Beyond Compensation?

Examining the Role of Apologies in the Restoration of Victims’ Needs in Simulated Tort Cases

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Abstract

Tort law currently debates the value of facilitating apology in order to enhance the restoration of victims’ non-material needs, and to promote dispute resolution. However, the extent to which apology can augment these outcomes beyond conventional, monetary reparations is not yet clear. The present research aimed to provide some first insights into this question, by means of two experimental studies conducted among community members recruited through MTurk (Study 1) and Prolific (Study 2). Participants imagined a scenario in which they became victims of a traffic accident. Study 1 (N = 81, 42 men, 39 women, M_age = 35.90) manipulated the resulting harm (personal injury or property loss) to examine which needs participants experienced, and what remedies (apology, compensation) they desired. Factor analysis revealed (non-material) needs for interpersonal treatment, responsibility taking, closure, and punishment, and (material) needs for compensation; these needs were as prominent after property loss as after personal injury. Non-material needs predicted greater desire for apology (and not compensation). Study 2 (N = 485, 286 men, 199 women, M_age = 31.03) examined how these remedies impacted the satisfaction of these needs and dispute resolution by manipulating apology (no apology, apology), compensation level (partial, approximate, or exact), and harm within the same scenario. Apologies enhanced the restoration of participants’ non-material needs. However, settlement remained mostly contingent on compensation: (modest) effects of apology were restricted to partial compensation. These findings therefore imply that apologies could augment victims’ restoration after torts, but may be limited as a catalyst for settlement.

Keywords: Apology, personal injury, non-material needs, damages, settlement

Public Significance Statement: This study provides preliminary evidence on the relative value of apology and compensation in tort litigation. It suggests that apologies can fulfill
important needs of victims (e.g., acceptance of responsibility, acknowledgement of wrongdoing, and retribution) that compensating their losses cannot. However, for resolving their disputes, participants nevertheless based their decisions mainly on how much money they were offered in settlement. This suggests that beliefs about the effectiveness of apology as a catalyst for settlement may be overly optimistic.
Beyond Compensation?

Examining the Role of Apologies in the Restoration of Victims’ Needs in Simulated Tort Cases

Classic conceptions of tort law aim to restore the victim “to the position that would have been occupied had the wrong not occurred,” by means of monetary compensation (see King, 2004). As such, tort litigation focuses primarily on determining the (pecuniary and nonpecuniary) losses of the victim, and the appropriate level of compensation for redressing them. This process thereby reflects the belief that victims’ main motive for litigating is to receive compensation, and that monetary remedies suffice for their restoration (Relis, 2007).

However, recent perspectives, building on psychological insights into justice sentiments (e.g., Okimoto & Tyler, 2007; Shnabel & Nadler, 2008; Tyler, Boeckmann, Smith, & Huo, 1997), increasingly recognize that victims’ needs in response to torts may extend beyond material concerns (e.g., Abel, 2006; Carroll & Witzleb, 2011; Relis, 2007). As torts frequently involve negligent, risky, or malevolent behavior, whereby perpetrators failed to live up to due standards of service or care, victims may desire an admission of responsibility or wrongdoing (Hensler, 2003; Relis, 2007). Similarly, victims may desire acknowledgement and sympathy for the harm to their life and livelihood (Relis, 2007). Further needs may include accountability, retribution, or punishment (Carroll & Witzleb, 2011; Taft, 2006), prevention of reoccurrence (Vincent, Young, & Phillips, 1994), and respect or concern for one’s rights (Okimoto & Tyler, 2007).

While tort law may seek to express such relational sentiments by means of monetary compensation (e.g., punitive damages, see Hensler, 2003; affectionate damages [for non-economic harm relating to injury/death of a loved one], see Hulst & Akkermans, 2011; pain and suffering damages, Radin, 1993), monetary remedies cannot directly express such sentiments:
indeed, using money in this fashion may be ineffective, or even objectionable (Tetlock, Kristel, Elson, Green, & Lerner, 2000). Accordingly, legal perspectives increasingly recognize that monetary compensation may insufficiently restore victims’ non-material needs, and that this may undermine the resolution of their disputes – particularly in case of nonpecuniary loss, like personal injury, where they assume such needs to be especially prominent and influential (Abel, 2006; Cohen, 1999; Shuman, 1994). Instead, such perspectives advocate to facilitate apology, as a remedy that does directly target victims’ non-material needs (Abel, 2006; Cohen, 1999; Latif, 2001).

**Remedial Effects of Apology**

Advocates of apology favor their provision in tort law because apologies do have the capacity to directly convey such relational sentiments. Substantive apologies include admission of wrongdoing, remorse, and acknowledgement or sympathy for the victim’s harm (Smith, 2008; Tavuchis, 1991). Moreover, apologizing symbolically humbles the perpetrator, submitting him/her to the victim’s power to forgive (Tavuchis, 1991). As such, substantive apologies acknowledge and reaffirm the norms that were broken, recognize the victim’s harm, and rebuild his/her status and self-worth, in ways that are impossible for monetary remedies (Okimoto & Tyler, 2007; Shnabel & Nadler, 2008; Tyler et al., 1997). For these reasons, advocates assume that apologies will enhance victims’ restoration in tort litigation, and thereby facilitate the resolution of their disputes (Cohen, 1999; Latif, 2001; Vines, 2015). They particularly anticipate such remedial effects in personal injury cases (Shuman, 1994) – as opposed to exclusively material losses, for which monetary remedies are assumed to suffice (Radin, 1993).

Evidence on effectiveness of apology in tort litigation is inconclusive, however. Certainly, victims show favorable beliefs of their remedial effectiveness, and some favorable
effects have been observed legal practice (e.g., in equal opportunity legislation, Allan, McKillop, & Carroll, 2010; in alternative dispute resolution, Dhami, 2012; Poulson, 2003). Studies on medical malpractice suggest that full disclosure may result in greater satisfaction when combined with a full apology and tangible support (Iedema et al., 2008), and such protocols were ostensibly associated with lower claims within specific hospitals (Boothman, Blackwell, Campbell, Commiskey, & Anderson, 2009; Cohen, 2000). Indeed, some economic analyses suggest that in medical settings, apology laws promote case resolution and reduce claims by up to $55,000–$73,000 (estimated for severe cases, Ho & Liu, 2011). However, other studies question such beneficial effects, by suggesting that apology laws may expose undetected malpractice, and thereby increase liability risk. Indeed, McMichael and colleagues found that for nonsurgeons (whose patients are less likely to anticipate potential risks), apology laws increase litigation and average claims (McMichael, Van Horn, & Viscusi, 2019). In sum, evidence from field research and economic analyses are not conclusive. Comparisons of claim rates do not illuminate individual outcomes, and compare time points that may not be comparable. Cases in litigation or mediation may vary in content, which may influence both apology and case resolution. As such, evidence from legal practice remains mostly indirect, or anecdotal (see Abel, 2006; Cohen, 1999; Latif, 2001).

It is due to these limitations that the experimental studies of Robbennolt (2003, 2006, 2013) have been so influential. Robbennolt’s research relied on experimental vignettes, which enabled her to confront participants with identical, hypothetical personal injury incidents. Participants all imagined an identical scenario, in which they were injured in a pedestrian-bicycle accident, and had to decide whether to litigate or accept settlement. Within the scenario, Robbennolt manipulated the provision of apologies, so that participants either did, or did not
receive an apology from the perpetrator. By comparing responses between these categories, the impact of apology on key outcomes could be isolated. Participants who received an apology reported greater forgiveness, and lower settlement aspirations (but not lower minimally acceptable settlement offers; Robbennolt, 2006). Moreover, they were (somewhat) more likely to accept settlement (Robbennolt, 2003). These studies thereby provided a valuable, direct indication of how apology may contribute to the resolution of disputes. Given that these conclusions echo favorable indirect evidence from field research, legal scholars often assume them to translate to legal practice (Arbel & Kaplan, 2017; Vines, 2015).

Nevertheless, there are important reasons to question the effectiveness of apology. Firstly, some research implies that apologies may often be less effective than victims anticipate. Psychological research suggests that victims overestimate the extent to which perpetrators’ apologies will satisfy them (De Cremer, Pillutla, & Reinders Folmer, 2011). Similarly, in mediation, victims frequently regard apologies as insufficiently exhaustive or sincere, even when perpetrators believe them to be (Choi & Severson, 2009). Such concerns may be magnified in legal settings, by the considerable risk of insincere or strategic apologies, or their possible devaluation by legal protection (Latif, 2001; Robbennolt, 2003, 2006; Taft, 2006).

Secondly, evidence on apology in tort settings fails to compare their remedial effectiveness to what can be achieved with traditional monetary compensation. Psychological research suggests that the impact of apology may be limited compared to that of substantive compensation, or may be contingent on its provision (Bottom, Gibson, Daniels, & Murnighan, 2002; Haesevoets, Reinders Folmer, De Cremer, & Van Hiel, 2013). For example, Haesevoets and colleagues (2013) show that after distributive harm (i.e., unequal distribution of valuable lottery tickets in an experiment), renewed cooperation was almost exclusively contingent on
compensation (i.e., restitution of losses). Apologies only modestly increased this outcome in case of partial compensation, and had no effect at greater compensation levels, or when participants received no compensation. Other studies suggest that apologies require greater compensation: for example, Ohtsubo and Watanabe (2009) advance that apologies are more persuasive the costlier (e.g., inconvenience, expense) they are to the offender. In sum, these findings imply that to understand the effectiveness of apology in tort settings, it is crucial to evaluate this relative to the compensation level that accompanies it. Indeed, critics of legal apology hypothesize that its remedial effectiveness might evaporate if victims became more aware of the extent to which accepting an apologetic settlement offer might curtail the damages to which they legally are entitled (Teninbaum, 2011).

These observations highlight important gaps in the existing evidence on apology in tort settings. Legal theorizing has linked a whole range of needs to victims’ dissatisfaction with traditional designs of tort litigation, but has not assessed their prominence, or their relations to the remedies that victims desire (e.g., monetary compensation and apology). Legal research did not evaluate how apology may contribute beyond compensation to the restoration of these needs, and how this may translate into settlement. And psychological studies do not illuminate how these processes may operate in tort settings involving personal injury or property loss.

**The Present Research**

The major purpose of the present research was to illuminate these questions. To do so, we relied on two experimental studies. Building on Robbennolt’s influential research, we similarly employed vignettes to present participants with equivalent, hypothetical torts. Within these scenarios, we independently manipulated key variables (type of harm, level of compensation,
provision of apologies), while keeping constant all other features (e.g., circumstances of the incident, culpability, etc.), to exclude them as potentially confounding variables.

**Study 1**

The major purpose of Study 1 was to explore the needs that victims experience in response to torts, and their relation to the remedies that they desire. We asked participants to imagine they were traffic accident victims through a scenario (cf. Robbennolt, 2003; 2006). The scenario manipulated their harm to involve either personal injury or property loss, of an equivalent monetary cost. We assessed participants’ needs, and examined their underlying structure using factor analysis. Moreover, we examined their demands for monetary remedies and apology. Based on the literature reviewed, we advanced four hypotheses:

1. **Hypothesis 1.1**: participants would display distinct (categories of) non-material needs that are separate from their material needs.

2. **Hypothesis 1.2**: relative to participants in the property loss condition, participants in the personal injury condition would display higher levels of non-material needs.

3. **Hypothesis 1.3**: greater levels of material needs would predict greater levels of desire for compensation.

4. **Hypothesis 1.4**: greater levels of non-material needs would predict greater levels of desire for apology.

**Method**

**Sample.** Participants were 81 Americans (42 men, 39 women, $M_{\text{age}} = 35.90$, $SD_{\text{age}} = 11.60$) recruited through the online research panel Amazon Mechanical Turk (https://www.mturk.com, see Buhrmester, Kwang, & Gosling, 2011). Only workers who were US nationals, were aged 18 years or older, and possessed approval rates of greater than 90 were
able to participate. Additional screening did not alter the results; hence, the data is otherwise unfiltered. We randomly assigned participants to conditions in a 2-level (Type of Harm: property loss vs personal injury) design. They received $1.00 for participating ($M_{time} = 5 \text{ minutes } 47, SD_{time} = 2 \text{ minutes } 56$).

**Procedure.** When MTurk workers consented to participate, we rerouted them to a hosted website, where they read the scenario (see Materials), in either the property loss version or the personal injury version. Their instructions were to “imagine as vividly as possible how [they] would feel in this situation, and what [their] thoughts would be,” and to keep this in mind when answering questions. Thereupon, they responded to the manipulation checks and dependent measures. Upon completion, they returned to MTurk and received their payment.

**Materials.** Participants read an experimental vignette (adapted from Robbennolt, 2003; 2006) in which the protagonist became the victim of a traffic accident. While getting out of their car after parking, the protagonist collided with a motorcyclist, who had been speeding and not paying attention. Participants imagined themselves in the position of the protagonist (see Procedure).

**Manipulation of Type of Harm.** Within the scenario, we manipulated the type of harm. In the property loss condition (Appendix 1a in Online Supplemental Materials), the motorcyclist hit the door of the protagonist’s car, resulting in significant damage and a sizable repair bill. In the personal injury condition (Appendix 1b in Online Supplemental Materials), the motorcyclist hit the protagonist him/herself, resulting in a broken leg and sizable medical costs (personal injury condition). The stated total cost (for pecuniary and nonpecuniary losses) was identical ($10,000).
**Manipulation checks.** We solicited two items to test the effectiveness of our manipulation of Type of Harm: (to what extent did you suffer) “material harm,” and “physical harm” (1 = not at all; 7 = very much).

**Measuring victim needs.** To assess needs relevant to the restoration of the costs of the incident (Hensler, 2003; Relis, 2007), we adapted four items from Colquitt’s (2001) measure of distributive fairness: (How important is it to you that the motorcyclist provides a settlement offer that…) “reflects the costs that you suffered as a result of the incident,” “is appropriate for the costs you suffered as a result of the incident,” “reflects the costs that the incident inflicted on you,” and “is justified, given the costs you suffered” (1 = not at all; 7 = very much).

To assess needs related to interpersonal treatment and respect (Okimoto & Tyler, 2007; Relis, 2007), we derived five items from measures of interactional fairness: (How important is it to you that the motorcyclist…) “treats you with kindness and consideration,” “treats you with respect and dignity,” “deals with you in an honest and truthful manner,” (Niehoff & Moormann, 1993), “shows concern for your rights” (Okimoto & Tyler, 2007), and “treats you in a polite manner” (Colquitt, 2001). We supplemented them with four items on victims’ emotional recovery, derived from an inventory on affectionate damages (Hulst & Akkermans, 2011): “approaches you in a sincere and open way”, “expresses empathy”, “sufficiently acknowledges the emotional impact on you”, and “responds swiftly to the incident” (1 = not at all; 7 = very much).

To assess needs related to the violation of norms (Kahan, 1996; Tyler et al., 1997), punishment (Taft, 2006), and prevention (Vincent et al., 1994), we used six items from research on affectionate damages (Hulst & Akkermans, 2011): “acknowledges his fault,” “acknowledges legal liability,” that a court (or other institution) “finds the motorcyclist guilty,” “punishes or
imposes a fine on the motorcyclist,” “that it is clear to the outside world that someone else was responsible for the incident,” and “that action is taken to prevent similar incidents in the future”. Additionally, we included six items on revenge or benevolence (McCullough, Root, & Cohen, 2006), assessing their need: “to punish the motorcyclist,” “to get even with the motorcyclist,” and that “the motorcyclist gets what he/she deserves,” or conversely, “to bury the hatchet and move on,” “to put your hurts aside,” and “to give up your hurt and resentment” (1 = not at all; 7 = very much).

**Desire for compensation.** To examine desire for compensation, we measured a) settlement aspirations (i.e., *ideal* level of compensation), and b) *minimum acceptable* level of compensation (i.e., the lowest offer that participants would accept; see Robbennolt, 2006). Thus, we examined both participants' aspirations for settlement and their willingness to make concessions from this. To measure them we used a slider, which could be moved to select any level between 0 and $10,000 (in whole dollars). Therefore, it was impossible for participants to indicate a figure that was greater than their total (pecuniary and nonpecuniary) losses.

**Desire for apology.** To examine desire for an apology, we measured the importance “that the motorcyclist apologizes” (1 = not at all; 7 = very much).

**Results**

**Manipulation checks.** Table 2 shows the relevant results. A two-level (Type of Harm) between-participants analysis of variance on the manipulation checks showed that participants indicated greater physical harm in the personal injury condition than in the property loss condition. As the presence (or absence) of physical harm constitutes the major difference between personal injury and property loss, this result indicates that our manipulation was successful.
Participants indicated greater material harm in the property loss condition than in the personal injury condition; however, this difference failed to reach significance. This may reflect the notion that participants suffered equal monetary losses in either condition.

**Victim needs.** As our measures of victim needs encompassed a broad range of potentially interrelated concepts, we conducted an exploratory factor analysis (with oblique rotation) to examine their underlying structure. The initial analysis extracted six factors with Eigenvalues over 1.00, explaining 75.46% of the item variance. Examination of the scree plot indicated that four- and five-factor solutions were also possible. We selected the five-factor solution (Table 1) for its combination of explained variance (71.38%), modest intercorrelations ($r_s < .29$), and interpretability. This solution indicated firstly a dimension that reflected material needs (Factor 1, $\alpha = .91$). Additional dimensions reflected non-material needs related to interpersonal treatment (Factor 2, $\alpha = .91$), responsibility taking (Factor 3, $\alpha = .78$), closure (Factor 4, $\alpha = .85$), and punishment or vindication (Factor 5, $\alpha = .81$). We omitted a single item (“How important is it to you that a court (or other institution) finds the motorcyclist guilty?”) that displayed sizable loadings on multiple dimensions.

We analyzed the resulting need measures in a 2 (Type of Harm) x 5 (Needs) mixed factorial analysis of variance, in which Type of Harm was a between-participants factor, and Needs was a within-participants factor. Table 2 shows the relevant results. The analysis firstly revealed a significant main effect of Needs, indicating differences between the relative importance of the various needs, $F(2.96, 234.15) = 76.11, p < .001, n^2_p = .49$, 95% CI [.40, .56] (Table 2). Irrespective of the type of harm, participants attached the greatest importance to material needs, followed by needs for responsibility taking, interpersonal treatment, closure, and punishment (all $ps < .005$). Although there were indications that certain needs may differ
depending on Type of Harm (in the case of material needs and needs for closure), we observed no significant differences between personal injury and property loss.

**Desire for compensation.** To examine whether participants’ settlement aspirations and minimally acceptable settlement levels differed according to the type of harm, we conducted 2-level (Type of Harm) between-participants analyses of variance (Table 2). In case of personal injury, settlement aspirations were no greater than in case of property loss. However, minimal settlement levels were significantly higher in case of personal injury than in case of property loss.

**Desire for apology.** Participants’ desire for apologies did not differ between conditions, and was as prominent in case of personal injury as in case of property loss.

**Associations between victim needs and desired remedies.** Next, we examined how participants’ needs were associated with the remedies that they desired. To this end, we estimated a structural equation model using the lavaan package (Rosseel, 2012) in R (R Core Team, 2013). This model regressed participants’ settlement aspirations, minimal settlement demands, and desire for apology upon the five need measures. Due to the differences in measurement level between the dependent concepts, we standardized all variables.

Figure 1 displays the structural model, showing only the significant associations. As can be seen, greater material needs were associated with greater desire for compensation (i.e., higher settlement aspirations and minimally acceptable levels of settlement), and with lower desire for apology. Conversely, greater needs for interpersonal treatment and responsibility taking were associated with greater desire for apology. Of the non-material needs, only punishment was associated with compensation, predicting higher minimal settlement levels.

**Study 1 Discussion**
Study 1 aimed to explore the nature and prominence of victims’ material and non-material needs in response to torts, and their relation to the remedies that they desire. Our findings indicated that in addition to material needs, four distinct categories of non-material needs could be identified: needs for responsibility taking, interpersonal treatment, punishment and closure (supporting Hypothesis 1.1). These needs were prominent relative to needs for material compensation; moreover, they were associated with different remedies. Whereas material needs predicted greater desire for compensation (in line with Hypothesis 1.3), needs for responsibility taking and interpersonal treatment predicted greater desire for apology (in line with Hypothesis 1.4). Thereby, these findings provide important preliminary evidence to support the assumption that torts may activate prominent non-material needs that may require apology.

One noteworthy observation concerns the difference between personal injury and property loss. Legal perspectives particularly associate non-material needs with personal injury cases, and assume that apologies are particularly necessary there (Abel, 2006; Cohen, 1999; Shuman, 1994). However, in Study 1, non-material needs were as prominent in case of property loss as in case of personal injury, as was desire for apology (contrary to Hypothesis 1.2). Instead, personal injury predicted higher (minimally acceptable) settlement demands, suggesting a firmer stance on the material (rather than non-material) aspects of harm.

**Study 2**

Study 1 illuminated the nature of participants’ material and non-material needs in context of torts, and their relationship to the remedies that they desire (compensation and apology). Study 2 aimed to examine how the provision of those remedies might influence the restoration of those needs, and the resolution of their disputes. To do so, Study 2 expanded the vignettes of Study 1 to contain the perpetrator’s response to the incident. This included a settlement offer that
varied in size (exact compensation, approximate compensation, or partial compensation, relative to the victim’s costs), and an apology (or no apology). By independently manipulating these remedies, the study aimed to illuminate a) how (the level of) monetary compensation may contribute to the satisfaction of material and non-material needs, b) how apology may contribute to these outcomes beyond compensation, and c) how either remedy thereby may impact dispute resolution (i.e., settlement decisions). As in Study 1, we examined these processes in context of torts involving either personal injury or property loss. On the basis of legal theorizing on apology, we advanced the following hypotheses:

**Hypothesis 2.1**: relative to participants in the no apology condition, participants in the apology condition would display greater levels of non-material need satisfaction.

**Hypothesis 2.2**: relative to participants in the no apology condition, participants in the apology condition would display greater levels of settlement acceptance.

**Hypothesis 2.3**: greater levels of non-material need satisfaction would predict greater levels of settlement acceptance.

**Hypothesis 2.4**: relative to the no apology condition, the extent to which apology would increase non-material need satisfaction and settlement acceptance would be greater within the personal injury condition than within the property loss condition.

**Method**

**Sample.** Participants were 485 American respondents (286 men, 199 women, $M_{age} = 31.03, SD_{age} = 10.69$) recruited through the online research panel Prolific (http://prolific.ac, see Peer, Brandimarte, Samat, & Acquisti, 2017). As in Study 1, only US nationals aged 18 years or older with approval rates of greater than 90 were able to participate. As in Study 1, additional screening did not alter the results; thus, the data is otherwise unfiltered. We randomly assigned
participants to conditions in a 3 (Compensation Level: exact vs approximate vs partial) x 2 (Apology: no apology vs apology) x 2 (Type of Harm: property loss vs personal injury) between-participants design. They received £1.00 for their participation ($M_{time} = 7$ minutes 07, $SD_{time} = 5$ minutes 11).

**Procedure.** The procedure was identical to Study 1. We rerouted participants from Prolific to a hosted website, where they read the instructions and materials. Upon completion, they returned to Prolific and received their payment.

**Materials.** Study 2 employed the same scenario as Study 1, which we expanded to include the perpetrator’s response to the incident (Appendix 2a and 2b in Online Supplemental Materials).

**Manipulation of Compensation Level.** Within the scenario, we firstly manipulated the compensation level offered by the perpetrator. The motorcyclist offered to compensate either exactly the victim’s losses ($10.000$, exact compensation condition), slightly less ($9.000$, approximate compensation condition), or considerably less ($6.000$, partial compensation condition) as an out-of-court settlement.

**Manipulation of Apology.** Secondly, we manipulated the provision of apologies. The motorcyclist either made no apology (no apology condition), or provided an apology that expressed remorse, acknowledged the harm, and accepted responsibility (apology condition):

“I am so sorry for wrecking your car (property loss condition) / for hurting you (personal injury condition). The incident was all my fault. I was going too fast and not watching where I was going until it was too late” (adapted from Robbennolt, 2003, 2006).

**Manipulation of Type of Harm.** Lastly, Study 2 also manipulated the type of harm (property loss or personal injury), using the same manipulation as in Study 1.
Manipulation checks. To check the manipulation of Type of Harm, we used the same items as in Study 1. To check the manipulation of apology, we used a single item: “To what extent did the motorcyclist apologize?” (1 = not at all; 7 = very much). To check the manipulation of compensation level, we asked participants to type in the settlement offer.

**Measuring victim need satisfaction.** As the focus of Study 2 was on the *restoration* of needs by compensation and apology, we reframed the need measures of Study 1 into measures of need satisfaction (e.g., “to what extent do you feel the motorcyclist treated you with kindness and consideration?,” 1 = not at all; 7 = very much). We computed scale measures for material needs (α = .98), interpersonal treatment (α = .96), responsibility taking (α = .66), closure (α = .96), and punishment (α = .74).

**Settlement decisions.** After participants completed the need satisfaction measures, we assessed their settlement decisions. To do so, we relied on two items: “How likely is it that you would accept the offer of the motorcyclist and not proceed with the lawsuit?” (1 = not at all; 7 = very much), and “Would you accept the offer of the motorcyclist and not proceed with the lawsuit?” (1 = no; 2 = yes). Because these items were highly correlated (r = .90), we combined them into a composite score of settlement acceptance, by converting them into z-scores, and computing their average.

**Results**

**Manipulation checks.** We analyzed participants’ responses to the manipulation checks by means of 3 (Compensation Level) x 2 (Apology) x 2 (Type of Harm) between-participants analyses of variance (Table 3). Participants indicated significantly greater physical harm in the personal injury condition than in the property loss condition. Furthermore, they indicated
significantly greater material harm in the property loss condition than in the personal injury condition. As such, our manipulation of Type of Harm was successful.

With regard to remedies, participants in the apology condition evaluated the perpetrator as more apologetic ($M = 5.78, SD = 1.36$) than participants in the no apology condition ($M = 3.14, SD = 1.61$), $F(1, 473) = 382.09, p < .001, d = 1.80, 95\% \text{ CI} [1.58, 2.01]$. Moreover, 97.3% of participants correctly recalled the settlement offer with which they had been presented. Thus, our manipulations of Apology and Compensation Level were also successful.

Participants’ perceptions of having received an apology also depended on Compensation Level, $F(2, 473) = 10.23, p < .001, f = .15, 95\% \text{ CI} [.06, .24])$. Participants in the exact compensation condition were more likely to indicate having received an apology ($M = 4.74, SD = 1.85$) than participants in the approximate compensation condition ($M = 4.54, SD = 1.95$) or the partial compensation condition ($M = 3.96, SD = 2.18$).

**Need satisfaction.** As our first step of the analysis, we examined how compensation and apology contributed to participants’ need satisfaction. To do so, we conducted a $3 \times 2 \times 2 \times 5$ mixed factorial analysis of variance, in which Compensation Level, Apology, and Type of Harm were between-participants factors, and Needs was a within-participants factor. This analysis firstly revealed a significant effect of Needs, indicating differences in satisfaction depending on the type of need, $F(3.36, 1589.23) = 190.84, p < .001, n^2_p = .29, 95\% \text{ CI} [.25, .32]$ (Table 3). Participants indicated the highest satisfaction levels for interpersonal treatment and closure, while satisfaction was lower for material needs and responsibility taking, and lowest for punishment. Moreover, need satisfaction differed according to Type of Harm, $F(3.36, 1589.23) = 5.33, p = .001, n^2_p = .011, 95\% \text{ CI} [.002, .022]$. Participants in the property loss condition indicated significantly greater
satisfaction of material needs and needs for closure than participants in the personal injury condition.

Next, we examined how the compensation level contributed to participants’ need satisfaction. A significant interaction indicated that the effect of Compensation Level differed depending on Needs, $F(6.72, 1589.23) = 81.63, p < .001, \eta^2_p = .26, 95\% \text{ CI} = [.22-.29]$ (Table 4). Greater compensation levels increased the satisfaction of participants’ material needs, and that of their non-material needs for interpersonal treatment, responsibility taking, and closure. However, compensation did not increase the satisfaction of their punishment needs.

Lastly, we examined how apology contributed beyond compensation to participants’ need satisfaction. A significant main effect of Apology indicated that participants who received an apology displayed higher (total) satisfaction than participants who received no apology, $F(1, 473) = 42.87, p < .001, d = .60, 95\% \text{ CI} = [.42, .78]$. Apologies greatly increased the satisfaction of needs for interpersonal treatment and responsibility taking, and also that of material needs, needs for closure, and punishment needs (Table 5). The impact of Apology was contingent on Compensation Level, however, $F(2, 473) = 5.06, p = .007, \eta^2_p = .02, 95\% \text{ CI} = [.00, .05]$. Apologies especially enhanced participants’ restoration in case of partial compensation, where they increased the satisfaction of material needs and non-material needs for interpersonal treatment, responsibility taking, closure, and punishment. The contribution of apology was more limited in case of approximate compensation or exact compensation, however. Here, they only increased the satisfaction of participants’ needs for interpersonal treatment and responsibility taking.

In terms of the effectiveness of these remedies in case of personal injury or property loss, the analysis indicated the effect of Compensation Level to differ depending on Type of Harm,
\( F(2, 473) = 3.98, p = .02, n^2_p = .16, 95\% \text{ CI} = [.00, .04], \) whereas the effect of Apology did not differ between either context, \( F(2, 473) = 1.13, p = .29, n^2_p = .00, 95\% \text{ CI} = [.00, .02]. \) When receiving approximate compensation, participants in the personal injury condition displayed lower (overall) need satisfaction (\( M = 4.04, SD = 1.16 \)) than participants in the property loss condition (\( M = 4.55, SD = 0.93, F[1, 473] = 13.61, p < .001, d = .34, 95\% \text{ CI} [.16, .52] \)). However, they showed equivalent (dis)satisfaction after partial compensation (\( F[1, 473] = 0.17, p = .68, d = .04, 95\% \text{ CI} [.00, .21] \)) or exact compensation (\( F[1, 473] = 2.89, p = .09, d = .16, 95\% \text{ CI} [.00, .34] \)).

**Settlement decisions.** We examined how compensation and apology contributed to decisions to settle. To this end, we conducted a 3 (Compensation Level) x 2 (Apology) x 2 (Type of Harm) between-participants analysis of variance. We first consider the effect of compensation. The analysis revealed a significant main effect of Compensation Level: higher compensation levels increased decisions to settle (Table 4).

Next, we examined whether apology contributed to settlement beyond compensation. The analysis revealed that the effectiveness of Apology was contingent on Compensation Level, as indicated by a significant interaction effect, \( F(1, 473) = 3.86, p = .02, n^2_p = .02, 95\% \text{ CI} = [.00, .04] \) (Table 5). Although apology increased settlement in case of partial compensation, it had no effect in case of approximate compensation or exact compensation. Indeed, settlement was significantly higher when participants were offered greater compensation (but no apology) than when they were offered lower compensation with an apology (partial compensation with apology vs. approximate compensation without apology: \( F(1, 473) = 80.86, p < .001, d = .83, 95\% \text{ CI} [.64, 1.01]; \) partial compensation with apology vs. exact compensation without apology: \( F(1, 473) = 149.21, p < .001, d = 1.12, 95\% \text{ CI} [.93, 1.31] \)).
With regard to the effectiveness of these remedies in case of personal injury or property loss, the analysis revealed that Type of Harm influenced neither the effect of compensation ($F[1, 473] = 0.67, p = .51, n^2_p = .00, 95\% CI [.00, .02]$), nor that of apology ($F[1, 473] = 2.45, p = .12, n^2_p = .00, 95\% CI [.00, .02]$). Moreover, we observed no significant differences in settlement between personal injury and property loss, $F(1, 473) = 2.95, p = .09, d = .16, 95\% CI [.00, .34]$.

**Mediation analyses.** As our last step of the analysis, we examined how the contribution of compensation and apology to material and non-material need satisfaction translated into greater settlement. To do so, we conducted mediation analyses, in which the indirect effect of either remedy on settlement was examined, through their respective effects on the satisfaction of participants’ material and non-material needs. For these analyses, we relied on the PROCESS macro (model 7; 10,000 bootstrapped resamples; Hayes, 2013). Compensation Level was the independent variable (X), and Apology the moderator (W). Settlement was the dependent variable (Y), while the five need measures were the mediators (Med). Lastly, Type of Harm was included as a covariate. To reduce complexity, we aggregated the greater compensation levels (0 = partial compensation, 1 = approximate or exact compensation). This preserves the notion that both need satisfaction and settlement were greater at higher compensation levels, but removes the need for separate analyses using dummy variables (reducing the number of analyses, while enhancing clarity). The pattern of results is identical.

Figure 2 displays the results of the analysis. Greater compensation (controlling for the influence of apology) significantly increased material and non-material need satisfaction. The same applied for apology (controlling for the influence of compensation), which significantly increased the satisfaction of material needs ($b = 0.45, SE = 0.13, 95\% CI [.21, .71]$), needs for interpersonal treatment ($b = 0.87, SE = 0.14, 95\% CI [.58, 1.15]$), for responsibility taking ($b =
0.90, SE = 0.15, 95% CI [.60, 1.19]), closure (b = 0.53, SE = 0.14, 95% CI [.25, .81]), and punishment (b = 0.42, SE = 0.16, 95% CI [.10, .74]). Furthermore, the analysis indicated significant moderating effects, suggesting the contribution of greater compensation to the satisfaction of material, interpersonal, and closure needs to decline when accompanied by an apology.

For settlement, the analysis revealed that greater satisfaction of material needs and closure needs significantly promoted settlement. However, greater satisfaction of needs for responsibility taking and punishment did not predict settlement; moreover, greater satisfaction of interpersonal needs significantly reduced settlement.

As such, the mediation analysis indicated that greater compensation exerted significant positive indirect effects on settlement through its contribution to greater satisfaction of material needs (ab = .49, SE = .09, 95% CI [.32, .66]) and closure needs (ab = .51, SE = .07, 95% CI [.38, .65]). Compensation exerted a significant negative indirect effect on settlement through its contribution to the satisfaction of interpersonal needs (ab = -.08, SE = .04, 95% CI [-.16, -.01], a negative effect). These indirect effects were significant both in the no apology condition (material needs: ab = .57, SE = .10, 95% CI [.38, .78]; closure needs: ab = .61, SE = .09, 95% CI [.45, .80]; interpersonal needs: ab = -.09, SE = .04, 95% CI [-.19, -.01]) and in the apology condition (material needs: ab = .40, SE = .08, 95% CI [.26, .56]; closure needs: ab = .39, SE = .08, 95% CI [.26, .56]; interpersonal needs: ab = -.06, SE = .03, 95% CI [-.13, -.01]).

In contrast, apology exerted indirect effects on settlement only in case of partial compensation, through its contribution to greater satisfaction of material needs (ab = .20, SE = .06, 95% CI [.10, .32]) and closure needs (ab = .27, SE = .09, 95% CI [.11, .46]). Apology exerted a negative indirect effect on settlement (regardless of compensation) through its
contribution to the satisfaction of interpersonal needs \((ab = -.10, SE = .05, 95\% CI [-.22, -.02])\). Lastly, its contribution to greater satisfaction of needs for responsibility taking did not influence settlement \((ab = .01, SE = .03, 95\% CI [-.06, .07])\).

**Study 2 Discussion**

Study 2 extends the insights of Study 1 by illuminating how compensation and apology restore the material and non-material needs that victims experience in response to torts. Moreover, Study 2 illuminates how these remedies thereby may influence the *resolution* of torts. In line with Hypothesis 2.1, apology increased the satisfaction of participants’ material and non-material needs, beyond the contribution of monetary compensation. With regard to dispute resolution, however, the results revealed that apology facilitated settlement only in case of partial compensation. This finding reflected the notion that the needs that were best served by an apology (i.e., interpersonal needs and needs for responsibility taking) did not predict greater settlement, whereas the needs that were best served by greater compensation (i.e., material needs and needs for closure) did. As such, Study 2 revealed only partial support for Hypotheses 2.2 and 2.3. There also were no indications that apology was particularly effective in case of personal injury (contrary to Hypothesis 2.4).

**General Discussion**

Taken together, our findings suggest that non-material needs indeed predict greater desire for apology in response to torts. Moreover, apology indeed enhanced the satisfaction of those needs, beyond what was possible through monetary compensation. Decisions to settle, however, depended mostly on the level of compensation: indeed, an apology only increased settlement in case of partial compensation.

**Theoretical Implications**
The present findings firstly have important implications for legal theorizing on apology. Legal perspectives have debated the desirability of facilitating apology in tort settings. This debate involves concerns about their remedial effectiveness, and about the ethicality of facilitating them – in that apologies may exploit victims’ emotions to avoid litigation and legitimate compensation of losses (Arbel & Kaplan, 2017; Teninbaum, 2011). The present research provides preliminary insight into both these questions. Our findings provide direct, causal evidence that apology can greatly enhance the satisfaction of the needs that victims experience in response to torts. This was especially the case for (non-material) needs for interpersonal treatment and responsibility taking (according to Cohen’s guidelines for $d$, a large effect). With regard to settlement, however, the impact of apology beyond compensation was less conspicuous. Our findings indicated that decisions to settle depended particularly on greater compensation (according to Cohen’s guidelines for $f$, a large effect), and that apologies only increased settlement in case of partial compensation (according to Cohen’s guidelines for $d$, a small effect). Indeed, while apology undoubtedly had an effect on settlement rates in case of partial compensation, the fact remains that the majority of participants in this condition continued to reject settlement – whereas the (vast) majority of participants accepted settlement in case of approximate or exact compensation, regardless of apology. We believe that this result therefore highlights an important caveat for overly favorable interpretations of the effectiveness of apology in tort settings.

An important question that arises from these conclusions is why apology only enabled a (modest) increase in settlement in case of partial compensation – despite the fact that participants displayed prominent non-material needs, which apologies address. The mediation analyses suggest some possible explanations for this discrepancy. These revealed that the needs that
benefited the most from an apology did not predict greater settlement (needs for responsibility taking) – or even showed a negative association with this outcome (interpersonal needs). Conversely, the needs that benefited the most from greater compensation (material needs and needs for closure) did predict greater settlement. Whether this may always be the case is not yet clear: it is possible that particular needs will gain in importance in other situations (e.g., when perpetrators do not apologize straight away; when their blameworthiness is less clear than in the present scenario). Nevertheless, these findings underline that effects of apology for victims’ restoration should not be unequivocally extended to case resolution.

Our findings also highlight another important implication for the legal debate on apology, namely the importance of considering the restorative effects of monetary compensation. Not only was the level of compensation of principal importance for participants’ settlement decisions, it also contributed to the satisfaction of their non-material needs. Indeed, our findings suggested the contribution of apology to these outcomes to decline at higher compensation levels. These results support theorizing that damages may confer relational meaning, and thereby contribute to victims’ restoration (Carroll & Witzleb, 2011; Hensler, 2003; Shuman, 1994). As such, in the legal debate on apology, the importance of compensation for victims’ restoration and for settlement should not be overlooked. Indeed, it is noteworthy that greater compensation enabled higher settlement and satisfaction (for material needs, interpersonal treatment, and closure needs) than did an apology accompanied by partial compensation. Nevertheless, it should also be noted that full restoration of losses may often be unfeasible in tort resolution. Potentially, the more subdued findings in context of partial compensation may be more representative of typical cases in legal practice.
A final important implication concerns the type of harm. The present discussion on apology in tort litigation focuses almost exclusively on personal injury litigation. It is assumed that non-material needs are especially prominent in this domain, and that apologies therefore will be especially necessary and influential there (Abel, 2006; Cohen, 1999; Shuman, 1994). In contrast, for property loss, legal perspectives generally assume non-material needs to be less prominent, such that monetary remedies will suffice (e.g., Radin, 1993). The present findings challenge both these assumptions. Firstly, we found no indication that non-material needs were more prominent in case of personal injury than in case of property loss. Secondly, we found no indications that apologies were more necessary or influential in case of personal injury. Rather, apologies were desired just as much in case of property loss, and were just as effective at increasing participants’ restoration. Of course, our scenario focused on property losses that were relatively impactful and costly (equivalent to personal injury). Nevertheless, these preliminary findings suggest that non-material needs and apology may be relevant to a broader range of contexts than previously has been assumed (Carroll, 2013). Accordingly, a broader focus may also be appropriate in the legal discussion on apology.

**Practical Implications**

What do these findings imply for the debate on the sufficiency of current remedies in tort litigation, and the need to facilitate apologies (e.g., Carroll, 2013; Vines, 2015; White, 2005)? Initiatives to facilitate apology have not only been advocated to enhance victims’ restoration, but also on the assumption that doing so will promote settlement – and thereby will reduce litigation rates and cost (Cohen, 1999; Latif, 2001; Vines, 2015). However, our findings generally imply that 1) apologies may be more effective for restoring victims’ needs, and 2) particular important needs may not contribute to settlement. These conclusions appear to present legislators with a
dilemma. To the extent that they aim to promote victims’ restoration, our findings suggest that facilitating apology indeed could prove beneficial. For settlement, however, our findings imply that this may remain a mostly financial issue. Indeed, this may be exacerbated in legal practice, where apology and compensation may come from different sources (perpetrators and insurers), further loosening the link between the two.

**Limitations**

An important limitation concerns the ecological validity of our studies, and the extent to which roleplaying in written vignettes can capture the processes and experiences that are relevant to the restoration of torts – particularly those involving personal injury. Nevertheless, we are confident that our methods do enable us to provide relevant, preliminary insights for these questions. To begin with, research has demonstrated that experimental methods using hypothetical vignettes can capture processes relevant to real-life behavior, even for emotional behaviors that are otherwise difficult to re-create in laboratory settings. Indeed, a review by Anderson and Bushman (1997) indicated that “trivial” experimental studies were able to capture similar mechanisms for aggressive behavior as those identified in field research. Similarly, legal-psychological research on jury simulations has shown consistent results between undergraduates and jury-eligible community members (Bornstein, 1999). In sum, “artificial” experimental vignettes can capture relevant processes of real-life, legally relevant behavior, while being better suited to separate the effects of experimental variables that are difficult to isolate in real-world contexts. These benefits may be particularly pronounced for the study of legal remedies, given that in legal practice, apologies are infrequent, and settlement negotiations often go unrecorded (Robbennolt, 2003).
In terms of the ability of experimental vignettes to evoke experiences relevant to accidents and their restoration, it is noteworthy that a large part of clinical and medical research relies on vignettes to capture judgment and decisions in clinical situations (for a review, see Evans et al., 2015), including medical malpractice (Boenink, Oderwald, De Jonge, Van Tilburg, & Smal, 2004). Moreover, research suggests that in such contexts, vignettes are in fact predictive of responses to real-life transgressions. For example, Lunza (1990) showed that nurses’ responses to imagined patient assault predicted their responses to actual patient assault cases. Directly relevant to apologies, Leunissen and colleagues found similar predictors of need for apology in hypothetical scenarios as in recollections of real-life transgressions (Leunissen, De Cremer, Reinders Folmer, & Van Dijke, 2013). Taken together, these findings makes us confident that our vignettes can capture processes and experiences relevant to personal injury, and to the restoration of harm. Nevertheless, replication in different contexts (including other scenarios, but especially in litigation practice) is necessary. We return to this in the following section.

A second limitation concerns the manipulation check for perceived material harm in Study 1, which failed to detect significant differences between the personal injury condition and the property loss condition. Given that property loss involved considerable material damage, why did such perceptions not differ in Study 1? A first reason may be that perceived material harm is a less sensitive test of our manipulation. Both property loss and personal injury involved harms that may have been experienced as material (e.g., monetary losses), whereas only personal injury involved physical harm. Indeed, the check for perceived physical harm consistently demonstrated significant differences between these conditions, in both studies. A second reason may be the lower power of Study 1 for detecting between-participant effects. Indeed, we did
observe significant differences in perceived material harm in (the higher powered) Study 2. Taken together, these results give confidence that the manipulation was successful. Nevertheless, we recommend that future research use a more direct and sensitive check for property losses (e.g., “to what extent did you suffer property loss?”).

A final limitation is that by explicating the type of harm (“wrecking your car” or “hurting you”), our apology manipulation was not verbally identical between conditions (but was identical in terms of elements, by including 1] an expression of remorse, 2] acceptance of responsibility, and 3] acknowledgement of harm). Our reason for doing so was that acknowledging the harm is a critical element of apology (e.g., Smith, 2008; Tavuchis, 1991), which a generic, identical account would have lacked. Nevertheless, we recommend that future research explore other representations – including verbally identical apologies, but also apologies that differ in terms of content, delivery, and timing. In this way, such evidence may contrast our specific, timely, spontaneous and rather extensive apologies with generic, tardy, non-spontaneous, or partial apologies. Doing so may be particularly important in light of findings that perpetrators of torts may avoid particular elements when apologizing (e.g., admitting responsibility), despite victims’ desire for them (Reinders Folmer et al., 2019).

Avenues for Future Research

To confirm the preliminary findings reported here, future research is needed that examines these processes among actual tort victims. Doing so would illuminate whether the observed effects on need restoration and settlement may also be reflected by victims who have directly experienced such losses. A particularly intriguing prospect would be to directly track these processes during litigation. Although the scope for doing so is typically limited by the low base rate of apologies, the adoption of protective legislation in some jurisdictions may provide
novel opportunities (see Carroll, 2013; Vines, 2015). This way, future research may further advance our insight into the remedial value of apology in the resolution of torts – to enable resolutions that are sensitive to victims’ needs, yet cognizant on the remedies that effectively resolve their disputes.

In addition, it would be valuable for future research to link the present findings on what parties desire in terms of remedies to what they desire in terms of procedure (Shestowsky, 2014). It is possible that needs that explain victims’ preferred remedies will also shape which procedures they desire – in light of their prospects for providing those remedies, and for satisfying those needs. It would be interesting to explore (for example) if non-material needs may explain victims’ preference for mediation over litigation (Poulson, 2003). In relation to this, it would also be interesting to contrast their perspective that of other legal protagonists, such as judges, juries, offenders, or mediators – to understand whether these actors may recognize the same needs that victims do, and anticipate their satisfaction by apologies and compensation (see Relis, 2007). By doing so, future research may further unravel how victims’ needs shape the resolution of torts – and uncover novel ways in which tort law may facilitate this.
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Table 1

(Rotated) factor loadings from exploratory factor analysis of victim need items, Study 1.

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. reflect your costs</td>
<td>.90</td>
<td>.00</td>
<td>-.00</td>
<td>.12</td>
<td>.11</td>
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<tr>
<td>S. appropriate for cost</td>
<td>.68</td>
<td>-.10</td>
<td>-.31</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>S. reflect incident cost</td>
<td>.79</td>
<td>-.10</td>
<td>-.26</td>
<td>.05</td>
<td>.03</td>
</tr>
<tr>
<td>S. justified given cost</td>
<td>.93</td>
<td>.04</td>
<td>.06</td>
<td>.11</td>
<td>.08</td>
</tr>
<tr>
<td>Kindness and consideration</td>
<td>.01</td>
<td>.87</td>
<td>-.01</td>
<td>.12</td>
<td>-.01</td>
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<tr>
<td>Respect and dignity</td>
<td>.09</td>
<td>.84</td>
<td>.05</td>
<td>.12</td>
<td>-.17</td>
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<tr>
<td>Honest and truthful</td>
<td>.35</td>
<td>.53</td>
<td>-.24</td>
<td>-.09</td>
<td>-.18</td>
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<tr>
<td>Concern for rights</td>
<td>.11</td>
<td>.62</td>
<td>-.14</td>
<td>-.26</td>
<td>.01</td>
</tr>
<tr>
<td>Polite manner</td>
<td>-.06</td>
<td>.87</td>
<td>.02</td>
<td>.07</td>
<td>.01</td>
</tr>
<tr>
<td>Sincere and open way</td>
<td>-.00</td>
<td>.77</td>
<td>.01</td>
<td>.14</td>
<td>-.02</td>
</tr>
<tr>
<td>Express empathy</td>
<td>-.31</td>
<td>.77</td>
<td>-.09</td>
<td>.11</td>
<td>.00</td>
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<tr>
<td>Acknowledge emot. impact</td>
<td>-.13</td>
<td>.76</td>
<td>.01</td>
<td>.08</td>
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<td>Acknowledge fault</td>
<td>-.05</td>
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<td>-.67</td>
<td>.14</td>
<td>.16</td>
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<tr>
<td>Acknowledge liability</td>
<td>.18</td>
<td>.14</td>
<td>-.76</td>
<td>-.13</td>
<td>-.28</td>
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<tr>
<td>Respond swiftly</td>
<td>.15</td>
<td>.17</td>
<td>-.70</td>
<td>-.01</td>
<td>-.13</td>
</tr>
<tr>
<td>Prevent similar incidents</td>
<td>.20</td>
<td>-.13</td>
<td>-.65</td>
<td>.07</td>
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<tr>
<td>Bury hatchet</td>
<td>.14</td>
<td>.18</td>
<td>.04</td>
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<td>Put hurts aside</td>
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<td>.18</td>
<td>-.09</td>
<td>.75</td>
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<td>Give up hurt and resentment</td>
<td>.27</td>
<td>-.00</td>
<td>.00</td>
<td>.79</td>
<td>-.08</td>
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<td>Punish</td>
<td>.16</td>
<td>.05</td>
<td>.20</td>
<td>.01</td>
<td>.88</td>
</tr>
<tr>
<td>Get what (s)he deserves</td>
<td>.25</td>
<td>.14</td>
<td>.11</td>
<td>-.36</td>
<td>.74</td>
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<tr>
<td>Get even</td>
<td>.07</td>
<td>-.00</td>
<td>.07</td>
<td>-.21</td>
<td>.70</td>
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<tr>
<td>Court punish or fine</td>
<td>-.05</td>
<td>-.22</td>
<td>-.29</td>
<td>-.06</td>
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<td>Make clear other responsible</td>
<td>-.24</td>
<td>.06</td>
<td>-.34</td>
<td>.29</td>
<td>.61</td>
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Table 2

Effect of Type of Harm on Manipulation Checks and Victim Needs, Study 1

<table>
<thead>
<tr>
<th>Dependent measure</th>
<th>Type of Harm, $M (SD)$</th>
<th>Univariate effects</th>
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<tr>
<td></td>
<td>Property loss</td>
<td>Personal injury</td>
</tr>
<tr>
<td>Manipulation checks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived physical harm</td>
<td>2.12 (1.52)</td>
<td>6.78 (0.42)</td>
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<tr>
<td>Perceived material harm</td>
<td>6.30 (1.20)</td>
<td>6.02 (1.15)</td>
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<tr>
<td>Victim needs</td>
<td></td>
<td></td>
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<tr>
<td>Material needs</td>
<td>6.15 (0.95)</td>
<td>6.51 (0.85)</td>
</tr>
<tr>
<td>Interpersonal treatment</td>
<td>5.33 (1.03)</td>
<td>5.23 (1.50)</td>
</tr>
<tr>
<td>Responsibility taking</td>
<td>5.87 (1.03)</td>
<td>6.12 (1.03)</td>
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<tr>
<td>Closure</td>
<td>4.80 (1.31)</td>
<td>4.24 (1.59)</td>
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<tr>
<td>Punishment</td>
<td>3.51 (1.16)</td>
<td>3.83 (1.47)</td>
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<tr>
<td>Desired remedies</td>
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</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Settlement aspirations</td>
<td>7594.05 (2059.80)</td>
<td>7814.34 (1997.16)</td>
</tr>
<tr>
<td>Minimal settlement level</td>
<td>5288.67 (1284.85)</td>
<td>5984.49 (1821.42)</td>
</tr>
<tr>
<td>Desire for apology</td>
<td>4.73 (1.75)</td>
<td>4.80 (1.95)</td>
</tr>
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</table>
Table 3

Effect of Type of Harm on Manipulation Checks and Victim Needs, Study 2

<table>
<thead>
<tr>
<th>Dependent measure</th>
<th>Type of Harm, $M (SD)$</th>
<th>Univariate effects</th>
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<tr>
<td></td>
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<td>Personal injury</td>
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<tr>
<td><strong>Manipulation checks</strong></td>
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<td>Interpersonal treatment</td>
<td>4.68 (1.41)</td>
<td>4.56 (1.43)</td>
</tr>
<tr>
<td>Responsibility taking</td>
<td>4.42 (1.10)</td>
<td>4.25 (1.19)</td>
</tr>
<tr>
<td>Closure</td>
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<td>4.40 (1.61)</td>
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<tr>
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<td>3.28 (1.10)</td>
<td>3.19 (1.11)</td>
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Table 4

*Effect of Compensation Level on Need Satisfaction and Settlement Decision, Study 2*

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<th>Compensation Level, $M (SD)$</th>
<th>Univariate effects</th>
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<tr>
<td>Dependent measure</td>
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<td>Material needs</td>
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<tr>
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<tr>
<td>$10.000$</td>
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<tr>
<td>Need satisfaction</td>
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<tr>
<td>Material needs</td>
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<td>Interpersonal treatment</td>
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</tr>
<tr>
<td>Responsibility taking</td>
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<tr>
<td>Closure</td>
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</tr>
<tr>
<td>Punishment</td>
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<td>Settlement decision</td>
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<td>(z-score)</td>
<td>$-0.78$ (0.99)</td>
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Table 5

*Effect of Apology and Compensation on Need Satisfaction, Study 2.*

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<th>Dependent measure</th>
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<th>Apology</th>
<th>Univariate effects</th>
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<td></td>
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</tr>
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<td>4.92 (1.59)</td>
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<td>Punishment</td>
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<td>6.36</td>
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<td>$10.000</td>
<td>0.56 (0.47)</td>
<td>0.48 (0.60)</td>
<td>0.47</td>
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</table>
Figure 1. Structural model of associations between victim needs and desired remedies, Study 1. Note: * = \(p < .05\), ** = \(p < .001\).
Figure 2. Moderated mediation model: effect of Compensation Level on settlement mediated by need satisfaction and moderated by Apology, Study 2. Note: * = p < .05, ** = p < .001.
Appendix 1a

Vignette Study 1 (property loss condition)

Please try to imagine the following situation:

A few months ago you were driving back from a trip to the stores. While you were getting out of your car, you were suddenly hit by a motorcyclist, someone from your neighborhood with whom you are acquainted. It appeared that the motorcyclist had been riding too fast, had not been paying attention because he was adjusting his helmet’s visor, and had almost hit another pedestrian shortly before the incident.

Because you were in a lot of pain after the motorcyclist hit you, an ambulance was called to take you to the hospital. At the hospital it became clear that you had suffered a broken leg, and numerous bruises and scratches.

As a result of the incident, you were confronted with considerable medical costs resulting from the treatment of your injuries. Moreover, you suffered a loss of income in this period, as your injuries made it impossible for you to work for several days.

In the aftermath of the incident, it becomes clear to you that the incident has cost you quite some money. Therefore, you decided to do some research, to find out which amount of compensation is customary for the loss that you suffered as a result of the incident. Based on some research you calculated that when adding up all your pecuniary and nonpecuniary costs, you might be able to claim a compensation of up to $10,000. You also contacted several attorneys, who confirmed your calculation; however, they noted that in this case, $5,000 would be a more equitable figure.
Appendix 1b

Vignette Study 1 (personal injury condition)

Please try to imagine the following situation:

A few months ago you were driving back from a trip to the stores. While you were getting out of your car, your car was suddenly hit by a motorcyclist, someone from your neighborhood with whom you are acquainted. It appeared that the motorcyclist had been riding too fast, had not been paying attention because he was adjusting his helmet’s visor, and had almost hit a pedestrian shortly before the incident.

Although you were unhurt by the incident, the incident did inflict considerable damage to your car. A tow truck was called to take your car to the repair shop. Due to the incident, the door of your car was severely damaged, the door hinges had dislocated, and the paintwork was damaged across the length of the vehicle.

As a result of the incident, you were confronted with considerable costs to repair your car. Moreover, the incident caused you much inconvenience, as you had to expend a considerable amount of time and effort arranging the repairs, and were left without transport to work and several appointments that you had made.

In the aftermath of the incident, it becomes clear to you that the incident has cost you quite some money. Therefore, you decided to do some research, to find out which amount of compensation is customary for the loss that you suffered as a result of the incident. Based on some research you calculated that when adding up all your pecuniary and nonpecuniary costs, you might be able to claim a compensation of up to $10,000. You also contacted several attorneys, who confirmed your calculation; however, they noted that in this case, $5,000 would be a more equitable figure.
Appendix 2a

Vignette Study 2 (property loss/no apology/partial compensation condition)

Please try to imagine the following situation:

A few months ago you were driving back from a trip to the stores. While you were getting out of your car, your car was suddenly hit by a motorcyclist, someone from your neighborhood with whom you are acquainted. It appeared that the motorcyclist had been riding too fast, had not been paying attention because he was adjusting his helmet’s visor, and had almost hit a pedestrian shortly before the incident.

Although you were unhurt by the incident, the incident did inflict considerable damage to your car. A tow truck was called to take your car to the repair shop. At the repair shop it became clear that the door of your car was severely damaged, the door hinges had dislocated, and the paintwork was damaged across the length of the vehicle.

As a result of the incident, you were confronted with considerable costs to repair your car. Moreover, the incident caused you much inconvenience, as you had to expend a considerable amount of time and effort arranging the repairs, and were left without transport to work and several appointments that you had made.

In the aftermath of the incident, it becomes clear to you that the incident has cost you quite some money. Therefore, you decided to find out what compensation is customary for the loss that you suffered as a result of the incident. Based on some research you calculated that when adding up all your pecuniary and nonpecuniary costs, you could claim a compensation of $10,000. You also contacted several attorneys, who confirmed that you should be compensated with approximately $10,000, and that you could file a lawsuit to seek this compensation.
Because the motorcyclist heard that you had already sought legal advice, he invited you to meet with him to talk about the loss you suffered. At the meeting, you told the motorcyclist that you had suffered a loss of $10,000 for which you wanted to be compensated, and that you were considering filing a lawsuit to do so.

After you were finished speaking, the motorcyclist made you a settlement offer of $6,000 if you would agree not to file the lawsuit. He told you that it was the only and the highest offer he would make. Therefore, you must either accept the offer or reject it and file a lawsuit.
Appendix 2b

Vignette Study 2 (personal injury/apology/exact compensation condition)

A few months ago you were driving back from a trip to the stores. While you were getting out of your car, you were suddenly hit by a motorcyclist, someone from your neighborhood with whom you are acquainted. It appeared that the motorcyclist had been riding too fast, had not been paying attention because he was adjusting his helmet’s visor, and had almost hit another pedestrian shortly before the incident.

Because you were in a lot of pain after the motorcyclist hit you, an ambulance was called to take you to the hospital. While you and the motorcyclist were waiting for the ambulance to arrive, the motorcyclist apologized and told you:

“I am so sorry for hurting you. The incident was all my fault. I was going too fast and not watching where I was going until it was too late.”

At the hospital it became clear that you had suffered a broken leg, and numerous bruises and scratches. As a result of the incident, you were confronted with considerable medical costs resulting from the treatment of your injuries. Moreover, you suffered a loss of income in this period, as your injuries made it impossible for you to work for several days.

In the aftermath of the incident, it becomes clear to you that the incident has cost you quite some money. Therefore, you decided to find out what compensation is customary for the loss that you suffered as a result of the incident. Based on some research you calculated that when adding up all your pecuniary and nonpecuniary costs, you could claim a compensation of $10,000. You also contacted several attorneys, who confirmed that you should be compensated with approximately $10,000, and that you could file a lawsuit to seek this compensation.
Because the motorcyclist heard that you had already sought legal advice, he invited you to meet with him to talk about the loss you suffered. At the meeting, you told the motorcyclist that you had suffered a loss of $10,000 for which you wanted to be compensated, and that you were considering filing a lawsuit to do so.

After you were finished speaking, the motorcyclist made you a settlement offer of $10,000 if you would agree not to file the lawsuit. He told you that it was the only and the highest offer he would make. Therefore, you must either accept the offer or reject it and file a lawsuit.