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Are Costly Apologies Universally Perceived as Being Sincere?

A Test of the Costly Apology-Perceived Sincerity Relationship in Seven Countries

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Abstract

After inadvertently committing an interpersonal transgression, an offender might make an effortful apology (e.g. cancelling an important meeting to make an apology as soon as possible). Such costly apologies signal the apologiser's sincere intention to restore the endangered relationship. The present study investigated this costly signalling model of apology across seven countries (Chile, China, Indonesia, Japan, the Netherlands, South Korea and the U.S.). Participants were asked to imagine that a friend had committed an interpersonal transgression against them and had then apologised in either a costly or non-costly fashion. The results showed that costly apologies were perceived to be significantly more sincere than no cost apologies in the all seven countries. We further investigated whether religious beliefs would moderate the effect of costly apologies. Consistent with our prediction and evolutionary hypothesis, costly apologies were perceived to be significantly more sincere than no cost apologies across religious groups (Buddhists, Christians, and Muslims).

Keywords: Apology, Costly Signalling Theory, Cross-Cultural Research, Religion

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Interpersonal conflicts are inevitable consequences of social interaction. Correspondingly, reconciliation and/or forgiveness are important components for those who value harmony in their social lives. MCCULLOUGH (2008) discusses competing motives of vengeance and forgiveness among targets (referred to as "victims") of a wide range of transgressions. According to MCCULLOUGH, victims who perceive their offender as (i) careworthy, (ii) valuable (as a partner), and (iii) safe (i.e. unlikely to harm them again) tend to be willing to forgive offender. Since reconciliation is a bilateral process between victim(s) and offender(s), a victim's reaction is subject to influence of the offender's mitigating signals. MCCULLOUGH specifically notes that offender-generated apologies, self-abasing gestures, and compensation all increase a victim's likelihood of forgiveness.

Apologies have been the most intensely studied of the above mentioned mitigating signals, and have typically been found to be effective in inducing victims' forgiveness (e.g. DARBY and SCHLENKER 1982; OHBUCHI, KAMEDA and AGARIE 1989; DE CREMER 2010; see also FEHR, GELFAND and NAG 2010, for a meta-analytic review). However, apologies are not omnipotent. Correspondingly, several moderators and mediators of the apology-forgiveness relationship have been identified. These include harm severity (BENNETT and EARWAKER 1994), offenders' intention/responsibility (DARBY and SCHLENKER 1982; BENNETT and EARWAKER 1994; STRUTHERS, EATON, SANTELLI, UCHIYAMA and SHIRVANI 2008), harm type (GAUCHÉ and MULLET 2005), timing (FRANTZ and BENNIGSON 2005), empathy for the offender (MCCULLOUGH, WORTHINGTON and RACHAL 1997), and perceived sincerity (RISEN and GILOVICH 2007; TOMLINSON, DINEEN and LEWICKI 2004).

We take special note of "perceived sincerity" in the above list of moderating variables, because it is (implicitly or explicitly) typically *presumed* to be present by apology researchers. Nonetheless, as the lay expression "perfunctory apology" suggests, not every apology is sincere (LAZARE 2004). Some apologies, such as the briefest type that simply states "I am sorry", may be considered cheap talk (BOTTOM, GIBSON, DANIELS and MURNIGHAN 2002) in the sense that it is possible to say "sorry" even when an offender does not sincerely feel sorry. It is thus not appropriate to simply assume that an offender's apologetic statement will always be perceived as sincere. TOMLINSON et al. (2004) in fact found that, when perceived sincerity was manipulated independently of the presence of an apology, 51% of the variance in respondents' willingness to reconcile was accounted for by the perceived sincerity, while only 4% by the presence of the apologetic statement.

The fact that researchers commonly presume that apologies are sincere may be associated in part with the common definitions of apology that are found throughout the literature. Although no consensus appears to exist, most researchers do require more than a simple statement of "I am sorry" if an action is to be considered apologetic. Operational definitions of apology often include (a) acknowledgement of the harm done, (b) acceptance of responsibility, (c) expression of remorse and promise of forbearance, and (d) offer of reparation (e.g. SCHER and DARLEY 1997; LAZARE 2004; FEHR and GELFAND 2010). It is noteworthy that MCCULLOUGH (2008) considers the last two components to be separate mitigating signals: expressions of remorse, such as blushing or showing embarrassment, are closely associated with self-abasing gestures and reparation is a synonym of compensation. These two signals may independently assure the sincerity of apologies because involuntary emotional expressions are not easily mimicked (FRANK 1988) and financial compensation is costly (and thus extends one's actions beyond

"cheap talk"; BOTTOM et al. 2002). In fact, there is empirical evidence showing that expressions of remorse (e.g. GOLD and WEINER 2000; DAVIS and GOLD 2011) and financial compensations (DESMET, DE CREMER and VAN DIJK 2010, 2011a, 2011b) are effective in inducing victims' forgiveness even if they are not accompanied by a statement of apology.

The inverse question, however, is whether an apologetic statement (fully detached from an expression of remorse and/or offer of reparation) can in and of itself be perceived as sincere by victims. Working against this perspective are findings that cheap talk apologies (i.e. apologetic statements delivered without making amends) can "backfire" because they are perceived as being insincere (SKARLICKI, FOLGER and GEE 2004; ZECHMEISTER, GARCIA, ROMERO and VAS 2004). Based on costly signalling theory (e.g. ZAHAVI and ZAHAVI 1997; BLIEGE BIRD and SMITH 2005; GANGESTAD and THORNHILL 2007), OHTSUBO and WATANABE (2009) recently proposed a costly signalling model of apology, which predicts that *costly* apologies are perceived as more sincere than no cost apologies.

OHTSUBO and WATANABE's model assumes that the victim (V) initially interprets an apology from a position of uncertainty. From the perspective of V, it is possible that the transgressor might sincerely hope to restore the relationship with V. However, it is also possible that the transgressor, if easily forgiven, would exploit V again (i.e. there is uncertainty from the perspective of V). The transgressor also has a stake in the offense/reconciliation process. One transgressor, T1, may consider the benefit from future cooperative interactions with V to be greater than the benefit from a single occasion exploitation (b_e) and would therefore be willing to restore the relationship. On the other hand, for another transgressor, T2, the benefit from the exploitation, b_e, could exceed that of future cooperative interactions. Here we assume that V is willing to forgive T1, but not T2. This is dependent on accurately identifying T1 and T2's

intentions. Based on these assumptions, OHTSUBO and WATANABE have shown that T1 can communicate his/her sincere intention in a credible fashion by voluntarily incurring a certain amount of cost (a) in making the apology (where $a \geq b_e$). T2, in contrast, has no incentive to incur any cost equal to, or greater than, b_e. Accordingly, the model predicts that only T1 makes the costly apology, and, as a result, V can distinguish between T1 and T2 by examining the costliness of the apology. For example, after an unintentional transgression, T1 might cancel an important meeting and hurry to V's place to apologise. This assures V that T1 places higher value on the relationship with V than the meeting, and that T1 sincerely intends to reconcile. Parenthetically, this example also clarifies the independence between costly apologies and compensations: Despite T1's incurring the cost of cancelling a meeting, V's damage will not be restored.

One of the assumptions this model makes—that the relationship with V is more valuable for T1 than T2—is concordant with the *valuable relationship hypothesis* (DE WAAL 2000; McCULLOUGH 2008), an evolutionary model of reconciliation and forgiveness that was originally developed to explain reconciliations among primates. According to the valuable relationship hypothesis, the adaptive function of reconciliation is to preserve valuable relationships. It predicts that, following an interpersonal conflict, people are more inclined to reconcile with close (valuable) partners than with distant (less valuable) ones. Several studies have directly tested (and confirmed) this prediction among humans (VERBEEK and DE WAAL 2001; McCULLOUGH, LUNA, BERRY, TABAK and BONO 2010; KARREMANS et al. 2011). However, there may be moderators of this general effect. BURNETTE, McCULLOUGH, VAN TONGEREN and DAVIS (2012), for example, found that the effect of *relationship value* (i.e. value the victim places on the relationship with the transgressor) on forgiveness was tempered by a

perceived *exploitation risk* (i.e. the victim's perception about the risk of being exploited again): People who perceive the exploitation risk to be high are more hesitant to forgive even a partner with whom they have a valuable relationship. From our costly signalling perspective, the exploitation risk is a flip-side of the valuable relationship hypothesis. As shown above, only T1, who highly values the endangered relationship, will incur some cost to make an apology. The costliness of the apology in turn assures V that the transgressor sincerely intends to restore the relationship (i.e. the risk of further exploitation by the transgressor is low). Therefore, V's attention to the exploitation risk will facilitate V to reconcile with a partner who values the relationship (T1), but not with a partner who does not (T2).

The simple prediction from the costly apology model is that humans perceive costly apologies to be more sincere than no cost apologies. OHTSUBO and WATANABE's (2009) vignette and behavioural experiments confirmed this prediction: Their participants perceived apologies entailing some cost (e.g. cancelling an important meeting) to be more sincere than apologies without such a cost. Furthermore, by conducting a series of follow-up studies, OHTSUBO and WATANABE were able to exclude some alternative explanations, such as restored justice explanation (i.e. a victim's damage and an apologiser's cost are balanced out) and trait-attribution explanation (i.e. a victim perceives a costly apologiser as a good person, and the perceived sincerity is a by-product of this trait attribution). Nonetheless, all of their studies were conducted in Japan, and this is a serious limitation of their research that aimed at testing an evolutionary model that assumes the universality of a manifest phenomenon (HENRICH, HEINE and NORENZAYAN 2010).

The available evidence neither supports nor refutes the universality claim regarding the costly apology-perceived sincerity relationship. On the one hand, a recent study confirmed the

universality of the relationship between interpersonal closeness and forgiveness (KARREMANS et al. 2011). On the other hand, it is known that there is a substantial cross-cultural variance in reliance on apologies as conflict resolution strategies (HICKSON 1986). Moreover, cross-cultural research on dispute settling strategies suggests that Japanese, for example, are more prone to apologise than Americans (HAMILTON and HAGIWARA 1992; ITOI, OHBUCHI and FUKUNO 1996). Hence, there remains a possibility that OHTSUBO and WATANABE's results are unique to the Japanese culture where apologies are practiced more regularly than in other countries.

The purpose of the present study is to replicate OHTSUBO and WATANABE's results cross-culturally, and thus test the following hypothesis in seven countries (Chile, China, Indonesia, Japan, the Netherlands, South Korea, and the United States).

Hypothesis 1: *Costly apologies will be perceived as being more sincere than no cost apologies across all seven investigated countries.*

Because these seven countries vary substantially in terms of their predominant religious orientations, and it is known that religious beliefs and religiosity influence forgiveness (FOX and THOMAS 2008; MCCULLOUGH 2008; MULLET and AZAR 2009), we also investigated the following hypothesis.

Hypothesis 2: *The relationship between apology cost and perceived sincerity will be intact regardless of participants' religious beliefs.*

To test these hypotheses, a vignette experiment manipulating the type of apology (costly vs. no cost) was conducted in each of the seven countries. The current vignettes can be considered an extension of the materials used in OHTSUBO and WATANABE's (2009) Experiment 2. For the current study, participants were asked to imagine that their friend had committed an

interpersonal transgression (e.g. not showing up at a meeting point), and then apologised to them in either a costly or non-costly manner. Participants then rated the sincerity of the apology.

Method

Participants

Participants were 185, 92, 61, 171, 93, 45 and 40 students enrolled in university-level educational programs in Chile, China, Indonesia, Japan, the Netherlands, South Korea and the U.S., respectively. A total of 687 participants (262 males, 423 females, and 2 not reported) were 20.6 years old on average ($SD = 2.51$) and mostly single (98%). There were 101, 186, and 50 participants who described themselves as Buddhists, Christians (Catholics and Protestants combined) and Muslims, respectively. More specific demographic details are shown in Table 1.

Although the seven countries are not exhaustively representative of all of the world cultures, they do provide cultural divergence. While these cultures vary across several dimensions, we consider the individualism-collectivism dimension to be highly relevant in terms of the disposition to forgive (see, for example, KARREMANS et al. 2011). The seven countries included in the present study varied substantially along the individualism-collectivism dimension (ranging from 14 [Indonesia] to 91 [the U.S.]; HOFSTEDE, HOFSTEDE, and MINKOV, 2010).

Design, Scenarios and Dependent Variables

The present study employed a 2 (apology type: costly vs. no cost) × 7 (country) between-participants design. Although the present study included three scenarios, they were uniformly ordered for all participants, and were not treated as a within-participants factor. Each participant was assigned to either the costly apology or no cost apology condition, and thus received either the three costly apology scenarios or the three no cost apology scenarios.

The three interpersonal transgression scenarios (each of which was followed by an apology episode) were used to assess the extent to which the perceived cost of an apology would enhance participants' perception of offender sincerity. For example, the first transgression involved a friend who borrowed the participant's book and returned it with ink spots on it (see Table 2 for a full description of the three scenarios). In all hypothetical scenarios the experimental participant was asked to place him/herself in the role of the focal person (the person who suffered the transgression). Each scenario was immediately followed by two items assessing participants' anger level on a 7-point scale: (i) How upset would you be if the scenario really happened? and (ii) How angry would you be at your friend if the scenario really happened?

After assessing the pre-apology anger level, each scenario was followed by either a costly apology or no cost apology scenario. Examples of the two types of apology are as follows (see Table 2 for exact wording): *Hearing that the participant was upset, the friend cancelled a plan to go to a rock concert featuring his/her favourite band and instead visited you and apologised* (costly apology condition) and *the friend did not cancel the rock concert, but did phone to say "I am sorry"* (no cost apology condition). Each costly apology scenario was written such that making an apology was associated with some cost incurred by the apologiser but no difference to the victim's objective well-being. Therefore, any difference in perceived sincerity between the costly apology condition and the no cost apology condition would be attributable to the effect of compensation.[1]

After reading the apology, participants were asked to rate their post-apology anger level with the same two items as those administered in the pre-apology anger assessment. Participants then answered each of the following four items: (1) How sincere do you find your friend's

apology? (2) How much are you willing to forgive your friend? (3) How highly do you think your friend values the relationship with you? (4) How nice do you think your friend is? Of these four items, the primary dependent variable of interest to the current study was item 1 (perceived sincerity).[2]

Translation and Back-translation Procedures

The materials were first developed in English. The English version was translated into Japanese by two authors (YO and EW). The Japanese version was back-translated into English by a native English speaker, who was studying the Japanese language at a Japanese graduate school. An additional native English speaker confirmed that the back-translated version was equivalent to the original English version. The Japanese version was administered to the Japanese sample. The English version was administered to the U.S. and Dutch samples. Before conducting the experiment in the Netherlands, a research assistant reviewed the materials and confirmed that Dutch undergraduates would be able to understand the scenarios, questions, and response options in English.

For the other four countries (Chile, China, Indonesia and South Korea), the Spanish, Chinese, Indonesian and Korean versions of the questionnaire were developed in the following manner. For each language version, one of the authors or a research assistant whose native language was the target language first translated the English version into the target language. The translated version was then translated into Japanese by another native speaker of the target language. YO and EW confirmed that the translated Japanese versions were equivalent to the original English and Japanese versions. When differences between the translated versions and the original versions were detected, the second translators were consulted to correct the target-language versions.

Results

Costly Apologies and Perceived Sincerity across Seven Countries

Before testing the effect of apology cost, it was confirmed that pre-apology anger level did not differ across the apology cost conditions. As the pre-apology responses to items (i) and (ii) were highly correlated with each other (r's = .64, .57 and .70 for Scenarios 1, 2 and 3, respectively), the responses to the two items were averaged to obtain the pre-apology anger score. A series of 2 (apology cost) × 7 (country) analyses of variance (ANOVAs) revealed that neither the main effect of apology cost nor the interaction of the two factors broached statistical significance for any of the three scenarios (all F's < 1.1, ns at the .05 level). We therefore note here that any differences across the apology cost conditions are not attributable to differences in the pre-apology anger level. The main effect of country was significant (with small effect sizes) for Scenario 1, $F(6, 672) = 8.66$, $p < .001$, $\eta^2 = .07$, and Scenario 3, $F(6, 673) = 13.78$, $p < .001$, $\eta^2 = .11$, but non-significant for Scenario 2.

The perceived sincerity scores of each scenario were submitted to a 2 (apology cost) × 7 (country) ANOVA. For Scenario 1, main effects of apology cost, $F(1, 673) = 169.03$, $p < .001$, $\eta^2 = .20$, and country, $F(6, 673) = 2.31$, $p < .05$, $\eta^2 = .02$, were significant (Figure 1a). Although the interaction effect was non-significant, $F(6, 673) = 1.30$, ns, in order to confirm that the effect of apology cost is universal, we additionally conducted a series of simple effect tests (two-tailed tests were employed throughout the subsequent simple effect tests). The results revealed that the effect of apology cost was significant in the all seven countries. Thus, Hypothesis 1 was supported in Scenario 1. Although the interaction effect was not significant, there were substantial differences in effect size (measured by Cohen's d), with smaller effects recorded within Chile, China and Indonesia (0.73, 0.84 and 0.74, respectively) and larger effects in Japan,

the Netherland, South Korea and the U.S. (1.23, 1.37, 1.45 and 1.36, respectively). Given the

above-mentioned pre-apology country differences, we investigated whether countries associated

with higher levels of pre-apology anger required costly apologies. Such an effect would be

expected to yield a positive correlation between the effect size of apology cost and averaged

ratings of pre-apology anger. However, the correlation between each country's mean pre-

apology anger score and effect size was effectively zero, $r = -.03$ ($n = 7$, ns).

For Scenario 2, the main effects of apology cost, $F(1, 672) = 448.00$, $p < .001$, $\eta^2 = .38$,

and country, $F(6, 672) = 3.07$, $p < .01$, $\eta^2 = .02$, as well as their interaction effect, $F(6, 672) = 5.15$, $p < .001$, $\eta^2 = .03$, all exhibited statistical significance (Figure 1b). Simple effect tests

showed that the effect of apology cost was significant in the all seven countries. Although the

effect sizes varied substantially (d's = 0.77, 1.27, 1.38, 1.40, 1.50, 1.91 and 2.30 for Indonesia,

the U.S., Chile, South Korea, the Netherlands, China and Japan, respectively), these effect sizes

again were not correlated with the mean pre-apology anger score ($r = -.12$, $n = 7$, ns). The

evidence from Scenario 2 again provides support for Hypothesis 1.

For Scenario 3, only the main effect of country was significant, $F(6, 673) = 7.35$, $p < .001$,

$\eta^2 = .06$. The simple effects of cost were not significant for any of the seven countries. Therefore,

Hypothesis 1 was not supported across all seven countries. Retrospectively, the manipulation of

cost was quite weak in Scenario 3 (our retention of three scenarios was in fact done in

consideration of this possibility within any one scenario). For Scenario 3, the cost was

manipulated by the driving time from the transgressor's home to the victim's home: 2-hours in

the costly apology condition vs. 10-minutes in the no cost apology condition (Table 2). A follow-

up study conducted in Japan revealed that riding a bus 2-hours was perceived as an adequate cost,

but driving a car 2-hours was not.[3]

In addition to the perceived sincerity ratings of focus, our study also measured participants' willingness to forgive, the apologiser's valuation of the relationship and perceived niceness of the apologiser (i.e. items 2, 3 and 4, respectively). As an additional check on Hypothesis 1, we tabulated the means and standard deviations of these variables as a function of the apology cost condition as Table 3. The general pattern was consistent with the main result: Mean scores were greater in the costly apology condition than the no cost apology condition, although some items failed to reach the conventional significance level in Indonesia and South Korea. All three items were highly correlated with perceived sincerity (see the leftmost column in Table 3). The comparable correlation coefficients were also significant when separately computed for each of the seven countries. Based on the results across two of our three scenarios as well as auxiliary evidence from our items 2, 3, and 4, we therefore find general support for Hypothesis 1. Because of our weak manipulation in Scenario 3, all subsequent analyses focus on the first two scenarios only.

Costly Apology-Perceived Sincerity Relationship and Religion

The perceived sincerity scores of self-identified Buddhists, Christians and Muslims were submitted to a 2 (apology cost) × 3 (religion) ANOVA. For Scenario 1, only the main effect of apology cost was significant, $F(1, 330) = 72.55$, $p < .001$, $\eta^2 = .18$ (Figure 2a). Simple effect tests indicated that the effect of apology cost was significant in every religious group (d's =1.24, 0.73 and 1.17 for Buddhists, Christians and Muslims, respectively). For Scenario 2, the main effect of apology cost, $F(1, 329) = 203.32$, $p < .001$, $\eta^2 = .37$, and the interaction effect, $F(2, 329) = 5.36$, $p < .01$, $\eta^2 = .02$, were significant. The main effect of religion was marginally significant, $F(2, 329) = 2.89$, $p < .10$, $\eta^2 = .01$ (Figure 2b). Simple effect tests indicated that the effect of apology cost was significant in each of the three religious groups (d's = 2.09, 1.35 and

1.27 for Buddhists, Christians and Muslims, respectively).[4] Collectively these results provide

support for Hypothesis 2. The consistency across the three religious groups was also

corroborated by analyses of the three other dependent variables. That is, a series of simple effect

tests revealed that the costly apology was associated with significantly higher ratings of

willingness to forgive, perceived valuation of the relationship, and perceived niceness of the

apologiser than the no cost apology regardless of participants' religion and scenario.

It should be noted here that a possible shortcoming of the present study was that we did

not incorporate an irreligious group in the analyses. Within each sample, participants used

several different words to indicate their non-religiosity, such as "irreligious" and "atheist".

Whether such apparent synonyms had the equivalent meaning among our samples both within

and between countries cannot be objectively verified. Because of this ambiguity, we did not

include an "irreligious" category within the above ANOVAs. We instead conducted separate t-

tests including only those who defined themselves by "irreligious" or its synonyms. For both

scenarios, the costly apology was perceived more sincere than the no cost apology by such

irreligious participants. For Scenario 1, the mean perceived sincerity was 6.06 ($SD = 1.10$) and

4.75 ($SD = 1.37$) in the costly and no cost apology conditions, respectively, $t(238) = 8.24$, p

$< .001$, $d = 1.06$. For Scenario 2, the mean perceived sincerity was 5.53 (1.32) and 3.12 (1.49) in

the costly and no cost apology conditions, respectively, $t(238) = 13.26$, $p < .001$, $d = 1.71$.

Across these analyses, we consider the evidence to support the conclusion that the effect of

apology cost is not moderated by participants' religiosity.

Discussion

The present study demonstrated that the cost involved in an apology signals an

apologiser's sincerity to the victim in at least seven countries (Chile, China, Indonesia, Japan, the

Netherlands, South Korea and the U.S.). The same conclusion holds when participants were divided based on their religious beliefs: A costly apology enhanced the perceived sincerity among Buddhists, Christians, Muslims and non-religious people. These results provide support for OHTSUBO and WATANABE's (2009) evolutionary hypothesis, which assumes that the effect of apology cost in inducing perceptions of sincerity on the part of the victim is universal.

Although the findings across countries and religions were generally consistent with the costly apology model, the *effect sizes* did vary substantially across countries, religions and scenarios. The effect sizes were generally larger for Scenario 2 than Scenario 1 (as well as Scenario 3). In addition, some inconsistency across the scenarios was detected for a few dependent variables other than perceived sincerity. For example, the apology cost generally raised participants' *willingness to forgive*. This pattern was found in the all seven countries when Scenario 2 was presented but disappeared when Scenario 1 was presented to Indonesians and Koreans (Table 3). These results suggest that apology cost should possibly be considered along a graded dimension. Although our manipulation was categorical (i.e. "costly" and "no cost"), it is reasonable to assume that the latent structure of cost is dimensional and our variable effect sizes across the three scenarios reflect this graded differentiation in cost severity. It is also possible that people in different countries view different types of apologies differently in terms of costliness. This might account for the variable effect sizes across the countries.

In spite of the variable effect sizes, however, the present study suggests that there is a common denominator in assessing sincerity of apologies across countries and religions. It is noteworthy here that the simple effects of apology cost on perceived sincerity and relationship valuation were significant (or at least marginally significant) in the all seven countries. These results provide support for the notion that costly apologies are used by victims as information in

assessing the transgressor's valuation of the relationship, and that this is possibly an inverse barometer of exploitation risk. Consistent with the previous study showing that victims who perceive the risk of exploitation as being low are more prone to forgive their transgressor (BURNETTE et al. 2012), the present study also showed that costly apologies facilitated forgiveness (Table 3).

The effect of apology cost on the perception of the apologiser as being a nice person was not predicted from OHTSUBO and WATANABE's costly apology model, but could indicate the presence of another adaptive function of costly apologies. Recently, based on a series of experiments investigating people's willingness to make a costly apology, WATANABE and OHTSUBO (2012) proposed a reputation maintenance function of costly apologies. This is consistent with TABAK and colleagues' argument that conciliatory gestures lead to perceptions of the transgressor as being more agreeable, and thus the future risk of exploitation is lower (TABAK, MCCULLOUGH, LUNA, BONO and BERRY 2012). Such explanations assume that costly apologies signal the apologiser's general disposition (e.g. agreeable) rather than the relation-specific attitude (i.e. valuation). Importantly, recipients of this type of signal are not limited to the victim, and the adaptive function of the signal is to communicate to all relevant group members the transgressor's intention to comply with social norms. Therefore, the present results as well as recent research suggest that costly apologies have dual functions: They signal how much the apologiser values the endangered relationship and also his/her general agreeableness. Here again we note that the latter function might be associated with weaker effect sizes in Indonesia and South Korea (Table 3).

Limitations of the present study include possible within-sample biases. For example, our Buddhist and Muslim samples mostly consisted of Japanese and Indonesians, respectively (Table

1). This is especially problematic because Japan is a highly secular country (INGLEHART and BAKER 2000) and we surmise that many "Buddhists" in the Japanese sample do not have formal knowledge of doctrines of Buddhism. In future studies, it may be fruitful to collect data from more serious Buddhist countries, such as Thailand (where most men enter a monastery at least a few days in their lifetime). A second possible limitation related to our sample is that all participants were university students (ARNETT 2008). Further research including fully representative samples from a wider range of countries would therefore be necessary in order to draw any *strong* conclusion that a sensitivity to the cost involved in an apology lies within the repertoire of the human evolved psychology.

If we put such theoretical/methodological considerations aside, we may be more optimistic about the practical implications of the current study. There is some evidence that costly apologies may be effective strategies for reconciliation at intergroup and international (LONG and BRECKE 2003; BLATZ and PHILPOT 2010) as well as individual levels of interaction. Most international attempts at conflict resolution are practiced by individuals with diverse cultural origins (but similar educational levels—typically holding at least a bachelor's degree). Here we suggest that costly apologies may effectively communicate the apologising country's sincerity to the wronged country. Although we admit that we need to expand our model's perspective in order to deal with a broader forgiveness process (e.g. reconciliatory gesture-perceived sincerity-forgiveness), we are hopeful that this line of research may bear fruit regarding strategies for conflict resolution. If so, it is possible that such information could be of use to those involved in resolving intergroup and international conflicts.

Acknowledgements

Footnotes

[1] One of the reviewers of an earlier version of this manuscript noted that for some of our scenarios, the two conditions differed in not only costliness of apology but also a manner whereby the apology was made. For example, in Scenario 1, the costly apology was delivered face-to face, while the no cost apology was made via telephone. Scenario 2, in contrast, involved face-to-face apologies for both cost conditions (see Table 2).

[2] After their reactions to the apology scenario were assessed, participants were presented with four types of accounts (concession, excuse, justification and refusal; SCHÖNBACH 1990). They were told that these might have been provided by the offender and asked to estimate the likelihood of receiving each of the accounts. As this section of the questionnaire is not directly relevant to the purpose of the present study, results regarding this section are not reported in this article. Information regarding these variables is available from the corresponding author upon request.

[3] The follow-up Japanese study (involving only Scenario 3) included 96 participants (36 males and 60 females). A 2 (apology cost) × 2 (cost type: drive vs. bus) between-participants factorial design was employed. All participants first read the interpersonal transgression part of Scenario 3, and rated their anger level. Participants then read one of the four apology scenarios. The last sentence of the apology scenarios was: "It took approximately [2 hours vs. 10 minutes] for person C to [drive vs. take a bus] from his/her home to your home". After reading the apology scenario, participants answered the same items as those in the main study. The omnibus 2 (apology cost: 2-hours vs. 10-minuetes) × 2 (cost type: drive vs. bus) ANOVA revealed the significant main effect of apology cost, $F(1, 92) = 5.36$, $p < .05$, $\eta^2 = .05$, marginally significant main effect of cost type, $F(1, 92) = 2.82$, $p < .10$, $\eta^2 = .03$, and marginally significant interaction, $F(1, 92) = 3.21$, $p < .10$, $\eta^2 = .03$. Simple effect tests revealed that the effect of apology cost was not significant when the cost was manipulated by the driving-time, $F(1, 92) < 1$. However, it was significant when the cost was manipulated by the bus-ride time, 6.30 ($SD = 0.97$) in the costly apology condition and 5.41 ($SD = 1.41$) in the no cost apology condition, respectively, $F(1, 92) = 8.26$, $p < .001$. Based on these results, we concluded that the manipulation was unsuccessful for Scenario 3 in the main study.

[4] The effect of apology cost was significant within each of the three religious groups. However, since the main effect of country was significant in the analyses comparing the seven countries, in order to statistically control for the effect of country, a series of analyses of covariance (ANCOVAs) were separately conducted for each religious group controlling for each participant's country-level perceived sincerity as a covariate. For example, M_{Chile} (collapsing across the two apology cost conditions) was entered as a covariate for the all Chilean participants

regardless of their religious beliefs, M_{China} for the all Chinese participants, and so forth. For both

Scenarios 1 and 2, the main effects of apology cost were significant at the .017 level (.05 was

adjusted applying Bonferroni's method) within each of the three religious groups after

controlling for the country-level perceived sincerity.

References

ARNETT, J. J. (2008): The neglected 95%: Why American psychology needs to become less American. *American Psychologist*, 63, 602-614.

BENNETT, M. and EARWAKER, D. (1994): Victims' responses to apologies: The effects of offender responsibility and offense severity. *Journal of Social Psychology*, 134, 457-464.

BLATZ, C. W. and PHILPOT, C. (2010): On the outcomes of intergroup apologies: A review. *Social and Personality Psychology Compass*, 4, 995-1007.

BLIEGE BIRD, R. and SMITH, E. A. (2005): Signaling theory, strategic interaction, and symbolic capital. *Current Anthropology*, 46, 221-248.

BOTTOM, W. P., GIBSON, K., DANIELS, S. E. and MURNIGHAN, J. K. (2002): When talk is not cheap: Substantive penance and expressions of intent in rebuilding cooperation. *Organization Science*, 13, 497-513.

BURNETTE, J. L., McCULLOUGH, M. E., VAN TONGEREN, D. R. and DAVIS, D. E. (2012): Forgiveness results from integrating information about relationship value and exploitation risk. *Personality and Social Psychology Bulletin*, 38, 345-356.

DARBY, B. W. and SCHLENKER, B. R. (1982): Children's reactions to apologies. *Journal of Personality and Social Psychology*, 43, 742-753.

DAVIS, J. R. and GOLD, G. J. (2011): An examination of emotional empathy, attributions of stability, and the link between perceived remorse and forgiveness. *Personality and Individual Differences*, 50, 392-397.

DE CREMER, D. (2010): To pay or to apologize? On the psychology of dealing with unfair offers in a dictator game. *Journal of Economic Psychology*, 31, 843-848.

DESMET, P. T. M., DE CREMER, D. and VAN DIJK, E. (2010): On the psychology of financial compensation to restore fairness transgression: When intentions determine value. *Journal of Business Ethics*, 95, 105-115.

DESMET, P. T. M., DE CREMEr, D. and VAN DIJK, E. (2011a): In money we trust? The use of financial compensations to repair trust in the aftermath of distributive harm. *Organizational Behavior and Human Decision Processes*, 114, 75-86.

DESMET, P. T. M., DE CREMER, D. and VAN DIJK, E. (2011b): Trust recovery from voluntary or forced financial compensation in the trust game: The role of trait forgiveness. *Personality and Individual Differences*, 51, 267-273.

DE WAAL, F. B. M. (2000): Primates—A natural heritage of conflict resolution. *Science*, 289, 586-590.

FEHR, R. and GELFAND, M. J. (2010): When apologies work: How matching apology components to victims' self-construals facilitates forgiveness. *Organizational Behavior and Human Decision Processes*, 113, 37-50.

FEHR, R., GELFAND, M. J. and NAG, M. (2010): The road to forgiveness: A meta-analytic synthesis of its situational and dispositional correlates. *Psychological Bulletin*, 136, 894-914.

FOX, A. and THOMAS, T. (2008): Impact of religious affiliation and religiosity on forgiveness. *Australian Psychologist*, 43, 175-185.

FRANK, R. H. (1988): *Passions within Reason: The Strategic Role of the Emotions*. New York: Norton.

FRANTZ, C. M. and BENNIGSON, C. (2005): Better late than early: The influence of timing on apology effectiveness. *Journal of Experimental Social Psychology*, 41, 201-207.

GANGESTAD, S. W. and THORNHILL, R. (2007): The evolution of social inference processes: The importance of signaling theory. In Forgas, J. P. Haselton, M. G., von Hippell, W. (eds.): *Evolution and the Social Mind*. New York: Psychology Press, pp. 33-48.

GAUCHÉ, M. and MULLET, E. (2005): Do we forgive physical aggression in the same way as that we forgive psychological aggression? *Aggressive Behavior*, 31, 559-570.

GOLD, G. J. and WEINER, B. (2000): Remorse, confession, group identity, and expectancies about repeating a transgression. *Basic and Applied Social Psychology*, 22, 291-300.

HAMILTON, V. L. and HAGIWARA, S. (1992): Roles, responsibility, and accounts across cultures. *International Journal of Psychology*, 27, 157-179.

HENRICH, J., HEINE, S. J. And NORENZAYAN, A. (2010): The weirdest people in the world? *Behavioral and Brain Sciences*, 33, 61-135.

HICKSON, L. (1986): The social contexts of apology in dispute settlement: A cross-cultural study. *Ethnology*, 25, 283-294.

HOFSTEDE, G., HOFSTEDE, G. J. and MINKOV, M. (2010): *Cultures and Organizations: Software of the Mind* (3rd ed.). New York: McGraw-Hill.

INGLEHART, R. and BAKER, W. E. (2000): Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, 65, 19-51.

ITOI, R., OHBUCHI, K. and FUKUNO, M. (1996): A cross-cultural study of preference of accounts: Relationship closeness, harm severity, and motives of account making. *Journal of Applied Social Psychology*, 26, 913-934.

KARREMANS, J. C., REGALIA, C., PALEARI, F. G., FINCHAM, F. D., CUI, M., TAKADA, N., OHBUCHI, K., TERZINO, K., CROSS, S. E. and USKUL, A. K. (2011): Maintaining harmony

across the globe: The cross-cultural association between closeness and interpersonal forgiveness. *Social Psychological and Personality Science*, 2, 443-451.

LAZARE, A. (2004): *On Apology*. New York: Oxford University Press.

LONG, W. J. and BRECKE, P. (2003): *War and Reconciliation: Reason and Emotion in Conflict Resolution*. Cambridge, MA: MIT Press.

McCULLOUGH, M. E. (2008): *Beyond Revenge: The Evolution of the Forgiveness Instinct*. San Francisco, CA: Jossey-Bass.

McCULLOUGH, M. E., LUNA, L. R., BERRY, J. W., TABAK, B. A. and BONO, G. (2010): On the form and function of forgiving: Modeling the time-forgiveness relationship and testing the valuable relationships hypothesis. *Emotion*, 10, 358-376.

McCULLOUGH, M. E., WORTHINGTON, E. L., Jr. and RACHAL, K. C. (1997): Interpersonal forgiving in close relationships. *Journal of Personality and Social Psychology*, 73, 321-336.

MULLET, E. and AZAR, F. (2009): Apologies, repentance, and forgiveness: A Muslim-Christian comparison. *International Journal for the Psychology of Religion*, 19, 275-285.

OHBUCHI, K., KAMEDA, M. and AGARIE, N. (1989): Apology as aggression control: Its role in mediating appraisal of and response to harm. *Journal of Personality and Social Psychology*, 56, 219-227.

OHTSUBO, Y. and WATANABE, E. (2009): Do sincere apologies need to be costly? Test of a costly signaling model of apology. *Evolution and Human Behavior*, 30, 114-123.

RISEN, J. L. and GILOVICH, T. (2007): Target and observer differences in the acceptance of questionable apologies. *Journal of Personality and Social Psychology*, 92, 418-433.

SCHER, S. J. and DARLEY, J. M. (1997): How effective are the things people say to apologize? Effects of the realization of the apology speech act. *Journal of Psycholinguistic Research, 26*, 127-140.

SCHÖNBACH, P. (1990): *Account Episodes: The Management or Escalation of Conflict.* Cambridge, U.K.: Cambridge University Press.

SKARLICKI, D. P., FOLGER, R. and GEE, J. (2004): When social accounts backfire: The exacerbating effects of a polite message or an apology on reactions to an unfair outcome. *Journal of Applied Social Psychology, 34*, 322-341.

STRUTHERS, C. W., EATON, J., SANTELLI, A. G., UCHIYAMA, M. and SHIRVANI, N. (2008): The effects of attributions of intent and apology on forgiveness: When saying sorry may not help the story. *Journal of Experimental Social Psychology, 44*, 983-992.

TABAK, B. A., MCCULLOUGH, M. E., LUNA, L. R., BONO, G. and BERRY, J. W. (2012): Conciliatory gestures facilitate forgiveness and feelings of friendship by making transgressors appear more agreeable. *Journal of Personality, 80*, 503-536.

TOMLINSON, E. C., DINEEN, B. R. And LEWICKI, R. J. (2004): The road to reconciliation: Antecedents of victim willingness to reconcile following a broken promise. *Journal of Management, 30*, 165-187.

VERBEEK, P. and DE WAAL, F. B. M. (2001): Peacemaking among preschool children. *Peace and Conflict: Journal of Peace Psychology, 7*, 5-28.

WATANABE, E. and OHTSUBO, Y. (2012): Costly apology and self-punishment after an unintentional transgression. *Journal of Evolutionary Psychology, 10*, 87-105.

ZAHAVI, A. and ZAHAVI, A. (1997): *The Handicap Principle: A Missing Piece of Darwin's Puzzle.* New York: Oxford University Press.

ZECHMEISTER, J. S., GARCIA, S., ROMERO, C. and VAS, S. N. (2004): Don't apologize unless you

mean it: A laboratory investigation of forgiveness and retaliation. *Journal of Social and*

Clinical Psychology, 23, 532-564.

Table 1

Demographic information of participants

Country	Sample Size (n of Females)	Mean Age (±SD)	Majority of Participants' Native Language (%)	Number of Buddhists	Number of Christians	Number of Muslims
Chile	185 (132)	22.2 ± 1.69	Spanish (99%)	0	95	0
China	92 (47)	21.2 ± 4.42	Chinese (98%)	7	4	1
Indonesia	61 (36)	20.2 ± 2.17	Indonesian (100%)	1	18	40
Japan	171 (87)*	18.7 ± 0.90	Japanese (99%)	90	0	0
Netherlands	93 (79)	20.3 ± 2.29	Dutch (94%)	0	32	7
South Korea	45 (18)	21.6 ± 2.00	Korean (100%)	2	24	0
United States	40 (28)	21.0 ± 3.72	English (100%)	1	13	1

* Two of the 171 Japanese participants failed to report their sex.

Table 2

Three Transgression and Apology Scenarios (Italics Signify the Differences between the Conditions)

	Scenario 1	Scenario 2	Scenario 3
Transgression Scenario	Your same-sex friend, person A, borrowed your textbook for a class. He/she returned the book to you soon. The next time you opened it, however, you found that it was spotted with ink. You felt uneasy and talked about that to another friend. The friend told person A that you were upset.	You had planned to play tennis with your same-sex friend, person B, on Saturday. You arrived at the tennis court a few minutes before 10 a.m., the time person B and you had scheduled to meet. However, B did not show up. You waited for person B until 11 a.m. On the way home, you happened to see another friend and talked about that. The friend called person B and said that you were upset.	You invited your same-sex friend, person C, to your birthday party. On the way to the party, person C met person D, another same-sex friend. Person C took person D to the party without letting person D know about whose party he/she was going to. In fact, you had a big quarrel with person D recently, and you were uncomfortable about the presence of person D at your birthday party. After the party, some of the guests told person C that you had been annoyed.
Costly Apology	The following day, person A had planned to go to a rock concert featuring his/her favourite band. However, after hearing that you were upset, *person A cancelled the concert and visited you to make an apology as soon as possible.*	It turned out that person B had gone home to meet his/her family on that weekend. Being reminded of the tennis, *he/she hurriedly came to you cancelling his/her family dinner. Visiting you later that evening, he/she apologised to you.*	Being notified about your annoyance at the party, person C came to you to make an apology. It took approximately *2 hours* for person C to drive from his/her home to your home.
No Cost Apology	The following day, person A had planned to go to a rock concert featuring his/her favourite band. Therefore, after hearing that you were upset, *before leaving for the concert, person A called you to make an apology.*	It turned out that person B had gone home to meet his/her family on that weekend. Being reminded of the tennis, *he/she had family dinner as he/she originally planned. After coming back from his/her home, he/she happened to meet you on campus, and he/she apologised to you.*	Being notified about your annoyance at the party, person C came to you to make an apology. It took approximately *10 minutes* for person C to drive from his/her home to your home.

Table 3

Mean Scores of Three Secondary Dependent Variables as a Function of Apology Cost and Country

The description of each item and its correlation with perceived sincerity		Chile		China		Indonesia		Japan		Netherlands		South Korea		U.S.	
		Costly	No cost	Costly	No cost	Costly	No cost	Costly	No cost	Costly	No cost	Costly	No cost	Costly	No cost
Scenario 1															
Item 2 (*r* = .64, *p* < .001)	*Mean*	6.47	5.73	6.48	5.80	6.19	5.83 ‡	6.24	5.70	6.23	5.64	6.43	6.00 ‡	6.27	5.75
Willingness to Forgive	*(SD)*	(0.97)	(1.27)	(0.85)	(1.15)	(0.75)	(1.34)	(1.06)	(1.25)	(1.10)	(1.18)	(1.04)	(0.87)	(0.93)	(1.21
Item 3 (*r* = .69, *p* < .001)	*Mean*	6.47	5.20	6.42	5.34	6.29	5.80 †	6.18	4.78	6.06	4.85	6.17	5.27	6.39	5.18
Relationship Valuation	*(SD)*	(0.81)	(1.17)	(0.71)	(1.14)	(0.69)	(1.03)	(1.05)	(1.29)	(1.14)	(1.15)	(1.15)	(1.24)	(0.74)	(1.28)
Item 4 (*r* = .61, *p* < .001)	*Mean*	5.63	4.67	5.75	4.95	5.42	5.10 ‡	5.51	4.51	5.40	4.45	5.78	5.23 ‡	5.70	4.85
Niceness of the Offender	*(SD)*	(1.13)	(1.25)	(1.10)	(1.03)	(1.03)	(1.18)	(1.23)	(1.06)	(1.28)	(0.99)	(1.24)	(1.02)	(1.02)	(1.18)
Scenario 2															
Item 2 (*r* = .80, *p* < .001)	*Mean*	5.97	4.38	6.15	4.41	5.45	4.87 †	5.43	3.29	5.48	3.38	5.87	4.09	5.87	4.54
Willingness to Forgive	*(SD)*	(1.00)	(1.53)	(1.17)	(1.54)	(1.03)	(1.07)	(1.61)	(1.39)	(1.47)	(1.53)	(1.06)	(1.63)	(1.01)	(1.48)
Item 3 (*r* = .82, *p* < .001)	*Mean*	5.80	3.41	5.96	3.45	5.39	4.23	5.40	2.57	5.52	2.75	5.52	3.32	5.80	3.68
Relationship Valuation	*(SD)*	(1.09)	(1.33)	(1.37)	(1.41)	(1.17)	(1.33)	(1.55)	(1.18)	(1.27)	(1.34)	(1.16)	(1.64)	(1.03)	(1.36)
Item 4 (*r* = .77, *p* < .001)	*Mean*	5.22	3.26	5.67	4.05	4.97	4.03	4.76	2.74	5.00	2.91	5.43	3.23	5.47	3.47
Niceness of the Offender	*(SD)*	(1.20)	(1.31)	(1.21)	(1.18)	(1.08)	(1.27)	(1.53)	(1.13)	(1.43)	(1.24)	(1.27)	(1.54)	(1.04)	(1.44)

Notes. *All within-country simple effects of apology cost were significant except for the comparisons designated by † (marginally significant differences by two-tailed tests) and ‡ (non-significant differences by two-tailed tests).*

Figure Captions

Figure 1. Mean perceived sincerity scores for (a) Scenario 1 and (b) Scenario 2 as a function of apology cost and country. Error bars attached to each column represent standard errors of means.

Figure 2. Mean perceived sincerity scores for (a) Scenario 1 and (b) Scenario 2 as a function of apology cost and religious belief. Error bars attached to each column represent standard errors of means.

(a) Scenario 1

(b) Scenario 2