

Supplementary Materials

Allowing the Victim to Draw a Line in History: Intergroup Apology Effectiveness as a Function of Collective Autonomy Support

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1. Factor Analysis of the Perceived Empathic Support Scale

In both studies, we adapted 7 items from Williams and colleagues' autonomy support scale (1996) to assess perceptions of empathic support of the apology. For both experiments we performed a Principal Component Analysis (PCA) with varimax rotation to insure that all seven items loaded onto one factor of empathic support. In both experiments we found that all seven items loaded onto one factor of empathic support.

Experiment 1

We expected that all items would load onto one factor representing participants' impressions of empathic support expressed in the apology. Principal component analysis revealed a one-factor solution. All seven items loaded onto one factor accounting for 54.14 percent of the total item variance (*Eigen value*=3.79). All items had acceptable factor loadings (>.40; Stevens, 1986). Table S1 displays the individual factor loadings for each item.

Table S1: Component Matrix (PCA) of empathic support items, Experiment 1.

	Factor 1 (Empathic Support)
In their apology, the University of Ottawa shows that they understand how the University of Carleton felt as a result of the transgression.	.64
Carleton University can trust what was said in the apology from the University of Ottawa.	.58
In their apology, the University of Ottawa shows that they took the time to listen to the concerns of Carleton University.	.75
In their apology, the University of Ottawa showed that they took the time to ask questions and understand Carleton University's reactions to the transgression.	.73
In their apology, the University of Ottawa showed that they care about Carleton University.	.80
In their apology, the University of Ottawa showed that they were able to take the perspective of Carleton University.	.81
In their apology, the University of Ottawa showed that they were sensitive to the feelings of Carleton University.	.81

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Experiment 2

Replicating Experiment 2, a principal component analysis revealed a one-factor solution. All seven items of the empathic support scale loaded onto one factor accounting for 61.44 percent of the total item variance (*Eigen value*=4.30). All items had acceptable factor loadings (>.40). Table S2 displays the individual factor loadings for each item.

Table S2: Component Matrix (PCA) of empathic support items, Experiment 2.

	Factor 1 (Empathic Support)
In their apology, the American Government shows that they understand how Canadians felt as a result of the transgression.	.73
Canadians can trust what was said in the apology from the American Government.	.70
In their apology, the American Government shows that they took the time to listen to the concerns of Canadians.	.83
In their apology, the American Government showed that they took the time to ask questions and understand Canadians' reactions to the transgression.	.74
In their apology, the American Government showed that they care about Canadians.	.75
In their apology, the American Government showed that they were able to take the perspective of Canadians.	.86
In their apology, the American Government showed that they were sensitive to the feelings of Canadians.	.86

2. Exploring Group Identification as a Potential Moderator of the Effect of Apology Condition on Impressions of the Apology, Forgiveness, and Empowerment.

Extant literature indicates that highly identified group members are most impacted by the presence rather than absence of an intergroup apology (e.g. Brown, Wohl & Exline, 2008). In the present research, it is possible that highly identified victims rather than lowly identified victims may be most affected by differences in the content of the apology (i.e., autonomy supportive vs. autonomy non-supportive language). In both experiments we examined if group identification moderated the effects of the apology condition on our outcomes of interest (empowerment, perceived empathic support, forgiveness). In both experiments we found no evidence of moderation. Furthermore, in both experiments, the results of our main analyses reported in the main text did not change when controlling for group identification.

Experiment 1

Group identification was assessed prior to participants reading about the apology. Group identification was assessed with 4 items adapted from Brown, Wohl and Exline's (2008). Adapted items included: "I identify with Carleton University"; "I see myself as a member of Carleton University"; "I do not feel strong ties to other members of Carleton University (rev)"; "I am not pleased to be a student at Carleton" ($\alpha = 0.69$). One-way ANOVA found no differences between participants' base level of group identification across the 3 apology conditions, $F(2,177)=.27, p = .77, \eta^2 = .003$.

Empathic support in the apology. Using the PROCESS macro (Version 2.15, Model 1) we tested whether group identification moderated the effect of apology condition on group members' perception of empathic support contained within the apology. We used the autonomy supportive condition as the reference condition. Group identification did not moderate the effect of the basic apology relative to the autonomy supportive apology on perceived empathic support, $b=.008, t(1,174)=.04, p=.97, 95\% CI=[-.39, .41]$. Similarly, group identification did not moderate the effect of the autonomy unsupportive apology relative to the autonomy supportive apology on empathic support, $b=.12, t(1,174)=-.56, p=.57, 95\% CI=[-.32, .56]$. The main effect of condition on empathic support remained significant when controlling for group identification, $F(2,176)=4.86, p = .009, \eta^2 = .05$. Furthermore, planned contrasts yielded consistent results with what was reported in the main text, which did not control for group identification. When controlling for group identification, participants who read the collective autonomy supportive apology perceived significantly more empathic support than those who read the collective autonomy unsupportive apology, $MD=.53, SE=.19, p=.005, 95\% CI [.17, .90]$, and participants who read the basic apology, $MD=.46, SE=.19, p=.015, 95\% CI [.09, .83]$. Participants in the basic apology condition and the collective autonomy unsupportive condition did not differ in their perceptions of receiving empathic support from the apology, $MD=.07, SE=.19, p=.71, 95\% CI [-.30, .44]$.

Forgiveness. Using the PROCESS macro (Version 2.15, Model 1) we tested whether group identification moderated the effect of apology condition on group members' willingness to forgive the transgressing group. Group identification did not moderate the effect of the basic apology relative to the autonomy supportive apology on forgiveness, $b=.20, t(1,174)=1.16, p=.25, 95\% CI=[-.14, .54]$. Similarly, group identification did not moderate the effect of the autonomy unsupportive apology relative to the autonomy supportive apology on forgiveness, $b=.33, t(1,174)=1.75, p=.08, 95\% CI=[-.04, .70]$.

Mediation Analyses. Using PROCESS (Version 2.15, Model 4, 10,000 boot-strapping samples) we re-ran the mediation model testing the apology condition -> perceived empathic support -> forgiveness pathway reported in the main text. But, this time, group identification was included as a

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covariate. The indirect effect of the basic apology versus autonomy supportive apology on forgiveness remained significant when we controlled for group identification in the model, *indirect effect* = -.12, *SE* = .06, 95% *CI* = [-.28, -.02]. Similarly, the indirect effect of the autonomy unsupportive apology versus the autonomy supportive apology on forgiveness remained significant when we controlled for group identification in the model, *indirect effect* = -.14, *SE* = .06, 95% *CI* = [-.30, -.03].

Together, these findings provide evidence that victims perceive greater empathic support when their autonomy is explicitly acknowledged in the apology, regardless of their level of group identification.

Experiment 2

As in Experiment 1, group identification was assessed prior to participants reading the apology. In Experiment 2, group identification was measured with the 12-item group identification scale (Cameron, 2004). This scale assesses three distinct dimensions of group identification: ingroup affect “e.g., In general, I’m glad to be Canadian”; ingroup ties “e.g., I feel strong ties to other Canadians” and ingroup centrality “e.g., In general, being Canadian is an important part of my self-image”. We computed an overall score of group identification by taking the mean of all 12 items ($\alpha = 0.89$). One-way ANOVA found no differences between participants’ base level of group identification across apology conditions, $F(2,66) = .27, p = .77, \eta^2 = .008$.

Empowerment. Using the PROCESS macro (Version 2.15, Model 1) we tested if group identification moderated the effect of apology condition on the extent to which group members felt empowered by the apology. We used the autonomy unsupportive condition as the reference condition. Group identification did not moderate the effect of the basic apology relative to the autonomy unsupportive apology on empowerment, $b = .41, t(1,63) = 1.40, p = .17, 95\% CI = [-.18, 1.00]$. Similarly, group identification did not moderate the effect of the autonomy supportive apology relative to the autonomy unsupportive apology on empowerment, $b = .14, t(1,63) = -.42, p = .68, 95\% CI = [-.52, .79]$. The main effect of condition on empowerment remained significant when controlling for group identification, $F(2,65) = 5.13, p = .009, \eta^2 = .14$. Furthermore, planned contrasts yielded consistent results with what was reported in the main text which did not control for group identification. When controlling for group identification, we found that participants who read the collective autonomy supportive apology felt more empowered than participants who read the collective autonomy unsupportive apology, $MD = .84, SE = .30, p = .007, 95\% CI [.24, 1.45]$. Furthermore, participants who read the collective autonomy unsupportive apology felt less empowered than participants who read the basic apology, $MD = -.79, SE = .29, p = .009, 95\% CI [-1.37, -.21]$. There were no significant differences in feelings of empowerment between those who read the basic apology and those who read the collective autonomy supportive apology, $MD = .05, SE = .30, p = .86, 95\% CI [-.55, .66]$.

Empathic support in the apology. Using the PROCESS macro (Version 2.15, Model 1) we again tested whether group identification moderated the effect of apology condition on group members’ perception of empathic support delivered in the apology. We used the autonomy unsupportive condition as the reference condition. Group identification did not moderate the effect of the basic apology relative to the autonomy unsupportive apology on perceived empathic support, $b = -.33, t(1,63) = -.88, p = .38, 95\% CI = [-1.07, .42]$. Similarly, group identification did not moderate the effect of the autonomy supportive apology relative to the autonomy unsupportive apology on perceived empathic support, $b = -.35, t(1,63) = -.84, p = .40, 95\% CI = [-1.17, .47]$. As in Experiment 1, the main effect of condition on perceived empathic support remained significant when controlling for group identification, $F(2,65) = 3.43, p = .038, \eta^2 = .10$. Furthermore the results of the planned comparisons controlling for group identification remained consistent with the results reported in the main text.

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Controlling for group identification, we found that participants who read the collective autonomy supportive apology tended to perceive more empathic support than participants who read the collective autonomy unsupportive apology, although this trend remained non-significant, $MD=.60$, $SE=.38$, $p=.12$; 95% CI [-.15,1.35]. Participants who read the collective autonomy unsupportive apology perceived significantly less empathic support than participants who read the basic apology, $MD=-.94$, $SE=.36$, $p=.012$, 95% CI [-1.67,-.22]. Participants in the basic apology and the collective autonomy supportive condition did not differ in perception of empathic support, $MD=.34$, $SE=.38$, $p=.37$; 95% CI [-.41, 1.10].

Forgiveness. Using the PROCESS macro (Version 2.15, Model 1) we tested whether group identification moderated the effect of apology condition on group members' willingness to forgive. Group identification did not moderate the effect of the basic apology relative to the autonomy unsupportive apology on forgiveness, $b=.13$, $t(1,63)=.42$, $p=.67$, 95% CI [-.49, .75]. Similarly, group identification did not moderate the effect of the autonomy supportive apology relative to the autonomy unsupportive apology on forgiveness, $b=-.04$, $t(1,36)=-.12$, $p=.91$, 95% CI [-.72, .64].

Mediation analysis. Using PROCESS (Version 2.15, Model 4, 10,000 boot-strapping samples) we re-ran the mediation model testing the apology condition -> empowerment-> perceived empathic support -> forgiveness pathway reported in the main text. But, this time, we included group identification as a covariate. The indirect effect of the basic apology versus autonomy unsupportive apology on forgiveness through the serial pathway remained significant when we controlled for group identification in the model, $indirect\ effect=.16$, $SE=.09$, 95% CI [.04,.43]. Similarly, the indirect effect of the autonomy supportive apology versus the autonomy unsupportive apology on forgiveness through the serial pathway remained significant when we controlled for group identification in the model, $indirect\ effect=.17$, $SE=.10$, 95% CI [.04,.45].

We also re-ran all moderation analyses for experiment 2 using participants' *identity centrality* score specifically. We conducted these analyses given extant literature suggesting that identity centrality scores specifically may be the facet of group identification linked to greater responses to social identity threats (Bombay, Matheson, & Anisman et al., 2010; McCoy & Major, 2003). However, the pattern of our results did not change when repeating the above moderation analyses using the identity centrality subset. Thus, consistent with Experiment 1, Experiment 2 provides additional evidence that when victims' autonomy is explicitly acknowledged in an apology, they may feel more empowered and perceive more empathic support, regardless of their level of group identification.

3. Testing alternative pathways in Experiment 2

Our proposed sequential mediation model predicted that autonomy supportive apologies lead to forgiveness first through feelings of empowerment (entered as mediator 1) and second through perceived empathic support in the apology (entered as mediator 2). In addition to this model, we tested the reverse sequential model in which autonomy supportive apologies increased forgiveness through perceived empathic support (entered as mediator 1) and second through feelings of empowerment (entered as mediator 2). However, we did not find support for this reverse model. These analyses revealed no significant indirect effect of the basic apology condition (relative to the autonomy unsupportive apology) on forgiveness through empathic support (entered as mediator 1) and feelings of empowerment (entered as mediator 2), *indirect effect* = -.08, *SE* = .07, 95% *CI* = [-.30, .00]. The analyses also revealed no significant indirect effect of the collective autonomy supportive apology condition (relative to the collective autonomy unsupportive apology) on forgiveness through empathic support (entered as mediator 1) and empowerment (entered as mediator 2), *indirect effect* = -.05, *SE* = .06, 95% *CI* = [-.25, .00].

In addition to the sequential mediation models, we tested a parallel mediation model in which apology conditions lead to forgiveness independently through perceived empathic support of the apology and through empowerment. With respect to the basic apology relative to the autonomy unsupportive apology, the indirect effect through empathic support was significant, *indirect effect* = .35, *SE* = .17, 95% *CI* = [.09, .76], however, the indirect effect through feelings of empowerment was non-significant, *indirect effect* = -.16, *SE* = .12, 95% *CI* = [-.52, .00]. With respect to the autonomy supportive apology relative to the autonomy unsupportive apology, the indirect effect through empathic support was non-significant, *indirect effect* = .22, *SE* = .16, 95% *CI* = [-.02, .62], and the indirect effect through feelings of empowerment was non-significant, *indirect effect* = -.22, *SE* = .14, 95% *CI* = [-.56, .00].

In sum, these additional analyses reveal that the sequential model in which apology conditions impacted forgiveness through feelings of empowerment (entered first) and perceived empathic support contained within the apology (entered second) best fit the data.

4. Qualitative Nature of Changes Made to the Apology (Experiment 2)

Analyses for the number of changes made to the apology were reported in our main text. Here, we examined the qualitative nature of the changes and comments participants made to the apology using the track changes feature of Microsoft Word. We found that participants expressed dissatisfaction to at least six re-occurring themes: (1) compensation, (2) punishment, (3) the amount of time taken to offer the apology, (4) prevention of relapse, (5) lack of acknowledging the victims' names, and (6) identity of the person delivering the apology. We present the frequency of each type of dissatisfaction participants expressed by condition in Table S3. We also coded for whether participants expressed dissatisfaction with feeling forced to or expected to forgive. Importantly, we expected this form of dissatisfaction to be most unique to participants receiving the autonomy unsupportive apology.

Table S3. Frequencies of different types of dissatisfaction expressed across conditions – Experiment 2

	Basic Apology (N=24)	Autonomy Unsupportive Apology (N=24)	Autonomy Supportive Apology (N=21)
Dissatisfaction with compensation	37.50%	29.20%	33.30%
Dissatisfaction with Punishment	45.80%	20.80%	23.80%
Dissatisfaction with time taken to offer the apology	25.00%	29.20%	14.30%
Dissatisfaction with prevention of relapse	29.20%	29.20%	33.30%
Dissatisfaction with lack of acknowledging the victims' names	20.80%	25.00%	0%
Dissatisfaction with identity of the person delivering the apology	4.20%	4.20%	0%
Dissatisfaction with language implying an expectation of forgiveness	0%	91.70%	0%

Participants were relatively similar in their dissatisfaction with respect to aspects of the apology that were common across all conditions. But, as would be expected, it was only participants in the autonomy unsupportive condition who expressed dissatisfaction with language that undermined the choice of their group to forgive or accept the apology (i.e., language which implied an expectation of

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forgiveness). It is not surprising that group members who received the basic apology or the autonomy supportive apology did not express concerns about their group's autonomy. There was no language in these apologies that was potentially threatening to their autonomy. We also examined how victims who received the autonomy unsupportive apology changed the controlling language that was embedded in the apology. The most commonly used word to replace controlling language such as "we expect" or "we are confident" was the word "hope". Twenty-one of the twenty-four participants inserted the word *hope* into the apology in order to replace the controlling language.

5. Actual Edits Made to the Experimental Section of the Apology by Participants in the Autonomy Unsupportive Condition (Experiment 2)

Included here are all 24 versions of the experimental section of the apology edited by participants within the autonomy unsupportive condition.

The original section of the apology provided to these participants was:

The American Government is confident that all Canadians will forgive myself and the United States of America for these actions. We expect that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.

1. The American Government **hopes** that all Canadians can **find it in their hearts** to forgive **the transgressions that** myself and the United States of America **have committed**. We **know** that this apology will **not** smooth all of the waters, **but we think it is a good place to start**. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”
2. The American Government is confident that all Canadians will forgive myself and the United States of America for these actions. We expect that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.
3. The American Government is **very sorry and is hopeful** that all Canadians will someday be able to forgive myself and the United States of America for these actions. We **hope** that this apology will **help to bring some peace to those affected by the incident** . We believe that it is time to acknowledge this negative episode in our history **so that we can learn from this incident, give the incident the attention that it deserves**, and continue face the future together.
4. We **hope** that this apology will smooth all of the waters, **and we feel this is an adequate start for doing so** We believe that it is time to acknowledge this negative episode in our history so that we can both **learn from our, The Americans, mistake and** turn the page **towards a future together in harmony**.
5. **Although** American Government **would appreciate** that all Canadians will forgive myself and the United States of America for these actions; **we understand that forgiveness may take time and accept the choice of those who are unable to do so**. We **do not** expect that this apology will smooth all of the waters **right away, however we hope it is a step in that direction**. We believe that it is time to acknowledge this negative episode in our history so that we can **eventually** both turn the page and continue face the future together.
6. The American Government **sincerely hopes** that all Canadians will forgive myself, **the Major responsible** and the United States of America **as a whole** for these actions. **We are all accountable for what happen on April 18, 2002**. We **hope** that this apology will smooth all of the waters, **and are willing to do what is necessary if it does not**. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.

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[Participant added following comment: I think that there should also be an apology from the Major who actually dropped the bomb... It would have felt more sincere if he had explained himself and apologized personally. Also, If we knew the names of the families, it would have been more sincere to include their names. They should have also acknowledged why it took them 10 years to apologize.]

7. The American Government **I hopes** Canadians will forgive myself and the United States of America for these actions. We **hope this** apology will be a **stepping stone to** smoothing all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can turn the page and continue face the future together. **We hope that Canadians will join us in this endeavor to face the future.**

8. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.

9. [Entire section deleted] **This reckless behavior will never be repeated. We humbly ask our Canadian neighbors to forgive us, in our hope that we can continue to face the future together in trust, harmony and mutual respect.**

10. The American Government **sincerely hopes that this apology will be the beginning of the reconciliation between Canadians and the American government. We recognize that Canadians believe this incident was not handled appropriately, and we wish to show that we acknowledge this, and are working to rectify these problems through our future actions.** We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

11. The American Government is confident that all Canadians will forgive myself and the United States of America for these actions. We expect *[Participant commented: Could have said we hope instead of we expect]* that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

12. The American Government **hopes** that all Canadians **will be able to** forgive myself and the United States of America for these actions. We **want** to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

13. The American Government **hopes** that all Canadians will forgive myself and the United States of America for these actions. **Hopefully,** this apology will **help** smooth **some** of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

14. The American Government **sincerely hopes** that all Canadians will **forgive** myself and the United States of America for these actions. We **can only hope that** this apology will **start to** smooth all of the waters. We believe that it is **our duty** to acknowledge this negative episode in our history so that we can turn the page and **make amends.**”

15. The American Government **truly hopes** that all Canadians will forgive myself, **the Major** and the United States of America for these actions. We **hope** that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue **to** face the future together.”

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16. The American Government **hopes** that all Canadians will forgive myself and the United States of America for these actions. We **hope** that this apology will smooth all of the waters, **which were ruffled by the previous U.S. Government and the powers-that-be in the Armed Forces.** We believe that it is time to acknowledge this negative episode in our history **(during which four men were needlessly killed)** so that we can bot (sorry, I just accidentally pressed delete here) turn the page and continue face the future together.”

17. The American Government **wishes** that all Canadians will forgive myself and the United States of America for these actions. We **hope** that this apology will smooth all of the waters. We **hope it is not too late** to acknowledge this negative episode in our history **and** that we can both turn the page and continue face the future together.”

18. The American Government **hopes** that all Canadians will forgive myself and the United States of America for our actions. **We also hope that one day soon we can** both turn the page and continue face the future together.”

19. The American Government is **hoping** that all Canadians will forgive myself and the United States of America for these actions. We **hope** that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

20. The American Government is confident that all Canadians will forgive myself and the United States of America for these actions. We expect that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

21. The American Government **hope** that all Canadians will forgive myself and the United States of America for these actions. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue face the future together.”

22. The American Government **hopes that this apology and the preceding actions will offer peace to Canadians and to the families who lost loved ones. We also hope that our following actions will allow the Canadian people to accept our apology..** We **hope** that this apology will smooth all of the waters. We believe that it is time to acknowledge this negative episode in our history so that we can both turn the page and continue **to** face the future together.”

23. The American Government **hopes** that all Canadians will forgive myself and the United States of America for these actions. **Our relationship as neighbors means a great deal to us. We would like to learn from this** negative episode in our history, **gain the Canadian’s trust back** and continue face the future together.”

24. **We hope that the Canadian people and the victims families can forgive the American Government for this tragedy. \We acknowledge that this apology should have been issued 10 years ago. Yet,** We believe that it is time **we hope** that we can both turn the page and continue face the future together.”