Supplementary Online Materials for "The Paradox of Viral Outrage"

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For each of our studies we report supplementary analyses that were not included in the main text, as well as additional information requested during the peer review process.

Study 1

Method

In Study 1, we did not aim to address issues of mechanism. However, as an exploratory mediator we originally included the measure of sympathy used in Studies 2-5. In our results below, we report the effects of viral outrage on sympathy in Study 1.

In addition, in Study 1 (as well as in Studies 2, 4a, 4b, and 5) we measured another exploratory mediator, namely participants' perceptions that the punishment directed towards the offender was cruel and excessive. Participants indicated the extent to which they believed commenters' responses were "cruel" and "excessive" (r=.78; 1=*Not at all* to 7=*Extremely*). In our results below, we also report the effects of viral outrage on perceptions of excessive punishment. We note that because this measure was highly correlated with sympathy (r=.67), it is not clear that sympathy and perceptions of excessive punishment represent conceptually distinct psychological processes.

Note that although these results are not presented in the main text for ease of presentation, the mediation results presented below are entirely consistent with the results presented for Studies 2 and following.

Results

We examined how participants' demographic characteristics influenced how offensive they found the offender's post (Table S1), and their impressions of the target commenter (Table S2).

A 2 (Outrage: Non-Viral or Viral) × 2 (Target commenter: First or Last) ANOVA on sympathy towards the offender revealed a main effect of Outrage, $F(1, 377)=10.22$, $p=.002$, $\eta^2_p=.03$, such that participants felt more sympathy for the offender when outrage was viral ($M=2.58$, $SD=1.75$) rather than non-viral ($M=2.08$, $SD=1.52$). There were no effects of target commenter, $ps \geq .469$.

Next, a 2 (Outrage: Non-Viral or Viral) × 2 (Target commenter: First or Last) ANOVA on perceptions of excessive punishment revealed a main effect of Outrage, $F(1, 377)=50.38$, $p<.001$, $\eta^2_p=.12$, such that participants found the punishment to be more excessive when outrage was viral ($M=4.02$, $SD=1.78$) rather than non-viral ($M=2.82$, $SD=1.60$). There were no effects of target commenter, $ps \geq .423$.

The effects of viral (vs. non-viral) outrage on impressions of the target commenter were mediated both by sympathy towards the offender, indirect effect 95% CI=[.080, .382], $a=.50$, $b=.45$, and by perceptions of excessive punishment, indirect effect 95% CI=[.431, .824], $a=1.20$, $b=.52$.

Finally, because our dependent measure (i.e., impressions of individual commenters) was comprised of two items with negative valence ("in the wrong" and "a bully") and two items with positive valence ("praiseworthy" and "a good person"), we examined the effects of viral outrage separately for the negatively worded and positively worded items. A 2 (Outrage: Non-Viral or Viral) × 2 (Target commenter: First or Last) ANOVA on the mean of the two negative items revealed a significant main effect of Outrage, $F(1, 384)=16.35$, $p<.001$, $\eta^2_p=.04$, such that

participants formed more negative impressions of individual commenters when outrage was viral (M=3.10, SD=1.79) rather than non-viral (M=2.49, SD=1.50). A 2 × 2 ANOVA on the mean of the two positive items revealed no main effect of Outrage, p=.300.

Study 2

Method

We provide an illustration of how comments were presented in the control, anonymity, and upvoting conditions (Figure S1). As in Study 1, we included the additional exploratory mediator of perceptions of excessive punishment (r=.83). Below, we report the effects of viral outrage on this measure.

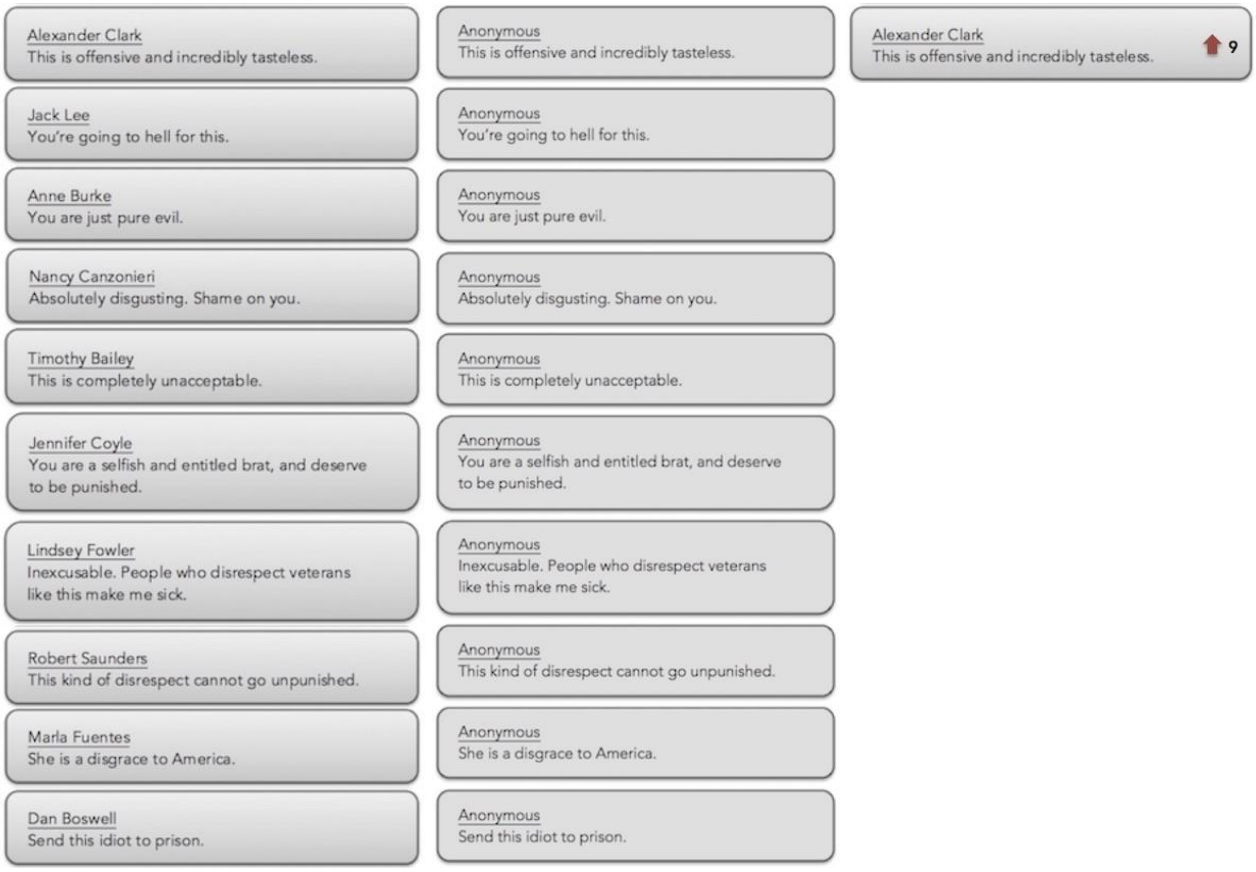

Figure S1. Manipulation of response type in Study 2. Participants were randomly assigned to the control condition (left panel), anonymity condition (middle panel), or upvoting condition (right panel).

Results

A 2 (Outrage: Non-Viral or Viral) × 3 (Response Type: Control, Anonymous, or Upvoting) ANCOVA on perceptions of excessive punishment revealed a main effect of Outrage, $F(1, 580)=20.14$, $p<.001$, $\eta^2_p=.03$, such that participants found the punishment to be more excessive when outrage was viral ($M=3.75$, $SD=1.97$) rather than non-viral ($M=2.98$, $SD=1.87$). There was also a main effect of Response Type, $F(1, 580)=14.75$, $p<.001$, $\eta^2_p=.05$, such that the punishment was found to be less excessive in the upvoting condition ($M=2.83$, $SD=1.80$) than in either the anonymity condition ($M=3.64$, $SD=1.94$) or control condition ($M=3.63$, $SD=2.02$). There was also a significant interaction, $F(1, 580)=6.45$, $p=.002$, $\eta^2_p=.02$. Specifically, participants found the punishment more excessive when outrage was viral (vs. non-viral) in the anonymity and control conditions, but not in the upvoting condition.

The effects of viral (vs. non-viral) outrage on impressions of the target commenter were mediated both by sympathy (as reported in the main text) and by perceptions of excessive punishment, indirect effect 95% CI=[.146, .396], $a=.67$, $b=.39$.

Finally, as in Study 1, we examined the effects of viral outrage on impressions of individual commenters separately for the negatively worded and positively worded items of our dependent measure. A 2 (Outrage: Non-Viral or Viral) × 3 (Response Type: Control, Anonymous, or Upvoting) ANCOVA on the mean of the two negative items revealed a significant main effect of Outrage, $F(1, 571)=13.49$, $p<.001$, $\eta^2_p=.02$, such that participants formed more negative impressions of individual commenters when outrage was viral ($M=3.13$, $SD=1.85$) rather than non-viral ($M=2.57$, $SD=1.70$). A 2 × 3 ANCOVA on the mean of the two positive items also revealed a main effect of Outrage, $F(1, 571)=5.12$, $p=.024$, $\eta^2_p=.01$, such that

participants formed less positive impressions of individual commenters when outrage was viral (M=3.80, SD=1.53) rather than non-viral (M=4.18, SD=1.68).

Study 3

Method

We provide an illustration of how surprise was manipulated (Figure S2). In contrast to our other studies, in Study 3 we did not measure perceptions of excessive punishment.

Figure S2. Manipulation of surprise in Study 3. Depending on condition, the target commenter expressed no surprise at the number of commenters (the top-left and bottom-left panels corresponding to the non-viral vs. viral outrage conditions, respectively) or expressed surprise at the number of commenters (the top-right and bottom-right panels corresponding to the non-viral vs. viral outrage conditions, respectively). In the control condition, the target commenter did not make a remark regarding the number of commenters.

Results

As in Studies 1-2, we examined the effects of viral outrage on impressions of individual commenters separately for the negatively worded and positively worded items of our dependent measure. A 2 (Outrage: Non-Viral or Viral) × 3 (Surprise: Control, No Surprise, or Surprise) ANOVA on the mean of the two negative items revealed no main effect of Outrage, p=.132. A 2 × 3 ANOVA on the mean of the two positive items revealed a main effect of Outrage, F(1, 597)=9.32, p=.002, η^2_p=.02, such that participants formed less positive impressions of individual commenters when outrage was viral (M=3.52, SD=1.41) rather than non-viral (M=3.87, SD=1.40).

Study 4a

Method

We included the additional exploratory mediator of perceptions of excessive punishment (r=.76). Below, we report the effects of viral outrage on this measure.

Results

We conducted a 2 (Outrage: Viral or Non-Viral) × 2 (Offender: High Status or Control) ANCOVA on perceptions of excessive punishment. This revealed a main effect of Outrage, $F(1, 794)=81.77$, $p<.001$, $\eta^2_p=.09$, such that participants found the punishment to be more excessive when outrage was viral (M=3.33, SD=1.79) than non-viral (M=2.40, SD=1.46). Contrary to predictions, there was no main effect of Offender or an interaction, $ps \geq .449$. The effects of viral (vs. non-viral) outrage on impressions of the target commenter were mediated both by sympathy (as reported in the main text) and by perceptions of excessive punishment, indirect effect 95% CI=[.308, .507], a=1.01, b=.40.

Finally, as in Studies 1-3, we examined the effects of viral outrage on impressions of individual commenters separately for the negatively worded and positively worded items of our dependent measure. A 2 (Outrage: Viral or Non-Viral) × 2 (Offender: High Status or Control) ANCOVA on the mean of the two negative items revealed a significant main effect of Outrage, $F(1, 785)=14.92$, $p<.001$, $\eta^2_p=.02$, such that participants formed more negative impressions of individual commenters when outrage was viral (M=2.51, SD=1.68) rather than non-viral (M=2.21, SD=1.48). A 2 × 2 ANCOVA on the mean of the two positive items also revealed a significant main effect of Outrage, $F(1, 785)=4.33$, $p=.038$, $\eta^2_p=.01$, such that participants formed less positive impressions of individual commenters when outrage was viral (M=4.18, SD=1.62) rather than non-viral (M=4.28, SD=1.51).

Study 4b

Method

We included the additional exploratory mediator of perceptions of excessive punishment (r=.76). Below, we report the effects of viral outrage on these measures.

Results

We conducted a 2 (Outrage: Viral or Non-Viral) × 2 (Offender: Unsympathetic or Control) ANOVA on perceptions of excessive punishment. This revealed a main effect of Outrage, $F(1, 765)=78.79$, $p<.001$, $\eta^2_p=.09$, such that participants found the punishment to be more excessive when outrage was viral (M=3.57, SD=1.84) than non-viral (M=2.47, SD=1.62). There was also a main effect of Offender, $F(1, 765)=21.40$, $p<.001$, $\eta^2_p=.03$, such that participants were found the punishment to be less excessive when outrage was directed towards the unsympathetic offender (M=2.74, SD=1.75) than in the control condition (M=3.33, SD=1.85). There was no interaction, p=.212. The effects of viral (vs. non-viral) outrage on impressions of the target commenter were mediated both by sympathy (as reported in the main text) and by perceptions of excessive punishment, indirect effect 95% CI=[.397, .678], a=1.10, b=.48.

Finally, as in Studies 1-4a, we examined the effects of viral outrage on impressions of individual commenters separately for the negatively worded and positively worded items of our dependent measure. A 2 (Outrage: Viral or Non-Viral) × 2 (Offender: Unsympathetic or Control) ANOVA on the mean of the two negative items revealed a significant main effect of Outrage, $F(1, 786)=4.97$, p=.026, $\eta^2_p=.01$, such that participants formed more negative impressions of individual commenters when outrage was viral (M=2.59, SD=1.73) rather than non-viral (M=2.36, SD=1.58). A 2 × 2 ANOVA on the mean of the two positive items also revealed no main effect of Outrage, p=.505.

Study 5

Method

We included the additional exploratory mediator of perceptions of excessive punishment (r=.84). Below, we report the effects of viral outrage on this measure.

Results

We examined how participants' demographic characteristics influenced how offensive they found the offender's post (Table S1). We note that these correlations change when no participants were excluded. In the absence of exclusions, participants were more likely to find the stimulus offensive if they were older, female, or more politically liberal. We also examined how participants' demographic characteristics influenced how their negative impressions of the target commenter (Table S2).

A 2 (Outrage: Viral or Non-Viral) × 2 (Role: First- or Third-Person) ANCOVA on perceptions of excessive punishment revealed a main effect of Role, $F(1, 237)=60.73$, $p<.001$, $\eta^2_p=.02$, such that participants found the punishment to be more excessive when they were first-person commenters (M=1.54, SD=1.34) rather than third-person observers (M=3.01, SD=1.83). There was also a main effect of Outrage, $F(1, 237)=8.49$, $p=.004$, $\eta^2_p=.04$, such that participants found the punishment to be more excessive when outrage was viral (M=2.83, SD=1.97) than non-viral (M=2.04, SD=1.48). Finally, there was a significant interaction, $F(1, 237)=19.60$, $p<.001$, $\eta^2_p=.08$. Although third-person observers found the punishment more excessive when outrage was viral (M=3.81, SD=1.91) than non-viral (M=2.38, SD=1.50), $p<.001$, first-person commenters were not affected by whether outrage was viral (M=1.52, SD=1.08) or non-viral (M=1.55, SD=1.33), $p=.327$.

The effects of viral (vs. non-viral) outrage on impressions of the target commenter were mediated both by sympathy (as reported in the main text) and by perceptions of excessive punishment, indirect effect 95% CI=[.088, .511], *a*=.68, *b*=.38.

Table S1. Correlations between perceived offensiveness of and participants' demographic characteristics in Studies 1-5.

Demographic characteristic	Study 1	Study 2	Study 3	Study 4a	Study 4b	Study 5
Age	.06	.20*	.01	.09*	-.05	.02
Gender (0=*male*, 1=*female*)	.23*	.08	.19*	.25*	.15*	.05
Race or ethnicity (0=*white*, 1=*non-white*)	.11*	-.12*	-.08	.04	.15*	.13*
Social class	-.01	.06	.01	-.07	-.01	.07
Religiosity	-.04	.09*	-.13*	.07	-.02	.01
Political liberalism	.20*	-.14*	.25*	.12*	.35*	.11

Notes: An asterisk (*) indicates $p<.05$.

Table S2. Correlations between negative impressions of target commenter and participants' demographic characteristics in Studies 1-5.

Demographic characteristic	Study 1	Study 2	Study 3	Study 4a	Study 4b	Study 5
Age	.02	-.16*	.03	-.15*	-.01	.02
Gender (0=*male*, 1=*female*)	-.12*	-.06	-.22*	-.28*	-.15*	-.05
Race or ethnicity (0=*white*, 1=*non-white*)	.04	.04	-.03	.04	-.16*	.02
Social class	.01	-.07	-.04	.02	.02	.01
Religiosity	.04	-.08	.07	.05	.02	.18*
Political liberalism	-.20*	.11*	-.29*	-.11*	-.35*	-.15*

Notes: An asterisk (*) indicates $p<.05$.