Supplementary Materials: Simulated Data

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Author Note

All procedures performed in studies involving human participants were approved by the Institutional Research Ethics Committee and conducted in accordance with the Code of Professional Ethics of the Psychological Society of Ireland and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. The authors declare that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Abstract

Moral dumbfounding occurs when people maintain a moral judgment in the absence of supporting reasons. Drawing on dual-process approaches to moral judgment, one possible explanation for moral dumbfounding proposes that it occurs as a result of a conflict between intuitive and deliberative processes. Consistent with this explanation, previous research has shown that under manipulations designed to lead to more intuitive thinking rather than deliberative thinking (such as increased cognitive load), people are less likely to provide reasons for their judgments, and more likely to provide dumbfounded responses in a moral dumbfounding task. Building on this work the present research examines if dumbfounded responding can be reduced through experimental manipulations designed to facilitate deliberative thinking (over intuitive thinking). Drawing on construal-level theory, and the finding that distancing facilitates deliberative thinking, we predict that including a distancing manipulation in a moral dumbfounding task will increase reason-giving, and reduce dumbfounded responding. We propose a pre-registered study to test this prediction.

Keywords: moral dumbfounding, distancing, construal-level theory, dual-processes, reasons, intuitions

Supplementary Materials: Simulated Data

Temporal Distancing and Dumbfounding

Overview of Judgments. A total of 3377 participants (70.35%) rated the behavior of Julie and Mark as wrong initially, and 3268 participants (68.08%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.4, SD = 1.4), $t(4799)$ = -2.93, p = .003, d = 0.04.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $F(2, 4797) = 0.31$, p = .732 ${\eta_p}^2 = 0$, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.3, M_{control} = 3.3, SD_{control} = 1.3). There was no difference in revised judgement depending on distance manipulation: $F(2, 4797) = 3.8$, p = .022, ${\eta_p}^2 = 0.002$, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.4, M_{control} = 3.4, SD_{control} = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(4, N = 4800) = 86.726$, $p < .001$, $V = 0.13$, the observed power was 1. The responses to the critical slide for the increased distance group (N = 1600) the decreased distance group (N = 1600), and the control group (N = 1600) are displayed in Figure 1.

Figure 1

Simulated Data: Responses to critical slide depending on temporal distance for the increased temporal distance group (future, N = 1,600), for the decreased temporal distance group (today, N = 1,600), and for the control group (N = 1,600) (error bars represent standard error of the proportion)

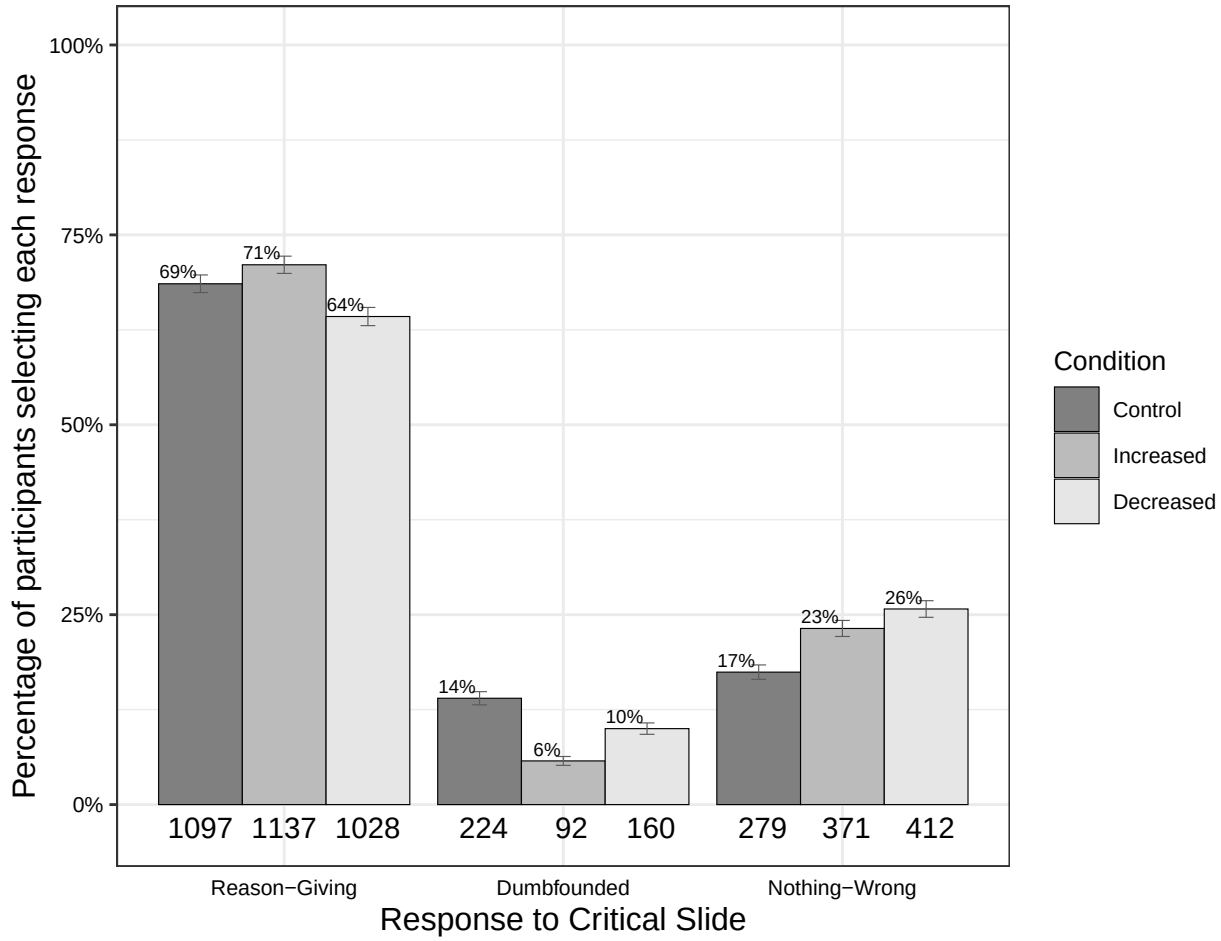


Table 1

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on temporal distancing

		Control	Increased	Decreased
Observed count	Reasons	1097	1137	1028
	Dumbfounded	224	92	160
	Nothing Wrong	279	371	412
Expected count	Reasons	1087.33	1087.33	1087.33
	Dumbfounded	158.67	158.67	158.67
	Nothing Wrong	354	354	354
Standardised residuals	Reasons	0.63	3.26*	-3.89**
	Dumbfounded	6.69**	-6.83**	0.14
	Nothing Wrong	-5.53**	1.25	4.28**

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Psychological Distancing and Dumbfounding

Overview of Judgments. A total of 3377 participants (70.35%) rated the behavior of Julie and Mark as wrong initially, and 3268 participants (68.08%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.4, SD = 1.4), $t(4799)$ = -2.93, p = .003, d = 0.04.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $t(4796.27)$ = -1.37, p = .171, d = 0.04, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.3). There was no difference in revised judgement depending on distance manipulation: $t(4795.59)$ = -0.61, p = .541, d = 0.02, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(2, N = 4800) = 20.604$, $p < .001$, $V = 0.07$, the observed power was 0.98. The responses to the critical slide for the increased distance group (N = 2400) and the decreased distance group (N = 2400) are displayed in Figure 2.

Figure 2

Simulated Data: Responses to critical slide depending on psychological distance for the increased psychological distance group (future, N = 2,400), and for the decreased psychological distance group (today, N = 2,400), (error bars represent standard error of the proportion)

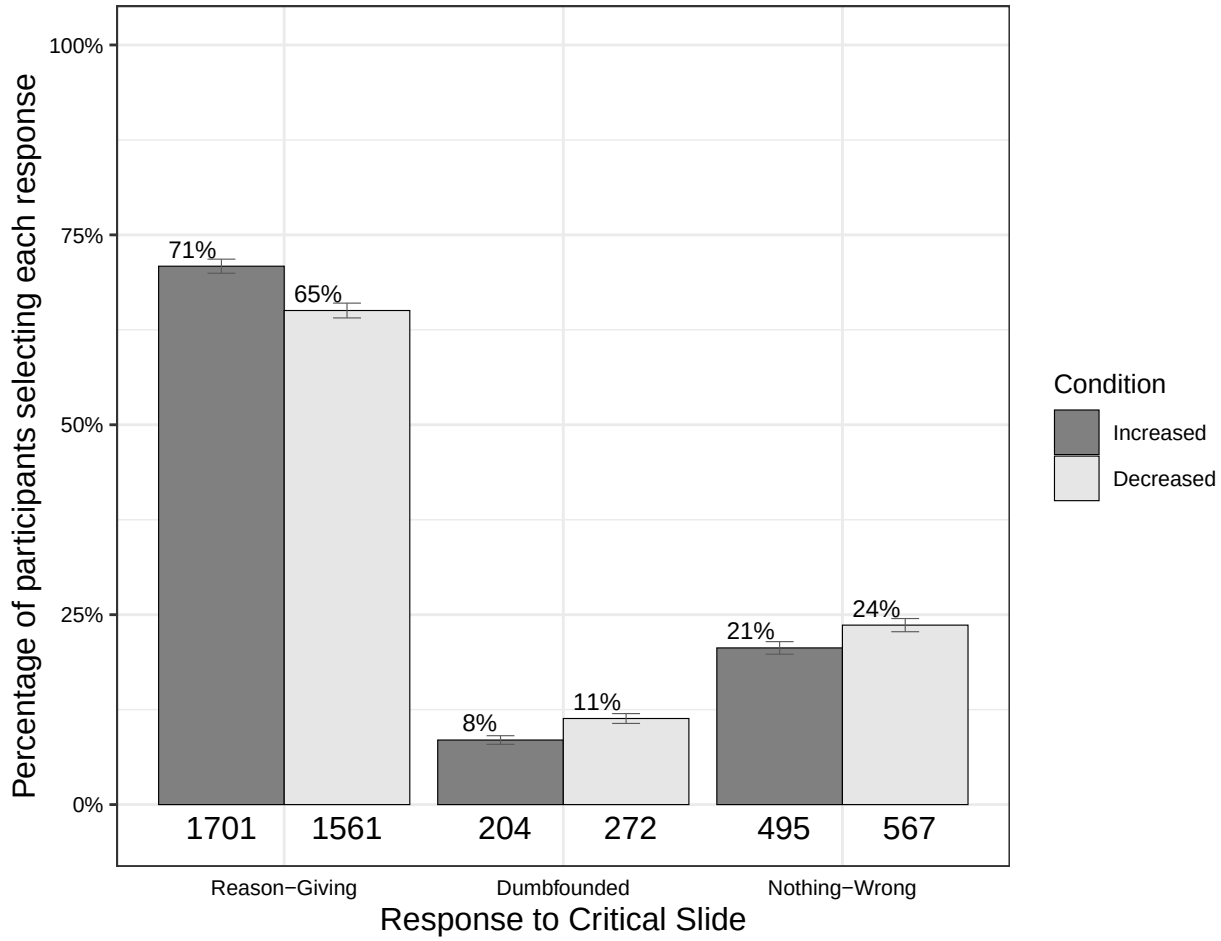


Table 2

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on psychological distancing

		Increased	Decreased
Observed count	Reasons	1701	1561
	Dumbfounded	204	272
	Nothing Wrong	495	567
Expected count	Reasons	1631	1631
	Dumbfounded	238	238
	Nothing Wrong	531	531
Standardised residuals	Reasons	4.33**	-4.33**
	Dumbfounded	-3.28*	3.28*
	Nothing Wrong	-2.5*	2.5*

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Distancing and Dumbfounding

Without Scenario

Overall the model significantly predicted responses to the critical slide $\chi^2(10, N = 4800) = 123.37$, $p < .001$, The observed power was 1. The model explained between 0.85% (Cox and Snell R square) and 2.02% (Nadelkerke R squared) of the variance in responses to the critical slide. For scenarios in the future, participants were more likely to provide reasons than to present as dumbfounded Wald = -12, $p < .001$, odds ratio = 0.28, 95% CI [0.19, 0.43].

Table 3

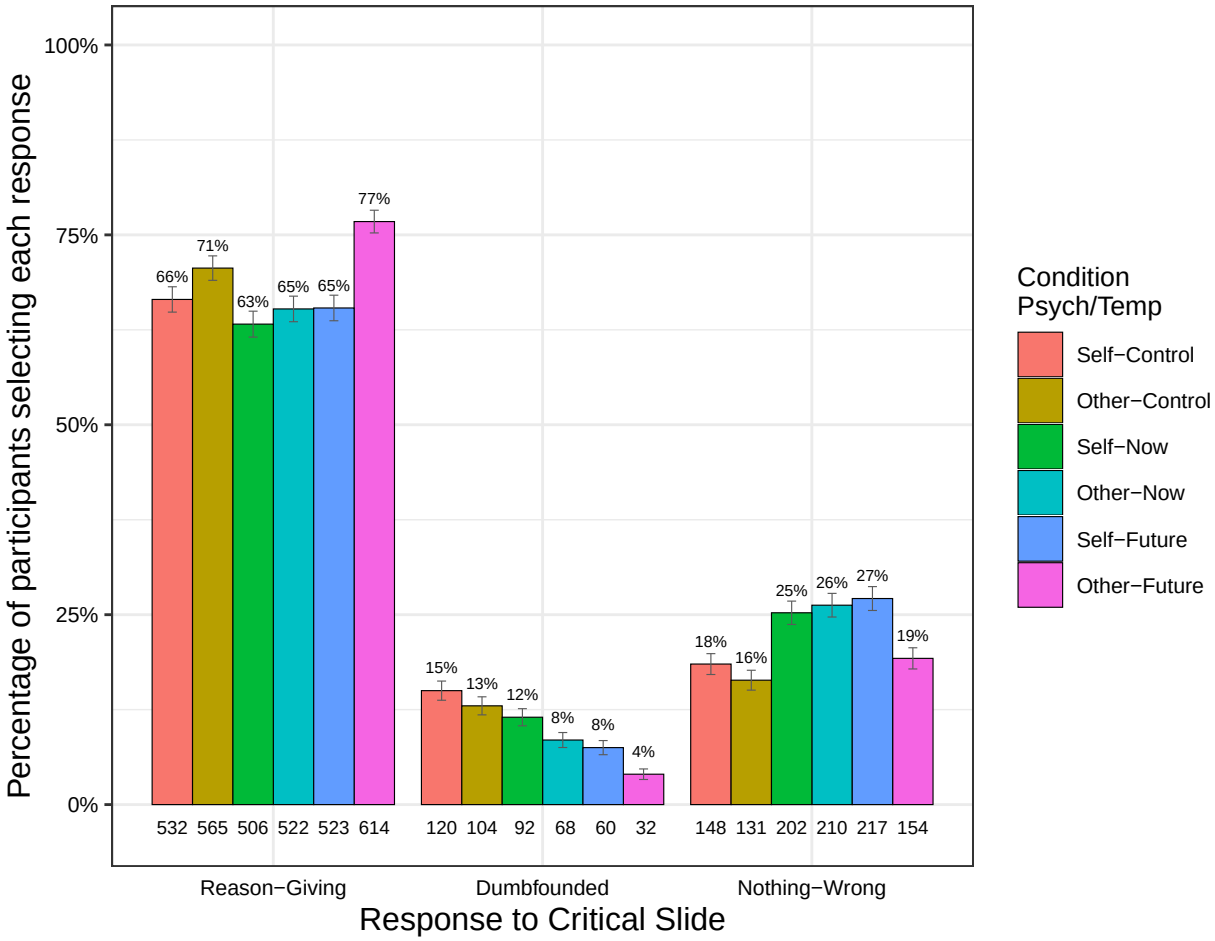
Predictors of each response with reason-giving as the reference response

Response	Term	*b*	*S.E.*	*z*	Wald	*p*	*O.R.*	Lower	Upper
D	(Intercept)	-1.69	0.11	-15.86	-31.72	< .001**	0.18	0.15	0.23
D	Psy-Self	0.20	0.15	1.38	2.77	0.167	1.23	0.92	1.63
D	Temp-Future	-1.26	0.21	-6.00	-12.00	< .001**	0.28	0.19	0.43
D	Temp-Now	-0.35	0.17	-2.07	-4.13	.039*	0.71	0.51	0.98
D	Psy-Self × Temp-Future	0.59	0.27	2.17	4.33	.030*	1.80	1.06	3.05
D	Psy-Self × Temp-Now	0.13	0.23	0.58	1.15	0.565	1.14	0.73	1.77
NW	(Intercept)	-1.46	0.10	-15.07	-30.15	< .001**	0.23	0.19	0.28
NW	Psy-Self	0.18	0.13	1.36	2.71	0.175	1.20	0.92	1.56
NW	Temp-Future	0.08	0.13	0.59	1.19	0.553	1.08	0.83	1.40
NW	Temp-Now	0.55	0.13	4.35	8.69	< .001**	1.74	1.35	2.22
NW	Psy-Self × Temp-Future	0.32	0.18	1.78	3.55	0.076	1.38	0.97	1.97
NW	Psy-Self × Temp-Now	-0.19	0.18	-1.07	-2.14	0.286	0.83	0.58	1.17

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$; D = dumbfounded, NW = nothing-wrong

Figure 3

Simulated Data: Responses to critical slide depending on both manipulations. Sample sizes as follows: Self-Control, N = 800, Other-Control, N = 800, Self-Now, N = 800, Other-Now, N = 800, Self-Future, N = 800, Other-Future, N = 800, (error bars represent standard error of the proportion)



Including Scenario

Overall the model significantly predicted responses to the critical slide $\chi^2(16, N = 4800) = 163.4$, $p < .001$, The observed power was 1. The model explained between 1.13% (Cox and Snell R square) and 2.67% (Nadelkerke R squared) of the variance in responses to the critical slide. For scenarios in the future, participants were more likely to provide reasons than to present as dumbfounded Wald = -12.16, $p < .001$, odds ratio = 0.28, 95% CI [0.18, 0.42].

Julie and Mark

Temporal Distancing and Dumbfounding.

Overview of Judgments. A total of 860 participants (69.81%) rated the behavior of Julie and Mark as wrong initially, and 834 participants (67.69%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.4, SD = 1.4), $t(1231)$ = -1.23, p = .220, d = 0.03.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $F(2, 1229) = 0.43$, p = .653 ${\eta_p}^2$ = 0.001, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.3, M_{control} = 3.3, SD_{control} = 1.3). There was no difference in revised judgement depending on distance manipulation: $F(2, 1229) = 1.97$, p = .140, ${\eta_p}^2 = 0.003$, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.4, M_{control} = 3.5, SD_{control} = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(4, N = 1232) = 17.707$, p = .001, V = 0.12, the observed power was 0.96. The responses to the critical slide for the increased distance group (N = 415) the decreased distance group (N = 411), and the control group (N = 406) are displayed in XXXXX Figure 1.

Table 4

Predictors of each response with reason-giving as the reference response

Response	Term	*b*	*S.E.*	*z*	Wald	*p*	*O.R.*	Lower	Upper
D	(Intercept)	-1.74	0.14	-12.35	-24.70	< .001**	0.17	0.13	0.23
D	Psy-Self	0.20	0.15	1.32	2.65	0.186	1.22	0.91	1.62
D	Temp-Future	-1.28	0.21	-6.08	-12.16	< .001**	0.28	0.18	0.42
D	Temp-Now	-0.35	0.17	-2.11	-4.22	.035*	0.70	0.50	0.98
D	Scenario-Jennifer	-0.03	0.14	-0.18	-0.35	0.86	0.97	0.73	1.29
D	Scenario-Julie and Mark	0.47	0.13	3.45	6.90	< .001**	1.59	1.22	2.08
D	Scenario-Trolley	-0.34	0.16	-2.19	-4.38	.029*	0.71	0.53	0.96
D	Psy-Self × Temp-Future	0.61	0.27	2.24	4.48	.025*	1.84	1.08	3.13
D	Psy-Self × Temp-Now	0.14	0.23	0.63	1.26	0.529	1.15	0.74	1.80
NW	(Intercept)	-1.42	0.12	-12.32	-24.65	< .001**	0.24	0.19	0.30
NW	Psy-Self	0.18	0.13	1.34	2.68	0.18	1.20	0.92	1.56
NW	Temp-Future	0.07	0.13	0.57	1.13	0.572	1.08	0.83	1.40
NW	Temp-Now	0.54	0.13	4.29	8.58	< .001**	1.72	1.34	2.21
NW	Scenario-Jennifer	-0.18	0.10	-1.72	-3.44	0.085	0.84	0.68	1.02
NW	Scenario-Julie and Mark	0.05	0.10	0.53	1.07	0.593	1.06	0.87	1.29
NW	Scenario-Trolley	-0.01	0.10	-0.13	-0.25	0.9	0.99	0.81	1.20
NW	Psy-Self × Temp-Future	0.32	0.18	1.78	3.57	0.075	1.38	0.97	1.97
NW	Psy-Self × Temp-Now	-0.19	0.18	-1.04	-2.08	0.298	0.83	0.59	1.18

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$; D = dumbfounded, NW = nothing-wrong

Table 5

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on temporal distancing

		Control	Increased	Decreased
Observed count	Reasons	266	278	240
	Dumbfounded	68	41	61
	Nothing Wrong	72	96	110
Expected count	Reasons	258.36	264.09	261.55
	Dumbfounded	56.02	57.26	56.71
	Nothing Wrong	91.61	93.64	92.74
Standardised residuals	Reasons	0.96	1.74	-2.71*
	Dumbfounded	2.1*	-2.84*	0.75
	Nothing Wrong	-2.84*	0.34	2.49*

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Psychological Distancing and Dumbfounding.

Overview of Judgments. A total of 860 participants (69.81%) rated the behavior of Julie and Mark as wrong initially, and 834 participants (67.69%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.4, SD = 1.4), $t(1231)$ = -1.23, p = .220, d = 0.03.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $t(1227.55)$ = -1.08, p = .278, d = 0.06, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.3). There was no difference in revised judgement depending on distance manipulation: $t(1228.76)$ = -0.43, p = .670, d = 0.02, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(2, N = 1232) = 6.682$, p = .035, V = 0.07, the observed power was 0.57. The responses to the critical slide for the increased distance group (N = 619) and the decreased distance group (N = 613) are displayed in XXXXX Figure 2.

Table 6

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on psychological distancing

		Increased	Decreased
Observed count	Reasons	415	369
	Dumbfounded	74	96
	Nothing Wrong	130	148
Expected count	Reasons	393.91	390.09
	Dumbfounded	85.41	84.59
	Nothing Wrong	139.68	138.32
Standardised residuals	Reasons	2.5*	-2.5*
	Dumbfounded	-1.89	1.89
	Nothing Wrong	-1.32	1.32

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Overall the model significantly predicted responses to the critical slide $\chi^2(10, N = 1232) = 26.19$, $p = .003$, The observed power was 0.96. The model explained between 0.71% (Cox and Snell R square) and 1.57% (Nadelkerke R squared) of the variance in responses to the critical slide. For scenarios in the future, participants were more likely to provide reasons than to present as dumbfounded Wald = -3.82, $p = .056$, odds ratio = 0.53, 95% CI [0.28, 1.02].

Table 7

Predictors of each response with reason-giving as the reference response

Response	Term	*b*	*S.E.*	*z*	Wald	*p*	*O.R.*	Lower	Upper
D	(Intercept)	-1.54	0.20	-7.52	-15.03	< .001**	0.21	0.14	0.32
D	Psy-Self	0.33	0.27	1.19	2.38	0.233	1.39	0.81	2.37
D	Temp-Future	-0.63	0.33	-1.91	-3.82	0.056	0.53	0.28	1.02
D	Temp-Now	-0.01	0.29	-0.04	-0.08	0.967	0.99	0.56	1.75
D	Psy-Self × Temp-Future	0.15	0.44	0.34	0.68	0.735	1.16	0.49	2.72
D	Psy-Self × Temp-Now	0.04	0.40	0.10	0.19	0.924	1.04	0.48	2.26
NW	(Intercept)	-1.44	0.20	-7.32	-14.64	< .001**	0.24	0.16	0.35
NW	Psy-Self	0.25	0.27	0.95	1.90	0.343	1.29	0.76	2.17
NW	Temp-Future	0.33	0.26	1.30	2.61	0.192	1.40	0.84	2.31
NW	Temp-Now	0.45	0.26	1.74	3.48	0.082	1.57	0.94	2.60
NW	Psy-Self × Temp-Future	-0.17	0.36	-0.46	-0.93	0.643	0.85	0.42	1.71
NW	Psy-Self × Temp-Now	0.17	0.35	0.47	0.94	0.638	1.18	0.59	2.36

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$; D = dumbfounded, NW = nothing-wrong

Jennifer

Temporal Distancing and Dumbfounding.

Overview of Judgments. A total of 845 participants (69.55%) rated the behavior of Julie and Mark as wrong initially, and 827 participants (68.07%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.4) and revised ratings (M = 3.4, SD = 1.4), $t(1214)$ = -1.31, p = .191, d = 0.04.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $F(2, 1212) = 0.33$, p = .722 ${\eta_p}^2$ = 0.001, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.4, M_{control} = 3.3, SD_{control} = 1.4). There was no difference in revised judgement depending on distance manipulation: $F(2, 1212) = 1.06$, p = .346, ${\eta_p}^2 = 0.002$, ($M_{\text{increased}}$ = 3.5, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.4, M_{control} = 3.3, SD_{control} = 1.3).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(4, N = 1215) = 35.198$, $p < .001$, $V = 0.17$, the observed power was 1. The responses to the critical slide for the increased distance group (N = 404) the decreased distance group (N = 386), and the control group (N = 425) are displayed in XXXXX Figure 1.

Table 8

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on temporal distancing

		Control	Increased	Decreased
Observed count	Reasons	300	293	266.00
	Dumbfounded	63	16	37.00
	Nothing Wrong	62	95	83.00
Expected count	Reasons	300.47	285.63	272.90
	Dumbfounded	40.58	38.57	36.85
	Nothing Wrong	83.95	79.8	76.25
Standardised residuals	Reasons	-0.06	0.99	-0.93
	Dumbfounded	4.59**	-4.68**	0.03
	Nothing Wrong	-3.32**	2.32*	1.05

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Psychological Distancing and Dumbfounding.

Overview of Judgments. A total of 845 participants (69.55%) rated the behavior of Julie and Mark as wrong initially, and 827 participants (68.07%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.4) and revised ratings (M = 3.4, SD = 1.4), $t(1214)$ = -1.31, p = .191, d = 0.04.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $t(1212.78)$ = -1.48, p = .140, d = 0.08, ($M_{\text{increased}}$ = 3.2, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.4). There was no difference in revised judgement depending on distance manipulation: $t(1211.59)$ = -0.25, p = .800, d = 0.01, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(2, N = 1215) = 4.799$, p = .091, V = 0.06, the observed power was 0.42. The responses to the critical slide for the increased distance group (N = 612) and the decreased distance group (N = 603) are displayed in XXXXX Figure 2.

Table 9

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on psychological distancing

		Increased	Decreased
Observed count	Reasons	450	409
	Dumbfounded	52	64
	Nothing Wrong	110	130
Expected count	Reasons	432.68	426.32
	Dumbfounded	58.43	57.57
	Nothing Wrong	120.89	119.11
Standardised residuals	Reasons	2.18*	-2.18*
	Dumbfounded	-1.26	1.26
	Nothing Wrong	-1.57	1.57

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Overall the model significantly predicted responses to the critical slide $\chi^2(10, N = 1215) = 45.29$, $p < .001$, The observed power was 1. The model explained between 1.23% (Cox and Snell R square) and 3.02% (Nadelkerke R squared) of the variance in responses to the critical slide. For scenarios in the future, participants were more likely to provide reasons than to present as dumbfounded Wald = -6.67, $p < .001$, odds ratio = 0.23, 95% CI [0.1, 0.55].

Table 10

Predictors of each response with reason-giving as the reference response

Response	Term	*b*	*S.E.*	*z*	Wald	*p*	*O.R.*	Lower	Upper
D	(Intercept)	-1.69	0.20	-8.36	-16.71	< .001**	0.18	0.12	0.27
D	Psy-Self	0.25	0.28	0.91	1.82	0.364	1.29	0.75	2.22
D	Temp-Future	-1.45	0.44	-3.33	-6.67	< .001**	0.23	0.10	0.55
D	Temp-Now	-0.41	0.33	-1.24	-2.48	0.214	0.66	0.34	1.27
D	Psy-Self × Temp-Future	0.21	0.59	0.36	0.72	0.719	1.24	0.39	3.91
D	Psy-Self × Temp-Now	-0.01	0.45	-0.02	-0.05	0.981	0.99	0.41	2.39
NW	(Intercept)	-1.66	0.20	-8.31	-16.61	< .001**	0.19	0.13	0.28
NW	Psy-Self	0.16	0.28	0.57	1.13	0.572	1.17	0.68	2.02
NW	Temp-Future	0.23	0.27	0.86	1.73	0.388	1.26	0.75	2.13
NW	Temp-Now	0.49	0.27	1.84	3.68	0.065	1.64	0.97	2.77
NW	Psy-Self × Temp-Future	0.42	0.37	1.13	2.26	0.258	1.52	0.74	3.12
NW	Psy-Self × Temp-Now	-0.16	0.38	-0.44	-0.87	0.663	0.85	0.41	1.77

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$; D = dumbfounded, NW = nothing-wrong

Trolley

Temporal Distancing and Dumbfounding.

Overview of Judgments. A total of 861 participants (70.57%) rated the behavior of Julie and Mark as wrong initially, and 848 participants (69.51%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.3, SD = 1.4), $t(1219)$ = -1.35, p = .178, d = 0.04.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $F(2, 1217) = 0.7$, p = .498 ${\eta_p}^2$ = 0.001, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.2, $SD_{\text{decreased}}$ = 1.3, M_{control} = 3.3, SD_{control} = 1.3). There was no difference in revised judgement depending on distance manipulation: $F(2, 1217) = 3.58$, p = .028, ${\eta_p}^2 = 0.006$, ($M_{\text{increased}}$ = 3.2, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.4, M_{control} = 3.5, SD_{control} = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(4, N = 1220) = 35.149$, $p < .001$, $V = 0.17$, the observed power was 1. The responses to the critical slide for the increased distance group (N = 404) the decreased distance group (N = 415), and the control group (N = 401) are displayed in XXXXX Figure 1.

Table 11

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on temporal distancing

		Control	Increased	Decreased
Observed count	Reasons	274	300	278
	Dumbfounded	49	10	25
	Nothing Wrong	78	94	112
Expected count	Reasons	280.04	282.14	289.82
	Dumbfounded	27.61	27.82	28.57
	Nothing Wrong	93.35	94.05	96.61
Standardised residuals	Reasons	-0.8	2.37*	-1.56
	Dumbfounded	5.15**	-4.28**	-0.85
	Nothing Wrong	-2.21*	-0.01	2.2*

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Psychological Distancing and Dumbfounding.

Overview of Judgments. A total of 861 participants (70.57%) rated the behavior of Julie and Mark as wrong initially, and 848 participants (69.51%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings ($M = 3.3$, $SD = 1.3$) and revised ratings ($M = 3.3$, $SD = 1.4$), $t(1219) =$ -1.35, $p = .178$, $d = 0.04$.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $t(1217.77) = 0.15$, $p = .884$, $d = 0.01$, ($M_{\text{increased}} = 3.3$, $SD_{\text{increased}} = 1.3$, $M_{\text{decreased}} = 3.3$, $SD_{\text{decreased}} = 1.3$). There was no difference in revised judgement depending on distance manipulation: $t(1217.98) = 0.19$, $p = .852$, $d = 0.01$, ($M_{\text{increased}} = 3.3$, $SD_{\text{increased}} = 1.4$, $M_{\text{decreased}} = 3.3$, $SD_{\text{decreased}} =$ 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(2, N = 1220) = 5.262$, $p = .072$, $V = 0.07$, the observed power was 0.46. The responses to the critical slide for the increased distance group ($N = 611$) and the decreased distance group ($N = 609$) are displayed in XXXXX Figure 2.

Table 12

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on psychological distancing

		Increased	Decreased
Observed count	Reasons	450	409
	Dumbfounded	52	64
	Nothing Wrong	110	130
Expected count	Reasons	432.68	426.32
	Dumbfounded	58.43	57.57
	Nothing Wrong	120.89	119.11
Standardised residuals	Reasons	2.18*	-2.18*
	Dumbfounded	-1.26	1.26
	Nothing Wrong	-1.57	1.57

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Overall the model significantly predicted responses to the critical slide $\chi^2(10, N = 1220) = 50.66$, $p < .001$, The observed power was 1. The model explained between 1.37% (Cox and Snell R square) and 3.41% (Nadelkerke R squared) of the variance in responses to the critical slide. For scenarios in the future, participants were more likely to provide reasons than to present as dumbfounded Wald = -7.22, $p < .001$, odds ratio = 0.07, 95% CI [0.02, 0.29].

Table 13

Predictors of each response with reason-giving as the reference response

Response	Term	*b*	*S.E.*	*z*	Wald	*p*	*O.R.*	Lower	Upper
D	(Intercept)	-1.72	0.22	-7.90	-15.79	< .001**	0.18	0.12	0.28
D	Psy-Self	-0.01	0.31	-0.04	-0.07	0.97	0.99	0.54	1.82
D	Temp-Future	-2.68	0.74	-3.61	-7.22	< .001**	0.07	0.02	0.29
D	Temp-Now	-0.94	0.39	-2.41	-4.81	.016*	0.39	0.18	0.84
D	Psy-Self × Temp-Future	1.57	0.86	1.83	3.67	0.067	4.81	0.90	25.83
D	Psy-Self × Temp-Now	0.47	0.53	0.90	1.80	0.367	1.61	0.57	4.51
NW	(Intercept)	-1.32	0.18	-7.15	-14.31	< .001**	0.27	0.19	0.38
NW	Psy-Self	0.13	0.26	0.51	1.03	0.608	1.14	0.69	1.89
NW	Temp-Future	-0.24	0.26	-0.92	-1.85	0.356	0.78	0.47	1.32
NW	Temp-Now	0.42	0.24	1.74	3.48	0.082	1.52	0.95	2.45
NW	Psy-Self × Temp-Future	0.61	0.35	1.72	3.44	0.085	1.84	0.92	3.69
NW	Psy-Self × Temp-Now	-0.15	0.34	-0.43	-0.86	0.669	0.86	0.44	1.69

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$; D = dumbfounded, NW = nothing-wrong

Heinz

Temporal Distancing and Dumbfounding.

Overview of Judgments. A total of 811 participants (71.58%) rated the behavior of Julie and Mark as wrong initially, and 759 participants (66.99%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.4, SD = 1.4), $t(1132)$ = -1.99, p = .047, d = 0.06.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $F(2, 1130) = 3.25$, p = .039 ${\eta_p}^2$ = 0.006, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.4, M_{control} = 3.2, SD_{control} = 1.3). There was no difference in revised judgement depending on distance manipulation: $F(2, 1130) = 1.58$, p = .206, ${\eta_p}^2$ = 0.003, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.4, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.3, M_{control} = 3.5, SD_{control} = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(4, N = 1133) = 14.928$, p = .005, V = 0.11, the observed power was 0.92. The responses to the critical slide for the increased distance group (N = 377) the decreased distance group (N = 388), and the control group (N = 368) are displayed in XXXXX Figure 1.

Table 14

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on temporal distancing

		Control	Increased	Decreased
Observed count	Reasons	274	300	278
	Dumbfounded	49	10	25
	Nothing Wrong	78	94	112
Expected count	Reasons	280.04	282.14	289.82
	Dumbfounded	27.61	27.82	28.57
	Nothing Wrong	93.35	94.05	96.61
Standardised residuals	Reasons	-0.8	2.37*	-1.56
	Dumbfounded	5.15**	-4.28**	-0.85
	Nothing Wrong	-2.21*	-0.01	2.2*

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Psychological Distancing and Dumbfounding.

Overview of Judgments. A total of 811 participants (71.58%) rated the behavior of Julie and Mark as wrong initially, and 759 participants (66.99%) rated the behavior as wrong at the end of the task. There was a significant difference between initial ratings (M = 3.3, SD = 1.3) and revised ratings (M = 3.4, SD = 1.4), $t(1132)$ = -1.99, p = .047, d = 0.06.

Distancing and Judgments Made. There was no difference in initial judgement depending on distance manipulation: $t(1130.99)$ = -0.29, p = .769, d = 0.02, ($M_{\text{increased}}$ = 3.3, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.3, $SD_{\text{decreased}}$ = 1.3). There was no difference in revised judgement depending on distance manipulation: $t(1130.25)$ = -0.73, p = .468, d = 0.04, ($M_{\text{increased}}$ = 3.4, $SD_{\text{increased}}$ = 1.3, $M_{\text{decreased}}$ = 3.4, $SD_{\text{decreased}}$ = 1.4).

Distancing and Reason-Giving/Dumbfounding. There was a significant association between temporal distance condition and response to the critical slide, $\chi^2(2, N = 1133) = 5.72$, p = .057, V = 0.07, the observed power was 0.5. The responses to the critical slide for the increased distance group (N = 558) and the decreased distance group (N = 575) are displayed in XXXXX Figure 2.

Table 15

Observed counts, expected counts, and standardised residuals for each response to the critical slide depending on psychological distancing

		Increased	Decreased
Observed count	Reasons	450	409
	Dumbfounded	52	64
	Nothing Wrong	110	130
Expected count	Reasons	432.68	426.32
	Dumbfounded	58.43	57.57
	Nothing Wrong	120.89	119.11
Standardised residuals	Reasons	2.18*	-2.18*
	Dumbfounded	-1.26	1.26
	Nothing Wrong	-1.57	1.57

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$

Overall the model significantly predicted responses to the critical slide $\chi^2(10, N = 1133) = 34$, $p < .001$, The observed power was 0.99. The model explained between 1% (Cox and Snell R square) and 2.36% (Nadelkerke R squared) of the variance in responses to the critical slide. For scenarios in the future, participants were more likely to provide reasons than to present as dumbfounded Wald = -5.45, $p = .006$, odds ratio = 0.27, 95% CI [0.11, 0.69].

Table 16

Predictors of each response with reason-giving as the reference response

Response	Term	*b*	*S.E.*	*z*	Wald	*p*	*O.R.*	Lower	Upper
D	(Intercept)	-1.85	0.23	-7.90	-15.79	< .001**	0.16	0.10	0.25
D	Psy-Self	0.18	0.33	0.54	1.08	0.589	1.19	0.63	2.26
D	Temp-Future	-1.30	0.48	-2.73	-5.45	.006*	0.27	0.11	0.69
D	Temp-Now	-0.26	0.37	-0.71	-1.42	0.477	0.77	0.37	1.58
D	Psy-Self × Temp-Future	1.10	0.58	1.88	3.75	0.06	2.99	0.95	9.40
D	Psy-Self × Temp-Now	0.22	0.49	0.45	0.91	0.65	1.25	0.48	3.25
NW	(Intercept)	-1.43	0.20	-7.28	-14.56	< .001**	0.24	0.16	0.35
NW	Psy-Self	0.18	0.27	0.64	1.28	0.523	1.19	0.70	2.04
NW	Temp-Future	-0.05	0.28	-0.18	-0.37	0.855	0.95	0.55	1.64
NW	Temp-Now	0.81	0.25	3.20	6.40	.001*	2.24	1.37	3.67
NW	Psy-Self × Temp-Future	0.47	0.37	1.25	2.50	0.211	1.60	0.77	3.33
NW	Psy-Self × Temp-Now	-0.59	0.36	-1.65	-3.29	0.1	0.55	0.27	1.12

Note. * = sig. at $p < .05$; ** = sig. at $p < .001$; D = dumbfounded, NW = nothing-wrong