Supplemental Materials

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Table S1. Mixed effects model specifications

Model	Formula
Study 1 Moral judgments	lmer(moral ~ (Ini_Pos_Neg*Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re)*ActPers + (Ini_Pos_Neg + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|ID) + (Ini_Pos_Neg + Ini_Pos_Neg:Pre_Post:Con_Re|Question)
Study 1.5 Moral judgments	lmer(moral ~ (Ini_Pos_Neg*Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re)*Act_Pers + (Ini_Pos_Neg + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|ID) + (Ini_Pos_Neg + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|Item)
Study 1.5 Informational judgments	lmer(persit ~ Ini_Pos_Neg *Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re + (Pre_Post + Ini_Pos_Neg:Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|ID) + (0+Pre_Post + Ini_Pos_Neg:Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|Item)
Study 1.5 Moral updating ~ informational judgments	lmer(moral.diff ~ persit.final*Con_Re*Ini_Pos_Neg + (0+ Con_Re:Ini_Pos_Neg|ID) + (0+Con_Re:Ini_Pos_Neg|Item)
Study 1.5 Bayesian mediation model	med.mod <- bf(persit.final ~ Ini_Pos_Neg + (Ini_Pos_Neg|ID) + (Ini_Pos_Neg|Item)) dv.mod <- bf(moral.diff ~ Ini_Pos_Neg + persit.final + (0 + Ini_Pos_Neg|ID) + (Ini_Pos_Neg|Item)) mediation <- brm(med.mod + dv.mod + set_rescor(FALSE), data = reframed)
Study 2 Moral judgments	lmer(moral ~ (Ini_Pos_Neg*Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re)*Act_Pers + (Ini_Pos_Neg + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|ID) + (Ini_Pos_Neg + Ini_Pos_Neg:Pre_Post:Con_Re|Item)
Study 2 Informational judgments	lmer(persit ~ Ini_Pos_Neg *Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re + (Pre_Post + Ini_Pos_Neg:Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|ID) + (0+ Ini_Pos_Neg + Pre_Post + Ini_Pos_Neg:Pre_Post + Pre_Post:Con_Re + Ini_Pos_Neg:Pre_Post:Con_Re|Item)
Study 2 Moral updating ~ informational judgments	lmer(moral.diff ~ persit.final*Con_Re*Ini_Pos_Neg + (0+ Con_Re:Ini_Pos_Neg|ID) + (0+Con_Re*Ini_Pos_Neg|Item)
Study 2 Bayesian mediation model	med.mod <- bf(persit.final ~ Ini_Pos_Neg + (Ini_Pos_Neg|ID) + (Ini_Pos_Neg|Item)) dv.mod <- bf(moral.diff ~ Ini_Pos_Neg + persit.final + (0 + Ini_Pos_Neg|ID) + (Ini_Pos_Neg|Item)) mediation <- brm(med.mod + dv.mod + set_rescor(FALSE), data = reframed)
Study 3 Moral updating	lmer(update ~ paradigm*valence + (valence|ID))
Study 3 Informational and causal judgments	lmer(persit ~ paradigm*valence + (valence|ID)) lmer(locus ~ paradigm*valence+(valence|ID)) lmer(stability ~ paradigm*valence + (1|ID))
Study 3 Moral updating ~ informational and causal judgments	lmer(moral.diff ~ persit*paradigm + persit*valence + paradigm*valence + (valence|ID)) lmer(moral.diff ~ locus*paradigm + locus*valence + paradigm*valence + (valence|ID)) lmer(moral.diff ~ stability*paradigm + stability*valence + paradigm*valence + (valence|ID))

Study 1: Experimental instructions

"This study consists of a series of brief scenarios. You will read each story as it unfolds, and at two points answer a question about the story.
As you will be asked the same question twice for each story, please answer it in light of all the information you currently have at each time that you are asked.
There are 24 scenarios in total. Unfortunately we are unable to display a progress bar with this survey. We apologize for the inconvenience."

Study 2: Experimental instructions

"This study consists of a series of brief scenarios. You will read each story as it unfolds, and at two points in the story you will answer two questions.
There are 24 scenarios in total. Unfortunately we are unable to display a progress bar with this survey. We apologize for the inconvenience."

Study 1: Comparisons of act-based vs. person-based moral judgments

We compared act-based and person-based judgments in all six conditions: a) Initial Moral, b) Initial Immoral, c) Moral-to-Immoral, d) Immoral-to-Moral, e) Moral–Control, and f) Immoral–Control. We used a series of contrasts within our model to test the difference between act-based and person-based judgments in each condition; p-values were using the Tukey method.

There were no significant differences between judgment types: a) Initial Moral, *Estimate* = -0.20, *SE* = 0.15, *z* = -1.31, *p* = 0.598, *d* = -0.080 [-0.200, 0.04]; b) Initial Immoral, *Estimate* = 0.04, *SE* = 0.16, *z* = 0.22, *p* = 1.00, *d* = 0.015 [-0.115, 0.145]; c) Moral-to-Immoral, *Estimate* = -0.01, *SE* = 0.20, *z* = -0.04, *p* = 1.00, *d* = -0.003 [-0.159, 0.155]; d) Immoral-to-Moral, *Estimate* = -0.04, *SE* = 0.18, *z* = -0.25, *p* = 1.00, *d* = -0.018 [-0.163, 0.126]; e) Moral–Control, *Estimate* = -1.00, *SE* = 0.18, *z* = -0.57, *p* = 0.983, *d* = -0.042 [-0.186, 0.103]; f) Immoral–Control, *Estimate* = 0.42, *SE* = 0.20, *z* = 2.13, *p* = 0.145, *d* = 0.173 [0.013, 0.333]. The only trend of note was that, within the Immoral–Control condition, act-based judgments became slightly more positive than person-based judgments, i.e., act-based Immoral–Control judgments drifted up from the negative first-pass judgments—however, this trend was not significant. Given that there were no significant differences between judgment types, the following analyses collapsed across act-based and person-based judgments.

Study 1: Method for collecting feature ratings

Participants

Participants were recruited online through Amazon Mechanical Turk (AMT) for payment. Participants consisted of 315 adults (140 female, 175 male, 2 unspecified; M_{Age} = 33.6 years, SD_{Age} = 9.4 years), after excluding seven participants for failing an attention check. After collecting data from all 315 participants, we conducted our analyses without collecting additional data. The [blinded] Institutional Review Board approved the study, and each participant provided consent before beginning.

Procedure

Each participant read 24 scenarios (6 tragic–taboo; 6 taboo–tragic; 6 tragic– control; 6 taboo–control), presented in a semi-random order to counterbalance condition–scenario combinations across participants. Participants provided first and second pass moral judgments, and subgroups of participants provided second pass judgments of either *impression violation, belief violation, desire violation, prescriptive norm violation*, or *descriptive frequency*. Measures for prescriptive and descriptive norms were adapted from Brauer & Chaurand (2010).

Study 1.5: Results from original follow-up experiment

Study 2 was preceded by an initial exploratory follow-up experiment to Study 1; however, as neither Study 1 nor the initial follow-up ("Study 1.5") were pre-registered, we ran a pre-registered direct replication of both experiments, and reported those results in the main text as Study 2. Results from the original follow-up experiment are reported here.

Methods and Materials

Participants

Participants were recruited through Amazon Mechanical Turk in exchange for payment. The final sample consisted of 121 adults (56 female; M_{Age} = 33.69 years, SD_{Age} = 10.07 years), after excluding 5 participants for failing a simple attention check, and 20 participants for quitting before completing the survey. After collecting data from all 121 ($N_{act\text{-}based}$ = 62, $N_{person\text{-}based}$ = 59) participants, we conducted our analyses without collecting additional data. As in Study 1, we did not conduct a formal power analysis to determine our sample size, but we took into consideration the stimuli and subjects necessary to detect effects in mixed effects designs, according to prior simulations (Westfall et al., 2014). Our sample size is powered to detect a minimum effect size of d = 0.257, at $\alpha = 0.05$, $\beta = 0.80$, in a paired sample t-test (Faul et al., 2007; see below for more specific sensitivity analyses tailored to our mixed-effects design.) The [blinded] IRB approved the study, and each participant provided informed consent before beginning the survey. While analyses were conducted with a subset of measures and participants, we report all measures, manipulations, and exclusions.

Stimuli

The same 24 scenarios were used as in Study 1. Participants were asked to make a moral judgment as well as an *informational judgment* about whether the scenario provided relatively more information about the person or about the situation. Just before their first-pass moral judgment, participants were asked: "Based on the story so far, have you learned more about <agent>, or about the situation?" (1 – Only about <agent>, 7 – Only about the situation). Likewise, just before their second-pass moral judgment, participants were asked: "**Based on the new information,** have you learned more about <agent>, or about the situation?" (1 – Only about <agent>, 7 – Only about the situation; bolded emphasis in original). This question probed the information gained, rather than attribution made (e.g., "Is this behavior due to the agent or the situation?"), as the reframing information elaborated on the initial behavior, rather than presenting an additional, new behavior where attribution could be probed.

Procedure

The procedure followed that of Study 1, with one change to increase usability for participants: parts a through d were presented on one page, where participants made first-pass informational and moral judgments. On the next page, part e was added in bold below the previous parts, and participants made second-pass informational and moral judgments.

Analysis

All data and analysis code are available on OSF (see Open Practices). Linear mixed effects regressions were separately fit to predict moral judgments, and informational judgments. Predictors included Initial Condition (moral, immoral), Reframing Condition (reframing, control), Timepoint (first-pass, second-pass), and all interactions except Initial Condition x Reframing Condition (as in Study 1), and the random effects structure was reduced according to the procedure outlined in Study 1 (see Supplemental Table 1). The maximal models included random effects for Initial Condition, Reframing Condition, and Timepoint. All reported p-values are corrected for multiple comparisons using the Tukey method.

A separate linear mixed effects model tested correlations between moral updating and informational judgments. Moral updating (second-pass minus first-pass moral judgments) was predicted using, as predictors, second-pass informational judgments, Initial Condition (moral, immoral), Reframing Condition (reframing, control), and all interactions. The maximal model included random effects for informational judgments, Initial Condition, and Reframing Condition. Contrasts within the model were tested simultaneously using the *multcomp* package (Hothorn et al., 2016). All reported p-values are corrected for multiple comparisons using the Tukey method.

Finally, second-pass informational judgments were tested as a mediator between Initial Condition (moral, immoral) and moral updating in a Bayesian multilevel model (*brms* package; Bürkner, 2017). Default, uninformative priors were used, and all Rhat values were <= 1.01, suggesting the model had converged. The maximal model included random effects for Initial Condition and informational judgments.

Results

Act-based vs. Person-based Judgments

We replicated our finding from Study 1, that there were no differences between act-based and person-based moral judgments. P-values were corrected using the Tukey method. As before, there were no significant differences between judgment types in: a) Initial Moral, $M = 0.08$, $SE = 0.13$, $z = 0.59$, $p = .984$, $d = 0.032$[-0.073, 0.137]; b) Initial Immoral, $M = -0.14$, $SE = 0.14$, $z = -1.00$, $p = .841$, d = -0.058 [-0.170, 0.055]; c) Moral-to-Immoral, $M = 0.06$, $SE = 0.15$, $z = 0.40$, $p = 0.998$, d = 0.024 [-0.096, 0.145]; d) Immoral-to-Moral, $M = 0.08$, $SE = 0.15$, $z = 0.55$, $p = 0.989$, d = 0.033 [-0.084, 0.150]; e) Moral–Control, $M = 0.42$, $SE = .18$, $z = 2.31$, $p = .103$, d = 0.169 [0.026, 0.313]; f) Immoral–Control, $M = 0.52$, $SE = 0.20$, $z = 2.53$, $p = 0.058$, d = 0.207 [0.047, 0.367]. Both control conditions showed a trend where act-based judgments became slightly more positive when control information was added, consistent with our observation for Immoral–Control scenarios in Study 1.

As no significant differences were observed between act-based and person-based moral judgments, the following analyses collapse across judgment type.

Moral Updating

We again asked whether there were asymmetries in moral updating. There was a significant 3-way interaction[1] between Initial Condition, Reframing Condition, and Timepoint, *Estimate* = 1.77, $SE = 0.25$, $t(34.80) = 7.17$, $p < 0.001$, $\eta^2_p = 0.60$ [0.37, 0.73]. The positivity bias observed in Study 1 was replicated in this sample: the magnitude of updating was greater for Immoral-to-Moral ($M = 3.94$, $SE = 0.17$) than Moral-to-Immoral ($M = 3.22$, $SE = 0.19$) scenarios, *Estimate* = 0.35, $SE = 0.12$, $z = 3.05$, $p = .014$, $d = 0.14$ [0.05, 0.23].

Furthermore, all manipulation checks passed (Figure 1). Initial Moral segments ($M = 4.07$, $SE = 0.17$) were rated as more moral than Initial Immoral ($M = 2.74$, $SE = 0.17$), *Estimate* = 1.33, $SE = 0.12$, $z = 11.07$, $p < .001$, $d = 0.53$ [0.44, 0.63]. Updating occurred, such that Moral-to-Immoral segments were rated as less moral than Initial Moral, *Estimate* = -0.85, $SE = 0.09$, $z = -9.51$, $p < .001$, $d = -0.34$ [-0.41, -0.27], and Immoral-to-Moral segments were rated as more moral than Initial Immoral, *Estimate* = 1.20, $SE = 0.10$, $z = 12.46$, $p < .00$, $d = 0.48$ [0.40, 0.55]. Control scenarios showed the same pattern as in Study 1. Moral judgments of Initial Moral segments remained unchanged after adding Control information ($M = 4.11$, SE = 0.17), *Estimate* = 0.04, $SE = 0.09$, $z =$

[1] A sensitivity analysis (estimated by simulation using the *simr* package; Green & MacLeod, 2016) indicated that the 3-way interaction between Initial Condition, Reframing Condition, and Timepoint could be detected at a minimum effect size 60% below the observed effect size, while retaining ~80% power. All fixed effects in the model were multiplied by .4, and a Monte Carlo simulation was used to conduct a z-test on the interaction term (*power* = 82.60% [80.11%, 84.90%], 1000 simulations, function call: powerSim(model, nsim=1000, test=fixed("Initial:Updating:Timepoint", method="z"), seed=123)).

0.47, $p = .992$, $d = 0.02$ [-0.05, 0.09], and Initial Immoral segments became slightly more moral after adding Control information ($M = 3.06$, $SE = 0.20$), *Estimate* = 0.33, $SE = 0.10$, $z = 3.38$, $p = .004$, $d = 0.13$ [0.05, 0.21], but this shift was significantly smaller than the equivalent shift for Immoral-to-Moral scenarios, *Estimate* = 0.88, $SE = 0.16$, $z = 5.50$, $p < .001$, $d = 0.35$ [0.22, 0.47].

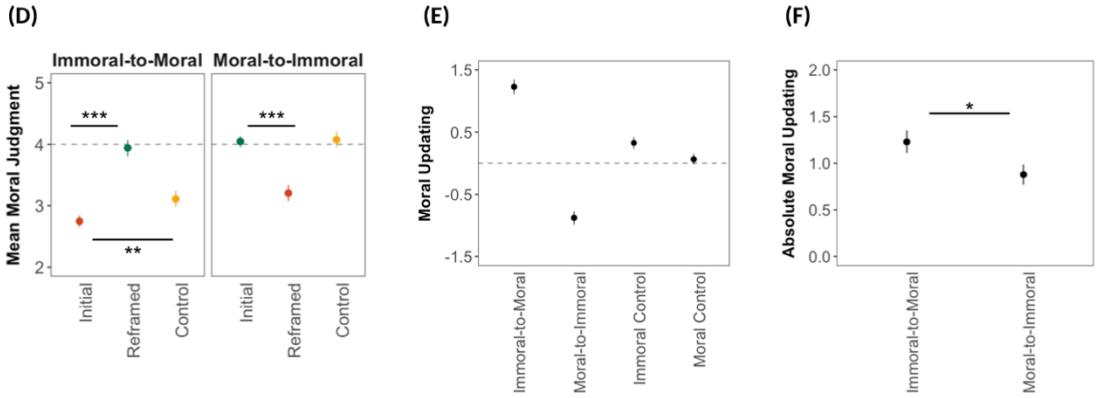

Figure 1. Mean moral judgments and updating. **D:** Mean moral judgment for each condition, collapsed across act-based and person-based moral judgments. Error bars represent 95% confidence intervals. **E:** Difference between second-pass and first-pass moral judgments, for each scenario type. **F:** Magnitude of moral updating. There was greater updating for Immoral-to-Moral reframing relative to Moral-to-Immoral reframing. *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$ (after correction for multiple comparisons)

Informational Judgments

Are qualitative asymmetries in dispositional/situational information observed across directions of reframing (Figure 2)? The model revealed a significant 3-way interaction[2] between Initial Condition, Reframing Condition, and Timepoint, *Estimate* = 0.91, $SE = 0.15$, $t(29.53) = 6.04$, $p < 0.001$, $\eta^2_p = 0.55$ [0.30, 0.71]. Comparing all conditions against the scale midpoint, Initial Moral and Immoral-to-Moral segments provided relatively more information about the situation (Initial Moral: $M = 4.45$, $SE = 0.08$, $z = 5.92$, $p < .001$, $d = 0.17$ [0.12, 0.23]; Immoral-to-Moral: $M = 4.79$, $SE = 0.12$, $z = 6.58$, $p < .001$, $d = 0.31$ [0.22, 0.40]), while all remaining comparisons were non-significant (statistics listed in below table).

Condition	Estimate	Std. Error	z	p
Initial Immoral	4.07566	0.07573	0.999	0.860
Initial Moral	4.44835	0.07571	5.922	<0.001 ***
Immoral–Control	3.56690	0.23009	-1.882	0.296
Moral–Control	3.55078	0.20644	-2.176	0.163
Immoral-to-Moral	4.78954	0.11991	6.584	<0.001 ***
Moral-to-Immoral	3.86007	0.11103	-1.260	0.706

Comparing these two conditions, Immoral-to-Moral segments provided *more* situational information than Initial Moral segments, *Estimate* = 0.34, $SE = 0.12$, $z = 2.90$, $p = 0.025$, $d = 0.13$ [0.04, 0.22]. Comparing reframed scenario types, Immoral-to-Moral segments ($M = 4.79$, $SE = 0.12$)

[2] A sensitivity analysis (estimated by simulation using the *simr* package; Green & MacLeod, 2016) indicated that the 3-way interaction between Initial Condition, Reframing Condition, and Timepoint could be detected at a minimum effect size 50% below the observed effect size, while retaining ~80% power. All fixed effects in the model were multiplied by .5, and a Monte Carlo simulation was used to conduct a z-test on the interaction term (*power* = 85.40% [83.06%, 87.53%], 1000 simulations, function call: powerSim(model, nsim=1000, test=fixed("Initial:Updating:Timepoint", method="z"), seed=123)).

provided more situational information than Moral-to-Immoral segments (M = 3.86, SE = 0.11), *Estimate* = 0.93, SE = 0.14, z = 6.52, p < 0.001, d = 0.37 [0.25, 0.47]. Thus, moral vignettes, whether presented initially (Initial Moral) or as reframing an immoral dilemma (Immoral-to-Moral), were judged as providing more situational than dispositional information.

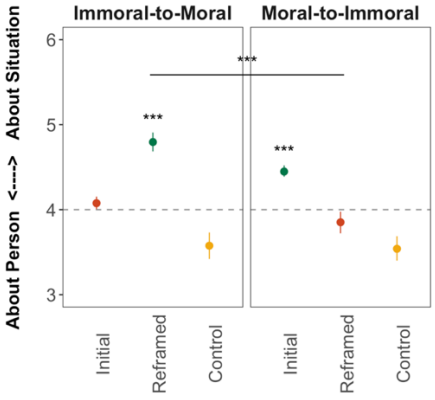

Figure 2. Condition means for informational judgments. Moral information was rated as providing more information about the situation (relative to the scale midpoint), both when it was presented in the initial segment and in the reframing segment. Moral reframing information was rated as providing more information about the situation, compared to immoral reframing information. Error bars represent 95% confidence intervals. ***: p < 0.001 (after correction for multiple comparisons)

Correlations Between Moral Updating and Informational Judgments

We tested the correlations between moral updating and second-pass informational judgments (Figure 3). There was no 3-way interaction between informational judgments, Initial Condition, and Reframing Condition, *Estimate* = -0.05, SE = 0.06, t(2632.92) = -0.90, p = 0.369, η^2_p = 0.0003 [0, 0.0031], and no 2-way interaction between informational judgments and Initial Condition, *Estimate* = -0.02, SE = 0.03, t(2813.00) = -0.54, p = 0.590, η^2_p = 0.001 [0, 0.002]. We observed a 2-way interaction[3] between informational judgments and Reframing Condition, *Estimate* = 0.13, SE = 0.03, t(2868.90) = 4.60, p < 0.001, η^2_p = 0.007 [0.002, 0.015]. Contrast analyses revealed a significant correlation between moral updating and informational judgments among reframed scenarios, *Estimate* = 0.13, SE = 0.02, z = 5.70, p < 0.001, d = 0.07 [0.04, 0.09], but no correlation between moral updating and informational judgments among control scenarios, *Estimate* = -0.001, SE = 0.017, z = -0.061, p = 0.999, d = -0.0005 [-0.0177, 0.0166].

Follow-up contrasts revealed that within Immoral-to-Moral scenarios, reframing information that provided *more situational* information was associated with *more positive* moral updating, *Estimate* = 0.11, SE = 0.03, z = 3.18, p = 0.008, d = 0.06 [0.02, 0.09]. Likewise, within Moral-to-Immoral scenarios, reframing information that provided *more situational* information was associated with *less negative* moral updating, *Estimate* = 0.15, SE = 0.03, z = 4.90, p < 0.001, d = 0.08 [0.05, 0.11]. No relationship was observed in Immoral-Control scenarios, *Estimate* = 0.004, SE = 0.025, z = 0.180, p = 0.999, d = 0.002 [-0.023, 0.027], or in Moral-Control scenarios, *Estimate* = -0.007, SE = 0.026, z = -0.259, p = 0.999, d = -0.003 [-0.029, 0.022]. Thus, after reframing, moral judgment

[3] A sensitivity analysis (estimated by simulation using the *simr* package; Green & MacLeod, 2016) indicated that the 2-way interaction between informational judgments and Reframing Condition could be detected at a minimum effect size 35% below the observed effect size, while retaining ~80% power. All fixed effects in the model were multiplied by .65, and a Monte Carlo simulation was used to conduct a z-test on the interaction term (*power* = 84.40% [82.00%, 86.60%], 1000 simulations, function call: powerSim(model, nsim=1000, test=fixed("Informational:Updating", method="z"), seed=123)).

became more positive for Immoral-to-Moral scenarios and more negative for Moral-to-Immoral scenarios—but, in both cases, when reframing information was interpreted as situational information, moral judgments became more positive (Figure 3).

Given that (a) the positivity bias, where reframing was stronger in Immoral-to-Moral scenarios than in Moral-to-Immoral scenarios, and (b) situational interpretations of reframing information increased positive moral updating, we hypothesized that situational interpretations may mediate the positivity bias we observed. The mean estimated total effect of moral reframing direction on moral updating was *Estimate* = 2.08 [95% Bayesian credible interval = 1.68, 2.50], and the mean estimated direct effect was *Estimate* = 1.97 [1.55, 2.36]. The mean estimated indirect effect of moral reframing direction on moral updating through informational judgments was *Estimate* = 0.11 [0.05, 0.17], representing a 5.09% [2.11%, 8.07%] mediation. These results indicate that a small portion of the effect of moral reframing direction on moral updating is explained by informational judgments. It should be noted, however, that the causal effect of the mediator cannot be determined in the current design, as situational vs. dispositional interpretations were not themselves manipulated, and alternative models could explain the positivity bias in moral updating; further research is required to test whether situational vs. dispositional interpretations causally affect updating, and to test alternative models (Fiedler, Harris, & Schott, 2018; Pirlott & MacKinnon, 2016). In sum, the current results reveal a correlation, such that the positivity bias in moral updating may be partially explained by the interpretation of reframing information as situational.

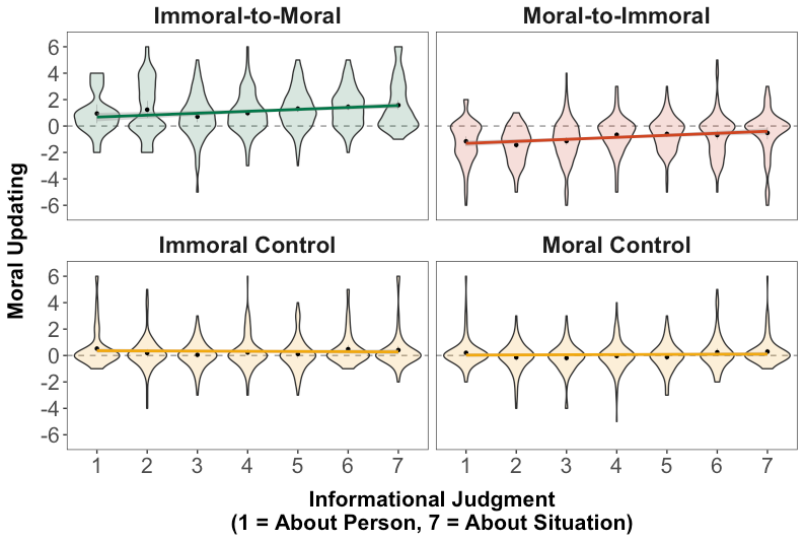

Figure 3. Relationship between second-pass informational judgments and moral updating for each scenario type. For Immoral-to-Moral scenarios and Moral-to-Immoral scenarios, rating reframing information as providing more information about the situation was associated with more positive (less negative) moral updating. There was no significant relationship between informational judgments and moral updating for Immoral–Control scenarios, or for Moral–Control scenarios.

Study 2: Comparisons of act-based vs. person-based moral judgments

Condition	Estimate	SE	z	p
Initial Moral	-0.04484	0.06334	-0.708	0.9615
Initial Immoral	-0.06446	0.06501	-0.991	0.8456
Moral–Control	0.13688	0.07842	1.746	0.3320
Immoral–Control	0.23889	0.08522	2.803	0.0268 *
Moral-to-Immoral	0.02217	0.07511	0.295	0.9996
Immoral-to-Moral	0.10341	0.07252	1.426	0.5457

Study 2: Moral judgment manipulation checks

Consistent with our design, Initial Moral segments (M = 4.06, SE = 0.16) were rated as more moral than Initial Immoral scenarios (M = 2.58, SE = 0.18), *Estimate* = 1.48, SE = 0.11, z = 13.02, p < .001, d = 0.65 [0.55, 0.74]. Initial Immoral segments received more extreme moral ratings than Initial Moral scenarios: Initial Moral ratings (M = 4.06, SE = 0.16) did not significantly differ from the midpoint, z = 0.38, p = 0.871, d = 0.03 [-0.11, 0.16], whereas Initial Immoral ratings (M = 2.58, SE = 0.18) were significantly lower than the midpoint, z = -7.95, p < .001, d = 0.62 [0.47, 0.77].

Reframing in both directions was successful. Initial Moral segments became less moral when reframed to Moral-to-Immoral (M = 3.09, SE = 0.16), *Estimate* = -0.97, SE = 0.05, z = -17.93, p < .001, d = -0.42 [-0.47, -0.37]. Initial Immoral segments became more moral when reframed to Immoral-to-Moral (M = 3.96, SE = 0.17), *Estimate* = 1.38, SE = 0.05, z = 25.46, p < .001, d = 0.60 [0.56, 0.65]. Moral judgments of Initial Moral segments remained unchanged after adding Control information (M = 4.13, SE = 0.17), *Estimate* = 0.07, SE = 0.05, z = 1.29, p = .579, d = 0.03 [-0.02, 0.08]; however, Initial Immoral segments did become slightly more moral after adding Control information (M = 2.87, SE = 0.20), *Estimate* = 0.29, SE = 0.05, z = 5.36, p < 0.001, d = 0.13 [0.08, 0.17]. This moral shift for Immoral–Control scenarios was significantly smaller than the equivalent shift for Immoral-to-Moral scenarios, *Estimate* = 1.09, SE = 0.10, z = 11.32, p < .001, d = 0.47 [0.39, 0.56].

Study 2: Comparisons of informational judgments against the scale midpoint

Condition	M	SE	z	p
Initial Moral	4.52728	0.04807	10.970	<0.001 ***
Initial Immoral	3.97233	0.04807	-0.576	0.9852
Moral–Control	3.58679	0.21035	-1.964	0.2436
Immoral–Control	3.44803	0.20635	-2.675	0.0447 *
Moral-to-Immoral	3.75331	0.09728	-2.536	0.0650 .
Immoral-to-Moral	4.80341	0.12716	6.318	<0.001 ***

Study 2: Further analyses on correlations between updating and informational judgments

There was a marginally significant 3-way interaction between informational judgments, Initial Condition, and Reframing Condition, *Estimate* = -0.05, SE = 0.03, t(3533) = -1.91, p = 0.056, η^2_p = 0.001 [0, 0.004]. There was a 2-way interaction between informational judgments and Initial Condition, *Estimate* = -0.04, SE = 0.01, t(3684) = -3.29, p = 0.001, η^2_p = 0.003 [0.001, 0.007]. Contrast analyses revealed a significant correlation among reframed scenarios, *Estimate* = 0.12, SE = 0.01, z = 12.04, p < 0.001, d = 0.07 [0.06, 0.08], but not among control scenarios, *Estimate* = -0.009, SE = 0.007, z = -1.182, p = 0.721, d = -0.005 [-0.014, 0.004]). There was a significant correlation between moral updating and informational judgments among scenarios that start out moral, *Estimate* = 0.08, SE = 0.01, z = 9.01, p < 0.001, d = 0.04[0.03, 0.05]), and among scenarios that start out immoral, *Estimate* = 0.04, SE = 0.01, z = 3.82, p < 0.001, d = 0.02[0.01, 0.03]).

Study 2: Analyses of act-based judgments alone

Moral judgments and updating

Consistent with our design, Initial Moral segments (M = 4.0809, SE = 0.1562) were rated as more moral than Initial Immoral scenarios (M = 2.6085, SE = 0.1844), *Estimate* = 1.47239, SE = 0.12424, z = 11.851, p < .001. Initial Immoral segments received more extreme moral ratings than Initial Moral scenarios: Initial Moral ratings did not significantly differ from the midpoint, z = 0.518, p = 0.787, whereas Initial Immoral ratings were significantly lower than the midpoint, z = -7.547, p < .001.

Reframing in both directions was successful. Initial Moral segments became less moral when reframed to Moral-to-Immoral (M = 3.0858, SE = 0.1594), *Estimate* = -0.99510, SE = 0.06202, z = -16.045, p < .001. Initial Immoral segments became more moral when reframed to Immoral-to-Moral (M = 3.9032, SE = 0.1740), *Estimate* = 1.29469, SE = 0.06247, z = 20.724, p < .001. Moral judgments of Initial Moral segments remained unchanged after adding Control information (M = 4.0541, SE = 0.1697), *Estimate* = -0.02679, SE = 0.06207, z = -0.432, p = 0.9934; however, Initial Immoral segments became marginally more moral after adding Control information (M = 2.7538, SE = 0.2079), *Estimate* = 0.14528, SE = 0.06252, z = 2.324, p = 0.0981. This marginal moral shift for Immoral–Control scenarios was significantly smaller than the equivalent shift for Immoral-to-Moral scenarios, *Estimate* = 1.14942, SE = 0.10492, z = 10.956, p < .001.

We observed a positivity bias when comparing the absolute magnitudes of moral updating in Moral-to-Immoral and Immoral-to-Moral scenarios: Immoral-to-Moral scenarios were updated *more* than Moral-to-Immoral scenarios, *Estimate* = 0.29959, SE = 0.06238, z = 4.803, p < .001.

Comparisons of informational judgments against the scale midpoint

Condition	M	SE	z	p
Initial Moral	4.51363	0.06395	8.032	<0.001 ***
Initial Immoral	3.95777	0.06395	-0.660	0.9745
Moral–Control	3.70074	0.21163	-1.414	0.6020
Immoral–Control	3.56352	0.21413	-2.038	0.2185
Moral-to-Immoral	3.74414	0.10563	-2.422	0.0909 .
Immoral-to-Moral	4.75717	0.13779	5.495	<0.001 ***

Comparisons of informational judgments by condition

Immoral-to-Moral segments and Initial Moral segments did not significantly differ, *Estimate* = 0.24354, SE = 0.12897, z = 1.888, p = 0.293. Comparing reframed scenario types, Immoral-to-Moral segments provided more situational information than Moral-to-Immoral segments, *Estimate* = 1.01303, SE = 0.16300, z = 6.215, p < 0.001.

Correlations between moral updating and informational judgments

There was a significant correlation between moral updating and informational judgments among reframed scenarios, *Estimate* = 0.133100, SE = 0.012794, z = 10.404, p < 0.001, but no correlation between moral updating and informational judgments among control scenarios, *Estimate* = 0.008460, SE = 0.009697, z = 0.872, p = 0.87205.

Within Immoral-to-Moral scenarios, reframing information that provided *more situational* information was associated with *more positive* moral updating, *Estimate* = 0.059505, SE = 0.018701, z = 3.182, p = 0.00788. Likewise, within Moral-to-Immoral scenarios, reframing information that provided *more situational* information was associated with *less negative* moral updating, *Estimate* = 0.206695, SE = 0.017226, z = 11.999, p < 0.001. No relationship was observed in Immoral-Control

scenarios, *Estimate* = 0.008355, *SE* = 0. 013455, *z* = 0.621, *p* = 0.95931, or in Moral-Control scenarios, *Estimate* = 0.008565, *SE* = 0.013214, *z* =0.648, *p* = 0.95267.

Study 2: Analyses of person-based judgments alone

Moral judgments and updating

Consistent with our design, Initial Moral segments (*M* = 4.0367, *SE* = 0.1637) were rated as more moral than Initial Immoral scenarios (*M* = 2.5427, *SE* = 0.1810), *Estimate* = 1.49398, *SE* = 0.11667, *z* = 12.805, *p* < .001. Initial Immoral segments received more extreme moral ratings than Initial Moral scenarios: Initial Moral ratings did not significantly differ from the midpoint, *z* = 0.224, *p* = 0.951, whereas Initial Immoral ratings were significantly lower than the midpoint, *z* = -8.053, *p* < .001.

Reframing in both directions was successful. Initial Moral segments became less moral when reframed to Moral-to-Immoral (*M* = 3.1026, *SE* = 0.1629), *Estimate* = -0.93408, *SE* = 0.06429, *z* = -14.529, *p* < .001. Initial Immoral segments became more moral when reframed to Immoral-to-Moral (*M* = 4.0131, *SE* = 0.1740), *Estimate* = 1.47037, *SE* = 0.06501, *z* = 22.617, *p* < .001. Moral judgments of Initial Moral segments became marginally more positive after adding Control information (*M* = 4.1985, *SE* = 0.1809), *Estimate* = 0.16185, *SE* = 0.06438, *z* = 2.514, *p* = 0.062; Initial Immoral segments also become slightly more moral after adding Control information (*M* = 2.9778, *SE* = 0.2026), *Estimate* = 0.43511, *SE* = 0.06509, *z* = 6.684, *p* <0.001. This moral shift for Immoral–Control scenarios was significantly smaller than the equivalent shift for Immoral-to-Moral scenarios, *Estimate* = 1.03527, *SE* = 0.10759, *z* = 9.622, *p* < .001.

We observed a positivity bias when comparing the absolute magnitudes of moral updating in Moral-to-Immoral and Immoral-to-Moral scenarios: Immoral-to-Moral scenarios were updated *more* than Moral-to-Immoral scenarios, *Estimate* = 0.53630, *SE* = 0.07041, *z* = 7.617, *p* < .001.

Comparisons of informational judgments against the scale midpoint

Condition	M	SE	z	p
Initial Moral	4.53917	0.05459	9.876	<0.001 ***
Initial Immoral	3.98512	0.05459	-0.273	0.9997
Moral–Control	3.48087	0.22708	-2.286	0.1232
Immoral–Control	3.33582	0.21531	-3.085	0.0135 *
Moral-to-Immoral	3.75472	0.10724	-2.287	0.1237
Immoral-to-Moral	4.84562	0.12924	6.543	<0.001 ***

Comparisons of informational judgments by condition

Immoral-to-Moral segments provided marginally more situational information than Initial Moral segments, *Estimate* = 0.30645, *SE* = 0.11572, *z* = 1.888, *p* = 0.0494. Comparing reframed scenario types, Immoral-to-Moral segments provided more situational information than Moral-to-Immoral segments, *Estimate* = 1.09090, *SE* = 0.17027, *z* = 6.407 *p* < 0.001.

Correlations between moral updating and informational judgments

There was a significant correlation between moral updating and informational judgments among reframed scenarios, *Estimate* = 0.12904, *SE* = 0.01603, *z* = 8.052, *p* < 0.001, but no correlation between moral updating and informational judgments among control scenarios, *Estimate* = -0.02808, *SE* = 0.01263, *z* = -2.223, *p* = 0.120204.

Within Immoral-to-Moral scenarios, reframing information that provided *more situational* information was associated with *more positive* moral updating, *Estimate* = 0.09323, *SE* = 0.02358, *z* = 3.954, *p* = 0.000379. Likewise, within Moral-to-Immoral scenarios, reframing information that

provided *more situational* information was associated with *less negative* moral updating, *Estimate* = 0.16484, *SE* = 0.02117, *z* = 7.788, *p* < 0.001. No relationship was observed in Immoral-Control scenarios, *Estimate* = -0.03914, *SE* = 0.01714, *z* = -2.283, *p* = 0.104174, or in Moral-Control scenarios, *Estimate* = -0.01702, *SE* = 0.01701, *z* = -1.001, *p* = 0.804515.

Study 3: First-pass informational judgments

We examined whether, as in Studies 1–2, moral and immoral information elicited different informational judgments at the outset. There was a main effect of Valence Direction on first-pass informational judgments, such that Initial Moral segments were rated as providing more information about the situation than Initial Immoral segments (*Estimate* = 0.63, *SE* = 0.06, *t*(1541) = 9.71, *p*<.0001, *d* = 0.38[0.30, 0.46]; see below table for comparisons of all conditions against the scale midpoint).

Condition	M	SE	z	p
Updating, Initial Moral	4.13	0.08	1.58	0.372
Updating, Initial Immoral	3.66	0.08	-4.27	<.001
Reframing, Initial Moral	4.43	0.08	5.47	<.001
Reframing, Initial Immoral	3.65	0.08	-4.46	<.001

Although we had presented a set of 8 scenarios where the moral and immoral frames of the scenarios had been rated (by participants in Study 2) to not differ in the amount of situational information they provide, we still observed a difference in Study 3 in first-pass informational judgments between moral and immoral frames (as in Studies 1–2). In the previous two studies, this posed a problem for interpreting the overall pattern of results: it may have been the case that differences in how much situational information was provided by moral vs. immoral frames, rather than the context of reframing *per se*, contributed to the positivity bias in updating. That is, we were unable to determine from the previous studies whether the reframing context itself can explain why the negativity bias was overcome. In the current study, we compared an updating context and a reframing context using the same scenarios; thus, although the moral frames of scenarios were perceived as being more informative about the situation than immoral frames, this was the case within both paradigms, allowing us to still examine whether reframing is important for overcoming the negativity bias.

Study 3: Scenario items and counterbalancing

Of the 24 root scenarios used in Studies 1–2 (see below for full text), a subset of 8 were used in Study 3: item #s 1, 7, 8, 9, 10, 12, 15, 24. In the Reframing condition, 1 root scenario was presented per target (initial dilemma + reframing); in the Addition condition, 2 root scenarios were presented per target (one dilemma + second dilemma). These item #s for these pairings were: 1 & 12, 7 & 9, 8 & 15, 10 & 24.

Across participants, each root scenario experienced all possible combinations of: Updating vs. Reframing, Moral-to-Immoral vs. Immoral-to-Moral, and Timepoint (presented in the first segment vs. in the second segment). Thus, each root scenario takes 8 forms, distributed across 8 lists seen by participants. Furthermore, target name and Valence Direction were counterbalanced across participants.

Study 3: Structure of Causality Measures

To verify the discriminant validity of the locus of causality subscale and the stability of cause subscale (McAuley, Duncan, & Russell, 1992), we conducted a factor analysis on the 6 items contained in these scales, and found that a single factor structure is insufficient to explain variation in participants' responses to these items (variance explained by first component = 29%;

variance explained by first two components = 45%). Thus, for all downstream analyses, we calculated the average of the 3 locus of causality items, and the average of the 3 stability of cause items, and used these mean scores in separate regression models.

Study 3: Second-Pass Informational Judgments

When examining informational judgments of new moral or immoral segments, there was a marginal 2-way interaction between Paradigm Condition and Valence Direction, *Estimate* = -0.26, *SE* = 0.13, $t(508) = -1.97$, $p = 0.050$, $\eta^2_p = 0.008[0, 0.029]$. Comparing all conditions against the scale midpoint, in the Updating condition, final moral segments did not differ from the midpoint ($M = 4.01$, $SE = 0.07$, $z = 0.22$, $p = 0.999$, $d = 0.01[-0.08, 0.10]$), while final immoral segments provided relatively more information about the person than the situation ($M = 3.27$, $SE = 0.08$, $z = -0.10$, $p<.001$, $d = 0.44[0.34, 0.53]$). In the Reframing condition, final moral segments provided relatively more information about the situation ($M = 4.35$, $SE = 0.07$, $z = 4.76$, $p<.001$, $d = 0.22[0.13, 0.30]$), while final immoral segments did not differ from the midpoint ($M = 3.87$, $SE = 0.07$, $z = -1.59$, $p =$ 00.374, $d = 0.08[-0.02, 0.18]$).

Study 3: Correlations between Moral Updating and Informational Judgments

We tested correlations between moral updating (second-pass minus first-pass moral judgments) and second-pass informational judgments. There was no 3-way interaction between informational judgments, Paradigm Condition, and Valence Direction (*Estimate* = 0.05, *SE* = 0.10, $t(1964.09) = 0.46$, $p = 0.644$, $\eta^2_p = 0.0001[0, 0.0030]$). There a 2-way interaction between informational judgments and Paradigm Condition (*Estimate* = -0.10, *SE* = 0.05, $t(1858.56) = -2.07$, $p = 0.038$, $\eta^2_p = 0.002[0, 0.009]$), and a 2-way interaction between informational judgments and Valence Direction (*Estimate* = -0.13, *SE* = 0.05, $t(1960.32) = -2.61$, $p = 0.009$, $\eta^2_p = 0.0035[0.0002, 0.0105]$).

Within both paradigm conditions, for Immoral-to-Moral targets, final information that provided *more situational* information was associated with *more positive* moral updating (Updating: *Estimate* = 0.25, *SE* = 0.04, $z = 5.63$, $p<.001$, $d = 0.13[0.08, 0.17]$; Reframing: *Estimate* = 0.14, *SE* = 0.05, $z = 3.08$, $p = 0.012$, d = 0.07[0.03, 0.12]). In addition, for Moral-to-Immoral targets, final information that provided *more situational* information was associated with *less negative* moral updating (Updating: *Estimate* = 0.38, *SE* = 0.04, $z = 9.30$, $p < .001$, $d = 0.20[0.15, 0.24]$; Reframing: *Estimate* = 0.28, *SE* = 0.04, $z = 6.46$, $p<.001$, d = 0.14[0.10, 0.19]).

Study 3: Second-Pass Externality Judgments

There was a 2-way interaction between Paradigm Condition and Valence Direction, *Estimate* = -0.33, *SE* = 0.14, $t(509.72) = -2.36$, $p = 0.019$, $\eta^2_p = 0.0108[0.0002,0.0354]$. All conditions differed from the scale midpoint. In both paradigm conditions, final moral segments elicited relatively more external causal attributions than internal causal attributions (Updating: $M = 4.26$, $SE = 0.08$, $z = 3.42$, $p=0.003$, $d = 0.15[0.07, 0.24]$; Reframing: $M = 4.49$, $SE = 0.08$, $z = 6.38$, $p<.001$, $d = 0.29[0.20, 0.37]$), while final immoral segments elicited relatively more internal than external attributions (Updating: $M = 3.23$, $SE = 0.08$, $z = -0.0.79$, $p<.001$, $d = 0.45[0.36, 0.54]$; Reframing: $M = 3.79$, $SE =$ 0.08, $z = -2.68$, $p = 0.029$, $d = 0.13[0.03,0.21]$).

Study 3: Second-Pass Stability Judgments

There was a 2-way interaction between Paradigm Condition and Valence Direction, *Estimate* = -0.46, *SE* = 0.12, $t(1541.43) = -3.89$, $p<.001$, $\eta^2_p = 0.010[0.002, 0.021]$. All conditions were compared to the scale midpoint. In the Updating condition, both final moral and final immoral segments elicited relatively more stable causal attributions than unstable causal attributions (moral:

M = 3.73, *SE* = 0.08, *z* = -3.52, p = 0.001, *d* = 0.17[0.08, 0.27]; immoral: *M* = 3.45, *SE* = 0.08, *z* = -7.11, *p*<.001, *d* = 0.35[0.25, 0.45]). In the Reframing condition, final moral segments elicited relatively more stable than unstable attributions (*M* = 3.70, *SE* = 0.08, *z* = -3.94, *p*<.001, *d* = 0.19[0.10, 0.29]), while final immoral segments did not differ from the midpoint (*M* = 3.89, *SE* = 0.08, *z* = -1.44, *p* = 0.457, *d* = 0.08[-0.03, 0.17]).

Study 3: Correlations between Moral Updating and Externality Judgments

We tested correlations between moral updating and second-pass locus of causality judgments. There was no 3-way interaction between locus of causality judgments, Paradigm Condition, and Valence Direction (*Estimate* = -0.03, *SE* = 0.01, *t*(1984.77) = -0.34, *p* = 0.734, η^2_p = 0[0, 0.002]). There was no 2-way interaction between locus judgments and Paradigm Condition (*Estimate* = -0.068, *SE* = 0.049, *t*(1925) = -1.36, *p* = 0.172, η^2_p = 0[0, 0.006]), and no 2-way interaction between locus judgments and Valence Direction (*Estimate* = 0.003, *SE* = 0.050, *t*(1984) = 0.052, *p* = 0.959, η^2_p = 0[0,0.001]).

Within both paradigm conditions, for Immoral-to-Moral targets, final information that elicited more external causal attributions was associated with *more positive* moral updating (Updating: *Estimate* = 0.31, *SE* = 0.04, *z* = 7.24, *p*<.001, *d* = 0.16[0.12, 0.20]; Reframing: *Estimate* = 0.24, *SE* = 0.05, *z* = 5.26, *p*<.001, d = 0.12[0.08, 0.17]). In addition, for Moral-to-Immoral targets, final information that elicited more external attributions was associated with *less negative* moral updating (Updating: *Estimate* = 0.30, *SE* = 0.04, *z* = 7.46, *p* < .001, *d* = 0.16[0.12, 0.20]; Reframing: *Estimate* = 0.24, *SE* = 0.04, *z* = 5.55, *p*<.001, d = 0.12[0.08, 0.17]).

Study 3: Correlations between Moral Updating and Stability Judgments

We tested correlations between moral updating and second-pass stability of cause judgments. There was no 3-way interaction between stability of cause judgments, Paradigm Condition, and Valence Direction (*Estimate* = 0.15, *SE* = 0.11, *t*(1874.82) = 1.44, *p* = 0.15, η^2_p = 0.001[0, 0.06]), and no 2-way interaction between stability of cause judgments and Paradigm Type (*Estimate* = -0.07, *SE* = 0.05, *t*(1736.92) = -1.29, *p* = 0.197, η^2_p = 0.001[0, 0.006]). There was a significant 2-way interaction between stability of cause judgments and Valence Direction (*Estimate* = -0.11, *SE* = 0.05, *t*(1870.48) = -2.08, *p* = 0.038, *d* = 0.002[0, 0.009]).

Within the Updating condition, for Moral-to-Immoral targets, final information that elicited more unstable causal attributions was associated with less negative moral updating (*Estimate* = 0.15, *SE* = 0.04, *z* = 3.28, *p* = 0.006, *d* = 0.08[0.03, 0.12]). No other combination of Paradigm Type and Valence Direction yielded a significant correlation between stability judgments and moral updating (Updating, Immoral-to-Moral: *Estimate* =0.04, *SE* = 0.05, *z* = 0.88, *p* = 0.864, *d* = 0.02[-0.03, 0.06]; Reframing, Moral-to-Immoral: *Estimate* = 0.08, *SE* = 0.05, *z* = 1.74, *p* = 0.304, *d* = 0.04[-0.01, 0.08]; Reframing, Immoral-to-Moral: *Estimate* = -0.03, *SE* = 0.05, *z* = -0.69, *p* = 0.901, *d* = -0.02[-0.06,0.03]).

Study 3: Examples of full scenario text for each condition

Addition, Moral-to-Immoral

Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.
Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.
Michael's wife is adamantly opposed to euthanasia. She understands Michael's mother's circumstances, but has told Michael that she will divorce him if he has his mother euthanized.
Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.
--
Michael is the CEO of Morrison Motors, a large car manufacturing company. Michael must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.
Michael could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.
The cost of settlements with the families of the victims would be much cheaper than the cost of a recall. Not issuing a recall could save the company money and even set Michael up for a promotion.
Michael thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.

Addition, Moral-to-Immoral (alternate list)

Michael is the CEO of Morrison Motors, a large car manufacturing company. Michael must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.
Michael could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.
Michael knows that the finances of the company are poor, and the negative press and expense of a recall would bankrupt them. Thousands of long-time employees would lose their jobs and pensions.
Michael thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.
--
Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.
Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.
Michael's mother is very wealthy and has set up automatic deposits to Michael's bank account. When she dies, her fortune will be donated to her favorite charity, and Michael will stop receiving money.
Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.

Addition, Immoral-to-Moral

Michael is the CEO of Morrison Motors, a large car manufacturing company. Michael must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.
Michael could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.
The cost of settlements with the families of the victims would be much cheaper than the cost of a recall. Not issuing a recall could save the company money and even set Michael up for a promotion.
Michael thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.
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Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.
Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.
Michael's wife is adamantly opposed to euthanasia. She understands Michael's mother's circumstances, but has told Michael that she will divorce him if he has his mother euthanized.
Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.

Addition, Immoral-to-Moral (alternate list)
Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.
Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.
Michael's mother is very wealthy and has set up automatic deposits to Michael's bank account. When she dies, her fortune will be donated to her favorite charity, and Michael will stop receiving money.
Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.
--
Michael is the CEO of Morrison Motors, a large car manufacturing company. Michael must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.
Michael could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.
Michael knows that the finances of the company are poor, and the negative press and expense of a recall would bankrupt them. Thousands of long-time employees would lose their jobs and pensions.
Michael thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.

Reframing, Moral-to-Immoral
Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.
Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.
Michael's wife is adamantly opposed to euthanasia. She understands Michael's mother's circumstances, but has told Michael that she will divorce him if he has his mother euthanized.
Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.
--
Michael's mother is very wealthy and has set up automatic deposits to Michael's bank account. When she dies, her fortune will be donated to her favorite charity, and Michael will stop receiving money.

Reframing, Moral-to-Immoral (alternate list)
Brock is the CEO of Morrison Motors, a large car manufacturing company. Brock must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.
Brock could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.
Brock knows that the finances of the company are poor, and the negative press and expense of a recall would bankrupt them. Thousands of long-time employees would lose their jobs and pensions.

Brock thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.
--
The cost of settlements with the families of the victims would be much cheaper than the cost of a recall. Not issuing a recall could save the company money and even set Brock up for a promotion.

Reframing, Immoral-to-Moral
Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.
Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.
Michael's mother is very wealthy and has set up automatic deposits to Michael's bank account. When she dies, her fortune will be donated to her favorite charity, and Michael will stop receiving money.
Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.
--
Michael's wife is adamantly opposed to euthanasia. She understands Michael's mother's circumstances, but has told Michael that she will divorce him if he has his mother euthanized.

Reframing, Immoral-to-Moral (alternate list)
Brock is the CEO of Morrison Motors, a large car manufacturing company. Brock must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.
Brock could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.
The cost of settlements with the families of the victims would be much cheaper than the cost of a recall. Not issuing a recall could save the company money and even set Brock up for a promotion.
Brock thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.
--
Brock knows that the finances of the company are poor, and the negative press and expense of a recall would bankrupt them. Thousands of long-time employees would lose their jobs and pensions.

Full scenario text

Scenario 1 - Adapted from Lichtenstein et al., 2007

1. Rebecca is in charge of running a yearlong drug trial at McAdam Hospital. The drug was given to the experimental group of patients, and a placebo was given to the control group. At two months, early results suggest that the drug is effective.

2. Rebecca has the option to give the control group the medicine early. This could potentially save the lives of patients who would die without immediate access to the treatment.

3a. **[Moral Initial]**: Holding the trial at the original length would produce more conclusive data. This would help develop better treatments in the long run, and save the lives of patients in the future.

3b. **[Immoral Initial]**: Giving treatment to the control group before a study is complete is frowned on in the medical community. If Rebecca ends the study early, she will have trouble progressing her career.

4. Rebecca thinks very carefully and ultimately decides to continue the study at its original length. The drug trial continues for the remainder of the year, but some patients in the control group die during this time.

5a. **[Immoral Reframing]**: Giving treatment to the control group before a study is complete is frowned on in the medical community. If Rebecca ends the study early, she will have trouble progressing her career.

5b. **[Moral Reframing]:** Holding the trial at the original length would produce more conclusive data. This would help develop better treatments in the long run, and save the lives of patients in the future.

5c. **[Control]:** After Rebecca arrives home from work, she makes herself spaghetti for dinner and watches television. After dinner she washes the dishes and takes a shower before going to bed.

Scenario 2 - Adapted from Lichtenstein et al., 2007

1. Jessica is in charge of a subcommittee of the Environmental Protection Agency and must break a tie in a vote. The vote is on whether to approve a project proposed by a drug company.

2. If Jessica rejects the project then the drug company will be prevented from harvesting old growth forests to develop their drug. This would prevent severe environmental damage which would wipe out many endangered species.

3a. **[Moral Initial]**: By approving the project, Jessica will be allowing highly effective treatments for multiple sclerosis to be developed. No other treatment is nearly as effective as this drug, and the new drug would help thousands of people across America.

3b. **[Immoral Initial]**: Jessica's boss, the head of the EPA, would personally benefit if this new drug were to be produced. By approving the project Jessica would win his gratitude and he would be more likely to grant the promotion she planned to ask for.

4. Jessica thinks very carefully and ultimately decides to approve the project. The drug is developed, and the old growth forest is destroyed.

5a. **[Immoral Reframing]**: Jessica's boss, the head of the EPA, would personally benefit if this new drug were to be produced. By approving the project Jessica would win his gratitude and he would be more likely to grant the promotion she planned to ask for.

5b. **[Moral Reframing]**: By approving the project, Jessica will be allowing highly effective treatments for multiple sclerosis to be developed. No other treatment is nearly as effective as this drug, and the new drug would help thousands of people across America.

5c. **[Control]**: Jessica calls several of her close friends and makes plans to see a movie the following weekend. The movie had received good reviews in the local newspaper and Jessica has seen all of the leading actor's previous movies.

Scenario 3

1. Emil owns a small farm in Argentina. Emil is considering expanding his farm, which would allow him to grow more varieties of fruits and vegetables.

2. Emil sells his crops to a nearby village. He knows that what he grows does not contain enough nutrients for a healthy diet. By expanding his farm he could save the villagers from malnourishment.

3a. **[Moral Initial]**: Emil knows that the area of the rainforest that borders on his farm contains an exceptional number of endangered species, and that expanding into it will cause many of them to die out.

3a. **[Immoral Initial]**: Emil regularly brings in tourists who pay for tours of the rainforest near his house, and continuing to give these tours will be more profitable then planting more crops and feeding the village.

4. Emil thinks very carefully and ultimately decides not to expand his farm into the rainforest. His farm is not developed any further, and the villagers continue to suffer from malnourishment.

5a. **[Immoral Reframing]**: Emil regularly brings in tourists who pay for tours of the rainforest near his house, and continuing to give these tours will be more profitable then planting more crops and feeding the village.

5b. **[Moral Reframing]**: Emil knows that the area of the rainforest that borders on his farm contains an exceptional number of endangered species, and that expanding into it will cause many of them to die out.

5c. **[Control]**: Emil received a call the next day from an acquaintance he had lost contact with. They agreed to meet the next week at a café in the city in order to catch up on their lives since high school.

Scenario 4

1. Sanjeev is a government official in India who is in charge of a local wildlife preservation. A family of endangered tigers has been attacking people on the border of the preserve, and she must decide what to do about it.

2. The World Wildlife Foundation has asked that they be allowed to capture the tigers alive and relocate them. This will leave the villagers in danger for longer, but will save the tigers.

3a. **[Moral Initial]**: The nearby villagers are terrified and afraid to let their children out of their houses. By sending the army to kill the tigers Sanjeev could eliminate the danger almost immediately.

3b. **[Immoral Initial]**: Sanjeev knows that the teeth of these tigers are very valuable and can be sold as an aphrodisiac. By sending the army to kill the tigers Sanjeev could take a share of the profit.

4. Sanjeev thinks very carefully and ultimately decides to send in the army. The army kills the entire family of endangered tigers.

5a. **[Immoral Reframing]**: Sanjeev knows that the teeth of these tigers are very valuable and can be sold as an aphrodisiac. By sending the army to kill the tigers Sanjeev could take a share of the profit.

5b. **[Moral Reframing]**: The nearby villagers are terrified and afraid to let their children out of their houses. By sending the army to kill the tigers Sanjeev could eliminate the danger almost immediately.

5c. **[Control]**: The next afternoon, Sanjeev goes for a walk to get exercise. She forgot to eat breakfast that morning and becomes hungry after 30 minutes. She decides to take the shorter route home.

Scenario 5

1. Sarah and her five year old son Jeffery were recently evicted from their house and are living in a homeless shelter. A very rich couple has approached Sarah explaining that they are unable to conceive and that they would be willing to adopt Jeffery.

2. The couple has told Sarah that they will be moving to California. They do not plan to return and it is unlikely that Sarah will ever see her son again if they adopt him.

3a. **[Moral Initial]**: Sarah can barely feed Jeffery, let alone provide a comfortable life for him. She is absolutely certain that Jeffery would be very well off with his new family.

3b. **[Immoral Initial]**: Sarah has been told by the couple that they will buy her an expensive new car to replace her old one. They will purchase the car when she signs over custody of Jeffery.

4. Sarah thinks very carefully and ultimately decides to allow the family to adopt Jeffery. Jeffery moves to California with the family, and Sarah never sees him again.

5a. **[Immoral Reframing]**: Sarah has been told by the couple that they will buy her an expensive new car to replace her old one. They will purchase the car when she signs over custody of Jeffery.

5b. **[Moral Reframing]**: Sarah can barely feed Jeffery, let alone provide a comfortable life for him. She is absolutely certain that Jeffery would be very well off with his new family.

5c. **[Control]**: Sarah goes to her former high school's basketball game that weekend. Her high school used to rank poorly, but recently has improved its standing in the league.

Scenario 6

1. Candace is the Mayor of a small mid-western American city. The city needs to make cuts to the education budget. The council has brought two proposals to her about programs that could potentially be cut.

2. Candace could cut after school programs for at-risk youth. This would leave many adolescents without alternatives to getting involved with drugs and crime. It would almost certainly negatively affect their future prospects.

3a. **[Moral Initial]**: Cutting day-care programs would put a financial strain on single parents. Parents with jobs would need to work more hours and see their children less. Parents without jobs would have to balance childcare and their time to job hunt.

3b. **[Immoral Initial]**: Cutting day-care programs would make parents unhappy, and Candace is up for reelection next year. The votes of these parents were essential to her victory in the last election. Losing the support of parents could lose her the next election.

4. Candace thinks carefully and ultimately decides to cut the after school programs for at-risk youth. As a result, many of these children get involved with drugs and crime.

5a. **[Immoral Reframing]**: Cutting day-care programs would make parents unhappy, and Candace is up for reelection next year. The votes of these parents were essential to her victory in the last election. Losing the support of parents could lose her the next election.

5b. **[Moral Reframing]**: Cutting day-care programs would put a financial strain on single parents. Parents with jobs would need to work more hours and see their children less. Parents without jobs would have to balance childcare and their time to job hunt.

5c. **[Control]**: Candace takes her dog, Spot, on a walk through the downtown city park. The park allows dogs to go off of their leashes, but only in certain areas. When Candace reaches the area, she lets Spot off of his leash and throws the ball with him.

Scenario 7

1. Michael is 36 years old and is visiting his mother in the hospital. She is completely paralyzed and unable to speak. She had told Michael that in such situations she wants to be euthanized and the decision is legally Michael's to make.

2. Michael could ask the doctors to euthanize his mother. The procedure would be painless and if it was not performed she would live for years, completely unable to move or speak.

3a. **[Moral Initial]**: Michael's wife is adamantly opposed to euthanasia. She understands Michael's mother's circumstances, but has told Michael that she will divorce him if he has his mother euthanized.

3b. **[Immoral Initial]**: Michael's mother is very wealthy and has set up automatic deposits to Michael's bank account. When she dies, her fortune will be donated to her favorite charity, and Michael will stop receiving money.

4. Michael thinks very carefully and ultimately decides to leave his mother to die naturally. His mother remains conscious but unable to move or speak.

5a. **[Immoral Reframing]:** Michael's mother is very wealthy and has set up automatic deposits to Michael's bank account. When she dies, her fortune will be donated to her favorite charity, and Michael will stop receiving money.

5b. **[Moral Reframing]:** Michael's wife is adamantly opposed to euthanasia. She understands Michael's mother's circumstances, but has told Michael that she will divorce him if he has his mother euthanized.

5c. **[Control]:** On his way home, Michael listens to the radio. He hears that winter is expected to come early this year. As soon as he arrives home he writes himself a note to put the winter tires on the car on Friday.

Scenario 8

1. Erica is a 25-year-old woman who is seven months pregnant and single after her husband's death in a car accident. After a recent visit to the doctor, she learns that her baby has a rare chronic medical condition.

2. Erica could choose to have her baby. Although the medical condition will be debilitating, the baby's life expectancy is expected to be completely normal.

3a. **[Moral Initial]**: Erica knows that her baby would be in extreme pain for his entire life. The condition causes skin to be hypersensitive and painful to any sort of touch.

3b. **[Immoral Initial]**: Erica knows that her baby's medical condition would require her specialized equipment. She would need to move to a cheap apartment in order to afford this.

4. Erica thinks carefully and ultimately decides to have an abortion. Her unborn baby is aborted, and Erica suffers no negative consequences from the abortion.

5a. **[Immoral Reframing]**: Erica knows that her baby's medical condition would require her specialized equipment. She would need to move to a cheap apartment in order to afford this.

5b. **[Moral Reframing]**: Erica knows that her baby would be in extreme pain for his entire life. The condition causes skin to be hypersensitive and painful to any sort of touch.

5c. **[Control]**: When Erica cooks dinner that night she accidentally burns the potatoes. She notices that the smoke detector does not go off and replaces the batteries.

Scenario 9 - Adapted from Lichtenstein et al., 2007

1. Abby is the CEO of Morrison Motors, a large car manufacturing company. Abby must make a decision about whether to issue a recall due to a defect in the Ellipsis line of cars.

2. Abby could issue a recall to fix this defect, which would return the thousands of Ellipsis cars to the factory. This would protect customers from the fatal accidents that can occur when the brakes fail.

3a. **[Moral Initial]**: Abby knows that the finances of the company are poor, and the negative press and expense of a recall would bankrupt them. Thousands of long-time employees would lose their jobs and pensions.

3b. **[Immoral Initial]**: The cost of settlements with the families of the victims would be much cheaper than the cost of a recall. Not issuing a recall could save the company money and even set Abby up for a promotion.

4. Abby thinks carefully, and ultimately decides not to issue the recall. The company saves a great deal of money, but fatal accidents occur as a result.

5a. **[Immoral Reframing]**: The cost of settlements with the families of the victims would be much cheaper than the cost of a recall. Not issuing a recall could save the company money and even set Abby up for a promotion.

5b. **[Moral Reframing]**: Abby knows that the finances of the company are poor, and the negative press and expense of a recall would bankrupt them. Thousands of long-time employees would lose their jobs and pensions.

5c. **[Control]**: Abby went to the gym next to the office to exercise after work. She had originally planned to run on the treadmill, but they were all occupied so she used the bicycle machine instead.

Scenario 10 - Adapted from Lichtenstein et al., 2007

1. Brock is a clerk working for the Canadian military and can decide to approve or reject draftees that have been referred to him. He is currently considering the case of Aaron, a young man who is eligible to be drafted.

2. Brock knows that Aaron has experience with engineering and could be put on a bomb defusal squad. This expertise could potentially save the lives of civilians and fellow soldiers.

3a. **[Moral Initial]**: Brock read that Aaron works with Engineers without Borders. If rejected from the draft, Aaron would continue to build wells in South Africa, giving the poor access to fresh water.

3b. **[Immoral Initial]**: Brock was contacted by Aaron's family, who are very influential. They will contact Brock's superiors and get him promoted if he rejects Aaron's file and spares him the draft.

4. Brock thinks very carefully and ultimately decides to reject Aaron's file. Aaron is not drafted into the army.

5a. **[Immoral Reframing]**: Brock was contacted by Aaron's family, who are very influential. They will contact Brock's superiors and get him promoted if he rejects Aaron's file and spares him the draft.

5b. **[Moral Reframing]**: Brock read that Aaron works with Engineers without Borders. If rejected from the draft, Aaron would continue to build wells in South Africa, giving the poor access to fresh water.

5c. **[Control]**: The following afternoon, Brock attends a meeting along with the other clerks. They discuss a new database program that will help to reduce the amount of paper used in their jobs.

Scenario 11 - Adapted from Lichtenstein et al., 2007

1. Elizabeth owns and operates an animal shelter that cares for stray dogs. The shelter had signed a contract under a previous owner to supply dogs to a nearby university for research purposes. The contract is up for renewal.

2. Elizabeth could refuse to re-sign the contract, in which case the sale of animals to the university would end. The university studies the causes of blindness and tests hazardous chemicals on the animals.

3a. **[Moral Initial]**: The animal shelter is in poor financial shape. If Elizabeth refuses to re-sign the contract the shelter will likely close. As a result, all of the animals in their care would be turned out into the street.

3b. **[Immoral Initial]**: The animal shelter is in poor financial shape. If Elizabeth refuses to re-sign the contract the shelter will likely close. As a result, all of the animals in their care would be turned out into the street.

4. Elizabeth thinks very carefully and ultimately decides to re-sign the contract with the university. Several cats and dogs are taken each month for experimentation.

5a. **[Immoral Reframing]**: If Elizabeth re-signs the contract, then the university will increase their payment for the animals to adjust for inflation. The university has also promised to pay Elizabeth a signing bonus of $5000.

5b. **[Moral Reframing]**: The animal shelter is in poor financial shape. If Elizabeth refuses to re-sign the contract the shelter will likely close. As a result, all of the animals in their care would be turned out into the street.

5c. **[Control]**: After work, Elizabeth stops at a friend's house to borrow a movie that her friend had recommended. Elizabeth planned to watch it that night, but got distracted by another program that was on TV.

Scenario 12

1. Angela is a 40-year-old mother of two children, aged 12 and 14. She is has been approached by two women (Sandra and Megan) to act as a surrogate mother, and is considering whether to accept either offer.

2. By being a surrogate mother for Sandra, Angela would be helping a close friend who has always wanted a child but cannot conceive on her own. Sandra is willing to pay for Angela's healthcare costs, so that the pregnancy will not cost Angela anything.

3a. **[Moral Initial]**: Angela wants to send her children to college, but she does not have the money for a college savings fund. Megan has promised to pay Angela generously for carrying her child. Without this money, Angela may not be able to send her children to college.

3b. **[Immoral Initial]**: By being a surrogate mother for Megan, Angela will be generously compensated. Megan is a wealthy acquaintance and in addition to the large payment, has offered to buy Angela box seats at the Metropolitan Opera, of which Angela is an enormous fan.

4. Angela thinks carefully and ultimately decides to act as a surrogate mother for Megan. She is generously compensated for her trouble.

5a. **[Immoral Reframing]**: By being a surrogate mother for Megan, Angela will be generously compensated. Megan is a wealthy acquaintance and in addition to the large payment, has offered to buy Angela box seats at the Metropolitan Opera, of which Angela is an enormous fan.

5b. **[Moral Reframing]**: Angela wants to send her children to college, but she does not have the money for a college savings fund. Megan has promised to pay Angela generously for carrying her child. Without this money, Angela may not be able to send her children to college.

5c. **[Control]**: While Angela's children are at school she reads her favorite book. She notices that she is nearly finished and drives to a local bookstore to pick out something new. The store was having a sale, and so she picks out two books instead of just the one she planned to buy.

Scenario 13 - Adapted from Lichtenstein et al., 2007

1. Gregory is the captain of a fishing vessel that operates off the coast of Cape Cod. He is considering implementing a new fishing method for himself and his crew.

2. The new method involves specialized nets that release larger creatures caught in them. If used, it would decrease the number of dolphins that are accidentally caught and strangled in the netting.

3a. **[Moral Initial]**: Gregory knows that by implementing the new method he would be forced to lay off a third of his crew due to the related expenses. These people would have a very difficult time finding other jobs.

3b. **[Immoral Initial]**: Gregory has run a profitable business on the side where he sells dolphin fins to natural medicine distributors. If he implemented the new fishing method, he would need to shut down this business.

4. Gregory thinks carefully and ultimately decides not to implement the new fishing method. The vessel continues to kill several dolphins per month.

5a. **[Immoral Initial]**: Gregory has run a profitable business on the side where he sells dolphin fins to natural medicine distributors. If he implemented the new fishing method, he would need to shut down this business.

5b. **[Moral Initial]**: Gregory knows that by implementing the new method he would be forced to lay off a third of his crew due to the related expenses. These people would have a very difficult time finding other jobs.

5c. **[Control]**: On Saturday, Gregory drives to Connecticut to spend the weekend with his parents. The traffic is very light and Gregory arrives at his parent's house two hours earlier than he had expected to.

Scenario 14

1. Sergei is the governor of a small state in an Eastern European country. Sergei is considering whether to pass or veto an amendment banning the death penalty and public executions.

2. If Sergei passes the amendment, then the death penalty and public executions will be banned immediately. Based on the estimates of Sergei's staff, this would prevent at least ten executions of innocents per year.

3a. **[Moral Initial]**: Sergei knows that the state uses the income from tickets sold to public executions. Banning the death penalty would eliminate funding for several ongoing investigations into gang violence, leaving citizens in danger.

3b. **[Immoral Initial]**: The public executions are very popular among Sergei's supporters. Sergei will have a much better chance of reelection if he vetoes the proposal and allows both public executions and the death penalty to continue.

4. Sergei thinks very carefully and ultimately decides to veto the proposal. The death penalty is maintained.

5a. **[Immoral Initial]**: The public executions are very popular among Sergei's supporters. Sergei will have a much better chance of reelection if he vetoes the proposal and allows both public executions and the death penalty to continue.

5b. **[Moral Initial]**: Sergei knows that the state uses the income from tickets sold to public executions. Banning the death penalty would eliminate funding for several ongoing investigations into gang violence, leaving citizens in danger.

5c. **[Control]**: Sergei attends a briefing on the accounting department of the local government. The head accountant arrives late, but the meeting still ends early as most of the plans had been discussed previously at a related meeting.

Scenario 15

1. Brian is a contestant in a game show in which pairs of participants answer questions for money but are humiliated if they fail. Brian's partner has just failed the final question, and Brian has the option to "save" him.

2. If Brian decides to save his partner, his partner will not be dropped into a tank of human excrement, and Brian will end the game with half of the $10,000 he has earned.

3a. **[Moral Initial]**: Earlier, both Brian and his partner stated their reasons for being on the show. Brian's cousin was diagnosed with lung cancer, and Brian wants help pay for his treatment.

3b. **[Immoral Initial]**: By abandoning his partner to be dropped into the tank of human excrement, Brian will keep all of his money and be given a new Mercedes Benz car as a bonus prize.

4. Brian thinks carefully and ultimately decides to abandon his partner. Brian's partner is dropped into the human excrement, and Brian collects his earnings.

5a. **[Immoral Reframing]**: By abandoning his partner to be dropped into the tank of human excrement, Brian will keep all of his money and be given a new Mercedes Benz car as a bonus prize.

5b. **[Moral Reframing]**: Earlier, both Brian and his partner stated their reasons for being on the show. Brian's cousin was diagnosed with lung cancer, and Brian wants help pay for his treatment.

5c. **[Control]**: Brian is browsing Facebook later that night and notices that a former coworker has recently gotten married. Brian tells his wife who is surprised to hear the news.

Scenario 16 - Adapted from Lichtenstein et al., 2007

1. Cassandra is a member of the transportation board in a large American city. The board is considering the addition of a lane to a dangerous section of the freeway at the edge of the city.

2. Cassandra knows that this stretch of highway is notorious for causing vehicles to lose control, and that there have been fatal accidents year round at it. Adding an additional lane would prevent approximately 50 deaths due to accidents per year.

3a. **[Moral Initial]**: Cassandra recently spoke to the mayor, who told her that the money for the lane would need to come from the education budget. By rejecting the repairs to the highway, Cassandra could prevent the city from having to lay off 100 teachers.

3b. **[Immoral Initial]**: Cassandra's husband is a personal injury lawyer who makes most of his income from settling accidents. Approving the additional lane would create less business for Cassandra's husband, decreasing their combined income by a great deal.

4. Cassandra thinks carefully and ultimately decides not to approve the construction of the new highway lane.

5a. **[Immoral Reframing]**: Cassandra's husband is a personal injury lawyer who makes most of his income from settling accidents. Approving the additional lane would create less business for Cassandra's husband, decreasing their combined income by a great deal.

5b. **[Moral Reframing]**: Cassandra recently spoke to the mayor, who told her that the money for the lane would need to come from the education budget. By rejecting the repairs to the highway, Cassandra could prevent the city from having to lay off 100 teachers.

5b. **[Control]**: When Cassandra arrives home she notices that the sports magazine "NFL Monthly" is in her mailbox. She does not subscribe to this magazine, and has received magazines that were intended for a former tenant of her apartment since she moved in.

Scenario 17

1. Dr. Robertson is the medical administrator at St. Luke's hospital. The hospital has received a $10,000 donation and she must decide how it will be spent.

2. Dr. Robertson could use the $10,000 to save the life of Caleb, an 8 year-old boy who has a rare, but curable, degenerative disease. Caleb's family cannot afford the treatment on their own, and if it were given then Caleb would be cured immediately.

3a. **[Moral Initial]**: Dr. Robertson knows that many patients who come to St. Luke's hospital cannot afford basic immunizations. Setting up a free immunization clinic with the $10,000 could provide an essential service and save hundreds of lives in the long term.

3b. **[Immoral Initial]**: Dr. Robertson knows that the hospital board has promoted past administrators who implemented new programs. Creating a free immunization clinic with the money would set Dr. Robertson up for promotion.

4. Dr. Robertson thinks very carefully and ultimately uses the $10,000 to set up the free immunization clinic.

5a. **[Immoral Reframing]**: Dr. Robertson knows that the hospital board has promoted past administrators who implemented new programs. Creating a free immunization clinic with the money would set Dr. Robertson up for promotion.

5b. **[Moral Reframing]**: Dr. Robertson knows that many patients who come to St. Luke's hospital cannot afford basic immunizations. Setting up a free immunization clinic with the $10,000 could provide an essential service and save hundreds of lives in the long term.

5c. **[Control]**: Dr. Robertson later attends a seminar on a database the hospital is implementing. The database will help to coordinate organ transplants with other area hospitals. The meeting runs late and Dr. Robertson arrives home after dark.

Scenario 18

1. Peter is a lieutenant in the United States Army during World War I, returning from a reconnaissance mission. He is behind enemy lines with Arthur, a private from his unit who was injured by a landmine.

2. By taking Arthur back with him Peter would be saving his life. Due to his injury, Arthur cannot walk and would be killed by the Germans if Peter were to leave him.

3a. **[Moral Initial]**: Peter knows that a German sneak attack is about to launch. Unless Peter leaves Arthur behind he will not reach the trenches in time to warn and save his unit.

3b. **[Immoral Initial]**: By leaving Arthur behind, Peter will avoid having to pay the money he owes Arthur. The soldiers have been playing cards in the trenches and Peter owes Arthur $1,000.

4. Peter thinks very carefully and ultimately decides to leave Arthur behind.

5a. **[Immoral Reframing]**: By leaving Arthur behind, Peter will avoid having to pay the money he owes Arthur. The soldiers have been playing cards in the trenches and Peter owes Arthur $1,000.

5b. **[Moral Reframing]**: Peter knows that a German sneak attack is about to launch. Unless Peter leaves Arthur behind he will not reach the trenches in time to warn and save his unit.

5c. **[Control]**: Peter comes across an abandoned German truck on his way back to the trenches. He checks if it can be hot-wired, but quickly realizes that the truck is inoperable.

Scenario 19

1. Angelo is a treasure hunter in the Amazon, who is returning to camp with his partner Galeno after finding a powerful magical artifact: the mystic ankh. On the path to their camp, a trap knocks Galeno and the ankh into quicksand.

2. Angelo could save Galeno by pulling him from the quicksand. The mystic ankh is sinking, and if Angelo saves Galeno it will be lost forever.

3a. **[Moral Initial]**: The villagers that hired Angelo and Galeno to find the ankh need its magical power to grow their crops. Unless it is returned to them they will all starve.

3b. **[Immoral Initial]**: By saving the ankh and letting Galeno sink, Angelo could avoid having to split the pay that was promised by the villagers that hired them.

4. Angelo thinks very carefully and ultimately decides to let Galeno sink .He pulls the mystic ankh from the quicksand.

5a. **[Immoral Reframing]**: By saving the ankh and letting Galeno sink, Angelo could avoid having to split the pay that was promised by the villagers that hired them.

5b. **[Moral Reframing]**: The villagers that hired Angelo and Galeno to find the ankh need its magical power to grow their crops. Unless it is returned to them they will all starve.

5c. **[Control]**: On his way back to camp, Angelo sees movement in the jungle. He remains still in case it is a predator, and then continues to the camp.

Scenario 20

1. Justice Adams is a judge in London, England in the year 1878. He is considering his verdict on the case of Vincent. Vincent is the son of a rich merchant and killed a man while he was drunk.

2. Justice Adams could convict Vincent. The sentence for murder in cold blood is death. Vincent would be kept in a cell overnight and hanged at dawn the next morning.

3a. **[Moral Initial]**: Justice Adams knows that Vincent owns a business, employing 100 men. These men and their families would almost certainly starve if Vincent were convicted, as the business would need to close.

3b. **[Immoral Initial]**: A wealthy colleague of Vincent's offered to pull strings to promote Justice Adams to a superior court. This offer is on the condition that Justice Adams pardons Vincent.

4. Justice Adams thinks very carefully and ultimately decides to pardon Vincent.

5a. **[Immoral Reframing]**: A wealthy colleague of Vincent's offered to pull strings to promote Justice Adams to a superior court. This offer is on the condition that Justice Adams pardons Vincent.

5b. **[Moral Reframing]**: Justice Adams knows that Vincent owns a business, employing 100 men. These men and their families would almost certainly starve if Vincent were convicted, as the business would need to close.

5c. **[Control]**: Justice Adams is scheduled to hear another murder trial after this case. The court cannot find the key witness in time, and the trial is postponed until tomorrow.

Scenario 21

1. Dr. Ingris is a professor at McAdams University. Dr. Ingris employs Eric, a graduate student, and is part of an international project investigating the causes of cancer. A fire has broken out in her lab and when she arrived the lab was filled with smoke.

2. Eric is lying unconscious on the floor. Dr. Ingris could drag her graduate student to safety, saving his life. This would leave the lab server, which stores all of the lab's data, to be destroyed in the fire.

3a. **[Moral Initial]**: The lab server contains five years of research into the causes of cancer. Losing this data would set back progress in treatment by several years and lead to hundreds of patients' needless deaths.

3b. **[Immoral Initial]**: Dr. Ingris has stored her own research on the server, which is unrelated to the cancer work. If she left the lab server behind then it could take several more years for her to obtain tenure.

4. Dr. Ingris thinks very carefully and ultimately decides to save the lab server.

5a. **[Immoral Reframing]**: Dr. Ingris has stored her own research on the server, which is unrelated to the cancer work. If she left the lab server behind then it could take several more years for her to obtain tenure.

5b. **[Moral Reframing]**: The lab server contains five years of research into the causes of cancer. Losing this data would set back progress in treatment by several years and lead to hundreds of patients' needless deaths.

5c. **[Control]**: Outside the building, Dr. Ingris learns that the fire began in the lab beside hers after unstable chemicals were left too close to a hotplate. The fire had then spread through the walls into Dr. Ingris' lab.

Scenario 22

1. Matthew is 32 years old and lives in Argentina, next door to his brother. He is woken in the night by a tornado warning. There is a storm shelter in the basement of Matthew's apartment building.

2. Matthew's brother is disabled and cannot move without help. Unless Matthew helps him, he will be killed when the tornados hit.

3a. **[Moral Initial]**: Matthew's neighbors left their two children home alone for the night. If Matthew saves his brother he will not have time to get them to shelter.

3b. **[Immoral Initial]**: Matthew is listed as the beneficiary in his brother's life insurance. If his brother dies then Matthew will receive a large compensation package.

4. Matthew thinks very carefully and ultimately decides not to save his brother.

5a. **[Immoral Reframing]**: Matthew is listed as the beneficiary in his brother's life insurance. If his brother dies then Matthew will receive a large compensation package.

5b. **[Moral Reframing]**: Matthew's neighbors left their two children home alone for the night. If Matthew saves his brother he will not have time to get them to shelter.

5c. **[Control]**: Days later, Matthew learns that there were five other tornados that night. He hears that international aid might help with the rebuilding effort.

Scenario 23

1. Carver is a contractor for a private company hired by the Federal Emergency Management Agency (FEMA). Carver is in charge of containing a nuclear meltdown in a major American city.

2. Fixing the nuclear reactor will expose Carver's crew to dangerous radiation. By waiting on special equipment for defusal, Carver could guarantee the safety of his crew when they are sent inside to contain the reaction.

3a. **[Moral Initial]**: By sending in his crew immediately, Carver could be sure that the radiation is stopped before it could contaminate the city's water supply. If the water supply is contaminated the city will be uninhabitable for years.

3b. **[Immoral Initial]**: Carver's contract makes it clear that future work is only guaranteed if the situation can be resolved quickly. By sending his crew in immediately Carver would bring more business to the company and possibly be promoted.

4. Carver thinks very carefully and ultimately decides not to wait for special equipment, sending his crew in immediately.

5a. **[Immoral Reframing]**: Carver's contract makes it clear that future work is only guaranteed if the situation can be resolved quickly. By sending his crew in immediately Carver would bring more business to the company and possibly be promoted.

5b. **[Moral Reframing]**: By sending in his crew immediately, Carver could be sure that the radiation is stopped before it could contaminate the city's water supply. If the water supply is contaminated the city will be uninhabitable for years.

5c. **[Control]**: Carver sends a team to collect radiation readings throughout the city. Hundreds of samples must be collected and sent back to the laboratory. This information will determine how the clean-up proceeds next.

Scenario 24 – Inspired by Peter Singer/Peter Unger scenario

1. Andrei is 40 years old and lives in Latvia. He is driving home from the market when he comes across the scene of a terrible accident and sees an injured man lying in the street.

2. Andrei could drive the man to a hospital. The hospital is a 30-minute drive away. The man would almost certainly survive if he was able to quickly get medical attention.

3a. **[Moral Initial]**: Andrei lives with and cares for his father, who suffers from Alzheimer's. Andrei left him sleeping at home and unless he returns immediately his father may wake and wander into the street.

3b. **[Immoral Initial]**: The injured man is covered in blood and it will get on the seats if Andrei helps him. Andrei had planned to sell his car soon and this would lower the car's value.

4. Andrei thinks very carefully and ultimately decides to leave the injured man.

5a. **[Immoral Reframing]**: The injured man is covered in blood and it will get on the seats if Andrei helps him. Andrei had planned to sell his car soon and this would lower the car's value.

5b. **[Moral Reframing]**: Andrei lives with and cares for his father, who suffers from Alzheimer's. Andrei left him sleeping at home and unless he returns immediately his father may wake and wander into the street.

5c. **[Control]**: On the drive home Andrei sees that he is running low on gas. He stops at the next gas station to fill his tank, as he will not pass another until he reaches home.