

Journal of Experimental Psychology: General

The Road to Heaven Is Paved With Effort: Perceived Effort Amplifies Moral Judgment

Yochanan E. Bigman and Maya Tamir

Online First Publication, October 13, 2016. <http://dx.doi.org/10.1037/xge0000230>

CITATION

Bigman, Y. E., & Tamir, M. (2016, October 13). The Road to Heaven Is Paved With Effort: Perceived Effort Amplifies Moral Judgment. *Journal of Experimental Psychology: General*. Advance online publication. <http://dx.doi.org/10.1037/xge0000230>

The Road to Heaven Is Paved With Effort: Perceived Effort Amplifies Moral Judgment

Yochanan E. Bigman and Maya Tamir
The Hebrew University of Jerusalem

If good intentions pave the road to hell, what paves the road to heaven? We propose that moral judgments are based, in part, on the degree of effort exerted in performing the immoral or moral act. Because effort can serve as an index of goal importance, greater effort in performing immoral acts would lead to more negative judgments, whereas greater effort in performing moral acts would lead to more positive judgments. In support of these ideas, we found that perceived effort intensified judgments of both immoral (Studies 1–2) and moral (Studies 2–7) agents. The effect of effort on judgment was independent of the outcome (Study 3) and of perceptions of the outcome extremity (Study 6). Furthermore, the effect of effort on judgment was mediated by perceived goal importance (Studies 4–6), even when controlling for perceived intentions (Studies 5–6). Finally, we demonstrate that perceived effort can influence actual behavior, such as the assignment of monetary rewards (Study 7). We discuss the possible implications of effort as a causal motivational factor in moral judgment and social retribution.

Keywords: morality, moral judgments, effort, goals, motivation

This is my quest, to follow that star

no matter how hopeless, no matter how far

—“The Impossible Dream,” from the musical *The Man of La Mancha*

One of the striking characteristics of Don Quixote is his relentless effort in pursuing the noble cause of knighthood, fighting evil, defending the weak and performing moral deeds. Would Don Quixote be judged differently had he exerted less effort in his quests, for instance, had he fought windbags rather than windmills? In this investigation, we test whether the amount of effort exerted in the performance of moral or immoral actions affects the moral judgment of the agent. In what follows, we present the scientific background and rationale for the idea that the amount of effort agents exert in performing a moral or immoral deed influences how they are morally judged.

Moral Judgments

Moral judgments are an important and often automatic process by which we create impressions of the moral aspects of other people’s behavior (e.g., Uhlmann, Pizarro, & Diermeier, 2015). Moral judgments serve as the basis for many decisions people make in the social world. They affect how people are judged and punished in courts of law and beyond them. Moral judgments also

shape social interactions and relationships. People tend to seek out and approach people they judge as moral, and avoid those they judge as immoral (e.g., Boehm, 1999; Hamlin, Wynn, & Bloom, 2007). Moral judgments also direct people’s own moral behavior (Reynolds & Ceranic, 2007) and determine the type of social information people attend to (Brambilla, Rusconi, Sacchi, & Cherubini, 2011). An understanding of moral judgments, therefore, is essential for predicting moral behavior and social relations.

Moral Judgments of Actions and Character

Research on moral judgment focuses on two distinct judgments: judgments of the action (i.e., “Is A a moral action?”) and judgments of the agent (i.e., “Is X who performed A a moral person?”). According to Pizarro and colleagues (e.g., Pizarro & Tannenbaum, 2011; Uhlmann et al., 2015), moral judgments of the agent are more relevant to social functioning than judgments of the action itself. The moral character of the agent signals whether the person is trustworthy and whether this is someone people should approach or avoid. In contrast, the morality of the action has primarily philosophical significance (e.g., “Is it moral to kill one innocent person to save many others?”), but carries less social information about the agent performing the action. Therefore, according to Pizarro and colleagues, the main motivation to form moral judgments is to infer the morality of the agent performing the action, to inform immediate social behavior.

Moral judgments of agents are sensitive not only to the outcome of the moral or immoral action, but also to the virtue of the agent herself (Uhlmann et al., 2015). For example, a person who killed one person to save several others is judged negatively, even though her action results in a positive outcome (i.e., more people live), because observers infer that the person has an immoral character (Uhlmann, Zhu, & Tannenbaum, 2013). Thus, judgments of moral character are based on information that is diagnostic in regards to

Yochanan E. Bigman, Department of Psychology and the Federmann Center for the Study of Rationality, The Hebrew University of Jerusalem; Maya Tamir, Department of Psychology, The Hebrew University of Jerusalem.

Correspondence concerning this article should be addressed to Yochanan E. Bigman, Department of Psychology, The Hebrew University of Jerusalem, Mount Scopus, Jerusalem 91905, Israel. E-mail: Yochanan.Bigman@mail.huji.ac.il

the moral character and virtue of the agent, even when they carry no information about the morality of the action itself.

One aspect of the moral character of the agent that moral judgments are especially sensitive to is the motivation of the agent. For example, Critcher, Inbar, and Pizarro (2012) found that the speed with which an agent makes a moral decision affects the way he is judged, and that this effect is mediated by attributions of motives. Similarly, Janoff-Bulman, Sheikh, and Hepp (2009) found that people were sensitive to the motives underlying moral behavior, and that the way the motives affect judgment is dependent on the type of morality. People judge agents who are motivated by duty (vs. desire) more positively in the context of proscriptive morality (i.e., avoiding negative outcomes). In contrast, people judge agents who are motivated by desire (vs. duty) more positively in the context of prescriptive morality (i.e., causing positive outcomes). Indeed, attribution of motivation plays an important role in the judgment of moral character (Reeder, 2009; Reeder, Kumar, Hesson-McInnis, & Trafimow, 2002).

Intention and Effort in Moral Judgments

Research to date has identified several factors that affect judgments of moral character (for a review, see Uhlmann et al., 2015). These include whether the outcome was a result of omission or commission (Spranca, Minsk, & Baron, 1991) and the level of agency attributed to the agent (e.g., Gray & Wegner, 2009; Gray, Young, & Waytz, 2012). One of the best documented factors that shapes moral judgments of an agent's character is the perceived intentions of the agent (e.g., Cushman, 2008, 2015). Intentions refer to the belief of an agent that the performed action would lead to a certain outcome, and the desire for that outcome. Perceived intentions play an important role in the judgment of moral character, because they reflect both on the potential outcomes of the action and on the values of the agent (Pizarro & Tannenbaum, 2011). They indicate the reasons for a person's actions, her attitudes, and general moral character. Intentions link the person's behavior to her mind, constituting a crucial part of volitional action, which is a prerequisite for moral judgment (Alicke, 2000). When an agent is described as having an intention to do harm, the harmful action is perceived to be more harmful than when it was done unintentionally (Ames & Fiske, 2013). Indeed, the intention for a negative outcome results in a negative moral judgment of the person, even when the person has no control over the actual outcome (Inbar, Pizarro, & Cushman, 2012).

Intentions, however, are not the only factors that reflect the agent's motivation in the context of moral action. Indeed, people can have similar intentions but still differ in moral character and action, as captured by the proverb "The road to hell is paved with good intentions." In his interpersonal analysis of action, Heider (1958) emphasized the importance of intentions (i.e., "what a person is trying to do") in the perception of the agent's underlying motivation. However, he proposed that another factor that reflects the agent's underlying motivation is effort or exertion (i.e., "how hard the person is trying to do it"). According to Heider (1958), both intention and exertion of effort are components of a person's motivational force. Whereas intentions refer to the direction of the motivation, effort refers to the strength of the motivation. Heider emphasized that people use perceived intentions and perceived effort as indications of the agent's motivation to perform an action.

Building on Heider's distinction, therefore, this investigation tested whether effort influences moral judgments of character.

According to Heider (1958), in addition to helping people attribute causation, perceived effort reflects the relative importance of the goal to the agent. In research on motivation, effort reflects goal commitment (e.g., Austin & Vancouver, 1996; Hollenbeck, Williams, & Klein, 1989; Oettingen, Pak, & Schetter, 2001), which is a function of goal importance (Austin & Vancouver, 1996). Indeed, people infer goals from effortful behavior (Hassin, Aarts, & Ferguson, 2005). The more effort exerted by the agent, the more likely perceivers are to make inferences about the goal of the agent. For instance, Dik and Aarts (2007) found that the goal an agent had was more salient to perceivers when the agent exerted high effort in pursuing that goal. Furthermore, the more effort an agent exerted in pursuing a goal, the more people perceived that goal as important to the agent (Dik & Aarts, 2008).

Similarly, Jara-Ettinger, Gweon, Tenenbaum, and Schulz (2015) found that even young children (5–6 years old) use the effort required to achieve a goal as an index of the subjective value of goal for the agent. Finally, Janoff-Bulman and her colleagues (2009) suggest that at least in the cases of proscriptive morality (i.e., avoiding harm), moral credit is given to agents whose behavior "involve effort and lack of ease" (p. 534).

Building on these ideas, we propose that perceived effort influences moral judgments, and that it does so independently of attribution of intentions. Because effort can reflect how important the goal is to the agent and how committed she is to pursuing it, we predicted that an agent would be judged more extremely, the more effort she exerts when performing a moral or immoral action. Agents who exert more effort in performing an immoral act would be judged as less moral, because their immoral goals would appear more important to them. On the other hand, agents who exert more effort in performing a moral behavior would be judged as more moral, because their moral goals would appear more important to them.

The Current Investigation

In a series of seven studies, participants read vignettes depicting moral or immoral behaviors. We manipulated the degree of effort the agent exerted in performing the behavior. After reading each vignette, participants rated the moral character of the agents, and the extent to which they deserve punishment or reward for their behavior. In Study 1, we tested whether the perceived effort exerted in performing immoral behaviors affects moral judgments. In Study 2, we tested whether the perceived effort in performing both immoral and moral behaviors affected both moral judgments of character as well as assignment of punishment and reward. In Study 3, we tested whether perceived effort in performing moral behaviors influences moral judgments, independent of the actual consequences of the behaviors. In Study 4, we used a between-subjects design to test whether the hypothesized effect of effort is mediated by perceived goal importance. In Study 5, we tested whether the hypothesized effect of effort is mediated by perceived goal importance or by perceived intention. In Study 6, we included a different measure of perceived intentions, and controlled for perceived outcome severity. Finally, in Study 7, we tested whether effort influences monetary allocations to a real moral agent.

We predicted that perceived effort would amplify moral judgments. Agents performing moral behaviors would be judged more positively when exerting high (vs. low) effort, and agents performing immoral behaviors would be judged more negatively when exerting high (vs. low) effort. We further predicted that this effect would be independent of perceived intentions, and instead, mediated by attributions of goal importance.

Study 1

In Study 1, we tested whether the perceived effort exerted by the moral agent shapes moral judgments. To do so, we manipulated the level of effort agents exerted when performing an immoral act. We predicted that agent perceived as exerting high (vs. low) levels of effort when performing the immoral act would be judged more negatively.

Method

Participants. Participants were 142 (53.5% male; $M_{\text{age}} = 31.27$, $SD = 9.26$) Amazon Mechanical Turk (MTurk) workers. The sample size was determined by a power analysis based on the results of an exploratory study,¹ with an estimated power of 0.95. Participants received \$1 for their participation. Three participants failed to answer attention checks correctly and were excluded from the analysis.² Results remain unchanged when they were included in the analysis.

Materials.

Moral vignettes. Participants read four vignettes depicting immoral behaviors (i.e., stealing money from a lady's purse on the subway, cheating on a test, taking public transportation without paying, and posting embarrassing information on a former partner's Facebook account). Each vignette was presented in one of two versions: a low-effort version (e.g., "The purse is wide open and within reach, so he simply puts his hand in the purse") and a high-effort version (e.g., "The purse is shut tight and out of his reach, so he reaches out to it unnoticed, and struggles to open it.") See Appendix for an example of a full vignette.

Each participant read two vignettes in the low effort versions and two vignettes in the high effort versions. We created four possible combinations that included different vignettes in either their low- or high-effort versions and assigned participants at random to read one of those specific combinations. In the first combination, for example, stealing and cheating appeared in the low effort version and not paying for public transportation and Facebook hacking appeared in the high effort version. Each vignette appeared an equal number of times in the low effort and in the high effort versions

Manipulation check. Two items assessed attributions of effort to the agent (annotated by X below) on 1–9 scales: "How difficult was it for X to do A?" and "How much effort did X invest in A?" (1 = *not difficult at all/ no effort at all*; 9 = *extremely difficult/ extreme effort*). Reliability of the two items, and for reliability of all measures throughout the article, was computed for each version of each vignette ($M_r = .70$, $SD = 0.09$).

Moral judgment. We adapted indices of moral judgment that were used in previous research (e.g., Ames & Fiske, 2013; Critcher et al., 2012; Pizarro, Uhlmann, & Salovey, 2003). Specifically, we used the following five items ($M_\alpha = 0.90$, $SD = 0.04$): "To what

extent does X have bad or good moral standards?" (1 = *bad moral standards*; 9 = *good moral standards*), "To what extent would you describe X as a good or bad person?" (1 = *bad person*; 9 = *good person*), "To what extent was X's behavior right or wrong?" (1 = *very wrong*; 9 = *very right*), "How much praise or blame should X receive for A?" (1 = *extreme blame*; 9 = *extreme praise*), "To what extent was X's behavior forbidden or permissible?" (1 = *totally forbidden*; 9 = *totally permissible*).

Procedure. Participants were randomly assigned to one of the four vignette–condition combinations. The vignettes were presented in a random order. Following each vignette, participants completed the effort manipulation check and the moral judgment questions.³ Finally, participants provided demographic information. The ethics committee of The Hebrew University of Jerusalem approved all studies reported in the article.

Results and Discussion

Manipulation check. To test the efficacy of the effort manipulation we conducted a repeated-measures analysis of variance (ANOVA), predicting perceived effort, with effort version (high vs. low) as a within-subject factor. As predicted, participants perceived agents in the high effort versions as exerting more effort ($M = 5.67$, $SD = 1.72$) than those in the low effort versions ($M = 2.48$, $SD = 1.31$), $F(1, 138) = 373.68$, $p < .001$, $\eta^2 = .73$, confirming the efficacy of the effort manipulation.

Moral judgment. We first centered moral judgments of all vignettes (vignettes in both orders were centered around the mean moral judgment of the vignette) to eliminate variance that may result from differences in the basic moral judgment of the different vignettes.⁴ We then conducted a repeated-measures ANOVA, with effort version (high vs. low) as a within-subject factor. As predicted, participants rated agents described as exerting high effort in performing immoral behaviors as less moral ($M = -0.07$, $SD = 1.03$) than those described as exerting low effort ($M = 0.07$, $SD = 0.99$), $F(1, 138) = 5.03$, $p = .026$, $\eta_p^2 = .04$. These findings support our hypothesis that perceived effort shapes moral judgment.

We ran an equivalent analysis using multilevel modeling. We used the package "lme4" (Bates, Mächler, Bolker, & Walker, 2015) in R to test all mixed model regressions reported in the article, and the package "lmerTest" (Kuznetsova, Brockhoff, &

¹ In the exploratory correlational study, participants ($N = 103$) read two vignettes depicting immoral behaviors. Participants rated their moral judgment of the agents and rated spontaneous attributions of effort and intentions. We regressed perceived effort and intentions on moral judgment, and found effort to be a significant predictor ($\beta = 0.21$, $p = .029$). We conducted a power analyses based on these finding, leading us to target sample sizes of ~140 in all our within-subject studies (Studies 1–3, 6).

² Two attention checks were embedded in the study (see Goodman, Cryder, & Cheema, 2013; Oppenheimer, Meyvis, & Davidenko, 2009). First, in a question following one of the vignettes, participants were asked to select the number 5 as their answer. Additionally, after reading all vignettes, participants were presented with four immoral behaviors, three that appeared in the study and one that did not, and were asked to select the behavior that did not appear earlier in the study.

³ After completing these key questions, participants completed a series of additional measures that were less central to the current investigation.

⁴ In all studies, results remained unchanged when conducting the analyses using uncentered scores, controlling for vignette–condition combination and for gender.

Christensen, 2015) to calculate degrees of freedom and p values. When predicting moral judgment by effort condition and vignette (using dummy coding) with random intercepts for vignette and subject, and random slopes for effort by subject, we found a significant effect for effort condition, $t(410.1) = -1.98$, $p = .049$. However, when adding a random slope for effort condition by vignette, the effect of effort was no longer significant, $t = -1.14$.

Study 2

We assumed that effort reflects goal importance. The more effort an agent exerts to behave in a certain way, the more people would believe that it was important for the agent to behave that way. Such reasoning should apply to both immoral and moral acts. It is also possible, however, that because people attribute positive metadesires to others (e.g., Pizarro, Uhlmann, & Salovey, 2003), mitigating circumstances may affect the judgment of immoral acts, but not moral ones. In Study 2, therefore, we tested whether perceived effort influences judgments of agents who perform immoral or moral acts. We predicted that greater perceived effort would lead to more extreme moral judgments, so that agents performing immoral acts would be judged more negatively, and agents performing moral acts would be judged more positively.

Moral and immoral acts generate not only social judgments of character, but also social retribution, in the shape of punishment or reward. Immoral acts may lead to judgments of immoral character and may result in punishment, whereas moral acts may lead to judgments of moral character and could result in reward. Although related, moral judgments and social retribution are both conceptually and empirically distinct (Cushman, 2008). In Study 2, therefore, we tested whether perceived effort affects not only moral judgments, but social retribution tendencies as well as.

Method

Participants. Participants were 139 (56.1% male; $M_{\text{age}} = 34.14$, $SD = 10.20$) Amazon MTurk workers. Participants received \$2 for their participation. Three participants failed to answer attention checks correctly and were excluded from the analysis.⁵ Results remain unchanged when they were included in the analysis.

Materials.

Moral vignettes. Participants read eight vignettes. Four depicting immoral behaviors (identical to those that appeared in Study 1). Four additional vignettes depicted moral behaviors (i.e., returning a lost wallet, giving a ride to a stranded person, helping an elderly woman carry groceries, and helping underprivileged children with their homework). See Appendix for an example of a full vignette. As in Study 1, each vignette was presented in one of two versions: a low-effort version and a high-effort version. Each participant read four vignettes depicting immoral behaviors, two in the low effort version and two in the high-effort version, as well as four vignettes depicting moral behaviors, two in the low-effort version and two in the high effort version. We created eight Vignette \times Effort Version combinations, so that different vignettes appeared in different versions in each combination, and participants were randomly assigned to read the vignettes in one of those combinations.

Manipulation check. The manipulation check questions were identical to those in Study 1 ($M_r = .59$, $SD = 0.08$).

Moral judgment. We measured moral judgments using the same items as in Study 1 ($M_\alpha = 0.90$, $SD = 0.02$).

Social retribution. We assessed social retribution tendencies using two items ($M_r = .68$, $SD = 0.12$): “To what extent do you think that X should be punished or rewarded for his action?” (1 = *definitely punished*; 9 = *definitely rewarded*), and “What punishment or reward should X receive for A?” (1 = *harsh punishment*; 9 = *great reward*).

Procedure. Participants were randomly assigned to one of four vignette–effort combinations for the immoral behaviors, and to one of four vignette–effort combinations for the moral behaviors. The vignettes were presented in a random order. Following each vignette participants completed the moral judgment questions. Finally, participants provided demographic information.

Results and Discussion

Effort manipulation check. We tested whether participants perceived the high-effort versions as requiring more effort than the low effort versions. To that end, we conducted a repeated-measures ANOVA, predicting perceived effort, with effort version (high vs. low) and behavior type (immoral vs. moral) as within-subject factors. As predicted, participants perceived agents in the high effort versions as exerting more effort ($M = 6.09$, $SD = 1.67$) than those in the low effort versions ($M = 2.71$, $SD = 1.15$), $F(1, 135) = 595.23$, $p < .001$, $\eta_p^2 = .82$, confirming the efficacy of our effort manipulation. We also found a main effect for behavior type, such that moral behaviors were perceived as requiring more effort ($M = 4.79$, $SD = 1.17$) than immoral behaviors ($M = 4.01$, $SD = 1.06$), $F(1, 135) = 58.52$, $p < .001$, $\eta_p^2 = .30$. The Effort Condition \times Behavior Type interaction was not significant, $F < 1$.

Moral judgment. First, we conducted a paired-sample t test, comparing moral judgments of the moral behaviors with moral judgments of the immoral behaviors, to test whether moral judgment varied according to behavior type. As predicted, moral behaviors were judged as more moral ($M = 8.05$, $SD = 0.85$) than immoral behaviors ($M = 2.49$, $SD = 0.70$), $t(125) = 47.14$, Cohen’s $d = 4.05$, confirming the efficacy of the manipulation.

Second, to test the effect of effort on moral judgment, we conducted a repeated-measures ANOVA, with effort version (high vs. low) and behavior type (moral vs. immoral) as within-subject factors. We centered all the moral judgments by vignette. As predicted, we found an effort version \times behavior type interaction, $F(1, 135) = 18.34$, $p < .001$, $\eta_p^2 = 0.12$. When considering immoral behaviors, agents who were described as exerting high effort were judged as less moral ($M = -0.06$, $SD = 0.76$) than those described as exerting low effort ($M = 0.06$, $SD = 0.82$), $F(1, 135) = 4.32$, $p = .040$, $\eta_p^2 = .03$. When considering moral behaviors, agents who were described as exerting high effort were judged as more moral ($M = 0.10$, $SD = 0.84$) than those described as exerting low effort ($M = -0.10$, $SD = 0.86$), $F(1, 135) = 24.93$, $p < .001$, $\eta_p^2 = .16$. No other effect was significant ($F < 1$). Results remained unchanged when controlling for vignette by effort combinations. Figure 1 presents the uncentered mean scores. These results replicate those in Study 1 and show that perceived

⁵ The attention checks were identical to those in Study 1, with an additional item in which participants were asked to select 5 to accommodate for study length.

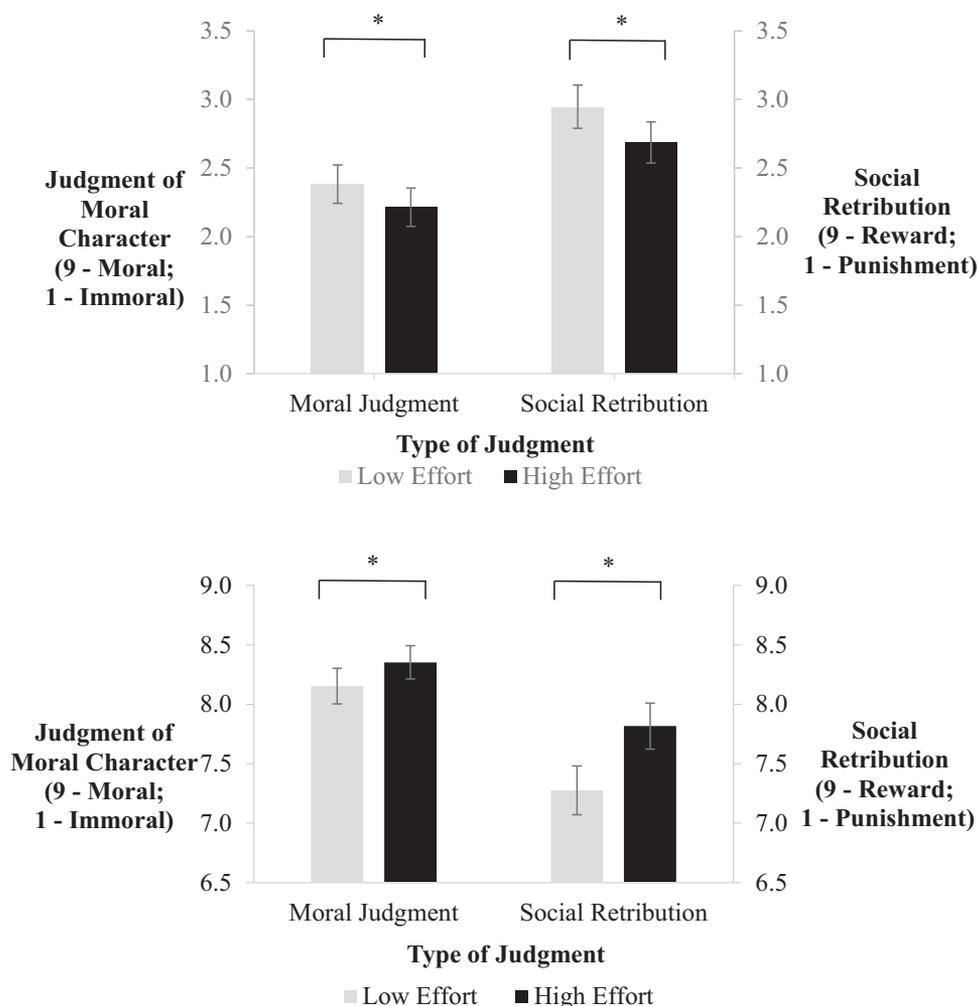


Figure 1. Mean moral judgments and social retribution of agents who exerted low (vs. high) effort in performing immoral acts (top panel) and moral acts (bottom panel; Study 2). Error bars reflect 95% confidence intervals. * $p < .05$.

effort influences moral judgments of agents performing both immoral and moral acts.

We ran an equivalent analysis using multilevel modeling, predicting moral judgment by effort condition, behavior type and their interaction with random intercepts for vignette and subject, and random slopes for effort by subject and vignette. The interaction was significant, $t(7.7) = 2.62$, $p = .032$. We then analyzed immoral and moral behaviors separately, using the same random intercepts and slopes. We found a marginally significant effect for effort on moral judgment of immoral behaviors, $t(323) = -1.93$, $p = .055$, and a significant effect for effort on moral judgment of moral behaviors, $t(3) = 3.25$, $p = .048$.

Social retribution. As might be expected, moral judgments and social retribution for each vignette in each condition were positively correlated ($M_r = .69$, $SD = 0.07$). To test the effect of effort on social retribution, we first centered all ratings of social retribution by vignette. Next, we conducted a repeated-measures ANOVA, with effort version (high vs. low) and behavior type (moral vs. immoral) as within-subject factors. As

predicted, we found an Effort \times Behavior Type interaction, $F(1, 135) = 57.35$, $p < .001$, $\eta_p^2 = 0.30$. When considering immoral behaviors, agents who were described as exerting high effort were assigned harsher punishment ($M = -0.10$, $SD = 0.77$) than those described as exerting low effort ($M = 0.09$, $SD = 0.95$), $F(1, 135) = 8.64$, $p = .004$, $\eta_p^2 = .06$. When considering moral behaviors, agents who were described as exerting high effort were assigned greater reward ($M = 0.27$, $SD = 1.12$) than those described as exerting low effort ($M = -0.27$, $SD = 1.21$), $F(1, 135) = 64.30$, $p < .001$, $\eta_p^2 = .32$. Additionally, we found a main effect for effort, $F(1, 135) = 14.00$, $p < .001$, $\eta_p^2 = .09$, such that agents in the high-effort versions were described as deserving less punishment and more reward ($M = .083$, $SD = 0.56$) than those in the low-effort versions ($M = -0.09$, $SD = 0.06$). No other effect was significant ($F < 1$). Results remained unchanged when controlling for Vignette \times Effort Combinations. Figure 1 presents the uncentered means. Perceived effort, therefore, amplifies not only moral judgments, but social retribution, as indexed by stronger

tendencies to punish in the case of immoral acts and reward in the case of moral acts.

We ran an equivalent analysis to the one described above using multilevel modeling, predicting social retribution. The interaction was significant, $t(18.3) = 4.72, p < .001$. We then analyzed immoral and moral behaviors separately, using the same random intercepts and slopes. We found a significant effect for effort on social retribution in response to immoral behaviors, $t(9.1) = -2.38, p = .041$, and a significant effect for effort on social retribution in response to moral behaviors, $t(3.4) = 7.04, p < .004$.

Study 3

In criminal law, there is a distinction between *mens rea* (i.e., a guilty mind), and *actus reus* (i.e., a guilty behavior), where both are considered necessary components of criminal behavior (e.g., Jeffries & Stephan, 1979). Cushman (2015) proposed a similar distinction in moral psychology, between a mental state component, and an event component that involves the behavior and its outcome (see also Alicke, 2000; Chakroff & Young, 2015; Pizarro & Tannenbaum, 2011). We propose that effort influences moral judgments by shaping perceptions of the mental state of the agent (i.e., goal importance), rather than perceptions of the event.

However, if effort influences inferences about the event, the effects of effort on moral judgment may be driven by differential inferences about the event, rather than the agent. Indeed, there is reason to suspect that effort influences the valuation of objective outcomes. According to Kruger, Wirtz, Van Boven, and Altermatt (2004), an outcome that requires more effort to achieve is perceived as more valuable. For example, participants liked a poem more and considered it of greater value when they believed it took the poet 18 (vs. 4) hours to write. Similarly, one could argue that a moral act that required more (vs. less) effort would be considered more moral, because it had a more positive outcome.

In Study 3, therefore, we tested whether the effects of effort on moral judgment depend on the objective consequences of the agent's behavior. We did this by using vignettes in which agents perform a moral act that fails to have its intended positive outcome. If perceived effort affects moral judgment by influencing the objective outcome of the behavior, effort should not influence moral judgment when the behavior fails to yield its intended outcome. If, however, perceived effort affects moral judgment by providing information about the motivation of the agent, effort should influence moral judgment even when the behavior fails to yield its intended outcome.

Method

Participants. Participants were 140 (56.4% male; $M_{\text{age}} = 33.94, SD = 11.09$) Amazon MTurk workers. Participants received \$1 in return for their participation. Six participants failed to answer attention checks⁶ correctly and were excluded from the analysis. Results remain unchanged when these participants were included in the analysis.

Materials.

Moral vignettes. We used three of the vignettes depicting moral behavior used in Study 2 (i.e., returning a wallet, helping kids with homework, giving someone a ride). Because it was difficult to consider a case where helping an elderly woman carry

groceries does not have the desired outcome, we replaced that vignette with a vignette that described a person baking a birthday cake for an orphan. In all vignettes, the moral behaviors failed to have their intended positive outcome. For example, the vignette that involved returning a wallet described a person trying to return a lost wallet to a person on the bus, only to discover that the person to whom he returned the wallet was not the owner. See Appendix for an example of a full vignette.

All vignettes were presented in either a low or a high effort version, as in previous studies. Each participant read two vignettes in a low effort version and two vignettes in a high effort version. We created four Vignette \times Effort Combinations, and participants were randomly assigned to read vignettes in one of the four combinations.

Manipulation check, moral judgments and social retribution.

We used the same measures as we did in Study 2 for the manipulation check ($M_r = .40, SD = 0.13$) and for social retribution ($M_r = .81, SD = 0.05$). To shorten the length of the survey, we used three of the items that we used in Studies 1–2 to measure moral judgments ($M_\alpha = 0.82, SD = 0.04$): “To what extent would you describe X as a good or bad person?” (1 = *bad person*; 9 = *good person*), “To what extent was X’s behavior right or wrong?” (1 = *very wrong*; 9 = *very right*), “How much praise or blame should X receive for A?” (1 = *extreme blame*; 9 = *extreme praise*).

Procedure. The procedure was identical to that of Studies 1–2.

Results and Discussion

Effort manipulation check. To test the efficacy of our effort manipulation, we ran a repeated-measures ANOVA, predicting perceived effort from effort version. As predicted, participants rated the agents in the high-effort versions ($M = 6.71, SD = 1.41$) as exerting more effort than agents in the low-effort versions ($M = 4.04, SD = 1.60$), $F(1, 133) = 232.97, p < .001, \eta_p^2 = 0.64$.

Moral judgment. We tested whether effort exerted by the agents affected how they were morally judged, even when their actions did not have the intended outcomes. As in Studies 1–2, we first centered the moral judgments in all vignettes (according to vignette means across effort conditions). Next, we ran a repeated-measures ANOVA, predicting moral judgment, with effort (low vs. high) as a within-subject factor. As predicted, agents who exerted high effort in performing moral behaviors were judged as more moral ($M = 0.14, SD = 1.03$) than those who exerted low effort ($M = -0.14, SD = 1.03$), $F(1, 133) = 13.07, p < .001, \eta_p^2 = 0.09$. Figure 2 presents the uncentered means. These findings rule out the possibility that the effect of effort on moral judgment is driven by differences in expected outcomes.

Social retribution. Moral judgments and social retribution for each vignette in each condition were positively correlated ($M_r = .63, SD = 0.09$). To test whether perceived effort affected social retribution tendencies, we ran a repeated-measures ANOVA predicting social retribution, with effort (low vs. high) as a within-subject factor. As in Studies 1–2, we centered ratings of social retribution in all vignettes (according to vignette means across effort conditions). As predicted, agents who exerted high effort in

⁶ Attention checks were the same as in Study 1.

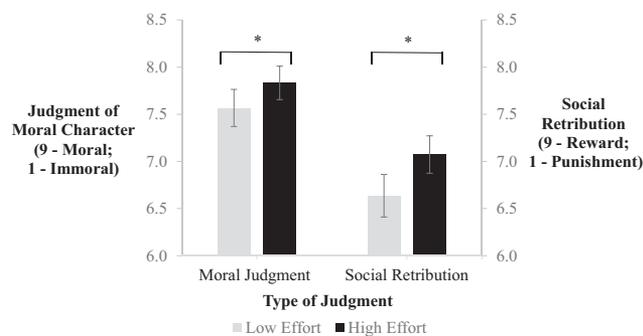


Figure 2. Mean moral judgments and social retribution of agents who exerted low (vs. high) effort in performing immoral acts that failed to have their intended outcome (Study 3). Error bars reflect 95% confidence intervals. * $p < .05$.

performing moral behaviors were seen as deserving a greater reward ($M = 0.23$, $SD = 1.16$) than those who exerted low effort ($M = -0.23$, $SD = 1.29$), $F(1, 133) = 26.99$, $p < .001$, $\eta_p^2 = 0.17$. Results for the uncentered scores are presented in Figure 2.

We ran equivalent analyses using multilevel modeling. We ran two analyses, predicting moral judgment and social retribution by effort condition with random intercepts for vignette and subject, and random slopes for effort by subject and vignette. We found a significant effect on moral judgment, $t(6.6) = 3.20$, $p = .017$, and on social retribution, $t(40.3) = 5.13$, $p < .001$.

Study 4

Study 4 was designed to address both methodological and theoretical concerns. First, from a methodological standpoint, Studies 1–3 were conducted on MTurk samples on the Internet. In Study 4, we sought to replicate the results of those studies using a student sample in the laboratory. Second, Studies 1–3 involved within-subject designs. In Study 4, we sought to demonstrate that our effects do not depend on between-trial comparisons that are likely to occur in within-subject designs, by using a between-subjects design instead (e.g., Hsee, Loewenstein, Blount, & Bazerman, 1999; Hsee & Zhang, 2010). From a theoretical standpoint, after showing that effort affects judgment even in the absence of the expected outcome of the behavior, in Study 4, we tested whether the effect of effort on moral judgment is mediated by attributions of goal importance. Participants read a description of an agent performing a moral behavior, described as requiring either high or low effort. We predicted that the agent who is described as exerting high (vs. low) effort would be judged as more moral, because performing the moral act is perceived as more important to him.

Method

Participants. Participants were 112 university students⁷ (23.2% male; $M_{\text{age}} = 23.25$, $SD = 2.35$). Participants completed the study in the lab and received either class credit or \$10 (roughly US \$2.5) as compensation.

Materials.

Moral vignette. We used the “returning the wallet” vignette that we used in Studies 2–3. We described the agent as a fellow university student.

Manipulation check, moral judgment and social retribution.

We used the same measures as we did in Studies 2–3 for the effort manipulation check ($M_r = .59$, $SD = 0.14$) and social retribution ($M_r = .82$, $SD = 0.02$). To keep the study short, we used only two of the items used in Studies 1–3 to measure moral judgment ($M_r = .41$, $SD = 0.13$): “To what extent would you describe X as a good or bad person?” and “How much praise or blame should X receive for A?”

Attribution of goal importance. We measured attribution of goal importance with two items ($M_r = .75$, $SD = 0.01$): “How important was it for X to perform A?” (1 = *not at all*; 9 = *extremely*) and “How committed was X to perform A?” (1 = *not at all*; 9 = *extremely*).

Procedure. To avoid a ceiling effect, all participants first read the same vignette depicting the agent not performing a moral behavior (i.e., not helping an elderly lady carry groceries from the store). Effort was not mentioned in the first vignette. Participants were then randomly assigned to conditions and read the target vignette. In the low-effort condition, the agent was described as exerting low effort to return the wallet, whereas in the high-effort condition, the agent was described as exerting high effort to return the wallet. Participants completed the dependent variables, and provided demographic information.

Results and Discussion

Manipulation check. To test the efficacy of our effort manipulation, we ran an independent samples t test, predicting attributions of effort from effort conditions. As expected, we found a significant effect for condition, $t(111) = 9.49$, $p < .001$, Cohen’s $d = 1.80$. Participants considered the agent in the high-effort condition as exerting more effort ($M = 5.74$, $SD = 1.70$) than the agent in the low-effort condition ($M = 2.76$, $SD = 1.61$), confirming the efficacy of our effort manipulation.

Moral judgments. To test the effect of the effort manipulation on moral judgments, we ran a simple regression, predicting moral judgments from effort conditions (low effort = -0.5 ; high effort = 0.5). As expected, we found a significant effect for effort condition, $\beta = 0.28$, $t(111) = 3.04$, $p = .003$. Our manipulation of effort influenced judgments of morality such that in the low-effort condition the agent was judged less positively ($M = 7.28$, $SD = 1.11$) than in the high-effort condition ($M = 7.84$, $SD = 0.85$).

Goal importance mediates effects on moral judgment.

Next, we tested for mediation of the effect of effort on moral judgment by perceived goal importance. Following Baron and Kenny (1986), we first regressed perceived goal importance on effort condition. As expected, condition had a significant effect on perceived goal importance, $\beta = 0.38$, $t(110) = 4.30$, $p < .001$. We then regressed moral judgments on both perceived goal importance and effort condition. Motivation was a significant predictor, $\beta = 0.47$, $t(110) = 5.36$, $p < .001$, whereas condition was no longer significant, $\beta = 0.12$, $t(110) = 1.38$, $p = .170$ (see Figure 3). The parallel analysis using Preacher and Hayes’ (2008) bootstrapping method (5000 samples) yielded identical results. The direct effect of condition on moral judgments was not significant ($p = .482$,

⁷ We aimed for 100 participants, 50 per cell. However, due to unexpected over enrollment, we ended up with more participants than originally planned.

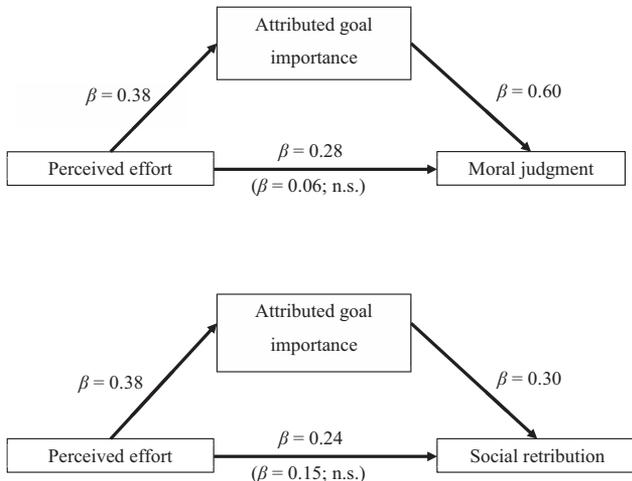


Figure 3. Mediation of the effects of effort on moral judgments (top panel) and social retribution (bottom panel) by attributed goal importance (Study 4).

95% confidence interval [CI] $[-0.21, 0.45]$), whereas the total effect ($B = .57, SE = 0.19, p = .003, 95\% CI [0.20, 0.94]$) and the indirect effect, mediating the effect of effort condition on moral judgment by perceived goal importance ($B = 0.45, SE = 0.11, 95\% CI [0.26, 0.69]$) was significant. These findings demonstrate that the effect of effort on moral judgments was fully mediated by perceived goal importance

Social retribution. The correlation between moral judgment and social retribution was positive and significant, $r = .48, p < .001$. To test the effect of our effort manipulation on social retribution tendencies, we ran a simple regression, predicting social retribution from effort condition (low effort = -0.5 ; high effort = 0.5). As predicted, we found a significant effect for effort condition, $\beta = 0.24, t(110) = 2.59, p = .011$. Effort influenced social retribution such that agents who were described as exerting high effort were assigned greater reward ($M = 6.34, SD = 1.12$) than agents described as exerting low effort ($M = 5.82, SD = 1.00$).

Goal importance mediates effects on social retribution. Next, we tested whether goal importance mediated the effect of effort on social retribution. When regressing social retribution on both goal importance and condition, goal importance was a significant predictor, $\beta = 0.24, t(110) = 2.47, p = .015$, whereas effort condition was not, $\beta = 0.15, t(110) = 1.5, p = .133$. Using Preacher and Hayes' (2008) bootstrapping method (5,000 samples), the direct effect of effort condition on social retribution was not significant ($p = .133, 95\% CI [-0.10, 0.74]$), whereas the total effect ($B = .52, SE = 0.20, p = .011, 95\% CI [0.12, 0.92]$) and the indirect effect mediated by perceived goal importance ($B = 0.20, SE = 0.09, 95\% CI [0.07, 0.40]$) were significant. This analysis indicates that the effect of effort on social retribution was fully mediated by perceived goal importance (see Figure 3).⁸

Study 5

Following Heider (1958), we argue that to assess motivation, people rely on both intentions and effort. Whereas intentions reflect the content of motivation, effort reflects the strength of

motivation. In the case of moral judgment, there is evidence for the role of perceived intentions (e.g., Cushman, 2008, 2015). Although effort is likely linked to intentions, we expected the effect of effort on moral judgment to be distinct from those of intentions. To test this prediction, in Study 5 we tested whether the effects of effort on moral judgment and social retribution are mediated by perceived goal importance, and whether they are independent of perceived intentions. We predicted that, as in Studies 1–4, effort would amplify moral judgments, that this effect would be mediated by perceived goal importance, and that it would persist even when controlling for perceived intentions.

Method

Participants. Participants were 101 university students (36.6% male, 3% failed to mention their gender; $M_{age} = 24.65, SD = 2.52$). Participants were offered a free snack in return for their participation.

Materials.

Moral vignettes. We used three vignettes depicting moral behaviors, identical to those used in Studies 2–4 (i.e., returning a lost wallet, giving a ride and helping underprivileged children).

Manipulation check, moral judgments, social retribution, goal importance, and perceived intentions. We used the same measures as we did in Studies 2–4 for the effort manipulation check ($M_r = .62, SD = 0.15$) and social retribution ($M_r = .65, SD = 0.15$). For the sake of brevity, we used only two of the items used in Studies 1–4 (i.e., the same items that we used in Study 4) to measure moral judgment ($M_r = .52, SD = 0.13$): “How much praise or blame should X receive for A?” and “To what extent would you describe X as a good or bad person?” Goal importance was measured with the following item, used in Study 4: “How important was it for X to perform A?” Finally, perceived intentions were assessed with the following item: “To what extent do you think X intended for his behavior to have its consequence?” (1 = *not at all*; 9 = *extremely*).

Procedure. Participants were randomly assigned to one of two conditions. In the low effort condition, agents were described as exerting low effort in performing a moral behavior. In the high effort condition, agents were described as exerting high effort in performing the same moral behavior. Participants read the vignettes and answered the questions about moral judgments, social retribution, perceived effort and attributed intentions.⁹ Participants then provided basic demographic information.

Results and Discussion

We included more than one vignette to increase the reliability of our findings, and accounted for the increased variability in a mixed-model mediation analysis. We coded the effort condition

⁸ We tested whether the effects of effort on moral judgment and on social retribution are independent, by controlling for social retribution in the mediation analysis of moral judgment. The effects in the mediation analyses was replicated, showing that these effects were independent.

⁹ Participants also rated “the degree to which they think X has the capacity to do good” (1 = *not at all* to 9 = *extremely*) and “the degree to which X was responsible for his actions” (1 = *not at all* to 9 = *extremely*). These items were not central to the current investigation and were not influenced by the effort manipulation.

(-1 = low effort condition; 1 = high effort condition). Because the analysis provides only unstandardized coefficients, we standardized all dependent variables, such that the coefficients of the regression are equivalent to standardized coefficients, such that the computed coefficients are equivalent to Betas and reported as such. Throughout the analyses, the model did not converge when specifying random slopes for effort by subject and therefore we do not specify that random slope.

Manipulation check. To test the efficacy of our effort manipulation, we ran a mixed model regression, predicting standardized perceived effort from effort condition, with random intercepts for vignette and subject, and with a random slope for effort by vignette. As expected, effort condition was a significant predictor of perceived effort, $\beta = 0.66$, $SE = 0.10$, $t(4.2) = 6.38$, $p = .003$, such that agents in the low effort condition were perceived as exerting less effort ($M_{\text{raw score}} = 3.51$, $SD = 1.98$) than those the high effort condition ($M_{\text{raw score}} = 6.64$, $SD = 1.59$), confirming the efficacy of our effort manipulation.

Perceived goal importance and intention. To test the distinctiveness of perceived goal importance and perceived intentions, we calculated the correlation between the two for each version of each vignette. The average correlation was moderate, $r = .36$, $SD = 0.13$, meaning that although the constructs are related, they were not perceived as identical.

Moral judgment, goal importance and intention. To test the effect of effort on moral judgments, we ran a mixed model regression, predicting standardized moral judgments from effort condition with random intercepts for subject and vignette, and a random slope for effort condition by vignette. As expected, condition was a significant predictor of moral judgments, $\beta = 0.20$, $SE = 0.09$, $t(95.5) = 2.26$, $p = .026$, such that agents who exerted high effort were perceived as more moral ($M_{\text{raw score}} = 8.18$, $SD = 1.04$) than those who exerted low effort ($M_{\text{raw score}} = 7.71$, $SD = 1.21$). When adding perceived intention to the model, the effect of effort remained significant, $\beta = 0.18$, $SE = 0.09$, $t(99.2) = 2.09$, $p = .038$, demonstrating that the effect of effort on moral judgments was independent of perceived intentions.

To test whether goal importance mediated the effect of effort on moral judgment, following Baron and Kenny (1986), we regressed perceived goal importance on effort condition, controlling for perceived intention with random intercepts for subject and vignette, and random slopes for effort condition by vignette. Effort condition was a significant predictor of perceived goal importance, $\beta = 0.34$, $SE = 0.08$, $t(5.6) = 4.21$, $p = .007$, such that participants believed that the moral behavior was more important to agents who exerted high effort ($M_{\text{raw score}} = 8.16$, $SD = 1.10$) than agents who exerted low effort ($M_{\text{raw score}} = 6.97$, $SD = 1.59$) in performing the behavior. Perceived intention was also a significant predictor of perceived goal importance, $\beta = 0.26$, $SE = 0.05$, $t(256) = 4.98$, $p < .001$, such that the more the act was perceived as intentional, the more important it was believed to be for the agent.

To test the link between goal importance and moral judgment, we regressed moral judgment on perceived goal importance and perceived intention with random intercepts for vignette and subject. Perceived goal importance predicted moral judgment significantly, $\beta = 0.25$, $SE = 0.05$, $t(245.2) = 5.71$, $p < .001$. No other effect was significant ($ts < 1$). Finally, we regressed moral judgments on effort condition, perceived goal importance and per-

ceived intention, with random intercepts for subject and vignette, and random slopes for effort condition by vignette. While perceived goal importance remained a significant predictor, $\beta = 0.24$, $SE = 0.04$, $t(233.9) = 5.40$, $p < .001$, effort condition ($t = 1.15$) and perceived intention ($t = 0.82$) were no longer significant predictors (see Figure 4).

We repeated this mediation analysis with the bootstrapping method (using the “mediation” package, Tingley, Yamamoto, Hirose, Keele, & Imai, 2014, 5,000 samples), testing the mediation of the effect of effort condition on moral judgment by perceived goal importance, while controlling for perceived intention. Due to the analyses restrictions (i.e., the “mediate” package does not support more than one level per model) in all mediation analyses, we could specify only a random intercept for subject and a random slope for effort condition by subject. To account for vignette variability, we dummy coded the vignettes, with the vignette depicting returning the wallet as the reference group. The casual mediated effect was significant, $\beta = 0.08$, 95% CI [0.04, 0.13], whereas the direct effect was not, $\beta = 0.10$, 95% CI [-0.07, 0.26]. These analyses show that the effect of effort on moral judgment was fully mediated by perceived goal importance, even when controlling for perceived intentions.

Social retribution, goal importance and intention. The correlation between moral judgment and social retribution was positive and significant, $M_r = .34$, $SD = 0.09$, $p < .001$. To test the effect of effort on social retribution, we ran a mixed model regression, predicting social retribution from effort condition, with random intercepts for subject and vignette and random slopes for effort condition by vignette. As expected, effort influenced social retribution, $\beta = 0.28$, $SE = 0.08$, $t(23.5) = 3.34$, $p = .003$, such that agents who were described as exerting high effort were assigned greater reward ($M_{\text{raw score}} = 6.42$, $SD = 1.32$) than agents who were described as exerting low effort ($M_{\text{raw score}} = 5.73$, $SD = 1.03$). The effect of effort remained significant when perceived intention was added to the model, $\beta = 0.26$, $SE = 0.08$, $t(24.5) = 3.05$, $p = .005$.

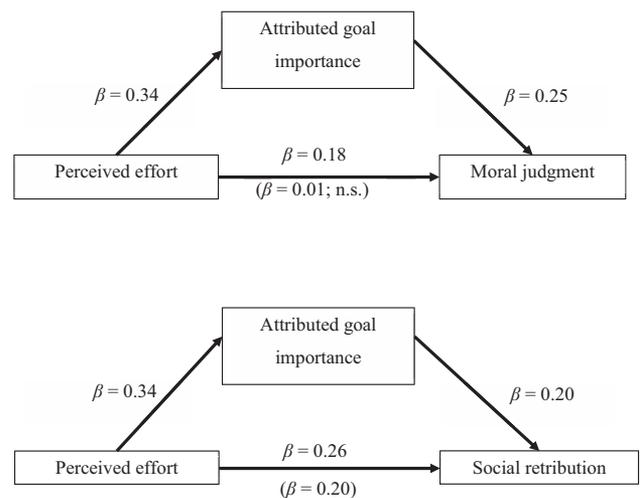


Figure 4. Mediation of the effects of effort on moral judgments (top panel) and social retribution (bottom panel) by attributed goal importance, controlling for perceived intentions (Study 5).

Next, we regressed social retribution on perceived goal importance and perceived intention, with random intercepts for vignette and subject. Perceived goal importance was a significant predictor of social retribution, $\beta = 0.20$, $SE = 0.05$, $t(273.6) = 3.77$, $p < .001$, whereas perceived intention was not, $t = 1.31$, $p = .191$. Following Baron and Kenny (1986), we regressed social retribution on effort condition, perceived intention and perceived goal importance, with random intercepts for subject and vignette and random slopes for effort condition by vignette. Both perceived goal importance, $\beta = 0.16$, $SE = 0.05$, $t(254.2) = 3.00$, $p = .003$, and effort condition, $\beta = 0.20$, $SE = 0.08$, $t(37.7) = 2.41$, $p = .021$, remained significant predictors. Perceived intentions, on the other hand, was not a significant predictor, $t = 1.07$ (see Figure 4).

We proceeded to use the bootstrapping method (Tingley et al., 2014; 5000 samples), testing the mediation of the effect of effort condition on social retribution by perceived goal importance, while controlling for perceived intention. Due to the analyses restrictions, we used a random intercept for subject, and a random slope for effort condition by subject. To account for vignette variability, we dummy coded the vignettes, with the vignette depicting returning the wallet as the reference group. The casual mediated effect was significant, $\beta = 0.06$, 95% CI [0.02, 0.10], as well as the direct effect, $\beta = 0.20$, 95% CI [0.04, 0.36]. These analyses show that the effect of effort on social retribution was partially mediated by perceived goal importance, even when controlling for perceived intentions.

Study 6

Study 6 was designed to address three issues. First, it is possible that the perceived outcome of effortful moral behaviors is more positive than the perceived outcome of effortless moral behaviors. Such differences in perceived outcomes, if they exist, could account for the effects of effort on judgment. Although this issue was addressed to some extent in Study 3, where actions led to no concrete outcomes, we wanted to address this issue directly in Study 6. Therefore, we directly assessed the perceived outcomes of behavior.

Second, intentions can refer to the expectation that an action would have a specific outcome or to the desire for the outcome (Cushman, 2008). In Study 5, we were able to show that the effects of effort persisted when controlling for the first aspect of intention, by assessing agents' expectations that their behavior would have the intended outcome. In Study 6, we tested whether the effects of effort persisted when controlling for the second aspect of intention, by assessing the agent's desire for the outcome. Finally, we wanted to test whether the mediating role of goal importance found in Study 5 replicates in another sample with within-subject design.

Method

Participants. Participants were 140 (59.3% male; $M_{\text{age}} = 33.40$, $SD = 10.28$) Amazon MTurk workers. Participants received \$1 in return for their participation. Eight participants failed to answer attention checks correctly and were excluded from the

analysis. Results remain unchanged when these participants were included in the analysis.

Materials.

Moral vignettes. We used the four moral vignettes used in Study 2 (i.e., returning a lost wallet, giving a ride, helping with groceries and helping underprivileged children).

Manipulation check, attention checks, moral judgments, social retribution, goal importance, and perceived intentions. We used the same measures as we did in Studies 2–5 for the effort manipulation check ($M_r = .60$, $SD = 0.09$) and social retribution ($M_r = .68$, $SD = 0.09$). We used the three items used in Study 3 to measure moral judgment ($M_\alpha = 0.73$, $SD = 0.09$). Goal importance was measured with the following item, "How important was it for X to A?" (e.g., "How important was it for Jacob to return the wallet?"; 1 = *not at all*; 9 = *extremely*). Perceived intentions were assessed with the following item: "To what extent do you think X intended to A?" (e.g., "to what extent do you think Jacob intended to return the wallet?"; 1 = *not at all*; 9 = *extremely*). Finally, we measured perceived outcome with the following question: "How would you describe the outcome of x's behavior?" (1 = *extremely negative*; 9 = *extremely positive*). We used the same attention checks as in Studies 1–3.

Procedure. The procedure was identical to the procedure in Studies 1–3.

Results and Discussion

We ran all the regression analyses reported below using mixed model regression (in R, using the "lme4" package). We coded the effort condition ($-1 = \text{low effort condition}$; $1 = \text{high effort condition}$). Because the analysis provides only unstandardized coefficients, we standardized all dependent variables, such that the coefficients of the regression are equivalent to standardized coefficients, and the computed coefficients are equivalent to betas and reported as such.

Manipulation check. To test the efficacy of our effort manipulation, we ran a mixed model regression, predicting standardized perceived effort from effort condition, with random intercepts for subject and vignettes, and random slopes for effort condition by subject and by vignette. As expected, effort condition was a significant predictor of perceived effort, $\beta = 0.61$, $SE = 0.06$, $t(4.5) = 10.47$, $p < .001$, such that agents in the low effort condition were perceived as exerting less effort ($M_{\text{raw score}} = 3.47$, $SD = 2.02$) than those the high effort condition ($M_{\text{raw score}} = 6.39$, $SD = 1.70$), confirming the efficacy of our effort manipulation.

Perceived goal importance and intention. To test the distinctiveness of perceived goal importance and perceived intentions, we calculated the correlation between the two for each version of each vignette. The average correlation was moderate, $r = .42$, $SD = 0.15$, showing that the constructs were related, but not perceived as identical.

Effort, intention, and outcome. To test whether our effort manipulation affected attributions of intention and perceptions of outcome severity, we ran two analyses, the first predicting perceived intentions and the second predicting perceived outcome by the effort condition. In both analyses, we specified random intercepts for subject and vignette, and random slopes for effort condition by vignette and subject. Neither of the analyses found a significant effect for effort condition (predicting intention: $t =$

1.19; predicting outcome: $t = 0.88$). We found no evidence that our effort manipulation influenced attributions of intention or perceived outcomes.

Moral judgment and goal importance. To test the effect of effort on moral judgments, we ran a mixed model regression, predicting moral judgments from effort condition, with random intercepts for subject and vignette and slopes for effort condition by subject and by vignette. As expected, effort condition was a (marginally) significant predictor of moral judgments, $\beta = 0.17$, $SE = 0.04$, $t(2.6) = 3.39$, $p = .053$, such that agents who exerted high effort were perceived as more moral ($M_{\text{raw score}} = 8.25$, $SD = 0.95$) than those who exerted low effort ($M_{\text{raw score}} = 7.95$, $SD = 0.85$). The effect of effort remained significant even when adding perceived intentions and perceived outcomes to the model, $\beta = 0.12$, $SE = 0.03$, $t(372) = 4.42$, $p < .001$, demonstrating that the effect of effort on moral judgments was independent of perceived intentions and perceived outcomes.

To test whether goal importance mediated the effect of effort on moral judgment, following Baron and Kenny (1986), we regressed perceived goal importance on effort condition, perceived intentions and perceived outcomes, with random intercepts for subject and vignette, and random slopes for effort condition by subject and vignette. Effort condition was a significant predictor of perceived goal importance, $\beta = 0.08$, $SE = 0.03$, $t(169.6) = 2.57$, $p = .011$, such that participants believed that the moral behavior was more important to agents who exerted high effort ($M_{\text{raw score}} = 7.70$, $SD = 1.38$) than to agents who exerted low effort ($M_{\text{raw score}} = 7.32$, $SD = 1.59$). Perceived intentions, $\beta = 0.29$, $SE = 0.04$, $t(347.9) = 7.48$, $p < .001$, and perceived outcomes, $\beta = 0.33$, $SE = 0.04$, $t(487.2) = 8.55$, $p < .001$, were also significant predictors of perceived goal importance, such that the more the agent intended for the outcomes to occur the more extreme the perceived outcome, and the more important it was for the agent.

To test the link between goal importance and moral judgment, we regressed moral judgment on perceived goal importance, perceived intentions and perceived outcomes, with random intercepts for subject and vignette, and random slopes for perceived goal importance by subject and by vignette. Perceived goal importance predicted moral judgment, $\beta = 0.27$, $SE = 0.04$, $t(119.2) = 5.76$, $p < .001$. Perceived intentions, $\beta = 0.11$, $SE = 0.03$, $t(513.9) = 3.22$, $p = .001$, and perceived outcomes, $\beta = 0.41$, $SE = 0.04$, $t(518.5) = 11.04$, $p < .001$, predicted moral judgment as well, but their effects were independent of goal importance. Finally, we regressed moral judgment on effort condition, perceived goal importance, perceived intentions and perceived outcomes, with random intercepts for subject and vignette, and random slopes for effort condition by subject and vignette. All four predictors were significant, effort: $\beta = 0.09$, $SE = 0.03$, $t(373.8) = 3.83$, $p < .001$; goal importance: $\beta = 0.22$, $SE = 0.04$, $t(506.4) = 5.82$, $p < .001$; intention: $\beta = 0.10$, $SE = 0.03$, $t(187.3) = 3.04$, $p = .002$; outcome: $\beta = 0.44$, $SE = 0.04$, $t(512.1) = 12.11$, $p < .001$, suggesting partial mediation by goal importance (see Figure 5).

We repeated this mediation analysis with the bootstrapping method (using the “mediation” package, Tingley et al., 2014, 5,000 samples), testing whether perceived goal importance mediated the effect of effort on moral judgment, controlling for perceived intentions and perceived outcomes. Due to the analyses’ restrictions, we specified a random intercept for subject and a random slope for effort condition by subject. To account for vignette variability, we

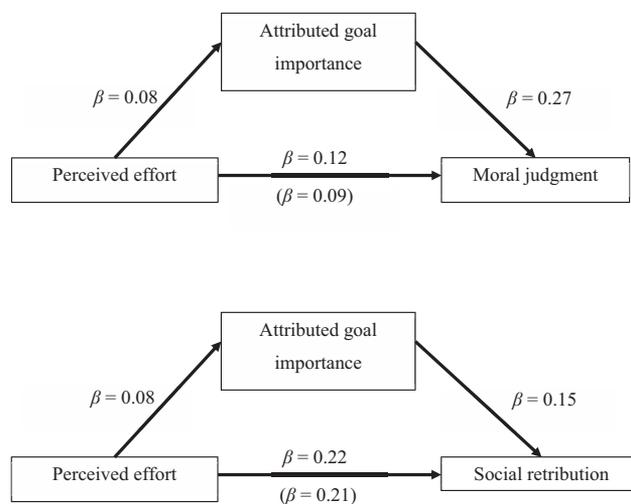


Figure 5. Mediation of the effects of effort on moral judgments (top panel) and social retribution (bottom panel) by attributed goal importance, controlling for perceived intentions and perceived outcome extremity (Study 6).

dummy coded the vignettes, with the vignette depicting returning the wallet as the reference group. The causal mediated effect was significant, $\beta = 0.02$, 95% CI [0.004, 0.03], as was the direct effect, $\beta = 0.10$, 95% CI [0.05, 0.15], indicating that the effect of effort on moral judgment was partially mediated by perceived goal importance, even when controlling for perceived intentions and perceived outcomes.

Social retribution, goal importance and intentions. The correlation between moral judgment and social retribution was positive and significant, $M_r = .60$, $SD = 0.08$, $p < .001$. To test the effect of effort on social retribution, we ran a mixed model regression, predicting social retribution from effort condition, with random intercepts for subject and vignette, and random slopes for effort condition by subject and vignette. As expected, effort influenced social retribution, $\beta = 0.25$, $SE = 0.03$, $t(8.0) = 8.10$, $p < .001$, such that agents who were described as exerting high effort were assigned greater reward ($M_{\text{raw score}} = 7.6$, $SD = 1.21$) than agents who were described as exerting low effort ($M_{\text{raw score}} = 6.96$, $SD = 1.30$). The effect of effort remained significant when perceived intentions and perceived outcomes were added to the model, $\beta = 0.22$, $SE = 0.04$, $t(2.3) = 5.23$, $p = .026$.

Next, we tested the link between goal importance and social retribution, we regressed social retribution on perceived goal importance, perceived intentions and perceived outcomes, with random intercepts for subject and vignette and random slopes for perceived goal importance by subject and by vignette. Perceived goal importance significantly predicted social retribution, $\beta = 0.15$, $SE = 0.05$, $t(21.5) = 2.83$, $p = .010$. Perceived intention, $\beta = 0.17$, $SE = 0.04$, $t(454.5) = 4.08$, $p < .001$, and perceived outcomes, $\beta = 0.20$, $SE = 0.04$, $t(402.0) = 4.76$, $p < .001$, also predicted social retribution. Finally, we regressed social retribution on effort condition, perceived goal importance, perceived intentions and perceived outcomes, with random intercepts for subject and vignette and random slopes for effort condition by subject and vignette. All four predictors were significant, effort: $\beta = 0.21$,

$SE = 0.04$, $t(2.2) = 5.22$, $p = .028$; goal importance: $\beta = 0.09$, $SE = 0.04$, $t(487.8) = 2.36$, $p = .019$; intentions: $\beta = 0.14$, $SE = 0.04$, $t(478.0) = 3.63$, $p < .001$; and perceived outcomes: $\beta = 0.19$, $SE = 0.04$, $t(505.6) = 4.74$, $p < .001$, suggesting partial mediation (see Figure 5).

We repeated this mediation analysis with the bootstrapping method (using the “mediation” package, Tingley et al., 2014, 5,000 samples), testing the mediation of the effect of effort condition on moral judgment by perceived goal importance, while controlling for perceived intentions and perceived outcomes. Due to the analysis’ restrictions, we used a random intercept for subject and a random slope for effort condition by subject. To account for vignette variability, we dummy coded the vignettes, with the vignette depicting returning the wallet as the reference group. The causal mediated effect was significant, $\beta = 0.01$, 95% CI [0.001, 0.019], as was the direct effect, $\beta = 0.21$, 95% CI [0.16, 0.26], indicating that the effect of effort on moral judgment was partially mediated by perceived goal importance, even when controlling for perceived intentions and perceived outcomes.

Study 7

Our main goal in Study 7 was to test whether the effort people exert in performing moral and immoral behaviors can carry implications for real social judgments and behavior in moral contexts. To do so, we created a situation in which people exerted either high or low effort that had moral consequences, we then described their behavior to a new group of participants and asked them to indicate the degree of reward they deserve.

In the first phase of the study, we asked participants to complete a series of math problems, and then we gave \$5 to charity on their behalf, in return for their participation. Participants in the low effort condition performed a series of easier problems (e.g., “5 + 9”), and participants in the high effort condition performed a series of more difficult problems (e.g., “637 × 527”). In the second phase of the study, we recruited a new sample of participants and told them that in a prior study we conducted, participants solved a series of math problems and in return for their participation, we donated \$5 to charity. Participants in one condition were shown examples of the problems given to a participant in the low effort condition, and participants in another condition were shown examples of the problems given to a participant in the high effort condition. We controlled for possible effects of ability, time, and perceived outcome, by telling participants that regardless of whether responses were accurate or not, as long as the participant worked for 5 min on the problems, \$5 were donated to charity on their behalf. Participants then rated to what extent they deserved a monetary bonus for their behavior. At the end of the study, the monetary bonus was paid to a random participant from the group that was perceived as more deserving of the bonus.

Method

Participants. Eight university students (12.5% male, 87.5% female; $M_{\text{age}} = 23.50$, $SD = 0.76$) participated in the first phase of the study. In the second phase of the study, participants were 101 university students (42.6% male, 55.4% female, two did not report their gender; $M_{\text{age}} = 24.47$, $SD = 2.41$). Four participants failed to complete the survey and could not be included in the analysis.

Procedure. In the first phase of the study, 8 participants completed one of two tasks in the laboratory, and we subsequently donated ₪20 (~ US \$5) to a charity of their choice (e.g., The Israel Cancer Association). In the low effort condition, participants spent 5 min solving relatively easy math problems, involving addition of two single digit numbers (e.g., “5 + 9”). In the high effort condition, participants spent 5 min solving relatively difficult math problems, involving multiplication of two three digit numbers (e.g., “637 × 527”). A pretest ($N = 32$) confirmed that people perceived the difficult math problems ($M = 3.76$, $SD = 1.30$, on a scale of 1 = *requires very little effort* to 5 = *requires a lot of effort*) as significantly more difficult than the easy math questions ($M = 2.20$, $SD = 0.94$), $t(30) = 3.85$, $p < .001$, Cohen’s $d = 1.38$.

In the second phase of the study, an experimenter approached a different group of participants at the university library. She told participants that we have recently completed a study, in which participants completed a math task, and that in return for their participation, we donated ₪20 to charity. We then told participants about one of these prior participants. Participants in the low effort condition, were told about one participant who completed the easier math problems, whereas participants in the high effort condition were told about one participant who completed the more difficult math problems. In each condition, participants were told that the participant was asked to try to solve a series of math questions for 5 min, and that regardless of whether they were able to solve the questions accurately or not, \$5 were donated to charity on their behalf. Participants were shown examples of the type of problems the prior participant was asked to solve.

We then told participants that 10% of the participants in the previous study will receive a ₪100 (~ US \$25) bonus. Participants completed an effort manipulation check, and then indicated the extent to which they thought the monetary bonus should go to the specific participant they were told about (“To what extent would you recommend that we give X the bonus?”; 1 = *not at all*; 9 = *extremely*), knowing that their recommendation will determine who would receive the bonus. At the end of the study, 10% of participants from the group that was rated as more deserving of the bonus received the monetary compensation, as promised.

Effort manipulation check. We used the same measures as we did in Studies 1–6 ($M_r = .75$).

Results and Discussion

Manipulation check. To test the efficacy of our effort manipulation, we ran an independent samples t test, predicting perceived effort from effort conditions. As expected, we found a significant effect for condition, $t(95) = 8.81$, $p < .001$, Cohen’s $d = 1.78$. Participants thought the participant in the high effort condition exerted more effort ($M = 5.50$, $SD = 1.70$) than the participant in the low effort condition did ($M = 2.62$, $SD = 1.51$), confirming the efficacy of our effort manipulation.

Bonus recommendations. To test the effect of the effort manipulation on bonus recommendations, we ran a simple regression, predicting moral judgments from effort conditions (low effort = -0.5 ; high effort = 0.5). As expected, we found a significant effect for effort condition, $\beta = 0.21$, $t(93) = 2.12$, $p = .036$. Participants in the second phase of the study believed that participants in the high effort condition were more deserving of the monetary bonus ($M = 6.27$, $SD = 1.79$) than were participants in

the low effort condition ($M = 5.49$, $SD = 1.87$). This result demonstrates that perceived effort affects not only the extent to which people perceive others as moral, but also how they reward them for it.

General Discussion

The current investigation provides the first empirical support for the idea that perceived effort affects moral judgment. Agents who exerted high (vs. low) effort in preforming immoral behaviors were judged as less moral, whereas agents who exerted high (vs. low) effort in preforming moral behaviors were judged as more moral. Perceived effort amplifies moral judgment, by serving as an index of goal importance, such that a moral or immoral behavior is perceived as more important to agents who exert more effort in performing it. Furthermore, we were able to show that the effect of effort goes beyond moral judgment and impacts the tendency to punish or reward. Our studies demonstrated that perceived effort amplifies moral judgments related to immoral (Studies 1–2) or moral (Studies 2–7) behaviors. The effect of effort was independent of the consequences of the behavior (Study 3). The effect was mediated by perceived goal importance (Studies 4–6), and was independent of perceived intentions (Studies 4–6) and of perceived outcome severity (Study 6). Finally, we were able to show that the effect carries real tangible implications (Study 7). Such patterns were found using both within-subject (Studies 1, 2, 3, 6) and between-subjects (Studies 4, 5, 7) designs, using both online (Studies 1, 2, 3, 6) and student (Studies 4, 5, 7) samples, establishing the generalizability of our findings.

Theoretical Implications: Perceived Motivation and Moral Judgments

Moral judgment involves an attempt to read the mind of an agent and understand the mental processes and characteristics that underlie her or his moral behavior (e.g., Chakroff & Young, 2015; Gray et al., 2012; Uhlmann et al., 2015). Because motivation plays an important role in explaining behavior, inferences about motivation are likely to be important determinants of moral judgment. Support for the role of motivational inferences in moral judgments comes from research on intentions. People are judged more harshly if they intended to perform an immoral act than if they did not, regardless of the consequences of the act (Cushman, 2008, 2015).

Motivational inferences, however, should not be limited to inferences about intentions (i.e., the content of motivation). People also make inferences about the strength of motivation (Austin & Vancouver, 1996; Gollwitzer, 1993). Research has shown that the importance of a goal or the commitment to it can predict performance, above and beyond its content (e.g., Austin & Vancouver, 1996; Klein, Wesson, Hollenbeck, & Alge, 1999). In this respect, effort is considered an index for the strength of motivation (e.g., Hollenbeck et al., 1989; Oettingen et al., 2001). Moral behavior is one type of motivated behavior, and as such, could also be influenced by both the content and the strength of motivation (see Heider, 1958). Our findings demonstrate the role of inferences about motivational strength in moral judgment. In doing, so we extend the explanatory model of moral judgment, and show how it relates to key constructs in research on motivation.

Although both intentions and goal importance are important aspects of motivation, they may differ on how easy they are to

perceive and how reliable they are. First, they differ in how easy they are to perceive. Intentions are a mental state, which may often be difficult to assess. Effort, on the other hand, is often easier to assess. We can see how long people spend on a task, how difficult an undertaking is for them, and how much effort they exert. For instance, when Don Quixote fights windmills, we can see how much effort he exerts and how persistent he is. Second, information about intentions and effort may not be equally reliable. Even if the agent declares her intentions, this declaration has no cost and is easy to fake, and therefore may not be credible. People, therefore, tend to underestimate the intentions of others (Kruger & Gilovich, 2004). In contrast, effort is costly and more difficult to fake, and therefore tends to be more credible (see Henrich, 2009 for a similar argument on costly signals). Although both intentions and effort are important signals, in daily life indices of effort may be easier to detect and more credible than indices of intention. Indeed, even toddlers (around 2 years of age), who do not yet have a developed theory of mind (Wellman, Cross, & Watson, 2001), are sensitive to how hard it is for an agent to help others, when they judge how nice an agent is who refuses to help (Jara-Ettinger, Tenenbaum, & Schulz, 2015).

We believe that thinking of moral judgments as attributions of motivated behavior may prove informative. Indeed, it may be possible to apply models of motivated behavior to better understand moral judgments. For example, given that different goals compete with each other (e.g., Kruglanski et al., 2015), moral judgments may be influenced not only by the strength of moral goals, but potentially by their relative dominance over other goals. This may uncover new ways to understand how people attribute goal importance to moral agents.

Pragmatic Implications: Perceived Effort and Social Retribution

We found an effect of effort on both moral judgments and social retribution. The fact that effort can influence decisions about social retribution has important pragmatic implications. First, information about effort may influence jurors who contemplate immoral behaviors in court. Although intentions play an important role in criminal law, as a sufficient indication of *mens rea* (a guilty mind, e.g., Cook, 1917; Jeffries & Stephan, 1979), effort has not attracted legal attention to date. Our findings, however, suggest that jurors may assign weaker punishment to a defendant who exerted less (vs. more) effort in executing a crime.

Second, in Study 7, we found that people believed that those who worked harder for a moral outcome were more deserving of a monetary reward. Such an effect may extend to other decisions about social retribution for moral actions. For instance, information about effort may influence individuals who serve on committees that assign awards for outstanding moral achievements (e.g., the Nobel Peace Prize). Although members of such committees typically focus on the consequences of moral behaviors, they may nonetheless be influenced by information regarding the effort exerted in executing them. Our findings suggest that considerations of effort may play a role in decisions about both immoral and moral behaviors that have so far gone undetected.

Limitations and Future Directions

Our research has several limitations. First, our studies targeted behaviors that involve moderate, but not extreme, digressions from moral norms (e.g., minor theft, but not murder). It is possible that the effect of perceived effort on moral judgment is not constant, but rather changes with the scope of the moral digression. For example, it is possible that effort might have less of an impact on judgments based on extreme moral and immoral behaviors (e.g., a murderer would be judged as negatively if he exerted high vs. low effort). Future research should test this possibility, by comparing extreme and moderate immoral and moral behaviors, while manipulating perceived effort.

Second, there may be a difference in the magnitude of the effect of effort on judgments of moral and immoral behaviors, such that the effect is larger for moral behaviors than immoral ones. Although this requires further examination, there may be several reasons to expect such an asymmetry. First, it is possible that exerting effort in itself is considered moral (Furnham, 1984, 1990). Second, it is possible that people automatically attribute high goal importance to agents behaving immorally. Finally, it is possible that effort, as a situational characteristic of behavior, affects moral behavior more than immoral behavior (Reeder & Spores, 1983). Situational demands affect judgments of moral behavior more than judgments of immoral behavior, because people believe that situational demands can cause immoral people to behave morally, more than they can cause moral people to behave immorally (Reeder & Spores, 1983). Future research could test these possibilities.

Third, we ruled out several alternative explanations for the effect of effort on moral judgment and social retribution: Effects related to the outcome (Study 3), effects related to the behavior (Study 4), and perceived intentions (Studies 5–6). Effort is often considered an index of goal importance (Austin & Vancouver, 1996; Hollenbeck et al., 1989; Oettingen et al., 2001), but it might reflect other attributions that affect moral judgment. For example, effort might affect attributions of moral agency. Moral agency refers to the degree to which people are perceived as capable of doing right or wrong (Gray & Wegner, 2009). People who are perceived as having more moral agency are judged more positively if they perform a moral action, and more negatively if they perform an immoral action (Gray & Wegner, 2009). When agents exert more effort in performing a moral or immoral action, observers may attribute more moral agency to them, which may contribute to more extreme moral judgments. This possibility could be tested in future research.

Fourth, we suggest that in certain situations, effort might be a more reliable index for the agent's moral motivation than intention is. Future research should investigate what leads people to rely on effort versus intention. For example, it is possible that when the agent is an expert in the behavior he's performing (e.g., an experienced life guard who easily saves a drowning person while off duty vs. an ordinary person), effort might carry less weight in moral judgment. Additionally, it is possible that deception and distrust increase the value of effort as a moral cue. In contrast, there may be cases where effort is less informative. For instance, when certain behaviors become habitual, effort may be less diagnostic of moral character. It is possible that if a person turned a specific moral behavior into a habit, which would ultimately render that behavior less effortful, the person would be judged as more moral, because habitual moral behavior reflect a moral

character. Future research is needed to identify and test such boundary conditions.

Effort might also contribute to attributions of ability (Heider, 1958). For example, when two agents perform the same task, but one exerts high effort and the other low effort, people may attribute lower ability to the agent who exerts high effort. We believe that ability is unlikely to explain our findings, given that high effort should lead to lower perceived ability, which should lead to less extreme moral judgments. Nonetheless, if effort can contribute to perceptions of both goal importance and ability, it is important to understand how such perceptions interact. There be cases in which inferences about ability and about goal importance converge (e.g., I work hard because I have the ability to do so) and others when they do not (e.g., I work hard to compensate for lack of skill). Also, some people might be prone to attribute effort to goal importance whereas others might be prone to attribute effort to low ability (e.g., Shepperd, Arkin, Strathman, & Baker, 1994; Surber, 1984; Touhey & Villemez, 1980). Similarly, it is possible that people differ in how they use effort in moral judgment. For example, people high in Protestant work ethics (Furnham, 1984, 1990) which includes "respect for, admiration of, and willingness to take part in hard work" (Furnham, 1990), might rely more on effort when making moral judgments than people low in Protestant work ethics. These and related questions could be examined in future research.

Conclusions

Moral character is not merely a function of moral intentions or even moral behaviors, as the proverb goes "the road to hell is paved with good intentions." We consider the person responsible for the behavior and her motives. Effort, in this respect, signals to a moral judge how important it was for the agent to behave the way she did. Our investigation demonstrates that the effort invested in immoral and moral behaviors does not go unnoticed.

References

- Alicke, M. D. (2000). Culpable control and the psychology of blame. *Psychological Bulletin*, *126*, 556–574. <http://dx.doi.org/10.1037/0033-2909.126.4.556>
- Ames, D. L., & Fiske, S. T. (2013). Intentional harms are worse, even when they're not. *Psychological Science*, *24*, 1755–1762. <http://dx.doi.org/10.1177/0956797613480507>
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *120*, 338–375. <http://dx.doi.org/10.1037/0033-2909.120.3.338>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality & Social Psychology*, *51*, 1173–1182.
- Bates, D., Maechler, M., Bolker, B., Walker, S. (2015). Fitting Linear Mixed-Effects Models Using lme4. *Journal of Statistical Software*, *67*, 1–48. <http://dx.doi.org/10.18637/jss.v067.i01>
- Boehm, C. (1999). *Hierarchy in the Forest: The Evolution of Egalitarian Behavior*. Cambridge, MA: Harvard University Press.
- Brambilla, M., Rusconi, P., Sacchi, S., & Cherubini, P. (2011). Looking for honesty: The primary role of morality (vs. sociability and competence) in information gathering. *European Journal of Social Psychology*, *41*, 135–143. <http://dx.doi.org/10.1002/ejsp.744>
- Chakroff, A., & Young, L. (2015). How the mind matters for morality. *AJOB Neuroscience*, *6*, 43–48. <http://dx.doi.org/10.1080/21507740.2015.1058866>

- Cook, W. W. (1917). Act, intention, and motive in the criminal law. *The Yale Law Journal*, 26, 645. <http://dx.doi.org/10.2307/786267>
- Critcher, C. R., Inbar, Y., & Pizarro, D. (2012). How quick decisions illuminate moral character. *Social Psychological & Personality Science*, 4, 308–315. <http://dx.doi.org/10.1177/1948550612457688>
- Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition*, 108, 353–380. <http://dx.doi.org/10.1016/j.cognition.2008.03.006>
- Cushman, F. (2015). Deconstructing intent to reconstruct morality. *Current Opinion in Psychology*, 6, 97–103. <http://dx.doi.org/10.1016/j.copsyc.2015.06.003>
- Dik, G., & Aarts, H. (2007). Behavioral cues to others' motivation and goal pursuits: The perception of effort facilitates goal inference and contagion. *Journal of Experimental Social Psychology*, 43, 727–737. <http://dx.doi.org/10.1016/j.jesp.2006.09.002>
- Dik, G., & Aarts, H. (2008). I want to know what you want: How effort perception facilitates the motivation to infer another's goal. *Social Cognition*, 26, 737–754. <http://dx.doi.org/10.1521/soco.2008.26.6.737>
- Furnham, A. (1984). The protestant work ethic: A review of the psychological literature. *European Journal of Social Psychology*, 14, 87–104. <http://dx.doi.org/10.1002/ejsp.2420140108>
- Furnham, A. (1990). A content, correlational, and factor analytic study of seven questionnaire measures of the protestant work ethic. *Human Relations*, 43, 383–399. <http://dx.doi.org/10.1177/001872679004300406>
- Gollwitzer, P. M. (1993). Goal achievement: The role of intentions. *European Review of Social Psychology*, 4, 141–185. <http://dx.doi.org/10.1080/14792779343000059>
- Goodman, J. K., Cryder, C. E., & Cheema, A. (2013). Data collection in a flat world: The strengths and weaknesses of Mechanical Turk samples. *Journal of Behavioral Decision Making*, 26, 213–224. <http://dx.doi.org/10.1002/bdm.1753>
- Gray, K., & Wegner, D. M. (2009). Moral typecasting: Divergent perceptions of moral agents and moral patients. *Journal of Personality and Social Psychology*, 96, 505–520. <http://dx.doi.org/10.1037/a0013748>
- Gray, K., Young, L., & Waytz, A. (2012). Mind perception is the essence of morality. *Psychological Inquiry*, 23, 101–124. <http://dx.doi.org/10.1080/1047840X.2012.651387>
- Hamlin, J. K., Wynn, K., & Bloom, P. (2007). Social evaluation by preverbal infants. *Nature*, 450, 557–559. <http://dx.doi.org/10.1038/nature06288>
- Hassin, R. R., Aarts, H., & Ferguson, M. J. (2005). Automatic goal inferences. *Journal of Experimental Social Psychology*, 41, 129–140. <http://dx.doi.org/10.1016/j.jesp.2004.06.008>
- Heider, F. (1958). *The Psychology of Interpersonal Relations*. New York, NY: Wiley.
- Henrich, J. (2009). The evolution of costly displays, cooperation and religion. *Evolution and Human Behavior*, 30, 244–260. <http://dx.doi.org/10.1016/j.evolhumbehav.2009.03.005>
- Hollenbeck, J. R., Williams, C. R., & Klein, H. J. (1989). An empirical examination of the antecedents of commitment to difficult goals. *Journal of Applied Psychology*, 74, 18–23. <http://dx.doi.org/10.1037/0021-9010.74.1.18>
- Hsee, C. K., Loewenstein, G. F., Blount, S., & Bazerman, M. H. (1999). Preference reversals between joint and separate evaluations of options: A review and theoretical analysis. *Psychological Bulletin*, 125, 576–590. <http://dx.doi.org/10.1037/0033-2909.125.5.576>
- Hsee, C. K., & Zhang, J. (2010). General evaluability theory. *Perspectives on Psychological Science*, 5, 343–355. <http://dx.doi.org/10.1177/1745691610374586>
- Inbar, Y., Pizarro, D. A., & Cushman, F. (2012). Benefiting from misfortune: When harmless actions are judged to be morally blameworthy. *Personality and Social Psychology Bulletin*, 38, 52–62. <http://dx.doi.org/10.1177/0146167211430232>
- Janoff-Bulman, R., Sheikh, S., & Hepp, S. (2009). Proscriptive versus prescriptive morality: Two faces of moral regulation. *Journal of Personality and Social Psychology*, 96, 521–537. <http://dx.doi.org/10.1037/a0013779>
- Jara-Ettinger, J., Gweon, H., Tenenbaum, J. B., & Schulz, L. E. (2015). Children's understanding of the costs and rewards underlying rational action. *Cognition*, 140, 14–23. <http://dx.doi.org/10.1016/j.cognition.2015.03.006>
- Jara-Ettinger, J., Tenenbaum, J. B., & Schulz, L. E. (2015). Not so innocent: Toddlers' inferences about costs and culpability. *Psychological Science*, 26, 633–640. <http://dx.doi.org/10.1177/0956797615572806>
- Jeffries, J. C., & Stephan, P. B. (1979). Proof in the criminal law. *The Yale Law Journal*, 88, 1325–1407. <http://dx.doi.org/10.2307/795725>
- Klein, H. J., Wesson, M. J., Hollenbeck, J. R., & Alge, B. J. (1999). Goal commitment and the goal-setting process: Conceptual clarification and empirical synthesis. *Journal of Applied Psychology*, 84, 885–896.
- Kruger, J., & Gilovich, T. (2004). Actions, intentions, and self-assessment: The road to self-enhancement is paved with good intentions. *Personality and Social Psychology Bulletin*, 30, 328–339. <http://dx.doi.org/10.1177/0146167203259932>
- Kruger, J., Wirtz, D., Van Boven, L., & Altermatt, T. W. (2004). The effort heuristic. *Journal of Experimental Social Psychology*, 40, 91–98. [http://dx.doi.org/10.1016/S0022-1031\(03\)00065-9](http://dx.doi.org/10.1016/S0022-1031(03)00065-9)
- Kruglanski, A. W., Jasko, K., Chernikova, M., Milyavsky, M., Babush, M., Baldner, C., & Pierro, A. (2015). The rocky road from attitudes to behaviors: Charting the goal systemic course of actions. *Psychological Review*, 122, 598–620. <http://dx.doi.org/10.1037/a0039541>
- Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2015). Package 'lmerTest' (Version 2.0) [Computer software]. Retrieved from <http://cran.uib.no/web/packages/lmerTest/lmerTest.pdf>
- Oettingen, G., Pak, H., & Schnetter, K. (2001). Self-regulation of goal setting: Turning free fantasies about the future into binding goals. *Journal of Personality and Social Psychology*, 80, 736–753. <http://dx.doi.org/10.1037/0022-3514.80.5.736>
- Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satiating to increase statistical power. *Journal of Experimental Social Psychology*, 45, 867–872. <http://dx.doi.org/10.1016/j.jesp.2009.03.009>
- Pizarro, D. A., & Tannenbaum, D. (2011). Bringing character back: How the motivation to evaluate character influences judgments of moral blame. In M. Mikulincer & P. R. Shaver (Eds.), *The social psychology of morality: Exploring the causes of good and evil* (pp. 91–108). Washington, DC: American Psychological Association.
- Pizarro, D., Uhlmann, E., & Salovey, P. (2003). Asymmetry in judgments of moral blame and praise: The role of perceived metadesires. *Psychological Science*, 14, 267–272. <http://dx.doi.org/10.1111/1467-9280.03433>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891. <http://dx.doi.org/10.3758/BRM.40.3.879>
- Reeder, G. D. (2009). Mindreading: Judgments About Intentionality and Motives in Dispositional Inference. *Psychological Inquiry*, 20, 1–18. <http://dx.doi.org/10.1080/10478400802615744>
- Reeder, G. D., Kumar, S., Hesson-McInnis, M. S., & Trafimow, D. (2002). Inferences about the morality of an aggressor: The role of perceived motive. *Journal of Personality and Social Psychology*, 83, 789–803. <http://dx.doi.org/10.1037/0022-3514.83.4.789>
- Reeder, G. D., & Spores, J. M. (1983). The attribution of morality. *Journal of Personality and Social Psychology*, 44, 736–745. <http://dx.doi.org/10.1037/0022-3514.44.4.736>
- Reynolds, S. J., & Ceranic, T. L. (2007). The effects of moral judgment and moral identity on moral behavior: An empirical examination of the

- moral individual. *Journal of Applied Psychology*, 92, 1610–1624. <http://dx.doi.org/10.1037/0021-9010.92.6.1610>
- Shepperd, J. A., Arkin, R. M., Strathman, A., & Baker, S. M. (1994). Dysphoria as a moderator of the relationship between perceived effort and perceived ability. *Journal of Personality and Social Psychology*, 66, 559–569. <http://dx.doi.org/10.1037/0022-3514.66.3.559>
- Spranca, M., Minsk, E., & Baron, J. (1991). Omission and commission in judgment and choice. *Journal of Experimental Social Psychology*, 27, 76–105. [http://dx.doi.org/10.1016/0022-1031\(91\)90011-T](http://dx.doi.org/10.1016/0022-1031(91)90011-T)
- Surber, C. F. (1984). Inferences of ability and effort: Evidence for two different processes. *Journal of Personality and Social Psychology*, 46, 249–268. <http://dx.doi.org/10.1037/0022-3514.46.2.249>
- Tingley, D., Yamamoto, T., Hirose, K., Keele, L., & Imai, K. (2014). mediation: R Package for Causal Mediation Analysis. *Journal of Statistical Software*, 59, 1–38. <http://dx.doi.org/10.18637/jss.v059.i05>
- Touhey, J. C., & Villemez, W. J. (1980). Ability attribution as a result of variable effort and achievement motivation. *Journal of Personality and Social Psychology*, 38, 211–216. <http://dx.doi.org/10.1037/0022-3514.38.2.211>
- Uhlmann, E. L., Pizarro, D. A., & Diermeier, D. (2015). A person-centered approach to moral judgment. *Perspectives on Psychological Science*, 10, 72–81. <http://dx.doi.org/10.1177/1745691614556679>
- Uhlmann, E. L., Zhu, L. L., & Tannenbaum, D. (2013). When it takes a bad person to do the right thing. *Cognition*, 126, 326–334. <http://dx.doi.org/10.1016/j.cognition.2012.10.005>
- Wellman, H. M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development*, 72, 655–684. <http://dx.doi.org/10.1111/1467-8624.00304>

Appendix

Vignette Examples

Study	High effort	Low effort
Study 1 (immoral)	While taking the subway home at the end of the day, Nate notices a lady standing next to him with a big purse. The purse is shut tight and out of his reach, so he reaches out to it unnoticed, and struggles to open it. He takes the several \$10 bills from the purse and gets off the subway.	While taking the subway home at the end of the day, Nate notices a lady standing next to him with a big purse. The purse is wide open and within reach, so he simply puts his hand in the purse. He takes the several \$10 bills from the purse and gets off the subway.
Studies 2, 4, 5, and 6 (moral)	Nate is taking the bus to work in the morning. He notices that a woman who just got up to get off the bus has accidentally left her wallet behind. The woman has already gotten off the bus, and the bus is about to leave the station. Nate quickly picks up the wallet, gets off the bus, runs after the woman and returns the wallet to her; he then catches the next bus.	Nate is taking the bus to work in the morning. He notices that a woman who just got up to get off the bus has accidentally left her wallet behind. The woman is still on the bus, so Nate quickly picks up the wallet and returns it to the woman before she gets off the bus.
Study 3 (moral, behavior fails to have intended outcome)	Nate is taking the bus to work in the morning. He notices that a woman who just got up to get off the bus has accidentally left her wallet behind. The woman has already gotten off the bus, and the bus is about to leave the station. Nate quickly picks up the wallet, gets off the bus, runs after the woman and returns the wallet to her. The woman thanks Nate, but tells him that the wallet is not hers. Nate then catches the next bus. The wallet is empty and has no identification information, so Nate gives it to the bus driver.	Nate is taking the bus to work in the morning. He notices that a woman who just got up to get off the bus has accidentally left her wallet behind. The woman is still on the bus, so Nate quickly picks up the wallet and returns it to the woman before she gets off the bus. The woman thanks Nate, but tells him that the wallet is not hers. The wallet is empty and has no identification information, so Nate gives it to the bus driver.

Received February 2, 2016
Revision received July 4, 2016
Accepted August 11, 2016 ■