This manuscript was accepted in Psychology, Crime, and Law.

Please visit the journal's website to see the published version.

Penitence Congruity Effect: Even Murderers are Seen as Less Immoral

When Expressing Guilt and Deontological Beliefs

Mariola Paruzel-Czachura

University of Silesia in Katowice, Poland

& Complutense University in Madrid, Spain

Michał Białek

University of Wrocław, Poland

Author Note

Correspondence concerning this article should be addressed to Mariola Paruzel-Czachura, Institute of Psychology, University of Silesia in Katowice, Grażyńskiego 53, 40-126 Katowice, Poland. E-mail: mariola.paruzel-czachura@us.edu.pl

Abstract

In five experiments with a total $N = 1559$, we studied to which extent the perception of wrongdoers' morality depends on wrongdoers' cognitive and emotional penitence on the example of deontological beliefs and guilt. Both types of penitence improved the target's moral impressions to a similar degree. We established a penitence congruity effect, whereby jointly signaling cognitive and emotional penitence amplifies the strength of each of these types of penitence. The penitence congruity effect was visible when participants compared several wrongdoers (Studies 1, 2, and 5) but disappeared when participants judged them independently (Studies 3 and 4). In a pre-registered Study 5, we showed how the credibility of the statements explained the penitence congruity effect: incongruent penitence (e.g., wrongdoer felt guilt but thought a murder could be justified) decreased the credibility of the positive statements and reduced its impact on the wrongdoer's moral perception. Taken together, people who judge transgressors do incorporate information about their cognitive and emotional penitence and expect this information to be congruent.

Keywords: penitence, penitence congruity effect, guilt, deontology, moral judgment

Graphical Abstract

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In 2015, Bonnie Litz put a fatal dose of medication into her severely disabled 28 years old daughter's feeding tube before ingesting some of the drugs herself with a glass of wine. Bonnie survived, but her daughter did not. As Bonnie was diagnosed with cancer, she did what she thought would best protect her daughter from the anticipated suffering under somebody else's care. Bonnie could be sentenced to a maximum of fourteen years and a minimum of three years or 30 months of probation. Bonnie pleaded guilty. However, in her own eyes, killing her daughter was ethically justified – she did what she thought was right: “I think, she's in a better place,” said Bonnie in an interview with ABC7 on October 16, 2017 (Garcia, 2017). Despite killing her child, she was sentenced by a judge to four years, and prosecutors seemed to show an act of mercy, reducing the original charge of first-degree murder to involuntary manslaughter. Bonnie served 73 days of her sentence, and she was set free during her appeal to the Illinois Supreme Court. There was still a chance that Bonnie could be set free because her attorney asked Governor for clemency. She was scheduled for a hearing in front of the Prisoner Review Board in early January 2018. However, when being outside prison, she committed suicide.

With her relatively lenient sentence, Bonnie's story is puzzling for how people judge others' moral transgressions. Specifically, it highlights how the wrongdoer's beliefs (i.e., she said that killing was the right thing to do in her situation) and emotions (i.e., feeling guilty) are crucial for moral judgments. Learning about one's emotions and beliefs provides us with additional information about their morality. If Bonnie believed that what she did was wrong and felt guilty, it would constitute two positive signals of her morality (cognitive and emotional penitence). If Bonnie believed that what she did was the right thing to do and did not feel guilty, it would constitute two negative signals about her morality. Moreover, as observed in Bonnie's real story, moral beliefs and

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emotions can also be incongruent: she said that what she did was the right thing to do, but she felt guilty about it.

Moral psychologists have already analyzed the possible influence of moral beliefs and emotions on judgments of wrongdoers' morality, but only separately. To better understand the relative importance of beliefs and emotions on wrongdoers' moral impressions, we ran five studies investigating how this information expressed simultaneously influences judgments about wrongdoers' morality. We considered two factors that shape moral judgments: (1) wrongdoers' deontological beliefs, i.e., believing that murder is wrong no matter the consequences or circumstances (Kant, 1785); and (2) wrongdoers' guilt because it is the quintessential moral emotion signaling the penitence (Prinz & Nichols, 2010). Studying how people judge wrongdoers' morality when wrongdoers' cognitive and emotional penitence are expressed simultaneously and comparing the relative importance of deontological beliefs and guilt expand previous research perspectives and broaden our understanding of forming moral judgments.

Wrongdoer's "Mind"

The research on the role of targets' beliefs in forming moral impressions is well characterized by Cohen, Panter, and Turan (2013, p. 596): "We think about other minds in order to make predictions about people's future behavior and judgments about their past behavior". Concerning beliefs, the "mind" line of research has considered how wrongdoers' ways of thinking (e.g., their moral beliefs) impact judgments about their morality (Tomlinson et al., 2014; Levine et al., 2018). Some people think that even sinful thoughts are as evil as sinful behavior (Cohen & Rozin, 2001; Berman & Small, 2018). When people were asked to list things that they consider relevant when judging

others' moral character, they reported focusing mainly on others' behaviors and moral beliefs. However, they rarely considered any other factor (Paruzel-Czachura, 2016).

One of the types of moral beliefs is the so-called deontological belief. People who are deontologists claim that we should follow moral rules (like "Do not kill"), and that is why some behaviors (like murder) are always wrong no matter the consequences or circumstances (Kant, 1785). On the contrary, non-deontologists claim that we should not blindly follow the rules but look first at the behavior's consequences, and sometimes harming others (even killing them) is a better moral choice as it brings better consequences to the world (Mill, 1863). We already know that people judge deontologists more positively than non-deontologists and prefer them as social partners (Everett et al., 2018; Sacco et al., 2017; Bostyn & Roets, 2017; Everett et al., 2016; Rom et al., 2017; Uhlmann et al., 2013) because deontologists are predictable moral partners (Turpin et al., 2020).

Wrongdoer's "Heart"

However, apart from possessing some moral beliefs, people also feel emotions when confronted with moral issues. Those emotions are one of the potential signals informing others about their morality. Past research has already focused on the agents' emotional reactions after moral transgression and the impact of those emotions on how wrongdoers are judged. The analyzed factors included socially desirable emotions like guilt, remorse, and being unhappy (Robinson et al., 2012; Cohen et al., 2013; Weiner et al., 1991; Ames & Johar, 2009; Krull et al., 2008) and socially undesirable emotions like displaying feelings of pleasure when another person experiences serious harm (so-called *schadenfreude*) (Gromet et al., 2016) or temptation to engage in other immoral behaviors (Berman & Small, 2018). For example, participants in a study judged individuals taking pleasure from observing others being harmed. Participants deemed

them immoral and evil even though the judged persons were not the ones who caused this harm (Gromet et al., 2016).

Targets' emotions help people shape the impressions of those targets so that positive emotions strengthen the behavior-correspondent inferences, while negative affect weakens such inferences (Ames & Johar, 2009). Because guilt is a crucial negative moral emotion signaling wrongdoers' penitence (Prinz & Nichols, 2010), we studied how it shapes their perceived morality in the current research.

Wrongdoer's "Mind" and "Heart"

Although researchers highlighted how beliefs and emotions might be crucial as signals of someone's morality (Fedotova et al., 2011), we lack empirical studies that have simultaneously analyzed them, including comparing their relative importance and possible interaction. However, some general differences between beliefs and emotions were already empirically studied.

For example, a study showed that emotions are seen as less controllable and more unintentional compared to beliefs, less preventable, and easier to choose (Cusimano & Goodwin, 2019). The more people believe that mental states may be controlled, the more they believe that they reveal the transgressor's character and that the acts are a matter of responsibility and blame. Signals of emotion are associated with higher levels of intuition, quickness, and reliance on one's heart, whereas signals of reason are associated with higher deliberation levels, slowness, and reliance on one's brain (Levine et al., 2018). Another relevant finding is that emotion is perceived to be a more robust signal of cooperation than reason, i.e., in the prisoner dilemma, participants accurately predicted that individuals who rely on emotion rather than reason would cooperate more often (Levine et al., 2018).

Hypotheses

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We expected that participants would perceive wrongdoers who have deontological beliefs and simultaneously feel guilty as more moral compared to all other study conditions (when there is a lack of cognitive and emotional penitence or only one of them appears). In other words, we hypothesized that joint expression of emotional (guilt) and cognitive (deontological beliefs) penitence would boost morality assessments of the transgressor. Moreover, we expected that joint lack of emotional and cognitive penitence would decrease their morality assessments. However, as in Bonnie's real story, we explored the effects of incongruent penitence, e.g., when one felt guilty but believed the transgression was justifiable. We wanted to discover which type of penitence has larger effects and whether the two interact.

There are no direct theoretical or empirical arguments if the differences between conditions would appear, but previous studies showed mixed results in assessing internal conflicts of wrongdoers. For example, one relevant study showed that older children and adults judge a person who did something morally right as more moral if this person experienced internal moral conflict than a person who acted without hesitation (Starmans & Bloom, 2016). However, other studies showed that even successfully fighting off the temptation of a moral transgression (e.g., a man considering having sex with his wife's sister) makes people see that man as more immoral compared to the man who never felt this kind of temptation (Berman & Small, 2018). In this case, merely considering a sin is a sufficient signal of someone's immorality, and successfully fighting off the temptation (like in Starman's and Bloom's study) does not help this man much.

We hypothesized that any sign of penitence (feeling guilty or holding deontological beliefs) would improve wrongdoers' assessment compared to expressing non-deontological beliefs and lack of guilt. However, we were oblivious to which

(cognitive or emotional) penitence would strongly boost wrongdoers' moral assessment and whether or how the two types of penitence are somehow interrelated.

Overview of the Studies

We ran a total of five studies ($N = 1559$) using several vignettes inspired by actual events. We used real-life behavior vignettes since they increase the task's external validity (Bostyn et al., 2018; Cesario, 2021; Schein, 2020). In Study 1, we asked participants to assess the morality of a man who murdered his parents (within-subject design). In Study 2, we repeated the procedure but with different wrongdoing, i.e., the murder of 300 innocent people in a terrorist attack. In Study 3, we used the same vignettes as in Studies 1 and 2, but this time between-subject design. In Study 4, we asked participants to assess other (less severe) unethical behaviors using a between-subject design. In Study 5, we replicated Studies 1 and 2, controlling whether participants believed in the wrongdoer's expression of penitence.

The studies were approved by the Ethics Committee of the University of Silesia in Katowice. All data and materials have been made publicly available via the Open Science Framework: https://osf.io/7tnsw/?view_only=None. Study 5 was pre-registered: <https://aspredicted.org/uf9ny.pdf>.

Data were analyzed with Bayesian versions of classical frequentist statistical tests. It allows for the direct comparison of models of interest, meaning that the null model can also be evaluated directly (Dienes, 2014). Default priors recommended by JASP 12.0 were used. We use B_M to denote how a particular model was supported over the subset of all other models, B_{10} to quantify the strength of the evidence supporting model 1 over the null model, and B_{01} to quantify evidence's strength supporting the null model over model 1. The nature of B allows for its continuous interpretation so that, e.g., $B_{10} = 6$ means that the observed data is six times more likely to be observed under

model 1 than under model 0. Typically, $B < 3$ is interpreted as inconclusive, with little to no support for a particular model (Jeffreys, 1961; Lee & Wagenmakers, 2014). To ease interpretation for those unfamiliar with Bayesian statistics, we also report p -values for the effects of interest. Regarding the statistical power of our studies, we aimed to have 80% power to detect effects we thought would have practical importance, $d > 0.20$ (Anvari & Lakens, 2019). To put this in context, an intervention on students' IQ of the size of $d = 0.20$ would mean the students improved by 3 IQ points. We then relaxed this requirement by considering available resources in between-subject experiments (Studies 3 and 4), in which we ended up with 80% power to detect larger effects of $d > 0.30$ (Lakens, 2021).

Study 1

Method

Participants. A sample of $N = 202$ adults (173 females, M_{age} : 26.45 years, $SD = 3.85$) volunteered for the online experiment. This sample provides 80% power to detect within-subject differences of the size of $d = 0.20$ (Faul et al., 2009). Note that our sample size is about double the minimum recommended by Simmons et al. (2011), that is, $n = 50$ per cell.

Participants were predominantly catholic ($N = 155$, 5 others, 42 atheists). Among believers, religious practice was on the average level of $M = 4.59$ ($SD = 2.05$) on a scale of 0-7. Data about participants' political views were also obtained: they were moderate in terms of their economic beliefs ($M = 3.55$; $SD = 1.57$) in response to "To what extent should the government be involved in the economy of the country?" (where 0 – *preference for liberal* and 7 – *preference for conservative*) and in social beliefs ($M = 4.08$; $SD = 1.68$) in a question "To what extent should the government be involved in

social/cultural issues in the country?”. No other data was collected, and data from all participants were analyzed.

Procedure and Materials. Participants read four vignettes of a young man who, together with his girlfriend, murdered his parents. The situation was based on a true story that happened just before the experiment. Participants read the following description: “During the night of 12 to December 13., Kamil N., 18-years-old, and his love Zuzanna M., 18-years-old, murdered Jerzy N. and Agnieszka N., Kamil N.’s parents. They used three knives, causing stab and cut wounds all over their victims’ bodies. Both of the parents died. According to the media, the couple planned to murder his parents, who opposed their relationship. Below you will find four hypothetical situations that could have occurred. Please mark on a scale from 0 to 7 to what extent, according to you, Kamil is a moral person.”

Next, participants read descriptions of the wrongdoer’s four profiles, each with different information concerning Kamil’s emotions (feeling guilty or not feeling guilty) and beliefs (holds deontological beliefs – that murder is always unacceptable, wrong, or holds non-deontological beliefs – that murder is sometimes acceptable). Participants were asked to judge Kamil’s morality on a scale of 0 (*immoral*) to 7 (*very moral*) for each of the four vignettes.

Results

Data were submitted to a 2 (emotions: guilt, no guilt) x 2 (beliefs: deontological, non-deontological) within-subjects Bayesian ANOVA with a default r scale for fixed effects of 0.5. The best model was the model assuming two main effects and an interaction, $B_M = 350,764$ (Figure 1). In general, information about the guilt the transgressor felt increased how people perceived his morality $F(1,200) = 208.02, p < .001, B_{10} > 1,000,000, \eta p^2 = .510$, and so did holding deontological beliefs, $F(1,200) =$

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247.66, $p < .001$, $B_{10} > 1,000,000$, $\eta_p^2 = .553$. These two effects interacted, $F(1,200) = 55.41$, $p < .001$, $B_{10} > 300,000$, $\eta_p^2 = .217$. As we were interested in which of the two types of penitence was more influential for participants' judgments, we compared two incongruent trials, showing that participants perceived a person who felt guilty but held no deontological beliefs as less moral compared to a person who didn't feel guilty but did hold deontological beliefs, $F(1, 200) = 20.50$, $p < .001$, $B_{10} > 1000$, $\eta_p^2 = .093$. This way, we show that wrongdoer with deontological beliefs and lack of guilt was assessed as more moral than wrongdoer who felt guilt and hold non-deontological beliefs.

Expressions of deontological beliefs and of guilt interacted, so that when the transgressor felt no guilt his beliefs had a smaller effect on his perceived morality $\Delta M = 1.01$; $F(1,200) = 128.95$, $p < .001$, $B_{10} > 100,000$, $\eta_p^2 = .392$ compared to when he felt guilt $\Delta M = 1.76$; $F(1,200) = 245.5$, $p < .001$, $B_{10} > 100,000$, $\eta_p^2 = .551$. In other words, signaling socially desirable deontological beliefs was more impactful at rebuilding one's moral impression if this person also felt guilt. Regardless of the size of the benefit to their morality, the wrongdoer was still judged as immoral (below scale midpoint of 3.5).

Figure 1

Impact of Deontological Beliefs and Guilt on Judgments About Wrongdoer's Morality in Study 1 (Murder of own Parents). Error Bars Represent 95% Confidence Intervals

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For exploratory reasons, we re-ran the analysis controlling for participants' gender, but the model assuming the main effects of guilt and deontological beliefs and their interaction was still the most supported model by the data, $B_M = 24.82$. This analysis provides some weak evidence against the inclusion of gender in the model, $B_{01} = 3.86$.

Discussion

Expressing penitence improved how people perceived the wrongdoer's morality, and this effect was likely independent of the gender of the person making the judgment. There are two essential findings from this study: (1) deontological beliefs with simultaneous lack of guilt seem to be weighted more (the wrongdoer was judged as less immoral) when judging a wrongdoer's morality than the expression of guilt and simultaneously lack of deontological beliefs, and (2) there is an additive gain for jointly displaying both types of penitence, which we termed "penitence congruity effect". Because of the surprising finding of a penitence congruity effect and because the experiment employed a real-life, extensively media-covered case, we decided to replicate the effect using a different real-life event.

Study 2

Method

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Participants. A sample of $N = 226$ participants (176 females, $M_{age} = 25.5$; $SD = 6.9$) volunteered for the online experiment. This sample provides 80% power to detect within-subject differences of the size of $d = 0.19$. Participants were mostly Catholic ($N = 137$ Catholic, $N = 17$ other, $N = 72$ atheists), moderate in their economic views ($M = 3.50$; $SD = 1.81$), and slightly liberal in their social views ($M = 4.29$; $SD = 1.73$). Religious believers were modestly practicing in their religion ($M = 4.27$; $SD = 2.08$).

Procedure and Materials. We used an identical design to Study 1. Participants read a vignette about the Malaysian Boeing 777 that was shot down over Ukraine. Almost 300 people were murdered. Again, participants had to judge four cases in which the wrongdoer felt guilty over the victims' tragedy, or they felt no guilt, and that they held deontological beliefs or non-deontological beliefs. Participants evaluated the extent to which they thought this wrongdoer was moral using the same 0-7 scale from Study 1.

Results

As in Study 1, data were submitted to a 2 (emotions: guilt, no guilt) x 2 (beliefs: deontological, non-deontological) within-subjects Bayesian ANOVA with a default r scale for fixed effects of 0.5. The model best supported by the data, $B_M = 5.91 \times 10^5$, was again the one including main effects of guilt, $F(1,225) = 329.03$, $p < .001$, $B_{10} > 1,000,000$, $\eta_p^2 = .594$, and beliefs, $F(1,225) = 456.01$, $p < .001$, $B_{10} > 1,000,000$, $\eta_p^2 = .670$, and their interaction, $F(1,200) = 44.84$, $p < .001$, $B_{10} > 600,000$, $\eta_p^2 = .166$ (Figure 2). Consistent with Study 1, participants perceived a wrongdoer who felt guilty but held non-deontological beliefs as less moral, compared to a wrongdoer who didn't feel guilty but held deontological beliefs, $F(1, 225) = 20.64$, $p < .001$, $B_{10} > 1,000$, $\eta_p^2 = .084$. Furthermore, in this study we observed that when the transgressor felt guilt their beliefs had a greater effect on his perceived morality, $\Delta M = 2.51$; $F(1,225) = 447.97$, $p < .001$,

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$B_{10} > 100,000$, $\eta_p^2 = .666$, compared to when they felt no guilt, $\Delta M = 1.62$; $F(1,225) = 187.95$, $p < .001$, $B_{10} > 100,000$, $\eta_p^2 = .455$.

Figure 2

Impact of Deontological Beliefs and Guilt on Judgments About Wrongdoer's Morality in Study 2 (Murder of Almost 300 Innocent People). Error Bars Represent 95% Confidence Intervals

Discussion

The results of Studies 1 and 2 consistently show that participants weigh socially desirable deontological beliefs and lack of guilt more than an expression of guilt and lack of deontological beliefs when shaping their moral judgments about a transgressor. Expressing deontological beliefs and guilt improved the wrongdoer's moral perception to be close to the scale midpoint – which is a really high score for a person that committed a murder. We also found evidence for deontological belief and guilt's superadditivity. Positive information about both these dimensions creates an extra gain, and the wrongdoer is seen more positively than would have resulted from the simple addition of the two dimensions independently.

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Despite replicating the greater impact of deontological beliefs compared to the effect of expression of guilt on wrongdoers' moral impressions, we warn from considering these effects definitive. Specifically, emotions tend to be rather continuous in nature (e.g., the strength of guilt can vary in its intensity), while beliefs tend to be rather dichotomous (e.g., a slight decrease in the strength of belief in murder being always prohibited can be interpreted as a sign of a belief that a murder can be justified). Since we did not manipulate the strength of emotions, we cannot be sure that participants assigned their full intensity to the wrongdoer. And if they did not consider guilt to be equally strong in congruent and incongruent conditions, this would also result in weaker effects of (imperfect) guilt than the effects of socially desirable, deontological beliefs.

All our data is based on a within-subjects design, in which a person who is judging can compare the relative weight of both pieces of information (i.e., cognitive and emotional penitence). From other research, e.g., moral luck (Kneer & Machery, 2018) or base rate use (Białek, 2017), we know that people might weigh the same pieces of information differently when its simultaneous presentation facilitates the comparison between the types of available information (Hsee, 1998). For example, participants might find it easier to focus on relevant information when contrasted with other, less relevant information. This problem was highlighted in the trolley dilemma, in which thinking about saving people by directly causing harm to a third party decreases the likelihood of accepting causing harm as a side effect of saving people (Wiegmann et al., 2012) because it makes the causal link between action and the outcome more salient (Waldmann et al., 2017). Finally, when comparing options side by side, people tend to reflect more; when comparing options independently, people tend to defer more to intuition and emotions (Hsee et al., 2005).

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We decided to replicate our experiments, this time in a between-subjects design, so that every participant would be presented with only one type of vignette. It should prevent participants from directly comparing wrongdoers between vignettes and decrease a potential demand effect (Orne, 1962), in which participants would feel pressured to vary their answers only because they saw those four different descriptions side by side.

Additionally, we investigated how participants think of wrongdoers when they do not receive any information about wrongdoers' penitence. We used this as a baseline condition. This way, we could test whether a lack of emotional and cognitive penitence would decrease the perception that wrongdoers are moral or whether emotional and cognitive penitence increases the perception that wrongdoers are moral.

Study 3

Participants. A sample of $N = 453$ participants (242 females, M_{age} : 22.3 years, $SD = 2.1$, range 18-47) volunteered for the online experiment. This sample provides 80% power to detect between-subject differences of the size of $d = 0.34$.

Participants were randomly assigned to four experimental and one control condition (in which no information about guilt and deontological beliefs was provided). At the end of the survey, we asked our participants about their religious faith, religious practice, and political views (liberal or conservative). Participants were mostly catholic ($N = 314$ Catholic, $N = 29$ other, $N = 110$ atheists), moderate in their economic views ($M = 3.62$; $SD = 1.58$), and slightly liberal in their social views ($M = 4.17$; $SD = 1.72$). Religious believers were modestly practicing in their respective religions ($M = 3.75$, $SD = 2.01$).

Procedure and Materials. Participants read two vignettes describing moral transgressions, identical to those in Studies 1 and 2: the murder of Kamil's parents and

the murder by shooting down the civilian Boeing jet. Each of the vignettes provided the same information about the wrongdoer: (1) deontological beliefs and guilt, (2) non-deontological beliefs and lack of guilt, (3) deontological beliefs and lack of guilt, (4) non-deontological beliefs and guilt. An additional change compared to Studies 1 and 2 was the addition of a (5) control condition in which no information about transgressors' cognitive or emotional penitence was provided. In sum, we randomly assigned participants to four experimental conditions and a control condition in which no information about deontological beliefs and guilt was provided. Vignettes had the same other characteristics of the wrongdoer. As in previous studies, participants judged the wrongdoer's morality using a 0-7 scale¹.

Results

Mean judgments about the wrongdoer's morality across conditions are presented in Figure 3. It is visible that the congruent negative information resulted in the lowest morality rankings, lower than if no information were provided (see Table 1 for details), while those including positive information about penitence were close to the scale midpoint.

Figure 3

Density Plots of Judgment of Murderer's Morality depending on Their Expression of Penitence Compared to no Information Condition in Study 3

¹ We shifted the scale to 1-8 because of required log-transformation which would fail if one of the parameters would be 0.

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Note. GD – guilt, deontological beliefs; nGD – no guilt, deontological beliefs, G
nD - guilt, non-deontological beliefs, nGnD - no guilt, non-deontological beliefs

First, because the responses in the two vignettes were highly correlated, $r(451) = .69$, $p < .001$), we averaged these responses. Moral judgments rankings were not normally distributed, resulting in non-normally distributed residuals, so we log-transformed them prior to any analysis. For the first step of the analysis, we repeated the analysis from Studies 1 and 2. To this end, we submitted log-transformed data to a 2 (emotions: guilt, no guilt) x 2 (beliefs: deontological, non-deontological) between-subjects Bayesian ANOVA and have left the control condition aside for now. The model best supported by evidence $B_M = 24.34$ was the one with two main effects of deontological beliefs, $F(1, 366) = 100.31$, $p < .001$, $\eta_p^2 = .215$, and of guilt, $F(1, 365) = 31.22$, $p < .001$, $\eta_p^2 = .079$ (Figure 4). The model with two main effects and their interaction was considerably less supported by the evidence $B_{01} = 6.09$.

Figure 4

Impact of Deontological Beliefs and Guilt on Judgments About Wrongdoers' Morality in Study 3

Note. Error bars represent the 95% Confidence Intervals.

Next, we compared all four experimental conditions to the control condition (Table 1). Comparisons were made with Bayesian t-tests, with prior Cauchy = 0.16. It implies that if the null hypothesis is accurate, we expect 80% of observed effect sizes to befall within the range $-0.5 < d < 0.5$. It is still a conservative approach since the typical effect size in psychology is $d = 0.3$ (Funder & Ozer, 2019). Note that the Bayes Factor's use is robust to multiple testing, so no corrections are required (Gelman & Tuerlinckx, 2000).

Table 1

Comparison of Means in Experimental Conditions to the Control Condition with no Information About Emotions and Beliefs

Condition	t-test	B_{10}
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emotions	beliefs	The direction of the change			Effect size <i>d</i> [95%CI]
guilt	deontological	<i>improved</i>	$t(1, 166) = 7.68, p < .001$	1.51×10^9	1.18 [0.86 - 1.51]
guilt	non-deontological	<i>no change</i>	$t(1, 168) = 1.01, p = .314$	0.68	0.16 [-0.15 - 0.46]
no guilt	deontological	<i>improved</i>	$t(1, 182) = 3.79, p < .001$	72.85	0.56 [0.27 - 0.86]
no guilt	non-deontological	<i>worse</i>	$t(1, 182) = 1.01, p = .007$	5.29	0.40 [0.11 - 0.70]

Note. Signs of the t-tests were removed due to negative means in some conditions caused by log transformation of means and confounding the test value interpretation.

Discussion

Consistent with Studies 1 and 2, we found that the expression of deontological beliefs and guilt increased the judgment about wrongdoers' morality. Information about wrongdoers' deontological beliefs and guilt, or wrongdoer expressing deontological beliefs despite lack of guilt, both improved the judgment of wrongdoers' morality compared to judgments made without any information about targets' penitence. However, jointly expressing non-deontological beliefs and lack of guilt decreased the assessment of wrongdoers' morality compared to no information condition. No difference was observed when comparing non-deontological beliefs and lack of guilt with no information condition. In other words, expressing the deontological beliefs always puts the wrongdoer in a better light, while expressing guilt improves the moral impressions but only if deontological beliefs accompany it.

In contrast to Studies 1 and 2, we observed no penitence congruity effect, so there was no extra premium for expressing emotional and cognitive penitence simultaneously. It could be for several reasons. One is that the penitence congruity effect is simply a demand effect created by our within-subject design, emphasizing the importance of deontological beliefs and guilt and their congruity (Orne, 1962). It could

happen because the only difference between transgressors was their beliefs and emotions, and therefore it could attract participants' attention. With separate evaluations, participants could not consider this information as important.

Secondly, there is a possibility that the penitence congruity effect is simply not robust and cannot be replicated. Finally, we could have been unlucky, perhaps not finding a real effect. It is always possible since all experiments' power is lower than 1, so there is always a risk of not finding an effect, e.g., due to sampling error. We tried to collect some evidence that would further verify the effect.

Study 4

Participants. A sample of $N = 297$ participants (152 females, M_{age} : 20.05 years, $SD = 1.10$) volunteered for the online experiment. We dropped data from one participant in the control condition, who rated all individuals' moral character as maximally positive (i.e., 8/8), suggesting misuse of the scale. Considering relatively large effects observed in Study 3, we recruited fewer participants for Study 4. This smaller sample provides 80% power to detect between-subject differences of the size of $d = 0.42$.

Procedure and Materials. Participants read four vignettes, describing four different moral transgressions of various severities (murder of innocent people in a shopping center, cheating on a partner, fighting with an aggressive man in the street, stealing money from a wallet found on the street) and were asked to judge the morality of the transgressor using the same 8-points scale as in previous studies. We increased the number of vignettes to compensate for the reduced number of participants in the experiment. The exemplary story was: "Ania and John have been married for five years. Recently, when Ania began working more in the afternoons, John felt lonely and betrayed Ania (he was unfaithful). John feels guilty about it, although he thinks that being unfaithful is acceptable in

marriage. To what extent do you think that John is a moral person?” (Condition: guilt and non-deontological beliefs).

As in Study 3, participants were randomly assigned to one of five experimental conditions. The control group received no information about deontological beliefs and guilt, and four experimental groups were created by mixing information about deontological beliefs (yes/no) and feelings of guilt (yes/no) of the transgressor. The murder scenario was based on a real-life event, whereas the three other cases described hypothetical events.

Results

First, we averaged the moral ratings of the transgressor across all four vignettes (Figure 5). The reliability of the moral impression scale was modest, $\alpha = 0.647$; short scales tend to be producing low reliabilities in general by virtue of the mathematics behind computing the parameter (Ziegler et al., 2014).

As in prior studies, many of the ratings for individuals who expressed guilt and deontological beliefs were close to the scale midpoint. As in all prior studies, we submitted the data to a 2 (emotions: guilt, no guilt) x 2 (beliefs: deontological, non-deontological) between-subjects Bayesian ANOVA with a default r scale for fixed effects of 0.5.

Figure 5

Density Plots of Judgment of Murderer's Morality depending on their Expression of Penitence Compared to no Information Condition in Study 4

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Note. GD – guilt, deontological beliefs; nGD – no guilt, deontological beliefs, G
nD - guilt, non-deontological beliefs, nGnD - no guilt, non-deontological beliefs

Consistent with the findings of Study 3, the best supported model included only the two main effects $B_M = 19.30$: of guilt, $F(1,232) = 27.47, p < .001, B_{10} = 28,412.4, \eta_p^2 = .106$, and of deontological beliefs, $F(1,234) = 15.48, p < .001, B_{10} = 140.7, \eta_p^2 = .063$ (Figure 6). As in Study 3, the model with two main effects was significantly more supported by the evidence than the model including two main effects and a guilt by deontological beliefs interaction, $B_{10} = 4.96$.

Figure 6

Impact of Deontological Beliefs and Guilt on Judgments About Wrongdoers' Morality in Study 4. Error Bars Represent 95% Confidence Intervals

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Next, we compared all four experimental conditions to the control condition in which nothing was said about wrongdoers' penitence (Table 2). Comparisons were made with Bayesian t-tests, with prior Cauchy = 0.16. Only wrongdoers who expressed guilt and communicated deontological beliefs were judged significantly higher than the control group. Wrongdoers who sent negative signals about their beliefs and emotions could have been judged worse compared to the control group.

Table 2

Comparison of Means in Experimental Conditions to the Control Condition With no Information About Guilt and Deontological Beliefs

Emotions	Condition	The Direction of the Change	t-test	B_{10}	Effect Size d [95%CI]
guilt	deontological	<i>improved</i>	$t(1, 111) = 4.29, p < .001$	229.8	0.81 [-.42-.119]
guilt	non-deontological	<i>no change</i>	$t(1, 116) = 1.93, p = .056$	1.51	0.36 [-0.01 - 0.72]
no guilt	deontological	<i>no change</i>	$t(1, 117) = 0.98, p = .332$	0.71	0.18 [-0.18 - 0.54]
no guilt	non-deontological	<i>no change / worse</i>	$t(1, 116) = -2.24, p = .027$	2.21	-0.41 [-0.78 - -0.05]

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Note: The control condition was the reference point of the comparison. Hence negative t-test values suggest that ratings in the control group were higher.

Discussion

Consistent with Study 3, but in contrast to Studies 1 and 2, Study 4 failed to support the penitence congruity effect. However, compared to no information condition, moral perceptions of the wrongdoers increased significantly only when the wrongdoer jointly expressed guilt and deontological beliefs.

Across all four experiments, we observed that when a person expresses only one type of penitence but not the other type (that is, holds deontological beliefs but feels no guilt, or expresses a feeling of guilt but also holds non-deontological beliefs), the benefit of penitence is smaller. One way to think about why this happens is that such incongruence casts doubt on the honesty of the penitence. That is, people may expect that guilt and deontological beliefs necessarily go hand in hand. That is a plausible assumption because people often experience cognitive dissonance when their actions, beliefs, and emotions mismatch. In such cases, people feel the urge to reduce this dissonance (Festinger, 1957). Faced with information about incongruency in wrongdoers' penitence, people may try to reduce the dissonance by decreasing the credibility of a statement that does not fit the behavior. In that case, people would discount the positive signs of penitence not fitting to the antisocial behavior and signs of lack of penitence.

Our speculation about the (mis)trust in the expression of penitence would be true; it would naturally lead to the penitence congruity effect we observed in Studies 1 and 2. Participants would simply doubt in penitence if it were incongruent but would trust in it more if it were congruent. To test these concerns, we decided to run Study 5, aiming to (1) replicate Studies 1 and 2 and (2) control for the trust in statements of penitence expressed by perpetrators. We hypothesized that credible information about

cognitive or emotional penitence impacts moral impressions more than identical information that is perceived as less credible.

Study 5

Study 5 was pre-registered at the journal, thanks to the feedback of reviewers.

The protocol of this study has also been registered at Aspredicted.org

(<https://aspredicted.org/uf9ny.pdf>).

Participants. Instead of simulating interactions for the power analysis that we found requiring too many assumptions, we were unwilling to make them. We relied on a rule of thumb and simply doubled the sample we used in Studies 1 and 2. As a result, a sample of $N = 404$ participants took part in the online experiment via Prolific. We excluded participants who did not pass the control question (i.e., have you experienced a fatal heart attack while watching Netflix?), so our final sample was $N = 381$ (167 females, 9 others or prefer not to say, $M_{age} = 24.62$ years, $SD = 7.32$).

Procedure and Materials. The study had a within-subject design, recycling the scenarios we used in Studies 1 and 2: the murder of Kamil's parents and the murder by shooting down the civilian Boeing jet. Participants evaluated the moral perception of wrongdoers and trust in each of their expressions of (lack of) penitence in 8 vignettes. The vignettes were created by manipulating whether the perpetrator expressed guilt (yes/no) and deontological beliefs (yes/no). For example, we asked: "Please mark on a scale from 0 to 7 to what extent do you think you believe what the perpetrator says" on a scale from 0 (*I do not believe the perpetrator feels guilty at all*) to 7 (*I fully believe that the perpetrator feels guilty*). This time we did not include a condition in which no information about penitence was provided because it is impossible to assess trust in information that is not provided.

Results

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Descriptive statistics for Study 5 are presented in Table 3. Moral perception ratings were modestly correlated to the perceived credibility of expression of guilt $r(3047) = .23, p < .001$, and of deontological beliefs, $r(3047) = .21, p < .001$. The two credibility ratings were only moderately correlated, $r(3048) = .52, p < .001$, suggesting they cannot be simply treated as items loading one factor: assessing the person's general credibility.

Table 3

Descriptive Statistics for Study 5

	Moral Impression	Credibility Guilt	Credibility Deontological Beliefs
Guilt, deontological beliefs	3.64 [2.31, 4.98]	4.91 [4.68, 5.15]	5.09 [4.91, 5.26]
No guilt, deontological beliefs	2.43 [1.09, 3.77]	4.69 [4.46, 4.92]	4.60 [4.42, 4.77]
Guilt, non-deontological beliefs	2.32 [0.99, 3.66]	3.94 [3.71, 4.18]	4.53 [4.36, 4.71]
No guilt, non-deontological beliefs	1.56 [0.23, 2.90]	5.13 [4.90, 5.36]	5.08 [4.91, 5.26]

Note. Data presented as mean [95% confidence interval].

Moral Impressions. First, we tried to replicate the previous findings regarding the impact of expressing guilt and deontological beliefs on the moral perception of the perpetrator. To this end, we submitted our data to a linear mixed effect model, with moral evaluation as the dependent variable, expression of guilt (yes/no), or deontological beliefs (yes/no) and their interaction as factors, and participants' ID and scenario (Kamil or Boeing) as clustering variables. Factors were mean-centered and set to -0.5 for no penitence and 0.5 for penitence. We used subtler modeling than in Studies 1-4 to parse out some of the variance attributable to the experimental design that could confound the results. Hence, b in this analysis refers to the unstandardized regression coefficient and not to Bayes Factor (B_{10}).

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Consistently with Studies 1 and 2, we found that expressing guilt and deontological beliefs had a positive impact on moral perception of the wrongdoer, $b = 0.99$ [0.89, 1.08], $t(2663) = 20.84$, $p < .001$ for guilt, and $b = 1.09$ [1.00, 1.19], $t(2663) = 23.08$, $p < .001$ for deontological beliefs. These effects were qualified by an interaction, $b = 0.46$ [0.27, 0.64], $t = 4.82$, $p < .001$ (Figure 7).

Decomposing the interaction with Bonferroni-corrected post-hoc tests, we see that expression of guilt benefited the wrongdoer more when it was accompanied by deontological beliefs $b = 1.22$ than when it was accompanied by non-deontological beliefs, $b = 0.76$. This way, we successfully replicated the penitence congruity effect in a within-subject design.

Figure 7

Impact of Deontological Beliefs and Guilt on Judgments About Wrongdoers' Morality in Study 5

Note. Error Bars Represent 95% Confidence Intervals.

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Credibility Ratings. Next, we used the same modeling to see whether a type of penitence influences credibility ratings. We pre-registered to use precisely the same analysis as for moral impressions.

Credibility of expression of guilt was lower than the expression of not feeling guilt, $b = -0.48 [-0.61, -0.35]$, $t(2663) = -7.02$, $p < .001$; and that it was higher when it was accompanied by deontological beliefs compared to when accompanied by non-deontological beliefs, $b = 0.26 [0.07, 0.13]$, $t(2663) = 3.86$, $p < .001$. Critically, the main effects were qualified by an interaction, $b = 1.42 [1.15, 1.68]$, $t(2663) = 10.34$, $p < .001$. Decomposing this interaction with simple effects revealed that expression of guilt impacted credibility of the penitence negatively when it was accompanied by non-deontological beliefs, $b = -1.19 [-1.37, -1.00]$, $t(2663) = -12.28$, $p < .001$, and positively when it was accompanied by deontological beliefs, $b = 0.23 [0.04, 0.42]$, $t(2663) = 2.35$, $p = .019$. Simply put, when the expression of guilt was inconsistent with held beliefs, its' perceived credibility was lower than the expression of not feeling guilt. Nevertheless, when the expression of guilt was consistent with held beliefs, its perceived credibility was higher than the expression of not feeling guilt. That said, people trusted statements of feeling guilt for a transgression more if these statements were congruent with held beliefs about the permissibility of this transgression.

We observed the same pattern when assessing the credibility of deontological beliefs. Although this time the main effects were non-significant, p 's $> .652$, we again observed a guilt by deontological beliefs interaction, $b = 1.04 [0.78, 1.30]$, $t(2664) = 7.77$, $p < .001$. Decomposing this interaction with simple effects revealed that expression of deontological beliefs impacted credibility of the penitence negatively when it was accompanied by expression of not feeling guilty, $b = -0.49 [-0.67, -0.30]$, $t(2664) = -5.16$, $p < .001$, and positively when it was accompanied by expression of

feeling guilty, $b = 0.55$ [0.37, 0.74], $t(2664) = 5.82$, $p < .001$. Hence, as in the case of credibility of a feeling of guilt, people trusted more those expressions of deontological beliefs that were congruent with the expression of guilt.

Exploratory Analysis. Although this was not pre-registered, we decided to test whether credibility ratings moderate the impact of penitence on transgressors' moral perceptions. Intuitively, as the credibility of the expression of penitence increases, so does the impact. To this end, we built a regression model, with moral perceptions as the dependent variable and predictors such as expression of guilt (yes/no), beliefs (non-deontological/ deontological), their credibility (on a scale of 1-7), and the two interaction terms of a statement and its credibility. Critical for our study is that the two interaction terms were significant (Figure 8), $b = 0.19$ [0.14, 0.24], $t = 7.29$, $p < .001$ for deontological beliefs by their credibility interaction, and $b = 0.34$ [0.29, 0.39], $t = 13.25$, $p < .001$ for guilt by its credibility interaction. The interactions clearly show that the impact of penitence was larger when the statement was found to be credible, to the extent that unbelievable statements had almost no impact on the transgressors' moral impression.

Figure 8

Impact of Penitence as a Function of its Perceived Credibility

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Discussion

In this fifth experiment, we again confirmed the penitence congruity effect observed when people make comparisons between moral transgressors differing in their expressions of penitence. For example, the premium for expressing guilt is larger when it is accompanied by statements about the transgression being always impermissible (deontological beliefs) compared to when it is accompanied by a statement about transgressions being justifiable (non-deontological beliefs). This decrease in the effectiveness of incongruent penitence is likely attributable to the lower credibility of

such penitence. That is, people disbelieve that a person is truly feeling guilty if they claim that the transgression they committed is justified. This disbelief, in turn, limits the positive effect of penitence on wrongdoers' moral impressions.

Our results (Table 3) exclude the alternative explanation, in which the penitence of people perceived as immoral is simply perceived as less believable. That is because most immoral transgressors (with no guilt and with non-deontological beliefs) are trusted the most, while their moral perceptions are the lowest. At the same time, transgressors who are the most moral, and show both guilt and deontological beliefs, are similarly trusted but judged as the most moral.

General Discussion

Our results suggest that deontological beliefs and guilt expressed by the wrongdoer are incorporated into their moral impressions. In five studies, we showed that deontological beliefs and guilt increased judgments of wrongdoers' morality, even in the most serious cases (i.e., murders), to almost a neutral level (that is, their morality was judged to be close to scales midpoint of 4). We replicated this finding in a variety of unethical situations – from lesser to greater transgressions (stealing, fighting, cheating on a romantic partner, and murder), in both hypothetical stories as well as stories based on real-life events. We think that when people assess wrongdoers' morality, they use information about wrongdoers' cognitive and emotional penitence on top of information about the transgression. This information combined may help reduce social uncertainty and form accurate predictions about the wrongdoers' future conduct (FeldmanHall & Shenav, 2019; Turpin et al., 2020; Walker et al., 2020).

We observed a penitence congruity effect, i.e., that jointly expressing guilt and deontological beliefs increased the impact of each component of the penitence. However, this effect was observed when transgressors differing in their penitence were

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judged side-by-side (in a within-subject design in Studies 1, 2, and 5), but not when the wrongdoers were judged separately (in a between-subject design in Studies 3 and 4). Moreover, in Studies 3 and 4, wrongdoers who signaled non-deontological beliefs and lack of guilt were judged more harshly than agents for whom no information about guilt or beliefs was provided. It means that the wrongdoer about whom there is no such information is granted some benefit of the doubt.

Our results must be interpreted considering several limitations. We want to highlight a clear difference in the generalization of the deontological belief and guilt information. The guilt information pertains only to the single act in question (e.g., “John does not feel guilty about it”), whereas the belief pertains much more broadly to the whole class of similar actions (e.g., “although he believes that stealing is unacceptable”). The belief information may be more powerful as its content is far more general and, therefore, pertains to a broader class of moral actions. Next, emotions are easier to think of as continuous (emotions differ in intensity) than beliefs (that are intuitively dichotomous: you either agree with a statement or not). That is probably why we found that deontological beliefs are a “stronger” signal of morality than guilt. Future studies should control this issue, and researchers should carefully equate the materials in terms of generality, ensuring that the belief information is just as “event-specific” as the information about emotions.

Related to this point, it can be easier for individuals to imagine a wrongdoer that displays incongruent penitence compared to one that, for example, feels guilty for conducting an act he believes to be justified. Archetypical penitence includes both: emotions and beliefs. A wrongdoer who does not fit this representative example may be less credible simply because they does not fit the stereotype (Bar-Hillel, 1984).

Another limitation, prevalent in psychological literature in general (Henrich et al., 2010), is that we only tested samples from one western country. It is hard to generalize these findings to the entire human population, knowing that countries and cultures differ substantially in moral values (Haidt et al., 1993) and choices (Sorokowski et al., 2020; Winking & Koster, 2020).

The practical implication of our research relates to making moral impressions after a moral transgression. We found that the beneficial effect of penitence was more significant in studies employing a within-subjects design, where participants could compare wrongdoers differing in their expression of guilt and deontological beliefs. Individuals willing to effectively rebuild their reputation may therefore wish to compare themselves to other wrongdoers who, on top of acting unethically, displayed socially undesirable emotions (“I do not feel guilty”) and non-deontological beliefs (“What I did is not wrong”). The prosecution, however, may wish to underline the lack of penitence in a suspect or its incongruence.

Conclusions

When people make moral assessments about a wrongdoer’s morality, they obviously consider information about what the wrongdoer did. Despite the behavior’s obvious relevance, our results showed how significant it is also looking at the wrongdoer’s “mind” and “heart” simultaneously. We found that even murderers benefit from expressing guilt and deontological beliefs, and if their cases are compared with other cases with a lack of even one type of penitence, they gain even more (i.e., are perceived as much less immoral), what we termed as the moral superadditivity effect.

Acknowledgments

The first author thanks Geoffrey Goodwin, Jonathan Baron, and Corey Cusimano for fruitful conversations about morality during her stay at the University of

Pennsylvania in 2019. Both authors thank Geoffrey Goodwin for his feedback on the manuscript and Paweł Niszczoła for his statistical help.

Funding

This research was supported by the grant “Moral Coherence: the relationship between people’s behavior and their moral views and emotions” (number 2017/01/X/HS6/01332) from NCN Miniatura 1 and by the grant “Moral thinking and unethical behavior” (number PN/BEK/2020/1/00058/DEC/1) from the NAWA Bekker Programme.

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