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Does willful ignorance deflect punishment? – An experimental study ☆

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ABSTRACT

This paper studies whether people can avoid punishment by remaining willfully ignorant about possible negative consequences of their actions for others. We employ a laboratory experiment, using modified dictator games, in which a dictator can remain willfully ignorant about the payoff consequences of his decision for a receiver. A third party can punish the dictator after observing the dictator's decision and the resulting payoffs. On the one hand, willfully ignorant dictators are punished less if their actions lead to unfair outcomes than dictators who reveal the consequences before implementing the same outcome. On the other hand, willfully ignorant dictators are punished more than revealing dictators if their actions lead to fair outcomes. We conclude that willful ignorance can circumvent blame when unfair outcomes result, but that the act of remaining willfully ignorant is itself punished, regardless of the outcome. Models of procedural fairness combining *ex ante* and *ex post* fairness qualitatively predict the observed punishment pattern.

> "A man is responsible for his ignorance." – Milan Kundera, *Laughable Loves*

1. Introduction

Many important decisions involve tradeoffs between personal benefits and impacts on the welfare of others. In such situations, there is often the possibility of remaining uninformed about how one's actions affect others. Moreover, such "willful ignorance" may provide a justification for self-interested behavior. That is, while a decision maker is typically held responsible for knowingly committing an action that hurts others, the attribution of responsibility is less clear when he acts without knowledge of consequences. Such reasoning may even hold when the decision to remain ignorant is made privately, as ignorance allows one to act selfishly without direct confrontation with the consequences for others or the associated guilt

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(Dana et al., 2007). Thus, strategically manipulating one's information about the consequences of one's actions for others provides a path through which ignorance, even when deliberate, might provide insulation from responsibility or blame.

In corporate and political contexts, individuals often present ignorance as an excuse for why they should not be held responsible for adverse outcomes that they caused. For example, following corporate scandals and fraud, CEOs and board members often excuse their role by claiming they were not aware of what took place further down the hierarchy. Examples include former Enron CEO Kenneth Lay, who claimed ignorance about any accounting irregularities at the failed firm, and Rupert Murdoch, who was directly accused of showing "willful blindness" concerning the phone-hacking practices at News Corporation.[4] In the political sphere, public officials often argue that being unaware of acts committed by subordinates should exonerate them from blame.[5] For example, in response to revelations about the NSA's widespread wiretapping of allied leaders' phones, high-ranking U.S. government officials claimed lack of knowledge that these surveillance practices were taking place.[6]

Prior research in economics demonstrates that decision makers seize upon strategies to act self-interestedly at the expense of others, when presented with opportunities for avoiding blame or responsibility.[7] An important but largely open question, however, is to what extent such strategies are, in fact, effective in deflecting blame.[8]

Our study directly addresses this issue, by quantifying the extent to which engaging in willful ignorance allows a decision maker to deflect external blame for his actions and their consequences. To this end, we conduct a laboratory experiment in which some participants can choose to remain ignorant about the consequences of their actions for others and in which other participants have the opportunity to impose costly monetary punishments after observing behavior and the resulting outcomes. We interpret the assigned punishment as a measure of blame and responsibility attribution for an action and its consequences.

More precisely, in our experiment a dictator plays a binary dictator game under one of two possible states of the world. The state of the world is chosen by a random device and determines whether an action that is personally beneficial for the dictator benefits or harms the receiver. The dictator can decide whether or not to learn the true state, and faces no cost for acquiring this information. The realized state is irrelevant for the dictator's payoffs, meaning that ignorance creates no uncertainty about the dictator's payoffs, but enables the dictator to remain ignorant about the effects of his action on others. Thus, our design affords the dictator the opportunity to remain willfully ignorant regarding the social consequences of his actions.

Our focus is not on the effects of willful ignorance per se, however (cf. Dana et al., 2007), but instead on the extent to which remaining willfully ignorant allows the dictator to avoid blame and responsibility when a bad outcome results for the receiver. Therefore, in our experiment a third party observes the actions of the dictator and the outcome of the game and decides whether and to what extent to punish the dictator for his behavior.

Our results show that, when outcomes detrimental to the receiver result, ignorance is indeed effective in reducing punishment. That is, when taking an action that increases one's own welfare, but also results in harm to others, it is better to have avoided knowledge that harm would occur. Thus, willful ignorance can help avoid blame.

At the same time, however, we find that willful ignorance itself is evaluated negatively, regardless of the consequences. That is, choosing to forgo information concerning the receiver's payoffs and acting in a self-regarding way incites punishment, even when the resulting state of the world is one in which the dictator's self-interest is also beneficial for the receiver. By remaining ignorant the dictator shows disregard for the possibility that the receiver may obtain a low payoff and this appears sufficient for inducing punishment by third parties. Thus, the mere act of avoiding information about how one's decisions affect others provokes blame and punishment.

As a result of the above two counteracting effects of ignorance on punishment by third parties, in expectation, willful ignorance does not yield a higher payoff than knowingly acting selfishly. That is, while ignorance provides some blame avoidance when bad outcomes result, the fact that its use produces blame even when the outcomes are good makes it an ineffective strategy for obtaining higher payoffs in our experiment.

However, the punishment *pattern* revealed in our study has important implications for how willful ignorance might interact with punishment outside the laboratory. Attention to the possibility of blame and punishment is often salient only when bad outcomes arise – e.g., following a scandal or harmful misdeed. The fact that decision makers are penalized less

[4] See http://www.businessweek.com/stories/2006-02-05/commentary-ken-lays-audacious-ignorance and http://www.guardian.co.uk/media/2012/may/01/phone-hacking-report-wilful-blindness.

[5] In fact, political science has long recognized the ability to avoid blame as an important determinant of a politician's success (Weaver, 1986) and ignorance as a potential strategy to do so (McGraw, 1991).

[6] See http://online.wsj.com/news/articles/SB10001424052702304470504579162110180138036.

[7] Some research demonstrates that decision makers hide behind uncertainty – both their own and that of others – about what outcomes will result or how such outcomes were produced in order to keep more money in a distributional context (Dana et al., 2007; Andreoni and Bernheim, 2009; Ockenfels and Werner, 2012). In some cases, this can even mean that people are willing to accept less money in order to forgo the opportunity to share and have the other person know that sharing could have taken place (Broberg et al., 2007; Dana et al., 2006; Lazear et al., 2012). Hamman et al. (2010) show that delegating distributive decisions to others similarly provides a justification for self-interested behavior. More generally, a growing literature on behavioral ethics (Treviño et al., 2006; Bazerman and Gino, 2012) seeks to identify factors that influence ethical conduct, often highlighting how contextual features can lead otherwise "good" people to feel licensed to act unethically (Mazar et al., 2008; Dana et al., 2012).

[8] Experimental research in economics has only recently started to investigate the effectiveness of blame-avoidance strategies. For example, Bartling and Fischbacher (2012) show that delegating a decision that can lead to an unfair allocation is an effective way to shift blame from oneself toward the person to whom the decision is delegated.

when acting under willful ignorance therefore suggests that willful ignorance may be a good strategy in contexts where punishment is unlikely to be considered absent some noticeably bad consequence. Thus, corporate and political leaders who suspect wrongdoing in the institutions they manage may, indeed, benefit from a strategy involving willful ignorance.

Our results also have implications for economic theories of social preferences. We find significant differences in punishment for the same outcome, depending on whether the dictator revealed the state before making his choice. This cannot be explained by theories that incorporate social motives through preferences over final payoff distributions (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000), which predict the same punishment for an allocation, independently of the actions that led to the allocation. The qualitative comparative-static effect of willful ignorance on punishment is consistent with theories that incorporate intention-based reciprocity as a motive (Rabin, 1993; Dufwenberg and Kirchsteiger, 2004; Falk and Fischbacher, 2006; Sebald, 2010). However, these models fail to predict our additional finding that willfully ignorant dictators are still punished less when the beneficial outcome occurs than when the unfair outcome obtains. That is, outcomes matter even for willfully ignorant dictators.

Research on procedural fairness recognizes that people care not only about distributions of final outcomes, but also about the procedures employed to implement outcomes (Frey et al., 2004; Bolton et al., 2005; Trautmann, 2009; Krawczyk, 2011; Fudenberg and Levine, 2012). Our study contributes to this literature in that we show that punishment is not determined solely by consequences, but also by the process – in our case, the dictator's decision whether to acquire information – that leads to those consequences. Our research thus also relates to recent studies that find both *ex ante* fairness (equal opportunities, fair procedures) and *ex post* fairness (equal payoffs) to influence distributive choices (Krawczyk and Le Lec, 2010; Brock et al., 2013; Cappelen et al., 2013). We find that simple models combining *ex ante* and *ex post* fairness (e.g., Brock et al., 2013; Saito, 2013), are able to predict both the qualitative comparative-static effect of willful ignorance on the assigned punishment as well as the finding that punishment depends on consequences following willful ignorance.

There exists prior evidence that willful ignorance can be used to obtain more favorable wealth distributions, in the context of bilateral bargaining. Building on earlier experiments on bilateral bargaining with incomplete information about values, which demonstrated that more informed parties extract more favorable payoffs (Roth and Murnighan, 1982), Kagel et al. (1996) show that responders in an ultimatum game are willing to accept very unequal monetary payoffs more often when the proposer is only partly informed about the receiver's payoffs than when the proposer has complete information. Thus, a party that is ignorant about the consequences of an offer for the other party can make less favorable offers. Conrads and Irlenbusch (2013) – using a design, like ours, that is motivated by Dana et al. (2007) – confirm that this extends to (willful) ignorance: offers to another party by a proposer in an ultimatum bargaining game, who chooses to remain ignorant or cannot avoid being ignorant, are accepted more frequently than comparable offers by a fully informed proposer. Our first result that willful ignorance deflects punishment for low receiver payoffs thus concords with their finding that willful ignorance leads to higher acceptance rates of unequal proposals.

The remainder of the paper is organized as follows. Section 2 describes our experimental design. Section 3 summarizes our results with respect to the observed punishment pattern and the dictator's decisions. Section 4 discusses the predictions of different social preference models regarding the qualitative comparative-static effect of willful ignorance on punishment behavior. Finally, Section 5 concludes the paper.

2. Experimental design

Our study uses one-shot binary dictator games that are modified to allow for willful ignorance and punishment. In the modified games, there are three players, as well as a move by nature that determines payoffs. Nature moves first, implementing one of two payoff states, ω_1 or ω_2, with equal probabilities, i.e., $p(\omega_1)=p(\omega_2)=0.5$.

The state determines the relationship between a dictator's choices and the payoffs of a passive receiver, as depicted in Fig. 1. More precisely, a dictator chooses between two options, a_1 and a_2. Regardless of the state, the dictator receives a payoff of 70 for choosing a_1 and 50 for choosing a_2. However, the state determines whether or not the dictator's and receiver's interests are aligned. In ω_1, the receiver receives 10 for the dictator's choice of a_1 and 50 for a choice of a_2. In ω_2 the receiver's payoffs are reversed: 50 for a choice of a_1 and 10 for a_2.

Fig. 1 also presents labels that provide an interpretation of the dictator's actions and their consequences, conditional on the realization of a particular state. In state ω_1, a choice of a_1 leads to an *unfair* allocation in that the dictator receives the

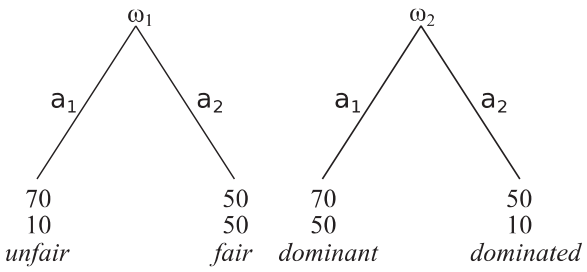

Fig. 1. The dictator's choice options in state ω_1 and state ω_2. The dictator's monetary payoff is shown in the top row, the receiver's payoff in the bottom row.

highest possible payoff and the receiver the lowest one. Conversely, a choice of a_2 in state ω_1 leads to a *fair* allocation. Thus, in ω_1 there is a conflict between what is best for the dictator and for the receiver, as in standard dictator games. However, this conflict is entirely removed in state ω_2. Here a choice of a_1 is *dominant* for a dictator who cares both about her own payoff and that of the receiver, while a_2 leads to a *dominated* allocation of 50-10.[9]

Depending on the treatment, the dictator is either informed about the realized state or not. In a *baseline* condition, the dictator is informed about the state before making a choice. In a *hidden information* condition, he is not initially informed, but he can choose whether to find out the state at no cost or remain willfully ignorant. The dictator then chooses between a_1 and a_2, either with or without knowledge of the state.

Finally, a third party can inflict punishment upon the dictator, after observing the dictator's choices (a_1 or a_2 and, in the hidden information condition, whether he remained ignorant or not), the realized state, and thus the resulting payoffs. Our primary interest is in these punishment decisions by third parties who were not directly affected by the dictator's decision.[10]

The third party has an endowment of 50 and can reduce the dictator's payoff. Punishment is costly for the third party. For each unit of own income spent by the third party, the dictator's payoff decreases by 5. Punishment is constrained in that the dictator's payoff cannot be reduced below 10. Thus, for example, if the dictator's payoff is 70 before punishment, the third party can spend any integer amount between 0 and 12 of own income, to deduct up to 60 from the dictator's payoff. If the dictator's payoff is 50, the third party can spend at most 8 units of own income, which decreases the dictator's payoff by 40.

Final payoffs are as follows. The dictator receives 70 or 50, depending on her choice of a_1 or a_2, minus the punishment assigned by the third party (five times the units of own income spent by the third party). The receiver gets either 50 or 10, depending on the dictator's decision and the relevant state. The third party's payoff is 50 minus the units of own income spent to punish the dictator.

We implemented two treatment conditions that differ only with respect to the information that the dictator possesses regarding the state.

2.1. Baseline

In the baseline condition, it is common knowledge that the dictator is informed about the state of the world before he makes his decision between a_1 and a_2. Thus, the dictator is fully aware of whether the choice is between the *unfair* and *fair* allocations or the *dominant* and *dominated* ones. To elicit dictator's complete strategies, we implemented the strategy method. That is, we asked each dictator how he would decide if state ω_1 were realized and how he would decide if state ω_2 were realized. Only after the dictator made both choices, he learned the actual realized state, and he knew that his choice in this state would be binding.

The third party was informed (i) about the state of the world and (ii) the dictator's choice in this realized state, and could then assign punishment to decrease the dictator's payoff. We also applied the strategy method to elicit the punishment choices. That is, we asked the third party to indicate how much she would deduct from the dictator's payoff for both possible choices by the dictator in both possible states of the world. Only after the third party made her decisions in all four possible cases, she learned the state of the world and the dictator's decision in this state. The third party knew that the chosen amount of punishment in the relevant case would be binding.

2.2. Hidden information

In the hidden information condition, it is common knowledge that the dictator is initially uninformed about the state of the world. Importantly, this uncertainty does not apply to the dictator's own payoffs, which are identical in both states. A choice of a_1 gives the dictator 70, while a_2 gives the dictator 50. Uncertainty thus only applies to the consequences of the two choices for the receiver's payoffs, as described in Fig. 1. The dictator has the option to reveal the state before making his allocation decision. Ignorance is the default, but revealing is costless and implemented by clicking a button on the decision screen.

If the dictator remains ignorant, he will never be informed about the underlying state of the world and he will thus never learn the receiver's payoff. However, if the dictator reveals, he learns the state of the world and chooses either between the *unfair* and *fair* allocation in state ω_1, or between the *dominant* and *dominated* allocation in state ω_2.[11]

[9] We use the labels "fair," "unfair," etc. for expositional reasons in the paper. In the experimental instructions, the dictator's choice options were neutrally framed as "Option 1" and "Option 2."

[10] We use a third-party, instead of a second-party, punishment design, firstly, because we are primarily interested in broad social norms of whether willful ignorance serves as an excuse for acting in a self-interested manner and third-party punishment is often employed to study norm violations; see, e.g., Fehr and Fischbacher (2004). Moreover, measuring third-party punishment allows observing punishment assignments that are not confounded by income or direct reciprocity effects. In contrast to the receiver (i.e., the second party), the third party always has an endowment of 50 points, irrespective of the resulting outcome.

[11] A basic common feature of our two treatments is that the information about the state of the world is *always* available to a decision maker, and the only difference is that willful ignorance is possible in one treatment but not in the other. This allows us to compare the consequences of a dictator's decision to remain ignorant when she could have acquired information, to situations in which the dictator is, either by default or by choice, informed. An alternative baseline, in which dictators are never informed, potentially provides insights into how judgments of punishment and blame are formed (cf. Gurdal et al., 2013), but departs from our main research question.

As in the baseline, we implemented the strategy method to elicit the allocation choices, where possible. That is, dictators first decided whether they wanted to acquire the payoff information or remain ignorant. If a dictator chose to remain ignorant, he then made a choice between a_1 and a_2, while if the dictator chose to acquire the payoff information, he then indicated choices of a_1 or a_2 for each of the two possible realized states. Only after the dictator made both choices, he learned the state of the world; he knew that his choice in this state would be binding.

The third party was informed of (i) whether or not the dictator revealed the state, (ii) the realized state of the world, and (iii) what choice the dictator made, either in ignorance or conditional on the realized state. The third party thus knew the state of the world even if the dictator chose to remain ignorant. We again used the strategy method to elicit the punishment decisions by third parties for all possible states and actions by the dictator. Note that there are now eight possible cases, as all four possible allocations can result either after remaining ignorant or after revealing.

2.3. General procedures

Before subjects entered the lab, they randomly drew a place card that specified at which computer terminal to sit and thus a subject's role and the group matching. Subjects found paper copies of the instructions at their assigned computer terminals. One third of the subjects were assigned the role of the dictator (neutrally labeled as “player A”). Two thirds of the subjects read in the instructions that they would be either in the role of the receiver (“player B”) or in the role of the third party (“player C”). These subjects all made choices as third parties and they learned of their actual roles only afterward. If they were assigned the role of the third party, then the chosen amount of punishment in the relevant case would be binding. If they were assigned to the role of receiver, their decisions would have no impact on the group. This procedure enabled us to elicit punishment decisions, which are the focus of this paper, from two thirds of our subjects.[12]

We conducted four sessions of the baseline condition, with 81 subjects in total (27 subjects in the role of the dictator and 54 subjects in the role of the receiver/third party). We also conducted four sessions of the hidden information condition, with 90 subjects in total (30 subjects in the role of the dictator and 60 subjects in the role of the receiver/third party).

All sessions took place at the decision laboratory of the Department of Economics at the University of Zurich in June 2012. The experiments were computerized with the software “z-Tree” (Fischbacher, 2007) and the recruitment was conducted with the software “ORSEE” (Greiner, 2003). Subjects were students from the University of Zurich and the Swiss Federal Institute of Technology (ETH) in Zurich. Students majoring in economics or psychology were not eligible to participate. Each subject participated in only one experimental condition. Subjects' instructions included comprehension questions that had to be answered correctly before the experiment could begin. A summary of the instructions was read aloud to ensure common information regarding the instructions. An English translation of the original German instructions for the hidden information condition can be found in the online Appendix II. Sessions lasted about 50–60 min. Payoffs from the game, denominated in “points,” were converted into money at the rate of 2 points to CHF 1 (about $1 at the time of the experiment) at the end of the experiment. On average, subjects earned CHF 39.80 in the baseline sessions and CHF 41.30 in the hidden information sessions. These amounts include a show-up fee of CHF 15.

3. Results

3.1. Punishment pattern

The focus of this paper is the pattern of punishment for dictator allocation choices by third parties. Our particular interest is in studying how the dictator's choice to either remain ignorant or become informed about the receiver's payoffs influences punishment.

Fig. 2 shows the average punishment that was assigned to the dictator for the different realized allocations in the baseline and in the hidden information condition.[13] The exact values can be read from Table 1. For instance, the left black bar in Fig. 2 shows that the dictator receives a deduction of 19.72 points, on average, if he chooses the *unfair* allocation in state ω_1 in the baseline condition.

In accordance with prior findings on third-party punishment (e.g., Fehr and Fischbacher, 2004), the figure shows that the dictators are punished significantly more for knowingly implementing the *unfair* allocation than for the *fair* allocation. This holds true in the baseline and when the dictator chose to acquire the information in the hidden information condition. When dictators remained ignorant, the difference in punishment for implementing the *unfair* vs. *fair* allocation was smaller, but also statistically significant. Thus, regardless of the dictator's knowledge or willful ignorance of the consequence to the receiver, a choice that results in an *unfair* allocation is punished more relative to one that results in a *fair* one ($p < 0.01$ in all three comparisons, using a Wilcoxon signed-rank test).[14]

[12] Note that this design choice, while eliminating strategic concerns for third parties, might place third parties mentally in the role of the receivers when making their punishment decisions. Nikiforakis and Mitchell (2014) compared a punishment protocol like ours to a protocol where the role of the third party was known in advance. They found a greater demand for punishment when roles were assigned *ex post* but, importantly, this effect was constant across treatments and thus did not influence treatment effects.

[13] Averages are calculated including observations with zero punishment, i.e., we report unconditional averages.

[14] All tests reported in this paper are two-sided.

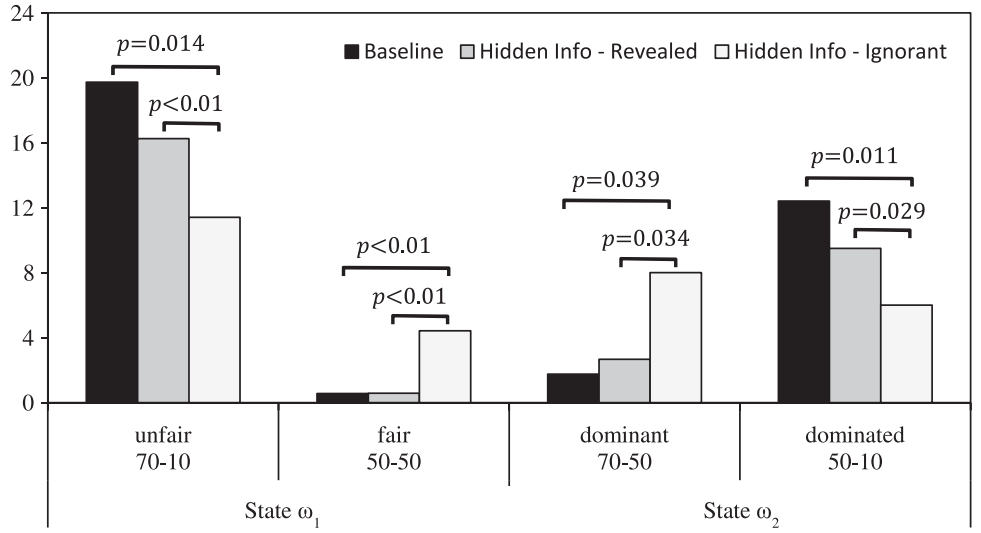

Fig. 2. Average punishment of the dictator by the third party. The significance of the difference in punishment is indicated by the *p*-values of the respective non-parametric tests (signed-rank or rank-sum). All four comparisons between baseline and hidden info – revealed are insignificant.

Table 1
Punishment behavior by experimental condition.

	Average punishment			Frequency of punishment		
	Baseline	Hidden info – revealed	Hidden info – ignorant	Baseline	Hidden info – revealed	Hidden info – ignorant
Unfair (70-10)	19.72	16.25	11.42	0.61	0.53	0.38
Fair (50-50)	0.56	0.58	4.42	0.04	0.05	0.20
Dominant (70-50)	1.76	2.67	8.00	0.13	0.13	0.27
Dominated (50-10)	12.41	9.50	6.00	0.50	0.37	0.28

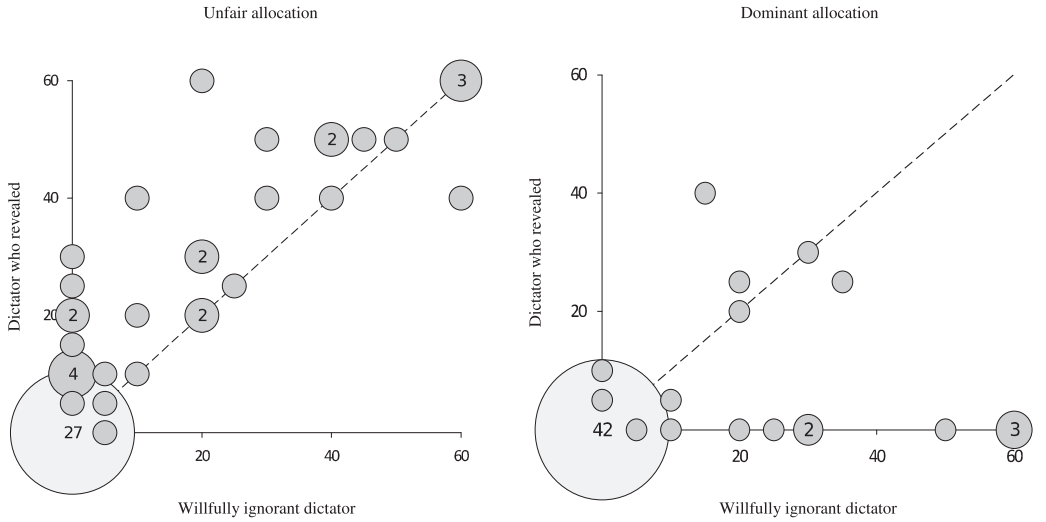

Fig. 3. Individual third party's punishment assignment for the *unfair* and *dominant* allocation depending on the dictator's choice to either reveal or remain ignorant.

Our data show, however, that willful ignorance mitigates the punishment received by a dictator whose actions result in the *unfair* allocation. A willfully ignorant dictator who chooses 70 points for himself is punished significantly less if the *unfair* allocation realizes (11.42) compared to a dictator who directly chooses the *unfair* allocation when the consequences are known – i.e., after revealing (16.25) or in the baseline condition (19.72) (Wilcoxon signed-rank test, $p < 0.01$, and

Wilcoxon rank-sum test, $p=0.014$, respectively).[15] Thus, our experiment reveals that willful ignorance can mitigate some of the blame and punishment received when knowingly implementing unfair outcomes.

Result 1. Willfully ignorant dictators are punished less for implementing an unfair outcome compared to dictators who knowingly chose the same outcome. Willful ignorance thus deflects blame for unfair outcomes.

However, the opposite pattern emerges when one considers what happens in cases where the resulting allocation is the *dominant* one, which is favorable to both the dictator and the receiver. Here, willfully ignorant dictators are punished significantly more (8.00) compared with dictators who choose the same *dominant* allocation after revealing (2.76) or in the baseline condition (1.76) (Wilcoxon signed-rank test, $p=0.034$, and Wilcoxon rank-sum test $p=0.039$, respectively). Thus, willful ignorance itself appears to receive blame and punishment, even when it results in an outcome favorable to everyone.

Result 2. Willfully ignorant dictators are punished more for implementing a dominant outcome compared to dictators who knowingly chose the same outcome. Willful ignorance is thus inherently blameworthy.

Due to this opposing effect of willful ignorance on punishment, the difference in punishment between the *unfair* and the *dominant* allocation is much smaller when the dictator remained ignorant (3.42) than when he revealed the state in the hidden information condition (13.58) or in the baseline (17.96). Nevertheless, all three differences are highly significant (Wilcoxon signed-rank tests, $p<0.01$).

Result 3. Dictators, including willfully ignorant ones, are punished more if an unfair outcome is implemented than if a dominant outcome is implemented. Outcomes thus matter for punishment even under willful ignorance.

We observe a similar pattern when a dictator chooses 50 for himself. In accordance with Result 1, if the choice is made under willful ignorance and the *dominated* allocation is implemented, the dictator is punished significantly less (6.00) compared to a dictator who chooses *dominated* after revealing (9.50) or in the baseline condition (12.41) (Wilcoxon signed-rank test, $p=0.029$ and Wilcoxon rank-sum test, $p=0.011$, respectively). However, the willfully ignorant dictator is punished significantly more if the *fair* allocation realizes (4.42) compared to a dictator who chooses *fair* after revealing (0.58) or in the baseline condition (0.56) (Wilcoxon signed-rank test, $p<0.01$, and Wilcoxon rank-sum test, $p<0.01$, respectively).[16] This finding confirms Result 2. The difference in punishment between the *fair* and the *dominated* allocation is again much smaller when the dictator remained ignorant than when he revealed the state in the hidden information condition or in the baseline condition (1.59 vs. 8.92 and 11.85, respectively). This difference is at least marginally significant in all three cases (Wilcoxon signed-rank tests, $p=0.052$, $p<0.01$ and $p<0.01$, respectively), which is consistent with Result 3.

To summarize, we find a consistent comparative-static effect of willful ignorance on punishment. On the one hand, for resulting allocations that yield the receiver the low payoff of 10, the dictator is punished significantly *less* when he remained ignorant than when he had the payoff information (Result 1). On the other hand, for allocations that are beneficial to the receiver – i.e., when the receiver gets the high payoff of 50 – the dictator is punished significantly *more* when he remained ignorant (Result 2). Willful ignorance thus deflects blame and punishment for socially "bad" outcomes (the *unfair* or the *dominated* allocation). The fact that the dictator did not know for sure that the receiver would get a low payoff appears to serve, to some extent, as an acceptable excuse. At the same time, willful ignorance is regarded as blameworthy in itself. A willfully ignorant dictator is punished significantly more than a dictator who reveals or a dictator in the baseline condition when the receiver experiences no harm (in either the *fair* or the *dominant* allocation). Remaining ignorant means that the dictator shows some disregard for the possibility of the receiver obtaining a low payoff, and this appears sufficient for inducing punishment by third parties. Finally, we observe that outcomes matter (Result 3). Dictators always receive more punishment when their actions yield the disadvantageous outcome for the receiver, regardless of the information possessed or acquired by the dictator.

A similar pattern to the one that we observe in punishment levels also emerges when we look at the comparative-static effect of willful ignorance on the frequency of punishment, presented in Table 1. A willfully ignorant dictator who chooses a_1 and a payoff of 70 for himself is punished less often if the *unfair* allocation results (38 percent), compared to a dictator who reveals (53 percent) or to the baseline condition (61 percent) (McNemar test, $p=0.012$, and Fischer exact test, $p=0.024$, respectively). Conversely, if the *dominant* allocation results, a willfully ignorant dictator is punished more frequently (27 percent versus 13 percent, in both cases) (McNemar test, $p=0.039$, and Fischer exact test, $p=0.101$, respectively).[17] Similarly,

[15] We do not find that revealing the state is treated differently from exogenously knowing the state. A comparison of the punishment for a dictator who reveals in the hidden information condition with the punishment in the baseline condition, where the dictator knows the state of the world by default, reveals no significant differences (Wilcoxon rank-sum tests, $p=0.331$, $p=0.743$, $p=0.900$, and $p=0.196$, for *unfair*, *fair*, *dominant*, and *dominated*, respectively).

[16] As we report below, willfully ignorant dictators never chose 50 points for themselves. Also, none of the dictators who revealed chose *dominated* in state ω_2. In the baseline condition, only one dictator chose *dominated*. While we call the allocation (50-10) "dominated," the fact that one subject chose it highlights the possibility that it could alternatively be labeled "spiteful" or "competitive" because it maximizes the relative payoff advantage of the dictator. Punishment for a dictator who learns that the state of the world is ω_2 and nevertheless chooses (50-10) could thus be driven by third parties who want to sanction "spiteful" or "competitive" dictators. We thank a referee for suggesting this interpretation.

[17] In Appendix A we report the results of a hurdle model to address the question whether the effects of willful ignorance on average punishment levels are driven by different frequencies of punishment or different levels conditional on punishment taking place. The analysis suggests that differences in frequencies primarily drive our results.

Table 2
Expected payoffs of dictators under different strategies.

	Baseline	Hidden information	
		Revealed	Ignorant
{*unfair*, *dominant*} ($a_1|\omega_1$) ($a_1|\omega_2$)	59.26	60.54	
{*fair*, *dominant*} ($a_2|\omega_1$) ($a_1|\omega_2$)	58.84	58.38	
{*unfair*, *dominated*} ($a_1|\omega_1$) ($a_2|\omega_2$)	43.94	47.13	
{*fair*, *dominated*} ($a_2|\omega_1$) ($a_2|\omega_2$)	43.52	44.96	
{*unfair*/*dominant*} (a_1)	–		60.29
{*fair*/*dominated*} (a_2)	–		44.79

a willfully ignorant dictator who chooses 50 for himself is punished more often if the *fair* allocation results and less often if the *dominated* allocation results, compared to a dictator who reveals or to the baseline condition, though the difference is not significant in all cases (McNemar tests, $p=0.012$ and $p=0.180$, and Fisher exact tests, $p=0.010$ and $p=0.021$, respectively).[18]

Results 1 and 2 are further illustrated in Fig. 3. The figure shows the individual third parties' punishment assignments in the hidden information condition when either the *unfair* allocation (left panel) or the *dominant* allocation (right panel) is realized. Circles above (below) the 45° line indicate greater (lower) punishment by third parties of dictators who revealed the state before choosing an allocation than of dictators who remained willfully ignorant. The numbers in the circles indicate the number of observations; circles without numbers represent one observation. For instance, when the *unfair* allocation realized, 27 third parties punished neither a willfully ignorant dictator nor a dictator who revealed the state of the world. Providing further support for the punishment pattern we observed earlier, of those third parties who did punish the *unfair* allocation, the majority assigned greater punishment to a dictator who revealed the state than to a willfully ignorant dictator. The pattern is reversed when the *dominant* allocation realizes: the majority of those third parties who punished assigned more punishment to a willfully ignorant dictator than to a dictator who revealed the state.[19]

3.2. Expected payoffs of dictators

We now turn to the dictators' expected payoffs for different strategies. There are four choice strategies in the baseline conditions, based on the two possible realized states and the two possible actions in each state. Because there is no uncertainty, these strategies are identified by the resulting outcomes (see Fig. 1): {*unfair*, *dominant*}, {*fair*, *dominant*}, {*unfair*, *dominated*}, and {*fair*, *dominated*}. In the hidden information condition, the dictator can choose to either reveal the payoff information – in which case the same four strategies as in the baseline become available – or to remain willfully ignorant, in which case the two unconditional action choices, a_1 or a_2, are available. Table 2 shows the dictators' average expected payoffs, based on the punishment behavior of third parties, for each of these possible strategies.

Our main interest is in the effect of the dictator's choice to remain ignorant on his expected payoff. We first compare the strategies that select the same allocations. In this regard, there is little difference between the expected payoffs of a dictator who chooses to remain ignorant and selects action a_1 (60.29) and either a dictator in the baseline (59.26) or a dictator who reveals the payoff information and selects action a_1 regardless of the realized state (60.54).[20]

We can also compare the strategy of remaining ignorant and selecting a_1 to revealing and acting fairly in the hidden information condition or in the baseline condition (i.e., giving the receiver a payoff of 50, regardless of the state). These are the most frequently chosen strategies (see Section 3.3). While the differences are small, the expected payoff of remaining ignorant and playing a_1 (60.29) is significantly higher than the expected payoff of either of these two other strategies (58.38 and 58.84; respectively, Wilcoxon signed-rank test, $p<0.01$, and Wilcoxon rank-sum test, $p<0.01$). The observation of very small payoff differences reflects our finding that willful ignorance has two countervailing effects on punishment, described in Results 1 and 2.

[18] Consistent with our observation on levels of punishment (see footnote 15), there is no difference in the frequency of punishment between the baseline and the hidden information conditions when the dictator reveals the payoff information (Fisher exact tests, $p=0.451$, $p=1$, $p=1$, $p=0.186$ for *unfair*, *fair*, *dominant*, and *dominated*, respectively).

[19] We can also connect the behavior of individual third parties across realized allocations (i.e., across the two panels of Fig. 3). Table A.2 in the online Appendix I presents the punishment patterns of individual third parties across the two outcomes and reveals that we observe similar patterns, at the individual level, to those we find on aggregate.

[20] The difference is marginally statistically significant in the first comparison (Wilcoxon rank-sum test, $p=0.075$) but not in the second (Wilcoxon signed-rank test, $p=0.137$). For all statistical tests in this subsection, we generate a distribution of payoffs, for each strategy, using the empirical punishment behavior of the third parties.

3.3. Dictators' strategies and resulting allocations

Finally, we consider the dictators' information acquisition decisions in the hidden information condition, as well as their allocation choices in both conditions.

In the baseline, 33 percent of dictators (9 of 27) chose the action a_1 regardless of the state, which corresponds to the allocations {*unfair*, *dominant*}. Almost twice as many, or 63 percent (17 of 27), chose the strategy that gave the receiver a payoff of 50 in either stage – e.g., a_2 in state ω_1 and a_1 in state ω_2, or {*fair*, *dominant*}. One subject chose action a_2 in state ω_2, implementing {*fair*, *dominated*}. This overall pattern of behavior is in line with earlier results on dictator games with punishment.[21]

In the hidden information condition, 43 percent of dictators (13 of 30) remained ignorant about the consequences of their decision for the receiver.[22] All of the dictators who remained ignorant chose action a_1 {*unfair*/*dominant*}. Of those dictators who revealed the state, 12 percent (2 of 17) choose a_1 unconditionally {*unfair*, *dominant*} and 88 percent (15 of 17) choose a_2 in state ω_1 and a_1 in state ω_2 {*fair*, *dominant*}. Dictators who revealed the state thus chose the *fair* allocation in state ω_1 in the large majority of the cases, indicating that they reveal the state primarily in order to condition their allocation choice on the state of the world.

The dictators' strategies resulted in different frequencies of the possible allocations in the two conditions. In the baseline, when state ω_1 realized, 33 percent of dictators (9 of 27) chose the *unfair* allocation. The *unfair* allocation resulted with higher frequency (50 percent, or 15 of 30) in the hidden information condition. In state ω_2, the *dominant* allocation resulted almost universally in both the hidden information (30 of 30 cases) and baseline conditions (26 of 27 cases).

The fact that *unfair* allocations result more frequently under hidden information than in the baseline resembles the findings in Dana et al. (2007). In their experiment, hidden information increased the frequency of the *unfair* allocation from 26 to 63 percent. The interpretation of Dana et al. is that the possibility to remain ignorant gives subjects the moral "wiggle room" to behave self-interestedly. While similar in direction, the effect in our experiment is much smaller and not statistically significant (Fisher exact test, $p=0.284$). Of course, a key difference between the two experiments is the presence of a punishment stage in our design. The threat of punishment alone potentially limits the extent to which subjects are willing to act as if willful ignorance absolves them of responsibility. As we see, third parties still hold dictators responsible for their ignorance.[23]

4. How well do social preference models account for the results?

In this paper, we ask the empirical question whether willful ignorance can reduce punishment for a dictator who implements an unfair allocation. Our goal was not to design an experiment to distinguish between different behavioral models of punishment and social preferences. However, it is nevertheless instructive to discuss the qualitative predictions of some leading models in the literature regarding the impact of the dictator's choice to remain willfully ignorant on the punishment by the third party. Note first that the canonical model of pure self-interest predicts no punishment at all, because it is costly. This prediction is clearly inconsistent with the data.

4.1. Outcome-based models of social preferences

Outcome-based models of social preferences introduce utility considerations over parties' final payoffs. For example, two leading models assume that people may dislike payoff inequalities (e.g., Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). In the spirit of these models, suppose that the third party's punishment decisions are driven by the *ex post* payoff difference between the dictator and the receiver. Consistent with the punishment motive "*ex post* inequality," we observe higher punishment for allocations with higher final inequality (Result 3). For a given allocation, however, the punishment motive "*ex post* inequality" does not predict a difference based on how that allocation was produced. Our main findings (Results 1 and 2) do not support this prediction.

4.2. Intention-based models of social preferences

A key feature of a second class of models (Rabin, 1993; Dufwenberg and Kirchsteiger, 2004; Sebald, 2010) is that players respond to the perceived intent (kind or unkind) of other players but not to realized *ex post* payoffs. The kindness of a player is typically evaluated relative to a fair "reference" payoff – e.g., the average between the highest and the lowest efficient payoff that a player can grant another player. A player's action is perceived as kind (unkind) if he believes that his action

[21] In Bartling and Fischbacher (2012), for instance, 63 percent of dictators selected a fair allocation in a binary dictator game with punishment that is comparable to our game if state ω_1 prevails.

[22] This percentage almost exactly matches the 44 percent of dictators who remained ignorant in Dana et al. (2007).

[23] Moreover, while in Dana et al., subjects who remained willfully ignorant never found out about the consequences for the receiver, dictators in our experiment received a "punishment signal" about the realized state of the world, due to the fact that third parties punished differently when the *unfair* allocation resulted than when the result was the *dominant* allocation. Thus, dictators lost some of the benefit of remaining ignorant, due to the information conveyed by punishment.

choice gives the other player more (less) than such a reference payoff. In the spirit of these models, we assume that the dictator's kindness toward the receiver drives the third parties' punishment decisions.[24]

Consider the dictator's choice of the *unfair* allocation (70-10) in state ω_1 in the baseline or after revealing in the hidden information condition. The implementation of the *unfair* allocation is unkind because it leaves the receiver with less than the reference payoff of 30 (the average of the receiver's highest and lowest possible payoff of 50 and 10, respectively). Second, the implementation of the *fair* allocation (50-50) in state ω_1 in the baseline or after revealing in the hidden information condition is kind. Finally, remaining willfully ignorant leads to a lottery over the receiver's payoff with an expected payoff of 30, regardless of whether the dictator chooses a_1 or a_2, which is neither kind nor unkind since it corresponds precisely to the reference payoff. Qualitatively, the punishment motive "intent" thus correctly predicts Results 1 and 2. The same prediction pattern prevails in state ω_2. However, the punishment motive "intent" cannot explain Result 3. After the decision to remain ignorant, the finally resulting allocation should not influence the third party's evaluation of the dictator's kindness and thus not affect punishment.[25]

4.3. Models of procedural fairness

Models of procedural fairness assume people care not only about outcomes but also about the procedures that lead to these outcomes (Frey et al., 2004; Bolton et al., 2005; Trautmann, 2009; Krawczyk, 2011; Fudenberg and Levine, 2012; Brock et al., 2013; Cappelen et al., 2013; Saito, 2013). An important example of such a procedure is the notion of "equal opportunities" which can be interpreted as the idea that not only *ex post* realized payoff differences are important but also *ex ante* expected payoff differences.

Simple models of procedural fairness are suggested by, e.g., Brock et al. (2013) or Saito (2013), who extend the Fehr and Schmidt (1999) model to allow for a convex combination of *ex ante* and *ex post* payoff comparisons. Suppose the third party's punishment decisions are driven by such a convex combination of *ex ante* and *ex post* payoff differences between the dictator and the receiver and sufficient weight is placed on both *ex ante* and *ex post* payoff differences.

Consider first the third party's evaluation of *ex ante* payoff differences. If the *unfair* allocation (70-10) results in state ω_1 in the baseline or after revealing in the hidden information condition, the *ex ante* payoff difference is 60. Since the *ex ante* payoff difference in case of a willfully ignorant dictator who chose a_1 is only 40, the model qualitatively predicts Result 1. If the *fair* allocation (50-50) results in state ω_1 in the baseline or after revealing in the hidden information condition, the *ex ante* payoff difference is zero. Since the *ex ante* payoff difference is 20 in case of a willfully ignorant dictator who chose a_2, the model also qualitatively predicts Result 2. The same qualitative prediction pattern prevails in state ω_2. Moreover, since *ex post* payoff differences are accounted for as well, qualitatively, the model also correctly predicts Result 3.

5. Conclusion

This paper studies how the opportunity to remain willfully ignorant – by avoiding information on the consequences of one's actions for others – affects the extent to which individuals are held accountable and punished by third parties for the resulting outcomes. Discussions of responsibility in political and corporate scandals are often accompanied by claims of ignorance that could have been resolved if the involved parties had sought out the relevant information. It is important, therefore, to understand whether such strategies are effective for deflecting blame and punishment.

Our findings reveal an interesting pattern. By remaining willfully ignorant, decision makers deflect some punishment when bad consequences arise, due to the fact that something good could have happened. Conversely, when good outcomes result from decisions made under willful ignorance, the fact that less desirable outcomes could have obtained provides grounds for punishment. But even under willful ignorance, punishment is still higher when bad consequences arise than when good outcomes result. Such punishment behavior by third parties is consistent with behavioral social preference models that combine *ex ante* and *ex post* fairness concerns.

For dictators in our experiment, willful ignorance is not a better strategy, in expectation, than acquiring payoff information. This is mainly because the third parties punish willful ignorance even when fortune produces a favorable outcome for the receiver. Nevertheless, the detected punishment *pattern* may have very different consequences outside the laboratory, where attention to the possibility of punishing someone is often salient only when bad outcomes arise. In such

[24] The psychological content of models of intention-based reciprocity is that unkindness triggers a reaction "in kind," i.e., punishment. While these models formally capture *bilateral* interactions, the third party in our experiment is not directly affected by the dictator's choices. Hence, our assumption that a third party's punishment decisions are driven by the dictator's unkindness towards the receiver is not formally in line with these models. Third-party punishment is typically associated with norm enforcement. In that sense, one can argue that the psychological content of models of intention-based reciprocity captures the norm that one should not be unkind, and the willingness to punish violations of this norm. A similar line of argument can be made regarding our assumption that the inequality between the dictator and the receiver drives the third party's punishment in the models discussed in Sections 4.1 and 4.3.

[25] The hybrid model of outcome- and intention-based social preferences by Falk and Fischbacher (2006) makes the same qualitative prediction in our context. In their model, a player is considered as unkind if he implements an allocation that favors him in expectation. The expectation is taken at the player's decision node, so that remaining ignorant can again be treated as granting the reference payoff, as in the model by Sebald (2010).

situations, our finding that decision makers receive lighter sanctions for bad outcomes suggests that willful ignorance may be an effective strategy for circumventing blame and punishment outside the laboratory.

Interestingly, in many legal systems the "equal culpability" doctrine permits defendants who acted under willful ignorance of the existence of a fact to be treated *as if* they had possessed actual knowledge of its existence (Marcus, 1993; Husak and Callender, 1994).[26] While this observation might suggest that the law is in contradiction with people's common moral sense, as elicited in our experiment, one important difference between our experimental environment and the one governed by the legal system is that the former is a one-shot interaction while the latter is a repeated game. Deterrence of future offenses is one main function of punishment under the law, and if ignorance were a valid excuse in the law, this deterrence function would be undermined. In contrast, a deterrence motive was absent in our experimental one-shot setting.

A final aspect of our experimental design worth stressing is that information acquisition was costless for dictators. Thus, both in the baseline as well as in the hidden information condition, the relevant information was available to the dictator at no cost; the dictator merely had the opportunity to avoid seeing it in the latter condition. If information acquisition were, instead, costly, this might enhance the moral justification for remaining ignorant. For example, following the 2008 financial crisis, many individuals and institutions involved in the sale of deceptively valued and marketed investment products tried to deflect responsibility with the claim that these products were too difficult to understand, i.e., they implicitly referred to the cost of being fully informed.[27] Of course, as the cost of becoming informed increases it becomes, at some point, inefficient or even impossible for decision makers to become informed about the consequences of their actions. Hence, in some cases, ignorance may be a valid excuse for not considering the consequences of one's actions, though uncertainty and asymmetric information about these costs may complicate such considerations. These issues raise interesting questions for future research.

Appendix A

A.1. Regression analyses

Table A.1 reports the results of regression analyses to complement the non-parametric tests reported in the paper. Columns (1) and (2) show OLS and Tobit regressions of the punishment level on dummy variables of the dictator's decisions in the different treatments. Since the dictator's choices might affect the likelihood and amount of punishment differently, columns (3a) and (3b) report estimates from a hurdle model, an econometric specification that treats the decision to punish and the amount of punishment as two separate stochastic processes.[28] The last column reports the number of observations underlying the estimation in column (3b).

The omitted category in all regressions is the choice of the *fair* allocation in the baseline condition. The first three dummy variables measure the difference between the omitted category (*fair*) and the three other possible allocations (*unfair*, *dominant*, and *dominated*) in the baseline condition. For all three comparisons, regressions (1) and (2) show a significant and positive difference with the exception of the comparison between the *fair* and *dominant* allocations in the OLS model. The hurdle model reveals that the *unfair*, *dominant* and *dominated* allocations are punished significantly more often than the *fair* allocation. But conditional on punishment occurring, there is no significant difference in the punishment amount between the *fair* allocation and the other three allocations (the coefficients are often large in magnitude, but the large standard errors reflect the very limited punishment of the *fair* allocation in the baseline, where only two subjects chose positive punishment).

The next four dummy variables measure the difference between the baseline and the hidden information condition when the dictator reveals the state. In all four regressions, none of the four coefficients is significant, which confirms our previous finding that the punishment pattern for a dictator who reveals is the same as the pattern in the baseline condition.

Finally, the last four dummy variables measure the difference in punishment for a given allocation between a dictator who reveals and a dictator who remains ignorant in the hidden information condition. The OLS and Tobit regressions show significant differences in all four comparisons consistent with the directional results in our main analysis. The hurdle model again reveals that these differences are driven by the frequencies of punishment, though the coefficients in regression (3b) are often large in magnitude and their sign indicates that the amount is influenced in the same direction as the decision to punish.

[26] For example, a defendant who was hired by a stranger to drive a car across the United States boarder and who claimed not to have had knowledge of the drugs that were hidden in the car was held liable to the same extent as he would have been had he had that knowledge (United States vs. Jewell).

[27] See http://www.nytimes.com/2009/03/12/business/12crime.html?pagewanted=1&_r=1&th&emc=th.

[28] First, a standard probit model estimates the likelihood that a third party will punish the dictator; second, a truncated linear regression estimates the conditional likelihood of a third party punishing a certain amount (McDowell, 2003; see, also, Erkal et al. (2011) for an example of where hurdle models are used with experimental data). The hurdle is crossed if a third party decides to punish.

Table A.1
Regression analyses.

	OLS (1)	Tobit (2)	Hurdle model		
			Probability (3a)	Amount (3b)	# obs. with positive punishment
Unfair (70-10)	19.17***	70.55***	0.66***	30.65	33
	(2.92)	(12.09)	(0.11)	(20.55)	
Dominant (70-50)	1.20	20.85**	0.21**	−4.31	7
	(0.78)	(9.96)	(0.09)	(20.70)	
Dominated (50-10)	11.85***	58.64***	0.57***	20.18	27
	(2.06)	(11.70)	(0.11)	(20.18)	
HI × unfair (70-10)	−3.47	−6.21	−0.06	−2.34	32
	(3.93)	(6.69)	(0.08)	(5.88)	
HI × dominant (70-50)	0.91	2.55	0.01	16.02	8
	(1.29)	(9.59)	(0.10)	(12.81)	
HI × dominated (50-10)	−2.91	−8.80	−0.11	1.69	22
	(2.83)	(6.84)	(0.07)	(5.65)	
HI × fair (50-50)	0.03	3.93	0.05	−11.16	3
	(0.61)	(13.86)	(0.13)	(24.70)	
HI × ignorant × unfair (70-10)	−4.83***	−11.20***	−0.12***	−0.92	23
	(1.26)	(2.88)	(0.04)	(4.29)	
HI × ignorant × dominant (70-50)	5.33**	19.51**	0.16**	15.97	16
	(2.10)	(7.75)	(0.07)	(10.66)	
HI × ignorant × dominated (50-10)	−3.50***	−9.15**	−0.07*	−7.90	17
	(1.29)	(3.88)	(0.04)	(5.05)	
HI × ignorant × fair (50-50)	3.83***	28.82***	0.26***	26.77	12
	(1.38)	(9.84)	(0.09)	(18.68)	
Constant	0.56	−59.92***	–	−0.78	2
	(0.47)	(12.16)		(21.39)	
Observations	696	696	696	202	202
(Pseudo) R^2	0.16	0.05	0.14	0.11	

Notes: The dependent variable in regressions (1), (2) and (3b) is the size of the punishment reduction received by a dictator. The dependent variable in regression (3a) is a dummy that equals 1 if the third party punishes. "Probability" reports the marginal effects from a probit regression calculated at the mean. "Amount" is a linear regression truncated at 0. The omitted category in all regressions is the choice of the fair allocation in the baseline condition. "HI" indicates the hidden information condition. Robust standard errors clustering at the subject level are reported in parentheses.

* Significance at 10 percent.
** Significance at 5 percent.
*** Significance at 1 percent.

Appendix B. Supplementary material

Supplementary data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.euroecorev.2014.06.016.

References

Andreoni, J., Bernheim, B.D., 2009. Social image and the 50-50 norm: a theoretical and experimental analysis of audience effects. Econometrica 77 (5), 1607–1636.
Bartling, B., Fischbacher, U., 2012. Shifting the blame: on delegation and responsibility. Rev. Econ. Stud. 79 (1), 67–87.
Bazerman, M., Gino, F., 2012. Behavioral ethics: toward a deeper understanding of moral judgment and dishonesty. Annu. Rev. Law Soc. Sci. 8 (1), 85–104.
Bolton, G.E., Brandts, J., Ockenfels, A., 2005. Fair procedures: evidence from games involving lotteries. Econ. J. 115 (506), 1054–1076.
Bolton, G.E., Ockenfels, A., 2000. ERC: a theory of equity, reciprocity, and competition. Am. Econ. Rev. 90 (1), 166–193.
Broberg, T., Ellingsen, T., Johannesson, M., 2007. Is generosity involuntary? Econ. Lett. 94 (1), 32–37.
Brock, J.M., Lange, A., Ozbay, E.Y., 2013. Dictating the risk – experimental evidence on giving in risky environments. Am. Econ. Rev. 103 (1), 415–437.
Cappelen, A.W., Konow, J., Sørensen, E.Ø., Tungodden, B., 2013. Just luck: an experimental study of risk taking and fairness. Am. Econ. Rev. 103 (4), 1398–1413.
Conrads, J., Irlenbusch, B., 2013. Strategic ignorance in ultimatum bargaining. J. Econ. Behav. Organ. 92, 104–115.
Dana, J., Cain, D.M., Dawes, R.M., 2006. What you don't know won't hurt me: costly (but quiet) exit in dictator games. Organ. Behav. Hum. Decis. Process. 100 (2), 193–201.
Dana, J., Weber, R.A., Kuang, J.X., 2007. Exploiting moral wiggle room: experiments demonstrating an illusory preference for fairness. Econ. Theory 33 (1), 67–80.
Dana, J., Loewenstein, G., Weber, R.A., 2012. Ethical immunity: how people violate their own moral standards without feeling they are doing so. In: De Cremer, D., Tenbrunsel, A.E. (Eds.), Behavioral Business Ethics: Shaping an Emerging Field, Psychology Press, New York.
Dufwenberg, M., Kirchsteiger, G., 2004. A theory of sequential reciprocity. Games Econ. Behav. 47 (2), 268–298.
Erkal, N., Gangadharan, L., Nikiforakis, N., 2011. Relative earnings and giving in a real-effort experiment. Am. Econ. Rev. 101 (7), 3330–3348.
Falk, A., Fischbacher, U., 2006. A theory of reciprocity. Games Econ. Behav. 54 (2), 293–315.

Fehr, E., Schmidt, K.M., 1999. A theory of fairness, competition, and cooperation. Q. J. Econ. 114 (3), 817–868.
Fehr, E., Fischbacher, U., 2004. Third-party punishment and social norms. Evol. Hum. Behav. 25 (2), 63–87.
Fischbacher, U., 2007. z-Tree: Zurich toolbox for ready-made economic experiments. Exp. Econ. 10 (2), 171–178.
Frey, B.S., Benz, M., Stutzer, A., 2004. Introducing procedural utility: not only what, but also how matters. J. Inst. Theor. Econ. 160, 377–401.
Fudenberg, D., Levine, D.K., 2012. Fairness, risk preferences and independence: impossibility theorems. J. Econ. Behav. Organ. 81 (2), 606–612.
Greiner, B., 2003. An online recruitment system for economic experiments. In: Kremer, K., Macho, V. (Eds.), Forschung und wissenschaftliches Rechnen 2003, GWD Bericht 62, Ges. für Wiss. Datenverarbeitung, Göttingen, pp. 79–93.
Gurdal, M.Y., Miller, J.B., Rustichini, A., 2013. Why blame? J. Political Econ. 121 (6), 1205–1247.
Hamman, J.R., Loewenstein, G., Weber, R.A., 2010. Self-interest through delegation: an additional rationale for the principal–agent relationship. Am. Econ. Rev. 100 (4), 1826–1846.
Husak, D.N., Callender, C.A., 1994. Wilful ignorance, knowledge, and the "equal culpability" thesis: a study of the deeper significance of the principle of legality. Wis. Law Rev., 29.
Kagel, J.H., Kim, C., Moser, D., 1996. Fairness in ultimatum games with asymmetric information and asymmetric payoffs. Games Econ. Behav. 13 (1), 100–110.
Krawczyk, M., 2011. A model of procedural and distributive fairness. Theory Decis. 70 (1), 111–128.
Krawczyk, M., Le Lec, F., 2010. 'Give me a chance!' An experiment in social decision under risk. Exp. Econ. 13 (4), 500–511.
Lazear, E.P., Malmendier, U., Weber, R.A., 2012. Sorting in experiments with application to social preferences. Am. Econ. J. Appl. Econ. 4 (1), 136–163.
Marcus, J.L., 1993. Model Penal Code Section 2.02(7) and willful blindness. Yale Law J. 102 (8), 2231–2257.
Mazar, N., Amir, O., Ariely, D., 2008. The dishonesty of honest people: a theory of self-concept maintenance. J. Mark. Res. 45 (6), 633–644.
McDowell, A., 2003. From the help desk: hurdle models. Stata J. 3 (2), 178–184.
McGraw, K.M., 1991. Managing blame: an experimental test of the effects of political accounts. Am. Political Sci. Rev. 85 (4), 1133–1157.
Nikiforakis, N., Mitchell, H., 2014. Mixing the carrots with the sticks: third party punishment and reward. Exp. Econ. 17 (1), 1–23.
Ockenfels, A., Werner, P., 2012. 'Hiding behind a small cake' in a newspaper dictator game. J. Econ. Behav. Organ. 82 (1), 82–85.
Rabin, M., 1993. Incorporating fairness into game theory and economics. Am. Econ. Rev. 83 (5), 1281–1302.
Roth, A.E., Murnighan, J.K., 1982. The role of information in bargaining: an experimental study. Econometrica 50 (5), 1123–1142.
Saito, K., 2013. Social preferences under risk: equality of opportunity versus equality of outcome. Am. Econ. Rev. 103 (7), 3084–3101.
Sebald, A., 2010. Attribution and reciprocity. Games Econ. Behav. 68 (1), 339–352.
Trautmann, S.T., 2009. A tractable model of process fairness under risk. J. Econ. Psychol. 30 (5), 803–813.
Treviño, L.K., Weaver, G.R., Reynolds, S.J., 2006. Behavioral ethics in organizations: a review. J. Manage. 32 (6), 951–990.
Weaver, R.K., 1986. The politics of blame avoidance. J. Public Policy 6 (4), 371–398.