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Ignorance by Choice: A Meta-Analytic Review of the Underlying Motives of Willful Ignorance and Its Consequences

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People sometimes avoid information about the impact of their actions as an excuse to be selfish. Such "willful ignorance" reduces altruistic behavior and has detrimental effects in many consumer and organizational contexts. We report the first meta-analysis on willful ignorance, testing the robustness of its impact on altruistic behavior and examining its underlying motives. We analyze 33,603 decisions made by 6,531 participants in 56 different treatment effects, all employing variations of an experimental paradigm assessing willful ignorance. Meta-analytic results reveal that 40% of participants avoid easily obtainable information about the consequences of their actions on others, leading to a 15.6-percentage point decrease in altruistic behavior compared to when information is provided. We discuss the motives behind willful ignorance and provide evidence consistent with excuse-seeking behaviors to maintain a positive self-image. We investigate the moderators of willful ignorance and address the theoretical, methodological, and practical implications of our findings on who engages in willful ignorance, as well as when and why.

Public Significance Statement
We present the first meta-analysis on willful ignorance—when individuals avoid information about the negative consequences of their actions to maximize personal outcomes—covering 33,603 decisions made by 6,531 participants across 56 treatment effects. Results demonstrate that the ability to avoid such information decreases altruistic behavior, and that seemingly altruistic behavior may not reflect a true concern for others.

Keywords: willful ignorance, deliberate ignorance, information avoidance, moral wiggle room, behavioral ethics

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People often "look the other way" and avoid information about the negative consequences of their actions to maximize personal outcomes. Known as *willful ignorance* (Dana et al., 2007; Grossman & Van der Weele, 2017; Hertwig & Engel, 2016), such behavior is a corrosive force that reduces altruistic behavior across a range of contexts. For instance, consumers may avoid information about the ethical origins or production process of the merchandise they purchase (Ehrich & Irwin, 2005). Similarly, citizens are often reluctant to engage with information about climate change's impact, so they will not feel obligated to change their lifestyle (Norgaard, 2006; Stoll-Kleemann et al., 2001). Willful ignorance also facilitates corruption in politics and business. In an in-depth analysis of the Watergate scandal, Simon (2005) reports, "Participants showed intense faith in the immunizing power of deliberate ignorance." In the Enron trial, the largest corruption case in U.S. history, the concept of willful ignorance played a key role in the sentencing of top executives (Simon, 2005).

Understanding its drivers and consequences is vital given the detrimental outcomes associated with willful ignorance. Our meta-analysis thus tackles the following questions: To what extent do people avoid uncomfortable information about the impact of their actions, and what is the consequence of such information avoidance on altruistic behavior? What are the psychological motives underlying willful ignorance? And finally, how robust is the negative impact of willful ignorance on contextual and personal factors?

Demonstrating the wide interest in this basic psychological phenomenon, willful ignorance has been studied across disciplines: in

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psychology (Kappes et al., 2018; Zane et al., 2016), sociology (McGoey, 2012; Norgaard, 2006), economics (Dana et al., 2007; Grossman & Van der Weele, 2017), business (Ehrich & Irwin, 2005; Exley & Kessler, 2020), law (Sarch, 2016), philosophy (Lynch, 2015; Wieland, 2016), and political science (Lindsey, 2020; Perl et al., 2018). Although excellent narrative reviews have summarized the functions and drivers of willful ignorance (Hertwig & Engel, 2016), as well as tendencies to avoid information about other aspects rather than the impact of one's actions on others (Fischer & Greitemeyer, 2010; Gigerenzer & Garcia-Retamero, 2017; Golman et al., 2017; Sharot & Sunstein, 2020; Sweeny et al., 2010), to date, no work has systematically synthesized existing empirical evidence meta-analytically. Thus, the current work fills this gap.

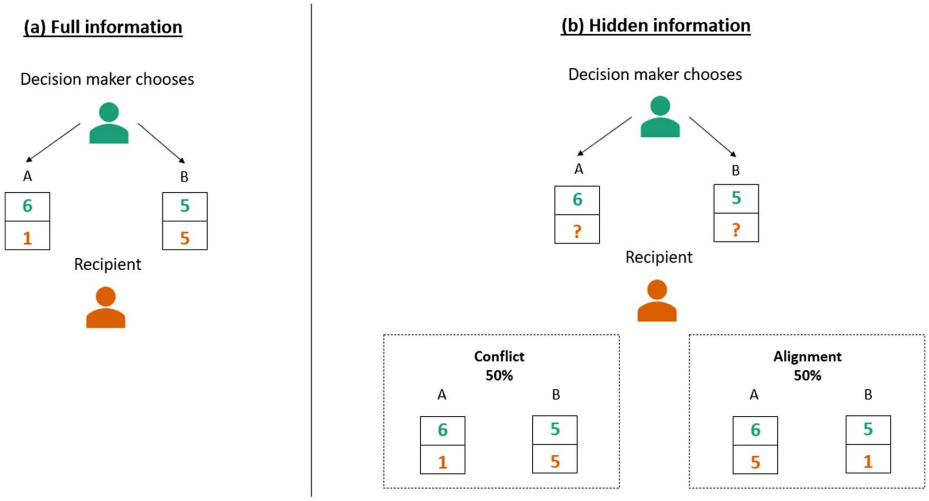
We present the first meta-analytic review on willful ignorance, including all studies presenting participants with conflicting ethical choices in a controlled lab setting where they can avoid learning the consequences of their actions on others. Our meta-analytic review has three main objectives. First, we provide an overview of variations of the state-of-the-art experimental paradigm used to study the negative impact of willful ignorance on altruistic behavior and assess the robustness of its conclusions. Second, we contribute to the understanding of the psychological drivers behind the sharing of economic resources, such as the literature on social preferences (Fehr & Fischbacher, 2003; Fehr & Schmidt, 1999) and social value orientation (Murphy et al., 2011). The existing literature focuses mostly on motives that are expressed by choices between monetary outcomes, principally selfishness or altruism, but also concerns for efficiency, fairness, or inequality. Yet, such motives alone cannot explain why people avoid information that they would otherwise use in their decisions (Dana et al., 2007; Grossman & Van der Weele, 2017). We discuss additional motives that may play a role in the decision to remain ignorant and use cumulated data to distinguish between excuse-seeking behaviors and self-image maintenance on the one hand (Strohminger & Nichols, 2014) and cognitive inattentiveness and its proxies (e.g., confusion or laziness; Vogel et al., 2020) on the other hand. Third, we use moderation analyses to examine the robustness of the willful ignorance effect on both contextual and personal factors. All in all, our meta-analysis provides a synthesis of the existing empirical knowledge about willful ignorance and guides future research.

Measuring Willful Ignorance

Willful ignorance emerges in situations where a decision maker's interest may conflict with someone else's interests. However, uncertainty about the exact nature of the conflict exists, and the decision maker can take actions to reduce this uncertainty. Dana et al. (2007) introduced the key experimental paradigm to study how people behave in such situations. Participants are randomly and anonymously paired and receive one of two roles: a decision maker or a recipient. Decision makers then make decisions that affect their own payoffs and that of the recipient. The experiment contrasts a full information treatment with a hidden information treatment. In the full information treatment, which functions as a control treatment and is depicted in Figure 1, the decision maker is asked to choose between two options: A and B. Option A is a selfish option, yielding a payoff of $6 for the decision maker and $1 for the recipient. Option B is an altruistic option, yielding a payoff of $5 for each participant.

Figure 1

Moral Wiggle Room Task by Dana et al. (2007)



Note. The green numbers represent monetary payoffs for the decision maker, and the orange numbers represent the monetary payoffs for an anonymous recipient. The two possible states of the world—conflict and alignment—have equal likelihoods of occurring in the hidden information treatment. The state of conflict on the left demonstrates a conflicting scenario, where option A maximizes the profits for self, at the expense of the recipient. The state of alignment on the right demonstrates a nonconflicting scenario, where option A maximizes the profits for both parties. Without getting additional information, decision makers only see the question marks that represent the payoffs for the recipient. See the online article for the color version of this figure.

In this control treatment, the majority of decision makers (74%) acted altruistically by choosing option B, foregoing a $1 profit for themselves to provide the recipient with $5 instead of $1.

In the hidden information treatment, participants face a similar choice, knowing option A pays them $6 and option B pays $5. Importantly, however, decision makers *do not know* the consequences of choosing A or B for the recipient. Decision makers do know there is a 50% chance they are in the state of alignment, where option A yields the recipient a payoff of $5, and option B a payoff of $1. Therefore, option A maximizes the profits for both the decision maker ($6) and the recipient ($5), so no conflict exists between the parties. Participants also know there is a 50% chance they are in the state of conflict, where the payoffs for the recipient are reversed, such that option A pays $1 and option B pays $5. That is, option A maximizes personal profit, at the expense of the recipient, creating a trade-off between own and the recipient's payoffs. In the hidden information treatment, before choosing between A and B, the decision makers can choose to privately and freely acquire information about how much the recipient will receive if they choose A or B. Alternatively, decision makers may choose not to acquire the information and decide between A and B without knowing the payoffs for the recipient.

Several intriguing findings in Dana et al. (2007) have made their study a modern classic in psychology, behavioral economics, and related fields. First, in the full information treatment (where participants knew the payoff for themselves and the recipient), only about a quarter of the participants (26%) chose the selfish option, A, suggesting the large majority (74%) of participants cared about implementing an altruistic outcome for the recipient. However, when given the choice to avoid information in the hidden information treatment, 44% of the decision makers chose to do so and subsequently chose the selfish option, A. As a result, the fraction of altruistic choices dropped by almost half in the hidden information treatment. This finding suggests some of the altruistic behavior, that is, choosing the monetary split that increases the other's payoff at the expense of one's own, is *not* driven by altruism, that is, "motivation with the ultimate goal of increasing another's welfare" (Batson, 2010, p. 16; Pfattheicher et al., 2022). Instead, the drop in the level of altruistic choices observed reflects that some participants *willfully* avoided information, even if (or perhaps because) it was relevant for their choice. These findings have spurred both follow-up work in the laboratory and novel theory formation, which we discuss below.

Table 1 summarizes variations of the moral wiggle room experimental paradigm that has been used to study willful ignorance behaviorally. These tasks share the structure that allows for the emergence of willful ignorance, namely the trade-off between one's own interest and the interest of others, and a decision of whether to learn about the social impact of one's actions. The paradigms also differ in various aspects, for example, whether recipients can reject the decision makers' proposed split of the money, whether decision makers make a choice by themselves or cast a vote for their preferred option in a democratic manner, and whether decision makers are placed in a decontextualized or contextualized setup. Other task characteristics that vary across studies include the nature of the recipient who is affected by the decision maker's choice (peer vs. charity) and the cost of acquiring information. The information cost, if implemented, is often very small and is used to mimic real-life situations where decision makers must spend time and effort to acquire the necessary information before making a decision.

Testing Theory of Willful Ignorance

The experimental findings by Dana et al. (2007) show that on the one hand, a substantial fraction of decision makers act altruistically, meaning they are willing to sacrifice personal payoffs when they are informed doing so helps others. On the other hand, when offered the possibility to acquire information about the consequences of their actions free of charge, some of those who would have acted altruistically had they been randomly assigned to the full information treatment, avoid acquiring information and behave selfishly in the hidden information treatment.

From a theoretical perspective, the findings of Dana et al. (2007) generate a paradox for the standard theoretical approaches regarding the sharing of economic resources. Those standard approaches, including the social preference literature (Fehr & Fischbacher, 2003) and the social value orientation literature (Murphy et al., 2011), assume people's motives are based on the monetary outcomes of the two players, namely (a) the extent to which people care about the payoffs for themselves, (b) the extent to which they care about the payoffs for others, or (c) some combination of the two (e.g., Fehr & Schmidt, 1999, focus on the difference between the payoffs of self and others, whereas Charness & Rabin, 2002, focus on the sum of payoffs of all players).[1] All such models predict decision makers who care about payoffs should reveal relevant information about them, especially when that information is available free of charge.

For illustration, consider a simple model with a group of decision makers who have only two possible motives, selfishness and altruism, and may possess both motives to different degrees (Krebs, 1991). In the context of Dana et al.'s (2007) experiment, decision makers who are mostly driven by selfishness, meaning their desire to maximize their own payoffs dominates concerns for the outcomes of the recipient, will choose the selfish option, A, in both the full and the hidden information treatments. Thus, although they may or may not reveal information about the other person's payoffs in the hidden information treatment, this information does not influence their final decision. By contrast, other decision makers may be driven by altruism; that is, in line with our definition above, they care about the recipient's welfare next to their own. These participants will be willing to sacrifice some of their personal payoffs to choose the altruistic option, B. As long as the ambiguity about the consequences for others can be lifted for free and doing so is easy, these decision makers will inform themselves about the consequences for others to ensure the final outcome is altruistic. Accordingly, theoretical models assuming behaviors are determined exclusively by concerns for monetary outcomes predict the same amount of selfish and altruistic behaviors in the full information and the hidden information treatments.

To resolve the paradox, we, therefore, need one or more additional motives that explain why the levels of altruistic behavior between the full information and the hidden information treatments differ. The first set of motives that features prominently in the literature relates to the idea that ignorance serves as an "excuse." According to this notion, altruistic acts are costly obligations that some people wish to escape from if given the opportunity. Different authors have proposed different motives that could rationalize such excuse-driven

[1] More precisely, the logic extends to *any* model of expected utility maximization with preferences defined exclusively over monetary outcomes. The proof comes from the demonstration that ignorance violates the independence axiom; see Feiler (2014) or Grossman and Van der Weele (2017, p. 201).

Table 1
Overview of Task Variations Measuring Willful Ignorance

Task	Description	Recipient type	Information cost	Employed in	No. of treatment effects	No. of participants
Moral wiggle room	A decision maker chooses one of the available options (usually between two options) that determine the payoffs for them and for the recipient. The decision maker knows their own payoffs associated with the options but does not know the payoffs for the recipient. The decision maker can privately acquire information about the recipient's payoffs or make a choice without this information. Whether the decision maker acquires information is not known to the recipient. All participants remain anonymous throughout the experiment.	Peer	Free	**Dana et al. (2007)**[a] Larson and Capra (2009)[b] Matthey and Regner (2011)[b] Bartling et al. (2014)[a] Feiler (2014)[b] Grossman (2014)[b] Grossman and Van der Weele (2017)[b] Moradi and Nesterov (2018) Kappes et al. (2018)[b] Cerrone and Engel (2019)[b] Exley and Kessler (2020)[a] Jarke-Neuert and Lohse (2020)[a] Stüber (2019)[a]	29	4,354
		Charity	Free	**Exley (2015)**[a] Lind et al. (2019)[b] Soraperra et al. (2020)[b]	6	729
Market setup (contextualized)	A decision maker takes the role of a consumer and chooses between one of two hypothetical products to purchase. Products differ in price. The price the decision maker pays for each product is deducted from their initial endowment, thus affecting the decision maker's final payoff. Products also differ in consequences because the purchase of unethical products results in a lower payoff for the recipient. The decision maker can learn the consequences associated with buying each type of product or make the purchase without this information. Whether the decision maker acquires information is not known to the recipient. In some versions of the task (e.g., Felgendreher, 2018), the decision maker's choice affects themselves, a producer (a third party), and a charity (a recipient). All participants remain anonymous throughout the experiment.	Peer	Free	Momsen and Ohndorf (2020b)[b] Pace (2020)[b]	3	158
			Costly	Momsen and Ohndorf (2020b)[b]	1	90
		Charity	Free	**Felgendreher (2018)**[b] Momsen and Ohndorf (2020b)[b] Momsen and Ohndorf (2019)[b]	4	258
			Costly	Momsen and Ohndorf (2019)[b] Momsen and Ohndorf (2020b)[b] Momsen and Ohndorf (2020a)[b]	8	416
Ultimatum bargaining	A decision maker proposes one of two options that determine the payoffs for them and for the recipient. The decision maker knows their own payoffs associated with the options but does not know the payoffs for the recipient. The decision maker can privately acquire information about the recipient's payoffs or make a choice without this information. The recipient is informed about the payoffs of both options and about whether the decision maker has information about the payoffs. The decision marker knows exactly which information the recipient will receive about their behavior. The recipient can accept or reject the decision maker's proposal. If the offer is accepted, each party gets the payoff associated with the proposal. If the offer is rejected, both parties receive zero payoff. All participants remain anonymous throughout the experiment.	Peer	Free	**Conrads and Irlenbusch (2013)**	3	162

(*table continues*)

Table 1 (*continued*)

Task	Description	Recipient type	Information cost	Employed in	No. of treatment effects	No. of participants
Group voting	Decision makers are placed within a group where group members do not know each other's identities. Each member can vote for one of two options: Option A that has a known consequence for the recipient or option B that has an unknown consequence for the recipient (either zero or double the consequence in option A). Options A and B also have different payoffs for the decision makers. Before making their decision, each member chooses whether to acquire information about the consequences of options A and B for the recipient. After acquiring the information or not (based on their choice), group members vote for the option (A or B) they prefer. The option that receives the majority of votes is implemented, determining the payoffs for every group member and the negative consequences for the recipient. Whether the decision makers acquire information is not known to the recipient or to other group members. Groups are randomly formed after each round of decisions, and all participants remain anonymous throughout the experiment.	Charity	Costly	**Momsen and Ohndorf (2020a)**[b]	2	184
Group dictator	Decision makers are placed within a group where group members do not know each other's identities. Each member can choose between option A that has a known consequence for the recipient and option B that has an unknown consequence for the recipient (either zero or double the consequence in option A). Options A and B also have different payoffs for the decision makers. Before making their decision, each member chooses whether to acquire information about the consequences of options A and B for the recipient. After acquiring the information or not (based on their choice) and making a decision between options A and B, one group member is randomly chosen. The option that members chose (A or B) is implemented, determining the payoffs for every group member and the negative consequences for the recipient. Whether the decision makers acquire information is not known to the recipient or to other group members. Groups are randomly formed after each round of decisions, and all participants remain anonymous throughout the experiment.	Charity	Costly	**Momsen and Ohndorf (2020a)**[b]	1	96

Note. Descriptions of the tasks measuring willful ignorance, the studies that implemented them, and the number of treatment effects and participants per task. The number of treatment effects refers to the number of comparisons between the full information treatment and the hidden information treatment. When a study appears multiple times, the number of subjects in the control treatment is counted multiple times. The article appearing in bold is the first to introduce each task. We have contacted authors for additional data in cases where all needed information for our analyses was not available in the original article. All authors we contacted provided the requested information.
[a] Studies for which we asked for and received the requested statistics. [b] Studies for which we asked for and received raw data. See the online Supplemental Materials for special cases in which we include only a subset of observations from a study.

information avoidance (see Cain et al., 2014). For instance, people may want to avoid negative feelings and wish to adhere to social norms of fairness in sharing behavior (Bicchieri et al., 2021; Cialdini & Goldstein, 2004; Gelfand & Harrington, 2015). Following such norms allows decision makers to maintain a positive self-image (Andreoni & Bernheim, 2009; Bénabou & Tirole, 2006; Cialdini & Goldstein, 2004; Leib et al., 2021; Shalvi et al., 2010), whereas violations lead to guilt, cognitive dissonance, and threats to a positive self-image (Bybee & Zigler, 1991; van Kleef et al., 2015).

Thus, one key idea is that ignorance provides an excuse that helps reduce the damage to one's self-image when choosing the selfish option, an idea that is formalized by Grossman and Van der Weele (2017).[2] In their model, ignorance is particularly valued by those who have relatively fewer altruistic concerns for the recipient and relatively more self-image concerns. When pressed by others or by the demands of their own conscience, the decision maker can always say they do not know for sure their action harms another person. The "I did not know" defense legitimizes selfish choices at least to some degree, much in the same way it does for consumers of unethical products or corrupt managers noted in our introductory paragraph. Note that in the controlled experimental context we are examining, the excuse value of ignorance is mainly for one's personal consumption and self-image maintenance. The experimental design rules out social image concerns or reputation motives because the experiment is anonymous, and neither the recipient nor the experimenter know whether the decision maker remains ignorant. Of course, social image or reputation concerns toward others may play a part in willful ignorance in real-world settings. Moreover, as we discuss in more detail below, self-image and social-image concerns are generally related to each other. Previous literature has provided experimental evidence for the self-image maintenance explanation in the context of this experimental paradigm (Grossman & Van der Weele, 2017), as well as closely related motives such as cognitive dissonance (Matthey & Regner, 2011; Spiekermann & Weiss, 2016). This theoretical account accords well with earlier literature in psychology, which shows how people manage their self-image (e.g., Sedikides & Strube, 1997) and that perceived moral traits have a particularly tight connection to identity (Strohminger & Nichols, 2014).

The second set of potential motives for ignorance is cognitive inattentiveness: The idea is people are simply lazy, inattentive, or confused and may be averse to processing additional information. For instance, many people dislike exerting cognitive effort, and some are even willing to endure physical pain to avoid it (Vogel et al., 2020). In this view, even some well-intentioned participants, who would have behaved altruistically when provided with full information, might seek an immediate resolution under ignorance in order to not have to think about a complicated problem. This explanation has also received some empirical support, with several authors offering results that suggest a role of complexity and cognitive costs in information avoidance (e.g., Exley & Kessler, 2020; Grossman, 2014; Moradi, 2018).

Tests and Predictions

Table 2 describes the tests for our theoretical predictions. The first key objective of our meta-analysis is to establish whether the difference in altruistic behavior between the full information and hidden information treatments is robust. This difference allows us to quantify the negative impact of willful ignorance on altruistic behavior. Additionally, a significant difference in altruistic behavior between the full information treatment and the hidden information treatment would refute models in which people care only about monetary outcomes of self and others, and show the motives underlying behavior must extend beyond those two elements (Table 2, Analysis 1).

The second objective of the meta-analysis is to distinguish between additional sets of motives for observed ignorance, namely the wish to generate excuses on the one hand and cognitive inattentiveness on the other hand. These two sets of motives have different implications for the type of decision makers choosing to seek information or ignorance. First, if excuse seeking motivates ignorance, we would expect ignorance to be chosen by those who are strongly motivated by self-image maintenance and/or selfishness because these people are the ones who need an excuse. By contrast, information will be chosen by decision makers who are mostly driven by altruism to ensure no harm will be imposed on the recipient. Although we cannot observe altruism directly, we can test the empirical implication of this claim. Namely, participants who *voluntarily acquire* information in the hidden information treatment should act, on average, more altruistically than participants who are *involuntarily informed* by the experimenter (i.e., in the full information treatment), despite having the same information. Grossman and Van der Weele (2017) refer to this prediction as "sorting."[3]

By contrast, if ignorance is motivated *exclusively* by cognitive inattentiveness, and under the reasonable assumption that inattentiveness is uncorrelated with altruistic motives, we would not expect such sorting. In this case, participants with different motives would all be equally likely to acquire information, so that participants who inform themselves voluntarily (in the hidden information treatment) would behave similarly to those who obtain information involuntarily from the experimenter (in the full information treatment). Hence, a meta-analysis of the sorting effect allows us to at least partially distinguish the two explanations. Note that the two sets of motives are not mutually exclusive; thus, a test of the sorting effect serves to identify whether self-image concerns drive ignorance above and beyond cognitive inattentiveness (Table 2, Analysis 2).

Moderation Analyses: Robustness of Willful Ignorance

A third objective of the meta-analysis is to investigate the moderators of willful ignorance. Meta-analytic techniques allow us to assess the robustness of the willful ignorance effect, by assessing the impact of various situational and personal moderators. We focus on

[2] One might wonder why ignorance can act as an excuse, given that it is explicitly chosen and the decision-maker "could have known." Grossman and Van der Weele (2017) answer this question by considering the choice of ignorance as part of a game of self-signaling, whereby the decision-maker tries to obfuscate the inferences that can be made about their level of altruism by an external observer or a "future self." In this setting, the authors show that even deliberately chosen ignorance is at least partially exculpatory in equilibrium because it sends a more positive signal about the decision-maker's altruism than choosing the unfair option with full information about the outcomes.

[3] It requires that self-image concerns are sufficiently widespread in the population; see Grossman and Van der Weele (2017, p. 186) for a precise discussion. Note that models of social preferences such as Fehr and Schmidt (1999) can also generate predictions of sorting, with some mild auxiliary assumptions, because they predict that people who are very altruistic should always obtain information, whereas those who are relatively selfish are indifferent between acquiring information or not.

Table 2
Predicted Results Under the Two Motives (Concern for Own and Other's Payoffs) Versus Multiple-Motives Models

Analysis	Two motives	Multiple motives		Current meta-analytical result
		Self-image concerns	Cognitive inattentiveness	
1. Impact of willful ignorance The fraction of altruistic choices is higher in the full information treatment than in the hidden information treatment.	No	Yes	Yes	Yes
2. Sorting Participants who voluntarily acquired information in the hidden information treatment are more altruistic than participants who involuntarily received information in the full information treatment.	Yes	Yes	No	Yes

two questions: first, how does the baseline level of altruistic behavior depend on such moderators? To address this question, we assess the level of altruistic choices in the full information treatment. Second, how do moderators affect the incidence of willful ignorance and the decrease in altruistic behavior? To address this question, we assess the level of altruistic behavior in the hidden information treatment, as well as the difference in altruistic choices between the two treatments. These analyses are somewhat exploratory but allow two interesting alternative hypotheses. On the one hand, if relevant moderators influence altruistic motives (i.e., the concern for the recipient's welfare), the fractions of altruistic choices in the full and hidden information treatments should be influenced by the moderators to a similar extent. On the other hand, if moderators mainly affect the wish to protect one's self-image or other concerns rather than the payoff of the recipient, such moderators may influence altruistic behavior in the full information treatment, but not in the hidden information treatment, thus widening the gap in altruistic choices between treatments.

Situational Factors

Temptation (Decision Maker's Payoff). Holding the recipient's payoff constant, the *decision maker's* payoff is expected to affect the level of altruism. The wider the payoff gap between the alternatives the decision maker is choosing from, the bigger the temptation to choose the selfish option. Indeed, previous studies have found that giving in the dictator game is sensitive to the benefits for the decision maker (Andreoni & Miller, 2002). Note also that when temptation increases enough, we can expect most participants to act selfishly, even in the full information treatment. In this case, room for a further increase in selfishness in the hidden information treatment is minimal, and we expect the gap between the two treatments to decline.

Harm (Recipient's Payoff). Holding the decision maker's payoff constant, the *recipient's* payoff is expected to affect the level of altruism. The wider the gap in the recipient's payoff between the alternatives the decision maker is choosing from, the larger the potential harm decision makers may inflict on the recipients if they choose selfishly. Note that even if participants ignore information (in the hidden information treatment), they still know what is the potential harm, as all possible payoff structures are provided in the task instructions before participants make their choices. Accordingly, a larger gap makes choosing the selfish option more expensive in terms of harm generated to the recipient. Given that some people seek to avoid harming others, for example, the do-no-harm principle (Baron, 1995), those participants should be more inclined to act altruistically (see Andreoni & Miller, 2002, for supporting evidence).

Following the discussion above, two hypotheses about the effect of increasing harm on behaviors in the hidden information treatment are plausible. On the one hand, increased harm may increase altruism among the decision makers to not inflict such harm on the recipient and hence reduce ignorance. On the other hand, a stronger social norm associated with higher harm may increase the social pressure to act altruistically and hence make the excuse to be selfish more appealing, leading to an increase in willful ignorance and a decrease in altruistic behavior. This possibility is in line with some, albeit rather weak, evidence that dictators who give more in a dictator game are also more likely to cancel their donation later if given the chance to do so anonymously (Broberg et al., 2007; Dana et al., 2006).

Recipient Type. In most studies, the entity who bears the consequences of the decision maker's choice is a peer (i.e., another participant), whereas in other studies, the entity is a charity (e.g., welfare recipients or environmental projects). These identities may affect the perceived deservingness of the recipient, which previous studies have shown matter. For instance, those judged as being more deserving are more likely to induce altruistic behavior (Fong & Oberholzer-Gee, 2011; Thunström et al., 2016), and charities may generally be considered more deserving than peers (Long & Krause, 2017). Accordingly, we should observe more altruistic choices made toward charities than toward peers in the full information treatment. for the hidden information treatment, the change in the strength of the altruistic norm might go in different directions, as discussed above.

Information Cost. In some studies (including Dana et al., 2007), the decision makers can acquire information for free. Other studies have implemented a symbolic cost for information to mimic real-life situations in which information is costly (e.g., Momsen & Ohndorf, 2019; Momsen & Ohndorf, 2020a; Toribio-Flórez et al., 2023). Such costs should make information less attractive (e.g., Leib, 2023; Serra-Garcia & Szech, 2019) and provide participants with an additional justification to remain ignorant and act selfishly. Therefore, we expect costly information to reduce altruistic choices in the hidden information treatment and increase the gap in altruistic choices between the full and hidden information treatments.

Repeated Decisions. When people make repeated ethical decisions, initial ethical behavior may provide a "license" for later unethical behavior (Merritt et al., 2010). Such moral licensing may depress overall altruistic choices relative to a one-shot situation (Blanken et al., 2015). Thus, we test whether making repeated

decisions results in lower levels of altruistic behavior. The effect of repeated decisions (vs. one shot) on the difference in altruistic choices between the full and hidden information treatments is unclear, and we explore it in our analysis.

Between-Subjects Design. In some cases, participants may not only make repeated decisions but may also make decisions in both the full and hidden information treatments (e.g., Exley, 2015; Feiler, 2014; Matthey & Regner, 2011; Soraperra et al., 2020). A within-subjects design generates additional considerations on top of the repetition of behavior. Specifically, participants in the full information treatment are forced to reveal what they would do in the conflicting situation. Doing so may limit the excuse value of ignorance if they later participate in the hidden information treatment, to the extent that ignorance serves to "maintain the idea that the agent would have acted virtuously under full information" (Grossman & Van der Weele, 2017). Thus, participants who have previously made a choice in the full information treatment may be less likely to remain ignorant. To capture these types of effects, we include a factor for whether the two full information and hidden information treatments were applied within or between subjects.

Personal Factors

Gender. Both women and men assume the role of decision maker in every study included in our meta-analysis. Results from meta- and mega-analyses aggregating data from laboratory studies (Brañas-Garza et al., 2018; Engel, 2011) and work analyzing national charitable giving in the United States (Mesch et al., 2011) and Great Britain (Piper & Schnepf, 2008) suggest that women are more altruistic and have stronger altruistic values (De Wit & Bekkers, 2016) than men. However, whether such observable altruistic behavior is driven by concern about the recipient's payoffs or concern about self-image maintenance is unclear. Supporting the possibility that multiple motives may underlie women's altruistic behavior, previous literature has shown women donate more (Engel, 2011) but are also more likely to avoid donation requests (Klinowski, 2018).

Age. Growing evidence suggests altruism increases with age (for a review, see Bekkers & Wiepking, 2010), and older participants typically act more altruistically in a dictator game. Specifically, a meta-analysis by Engel (2011) found that the elderly most frequently give away all of their endowment, middle-aged participants most frequently give half of their endowment, and students are the most likely to give nothing. Theoretically, younger people are more self-centered than older people, due to their lack of resources (Freund & Riediger, 2001) or their different perspective on time (Brandtstädter et al., 2010; Carstensen et al., 1999). As we highlighted before, whether such a difference is driven by a concern for the other's payoff or other motives is unclear, with different implications for behaviors in the full information treatment and the gap between the full and the hidden information treatments. In our analysis, we explore these possibilities.

All in all, the current meta-analysis tests the robustness of the willful ignorance phenomenon, tests the predictions made by the theory on willful ignorance (Grossman & Van der Weele, 2017), and determines the robustness of such behavior by assessing how relevant moderators shape the levels of both altruistic motives and other motives that are susceptible to excuse seeking.

Method

The present study is approved by the Economics and Business Ethics Committee (Reference No. 20190202020254) of the University of Amsterdam.

Literature Search

To obtain the relevant literature, in December 2020, we conducted the first preregistered (https://doi.org/10.21942/uva.13341233.v1) search on Google Scholar, Web of Science,[4] APA PsycInfo, and Scopus. Additionally, we looked for all journal articles that cited the three highly relevant articles: Ehrich and Irwin (2005), Dana et al. (2007), and Grossman and Van der Weele (2017). Simultaneously, we disseminated a call for published and unpublished studies via the mailing lists of the *Economic Science Association*, *Society for Judgment and Decision Making*, *European Association for Decision Making*, *European Association for Social Psychology*, *Society for Personality and Social Psychology*, and *International Conference on Social Dilemmas*.

In March 2021, we conducted a second search for literature on the ProQuest Dissertations and Theses database to expand our list of eligible studies, using the same search queries. The aim of the second search was to minimize potential publication bias stemming from the publication of only significant results. We restricted the search results from 2007 onwards because this year was when the first experimental paradigm was introduced to study willful ignorance (i.e., the moral wiggle room task).[5] The two searches covered various types of articles, including journal articles, book chapters, PhD dissertations, master's theses, and working papers.

Inclusion Criteria

Figure 2 provides the Preferred Reporting Items for Systematic Reviews and Meta-Analyses chart (Moher et al., 2009) with an overview of the identification, screening, and selection process. Studies that meet the three following criteria are included. First, the experimental study presents participants with a choice, which carries consequences for them and the recipient. Second, within the choice architecture, at least two states exist: (a) the state of conflict in which the interests of the decision maker and the recipient are misaligned and (b) the state of alignment in which the interests of the decision maker and the recipient are aligned. Third, the experimental setup includes both the full information treatment, where participants are fully informed of the consequences of their action, and the hidden information treatment, where participants choose either to learn about the impact of their action *before* making a decision or to make a decision without the additional information.

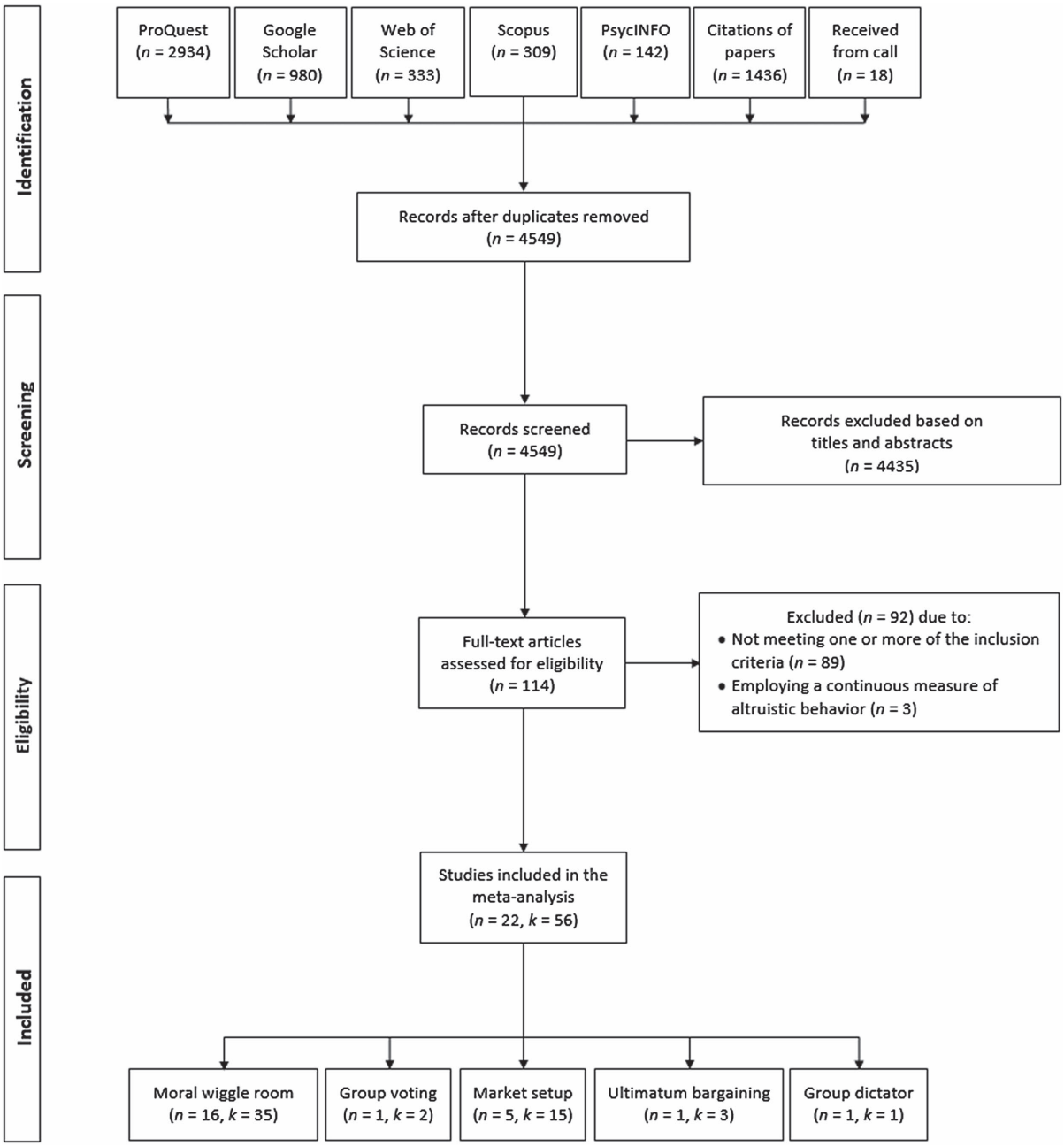
To screen the articles for inclusion, we used a two-step procedure. In the first step, the lead author and two research assistants screened the titles and abstracts of all references, using the web application for systematic review, Rayyan (Ouzzani et al., 2016). If the aim and method of the study were unclear, the references were retained for

[4] Via Web of Science, we had access to the Science Citation Index, the Social Sciences Citation Index, and the Arts and Humanities Citation Index.

[5] Although the study by Ehrich and Irwin (2005) is one of the first to investigate willful ignorance, it is eventually not included in the meta-analysis because the task is not financially incentivized, and as such, no real conflict exists. Participants only rank different options in terms of the likelihood of purchase.

Figure 2

PRISMA Chart: Literature Search and Screening Process



Note. PRISMA = Preferred Reporting Items for Systematic reviews and Meta-Analyses; n = the number of reports; k = the number of treatment effects. One article (Momsen & Ohndorf, 2020a) includes the market setup, the group-voting task, and the group-dictator task and thus appears in all three tasks in the PRISMA chart.

the full-text screening. In the second step, the lead author obtained and read the full text of the remaining references. When in doubt, all other coauthors were consulted to reach a joint decision.

The majority of the articles that were excluded during the full-text screening did not meet one or more of the inclusion criteria ($n = 89$, see Figure 2). Additionally, we excluded three studies measuring altruistic behavior, using a continuous outcome variable (Friedrichsen et al., 2022; Kajackaite, 2015; Toribio-Flórez et al., 2023). The continuous measures of altruistic behavior do not allow a straightforward categorization of what counts as a selfish/altruistic choice. Accordingly, we cannot analyze the data from these three studies together with the tasks implementing a binary choice. The small number of studies implementing a continuous measure also does not allow a meaningful analysis by themselves. Accordingly, we included only tasks implementing a binary choice, where participants choose between a selfish option and an altruistic option.

$$\text{RD} = \text{fraction of altruistic choices in full info} - \text{fraction of altruistic choices in hidden info (state of conflict)}. \quad (1)$$

$$\text{RD} = \text{fraction of altruistic choices in hidden info (state of conflict)} \mid \text{information acquisition} - \text{fraction of altruistic choices in full info}. \quad (2)$$

The final sample consists of 22 articles (eight unpublished, 36.36%) that fulfilled the inclusion criteria, with 56 treatment effects and 33,603 decisions made by 6,531 participants. We inferred information from the text, figures, tables, and appendices of the included studies to calculate the relevant effect sizes. For studies that did not report the necessary information, we contacted authors to obtain the missing data. We received a response, including raw data and/or requested statistics, from every author we contacted (see Table 1).

Coding of Studies

Analytical Approach and Outcome Variables

The current meta-analysis addresses three main goals. The first goal is to assess the robustness of the finding that willful ignorance decreases altruistic behavior and to quantify this detrimental role of willful ignorance. This goal corresponds to evaluating the meta-analytic evidence for the impact of willful ignorance on altruistic behavior described in Table 2 Analysis 1. To achieve this goal, we compute the risk difference in altruistic choices between the full information and hidden information treatments. The second goal is to assess whether ignorance is used strategically as an excuse, due to self-image concerns or merely a by-product of cognitive inattentiveness. This goal corresponds to evaluating the metaevidence of the sorting effect described in Table 2 Analysis 2. The outcome variable of this analysis is the risk difference of the sorting effect. The third goal is to use metaregressions to examine how situational and personal factors moderate the impact of willful ignorance on altruistic behavior. For the metaregressions, we compute two additional outcome variables, namely the log odds of altruistic choices in the full information treatment and the hidden information treatment.

Below, we describe the outcome variables and the analytical approach used for each of these goals.

Altruistic Behavior in the Full and Hidden Information Treatments. The first outcome variable directly measures the impact of willful ignorance on altruistic behavior. As shown in the first row of Table 2, we first assess the treatment difference in the fraction of altruistic choices between the full information treatment (where participants only make decisions in the state of *conflict*) and in the state of conflict of the hidden information treatment. To do so, we compute an effect measure for our dichotomous outcome variable called *risk difference* (RD; Higgins et al., 2022), using Equation 1. This RD quantifies the absolute difference between the proportions of altruistic choices made in the full and hidden information treatments. This difference maps directly to the reduction in payoff for the recipient, highlighting the negative impact of willful ignorance. To keep the comparison clean in terms of random assignment to treatments, we focus in both cases on those decision makers in the hidden information treatment who are randomly assigned to the state of conflict (i.e., where the trade-off between the payoffs of the two players is the same as in the full information treatment; see Equation 1 above).

Identifying the impact of willful ignorance on altruistic behavior using Equation 1 (a) establishes the robustness of findings on the detrimental role of willful ignorance, (b) quantifies such a negative impact, and (c) allows the assessment of which theoretical models, namely the selfishness/altruism versus multiple-motives models, gains meta-analytical support.[6]

Ignorance and Underlying Motives. To evaluate whether ignorance is indeed used as an excuse or whether it results from cognitive inattentiveness, we assess whether people who inform themselves about the consequences of their choices for others also behave more altruistically; see Table 2 Analysis 2. To do so, we compute the RD of the sorting effect using Equation 2. That is, we compare the fraction of altruistic choices made in the state of conflict of the hidden information treatment, conditional on decision makers having acquired information, with the fraction of altruistic choices made in the full information treatment. This measure compares the fraction of altruistic choices among those who voluntarily acquire information and face the state of conflict in the hidden information with the same fraction among those who were informed by the experimenter. Accordingly, it captures whether the participants who voluntarily search for information are indeed more altruistic than those who involuntarily receive the information. A positive RD implies altruistic participants self-select into information acquisition. Note this calculation cannot be meaningfully computed for studies implementing a within-subjects design (see Equation 2 above).[7]

This RD of the sorting effect informs us about the motives behind ignorance. It allows us to assess whether different people self-select into information acquisition/avoidance. Self-selection is consistent with the self-image account and not with indiscriminate cognitive inattentiveness.

Assessment of Situational and Personal Factors. We further conducted mixed-effects metaregressions to investigate the impact of situational factors and personal factors on three outcome variables: (a) the RD in altruistic choices, namely Equation 1, as well as two additional variables capturing altruistic behavior in each treatment; (b) the level of altruistic choices in the full information treatment, namely Equation 3; and (c) the level of altruistic choices in the hidden

[6] Another way to measure willful ignorance is to use the log of the risk ratio of altruistic choices, that is, the log of the fraction of altruistic choices in the state of conflict of the hidden information treatment divided by the fraction of altruistic choices in the full information treatment. Unlike the risk difference, our main outcome variable measuring willful ignorance, the log risk ratio measures the relative fraction of altruistic choices that is due to genuine altruistic motives. Details about such analyses and results can be found in the online Supplemental Material.

[7] The purpose of this analysis is to compare the level of altruism in the whole population, that is, the fraction of altruistic choices in the full information treatment, with the level of altruism among those who select into information, that is, the fraction of altruistic choices conditional of having acquired information. In a between-subjects design, these choices come from different groups of participants. In a within-subjects design, we need to use paired data (data from the same participants) because their choices are correlated. However, for this reason, we can only use the data of those who select into information for both the numerator and denominator, making the denominator represents the altruism of those *who select into information* when forced to see information instead of the altruism of the *entire population* when forced to see the information.

$$\log(\text{OD}) = \log \frac{\text{fraction of altruistic choices in full info}}{\text{fraction of selfish choices in full info}}, \quad (3)$$

$$\log(\text{OD}) = \log \frac{\text{fraction of altruistic choices in hidden info (state of conflict)}}{\text{fraction of selfish choices in hidden info (state of conflict)}}. \quad (4)$$

information treatment, namely Equation 4. For Equations 3 and 4, we calculate the log of the odds of altruistic choices (log(OD)), that is, the log of the fraction of altruistic choices over the fraction of selfish choices. A log(OD) of zero means the likelihood of observing an altruistic choice is 50%. A log(OD) smaller than zero means the likelihood is lower than 50%, and a log(OD) greater than zero means the likelihood is greater than 50% (see Equations 3 and 4 above).

Equations 3 and 4 provide estimates of the level of altruistic behavior in the full information treatment and the hidden information treatment, respectively. Whereas the log(OD) of altruistic choices in the full information treatment reflects the baseline level of altruistic behavior, the log(OD) of altruistic choices in the hidden information treatment reflects the level of altruistic behaviors when decision makers are allowed the opportunity to engage in willful ignorance. Although quantifying the relative strength of the different motives in the two treatments is not possible, the difference between these two measures, that is, the RD in altruistic choices between treatments calculated using Equation 1, can be considered a proxy for the importance of motives other than a genuine concern for the recipient's payoff.

We ran separate regression models for the situational and personal moderators. Because not all studies recorded personal variables such as age and gender, doing so maintains the highest statistical power possible for both analyses. In the first multivariate regression model, we included the effect sizes ($k = 53$)[8] that allowed coding for the following: (a) *temptation*: the difference in the payoffs between the two choices for the decision maker; (b) *harm*: the difference in the payoffs between the two choices for the recipient; (c) *recipient type*: peer ($k = 33$) or charity ($k = 20$); (d) *information cost*: free ($k = 44$) or costly information ($k = 9$); (e) *repeated decision*: repeated ($k = 19$) or one shot ($k = 34$); and (f) *between-subjects design:* between subjects ($k = 47$) or within subjects ($k = 6$). In the second regression model, we included the effect sizes ($k = 40$) from studies reporting the average age and proportion of males in the sample. Differences in the payoffs are measured in 2015 United States dollar (USD), purchasing power parity (PPP).

In addition to the aforementioned moderators, we also coded for a range of other study characteristics such as the type of task, the probability of the state of alignment, or the possibility of decision makers being punished. Given the limited number of studies implementing these and other variations, we report these factors descriptively but do not include them as moderators in our analyses. Table 3 provides an overview of the effect sizes, as well as all coded variables. Supplemental Table S1 provides a similar overview separated by task.

Calculating Standard Errors of the Outcome Variables

Different design choices, such as repeated decisions and the within-subjects design, affect the way the outcome variables and their standard errors are calculated. Additionally, treatment effects of studies that compare different experimental treatments with the same control treatment are mechanically correlated. Therefore, we estimate the covariance and the weights of the treatment effects and use a generalized least squares (GLS) estimation approach to take into account the covariance of the treatment effects (Gleser & Olkin, 2009). Details on how we calculate the treatment effects for different designs are provided in the online Supplemental Material.

Data Analysis

We conducted data analysis using the *metafor* package Version 3.0-2 (Viechtbauer, 2010) in R Version 4.0.4 (R Core Team, 2021). We conducted all analyses, using GLS mixed-effects models that specified the variance–covariance matrix of correlated treatment effects and allowed nested random effects of treatments within studies.

Transparency and Openness

See preregistration (https://doi.org/10.21942/uva.13341233.v1), data set (https://doi.org/10.21942/uva.19506658.v1), and code (https://doi.org/10.21942/uva.19507306.v1) for the meta-analysis on Figshare. We derive our predictions based on the theoretical framework of Grossman and Van der Weele (2017). In the preregistration, we considered four outcome variables. The main outcome variable we consider—the RD in altruistic choices between treatments—Equation 1, was preregistered. Developing the article and testing the logic outlined in Table 2, we added an outcome variable that captures the sorting effect, that is, Equation 2. For the moderation analyses, we included two additional outcome variables: the log(OD) of altruistic choices in the full information treatment and the log(OD) of altruistic choices in the hidden information treatment, that is, Equations 3 and 4, respectively. We did not preregister these three outcome variables.

Our preregistration includes three additional outcome variables. We report the first two variables (the level of ignorance and the alternative outcome variable assessing willful ignorance) in the Ignorance and the Underlying Motives section and the online Supplemental Material. The third outcome variable measures the impact of willful ignorance on altruism in tasks using a continuous measure. After coding the data, we realized only three studies meeting the inclusion criteria implemented a continuous outcome measure. Given the small number of articles, we did not analyze these studies.

Results

Descriptive Sample Characteristics

Our sample comprises 56 treatment effects including 33,603 decisions made by 6,531 participants. All 56 treatment effects in our sample were collected in WEIRD countries (Western, educated, industrialized, rich, and democratic; Henrich et al., 2010). The most

[8] The temptation and harm associated with choices cannot be defined for the studies by Matthey and Regner (2011) and Pace (2020) and are thus not included in this analysis. See detailed explanations in the online Supplemental Material.

Table 3
Overview of Effect Sizes and Coded Study Characteristics for All Tasks Combined

Variable	*M* (*SD*)	Median	Mode	Range	*k*
Risk difference in altruistic choices (full info − hidden info)	0.16 (0.16)	0.16		−0.25–0.56	56
Risk difference of the sorting effect (altruistic choices of informed subjects in hidden info − control subjects in full info)	0.08 (0.18)	0.07		−0.45–0.48	56
Probability of altruistic choice in full info	0.57 (0.72)	0.58		0.06–0.95	56
Probability of altruistic choice in hidden info	0.38 (0.69)	0.40		0.06–0.78	56
Temptation (payoff difference between alternatives for decision makers, 2015 USD, PPP)	$1.91 (1.71)	$1.30	$3.74 ($k$ = 6)	$0.09–$7.62	53
Harm (payoff difference between alternatives for recipients, 2015 USD, PPP)	$3.99 (3.35)	$3.92	$3.74 ($k$ = 6)	$0.37–$18.61	53
Recipient type (peer vs. charity)	64.29% peer		Peer (k = 36)		56
Information cost (free vs. costly)	83.93% free		Free (k = 47)	$0.00–$0.13	56
Punishment (none vs. by the third party or by the recipient)	96.43% no punishment		No punishment (k = 54)		56
Study type (lab vs. online)	75.00% lab		Lab (k = 42)		56
Repeated decisions (one shot vs. repeated)	66.07% one shot		One shot (k = 37)		56
Design (between-subjects vs. within-subjects)	89.29% between-subject		Between-subject (k = 50)		56
Probability of the state of alignment in hidden info	0.44 (0.16)	0.50	0.50 (k = 47)	0.00–0.80	56
Age (average age in a study)	26.29 (5.12)	23.67		21.67–37.96	40
Gender (average proportion of males in a study)	0.52 (0.08)	0.54		0.33–0.59	44
The year the study was conducted	2015 (3.13)	2016		2004–2019	56
Publication status (published or unpublished)	66.01% published		Published (k = 37)		56

Note. All articles (N = 22). Descriptive statistics of unweighted effect sizes, moderators, study characteristics, and sample characteristics for all tasks. k = number of treatment effects; USD = United States dollar; PPP = purchasing power parity; info = information.

common countries were Germany (k = 26; 46.4%) and the United States (k = 11; 19.6%). Other countries represented in the sample include Norway (k = 4, 7.1%), the Netherlands (k = 2; 3.6%), Switzerland (k = 1; 1.8%), and France (k = 1; 1.8%). The remaining sample (k = 11; 19.6%) was collected from online platforms such as Amazon Mechanical Turk and Prolific, where the authors did not restrict the country of origin or did not specify doing so in their reports. The most common publication year was 2020 (k = 16, M = 2017, SD = 3.04), indicating a recent surge of interest in the topic. The sample includes both published (k = 37; 66.1%) and unpublished (k = 19; 33.9%) treatment effects. The majority were conducted in the lab (k = 45; 80.4%), with the rest being conducted online (k = 11; 19.6%).

Altruistic Behavior in the Full and Hidden Information Treatments

Change in Altruistic Choices

Figure 3 gives an overview of altruistic choices across studies in the conflict setting. We look at the impact of willful ignorance on altruistic behavior using Equation 1 as explained in the Method section. The left panel shows the fractions of altruistic choices in both treatments of the experiment, where green dots indicate observations in the full information treatment and red dots indicate those in the hidden information treatment. The difference between the two thus shows the RD in altruistic choices between treatments, which reflects the negative impact of willful ignorance on altruistic behavior (k = 56). At the bottom of Figure 3, we show the unweighted average of the RD in altruistic choices between the two treatments.

Table 4 summarizes the results of the meta-analyses of different effect sizes using GLS mixed-effects models. Comparing altruistic choices in the hidden information treatment versus the full information treatment, the analysis reveals significantly higher levels of altruistic choices in the full information treatment compared with the hidden information treatment. The aggregate overall weighted gap (RD) between the two treatments is 15.6 percentage points (RD = 0.156, 95% CI [0.10, 0.21], p < .001). Further, we find a high level of heterogeneity (I^2 = 81.14), mostly between studies (I^2 = 71.93) and not within studies (I^2 = 9.21). Supplemental Figure S1 presents a forest plot with standard errors for all individual and aggregate estimates. For the sample sizes, see Supplemental Table S2.

To test for publication bias, we compared the distributions of effect sizes between unpublished and published treatments. Using the publication status as a moderator, our metaregression model revealed no significant difference between unpublished (k = 19, RD = 0.168) and published treatments (k = 37, RD = 0.148), β = −0.02, SE = 0.05, p = .719, providing no evidence of a publication bias.[9]

Outliers

As expected, we can observe from Figure 3 that the majority of studies report a lower fraction of altruistic choices in the hidden information treatment than in the full information treatment (k = 51), with a few exceptions (k = 5). To assess whether any outlier affects the robustness of our results, we classified outliers as those whose 95% CIs do not overlap with the 95% CIs of the weighted average treatment effect computed by the meta-analysis (Viechtbauer & Cheung, 2010). Using this method of classification, we identify nine outliers (see the list of outliers in Supplemental Table S3). Rerunning the meta-analysis excluding the nine outliers (k = 47)

[9] Other commonly used publication-bias analyses are not applicable to our setting. For example, the Egger's regression, the precision-effect test, and the precision effect estimate with standard error procedure do not consider the variance–covariance matrix of the correlated treatment effects, which are highly prevalent in our data set. For the same reason, the funnel plot is not a reliable method because the data points in the plot would not be independent.

Figure 3

Overview of the Levels of Altruistic Behavior and the Sorting Effect

Note. The left panel shows an overview of the fraction of altruistic choices in the full information treatment and the hidden information treatment (state of conflict). Unweighted averages are shown at the bottom. The right panel shows (again) the fraction of altruistic choices in the full information treatment and the fraction of altruistic choices in the hidden information treatment (state of conflict), conditional on having acquired information. The treatment names as they appear in the original studies are in parentheses. Studies implementing a within-subjects design are marked (†). Even though we compute and plot the fractions of altruistic choices of informed participants in the hidden information and full information treatments, the RD of the sorting effect cannot be computed for treatments from studies implementing a within-subjects design (see Footnote 7 for a detailed explanation). RD = risk difference. See the online article for the color version of this figure.

Table 4
Overall Average Effect Sizes and Heterogeneity

Outcome variable	Overall effect size			Heterogeneity				
	$M_{\text{effect size}}$	95% CI	90% PI	$I^2_{\text{between-study}}$	$I^2_{\text{within-study}}$	τ^2	Q	k
Equation 1: RD in altruistic choices between full info – hidden info	0.156***	[0.10, 0.21]	[−0.02, 0.33]	71.93	9.21	0.01	175.29***	56
Equation 2: RD of the sorting effect: Altruistic choices of informed participants in hidden info – full info	0.069*	[0.00, 0.14]	[−0.15, 0.29]	58.79	18.97	0.02	145.48***	50
Equation 3: log(OD) of altruistic choices in full info	0.267	[−0.06, 0.60]	[−0.96, 1.49]	70.38	20.41	0.53	379.26***	38
Equation 4: log(OD) of altruistic choices in hidden info	−0.461**	[−0.74, −0.18]	[−1.57, 0.65]	65.86	23.91	0.44	512.26***	56
Without outliers								
Equation 1: RD in altruistic choices between full info – hidden info	0.158***	[0.11, 0.20]	[0.02, 0.29]	65.24	6.55	0.01	90.23***	47

Note. $M_{\text{effect size}}$ = the weighted mean effect size; CI = confidence interval; PI = prediction interval; k = the number of treatment effects; RD = risk difference; log(OD) = log of the odds; info = information. The weighted mean effects are compared with zero; thus, a significant effect size means it is significantly different from zero.
* $p < .05$. ** $p < .01$. *** $p < .001$.

revealed similar results to those of the original meta-analysis (RD = 0.159, $p < .001$, $I^2 = 71.79$). Additionally, we discuss the two most extreme outliers in the Discussion section.

Ignorance and the Underlying Motives

In the theory section, and as summarized in Table 2, we describe two classes of motives underlying the decision to avoid information, which was chosen by 39.8% of participants across our sample (see the online Supplemental Material for detailed statistics). Specifically, we hypothesize that if ignorance is driven by the wish to generate an excuse rather than just cognitive inattentiveness, we would observe "sorting." That is, participants who acquire information in the hidden information treatment are more altruistic than those who receive information from the experimenter in the full information treatment. To test the association in our aggregate sample, we compare the fraction of altruistic choices among participants who were randomly assigned to the state of conflict of the hidden information treatment and chose to inform themselves of the consequences of their action, with the fraction of altruistic choices among those who were informed by the experimenter. The comparison is computed as an RD using Equation 2. Given that the comparison cannot be meaningfully computed for studies using a within-subjects design ($k = 6$), we included only data from studies implementing a between-subjects design ($k = 50$; see Footnote 7 for the explanation).

The right panel of Figure 3 gives an overview of altruistic choices across studies. Green dots indicate observations in the full information treatment, and yellow dots indicate observations in the hidden information treatment, conditional on participants having acquired information. The difference between the two thus shows the RD between the two treatments, as defined in Equation 2, which represents the sorting of participants with different motives underlying their behavior ($k = 50$). At the bottom of Figure 3, we show the unweighted average of the RD of the sorting effect between the two treatments.

We find altruistic choices are indeed higher among participants who acquire information than among participants who are given information by default, that is, participants in the full information treatment (RD = 0.069, $p = .050$). The fraction of altruistic choices is 6.9 percentage points higher among those who self-select into an environment with full information. Overall, our aggregate results support the idea that altruistic people inform themselves about the potential consequences of their choices; that is, they self-select into information acquisition. This finding is consistent with the idea that more selfishly motivated people avoid information deliberately due to self-image concerns. Although we cannot rule out the possibility of cognitive inattentiveness, this theoretical possibility alone cannot explain the results. Thus, self-image concerns significantly influence behavior over and above the extent to which inattentiveness drives behavior.

Finally, another piece of evidence for willful ignorance comes from an analysis in Dana et al. (2007), who found the level of information acquisition to be lower than the level of altruistic choices in the full information treatment. This finding implies at least some of those who acted altruistically in the full information treatment would avoid information had they been given the chance. The current meta-analysis did not replicate this finding as the fraction of information acquisition (60.2%) and the fraction of altruistic choices in the full information treatment (56.6%) are very close to each other, and the risk ratio is not statistically different from 1.00 (see online Supplemental Material). Note that the lack of effect does not rule out the possibility that some participants who behave altruistically in the full information treatment would avoid information had they been assigned to the hidden information treatment. The reason is that some participants who choose selfishly in the full information treatment are likely to acquire information out

of curiosity. However, the results of the meta-analysis do not allow us to establish this possibility directly.

Moderation Analyses

We now turn to the moderators of altruistic behavior. These analyses are somewhat exploratory and are intended to assess the robustness of the reported effects and identify interesting questions for future research. We perform two separate metaregressions for situational and personal factors. Doing so allows us to obtain maximum power because not all studies recorded personal factors. In each case, we look at the RD in altruistic choices between treatments. We assess the impact of the moderators on (a) the log(OD) of altruistic choices in the full information treatment, (b) the log(OD) of altruistic choices in the hidden information treatment, and (c) the difference between the two fractions, which informs us about how the moderators affect altruistic motives, in case changes are consistent between (a) and (b), versus other motives such as self-image maintenance, in case changes are inconsistent between (a) and (b).

To address potential multicollinearity among the moderators, we report the correlation matrix of all moderators (Supplemental Table S4) and their zero-order effects (Supplemental Table S5). We also computed the variance inflation factors (VIFs) of the moderators for all reported metaregressions. The VIF scores of all regressors are under 10, the threshold that is generally considered problematic. However, the values of temptation and harm show values between 5.0. and 8.9, respectively, which indicate moderate collinearity, so there is value in future research to distinguish the impact of these variables more precisely.

Situational Factors

Table 5 shows the metaregression for our outcome variables on six situational factors: temptation (for the decision maker), harm (for the recipient), whether the recipient is a charity, whether the information is costly, whether decisions are repeated, and whether the design is between subjects. We discuss the results for each factor in turn.

Temptation. For each treatment, we calculated the level of temptation as the difference in the payoffs (in 2015 USD, PPP) *for the decision maker* between the two monetary splits the decision maker can choose from. For studies using experimental points, we transformed the points into the local currency that was subsequently paid out to participants and converted it into 2015 USD PPP (similar to the approach used by Gerlach et al., 2019; Leib et al., 2021).

The predicted moderation effect of temptation is visualized in Panel A of Figure 4, together with the 95% CIs. As expected, we find a strong negative effect of temptation on altruistic behavior, both in the full information treatment (solid green line) and the hidden information treatment (dashed red line). This effect is confirmed by the regression analysis, which shows a significant negative effect, controlling for other covariates (Table 5, Models 1 and 2). Even though temptation reduces altruistic choices slightly faster in the full information treatment ($\beta = -0.388$) than in the hidden information treatment ($\beta = -0.384$), we observe no significant effect of temptation on the RD in altruistic choices between the two treatments (Table 5, Model 3). Thus, we find clear evidence that temptation affects altruistic choices in both the full and hidden information treatments but find no evidence that it affects the difference between the two conditions or the importance of motives such as self-image maintenance.

Harm. For each treatment, we calculated the level of harm to the recipient as the difference in the payoff (in 2015 USD, PPP) *for the recipient* between the two monetary options the decision maker can choose from.

The predicted moderation effect of harm is depicted in Panel b of Figure 4 together with the 95% CIs. As expected, we find a strong positive effect of harm on altruistic choices in both the full information treatment (solid green line) and the hidden information treatment (dashed red line). This effect is confirmed by the regression

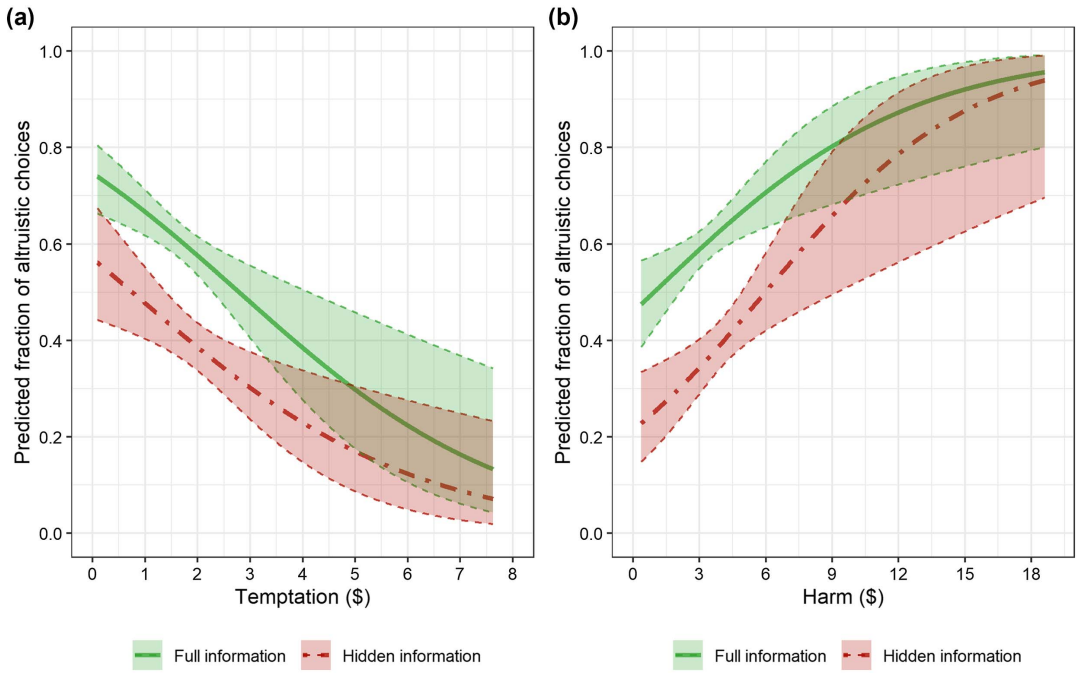
Table 5
The Effects of Situational Factors on Altruistic Behaviors

Factor	Model 1 log(OD) Altruistic choices in full info	Model 2 log(OD) Altruistic choices in hidden info	Model 3 RD Altruistic choices in full info − hidden info
Intercept	0.462 (0.395)	−1.205* (0.490)	0.347*** (0.080)
Temptation (2015 USD, PPP)	−0.388*** (0.105)	−0.374** (0.121)	0.011 (0.022)
Harm (2015 USD, PPP)	0.174** (0.056)	0.217** (0.067)	−0.016 (0.012)
Costly information	0.305 (0.324)	−0.262 (0.216)	0.042 (0.026)
Repeated decisions	−0.884** (0.309)	−0.030 (0.341)	−0.206*** (0.052)
Charity	−0.100 (0.237)	0.152 (0.233)	0.011 (0.040)
Between-subjects design	0.239 (0.355)	0.673† (0.402)	−0.082 (0.067)
I^2	66.45	81.98	59.95
Q_E (*df*)	86.27*** (28)	226.78*** (46)	84.39*** (46)
Q_M (*df*)	61.81*** (6)	21.93*** (6)	20.76** (6)
σ_1^2	0.01	0.11	0.00
σ_2^2	0.10	0.11	0.00
No. of treatment effects	35	53	53
No. of participants	2,473	3,896	4,979
No. of decisions	7,092	11,620	16,373

Note. Regression models testing the effect of situational factors on altruistic choices in (a) the full information treatment, (b) the hidden information treatment, and (c) the RD in altruistic choices between the full information treatment and the hidden information treatment. USD = United States dollar; PPP = purchasing power parity; RD = risk difference; log(OD) = log of the odds; info = information. QE is a test of residual heterogeneity. Q_M is a Wald-type test of moderators. σ_1^2 indicates the between-studies variance, and σ_2^2 indicates the within-studies variance.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 4

Predicted Effect of Harm and Temptation on Altruistic Behavior



Note. This figure depicts the predicted effect of temptation (Panel a) and harm (Panel b) and the 95% CIs on the likelihood of altruistic choices in the full information treatment (predictions are obtained from Model 1 of Table 5, keeping the other covariates fixed at their mean level) and in the hidden information treatment (predictions are obtained from Model 2 of Table 5, keeping the other covariates fixed at their mean level). Temptation and harm are measured in the 2015 USD PPP. Out of the 53 treatment effects, 51 have temptation < $4 (Panel a) and 51 have harm < $8 (Panel b). CI = confidence interval; USD = United States dollar; PPP = purchasing power parity. See the online article for the color version of this figure.

analysis, which shows a significant positive effect, controlling for other covariates (Table 5, Models 1 and 2). Even though harm increases altruistic choices in the hidden information treatment faster ($\beta = 0.217$) than in the full information treatment ($\beta = 0.174$), we observe no statistically significant effect of harm on the RD in altruistic choices between the two treatments (Table 5, Model 3). Thus, we find clear evidence that harm increases altruistic choices in both treatments; but, like for temptation, we find no evidence that it affects the difference between the two conditions or the importance of motives such as self-image maintenance.

Information Cost. We study the impact of costly information ($k = 9$) relative to free information ($k = 44$). The cost of information is coded binarily because the range of costs is extremely small, and even the highest cost is somewhat small (see the range of costs in Table 2). Controlling for other covariates, results indicate no significant effect of information cost in all three models in Table 5. The effect of information costs on altruistic choices in the hidden information treatment is negative, as expected, but the coefficient is not statistically significant. In Model 3, we see the cost of information increases the gap in altruistic behavior between treatments, but the effect is nonsignificant. Overall, the lack of evidence for an effect of information costs is surprising, and we discuss this issue in more detail in the Discussion section.

Repeated Decisions. We compare studies in which participants made a single decision ($k = 34$) with those in which participants made repeated decisions ($k = 19$). The regression results demonstrate a significantly negative impact of repeated decisions on altruistic choices in the full information treatment (Table 5, Model 1), whereas the corresponding effect in the hidden information treatment is smaller and not significant (Table 5, Model 2). As a result of this differential effect in the two treatments, we see a statistically significant decline in the RD in altruistic choices between the two treatments (Table 5, Model 3).

These results indicate repetition makes people more selfish in the full information treatment, but not in the hidden information treatment, and hence makes the samples in the two treatments more alike in their behavior. The fact that repetition does not affect altruistic choices in the hidden information treatment is consistent with the idea that those who behave altruistically in the hidden information treatment care more about the recipient than those who do so in the full information treatment and are hence less susceptible to psychological excuses such as moral licensing that are induced when people make decisions repeatedly. In other words, repetition might have a selection effect similar to ignorance in generating excuse value for participants. Further research can try to identify whether these types of excuses are indeed substitutes.

Recipient Type. We compare studies in which the recipient was a peer ($k = 33$) with those in which the recipient was a charity ($k = 20$). Controlling for other covariates, results reveal no significant effect of recipient type on any of our outcome variables.

This finding suggests decision makers do not adjust their behaviors much based on the type of recipient.

Between-Subjects Decisions. We compare studies in which participants made decisions in both information treatments ($k = 6$) with those in which participants participated in only one of the two treatments ($k = 47$). The regression results in Table 5 show no significant effects on any of our outcome variables, indicating this distinction does not have a large impact on behavior in this setting. Note that this null effect could arise because different studies implement the full and hidden information treatments in different orders.

Personal Factors

Table 6 shows the metaregressions results of the moderating effects of age and gender on the outcome variables. Figure 5 presents the corresponding graphical evidence of the estimated effects and their 95% CI. We discuss the results for each factor in turn.

Age. We coded age as the average age of all participants in a study (range: 22–38 years; $k = 40$, $M = 26.29$, $SD = 5.12$). Panel a of Figure 5 plots results from two regression models assessing the likelihood of altruistic choices as predicted by age separately for the full information treatment (solid green line) and the hidden information treatment (dashed red line). Results from the metaregressions (Table 6) reveal an increase in the fraction of altruistic choices in both treatments as the average age of decision makers increases. The finding is in line with previous findings on the positive relation between age and altruism (Bekker & Wiepking, 2011; Engel, 2011). Note that age increases the level of altruism in both the full and hidden information treatments (Models 1 and 2), but the effect is stronger in the full information treatment. As a result, the gap between the two treatments increases with age, an effect that is also statistically significant (Model 3). Thus, the higher amount of altruistic behavior observed among older people reflects that altruism indeed increases with age, but the increase is partly due to motives beyond the concern for the recipient's payoffs, such as self-image maintenance.

Gender. We coded gender as the proportion of male participants in the sample of each study. Most studies recruited a fairly balanced number of males and females ($k = 44$, range: 33.0%–58.6% males, $M = 0.52$, $SD = 0.08$). Panel b of Figure 5 plots the results from two regression models assessing the likelihood of altruistic choices as predicted by the proportion of males separately for the full information treatment (solid green line) and the hidden information treatment (dashed red line). The figure shows a higher proportion of males is associated with a lower level of altruistic choices in both the full and the hidden information treatments. This observation is echoed by the results from our metaregressions in Table 6 (Models 1 and 2). Because this effect is similarly sized in the two treatments, it does not affect the difference between the two treatments (Model 3). These results, therefore, suggest that women are more altruistic on average, and no gender difference exists in the tendency to act altruistically out of concern for one's self-image. This finding conflicts with the results of Klinowski (2018), who uses a different experimental paradigm to measure reluctant giving among men and women. Note that the gender data available to us are at the treatment level, that is, the proportion of females and males in each treatment. Accordingly, the null effect for gender may be the result of such aggregation.

Discussion

We present the first meta-analysis on willful ignorance, providing an overview of variations of the experimental paradigm used to measure it and reporting results assessing its magnitude and moderators. Specifically, we compare two situations. In the first, people take decisions in transparent settings where they have full information about how their choices impact others. In the second, people take decisions in nontransparent, ambiguous settings in which they can either learn about the consequences of their actions on others or remain willfully ignorant.

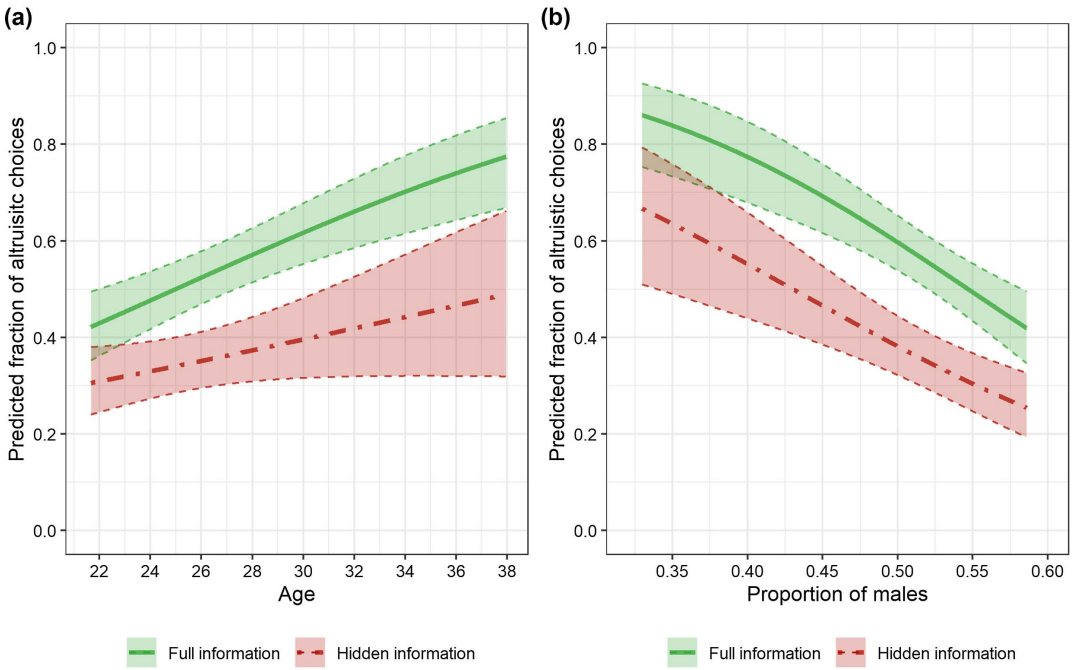
Table 6
The Effects of Personal Factors on Altruistic Behavior

Factor	Model 1 log(OD) Altruistic choices in full info	Model 2 log(OD) Altruistic choices in hidden info	Model 3 RD Altruistic choices in full info − hidden info
Intercept	1.996* (0.989)	1.718† (0.995)	−0.005 (0.222)
Mean age in the study	0.095*** (0.021)	0.048† (0.027)	0.013* (0.006)
The proportion of males in the study	−8.370*** (1.750)	−6.907*** (1.676)	−0.354 (0.380)
I^2	79.26	85.77	79.12
Q_E (*df*)	111.96*** (27)	217.79 (37)	85.59*** (37)
Q_M (*df*)	36.29*** (2)	17.78*** (2)	5.24† (2)
σ_1^2	0.06	0.14	0.01
σ_2^2	0.11	0.12	0.00
No. of treatment effects	30	40	40
No. of participants	2,337	2,288	4,475
No. of decisions	6,694	11,146	12,841

Note. Regression models testing the effect of personal factors on altruistic choices in (a) the full information treatment, (b) the hidden information treatment, and (c) the RD in altruistic choices between the full information treatment and the hidden information treatment. Q_E is a test of residual heterogeneity. Q_M is a Wald-type test of moderators. σ_1^2 indicates the between-studies variance, and σ_2^2 indicates the within-studies variance. RD = risk difference; log(OD) = log of the odds of altruistic choices; info = information.
† $p < .10$. * $p < .05$. *** $p < .001$.

Figure 5

Predicted Effect of Age and Gender on Altruistic Behavior



Note. Figure depicting the predicted effect of age (Panel a) and gender (Panel b) and the 95% CI on the likelihood of altruistic choices in the full information treatment (predictions are obtained from Model 1 of Table 6, keeping the other covariates fixed at their mean level) and in the hidden information treatment (predictions are obtained from Model 2 of Table 6, keeping the other covariates fixed at their mean level). Age and gender are measured as the average in each study. CI = confidence interval. See the online article for the color version of this figure.

Using cumulative data from 22 articles, 56 treatment effects, 6,531 participants, and 33,603 decisions, we find evidence supporting the existence and the negative impact of willful ignorance. In particular, we find 39.8% of participants avoid information about their decision's impact on others, leading to a drop of 15.6 percentage points in altruistic decisions, even when the initially hidden information is easily obtainable. The robust decrease in altruistic behavior in the nontransparent setting shows that non-outcome-based motives do indeed play a role in decision making. We found participants self-select into their preferred environment, with or without information. Those who actively choose information are more altruistic than those who passively received information. Overall, cumulated evidence supports the notion that people engage in ignorance (at least partially) to provide an excuse for selfishness.

Below, we discuss additional theoretical, methodological, and practical implications of our findings, as well as their limitations and the most promising avenues for future work.

Theoretical Implications

Most broadly, the current work informs theory about the general study of altruism. Much of the work focuses on transparent settings in which decision makers know the consequences of their actions before deciding (e.g., on social value orientation, Balliet et al., 2009; Murphy et al., 2011; on social mindfulness, Van Doesum et al., 2021; on reciprocity, Gintis et al., 2003; on development, Benenson et al., 2007; on socioeconomic status, Piff et al., 2010; on social preferences, Fehr & Fischbacher, 2003). However, the presence of uncertainty enables a more incisive look into the motivations underlying altruistic behavior, in order to assess whether one is truly motivated to implement a positive outcome for others as opposed to "giving in" to perceived (internalized) social obligations (Cain et al., 2014). Our findings provide new insights into the nature of altruistic behavior both within and across groups. For instance, while we replicate previous findings that altruism increases with age (Bekkers & Wiepking, 2010; Engel, 2011), we also find evidence that the increased altruism among older compared with younger individuals is at least partially driven by a desire to comply with social norms or to maintain one's self-image (Arnett, 2001) rather than exclusively by a concern for the other's outcome.

Motives Underlying Ignorance

Meta-analytic results are also informative of the psychological drivers underlying the choice to remain ignorant of the consequences of the decision on the recipient. In the theory section, we suggested two distinct sets of motives. First, participants may be using ignorance as an excuse to legitimize selfish behavior. Second, they may choose ignorance out of cognitive inattentiveness. Meta-analytic evidence revealed the selection of relatively altruistic participants into information seeking, which is consistent with excuse-seeking behavior, but not with a pure effect of cognitive inattentiveness.

Thus, taken together, the aggregate evidence suggests ignorance is indeed in part "willful" and driven by excuse-seeking and self-image maintenance motives.

Evidence from individual articles offers further support for this interpretation. First, several studies have found 20%–40% of participants are willing to pay a modest amount to remain ignorant, which is inconsistent with cognitive inattentiveness but consistent with the excuse-seeking motive (Cain & Dana, 2012; Grossman & Van der Weele, 2017; Saccardo & Serra-Garcia, 2020). Second, Grossman (2014) and Grossman and Van der Weele (2017) investigated participants' willingness to acquire information *after* they have revealed their level of altruism in the full information treatment. This timeline eliminates the excuse value of ignorance because participants can no longer pretend they *would have been altruistic* with full information. In this case, 80% of participants are willing to acquire information and even overcome a default setting when doing so, indicating avoidance was indeed mostly driven by its excuse value. The excuse value of ignorance is further bolstered by findings that participants view a selfish choice made with full information as more morally problematic than a selfish choice made under (self-imposed) ignorance (Grossman & Van der Weele, 2017). Participants are also more likely to exert costly punishment on decision makers who knowingly act selfishly (Bartling et al., 2014; Conrads & Irlenbusch, 2013). Last, Exley and Kessler (2020) showed that when participants make decisions concerning the payoffs of two other players (but not themselves), thus eliminating (self-)image concerns, ignorance decreases by about 13 percentage points.

Obviously, the findings listed above do not rule out a role for cognitive inattentiveness because the two sets of motives are not mutually exclusive. Indeed, some studies also find evidence for inattentiveness and laziness. For instance, Exley and Kessler (2020) found considerable ignorance, even in situations when participants make decisions concerning the payoffs of two other players (but not themselves), a situation in which ignorance presumably has no excuse value. Grossman (2014) showed that changing the default setting for information (i.e., when an extra click is necessary to remain ignorant instead of getting informed) reduces the ignorance level substantially. This result indicates that lowering the cost to acquire information in terms of effort has a sizable impact on the ignorance level. The fact that such small changes in the experimental design have a large impact on behavior suggests some participants choose the simplest course of action. However, we do not reproduce this effect in our results as the metaregression does not reveal a moderating effect of information cost on willful ignorance. That said, given that we examine the effect of information cost in terms of monetary value, the null effect may reflect that monetary cost has a smaller impact on laziness-driven ignorance than effort, a result that may be interesting for future research to explore.

One may also wonder whether concerns for social image or reputation may explain excuse-driven behavior or ignorance. This possibility appears unlikely for several reasons. First, in the experiments we review, the recipient does not know who the decision maker is, whether the decision maker remains ignorant, and whether they have been assigned to the state of conflict or alignment. Thus, ignorance cannot be used as an excuse to protect one's social image from the judgment of the other player. Second, reputation building is not possible as in the majority of included studies, decision makers only make one decision. Even in studies where decision makers make repeated decisions, pairs of participants (decision maker and recipient) are randomly and anonymously rematched after each iteration. Rematching is also done after each round of decisions in the group-voting and group-dictator variations of the task. Third, decision makers likely did not try to keep up an image toward the experimenter, given that the experiments were run mostly in large laboratories as well as online, where no decisions could be traced back to individuals' identities.

Finally, participants may care about the opinion of the receiver or experimenter in a more abstract way that is not directly linked to their reputation.[10] Similarly, the experimental setting could induce sensations of "being watched" or increase self-consciousness in comparison to more natural environments. Following Grossman and Van der Weele (2017), we argue such sensations, for example, concerns about heavenly judgment or thoughts like "what would my mother think," are hard to distinguish behaviorally from the demands of one's own conscience or self-image concerns. We, therefore, conclude the most plausible explanation is that ignorance functions as a means to protect one's self-image. Future research could try to further refine and buttress this interpretation, for instance, by running double-blind conditions in the laboratory.

Overall, results from our meta-analytical review as well as individual experiments suggest that cognitive inattentiveness alone cannot explain all ignorance behavior. Rather both excuse seeking and cognitive inattentiveness are important motives behind ignorance. Providing definite evidence as well as quantifying the role of each motive is complicated, given that cognitive inattentiveness may in and by itself be used as an excuse (see, e.g., Exley & Kessler, 2019). Thus, pinning down the relative strength of these motives in more detail is an important task for future research, which we further stress below.

Methodological and Practical Implications

Our metaregressions show that some moderators influence the overall level of altruistic behavior. On the one hand, temptation and the share of male participants reduce such behavior. On the other hand, we observe that harm increases altruistic choices, both when participants make choices in a transparent setting with full information and in an ambiguous setting with hidden information. Nonetheless, temptation, harm, and the share of male participants do not moderate the difference in the levels of altruistic choices between settings, suggesting participants behave consistently in both settings. Repeated decisions also have an effect on altruistic behavior. In particular, when asked to make multiple choices involving a conflict of interest, decision makers become much less altruistic in a transparent setting with full information than in an ambiguous setting with hidden information, thus reducing the gap between behaviors in the two treatments. One interpretation of this result, which should be

[10] In the hidden information treatment, participants may still be concerned about the receiver's perception of their character, even if their personal identity remains unknown. The difficulty in making inferences about one's character in this treatment could potentially lead decision makers to feel justified in behaving more selfishly and diminish their motivation to seek information. However, this explanation does not account for situations where the recipient is a charity that remains unaware of the experiment or why some studies show individuals willing to pay for ignorance (e.g., Van der Weele, 2014). Nonetheless, this explanation presents an intriguing avenue for future research.

subjected to future research, is that repetition induces moral licensing in a transparent setting, which provides an excuse value similar to that of willful ignorance.

Methodologically, we find asking participants to pay for the information (vs. not) does not moderate the difference in the level of altruistic behavior observed between treatments. Theoretically, costly information should deter participants from obtaining information (Leib, 2023; Saccardo & Serra-Garcia, 2020; Xiao & Bicchieri, 2011). Moreover, evidence from individual studies shows even small barriers to willful ignorance, such as the need to overcome a default setting, have strong effects on information seeking (Grossman, 2014). The reason may be that having to pay or exert effort to acquire information provides decision makers with an additional excuse to act selfishly.

If the effect of costly information is indeed present, we may not detect it for several reasons. First, limited heterogeneity of information cost exists across studies. The highest information cost in our data set is merely \$0.13 (2015 USD PPP; a range of cost \$0.04–\$0.13). If the impact of information cost on willful ignorance only emerges when the cost is sufficiently high, our ability to detect such an effect is restricted. For instance, in a study not meeting our inclusion criteria, Fong and Oberholzer-Gee (2011) implemented an information cost of \$1.05 (2015 USD PPP). In such a setting, the level of ignorance was as high as 67%, and recipients lost on average more than 50% of their earnings when a decision was made in a nontransparent relative to a transparent setting. As such, studying willful ignorance when information costs are high may provide more power to detect the potentially small effect of information cost on willful ignorance. Second, only nine treatment effects implemented a cost for information (16% of the data set; see Table 1), all of which were conducted using a repeated-measures and between-subjects design. Therefore, the three explanatory variables are correlated. This dependence in our data does not allow for a clear identification of the effect of costly information acquisition, which may depend on the other shared features of the design. In fact, when running the metaregression excluding a repeated-measures and between-subjects design as moderators, we still did not find supportive evidence for an effect of information cost on the RD in altruistic choices. Finally, information costs may mostly discourage selfish participants who want to acquire information out of curiosity but intend to act selfishly anyway. That is, information costs may affect ignorance levels, but not *willful* ignorance. Indeed, an exploratory analysis shows information costs increase ignorance, providing evidence for this idea (see details in the online Supplemental Material).

Another methodological insight from the current work is related to the differences between studying willful ignorance using a dictator game versus an ultimatum bargaining game. Although we did not assess whether task type moderates willful ignorance, due to the limited number of studies implementing different tasks (see Figure 2 and Table 1), we did observe clear opposing results from two treatments in Conrads and Irlenbusch (2013), in which behaviors were more altruistic in the hidden information treatment than in the full information treatment (Figure 3). Conrads and Irlenbusch (2013) study is the only study that has implemented the ultimatum bargaining game to examine willful ignorance. In this game, the proposer can remain strategically ignorant about the consequences of the bargaining proposal for the recipient and use this excuse to make a low and selfish offer. The unique design of these studies in our data set may explain the divergent results. In particular, the recipient in this setup is in a more powerful position than the passive recipient from other task designs. First, in one of the treatments, the recipient knows whether the proposer chose to be informed of the true state of the world. Second, the recipient can reject the offer the proposer makes, leading to zero payoffs for both parties. Thus, the recipient can punish proposers for acting selfishly. The fear of punishment may explain why proposers acquire information at a much higher rate than the average information-acquisition rate computed in this meta-analysis (76%–88% vs. 60%). The fear of rejection also explains why informed proposers typically make generous offers, in line with previous literature (Forsythe et al., 1994; Güth et al., 1982). Interestingly, the Conrads and Irlenbusch (2013) study showed ignorance actually had some exculpatory value because making a selfish choice with full information resulted in a higher rejection rate (58%) than when the proposer remained ignorant (40%).

These interpretations are further bolstered by a third treatment in Conrads and Irlenbusch (2013) using the ultimatum bargaining game. Here, the proposer only has a 50% chance of successfully informing themselves of the state of the world if they choose to do so, whereas proposers who choose to remain ignorant will remain ignorant with certainty. Although the recipient knows whether the proposer has information about the true state of the world or not when they make the offer, they do not know if the proposer remains ignorant by choice or by chance. Thus, ignorance in this treatment provides an even stronger excuse because it may have been imposed exogenously. Indeed, in this treatment, we observe a more typical result in line with the willful ignorance effect; that is, behaviors were more altruistic in the transparent setting with full information than in the ambiguous setting with hidden information (Figure 3). Given the small sample size of this study, future research should explore further how punishment affects willful ignorance, which can be a potentially useful intervention to suppress this behavior.

Our results further carry practical implications concerning the encouragement of responsible consumption. Specifically, results show that transparent environments increase altruistic behavior. However, full transparency is difficult to achieve. Merely providing information may not be enough, as long as information is easy to avoid. These considerations provide some new avenues for policies to combat willful ignorance. One way is to attack the conflict of interest at its source. Policymakers can tinker with the payoff structure of the decision by subsidizing good behavior (Cain & Dana, 2012) or taxing harmful behavior (for a review, see de Walque, 2020). Policymakers can tinker with the payoff structure of the decision by subsidizing good behavior (Cain & Dana, 2012) or taxing harmful behavior (for a review, see de Walque, 2020). By reducing the underlying temptation for selfish behavior, such policies may not just affect behavior directly but also indirectly through the tendency to avoid information. Interestingly, our metaregressions do not show statistically significant evidence for this indirect effect of temptation. However, the estimates are in the expected direction, potentially warranting attention in future research.

Another strategy is to avoid the use of moralistic frames or a strong emphasis on moral norms, which may induce threats to self-image and generate avoidance behavior. Instead, one may try to increase individual altruism or empathy by inducing reflections about potential harms or by letting people reaffirm their moral values

(Schneider & Weber, 2021). For instance, morally neutral prompts to reflect on animal welfare have shown promise in getting people to reduce their meat consumption, an area where cognitive dissonance and willful ignorance play an important role (Bouwman et al., 2022). In the same context, Bastian (2019) discussed related strategies to overcome motivated resistance in meat eating, like focusing on positive moral outcomes rather than guilt or shame, or emphasizing viable alternatives to meat.

Limitations and Directions for Future Research

Here, we point out a number of limitations that may point to areas for future research. First, our analysis contains experimental designs that are fairly homogeneous and mostly decontextualized. Table 1 shows the two most common variations of the experimental paradigm used to study willful ignorance are the moral wiggle room task and the market setup; the group-voting and group-dictator variations, as well as the ultimatum bargaining task, have only been conducted once. Out of the five variations, only the market setup presents participants with a contextualized setting. Whereas decontextualized settings provide high internal validity and allow the assessment of causal pathways in the most controlled way, contextualized settings provide higher external validity (van Dijk & De Dreu, 2021). As Table 1 shows, continuing to diversify the methods used to examine willful ignorance is necessary, especially with diverse decontextualized settings and field studies.

To our knowledge, no existing studies correlate excuse-seeking behaviors from the lab with actual decisions in the field. However, findings from recent field studies corroborate the existence of willful ignorance and altruistic behavior driven by motives other than a true concern for others in several real-life domains. For instance, a substantial fraction of participants (30%) avoid free information about the living condition of farm animals, leading to a 16-percentage point increase in meat consumption (Epperson & Gerster, 2021). People living in regions with higher numbers of asylum seekers are more likely to avoid reading news about refugees (Freddi, 2021). In the context of charity giving, many people who reluctantly donate to charity are happy to avoid solicitors when given the opportunity (Andreoni et al., 2017; DellaVigna et al., 2012). Households, while being motivated to recycle in exchange for high monetary compensation for themselves, completely stop recycling when given an opportunity to donate the same compensation to charity (Schwartz et al., 2021). Similar results were found in Sweden, where recycling behaviors reduced significantly after the option to donate to charity was introduced on recycling machines (Knutsson et al., 2013). Such findings demonstrate studying willful ignorance in the field is a fruitful direction for future research. In particular, we call for more research to investigate the correlation between excuse-seeking behaviors in the lab, such as those measured using the moral wiggle room task, and actual decisions in a natural environment.

Second, more research into the motives behind information avoidance and willful ignorance in moral dilemmas is necessary. In particular, as our discussion has shown, more work is needed to disentangle the relative role of excuse seeking and self-image concerns on the one hand, and cognitive inattentiveness on the other hand (including aversion to complexity and hard thinking; Exley & Kessler, 2020). This distinction matters from a policy perspective because it suggests very different strategies to overcome barriers to information consumption.

Third, the range of several key moderators in our sample is rather limited. This limitation might be a reason for the null result regarding the impact of information costs discussed above. Additionally, the range of participants' ages is also rather small (22–38; Table 3), which limits our ability to understand how the tendency to engage in willful ignorance develops with age. In line with previous findings, our results show people choose more altruistically as they age (Bekkers & Wiepking, 2010). Interestingly, however, such a pattern is stronger in the transparent setting with full information than in the ambiguous setting with hidden information. A plausible interpretation of the results suggests that the older people get, the more they are aware of the social norms associated with being considerate to others (Arnett, 2001). These findings are particularly intriguing, yet work on earlier and later life stages is markedly missing. Recent work shows age strongly and positively correlates with deliberate ignorance in various domains (Hertwig et al., 2021). Unraveling the longitudinal dynamics of how willful ignorance develops seems like a promising path for future work to explore.

Fourth, the limited number of studies measuring individual characteristics restricts our ability to investigate how different personality traits influence the tendency to engage in willful ignorance. Recent meta-analytical results show different features in a situation allow for the expression of different personality traits (Thielmann et al., 2020). For instance, traits related to an unconditional concern for others, such as honesty-humility, positively correlate with altruistic behavior in a dictator game, but not in an ultimatum game. Given that the situation presented in the moral wiggle room task and its variations differ from that of the original dictator game, investigating which personality traits are related to the tendency to engage in willful ignorance as well as altruistic behavior (or the lack thereof) in the current experimental paradigms is an interesting avenue for future research to explore.

Fifth, whereas willful ignorance has been studied in various Western countries, this phenomenon has not been investigated in non-WEIRD populations. Cultural forces have a strong influence over human altruistic behavior and social norms on sharing differ widely across societies around the globe (Fehr & Fischbacher, 2003). Given that much of the decision we are focusing on is being guided by (internalized) social norms, studying this behavior cross-culturally would be an interesting and important avenue. Monetary decisions taken in experimental settings we are considering here reflect the constant socialization people experience in their daily lives (Henrich et al., 2001). Thus, studying willful ignorance cross-culturally can expand our knowledge beyond awareness of the influence of social norms to gain a deeper understanding of how socioeconomic contexts influence willful ignorance, as well as the ecological roots and the adaptive functions behind willful ignorance in different cultural contexts (Gelfand et al., 2011, 2017).

Sixth, the results of our meta-analysis do not allow for causal inferences. For instance, the correlation we observed between age and willful ignorance could have multiple explanations (see Gerlach et al., 2019; Leib et al., 2021). One possible explanation is that individuals in earlier stages of their careers or students may place a higher value on the money earned in the task compared to those who are more established in their careers. Since older individuals typically hold more established positions, their motivation to earn extra money through the experimental task may be lower than that of younger individuals. Additionally, as highlighted by Hertwig et al. (2021),

age is associated with systematic changes in personality traits, such as lower openness to experience. Lower openness to experience could be associated with higher information avoidance, thus contributing to the correlation between age and willful ignorance in our data. To better understand the relationship between age and willful ignorance, further research is needed for validation and deeper insights.

Finally, while meta-analyses provide a quantitative summary of the literature, it is important to consider that effect size estimates from preregistered multiple-laboratory replication projects often yield more accurate results by mitigating publication bias concerns (Kvarven et al., 2020). Therefore, it is reasonable to expect slightly inflated effect size estimates in our current work. However, we should note that 34% of the treatment effects included in our meta-analysis are unpublished, which helps alleviate this concern to some extent. Moreover, we found no evidence of publication bias, since the effect sizes of published and unpublished treatments did not differ. Nevertheless, we strongly encourage large-scale, preregistered replication studies to substantiate the effects observed in our analysis.

Conclusion

Many of our decisions impact others. Often, people choose to remain uninformed about such an impact in order to make self-serving decisions. Such willful ignorance is an obstacle to altruism if it generates an excuse to behave selfishly. By understanding the prevalence, magnitude, and psychological underpinnings of willful ignorance, we can design environments to encourage well-informed altruistic decisions and restrain selfish ones.

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