MEMORANDUM

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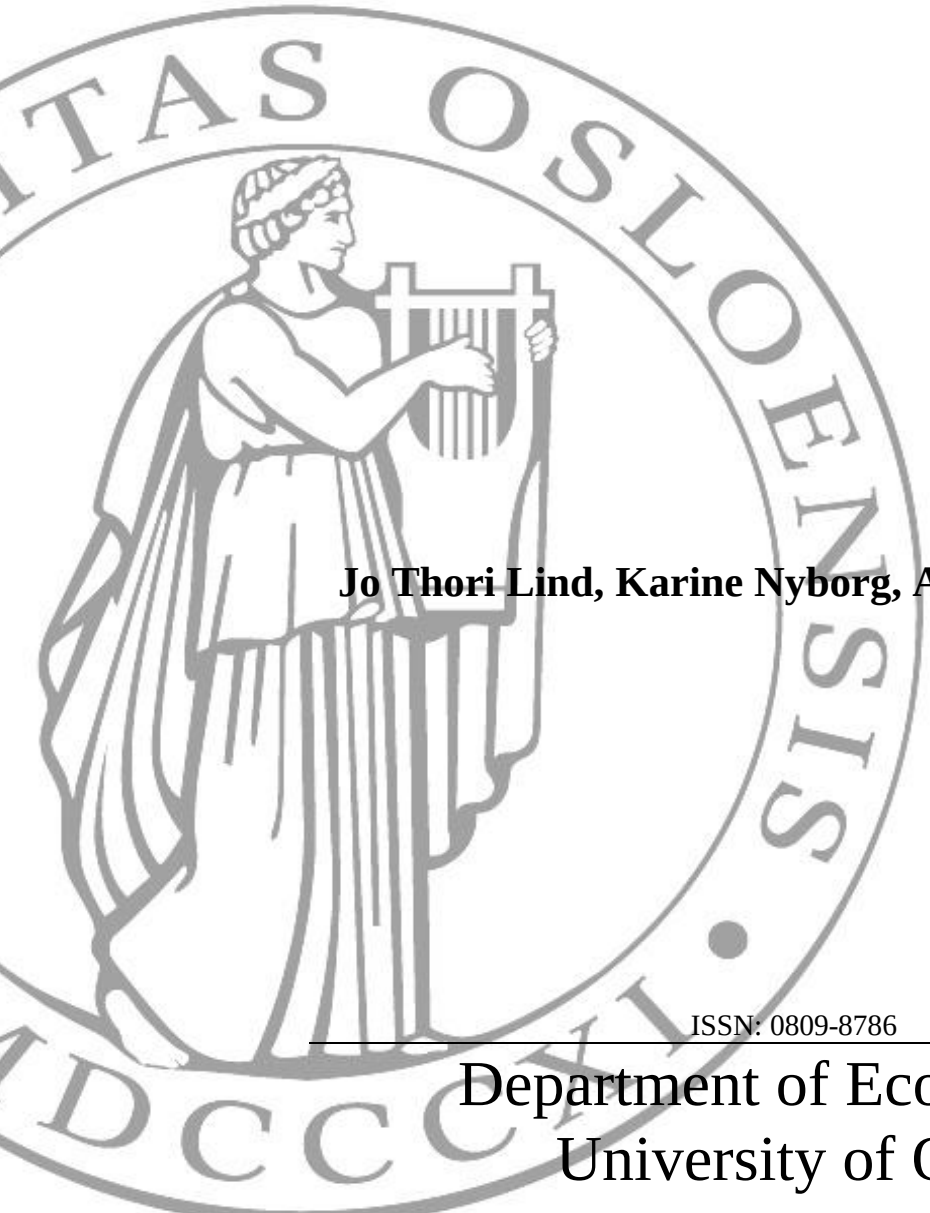
Save the planet or close your eyes?
Testing strategic ignorance in a charity context



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Save the planet or close your eyes? Testing strategic ignorance in a charity context*

Jo Thori Lind, Karine Nyborg, Anna Pauls†

Tuesday 4th September, 2018

Abstract

Our lab experiment tests for strategic ignorance about the environmental consequences of one's actions. In a binary dictator situation based on the design by Dana, Weber, and Kuang (2007), we test whether the option to remain ignorant about the receiver's payoffs reduces generosity. Our receiver is a charity that engages in carbon offset. Contrary to previous findings by Dana, Weber, and Kuang (2007) and replications, the option to remain ignorant does not decrease generosity. Only 22% of dictators choose ignorance. We test social interaction by allowing another subject to force the dictator to learn the receiver's payoff, and by allowing the dictator to sanction that subject. When information can be imposed by another subject, almost all dictators choose information themselves, but this does not increase generosity. The possibility of sanctions does not discourage subjects from providing information to dictators.

Keywords: Strategic ignorance, dictator game, experiment, social sanctions, carbon offset
JEL classification: C92, D63, Q50

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1 Introduction

If someone tells you that your current behavior is damaging the environment, you would probably feel a bit uncomfortable. But does the prospect of such a situation make you behave in a more environment-friendly way, or do you rather shy away from situations likely to confront you with such information?

Previous laboratory experiments have produced evidence for *strategic ignorance* (or willful ignorance) in contexts where people's choices affect another individual: when given the opportunity, a substantial share of subjects choose to remain ignorant about the consequences of their actions for the other, and such willingly ignorant people make significantly more selfish choices (Dana, Weber, and Kuang, 2007; Larson and Capra, 2009; Feiler, 2014; Grossman, 2014; van der Weele, 2014; Grossman and van der Weele, 2017). In the present study, we explore whether similar results arise when one's actions have consequences not for another participant in the lab, but instead for contributions to a global public good – in our case, payouts to a charity engaged in climate projects in poor countries.

Our findings constrast with those reported in much of the previous literature. Although we used a payoff structure similar to the one used in Dana, Weber, and Kuang (2007), a considerably lower share of subjects in our experiment – 5% to 22%, depending on the treatment – chose to remain ignorant about the consequences of their actions. Moreover, the option to remain ignorant did not significantly increase selfish behavior.

Nonetheless, a majority of those choosing the selfish option did prefer to remain ignorant about the receiver's payoffs. While this might indicate that people do indeed dislike receiving information about potentially negative consequences of their self-interested choices, an alternative explanation is that these individuals do not care about the charity and hence are simply not interested in the information.

If receiving information about potentially negative consequences of one's behavior is indeed unpleasant, people may sanction others who provide them with such information.[1] Hence, our experiment also includes treatments designed to test whether a messenger providing unwanted information is sanctioned for doing so, and whether potential sanctions discourage messengers from providing information. To our knowledge, ours is the first study to explore the role of social interaction in a strategic ignorance context.

Potential sanctions do not significantly discourage messengers' information provision in our study. This finding must be interpreted in light of the low incidence of willful ignorance, however: if the messenger foresees that the information is not unwelcome, she will hardly fear sanctions for providing it. Interestingly, we also find that when information can be imposed by the messenger, and the dictator (the subject making the choice affecting the charity) knows this, almost all dictators opt to receive information themselves. This precluded testing, as intended,

[1] For example, vegetarians often seem to be faced with negative social reactions, and promoting vegetarian choices can trigger outright hostility (see Zeit (2013), Spiegel (2013)). One possible reason might be that this provide unpleasant reminders to meat-eaters of the negative environmental impacts of their own choices.

whether provision of unwanted information is sanctioned.

Below, we first discuss the related literature, before presenting our design and discussing the results in more detail.

2 Literature and background

During the last decade, a literature has emerged demonstrating that generosity is highly context dependent (List, 2007; Cox, List, Price, Sadiraj, and Samek, 2016). While most people do share with others when placed in a 'sharing context' like standard versions of the dictator game (Camerer, 2003), their sharing does not appear to be (exclusively) motivated by a concern for the other's payoff or well-being as such. For example, if given the opportunity to escape from the dictator role, even at a cost, a large share of dictators choose to do so, leading to less favorable outcomes for the recipient (Dana, Cain, and Dawes, 2006; Broberg, Ellingsen, and Johannesson, 2007; Jacobsen, Eika, Helland, Lind, and Nyborg, 2011; Lazear, Malmendier, and Weber, 2012; DellaVigna, List, and Malmendier, 2012). Varying the dictator game in other ways blurring the dictator's responsibility – such as making the selfish option an automatic default if the dictator waits unusually long before making her choice – also tends to produce more selfish choices (Dana, Weber, and Kuang, 2007). One interpretation of these findings is that individual feelings of moral responsibility are context-dependent (Cox, List, Price, Sadiraj, and Samek, 2016), and, moreover, that responsibility is a burden individuals are reluctant to accept (Brekke, Kipperberg, and Nyborg, 2010; Nyborg, 2011). Although a person may share generously in a context making her feel obliged to do so, she may prefer to avoid such contexts altogether.

Along similar lines, Dana, Weber, and Kuang (2007) showed that the option to stay ignorant about the consequences of one's desicion induces more selfish behavior. Their study was followed by a surge of empirical as well as theoretical research on willful ignorance (Larson and Capra, 2009; Matthey and Regner, 2011; Feiler, 2014; Grossman, 2014; van der Weele, Kulisa, Kosfeld, and Friebel, 2014; Regner and Matthey, 2015; Grossman and van der Weele, 2017; Hertwig and Engel, 2016; Spiekermann and Weiss, 2016; Grossman, 2014; Felgendreher, 2018).

The basic version of Dana, Weber, and Kuang (2007) lab experiment faces subjects with a binary dictator situation. The recipient is another participant in the same room, matched anonymously and randomly with the dictator. In their *Baseline* treatment, being kind to the recipient implies forgoing a part of one's own payoff, with the benefits to the recipient being larger than the cost for the dictator. If the dictator chooses X, she gets 6 USD and another subject gets 1 USD. If she chooses Y, she and the other subject both get 5 USD.Dana, Weber, and Kuang (2007) use the notation A and B for the two choices. In our social interaction part, we used A and B to refer to the two types of subjects. We therefore use our notation for the two choices here. Note that Y is not only the pro-social but also the more efficient choice. This

yields the following payoff matrix

Baseline payoff

Dictator chooses	Dictator gets	Recipient gets
X	6	1
Y	5	5

In Dana et al.'s (2007) *Hidden Payoff* treatment, the dictator does not know from the outset which out of two possible sets of payoffs to the recipient applies. With probability 1/2, the recipient's payoffs are as in the *Baseline,*, otherwise the payoffs to the recipient is switched between alternatives, corresponding to the following matrix:

Hidden payoff

Dictator chooses	Dictator gets	Recipient gets
X	6	5
Y	5	1

That is, the dictator does not initially know whether she is in a situation of conflicting interests between the recipient and herself, or in a situation where their interests are aligned. However, the dictator can costlessly press a button to reveal which state applies for her, and thus make an informed choice. If she does not press the button, she makes her decision without knowing the payoffs to the recipient.

In the baseline treatment of Dana, Weber, and Kuang (2007), only 26% choose the selfish option X. In the *Hidden Payoff* treatment, this number increases to 63%, counting only subjects who actually are in the conflict state (whether they know it or not).[2] 56% of all subjects (50% of those in the conflict state) remain ignorant. 86% of ignorant subjects (100% counting only those in the conflict state) choose X. Thus, the option to remain ignorant about the receiver's payoff increases the prevalence of selfish choices.

Later studies largely confirm these findings. Larson and Capra (2009) repeat Dana et al.'s (2007) experiment in a double-blind version without computers, but force participants to make an active choice between knowing or not knowing the consequences of their actions for the recipient. They find roughly similar results as Dana, Weber, and Kuang (2007): in the baseline treatment with payoffs corresponding to the Baseline payoffs above, only 26% choose the selfish option X. In their *Hidden Payoff* treatment, where subjects did not know which of the two matrices applied and had to make an active choice whether to be informed or not, 56% of dictators chose to stay ignorant; moreover, as much as 63% of the dictators (in conflicting states) chose X – and all the subjects who chose to stay ignorant.

Grossman (2014) replicates the main results from the *Baseline* and *Hidden Payoff* treatments in Dana, Weber, and Kuang (2007)'s study, but add treatments that vary the extent to which staying ignorant is an active choice. In contrast to Larson and Capra (2009), he finds that

[2]If all subjects are included, both those in the conflicting and aligned interest states, 72% choose X.

results depend crucially on the ignorance option being a passive choice: when no information is the default, 45% of dictators stay ignorant; however, if the dictator is forced to make an active choice, this drops to 25%, and if being informed is the default, only 3% of dictators stay uninformed.

Grossman and van der Weele (2017) show that subjects are even willing to pay to remain ignorant, and that those who do make more selfish choices. Their results also indicate that curiosity can be a reason to reveal information, even for a person whose choice is unaffected by the receiver's payoff: in their study, ignorance is much lower when the receiver's payoff can be revealed only after having chosen between X and Y.

Also based on the design of Dana, Weber, and Kuang (2007), Feiler (2014) replicates the result that an option to stay ignorant increases selfish behavior. By varying the probability that the conflicting versus aligned interest state applies, she finds that ignorance is more prevalent when the probability of the aligned state is higher. Van der Weele (2014) finds that a decrease in the personal cost of implementing a fair allocation lowers the incidence of willful ignorance and increases prosociality. He also finds, however, that increasing the potential losses or gains of recipients does not affect ignorance or prosocial behavior substantially. Matthey and Regner (2011) use a dictator game with a rather different design, but still find that an option to stay ignorant about consequences of one's choices for another participant decreases generosity.

Thus, the result that an option to stay ignorant leads to substantial prevalence of willful ignorance and comparatively low levels of generosity, seems to be a rather robust result - at least as long as ignorance is the default choice and the payoff structure is similar to that in Dana, Weber, and Kuang (2007).

3 Experimental design and procedures: basic treatments

Like several of the studies quoted above, the basic versions of our experimental design are based on the *Baseline* and *Hidden Payoff* treatments of Dana, Weber, and Kuang (2007). However, instead of another experimental subject, the recipient is a charity promoting climate projects in poor countries. To our knowledge, this is the first study to explore strategic ignorance in a global warming context. We are aware of only one previous study that explores strategic ignorance with a charity as the recipient: in her Appendix C, Exley (2016) reports results from a strategic ignorance game with a charity recipient, used mainly to classify subjects in a study of risk (not ignorance) as an excuse for not giving. Exley finds that the option to stay ignorant leads to substantially more selfish choices.

It is well-know from previous experiments that a "deserving" recipient tends to increase generosity in dictator games (e.g., Eckel and Grossman (1996); Fong (2007); Cappelen, Halvorsen, Sørensen, and Tungodden (2016)). It is not *a priori* obvious, however, how this would affect the prevalence of strategic ignorance. On the one hand, a more deserving recipient may increase dictators' wish to share; on the other, the very fact that she will feel more strongly obliged to

share if discovering that the conflict state applies could increase her temptation to stay ignorant. Van der Weele (2014)'s result that the size of the recipient's gain or loss matters little might indicate that these two effects tend, more or less, to neutralize each other.

The recipient is the organisation *Myclimate*. Subjects are given the following information about the organization:

> In the course of the experiment, money will also be donated to climate change projects in poor countries through the organization Myclimate. All climate projects supported by Myclimate are either recognized by the UN (so-called CDM quotas) or calculated and controlled according to the UN scheme (CDM scheme). The climate projects follow the so-called Gold Standard, which among other things involves a focus on sustainable development where the measures are implemented.

We use a between-subjects design. The relative payoffs are the same as in Dana, Weber, and Kuang (2007), but numbers are converted into Norwegian kroner (NOK) and adjusted for the different price level in Norway.[3]

In our *Baseline* treatment, all subjects face the same binary dictator situation. They were provided with the following table:

Our baseline payoff

	You get	Climate projects get
You choose X	120	20
You choose Y	100	100

They were also told that if the dictator chooses X, she gets 120 NOK and *Myclimate* gets 20 NOK. If she chooses Y, she and *Myclimate* both get 100 NOK.

In our *Hidden Payoff* treatment too, all subjects face a binary dictator situation, but here they do not initially know whether their own and *Myclimate*'s interests conflict or align. Subjects are provided with two tables, one identical to the baseline payoff above, another identical to the following table:

Our hidden payoff

	You get	Climate projects get
You choose X	120	100
You choose Y	100	20

Subjects are told that the payoffs are either as in the baseline or the hidden payoff, that the relevant table varies between participants, and that they do not know which table applies for themselves. The participants are not, however, told the probabilities for each state. The true probability of the conflict state was, in fact, 0.9, because observations from the aligned

[3] At the time of the experiment, 1 NOK was worth 0.117 EUR.

state would give considerably less useful data for our social interaction treatments (we return to these later).[4]

Subjects could resolve the uncertainty costlessly by clicking on a button marked "Show correct table". If they chose to continue to the next screen without clicking this button, they decided between X and Y without knowing the payoffs to *Myclimate*.

In addition to the *Baseline* and *Hidden Payoff* treatments, we ran three treatments designed to explore social interaction: *Hypothetical Messenger*, *Stranger* and *Partner*. As these data turned out to yield less insights than expected, we provide a relatively brief report on these treatments below, after presenting the results of the *Baseline* and *Hidden Payoff* treatments.

In all treatments, the experiment was followed by a brief computer-based survey including socio-demographic questions, a few questions about the experiment, and respondents' agreement to the statements "Global warming is a serious societal problem" and "Donating to climate mitigation projects will help alleviate global warming".

All treatments took place at the University of Oslo's *Oeconlab* during February, March and April 2015, using the experimental software *ztree* (Fischbacher (2007)).[5] Participants were recruited via e-mail and in beginners' lectures in various subjects, excluding economics and psychology. Instructions were distributed to all participants and read out aloud. Before the experiment started, each subject had to solve correctly a quiz testing their understanding of the experiment. The experiment was double blind.[6]

4 Results: basic treatments

We hade 45 pairs of subjects in the *Baseline* and 59 in the *Hidden payoff* treatment, of which 55 were in a conflict state.[7,8] Table 1 shows the main outcomes from the basic treatments of the experiment. First, we observe that only a small number of subjects choose to remain ignorant in the *Hidden payoff* treatment. In total, only 22% (13 out of 59) do not choose information in *Hidden Payoff*.[9]

[4]While we find it unlikely that subjects suspected this high probability of one of the states, we cannot know their beliefs conocerning this. In retrospect, this question should ideally have been included in the post-experimental questionnaire.

[5]Data from the experiment were imported using the user-written Stata command `ztree2stata` by Kan Takeuchi.

[6]In the experimental software, subject identity was recorded only as ID numbers, created by an algorithm with a random component. Subjects' ID numbers were provided to them privately on their screens. They noted their ID number, name and bank account number on the payment form, and put the form themselves into a visibly locked mailbox to be opened by the the secretary of another research institution who handled the payments.

[7]See Appendix Table A.1 for a full overview of session compositions.

[8]In Dana, Weber, and Kuang (2007), 26% choose the selfish option in their baseline treatment, and 63% in Hidden Payoff, counting only subjects in the conflict state. To detect a difference in proportions compared to this, 22 subjects per group would have been necessary to achieve a power of 0.8. Our sample sizes in *Baseline* and *Hidden Payoff* give a power of 0.9889 for this difference in proportions.

[9]Results adjusted for multiple hypotheses testing following List, Shaikh, and Xu (2016) can be found in Appendix Table A.4. Average earnings by treatment are listed in Appendix Table A.2.

Table 1: Behavior in Baseline and Hidden Payoff treatments

	Baseline		Hidden Payoff	
	Subjects	Share	Subjects	Share
Subjects choosing X	8	.18 [.08 ;.32]	12	.22 [.12;.35]
Subjects choosing information			46	.78 [.65;.88]
Uninformed choosing X			5	.583 [.28;.85]
Informed choosing X			7	.12 [.04;.25]
Total subjects	45		59	

Notes: The table shows behavior in the Baseline and Hidden payoff treatments. In the latter treatment, only the 55 subjects in the conflict state are included in the analysis of the dictator. "Share" is the share of subjects choosing the selfish outcome (X), and exact confidence intervals for proportions are shown in square brackets.

If our subjects used the option to remain ignorant as an excuse to act selfishly, we should observe that more subjects choose X in our *Hidden Payoff*-treatment than in the *Baseline*. However, the difference we observe is small and statistically insignificant ($p = .4$). In the *Baseline* treatment, where each dictator's interest conflicted with the receiver's, 18% chose the selfish and inefficient option X (8 out of 45), compared to the *Hidden Payoff* treatment, were 22% (12 out of 55) chose X.[10]

Nonetheless, dictators's choice of information is systematic: 58% of ignorant dictators chose the selfish action X (7 out of 12), compared to only 11% of informed dicators (5 out of 43). Despite the small number of ignorant subjects, this difference is statistically significant ($p = .02$). That is, the option to remain ignorant has no significant impact on the choice between X and Y, but there is an association between choosing ignorance and choosing the selfish alternative X.

We cannot claim that our *Baseline* subjects were more generous towards the charity than the subjects of Dana, Weber, and Kuang (2007) were towards their other subject recipients: the 95% exact binomial confidence interval for the proportion choosing X in *Baseline* ranges from .08 to .32 and includes the proportion choosing X in Dana, Weber, and Kuang (2007)'s baseline. In our *Hidden Payoff*, however, a considerably lower share of subjects chose to stay ignorant as compared to the corresponding treatment in Dana, Weber, and Kuang (2007). The exact binomial confidence interval for the proportion choosing information ranges from .65 to .88. Its lower bound is well above the proportion choosing information in Dana, Weber, and

[10]Counting informed and uninformed dictators alike.

Kuang (2007)'s hidden payoff treatment (.50). Moreover, the proportion of 63% choosing X in their *Hidden Payoff* treatment is well above the upper bound of the confidence interval for the proportion choosing X in our *Hidden Payoff*-treatment, which ranges from .16 to .40.

So far we have only considered the effect of the experimental treatment, not taking into account that subjects' opinions may differ. We find no significant effects. Among the 104 subjects in the *Baseline* and *Hidden Payoff* treatments, only one does not agree with the statement that global warming is a serious societal problem. 23 out of 104 do not agree that donating to *Myclimate* will help the climate. While those with a moderate to strong belief in the effectiveness of donating for climate action ("agree" or "strongly agree") are less likely to choose X (selfish) in the conflict state, there seems to be no connection to choosing information. Finally, men seem to be somewhat more inclined to choose the selfish option – see Appendix Table A.3 for details.[11]

To sum up thus far: in an experiment along the lines of Dana, Weber, and Kuang (2007), but with a charity as the recipient, we find no evidence of strategic ignorance. Although some subjects do not reveal the information about the payoff to *Myclimate*, this does not significantly reduce overall generosity. The disguised active choice in our design may have something to do with this, cf. Grossman (2014).

5 The social interaction treatments

5.1 Design and procedures

As mentioned above, we also ran three treatments designed to explore social interaction. In each of these treatments, half of the subjects were randomly assigned the dictator role (referred to as "A types" or "A persons"). Participants were presented with two tables, corresponding to the *Hidden Payoff* treatment above. They were informed that Dictators (A types) were to choose between X and Y, that one of the tables applied for each A person, but they would not know which, and that different tables applied for different A persons, as described in Section 3.

The other half of the subjects were assigned the role of a messenger (referred to as "type B" or "B person"). Each dictator was paired with a randomly assigned messenger. The messenger's task was to answer "yes" or "no" to the following question:

> Assume that a type A person is going to choose between X and Y, but has chosen not to check which table is the correct one for him/her. If you had the possibility,

[11] Compared to the results by Dana, Weber, and Kuang (2007) and replications, the proportion of subjects that choose Y without information is rather high. Considering that without information, there is little reason to believe that Y is more likely to give a higher payoff to *Myclimate*, while one knows for sure that it gives a lower payoff to oneself, this observation is rather surprising. Recall, however, that the prevalence of ignorance is low, meaning that although the share of ignorant subjects choosing Y is high, it corresponds to a low number of subjects, possibly including some confused ones. Tjøtta (2018) finds that about one third of his subjects choose the lower payment in an experiment without any other recipient, and a minority considers choosing less socially inappropriate. For some subjects, such views may matter more than the recipient's payoff.

would you wish to inform the A person about this?

Type B gets 100 NOK for her participation independent of her answer. After having chosen between X and Y, however, type A is free to take up to 50 NOK of a messenger's endowment.

The three different treatments described below vary whether the type B person's answer about providing information is hypothetical or implemented, and whether the messenger a dictator can take from is randomly chosen or the same person who could impose information on the dictator. All subjects are informed about all rules before the experiment starts, and before types are drawn. Messengers learn neither which table/ state apply to the dictator matched with her, nor whether dicators chose X or Y.

5.1.1 Hypothetical messenger

All subjects are informed that the messenger's answer will not affect any A subject – the question is purely hypothetical. Moreover, the dictator may take up to 50 NOK from a *randomly drawn* messenger's endowment. Participants are informed:

> If you are type A, you will have the possibility to take up to 50 NOK from a participant of type B. If you use this possibility, the amount you take away from the B participant will be yours. This B participant is randomly chosen.

5.1.2 Stranger

In this treatment, each messenger (B type) is randomly and anonymously matched with a dictator (A type). The messenger's answer is implemented for the matched dictator if he or she does not choose information him/herself. Subjects are informed that if they are a B type, the following applies:

> If you answer yes, this will ensure that a randomly chosen A person gets information. This randomly chosen A person will then see the table that applies for him/her on his/her screen. If the A person has asked for information him-/herself, your answer will not have any influence.

The dictator may take up to 50 NOK from a *random* messenger's endowment, who is *not* the same subject who could impose information on the dictator. Participants are informed:

> If you are type A, you will have the possibility to take up to 50 NOK from a participant of type B. If you use this possibility, the amount you take away from the B person will be yours. This B person is randomly chosen, and is *not* the same person who could ensure that you got to know which table applied for you.

If the dictator does not press the button to ask for information herself, a screen appears indicating whether the B person matched with her has chosen to convey the information to her, and if so, display the correct table.

Table 2: Number of subjects in social interaction treatments by treatment, type and state

Treatment	Dictators (A)			Messengers (B)	Total subjects
	Total	Conflict state	Aligned state		
Hypothetical messenger	20	19	1	20	40
Stranger	19	17	2	19	38
Partner	30	27	3	30	60

Notes: Number of subjects in each treatment. The next three columns list the total number of subjects in the dictator role (type A), dictator subjects in the conflicting interest state and dictator subjects in the aligned interest state. The last column lists the number of subjects in the messenger role (Type B). The last column lists the total number of subjects in each treatment.

5.1.3 Partner

This treatment is similar to the *Stranger* treatment, except that the dictator may take up to 50 NOK from *the same* messenger's endowment who could impose information on her. Participants are informed:

> If you are type A, you will have the possibility to take up to 50 NOK from a participant of type B. If you use this possibility, the amount you take away from the B person will be yours. This B person is *the same person* who could ensure that you got to know which table was relevant for you.

5.2 Results: social interaction treatments

Table 2 lists the number of subjects in the social interaction treatments by treatment, subject type and state.

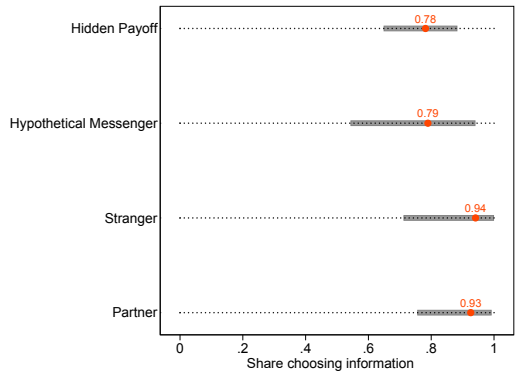
5.2.1 Information choices and selfish behavior by dictators

The choice of information acquisition and action taken by the A players as well as the information decision by the B players can be found in Table 3 and Figure 1. We see from Figure 1a that in the *Hidden Payoff* treatment, where no messenger was present, the vast majority of dictators (78%) chose information themselves. In *Hypothetical Messenger,* this share was 75% , which is insignificantly different from the share showing information in *Hidden Payoff* ($p = .5$). Interestingly, however, in those conditions where information could be imposed, i.e. the pooled *Stranger* and *Partner* treatments, almost all dictators (a total of 94%) chose information themselves.[12] Thus, while some dictators may dislike being informed, they seem to dislike even more to be imposed information upon by another subject. The difference between the pooled treatments where information could not be imposed (*Hidden Payoff* and *Hypothetical Messenger*) and the pooled treatments where the messenger could impose information on the dictator (*Stranger* and *Partner*) is significant at the 5% level ($p = .01$).

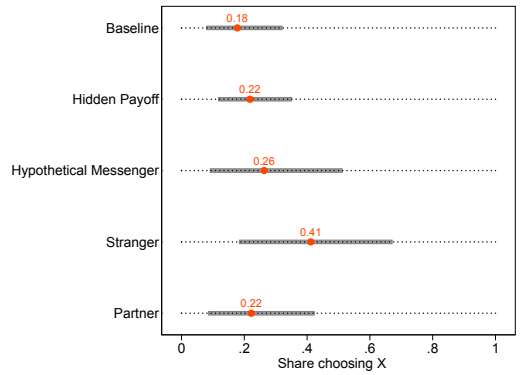
[12] 5% (1 out of 19) in *Stranger* and 7% (2 out of 30) in *Partner* do not choose information.

Figure 1: Dictator (A type) behavior in the social interaction treatments

(a) A types choosing information in the social interaction treatments



(b) A types choosing X in the social interaction treatments



Notes: The red dots show the point estimates of the share of A types choosing to acquire information and choosing X by treatment, with the grey lines indicating exact confidence intervals.

In previous studies, more ignorance has usually been associated with less generosity towards the recipient. It is thus interesting to note that while more dictators choose to press the button revealing information themselves in *Stranger* and *Partner*, this does not increase generosity. From Figure 1b, we see that in the *Stranger* treatment, 41% choose X (selfish), and in the *Partner* treatment, 22% chose X, compared to 22% in the *Hidden Payoff* and 26% in the *Hypothetical Messenger* treatments. The difference between the pooled sample where information could only be chosen by the dictator (*Hidden Payoff* and *Hypothetical Messenger*) and the pooled sample where the messenger could impose information (*Stranger* and *Partner*) is not significant ($p = .28$). [13]

Messengers' behavior seems to be little influenced by the possibility of being sanctioned (or by whether their answer is actually implemented), as seen from Table 3. In *Hypothetical Messenger*, 90% (18 out of 20) of messengers answer yes to giving information to a dictator that has not chosen information herself. This proportion decreases to 84% (16 out of 19) in *Stranger* and to 73% (22 out of 30) in *Partner*. If messengers were more reluctant to answer yes when the possible implementation of this answer puts them into a loyalty conflict between being kind to the dictator and being kind to the receiver, we would expect a significant difference in the share giving information between *Hypothetical Messenger* and *Stranger*. But for the small difference we find, the p-value is .47. Only in *Partner*, dictators can sanction the messenger for the actual answer he gave by taking from his endowment. If messengers were discouraged by expected sanctions from giving information, we would expect the difference between *Stranger*

[13] Reported values include dictators in the conflict state only. The only significant difference in selfish behavior between single treatments is the one between *Stranger* and *Partner* (p: .07). We do not have a fully convincing explanation for this. It could be a false positive since procedures correcting for multiple testing yield no significant test results.

Table 3: Behavior in social interaction treatments

	Hypothetical Messenger		Stranger		Partner	
	Subjects	Share	Subjects	Share	Subjects	Share
Choosing info	15	.79 [.54, .94]	16	.94 [.71, .99]	25	.93 [.76, .99]
Choosing X	5	.26 [.09, .51]	7	.41 [.18, .67]	6	.22 [.09,.42]
Total A subjects	19		17		27	
Giving info	18	.90 [.68, .99]	16	.84 [.60, .97]	22	.73 [.54, .88]
Total B subjects	20		19		30	

Notes: The table shows behavior in the three social interaction treatments. Only the 55 dictators in the conflict state are included in the analysis. "Share choosing info" is the share of A subjects choosing information themselves, "Giving info" is the share of B subjects willing to provide information. Exact confidence intervals for proportions are shown in square brackets.

and *Partner* to be significant, which it is not ($p = .3$).[14]

Hence, we find no evidence that potential sanctions discourage the provision of information to another subject. Recall, however, that even in the *Hidden Payoff* treatment, there is very little ignorance. This may indicate that in this particular context, information is not that unwelcome; and suspecting this, messengers may not fear sanctions.

5.2.2 No strong evidence for dictators sanctioning messengers

Dictators were only informed about the messenger's "yes" or "no" answer if the dictator had not asked for information herself. In those cases where dictators revealed the information themselves, which turned out to be most, the amount taken from the messenger can thus not, even in the *Partner* treatment, be interpreted as a sanction for the messenger's choice.

No dictator in *Partner* ended up being imposed information upon by a messenger. Thus we have no data to test how dictators react to receiving unwanted information. We observe that dictators took much more from messengers *in general* when messengers had the power to force the true payoff information upon dictators, compared to when the messenger's answer was purely hypothetical. In *Hypothetical Messenger*, dictators took on average NOK 16 from messengers, and 21% took everything they could. In *Stranger*, they took on average NOK 32, while 65% took the maximum. In *Partner*, dictators took on average NOK 22, 37% took the maximum. The difference in average taking between *Hypothetical Messenger* and *Stranger* is statistically significant ($p = .03$), the difference in the proportion of dictators taking the maximum is significant too (2-sided $p = .01$).[15] There is no statistically significant difference

[14]Note, however, that the *Stranger*-treatment has rather few observations.

[15]Differences in taking from the messenger are tested using Pearson's χ^2 tests.

between *Stranger* and *Partner* in average taking (p:.3), nor in taking the maximum (2-sided $p = .21$).[16] When we pool the two treatments where information could be imposed (*Stranger* and *Partner*) to *Hypothetical Messenger*, we find a statistically significant difference in average taking ($p = .08$) and taking the maximum (2-sided $p = .03$). More formal testing approaches accounting for multiple hypothesis tests are listed in Appendix Table A.4. No p-values for differences between treatments is then significant.

We also run a set of parametric regressions summarized in Appendix Table A.5. generally, find few statistically significant relationships. Dictators who choose information choose X less often. Males seem to choose X more often overall than females, but this difference largely disappeares when attidudes to quotas are controlled for. More optimism towards quotas as a means to mitigate global warming and a stronger agreement with man-made global warming as a serious environmental problem is positively associated with generosity. Strong agreement with acquiring information being the morally right choice is positively associated with acquiring information.

6 Conclusion

In the lab experiment presented here, subjects choose between two alternatives involving different payoffs to themselves and to a charity engaging in carbon offsets in poor countries. When we introduce uncertainty about the charity's payoff, subjects do not seem to exploit the option to stay ignorant as a means to escape the perceived obligation to donate. Our results are thus at odds with previous studies on willful ignorance.

By making ignorance the default choice, we make it easy for subjects to refrain from seeing the climate charity's payoff. Yet, we find very low ignorance rates. Furthermore, we find no evidence that the option to remain ignorant increases selfish behavior.

Compared to previous studies using student recipients, our experiment implicitly gives more information on the receiver's deservingness. The felt moral obligation to be environment-friendly might possibly be more difficult to escape than the social convention of sharing with a random person who is likely in a rather similar situation as oneself. Nevertheless, our results are also at odds with Exley's (2016) findings on willful ignorance using a charity recipient. One possibility is that our subject pool, consistsing mostly of Norwegian students, is affected by different cultural norms on the acceptability of willful ignorance than subject pools of previous studies. Such explanations remain speculative, of course, in the absence of more explicit empirical testing.

In our social interaction treatments, the possibility of sanctions does not discourage messengers from revealing information to dictators. These messages have little impact, however: when a messenger has the option to impose information on the dictator, almost all dictators prefer to

[16]The difference in average taking between *Hypothetical Messenger* and *Partner* is not significant (p:.25), nor is the one in taking the maximum (.15).

reveal the information themselves. Still, the latter observation is not associated with an increase in pro-social behavior.

Since the signs of willful ignorance are modest in our data, our experiment sheds less light on the potential social sanctioning of messengers of unwanted information than we hoped for. Numerous other studies have documented the prevalence of willful ignorance in slightly different situations, however. Thus, the topic of social sanctions for provision of unwelcome information is well worth further exploration.

References

BREKKE, K. A., G. KIPPERBERG, AND K. NYBORG (2010): "Social Interaction in Responsibility Ascription: The Case of Household Recycling," *Land Economics*, 86(4), 766–784.

BROBERG, T., T. ELLINGSEN, AND M. JOHANNESSON (2007): "Is generosity involuntary?," *Economics Letters*, 94(1), 32–37.

CAMERER, C. (2003): *Behavioral Game Theory: Experiments in Strategic Interaction*. Princeton University Press.

CAMERON, A. C., J. B. GELBACH, AND D. L. MILLER (2008): "Bootstrap-Based Improvements for Inference with Clustered Errors," *Review of Economics and Statistics*, 90(3), 414–427.

CAPPELEN, A. W., T. HALVORSEN, E. O. SØRENSEN, AND B. TUNGODDEN (2016): "Face-saving or fair-minded: What motivates moral behavior?," Working paper.

COX, J. C., J. A. LIST, M. PRICE, V. SADIRAJ, AND A. SAMEK (2016): "Moral Costs and Rational Choice: Theory and Experimental Evidence," NBER Working Paper 22234, National Bureau of Economic Research, Inc.

DANA, J., D. M. CAIN, AND R. M. DAWES (2006): "What you dont know wont hurt me: Costly (but quiet) exit in dictator games," *Organizational Behavior and Human Decision Processes*, 100(2), 193–201.

DANA, J., R. WEBER, AND J. KUANG (2007): "Exploiting moral wiggle room: experiments demonstrating an illusory preference for fairness," *Economic Theory*, 33(1), 67–80.

DELLAVIGNA, S., J. A. LIST, AND U. MALMENDIER (2012): "Testing for Altruism and Social Pressure in Charitable Giving," *The Quarterly Journal of Economics*, 127(1), 1–56.

ECKEL, C. C., AND P. J. GROSSMAN (1996): "Altruism in Anonymous Dictator Games," *Games and Economic Behavior*, 16(2), 181–191.

EXLEY, C. L. (2016): "Excusing Selfishness in Charitable Giving: The Role of Risk," *Review of Economic Studies*, 83(2), 587–628.

FEILER, L. (2014): "Testing models of information avoidance with binary choice dictator games," *Journal of Economic Psychology*, 45(C), 253–267.

FELGENDREHER, S. (2018): "Do consumers choose to stay ignorant? The role of information in the purchase of ethically certified products," Working Paper in Economics No. 717, University of Gothenburg.

FISCHBACHER, U. (2007): "z-Tree: Zurich toolbox for ready-made economic experiments," *Experimental Economics*, 10(2), 171–178.

FONG, C. M. (2007): "Evidence from an Experiment on Charity to Welfare Recipients: Reciprocity, Altruism and the Empathic Responsiveness Hypothesis," *The Economic Journal*, 117(522), 1008–1024.

GROSSMAN, Z. (2014): "Strategic Ignorance and the Robustness of Social Preferences," *Management Science*, 60(11), 2659–2665.

GROSSMAN, Z., AND J. VAN DER WEELE (2017): "Self-Image and Willful Ignorance in Social Decisions," *Journal of the European Economic Association*, 15(1), 173–217.

HERTWIG, R., AND C. ENGEL (2016): "Homo Ignorans Deliberately Choosing Not to Know," *Perspectives on Psychological Science*, 11(3), 359–372.

JACOBSEN, K. J., K. H. EIKA, L. HELLAND, J. T. LIND, AND K. NYBORG (2011): "Are nurses more altruistic than real estate brokers?," *Journal of Economic Psychology*, 32(5), 818–831.

LARSON, T., AND C. M. CAPRA (2009): "Exploiting moral wiggle room: Illusory preference for fairness? A comment," *Judgment and Decision Making*, 4(6), 467–474.

LAZEAR, E. P., U. MALMENDIER, AND R. A. WEBER (2012): "Sorting in Experiments with Application to Social Preferences," *American Economic Journal: Applied Economics*, 4(1), 136–63.

LIST, J. A. (2007): "On the Interpretation of Giving in Dictator Games," *Journal of Political Economy*, 115, 482–493.

LIST, J. A., A. M. SHAIKH, AND Y. XU (2016): "Multiple Hypothesis Testing in Experimental Economics," Working Paper 21875, National Bureau of Economic Research.

MATTHEY, A., AND T. REGNER (2011): "Do I Really Want to Know? A Cognitive Dissonance-Based Explanation of Other-Regarding Behavior," *Games*, 2(1), 114–135.

NYBORG, K. (2011): "I don't want to hear about it: Rational ignorance among duty-oriented consumers," *Journal of Economic Behavior & Organization*, 79(3), 263–274.

REGNER, T., AND A. MATTHEY (2015): "Do reciprocators exploit or resist moral wiggle room? An experimental analysis," Jena Economic Research Paper 2015-027, Friedrich-Schiller-University Jena.

SPIEGEL (2013): "Veggie Day: Die Furcht vor der gruenen Umerziehung," *Spiegel Online*, 9. Aug 2013.

SPIEKERMANN, K., AND A. WEISS (2016): "Objective and subjective compliance: a norm-based explanation of 'moral wiggle room'," *Games and Economic Behavior*, 96, 170–183.

TJØTTA, S. (2018): "You'll never walk alone. An experimental study on receiving money," Mimeo, University of Bergen.

VAN DER WEELE, J. (2014): "Inconvenient Truths: Determinants of Strategic Ignorance in Moral Dilemmas," SSRN Scholarly Paper ID 2247288, Social Science Research Network, Rochester, NY.

VAN DER WEELE, J. J., J. KULISA, M. KOSFELD, AND G. FRIEBEL (2014): "Resisting Moral Wiggle Room: How Robust Is Reciprocal Behavior?," *American Economic Journal: Microeconomics*, 6(3), 256–264.

WEBB, M. D. (2014): "Reworking Wild Bootstrap Based Inference for Clustered Errors," Working Paper 1315, Queen's University, Department of Economics.

ZEIT (2013): "Veggie Day: Gruene wollen fleischlosen Tag in Kantinen," *Zeit Online*, 5. Aug 2013.

A Additional tables and figures

Table A.1: Number of subjects by treatment, type, and state

Treatment	Dictators			Messengers	Total
	Total	Conflict	Aligned		
Basic treatments					
Baseline	45	45	0		
Hidden payoff	59	55	4		
Social interaction treatments					
Hypothetical messenger	20	19	1	20	40
Stranger	19	17	2	19	38
Partner	30	27	3	30	60

Notes: Number of subjects in each treatment. The next three columns list the total number of subjects in the dictator role (type A), dictator subjects in the conflicting interest state and dictator subjects in the aligned interest state. The last column lists the number of subjects in the messenger role (Type B). The last column lists the total number of subjects in each treatment.

Table A.2: Mean earnings and payments to Myclimate

	Dictators	Messengers	*Myclimate*
Individual decision part			
Baseline	103.56		85.78
	(7.73)		(30.93)
Hidden Payoff	105.42		83.73
	(8.97)		(32.48)
Social interaction part			
Hypothetical messenger	123.25	82.75	40
	(28.30)	(20.87)	(47.51)
Stranger	141.05	68.42	35.26
	(29.42)	(24.78)	(45.19)
Partner	127.33	78.67	42
	(28.37)	(23.27)	(48.11)

Notes: The table shows average payments to dictators (A players) and messengers (B players) as well as payments to Myclimate *by treatment. Standard deviation in parentheses. Note that since messengers could not donate to Myclimate, its average earnings in the social interaction part are about half of those in the basic treatments.*

Table A.3: The self-serving choice X in the basic treatments

	(1)	(2)	(3)
Hidden Payoff	0.0404	0.0754	0.0782
	(1.130)	(0.167)	(0.067)
Male		0.127	0.102
		(0.082)	(0.052)
Agreement warming quotas high			-0.238
			(0.211)
Constant	0.178	0.119	0.315
	(0.151)	(0.097)	(0.295)
Observations	100	99	99

Notes: The Table shows regressions of a dummy for A subjects choosing X in the basic treatments, their view about global warming as a serious problem of society, and the reduction of global warming by donating to measures for improvement of the climate.
Standard errors clustered at the session level, computed using the wild bootstrap (Cameron, Gelbach, and Miller, 2008), using weights for < 11 *clusters (Webb, 2014), are shown in parentheses.*

Table A.4: 2-sided p-values for tests on the sample of dictators unadjusted and adjusted for multiple testing

	List et al.			Bonferroni	Holm
Test	Unadjusted*	Dependence**	Dependence and transitivity***		
Choosing X					
Bc1 vs. Bc2	.268	.777	.778	1	1
Bc1 vs. Bc3	.314	.730	.730	1	1
Bc2 vs. Bc3	.819	.956	.956	1	1
Bc3 vs. Stranger	.288	.752	.752	1	1
Bc3 vs. Partner	.989	.989	.989	1	.989
Choosing info					
Bc2 vs. Bc3	.788	.984	.984	1	1
Bc3 vs. Stranger	.106	.513	.513	1	1
Bc3 vs. Partner	.118	.535	.535	1	1
Take from B					
Bc3 vs. Stranger	.068	.378	.378	.752	.752
Bc3 vs. Partner	.510	.896	.896	1	1
Stranger vs. Partner	.148	.598	.598	1	1

*Notes: The table reports results accounting for multiple hypothesis testing and displays 2 sided hypothesis tests for all nonparametric tests conducted in the analysis of the basic treatments and the social interaction treatments jointly. The p-values in the first three columns are, respectively, *) unadjusted according to Remark 3.1 **) adjusted taking dependence of hypotheses into account (Theorem 3.1) ***) adjusted taking dependence and transitivity of hypotheses into account (Remark 3.7)*

Table A.5: Choice of X – the self-serving choice

	(1)	(2)	(3)	(4)
Choose info	-0.422	-0.413	-0.436	-0.373
	[-1.280,0.436]	[-1.299,0.473]	[-1.274,0.403]	[-0.957,0.211]
Hypothetical Messenger	0.0482	0.0150	0.0406	0.0399
	[-0.130,0.226]	[-0.108,0.138]	[-0.256,0.337]	[-0.279,0.359]
Stranger	0.261	0.176	0.176	0.184
	[-0.417,0.939]	[-0.229,0.580]	[-0.199,0.552]	[-0.069,0.437]
Partner	0.0649	0.00493	-0.0109	-0.0115
	[-0.145,0.275]	[-0.045,0.055]	[-0.281,0.260]	[-0.214,0.191]
Male		0.155	0.0786	0.0770
		[-0.014,0.323]	[-0.016,0.173]	[-0.028,0.182]
Agreement warming quotas high			-0.375	-0.341
			[-0.950,0.200]	[-0.962,0.280]
Show table morally right				-0.132
				[-0.331,0.067]
Constant	0.548	0.509	0.849	0.849
	[-0.450,1.547]	[-0.359,1.377]	[-0.251,1.949]	[-0.146,1.844]
Observations	118	115	115	115
R^2	0.145	0.176	0.294	0.313

Notes: The Table shows shows results from regressions of a dummy for choosing X (the self-serving choice) on whether the subject chooses to see the true payoff table, treatment dummies, a dummy for male subjects, and agreement with revealing the receiver's payoffs being morally right.
95% confidence intervals are shown in brackets, based on standard errors clustered at the session level using the wild bootstrap (Cameron, Gelbach, and Miller, 2008) using weights for < 11 *clusters (Webb, 2014).*

Table A.6: Information chosen by dictators (A) and information provided by messengers (B)

	A informed	A chose info	B gave info*	A got info from B**	A uninformed
Baseline	100% 45 of 45	-	-	-	-
Hidden payoff	78% (46 of 59)	78% (46 of 59)	-	-	22% (13 of 59)
Hypothetical messenger	75% (5 of 20)	75% (5 of 20)	90% (18 of 20)	-	25% (15 of 20)
Stranger	95% (18 of 19)	95% (18 of 19)	84% (16 of 19)	0% (0 of 30)	5% (1 of 19)
Partner	97% (29 of 30)	93% (28 of 30)	73% (22 of 30)	3% (1 of 30)	3% (1 of 30)

*percentage of B types answering yes to giving info to A if A doesn't choose info herself (elicited with strategy method)
**percentage of A types that did not choose information themselves but got information from B
In parentheses: Number of A subjects making that choice out of total number of A subjects in respective treatment
- not applicable

Table A.7: Dictators (A) taking from messengers (B), only dictators in misaligned state

Hypothetical messenger	
Mean taking	15.79
	(20.36)
Taking maximum	21%
	(4 of 19)
Stranger	
Mean taking	32.35
	(24.63)
Taking maximum	65%
	(11 of 17)
Partner	
Mean taking	21.85
	(23.17)
Taking maximum	37%
	(10 of 27)

Notes: Mean taking: arithmetric mean. Standard deviation in parentheses.
Taking maximum: number of A subjects taking maximum out of total number of A subjects in respective treatment in parentheses