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Expressive Voting vs. Self-Serving Ignorance

Katharina Momsen* and Markus Ohndorf†

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We experimentally examine the effect of self-serving information avoidance on democratic and individual decisions in the context of climate change mitigation. Subjects need to choose between two allocations which differ in own payoffs and contributions to carbon offsets. In a between-subjects design, we vary the observability of the offset contribution, as well as the institutional decision context: individual consumption, dictatorship, and majority voting in small and large groups. If information is directly observable, we find robust evidence for expressive voting. However, in cases where information is initially unobservable but revealable without cost, there is no significant difference in selfish decisions between institutional decision contexts. We also find robust evidence for the exploitation of moral wiggle room via self-serving information avoidance in our consumption context, as well as with voting in large groups. Our results indicate that information avoidance effectively substitutes expressive ethical voting as an instrument to manage self-image on the part of the voter. This suggests that moral biases might be less likely in elections than previously thought.

Keywords: Expressive voting, information avoidance, experiment, moral wiggle room, climate change

JEL Classifications: C90, D12, D64, D72, D89, Q50

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1. Introduction

Decisions taken via democratic vote are often considered to yield more ethical outcomes than individual decisions, in particular when it comes to choices made in a market context. This dichotomy between 'electoral choice' and 'market choice' (Brennan and Lomasky, 1993) is based on a compelling argument. According to the 'low-cost theory of voting' (Tyran et al., 2019), instrumental considerations decrease with pivotality, i.e. the number of voters involved, while the utility from expressing moral principles remains unaffected by the size of the constituency. Thus, with decreasing probability of being pivotal, the ultimate decision is more likely to favor the more ethical option (Brennan and Buchanan, 1984; Fiorina, 1976; Tullock, 1971). In market decisions, in contrast, the potential conflicts between instrumental and expressive motives seem to be often resolved in favor of the former, leading to a more self-serving, less moral behavior. Recent experimental evidence seems to support this conjecture (Bartling et al., 2014; Falk et al., 2020; Falk and Szech, 2013).

From the outset, this dichotomy has been explained by the notion of decision makers' having to "reduce internal dissonance" (Tullock 1971, p. 387) between their moral preferences and payoff-oriented self-interest. This goes back to the theory of cognitive dissonance, first derived in Festinger (1957), which establishes different individual strategies to resolve such internal conflicts. For example, in situations where ethical views and self-interest are in conflict, the individual can resolve this conflict by deciding in favor of either one option or the other. In the context of the low-cost theory of voting, the small probability of being pivotal alters this trade-off in favor of expressing moral principles, leading to more ethical decisions. Note however, that this is not the only strategy that could be employed to reduce cognitive dissonance in the context of democratic decisions. For example, at least for decisions in smaller groups, the phenomenon of 'diffusion of responsibility' might arise (Choo et al., 2019; Rothenhäusler et al., 2018). In such a case, each decision maker in a group feels less responsible for the moral implication of a specific final outcome, as the moral responsibility is shared with all group members. This reduces the importance of the self-perception as a moral being and can lead to more self-interested choices within a group.

Another strategy to reduce cognitive dissonance is to not use all available information on the consequences of a decision even if information is accessible without cost. As was first pointed out by Festinger (1957), people tend to avoid information that might be incongruent with their established attitudes while disproportionately seeking news that are congruent—a tendency that is referred to as selective exposure to information.[1] More recently, economists have identified this behavior as one of the most effective strategies

[1] In social psychology selective exposure has been examined in a vast amount of experimental studies (Hart et al., 2009; Knobloch-Westerwick et al., 2017; Smith et al., 2008).

for motivated reasoning to reach favorable conclusions on the effect of own actions on others (Bénabou and Tirole, 2016; Gino et al., 2016; Golman et al., 2017). In the simplest case, individuals can choose to remain entirely ignorant on the nature and scope of external effects that own decisions have on others and choose according to their narrow self-interest. Thus, by avoiding information, they can circumvent feeling morally obliged to decide in favor of options associated with a larger positive (or a smaller negative) effect on others. They hence exploit moral wiggle room created via their deliberate lack of information (Dana et al., 2007). While there is ample experimental evidence of the exploitation of moral wiggle room in individual decision making (e.g. Dana et al., 2007; Grossman and van der Weele, 2017; Momsen and Ohndorf, 2020), its importance in the context of incentivized voting decisions has not been investigated yet. In this paper, we present the results of a lab experiment designed to analyze the interactions of expressive voting and information avoidance.

In our experiment, third-party consequences are implemented as contributions to carbon offsets of different sizes, such that subjects' decisions in the lab affect climate-change mitigation. The climate change context seems to be particularly prone to the dynamics of information avoidance via self-selection into echo chambers and networks with like-minded individuals.[2] In the contemporary academic discourse, such a behavior is often associated with biases in information seeking within social media networks (Bakshy et al., 2015; Halberstam and Knight, 2016). However, the problem of information avoidance is not limited to phenomena of online news consumption. As Boxell et al. (2017) report, polarization of political views might be more pronounced in demographic groups which are least likely to use the Internet and social media. In cases where this choice is made willingly and not compensated by a balanced consumption of traditional media, this would also qualify as a specific form of information avoidance (Klapper, 1960).

In order to examine the behavioral fundamentals of information avoidance, we investigate individual decisions and democratic votes under full information and compare these to a situation where information is initially unobservable but revealable without payoff-relevant cost. We derive predictions from a stylized cognitive dissonance model, which are tested in an experiment implementing four different decision contexts: market, dictatorship, and majority voting in small and large groups (democracies). The market setting is implemented as an individual decision-making task in which subjects choose between two hypothetical products which differ in prices and externalities. Apart from the carbon offset, no other party is affected by the subject's choice. This treatment ensures comparability to previous lab experiments investigating moral wiggle room exploitation in

[2]See, for example, Bolin and Hamilton (2018), Jasny et al. (2018, 2015), Leviston et al. (2013), and Walter et al. (2018).

individual decision making and thus serves as our baseline.[3] In all other treatment conditions, subjects are split into groups. In the dictatorship setting, one randomly selected decision maker decides between the above-described options with her choice immediately determining also her passive group members' payoffs and contributions to the offset. The dictatorship-setting can be used to isolate additional effects that might come into play when shifting from individual to group decisions, which usually complicates the analysis of the effect of expressive voting on decisions with an ethical component (Tyran et al., 2019). In the treatments with majority voting, each group member votes for the option they would like to implement for their entire group.

Under full information, we observe the lowest share of selfish choices in conflict situations in the market treatment. In fact, the amount of self-serving decisions in the market condition is significantly lower compared to majority voting in small groups and to the dictator condition. Hence, in our experiment, the market context does clearly not erode social responsibility – a finding which speaks to the growing literature on moral behavior in markets (see e.g. Bartling et al., 2014; Falk and Szech, 2013; Pigors and Rockenbach, 2016; Sutter et al., 2016). We find some evidence that the comparatively low amount of selfish choices in the market setting can be attributed mainly to the effect of rivaling other-regarding preferences in the dictatorship condition and in groups.

Interestingly, when comparing our voting treatments, we find a robust effect of group size, which is consistent with the low cost theory of voting. The amount of self-serving choices for the full information condition is at the same level as in the market treatment for voting in our larger group, i.e. significantly lower than for voting with a higher probability of being pivotal in our smaller group. This is in line with identifying a moral bias in larger elections presented in Bischoff and Egbert (2013), Feddersen et al. (2009), Fischer (1996), and Shayo and Harel (2012) and contrasts the studies that do not find an effect of expressive voting (Kamenica and Brad, 2012; Tyran and Sausgruber, 2006; Tyran, 2004).[4] Furthermore, this effect is stronger for smaller price differences, as predicted within our theoretical considerations.[5]

However, in our treatments with hidden but revealable information, all differences in selfish choices disappear, which suggests that the institutional context only matters when information on potential side-effects is readily available. This, in turn, suggests that the importance of the expressive motive for ethical decisions is dependent on the amount of directly observable information. Indeed, when analyzing the potential occurrence of self-serving information avoidance over the different decision situations, we find that this

[3] See, for example, Dana et al. (2007), Feiler (2014), Fong and Oberholzer-Gee (2011), Grossman (2014), Grossman and van der Weele (2017), Larson and Capra (2009), Lind et al. (2019), Matthey and Regner (2011), and Momsen and Ohndorf (2019, 2020).

[4] Note that expressive voting is not limited to the expression of moral principles. Robbett and Matthews (2018), for example, report robust evidence for voting as a means of expressing partisanship.

[5] Tyran (2004) also finds that expressive voting can arise in low-cost situations but not in situations associated with higher (expected instrumental) cost.

phenomenon arises in a significant way in the the market treatment and when subjects vote in larger groups, i.e. in those treatments that yield the largest amount of 'green' choices under full information. In these treatments, the exploitation of moral wiggle room is also less pronounced if the difference in payoffs is large, i.e. when the decision makers would need to sacrifice a larger share of their private payoff in order to benefit the third party, which is in line with our theoretical predictions.[6] Given these results, we conclude that avoiding information is the preferred strategy to deal with cognitive dissonance over all decision contexts investigated here, effectively dominating other strategies, like expressive voting. This result suggests that moral biases might be less likely in elections than previously thought.

The remainder of the paper is organized as follows: The following section describes our experimental design. We derive our behavioral predictions in Section 3. Our results are laid out in Section 4. The last section concludes. A translation of the experimental instructions as well as supplementary analyses are relegated to the Appendix.

2. Experimental Design

To investigate the behavioral fundamentals of information avoidance in different institutional decision contexts, we conducted a laboratory experiment where subjects made climate-relevant decisions in different institutional settings. In each of these settings, subjects made 24 consecutive binary decisions between two allocations A and B that differed in their payoffs and in contributions to climate change mitigation. The latter was implemented via associated payments to reduce global greenhouse gas emissions through the acquisition of high-quality carbon offsets on the voluntary offset market, such that experimental decisions had an impact beyond the laboratory.[7] With payoffs ranging from 10 to 90 ECUs, we implemented decision situations with payoff differences of 5, 10, 15 and 20 ECUs. For Option A, the contribution to the carbon offset equaled 15 ECUs in all decisions. The contribution associated with Option B could either be 0 or 30 ECUs, with each outcome being equally likely. For each round, the associated contribution was independent of the one realized in the previous round, such that subjects should consider each decision separately. We implemented two different types of decision situations: In situations with aligned interests (AI), the option with the higher payoff for the subject(s) generated the larger positive externality, whereas in situations with conflicting interests (CI), the option with the lower payoff was associated with a larger externality. Both types of situations were equally likely to occur and the order was randomized.

[6] This finding is also in line with the results presented in Momsen and Ohndorf (2019, 2020) where the interdependence between the difference in payoffs and information avoidance is analyzed in more detail.

[7] Subjects received information about offsets before the experiment started. A translation can be found in the supplementary material (see A.2).

2.1. Treatments

The experiment consists of eight between-subjects treatments in a 2x4 design varying both the observability of Option B's externality and the institutional setting.

Information Conditions

In the treatments with 'full' information (FI), the contributions to offsets of alternatives A and B were observable. Since the payoffs of both options were also depicted, subjects were immediately aware of the type of situation, i.e. if they were to make a decision with conflicting or aligned interests. In the treatments with 'hidden' information (HI), the externality of Option B was initially unobservable, but could be revealed by clicking a button. Clicking the button was associated with a nominal cost of 0.1 ECUs, which was, in fact, not payoff-relevant: With an exchange rate of 10 ECUs to 1 Euro, the costs of revealing information were equal to 1 Cent. Yet, final earnings in Euros were rounded up to the next 10 Cents, of which the Subjects were informed in the instructions. Since only two rounds were payoff-relevant, they could infer that the costs of clicking could not reduce their final payoff. However, even if they did not engage in these computations, they could see immediately that costs of 0.1 ECUs were very low. These small, only nominal costs were included to capture the fact that information on externalities is often available but takes a negligible amount of effort to gather, which may be taken as an excuse to remain ignorant. Clicking the button was optional, i.e. subjects could make their allocation decision without knowing if they were in a situation with conflicting or aligned interests.

Institutional Settings

In addition to varying the availability of information on the externalities, we altered the institutional frame in which decisions were made. The baseline 'Market' setting resembled the design employed in Momsen and Ohndorf (2019, 2020) with subjects taking the role of buyers, while the supply side of the market was computerized. In each round, subjects had to decide which of two virtual products to purchase.[8] As described above, the options differed in their prices and in their externalities. Subjects were endowed with 100 ECUs which they could spend on one of the two products. Their payoff resulted from their endowment minus the price paid for the selected product. Both the price of the option as well as the resulting payoff were displayed on their screens. Subjects did not have the option not to purchase. In contrast to the other institutional settings, decision making in the 'Market' setting was entirely individual.

[8]Note that the decision can also be interpreted as a dictator game where the decision maker needs to decide between two allocations. We clearly frame the choice as a consumption decision using terms such as 'products', 'purchase' and 'price'. As the supply side of the market is computerized, we only investigate consumption. However, for simplicity, we refer to this treatment variation as 'Market'.

In the 'Dictator' setting, subjects were split into groups of three. In each group, a randomly determined 'dictator' decided which option to implement for all group members. If, for example, the 'dictator' decided in favor of Option A, each group member earned the payoff associated with Option A and contributed 15 ECUs to the carbon offset. Hence, in total, the group contributed 45 ECUs. The other two group members also made allocation decisions which remained hypothetical. The identity of the decision maker responsible for the allocation decision of a group was determined randomly after all group members had made their allocation decisions. When making the allocation decision, subjects did not know if their choice would be implemented. In each round, new groups were formed and subjects remained anonymous throughout the whole experiment.[9]

In the 'Voting' settings, subjects were again split into groups which consisted – depending on the treatment – of three or eleven group members. Group members had to vote on the option they wanted to implement for all members of their group. The option receiving the majority of votes was implemented. If Option A received the majority of votes, each group member contributed 15 ECUs to the carbon offset and earned Option A's respective payoff. After each round, new groups were randomly formed.[10]

In the Market treatment under full information, each participant knew after each round how much she had earned and how much she had contributed to the carbon offset. In order to ensure comparability between the different institutional settings, we provide feedback to the participants in the Voting and in the Dictator treatments after each round on how much they earned and how much was contributed to the carbon offset on their behalf. Note that this feedback is also provided under hidden information to make sure that the only difference between the information conditions lies in the information available *before* subjects make their decisions. Hence, potential dynamics should be identical across treatments.

2.2. Experimental Procedure

The sessions for the experiment were run in the Innsbruck EconLab in October and November 2019. The experiment was programmed in zTree (Fischbacher, 2007) and participants were invited using hroot (Bock et al., 2014). As depicted in Table 1, 48 subjects participated in each treatment, with the exception of the 'Voting 11' treatment where only 44 subjects participated. Thus, in total, 376 subjects – mainly undergraduate students from all fields – participated in eight between-subjects treatments earning on average €8.78. The average amount invested in carbon offsets projects for each subject

[9] Each session consisting of 24 subjects was split into four fully independent matching groups from which groups were randomly formed.

[10] In the Voting3 treatment, each session was split into four fully independent matching groups from which groups were randomly formed. Due to the large group size, this was not possible in the Voting11 condition.

Table 1: Participants per treatment

	Full Information (FI)	**Hidden Information (HI)**
Market	48	48
Dictator	48	48
Voting3	48	48
Voting11	44	44
Total	188	188

was €2.60. Hence, a total amount of €978 was used to purchase high-quality carbon offsets.

At the beginning of each session, subjects received printed instructions which were read out aloud to create common knowledge. Afterwards, a short quiz on the understanding of the instructions followed. As soon as all subjects had completed the quiz successfully, they made their first allocation decision without knowing how the experiment would continue. After the first round, they received new instructions informing them that 23 additional rounds would follow. This design feature allows us to treat the first round as one-shot decision which cannot be polluted by potential time trends. Both the first round and one randomly determined round of the following 23 rounds were payoff-relevant. The payoffs of these two rounds were added and converted into Euros using an exchange rate of 0.1. Sessions were concluded with an unincentivized questionnaire which elicited the subjects' demographics as well as their political and environmental preferences. Subjects received their payoff privately and in cash at the end of a session which lasted approximately 35 minutes including payment.

3. Behavioral Predictions

For most of the phenomena investigated within our experiment, like expressive voting, diffusion of responsibility, and self-serving information avoidance, explanations have been brought forward based on the concept of cognitive dissonance (Festinger, 1957). In all experimental decision situations, a cognitive dissonance can arise if a person experiences a conflict between the motive of maximizing their own monetary payoff and their self-image as an environmentally friendly individual. If the effects of own actions are known, as in our FI treatments, the subject needs to solve this conflict by either deciding not to maximize their monetary payoff or by downwards-adjusting their self-image in terms of environmental friendliness. Both strategies are associated with either monetary or psychological costs, such that the resolution of the cognitive dissonance is always associated with trade-offs. In a group decision with voting, this trade-off is altered. If the probability of being decisive in a voting context is low enough, the expected impact of the own vote on the monetary outcome is small, i.e. voting for the 'greener' option

to preserve a positive self-image is associated with lower expected monetary cost. The cognitive dissonance is hence resolved by choosing the green option and the expressive motive of voting dominates considerations on instrumental utility. This reasoning is at the basis of the low-cost theory of voting, predicting that for larger constituencies—and hence lower probabilities of casting the pivotal vote—the amount of 'ethical' votes will be larger than for smaller constituencies or individual decisions (Feddersen et al., 2009; Shayo and Harel, 2012; Tyran, 2004). For smaller groups, however, this effect might be, in turn, reduced by a psychological tendency referred to as 'diffusion of responsibility'. In such a case, each decision maker in a group feels less responsible for the moral implication of a specific final outcome, reducing the importance of the self-image motive, which ultimately leads to a group decision in favor of a cheaper, less environmentally friendly choice (Choo et al., 2019; Rothenhäusler et al., 2018).

If information on the effects of the own decision needs to be revealed by the individual there exists an additional strategy to reduce cognitive dissonance, as they can choose to only reveal information that is congruent with their own self-image. This phenomenon is referred as to selective exposure to information (Festinger, 1957). In its simplest form, a person would simply avoid to reveal information on the ethical implications of their decision to exploit moral wiggle room (Dana et al., 2007). If the consequences of own decisions for third-parties or the environment are unknown, the size of the cognitive dissonance is reduced. In such a case, the self-image is only challenged by the possibility, not necessarily the fact, that maximizing payoffs corresponds to the less ethical option. In our HI treatments, it is *a priori* unclear, whether the alternative with the higher monetary payoff is associated with the environmental benefit that is larger (aligned interests, AI) or lower (conflicting interests, CI). Thus, avoiding information and choosing the self-serving option can be a viable alternative to revealing the information and then choosing the greener option even if it is more expensive to do so.

In order to structure our understanding of these different phenomena and to add some rigour to our predictions, it is useful to derive a formal representation of the decisions taken within the experimental treatments presented above. Up to the present, economic formalization of cognitive dissonance has focused on the strategy to adjust beliefs and fairness considerations (Konow, 2000; Rabin, 1994; Spiekermann and Weiss, 2016). In the following, we extend this framework to also reflect information avoidance. Our main focus is on the context of climate-relevant decisions as implemented in our experimental treatments.

Consider the binary choice at the basis of our experiment. Denote with $\omega_B \in \{\underline{\omega}_B, \overline{\omega}_B\}$ the realized amount of offset contribution for option B and with ω_A the certain amount associated with option A, with $\underline{\omega}_B > \omega_A > \overline{\omega}_B$. The largest achievable offset contribution d is hence defined by $d = max\{\omega_A, \omega_B\}$. An individual with green preferences would prefer the option associated with d if her costs p associated with each option were equal (i.e.

$p_B = p_A$). However, both options differ in costs to the individual, with the self-serving option denoted s for which $p_s = min\{p_A, p_B\}$.

In the case of individual choice on the market under full information (FI Market), cognitive dissonance occurs if individuals with (sufficiently intensive) green preferences choose the self-serving product option s, while $\omega_s < \omega_{\neg s} = d$, i.e. if interests are conflicting. We define the costs from this dissonance when choosing option i as a function $\Phi(d-\omega_i;\alpha)$, with $\Phi(0) = 0$, $\Phi' > 0$, $\Phi'' > 0$, and parameter α representing the intensity of the green preference. Under complete information, and for an endowment m, the individual's payoffs for both product options are

$$U_s = m - p_s - \Phi(d - \omega_s), \tag{1}$$

$$U_{\neg s} = m - p_{\neg s} - \Phi(d - \omega_{\neg s}) = m - p_{\neg s}. \tag{2}$$

Hence, under complete information, the selfish option is strictly dominated iff

$$\Phi(d - \omega_s) > \Delta_p = p_{\neg s} - p_s. \tag{3}$$

Thus, for Δ_p small enough, the individual will choose the more expensive product to avoid cognitive dissonance associated with a self-image as an environmentally conscious individual. Yet, for larger levels of Δ_p the individual will accept the dissonance with respect to their self-image in favor of their narrow self-interest.

Let us now introduce the possibility of information avoidance as an additional strategy to reduce cognitive dissonance, as in our HI Market treatment. For this, we assume the true value of ω_B to be initially unobservable, which implies that it is *a priori* unclear if interests are aligned or conflicting. Denote with μ the *ex ante* probability of interests being aligned, i.e. $\mu = P(\omega_s = d)$. Furthermore, we use index $k \in \{0, 1\}$ to denote the state of the individual's level of information, with $k = 1$ representing a situation where the information is revealed, while $k = 0$ represents non-revelation. Hence, for an uninformed individual ($k = 0$) for which (3) holds, the expected costs of cognitive dissonance Φ_0 when choosing option s are determined by the individual's (subjective) beliefs on the probability of aligned interests as follows:

$$\Phi_0 = \Phi\left(\hat{E}(d) - \hat{E}(\hat{\omega}_s); \alpha\right)$$

Notice that even without subjective distortions in beliefs Φ_0 is always smaller than under certainty, as represented in (3), which creates an incentive to simply remain uninformed and choose the self-serving option. This strategy, however, represents a sort of self-deception which, in turn, is likely to be associated with a feeling of displeasure with one's own self-serving rationalization. To take this into account, we introduce costs of self-deception which are increasing in the misperception of probability μ and depen-

dent on the amount of available information revealed, i.e. the value of k. The costs of self-deception for k signals revealed are

$$\Psi_k = \Psi_k\left((\hat{\mu}_k - \mu_k), k; \beta\right).$$

A higher β represents a greater sensitivity to self-deception, which varies across individuals as well as with contextual variables.

Given these assumptions and for k signals revealed, the valuation of the self-serving option s is

$$U_k(s) = m - p_s - \Phi_k\left(\hat{E}(d\,|k) - \hat{E}(\hat{\omega}_s\,|k)\right) - \Psi_k\left((\hat{\mu}_k - \mu_k), k\right). \tag{4}$$

Note that for the signal revealing the truth with certainty, as assumed here, the case for $k = 1$ reduces to (1). Using this setup, we can now proceed to analyze the tendency to avoid information in the HI market case. To identify the potential for self-serving information avoidance, consider an individual with green preferences for which, under certainty, (3) holds, i.e. under certainty they would want to choose the green option, even it is associated with higher costs $p_{\neg s}$. For simplicity, we assume risk-neutrality. This individual's expected valuation when planning to reveal the information, but before doing so, is

$$EU_{k=1} = m - \left[\hat{\mu} \cdot p_s + (1 - \hat{\mu}) \cdot p_{\neg s}\right]. \tag{5}$$

The term subtracted from the endowment m represents the expected cost before the signal is revealed. In this case, given that (3) holds, the individual will only choose the self-serving option if interests are aligned, otherwise option $\neg s$ is purchased. As the individual intends to always choose the 'greener' option, no cost from cognitive dissonance will arise.

For such an individual, the decision to remain uninformed is determined via a comparison of (4) with k=0 and (5). More precisely, self-serving information avoidance will arise iff $U_0(s) > EU_{k=1}$ which is the case for

$$\Delta_p > \frac{\Psi_0 + \Phi_0}{1 - \mu}.$$

Consequently, information will be avoided if, in the uninformed state, the costs of cognitive dissonance and self-deception are not too high compared to the difference in prices. Taking also condition (3) into account, we can establish a price range, where such information avoidance is self-serving. Information avoidance leads to the exploitation of moral wiggle room iff

$$\Phi(d - \omega_s) > \Delta_p > \frac{\Psi_0 + \Phi_0}{1 - \mu}. \tag{6}$$

Given this condition we can predict three types of behavior to be observed in our setups with hidden, but revealable information: First, for individuals with low or negligible levels of environmental preferences, the left hand side of condition (6) does not hold. These subjects will choose the self-serving option independent of the effect of their choice on the associated amount of offsets even under full information. Typically, such a 'homo oeconomicus'-type (Type 1) would be indifferent with respect to information revelation, as it has no value to her. Second, a subject with sufficiently strong green preferences would always choose to reveal the effect of her decision on others and then act according to her preferences (Type 2), i.e. the right hand side of condition (6) does not hold. Finally, the third type has green preferences of intermediate strength such that (6) holds. These subjects can be expected to avoid information that might reveal a divergence between the self-interested choice and the green preferences while choosing the self-serving option.

Note that a rational individual with environmental preferences would always choose to completely reveal all information available. Hence, an individual failing to reveal all available information is either of Type 1 (no environmental preferences) or of Type 3 (information avoider). We can thus identify self-serving information avoidance via a comparison of self-serving product choices in the full information treatment with those in the treatments where this information can be actively revealed. As with increasing price differences, condition (3) is less and less likely to hold, we can also expect an increasing share of Type 1-behavior.

This result is in line with recent experimental evidence on information avoidance on markets. Momsen and Ohndorf (2019) report that for information structures with stochastic revelation, self-serving information avoidance is more likely to arise if the differences in payoffs are not too large. A similar effect is reported in Momsen and Ohndorf (2020) for complete revelation and small but positive information cost. Note that for a consumption context with complete revelation of information and payoff-irrelevant information cost, as investigated here, information avoidance has not yet been detected experimentally.[11] We surmise that previous studies chose price differences that were beyond the boundaries established in (6). For the parameterization chosen here, we expect information avoidance to be more likely to occur for our lower price differences.

When moving from an individual decision to a democratic group decision, two different effects have to be separated. First, the outcome of the decision does not only affect the individual itself, but also other members of the group. The decision is hence likely to be influenced by other-regarding preferences. Second, in the case of voting the probability of the individual's decision to be decisive decreases. The larger the group, the lower the

[11] Market experiments presented in Bartling et al. (2014) and Pigors and Rockenbach (2016) provided no indication of information avoidance for such a setup. Several other studies also extend the analysis of self-serving information avoidance to situations involving contributions to charities or climate change mitigation (Felgendreher, 2018; Lind et al., 2019). Yet, for situations where information is without cost, they do not provide evidence for this phenomenon.

probability to be pivotal. To isolate the first effect, we included our dictator treatments, where one individual takes decisions for a whole group. Hence, in these treatments, the player's payoffs are similar to the individual decision case, but we have to consider two additional utility components. On the one hand, a dictator with green preferences would have additional utility from choosing the 'greener' alternative, as overall contributions to offsets would increase accordingly. We denote this component by ν and assume, for simplicity, additive separability. However, by forcing other group members to choose option $\neg s$, the dictator might experience some disutility from reducing their payoffs, which depends on their other-regarding preferences. These costs are denoted by ζ, such that the net effect of deciding for others when choosing $\neg s$ under certainty is $(\nu - \zeta)$.

Moreover, note that in our experimental setup, each subject will only take the payoff-relevant decision with probability $\pi_D = \frac{1}{3}$.[12] The decision taken by each subject is hence only payoff-relevant with probability π_D. In all other cases, the player's payoff receives a payoff determined by one of the other players. Let us denote the player's expectation of the payoff in this case with V. In these cases, the individual can neither influence payoffs, nor the level of associated offsets and will consequently not experience cognitive dissonance. The individual's decision problem G in the Dictator treatment under full information is thus characterized by the following payoffs:

$$U_s^G = \pi_D \left(m - p_s - \Phi^G(d - \omega_s)\right) + (1 - \pi_D)V, \tag{7}$$

$$U_{\neg s}^G = \pi_D \left(m - p_{\neg s} + (\nu - \zeta)\right) + (1 - \pi_D)V \tag{8}$$

Consequently, for the group case G, (3) transforms to

$$\Phi^G(d - \omega_s) + (\nu - \zeta) > \Delta_P. \tag{9}$$

It is *a priori* unclear if (9) is more restrictive or laxer than (3) as it depends on the net effect of $(\nu - \zeta)$, representing a trade-off between green and other-regarding preferences. If, for the Dictator FI treatment, we observe an increase in choices of option s we can infer that on average, the reduction of other players' income is weighted more heavily than the additional environmental co-benefits and vice versa. Notice also that (9) is independent of the probability π_D of the decision being realized. This is due to our assumption that cognitive dissonance only arises if the individual is actually responsible for the outcome. Note that this is consistent with the notion of cognitive dissonance used in social psychology, where the possibility of controlling the situation is a pre-condition for actually experiencing dissonant cognitions (Festinger, 1957; Smith et al., 2008).

[12] This design choice is mainly due to budget restrictions, but can also give useful insights into the different effects of pivotality if it concerns all payoff-components in contrast to situations where the expressive motive is unaffected, i.e. situations with voting.

We now turn to the issue of self-serving information avoidance in the dictator case. If (9) holds in the Dictator HI treatment for decision G, the expected payoff for a player intending to reveal information—analogous to equation (5) in the individual case—is

$$EU^G_{k=1} = \pi_D \left(\nu + m - \mu p_s - (1-\mu)(p_{\neg s} + \zeta)\right) + (1-\pi_D)V. \tag{10}$$

In contrast, a player choosing to remain uninformed at $k = 0$ will never know the actual level of d. As a consequence, they will not incur $(\nu - \zeta)$, rationally choose the self-serving option s and bear the cost of cognitive dissonance for remaining uninformed, as in (4) for $k = 0$. In this case, their expected payoff is

$$U^G_{k=0}(s) = \pi_D \left(m - p_s - \Psi^G_0 - \Phi^G_0\right) + (1-\pi_D)V. \tag{11}$$

Thus, when deciding for the whole group, a player will choose to avoid information to exploit moral wiggle room iff

$$\Phi^G(d - \omega_s) + (\nu - \zeta) > \Delta_p > -\zeta + \frac{\nu + \Psi^G_0 + \Phi^G_0}{1-\mu}. \tag{12}$$

Notice that in the case of a decision for a whole group, both cost components from cognitive dissonance Ψ^G_0 and Φ^G_0 might be different from a decision that only involves the individual itself. Hence, again, it is *a priori* unclear if self-serving information avoidance is more likely to arise in the Dictator treatment or the Market treatment. Yet, an *ex post* comparison of self-serving choices allows us to gain some insights into the relative sizes of these cost components.

Again, given our parameterization, for the largest part of our subjects we can expect the upper boundary of (12) to be exceeded for larger differences in monetary payoffs. Hence, also for the Dictator treatments, self-serving information avoidance is more more likely to occur for lower price differences.

We now turn to a group decision that is decided via voting. In this case the probability for the individual to be decisive for the outcome is lower than 1 and decreases with group size. We denote with π_t the (subjective) probability of the individual being pivotal, and with π_s ($\pi_{\neg s}$), the (subjective) probability of the low (high) cost option to be chosen if the player is not pivotal.

In a conflicting interest situation under full information, the player's expected payoff when voting for option $\neg s$ is

$$U^v_{\neg s} = m - \pi_t \left[(\nu - \zeta) - p_{\neg s}\right] - \pi_{\neg s}\left(\nu - p_{\neg s}\right) - \pi_s p_s, \tag{13}$$

while voting for option s yields

$$U^v_s = m - \pi_{\neg s}\left(\nu - p_{\neg s}\right) - \pi_t p_s - \pi_s p_s - \Phi^v \tag{14}$$

Thus, player will vote for option $\neg s$ iff

$$(\nu - \zeta) + \frac{\Phi^v}{\pi_t} > \Delta_p \tag{15}$$

Several interesting observations can be made with respect to this result. First, notice that this condition is relaxed with a decrease in the probability of being pivotal π_t. Thus, with decreasing probability of the own vote to be decisive, voting for option $\neg s$ is more likely to be used as a strategy to avoid cognitive dissonance (cost Φ^v). If it is unlikely that voting for the 'greener' option will affect the outcome, players can hence use the vote to align their choice with their own positive self-image. The vote will hence reflect what the individual considers to be morally preferable rather than being guided by their own narrow self-interest. This corresponds to the result derived from theories of expressive voting, where 'ethical' votes are likely to increase with larger constituencies. Hence, when comparing our FI Voting3 and Voting11 treatments, our model predicts a larger amount of votes for the 'greener' option in the latter treatement.

Furthermore, if we assume $\Phi^v = \Phi^G$, a comparison of (12) and (15) suggests that self-serving choices should also be less common under our FI Voting3 treatment than for the Dictator case. Note, however, that the cognitive dissonance might be diluted when we move from decisions by one individual to decisions taken by the group via voting, as there exists a psychological tendency often referred to as 'diffusion of responsibility'. If this is the case, we can expect the cost of cognitive dissonance to be lower than for individual decisions (i.e. $\Phi^v(d - \omega_s) < \Phi^G(d - \omega_s)$). If this effect is strong enough to countervail the effect of the lower probability of being pivotal, we would even observe a larger amount of self-serving choices under the Voting3 treatment.

Finally, we consider voting decisions if players have the possibility to avoid information, as in our Voting HI treatments. In this case, we also need to consider the subjective probabilities for the outcome in the uninformed state. Thus, denote with π_t^u the uninformed individual's subjective probability of being pivotal, and with π_s^u ($\pi_{\neg s}^u$), the subjective probability of a majority for the low (high) cost option if the uninformed player is not pivotal. While these probabilities might be subject to individual over- or underestimation, we assume sufficient rationality in this weighting in the sense that subjective probabilities add up to 1, i.e. $\pi_s^u + \pi_{\neg s}^u + \pi_t^u = 1$.

Thus, the expected payoff if information is avoided in our voting treatment, is (analogous to (5) in the individual case) as follows:

$$U_{k=0}^v(s) = m - (\pi_{\neg s}^u p_{\neg s} + \pi_s^u p_s + \pi_t^u p_s) - \Phi_0^v - \Psi_0^v \tag{16}$$

Assuming that an informed individual would vote for option $\neg s$ in case of conflicting interests, i.e. if (15) holds, the expected payoff before revealing information is

$$EU^{v}_{k=1} = \mu\left(m + \nu - p_s\right) + \left(1-\mu\right)\left[\pi_t\left(\left(\nu-\zeta\right) + m - p_{\neg s}\right) + \pi_{\neg s}\left(\nu + m - p_{\neg s}\right) + \pi_s\left(m - p_s\right)\right]. \tag{17}$$

Subtracting (17) from (16) hence yields the gains (losses) from avoiding information. Thus, exploitation of moral wiggle room via self-serving information avoidance arises iff

$$\left(\nu-\zeta\right) + \frac{\Phi^v}{\pi_t} > \Delta_p > \frac{\nu + \left(1-\mu\right)\left(\pi_t(\nu-\zeta) - \left(1-\pi_{-s}\right)\nu\right) + \Phi^v_0 + \Psi^v_0}{\left(1-\mu\right)\left(\pi_{\neg s} + \pi_t\right) - \pi^u_{\neg s}}. \tag{18}$$

This result is particularly interesting. If (18) holds, expressive voting is no longer the voter's preferred strategy to uphold a positive self-image. Instead, the player's corresponding cognitive dissonance is managed via the avoidance of information on the effects of their own choice. Subjects with intermediate preferences (Type 3), will remain strategically uninformed and choose the self-serving option. Hence, while we expect a larger amount of 'green' choices in the FI Voting11 treatment than in the corresponding Voting3 treatment due to expressive voting, this difference should be significantly lower for the respective HI treatments. Furthermore, notice that for ν large enough, an increase in the amount of voters (i.e. a reduction in π_t) will lead to a larger decrease of the right hand side of (18) than of its left hand side. Thus, the overall amount of avoided information can be expected to be larger for Voting11 than for Voting3, in particular for smaller price differences. Finally, also for the Voting treatments, we would expect the upper boundary of (18) to be exceeded in most cases for our larger price differences. Again, also for the Voting treatments, self-serving information avoidance can be expected to be more likely to occur for our lower price differences.

4. Results

In our analysis of the experimental results, we will first focus on the effect of the different institutional environments on the share of selfish choices, both under full and hidden information. We will then examine the exploitation of moral wiggle room within each institutional setting by comparing the share of selfish choices under full information to the share of selfish choices under initally unobservable, but revealable, information. Finally, we will analyze the effect of different institutions on the average amount of information revelations. Summary statistics for our sample as well as power calculations are provided in the Supplementary Material (see Table 7 and Section A.3.1).

4.1. Selfish choices

To study the share of selfish choices across treatments, we only consider decision situations with conflicting interests (CI), i.e. situations where the payoff-dominated option is

associated with larger positive externalities than the payoff-optimal option. This leaves us with approximately half of the total observations for each treatment condition. Table 2 lists the share of selfish choices in decision situations with conflicting interests in the eight treatments, pooled over all price differences in the left panel, for decision situations with price differences of five or ten ECUs in the middle panel, and for decision situations with price differences of 15 or 20 ECUs in the right panel.[13] Figure 1 displays these shares for the full information treatments (FI), whereas Figure 2 shows the shares for the hidden information treatments (HI).[14] Note that subjects in the treatments with full information are immediately aware of the conflict of interests with respect to own monetary payoff and the amount of carbon offsets provided. In contrast, subjects in the treatments with hidden information have to actively reveal information via the click of a button in order to gain information on the nature of the decision situation.

In our FI treatments, where all subjects are immediately aware of conflicting interests, choices appear to differ with respect to institutional settings. These differences are even more pronounced if differences in payoffs between the two options are relatively small. For both, the aggregated data as well as for situations with a relatively small difference in payoffs, the share of selfish choices is lowest in the market setting and highest in the Voting3 treatment. Considering the treatments with hidden information, however, differences in the share of selfish choices appear to be less pronounced.[15]

Table 2: Share of selfish choices in conflict situations

	All Data		**Payoff Diff. <= 10**		**Payoff Diff. >10**	
Treatment	N[16]	Share of Selfish Choices	N	Share of Selfish Choices	N	Share of Selfish Choices
Full Information						
FI Market	576	0.561	276	0.377	300	0.730
FI Dictator	576	0.594	276	0.486	300	0.693
FI Voting3	576	0.639	258	0.566	318	0.698
FI Voting11	528	0.612	220	0.405	308	0.760
Hidden Information						
HI Market	576	0.696	276	0.616	300	0.770
HI Dictator	576	0.722	264	0.633	312	0.798
HI Voting3	576	0.734	258	0.659	318	0.796
HI Voting11	528	0.759	220	0.645	308	0.841

[13]Note that a choice is defined as selfish when a subject chooses the payoff-optimal option s that is associated with lower positive externalities than the payoff-dominated option. We use this definition regardless of the information condition.

[14]Separate figures for each payoff difference can be found in Figure 6 and Figure 7 in the Appendix.

[15]Non-parametric test results can be found in the Appendix (see Table 10).

[16]N refers to the total number of conflict situations for each treatment condition. It thus depends both on the number of participants per treatment and on the number of decision situations falling into the relevant category.

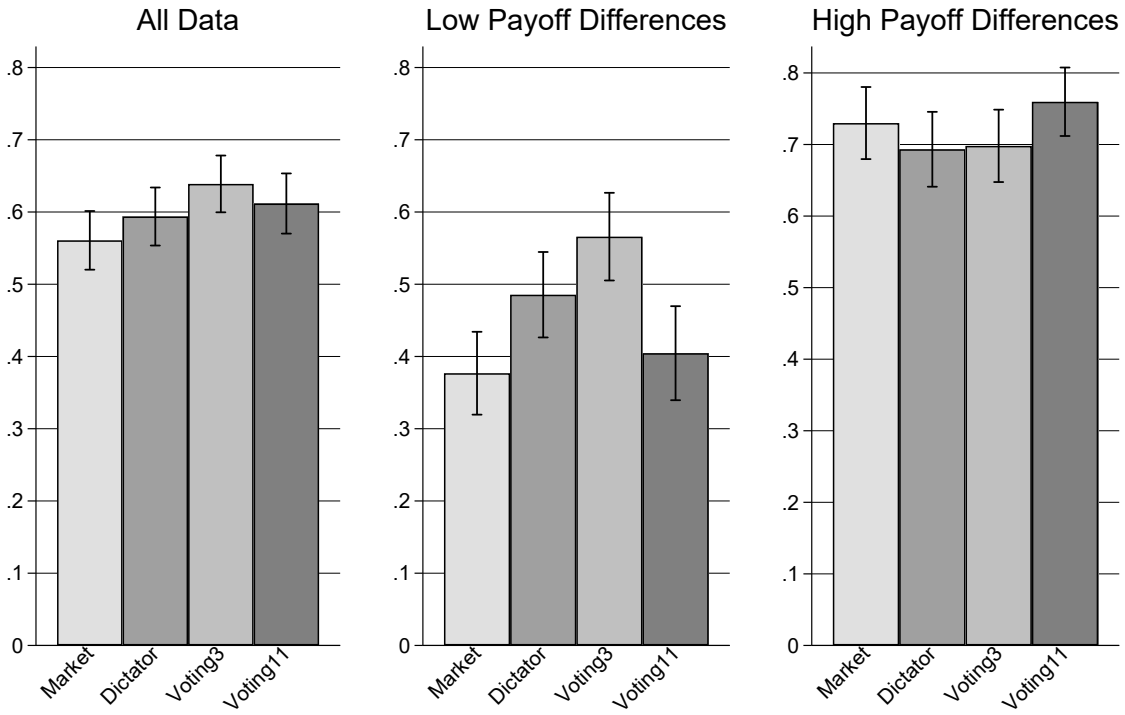


Figure 1: Share of selfish choices in conflict situations under full information

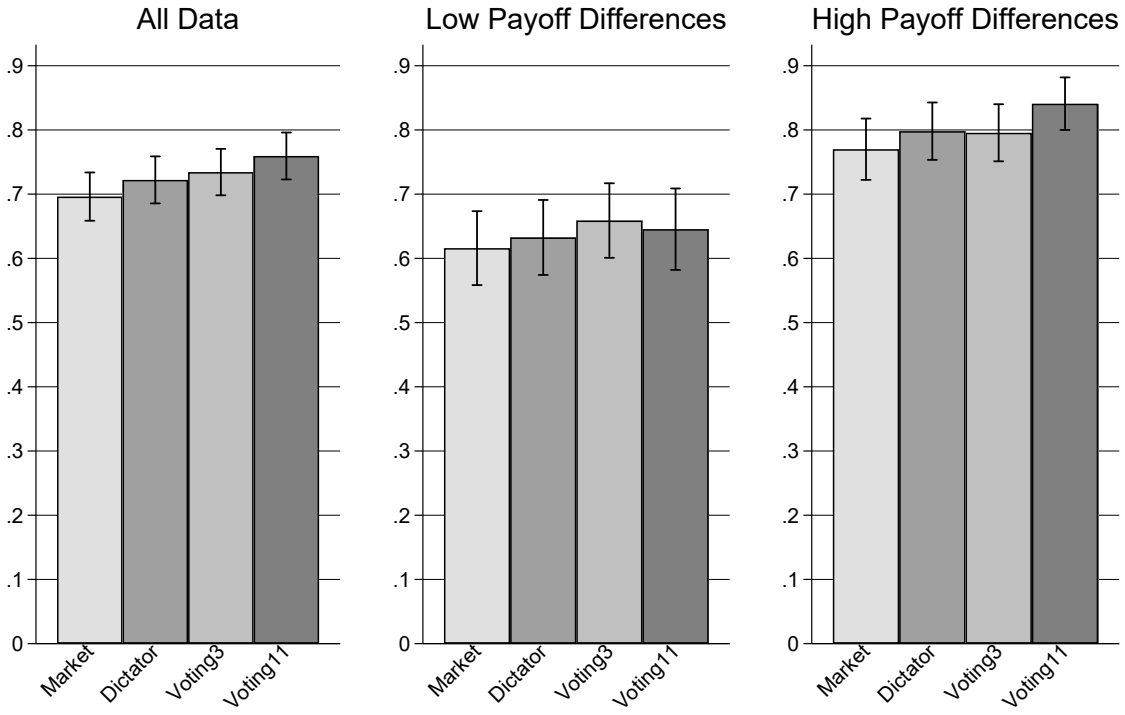


Figure 2: Share of selfish choices in conflict situations under hidden information

To further investigate these observations, we run several random effects panel regressions with standard errors clustered on subject level.[17] The results for the pairwise comparisons of the institutional settings under full information are presented in Table 3. We regress a dummy variable indicating whether a choice was selfish on the period number to capture potential time trends. We also include a dummy variable which indicates whether the difference in payoffs was high (HighPD = 1 if the difference in payoffs was 15 or 20 ECUs). Our main focus lies on the dummy variables for pairwise treatment comparisons. Furthermore, we interact these dummy variables with the dummy for the difference in payoffs between the options to control for the possibility of payoff-differences having different effects across treatments. We include a rather lean set of control variable consisting of the subject's age, whether they identified as male to control for potential gender effects as well as a dummy variable capturing if they studied economics or a closely related subject.[18] The latter dummy variable is included to control for the influence of training in economics on decisions made in situations that resemble dictator and public good games.

In all specifications, a higher difference in payoffs has a significant positive impact on the number of selfish choices, i.e. if it is more expensive to realize a higher climate-benefit fewer subjects decide to do so. Furthermore, it seems that experienced decision makers tend to become slightly more egoistic, although this effect does not occur in all settings. As could be expected from the graphs, there are indeed significantly more selfish choices in the Dictator and Voting3 conditions compared to the market treatment, although in both cases this is less pronounced for larger payoff differences. In light of our theoretical considerations, we surmise that this effect is driven by other-regarding preferences. If the decision does not only reduce the payoff of the individual themselves, but also of other members of the group, subjects are more reluctant to choose the more expensive 'green' option. This explanation is supported by the fact that decisions made in the Dictator setting and Voting3 are statistically indistinguishable (see Regression 4). Note, however, that this cannot explain that the difference in selfish decisions with respect to the Market treatment is slightly more pronounced in the Voting3 than in the Dictator treatment, as the effect of other-regarding preferences should be strongest if the decision for the group falls exclusively to the individual. As laid out in Section 3, the large share of selfish choices in Voting3 compared to the individual choice might be partially attributed to

[17] When we cluster standard errors on matching group level, p-values are smaller such that higher levels of significance can be reached. In the Voting11 treatment, however, the number of matching groups is, by design, very low. Hence, the results from regressions clustering on matching group level might overstate the true levels of significance. We therefore report the results from regressions with standard errors clustered on subject-level. As new groups were formed in each round and subjects remained anonymous, we are confident that within-group correlation is sufficiently low.

[18] A regression analysis including a larger set of control variables can be found in Table 13 in the Supplementary Material.

the diffusion of responsibility, which is prone to arise when it comes to decisions in small groups.[19]

Table 3: Selfish choices under full information across treatments

	(1)	(2)	(3)	(4)	(5)	(6)
	M vs. D	M vs. V3	M vs. V11	D vs. V3	D vs. V11	V3 vs. V11
Period	0.002	0.004**	0.010***	0.005**	0.011***	0.014***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
HighPD	0.370***	0.364***	0.345***	0.193***	0.175***	0.141***
	(0.046)	(0.045)	(0.045)	(0.039)	(0.039)	(0.039)
Dictator	0.136*					
	(0.073)					
Dictator*HighPD	-0.170***					
	(0.059)					
Voting3		0.163**		0.033		
		(0.077)		(0.077)		
Voting3*HighPD		-0.209***		-0.037		
		(0.061)		(0.057)		
Voting11			0.034		-0.121*	-0.170**
			(0.071)		(0.073)	(0.071)
Voting11*HighPD			-0.024		0.144**	0.174***
			(0.061)		(0.056)	(0.056)
Age	-0.010	0.019	-0.009	0.029***	0.003	0.019
	(0.011)	(0.013)	(0.006)	(0.010)	(0.008)	(0.015)
Male	0.101	0.079	0.099	0.173**	0.217***	0.167***
	(0.067)	(0.063)	(0.060)	(0.068)	(0.065)	(0.062)
Econ	0.042	0.113*	-0.016	0.050	-0.091	0.013
	(0.071)	(0.067)	(0.063)	(0.073)	(0.068)	(0.064)
Constant	0.496**	-0.172	0.400***	-0.270	0.245	-0.101
	(0.244)	(0.305)	(0.143)	(0.237)	(0.176)	(0.332)
R^2	0.103	0.113	0.161	0.106	0.148	0.157
N	1152	1152	1104	1152	1104	1104

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) are clustered on subject-level. Dependent variable is a dummy which takes the value of 1 if the selfish option is chosen in a conflict situation. Male is a dummy variable which takes the value of 1 if the subjects identified as male. Econ is a dummy variable that takes the values of 1 if the subject studies economics or business.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Most interestingly, in our analysis of the FI treatments, we do not find a significant difference in selfish choices between Voting11 and the Market treatment, while both of these treatments feature a significantly lower amount of selfish choices than the Voting3

[19] In a regression of the share of selfish choices on treatment dummies using the Market condition as baseline (see Table 12 in the Supplementary Material), we find that the coefficients of the Dictator and the Voting3 dummy are statistically indistinguishable (p = 0.602), while the coefficients of the Voting11 and the Dictator dummy and of the Voting11 and the Voting3 dummy differ significantly (p = 0.099 and p = 0.028, respectively).

treatment.[20] As the only difference between both Voting treatments is the size of the constituency, we can reasonably surmise that the difference in selfish choices in these treatments is due to differences in the probability of being pivotal. Thus, our results support theoretical considerations on expressive voting, which predict a larger share of 'ethical' decisions with a decrease in the probability of the individual vote being decisive. As explained in the previous section this is in line with the interpretation of expressive voting as a strategy to reduce cognitive dissonance and maintain a self-image of being an eco-friendly person.

Table 4: Selfish choices under hidden information across treatments

	(1)	(2)	(3)	(4)	(5)	(6)
	M vs. D	M vs. V3	M vs. V11	D vs. V3	D vs. V11	V3 vs. V11
Period	0.003	0.002	0.007***	0.003*	0.009***	0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
HighPD	0.138***	0.142***	0.126***	0.194***	0.187***	0.138***
	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.043)
Dictator	-0.041					
	(0.070)					
Dictator*HighPD	0.055					
	(0.049)					
Voting3		-0.039		0.055		
		(0.071)		(0.079)		
Voting3*HighPD		0.006		-0.047		
		(0.055)		(0.056)		
Voting11			0.003		0.082	0.027
			(0.062)		(0.073)	(0.068)
Voting11*HighPD			0.040		-0.022	0.027
			(0.054)		(0.054)	(0.060)
Age	0.007	-0.009	-0.004	0.011	0.015	-0.003
	(0.008)	(0.009)	(0.008)	(0.012)	(0.010)	(0.012)
Male	0.052	0.157**	0.089	0.091	0.044	0.133**
	(0.065)	(0.064)	(0.059)	(0.062)	(0.057)	(0.059)
Econ	0.074	0.102*	0.097*	0.057	0.058	0.066
	(0.060)	(0.057)	(0.053)	(0.062)	(0.060)	(0.052)
Constant	0.403**	0.743***	0.587***	0.231	0.100	0.509**
	(0.193)	(0.201)	(0.185)	(0.286)	(0.265)	(0.248)
R^2	0.048	0.074	0.080	0.056	0.080	0.086
N	1152	1152	1104	1152	1104	1104

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) are clustered on subject-level. Dependent variable is a dummy which takes the value of 1 if the selfish option is chosen in a conflict situation. Male is a dummy variable which takes the value of 1 if the subjects identified as male. Econ is a dummy variable that takes the values of 1 if the subject studies economics or business.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[20] These differences are also significant according to the non-parametric tests reported in the Supplementary Material (see Table 10).

Analogously to the FI case, we perform a second regression analysis for the hidden information treatments (see Table 4).[21] While both the effect of the period number and of the difference in payoffs are are similar to the full information treatments, none of the dummy variables specifying the institutional setting has a significant impact on the amount of selfish choices in conflict situations. Hence, the possibility of avoiding information seems to negate any effect that the institutional setting has on ethical choice under full information.

Interestingly, for both treatment types, FI and HI, we observe the lowest share of selfish choices in the Market treatment. Thus, in the context investigated here we can reject the notion that our consumption setup erodes morals compared to the other stylized institutions. As mentioned above, this observation might be explained by the influence of other-regarding preferences and diffusion of responsibility. In a market situation, subjects are indubitably responsible for the results of their action. Any type of diffusion of responsibility is hence precluded. This explanation is further supported by the fact that selfish choices for the FI Voting11 are at the same level as for the market case. The effect of expressive voting thus countervails the effects that increase the amount of selfish behavior in small group decisions.

4.2. Exploitation of Moral Wiggle Room

As laid out in Section 3, remaining ignorant about the consequences of their choices may be a valid strategy to choose the self-serving option in a (potential) CI situation without facing the corresponding negative consequences for self-perception. Knowing the effects of their choice, subjects with intermediate levels of green preferences would feel obliged to act upon them if they face a situation with conflicting interests. Hence, in a situation with Full Information, they feel obliged to choose the payoff-dominated, environmentally friendly option. In a HI situation, however, they might opt to not reveal information on the effects of their choice on the level of offsets and choose the payoff-dominant option without challenging their self-image as an environmentally friendly person. Hence, avoiding the information opens up moral wiggle room, the effect of which can be observed in a comparison of choices in the FI and HI treatments. More precisely, we identify the effect of self-serving information avoidance by comparing the amount of selfish choices in situations with conflicting interests across both information conditions. If the share of selfish choices is significantly higher under hidden information than under full information, this provides evidence for subjects exploiting moral wiggle room via a between-subjects comparison (Dana et al., 2007).

[21] A regression analysis including a larger set of control variables can be found in Table 14 in the Appendix.

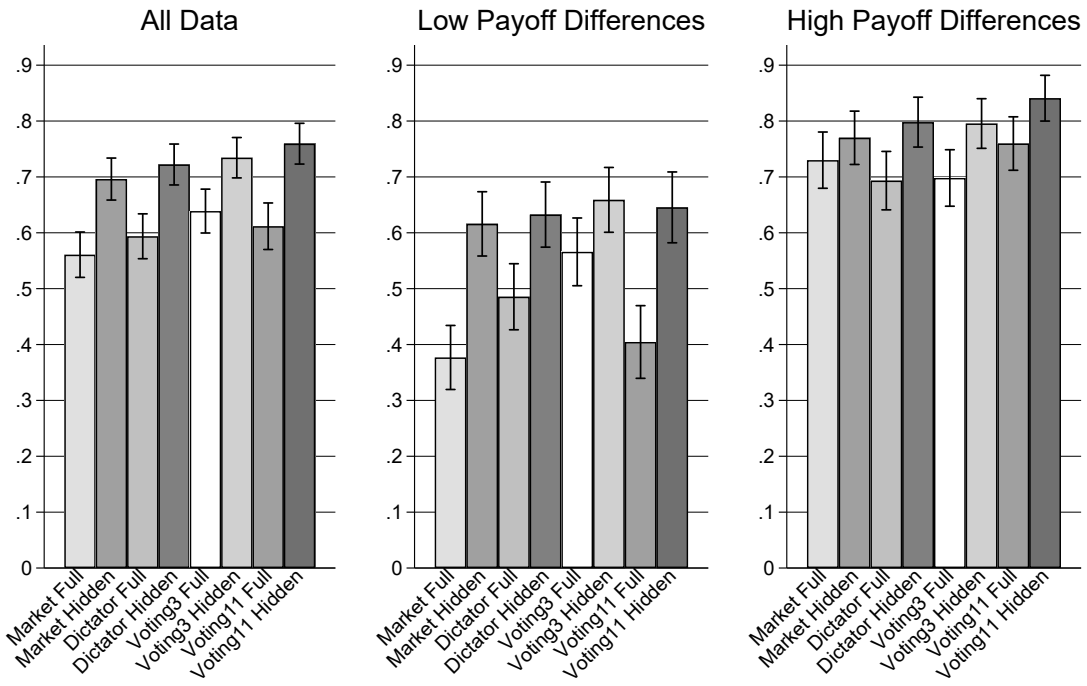


Figure 3: Share of selfish choices in conflict situations

The bars in Figure 3 depict the average share of selfish choices in conflict situations for each institutional and informational setting, either considering all data, situations with smaller payoff differences ($\Delta \leq 10$), or larger payoff differences ($\Delta > 10$).[22] Notice that in all institutional settings, the share of selfish choices is lower when externalities are initially observable, while the size of these differences seems to depend on the institutional setting. Thus, a look at the graphs indicates that exploitation of moral wiggle room might indeed arise in the contexts investigated here. The difference in behavior is most notable in the market setting and with voting in large groups and less so in dictatorships and with voting in small groups. Again, findings are more pronounced for smaller price differences.

In order to make more informed statements with respect to self-serving information avoidance, we perform several regression analyses.[23] We regress the decision to choose selfishly in conflict situations on a dummy variable 'Hidden' indicating whether the information on the associated offset level is initially unobservable. We also include the period number, a dummy indicating if the difference in payoffs was high, 'HighPD', and an interaction term of the payoff difference and the 'hidden' information dummy as explanatory variables. Again, we control for the subject's age, gender and the field of study using the 'Econ' dummy variable.[24] As before, the results, reported in Table 5, stem from

[22]Separate figures for each payoff difference can be found in Figure 8 in the Appendix.
[23]Results from non-parametric tests can be found in the Supplementary Material (see Table 11).
[24]Regressions including a larger set of control variables can be found in Table 15 in the Supplementary Material.

random effects panel regressions with standard errors clustered at subject level. A positive and significant coefficient for our 'Hidden' dummy indicates that moral wiggle room was indeed exploited. Notice that the sign of the effect of the 'Hidden' dummy on the amount of selfish choices is always positive, but it is only highly significant in the Market treatment and Voting11.[25] For these two treatments we can hence justifiably infer that moral wiggle room was exploited, yet, as predicted, to a lesser extent when the difference in payoffs is relatively large. In contrast, for the Dictator and Voting3 treatments, the effect is not significant. Hence, exploiting moral wiggle room does not appear to play a significant role for subjects' choices in these treatments.

It is particularly interesting that we find exploitation of moral wiggle room in the Market treatment and Voting11, as these are the treatments where under full information the amount of self-serving choices are lowest for small differences in payoffs. From our theoretical considerations, these would be exactly the cases for which one would expect the largest amount of subjects displaying self-serving information avoidance. In contrast, for larger price differences, the amount of self-serving choices with full information is, as theorized, significantly higher, such that the potential for identifying the exploitation of moral wiggle room is reduced.[26] As to the Market treatment, this means that the relative morality of decisions under full information is completely negated via the possibility to avoid information. There are, in fact, no significant differences in the amount of self-serving choices between institutions for the HI cases.

This result is even more compelling when considering the Voting11 treatment. While a comparison of both Voting treatments supported the low cost theory of voting, exploitation of moral wiggle room seems to entirely counterbalance any effect of a change in pivotality. Expressive voting no longer seems to be the preferred strategy to deal with cognitive dissonance if information is initially unobservable. Instead, subjects exploit moral wiggle room via self-serving information avoidance in the Voting11 treatment. As suggested in our theoretical considerations, this effect is strongest for lower payoff differences.

[25] The non-parametric tests reported in Table 11 yield the same results for Voting11 and Market. According to the non-parametric tests also the difference between the share of selfish choices under full and hidden information in the Dictator treatment is significant at the 10% level. This, however, is due to the lack of control variables: When performing the regression analysis for the Dictator condition without any controls, we also observe a significant effect ($p = 0.095$) of the 'Hidden' dummy, which disappears when we add controls. Hence, this slight discrepancy between the regression results and the non-parametric test results suggests that, although subjects were randomly assigned to the sessions, they differed with respect to some characteristics that influence their choices.

[26] Similarly, the large amount of self-serving choices in the Dictator and Voting3 treatments under Full information might be the reason why we cannot identify a significant effect with respect to moral wiggle room in these cases. In a between-subject comparison this effect is defined as the difference in amounts of selfish choices between the FI and HI conditions, such that it might become unidentifiable if the amount of selfish choices is too large in the FI treatment.

Table 5: Selfish Choices: Moral Wiggle Room

	(1) M	(2) D	(3) V3	(4) V11
Period	0.001	0.003	0.005**	0.018***
	(0.002)	(0.002)	(0.002)	(0.002)
HighPD	0.370***	0.197***	0.156***	0.318***
	(0.046)	(0.039)	(0.040)	(0.039)
Hidden	0.271***	0.071	0.077	0.269***
	(0.065)	(0.080)	(0.074)	(0.065)
HighPD*Hidden	-0.226***	-0.002	-0.011	-0.154***
	(0.055)	(0.053)	(0.059)	(0.056)
Age	-0.016*	0.016*	0.023	0.000
	(0.009)	(0.009)	(0.015)	(0.007)
Male	0.061	0.111	0.153**	0.142**
	(0.062)	(0.069)	(0.066)	(0.057)
Econ	0.116**	0.002	0.107*	-0.028
	(0.057)	(0.071)	(0.063)	(0.056)
Constant	0.644***	0.062	-0.131	0.120
	(0.208)	(0.219)	(0.330)	(0.161)
R^2	0.124	0.083	0.106	0.202
N	1152	1152	1152	1056

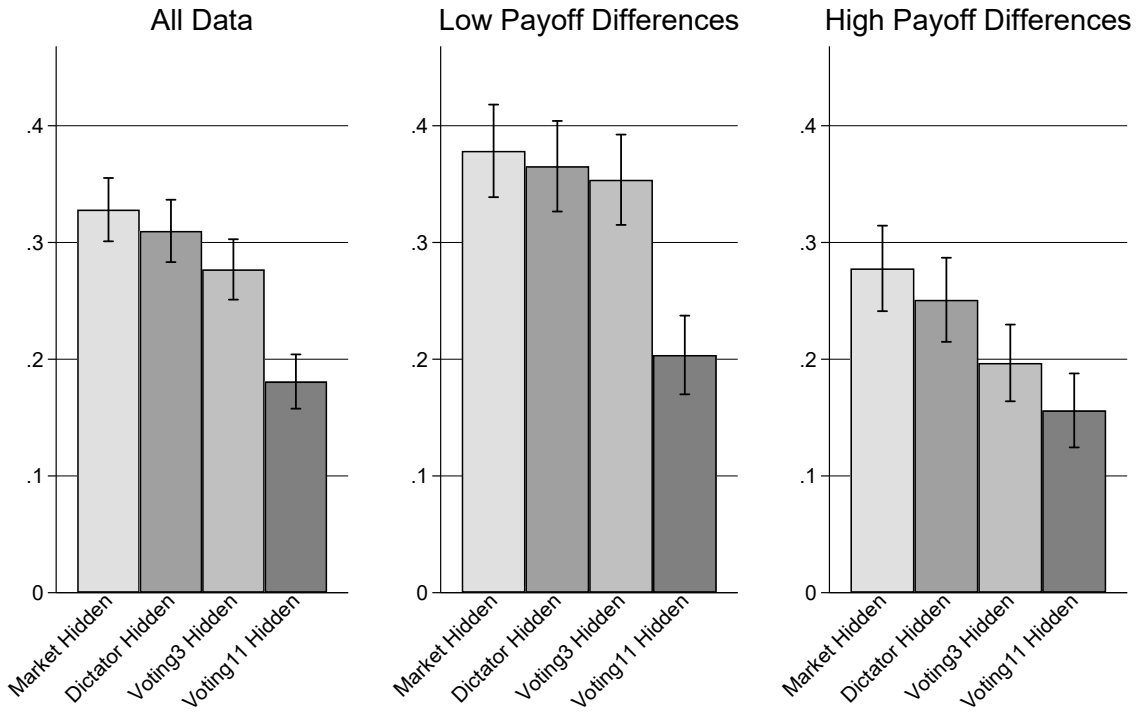
Notes: Output from random-effects panel regressions. Standard errors (in parentheses) are clustered on subject-level. Dependent variable is a dummy which takes the value of 1 if the selfish option is chosen in a conflict situation. Male is a dummy variable which takes the value of 1 if the subjects identified as male. Econ is a dummy variable that takes the values of 1 if the subject studies economics or business.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

4.3. Revelation Decisions

In this subsection we analyze the effect of the institutional decision context on the average amount of information revelations. Figure 4 displays the average share of revelations for each institutional environment with hidden information, for aggregate data and separately for smaller and larger payoff differences. From the figure, it is obvious that the revelation rate is highest in the market setting and lowest for voting decisions in large groups — a finding that holds for all payoff differences. To test whether the observed results are statistically significant, we again perform several random effects panel regressions comparing the treatments in a pairwise manner (see Table 6).[27] In (almost) all institutional settings, we find that in the later rounds, subjects become slightly more reluctant to reveal. Moreover, they reveal less often when the difference in payoffs is large. Considering the pairwise comparisons with the market setting as baseline, we only observe significantly fewer revelations in the Voting11 treatment; both the Dictator and

[27]For a regression analysis including a larger set of control variable see Table 16 in the Appendix.

Figure 4: Share of revelations across treatments separated by price differences



the Voting3 treatment are statistically indistinguishable from the Market baseline and from each other, as Regression 4 shows. Interestingly, the higher revelation rate in the Market treatment does not manifest itself in a higher share of environmentally friendly choices as we find strong support for moral wiggle room exploitation in markets. Hence, in this treatment condition also curious egoists reveal information on the externalities, but do not incorporate it in their decisions in case they have discovered a conflict in interests.

With significantly fewer revelations than in the Dictator treatment and in Voting3, Voting11 stands out, as it differs systematically from all other treatment conditions. In this treatment the revelation rate is lowest, which confirms our conjecture that information avoidance replaces expressive voting as a strategy to resolve cognitive dissonance in this case.

Table 6: Revelation decisions

	(1) M vs. D	(2) M vs. V3	(3) M vs. V11	(4) D vs. V3	(5) D vs. V11	(6) V3 vs. V11
Period	-0.002	-0.000	-0.003*	-0.003*	-0.006***	-0.003**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
HighPD	-0.105***	-0.106***	-0.105***	-0.116***	-0.117***	-0.153***
	(0.030)	(0.030)	(0.030)	(0.029)	(0.029)	(0.030)
Dictator	0.018					
	(0.069)					
Dictator*HighPD	-0.011					
	(0.041)					
Voting3		0.010		-0.012		
		(0.073)		(0.075)		
Voting3*HighPD		-0.048		-0.037		
		(0.042)		(0.041)		
Voting11			-0.147**		-0.173**	-0.160**
			(0.062)		(0.071)	(0.065)
Voting11*HighPD			0.059		0.070*	0.107***
			(0.039)		(0.038)	(0.039)
Age	0.001	0.009	0.010	-0.003	-0.002	0.007
	(0.009)	(0.011)	(0.009)	(0.012)	(0.011)	(0.013)
Male	-0.074	-0.041	-0.019	-0.038	-0.026	0.012
	(0.069)	(0.070)	(0.070)	(0.065)	(0.066)	(0.065)
Econ	-0.071	-0.090	-0.124**	-0.074	-0.107	-0.118**
	(0.066)	(0.063)	(0.060)	(0.066)	(0.065)	(0.058)
Constant	0.437**	0.223	0.220	0.523*	0.547**	0.309
	(0.201)	(0.236)	(0.208)	(0.288)	(0.272)	(0.282)
R^2	0.028	0.038	0.063	0.036	0.058	0.058
N	2304	2304	2208	2304	2208	2208

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) are clustered on subject-level. Dependent variable is a dummy which takes the value of 1 if information is revealed. Male is a dummy variable which takes the value of 1 if the subjects identified as male. Econ is a dummy variable that takes the values of 1 if the subject studies economics or business.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5. Conclusion

We present the results of an incentivized laboratory experiment designed to investigate self-serving information avoidance and moral bias in individual and voting decision contexts. Subjects choose between two options which affect their own payoff and the amount contributed to carbon offsets such that the impact of the subjects' decisions reaches beyond the laboratory. Our main interest is in the resolution of potential cognitive dissonances between the subjects' narrow self-interest and their self-perception as an environmentally conscious individual.

When information on the contribution is immediately observable, we observe the lowest share of self-serving decisions in the Market condition and with voting in large groups

(Voting11), while the self-serving option is chosen more frequently if decisions are taken for a group of three, either by a single dictator (Dictator treatment) or via voting (Voting3). From a comparison of the latter two treatments with the market treatment, we infer that, if decisions are taken for the whole group, additional factors are at play that influence the underlying trade-off between self-interest and self-perception. It is likely that the difference between the Market and the Dictator treatment is due to the influence of distributive preferences, as the dictator's decision also has an impact on the payoff of others. The difference in self-serving choices when comparing the Market and Voting3 treatments is slightly larger. In addition to distributive preferences, this could be explained by diffusion of responsibility. Notice, however, that in a comparison between Dictator and Voting3, the difference in the share of self-serving choices is not significant, such that this effect is not very large.

Comparing the Voting treatments yields certainly the most interesting result for the Full Information case. An increase in the number of voters from three to eleven significantly increases the share of 'greener' choices. This supports the low-cost theory of voting, as the corresponding decrease in the probability of being pivotal is associated with a decrease in self-serving choices. Hence, the relationship between the share of environmentally friendly decisions under full information and the number of decision makers is not linear: The share of environmentally friendly decisions is high in individual decision making contexts, decreases with majority voting in small groups and increases again in large groups. Notice that there is no reason to assume that the effects causing the decrease in the share of environmentally friendly decisions in small groups disappear for larger groups, such that an isolated effect of the probability of being pivotal might even be larger than reported here.

When information on the externalities is initially hidden, but revealable, differences in self-serving choices between decision contexts disappear entirely, with all decisions being in general more selfish. Furthermore, in the settings where we observed the lowest share of selfish decisions under full information – in the Market condition and Voting11 – subjects use the possibility of avoiding information as an excuse to behave more selfishly: They exploit moral wiggle room. In both institutional settings, strategic ignorance is used as a strategy to maintain a positive self-image while choosing selfishly. For Voting3 and the Dictator treatment, the observable pattern of strategic ignorance is less pronounced as choices are already more selfish under full information. Most interestingly, in the Voting11 treatment, information avoidance entirely substitutes expressive voting as a strategy to uphold a positive self-image.

This latter result surely needs some discussion, as the idea of electoral choices being more moral is one of the most compelling results of the theory of expressive voting. The possibility to remain uninformed with respect to the positions of candidates or parties concerning policies that feature a moral dimension is rather the rule than the exception.

Moreover, in recent years several phenomena have been identified supporting the conjecture that voters have a tendency to actively avoid information. There seem to be, in fact, groups of voters that tend to self-select into echo chambers, isolating themselves from certain information sources.[28] To the extent where this self-selection is an active choice, this development could also be interpreted as a more sophisticated form of information avoidance. As we have shown, the possibility to remain uninformed can lead to a reversal of (revealed) voters' preferences, as voters with intermediate preference intensity (Type 3) will remain uninformed and choose the option serving their narrow self-interest. Hence, when it comes to actual elections, such behavior is likely to contribute to a polarization of voters' preferences.

Note, however, that information avoidance does not only provide an explanation for the polarization of preferences, but it could also explain the polarization of politicians' positions and policies themselves. In a Hotelling-Downs framework, policies will converge to the preferences of the median voter if utility functions are concave. In contrast, convex utility functions over an ordered policy range will lead to a polarization in politicians' positions and their policies (Kamada and Kojima, 2014; Tajika, 2020). It is easy to see that a utility function that is concave over a specific policy range under complete information can become convex if voters remain uninformed with respect to a specific property of these options. In our experiment, for example, the set of policies was characterized by two dimensions, the associated cost and the corresponding effect on the global climate. If, under full information, concavity of utilities is driven by a decreasing marginal utility of environmental utility, strategic avoidance of this information leads to an evaluation of these options with respect to cost only, for which a convex form is plausible.

Thus, in the context of climate policy, democratic elections will not necessarily lead to an increase in the stringency of mitigation efforts, as the theory of expressive voting would predict (Brennan, 2009). Indeed, this theory does not seem to adequately predict the political development in the political sphere of various countries, where we observe polarization of both, voter preferences and proposed policy positions (Karakas and Mitra, 2020). As this discrepancy can be explained via self-serving information avoidance, it seems promising to further investigate these interactions in future research.

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[28] See, for example, Bakshy et al. (2015), Halberstam and Knight (2016), Pennycook and Rand (2018), and Sasahara et al. (2019).

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A. Supplementary Material

A.1. Instructions - On paper

To save space we have merged the instructions into one text highlighting the differences between the different treatment conditions in italics.

Dear participants,

Welcome to our experiment!

Please read the instructions carefully. The information given in the instructions is true. Your payment at the end of the experiment also depends on how well you have understood the instructions. The experiment as well as the analysis of the data are anonymous.
Please do not use any technical devices. If you have any questions during the experiment, please raise your hand – the experimenters will answer your question privately. Please do not talk to the other participants.
All expressions in the instructions refer equally to men and women.
This experiment consists of two parts. These instructions explain the first part of the experiment. Before the first part starts, each participant needs to answer some quiz questions on the instructions. As soon as all participants have finished the first part of the experiment, you will receive instructions for the second part.

Market

The first part of the experiment consists of a purchase decision which affects both your own payoff as well as a contribution to a carbon offset. The payment to the carbon offset will be made by the experimenters after the experiment is finished. You will receive more detailed information on carbon offsets on your screen at the beginning of the experiment.
You are endowed with 100 ECUs which you can spend on the virtual products A and B. In order to purchase, you need to click the button with the name of the product you want to purchase. You do not have the option not to buy.

Dictator

In the first part of the experiment, you will be split into groups of 3. You do not know the identity of your group members. It is your task to make an allocation decision. The allocation you have chosen determines your payoff, your group members' payoff as well as the contribution to a carbon offset. The payment to the carbon offset will be made by the experimenters after the experiment is finished. You will receive more detailed information on carbon offsets on your screen at the beginning of the experiment.

The allocation decision of one randomly determined group member will be implemented for the entire group. When you make your allocation decision, you do not know if you are the player whose allocation decision is implemented. This will be communicated as soon as all group members have made their allocation decisions. You need to decide between Allocation A and Allocation B. In order to select an allocation, you need to click the red button with the name of the preferred allocation. You do not have the option not to decide. The payment to the carbon offset and the payoffs for all group members are identical for each allocation.

Voting 3 (11)

In the first part of the experiment, you will be split into groups of 3 (11). You do not know the identity of your group members. It is your task to vote on the implementation of an allocation decision. The chosen allocation determines your payoff, your group members' payoff as well as the contribution to a carbon offset. The payment to the carbon offset will be made by the experimenters after the experiment is finished. You will receive more detailed information on carbon offsets on your screen at the beginning of the experiment.

You need to vote for the implementation of Allocation A or Allocation B. In order to vote for an allocation, you need to click the red button with the name of the preferred allocation. You do not have the option not to decide. The allocation that has received the majority of votes will be implemented, i.e. at least 2 (6) of the 3 (11) votes. The payment to the carbon offset and the payoffs for all group members are identical for each allocation.

Market with Full Information

The products differ in terms of their payoffs to the group members as well as in terms of their contributions to the offset. Both prices and contributions will be displayed on your screen.

Your earnings from a purchase decision are computed as your initial endowment minus the price you paid. Your earnings will be multiplied by 0.1 in order to compute your earnings in Euros. Analogously, the same of ECUs invested in carbon offsets will be multiplied by 0.1 in order to compute the contribution in Euros.

Market with Hidden Information

The products differ in terms of their payoffs to the group members as well as in terms of their contributions to the offset. For Product A, you know both the payoff and the contribution to the carbon offset (15 ECUs), whereas you only know the payoff of Product B. The possible contribution to the carbon offset of Product B can either be 0 or 30 ECUs, yet you do not know which number applies. Each contribution is equally likely.

Using the button "Contribution = 0 or 30 ECUs?" you have the opportunity to find out the contribution to the carbon offset of Product B. However, you can also make an allocation decision without information yourselves about B's contribution. Whether you use the button does not affect the contribution. Clicking the button has a cost of 0.10 ECUs. You can use the button only once.

Your earnings from a purchase decision are computed as your initial endowment minus the price you paid minus the costs of clicking the button in case you decided to click. Your earnings will be multiplied by 0.1 in order to compute your earnings in Euros. Analogously, the same of ECUs invested in carbon offsets will be multiplied by 0.1 in order to compute the contribution in Euros.

Hidden Information

The allocations differ in terms of their payoffs to the group members as well as in terms of their contribution to the offset. For Allocation A, you know both the payoff and the contribution to the carbon offset (15 ECUs), whereas you only know the payoff of Allocation B. The possible contributions to the carbon offset of allocation B can either be 0 or 30 ECUs, yet you do not know which number applies. Each contribution is equally likely.

Using the button "Contribution = 0 or 30 ECUs?" you have the opportunity to find out the contribution to the carbon offset of Allocation B. However, you can also make an allocation decision without information yourselves about B's contribution. Whether you use the button does not affect the contribution. Clicking the button has a cost of 0.10 ECUs. You can use the button only once.

Dictator and Voting Full Information

The allocations differ in terms of their payoffs to the group members as well as in terms of their contribution to the offset. Both payoffs and contributions for both allocations will be displayed on your screen.

Dictator

If your allocation decision is the one that is selected, your payoff and the payoff of your group members equals the payoff of the allocation that you have chosen. Similarly, the aggregate contribution to the offset equals the contribution of the selected allocation which is implemented for all group members. With 3 group members, this is three times the individual contribution. If your decision is not selected, it influences neither the payoff of the group members nor your own payoff. In this case, your payoff and your contribution to the carbon offset are determined by the allocation decisions of another group member. Please note: All group members always earn the same amount and contribute the same amount to the carbon offset. If the allocation of a player is implemented who chose Allocation A, 15 ECUs will be contributed for each group member will be contributed to the offset, i.e. in total 45.

Voting 3 (11)

Your payoff equals the payoff of the allocation for which the majority of the group members has voted. This is not the allocation for which you have voted if the majority of your group members has chosen differently. Analogously, your contribution to the carbon offset equals the contribution of the allocation which has received the majority of votes. Please note: All group members always earn the same amount and contribute the same amount to the carbon offset. If the allocation of a player is implemented who chose Allocation A, 15 ECUs will be contributed for each group member will be contributed to the offset.

Hidden Information

Your payoff will be determined by the implemented allocation minus the costs related to clicking the button if you decided to click. Your earnings will be multiplied by 0.1 in order to compute your earnings in Euros. Analogously, the same of ECUs invested in carbon offsets will be multiplied by 0.1 in order to compute the contribution in Euros.

The carbon offset has been selected by experts for climate policy at the University of Innsbruck and is certified according to the highest standards on the market. Certificates about the purchase of carbon offsets are available at the Institute of Public Finance at the University of Innsbruck.

At the end of the experiment, you will receive your earnings from part 1 and part 2 privately and in cash. In order to keep the process of payment as easy and time-efficient as possible, we will round your earnings towards the next higher 10 Cents.
As soon as all participants have completed the first part, you will receive new instructions on the second part.

Instructions on Part 2

Market

The second part of the experiment consists of 23 purchase decisions similar to the one you made in part 1. In each round, products differ in terms of their prices and in terms of their contributions to carbon offsets.

Market Full Information

Both the payoffs and the contributions for both products will be displayed on your screens.

Market Hidden Information

For Product A, you always know both the price and the contribution to the carbon offset, whereas you only know the price of Product B. The contributions of Product B can either be 0 or 30 ECUs, yet you do not know which number applies. Both contributions are equally likely. You have the option to reveal the contribution by clicking the button "Contribution = 0 or 30 ECUs?". Clicking the button costs 0.10 ECUs.

Dictator and Voting

The second part of the experiment consists of 23 allocation decisions similar to the one you made in part 1 of the experiment. In each round, new groups of 3 will be formed. You do not know the identity of your group members. After each round, new groups will be formed- Hence, you do not know who you are grouped with nor do you know if you have already interacted with your group members before.

Dictator

In each round, the allocation decision of one randomly selected group member will be implemented. When making the decision, you do not know if you will be the group member whose decision is implemented. This will only be communicated at the end of a round.

Voting 3 (11)

In each round, you need to vote for the implementation of Allocation A or Allocation B. In order to vote for one of the two allocations, you need to click the red button with the name of the allocation. You do not have the option not to vote. The allocation that has received the majority of vote, i.e. at least 2 (6) of 3 (11), will be implemented.

Hidden Information

Again allocations differ in the payoffs and in their contributions to carbon offsets. You know both the payoff and the contribution for Allocation A, while you only the payoff of Allocation B. The contributions of Allocation B can either be 0 or 30 ECUs, yet you do not know which number applies. With the button "Contribution = 0 or 30 ECUs?" you have the option to find out about the actual contribution of Allocation B. Clicking the button costs 0.10 ECUs.

Full Information

Again allocations differ in the payoffs and in their contributions to carbon offsets. Both the payoffs and the contributions for both options will be displayed on your screens.

Only one of the 23 decisions is payoff-relevant. The payoff-relevant round will be determined randomly at the end of the experiment. Again, ECUs will be multiplied by 0.1 to compute your earnings as well as the contribution to the carbon offset in Euros. Your earnings from the experiment consist of your earnings from the first part and your earnings from the payoff-relevant round of part 2. Analogously, both contributions will be added to compute your contribution to the carbon offset.
This experiment will be terminated with a questionnaire. You will be informed about your earnings. Afterwards you will receive your earnings, rounded up to the next 10 Cents, privately and in cash.

A.2. Information on Offsets - On screen

Our consumption decisions are directly and indirectly associated with the emission of greenhouse gases. Greenhouse gases contribute to the global climate change. Among all greenhouse gases the impact of CO_2 on manmade climate change is largest.

There are suppliers which offer each individual the possibility to compensate their CO_2 emissions by making a compensation payment (=offset). The idea is to avoid CO_2 emissions elsewhere with the invested money. The money is invested in climate protection projects which e.g. plant trees or promote the usage of renewable energies.

Within this experiment, you will make allocation decisions in your group (**Market:** purchase decisions) which influence the amount of offsets purchased for this experiment. Hence, your decisions in the experiment will have actual consequences on the global amount of CO_2 emissions.

The offset-project has been selected by experts for climate policy at the University of Innsbruck. It is certified by the highest standards in the market.

For a price of 2 €2 a ton of CO_2 emissions can be offset. The actual amount of CO_2 compensation depends on your choices.

A.3. Supplementary Analyses

A.3.1. Power Analysis

For the power analysis, we consider χ^2-tests that compare two independent proportions in a cluster randomized design. In our design, each subject constitutes a cluster and the size of a cluster refers to the number of relevant decisions taken by each subject. For each treatment, we have 48 (44 in Voting11) participants, i.e. the number of clusters in each treatment is 48 or 44, respectively. Each subject played 24 rounds, of which 12 were characterized by a conflict of interests between the monetary and the green preferences of a subject. In half of these twelve rounds, the difference in payoffs was low, i.e. 5 or 10 ECUs. This yields six observations within each cluster for the comparisons of choices under low payoff differences. With a significance level of 5%, an intraclass correlation of 0.27, an effect size of 0.2 (0.6 vs. 0.4) and 44 clusters per treatment, the estimated statistical power to detect the exploitation of moral wiggle room is 0.916. For the detection of differences in the share of selfish choices between the difference institutional settings, the effect size is slightly smaller. Hence, the power lies slightly below 0.8 with an estimate of 0.797. Note that we have used conservative numbers for the power calculation.

A.3.2. Descriptive Statistics

Table 7: Descriptive Statistics

	count	mean	sd	min	max
Male	376	0.44	0.50	0	1
Age	376	22.4	3.15	18	44
Econ	376	0.40	0.49	0	1
LeftRight	376	4.19	1.78	1	10
Honesty	376	3.36	1.59	1	9.40
ClimateIndividual	376	3.23	0.77	0.67	4.33
ClimateChangeFear	376	4.17	0.64	1	4.67
OffsetUse	376	1.65	0.84	1	4
OffsetNeg	376	3.05	1.18	1	5

Notes: Subjects self-classified as Male, Female, Diverse. Male is a dummy = 1 if the subject explicitly identifies as male. Econ is a dummy = 1 if the subject studies economics or business. LeftRight indicates the self-stated position on the political spectrum from 1 to 10, higher values = more right-wing orientation. Honesty captures self-stated honesty, higher value = more honest. Higher values of the variable ClimateIndividual indicate that the subject agrees with the statement that individual actions matter for climate change mitigation. Higher values of the variable ClimateChangeFear indicate that the subject is afraid of climate change. OffsetUse indicates the subject's experience with offsets (from 1 = never used to 4 = frequently used) and OffsetNeg captures if the subject holds a negative view towards offsets, higher values = more negative view.

A.3.3. Exploiting Moral Wiggle Room in Period 1

To check if behavioral patterns are significantly different in the first period when subjects did not know yet how the experiment would continue, we analyze first round-observations separately (see Table 8 for an overview and Figure 5 for a graphical representation). We find that in the first round, subjects exploit moral wiggle room in all settings but the dictator setting. Hence, only the finding for voting in small groups differs – for this treatment condition we did not find evidence of moral wiggle room exploitation when considering all 24 rounds. In line with our previous findings, the share of selfish choices in immediately observable conflict situations is low when subjects vote in large groups and in the market treatment – both results supporting our findings for the full 24 rounds of the experiment.

Table 8: Share of Selfish Choices in Period 1

Treatment	N	**Full Information** Share of Selfish Choices	**Hidden Information** Share of Selfish Choices	p-value
Market	48	0.438	0.688	0.014
Dictator	48	0.542	0.604	0.536
Vote3	48	0.521	0.604	0.020
Vote11	44	0.341	0.523	0.085

Notes: p-values from χ^2-tests. The results are robust to controlling for multiple hypotheses testing using the Bonferroni-Holm method.

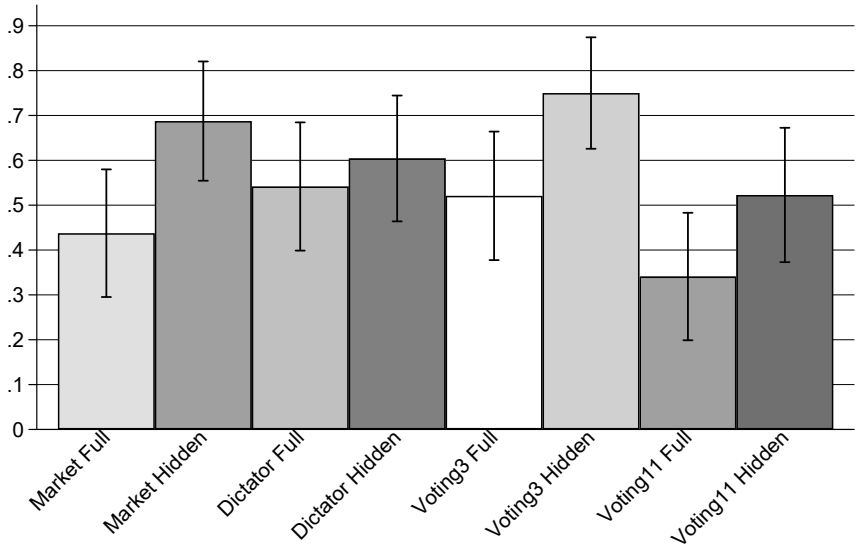


Figure 5: Share of Selfish Choices in Period 1

Table 9: p-values from χ^2-tests: Share of Selfish Choices in Period 1

	Full Information	Hidden Information
M vs. D	0.307	0.393
M vs. V3	0.414	0.496
M vs. V11	0.343	0.106
D vs. V3	0.838	0.127
D vs. V11	0.053	0.431
V3 vs. V11	0.082	0.023

A.3.4. Non-Parametric Test Results

Table 10: p-values from clustered χ^2-tests: Share of Selfish Choices

Full Information	**Low Payoff Differences**	**High Payoff Differences**
M vs. D	0.152	0.568
M vs. V3	0.015	0.653
M vs. V11	0.702	0.613
D vs. V3	0.304	0.950
D vs. V11	0.288	0.311
V3 vs. V11	0.037	0.395
Hidden Information		
M vs. D	0.811	0.649
M vs. V3	0.535	0.663
M vs. V11	0.652	0.205
D vs. V3	0.721	0.970
D vs. V11	0.856	0.495
V3 vs. V11	0.848	0.448

Notes: p-values from clustered χ^2-tests (Donner, 1989) to take within-subject correlation into account.

Table 11: p-values from clustered χ^2-tests: Moral Wiggle Room

Full Information	**Low Payoff Differences**	**High Payoff Differences**
Market	0.001	0.478
Dictator	0.058	0.133
Voting3	0.223	0.183
Voting11	0.001	0.167

Notes: p-values from clustered χ^2-tests (Donner, 1989) to take within-subject correlation into account. The results are robust to controlling for multiple hypotheses testing using the Bonferroni-Holm method.

A.3.5. Supplementary Regressions

Table 12: Selfish choices under full information in comparison to Market treatment

	(1)
	M vs. other treatments
Period	0.017***
	(0.005)
Period2	-0.000**
	(0.000)
HighPD	0.354***
	(0.044)
Dictator	0.140*
	(0.074)
Dictator*HighPD	-0.171***
	(0.059)
Voting3	0.180**
	(0.076)
Voting3*HighPD	-0.203***
	(0.060)
Voting11	0.022
	(0.072)
Voting11*HighPD	-0.032
	(0.060)
Age	0.008
	(0.008)
Male	0.133***
	(0.046)
Econ	0.025
	(0.049)
Constant	0.008
	(0.177)
R^2	0.117
N	2256

Notes: Output from random-effects panel regression. Standard errors (in parentheses) clustered on subject-level. Dependent variable is a dummy = 1 if the selfish option is chosen. Male is a dummy = 1 if the subject identified as male. Econ is a dummy = 1 if the subject studies economics or business. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.3.6. Regressions Including a Larger Set of Control Variables

Table 13: Selfish Choices under Full Information

	(1) M vs. D	(2) M vs. V3	(3) M vs. V11	(4) D vs. V3	(5) D vs. V11	(6) V3 vs. V11
Period	0.002	0.004**	0.010***	0.005**	0.011***	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Dictator	0.142**					
	(0.072)					
HighPD	0.372***	0.365***	0.345***	0.195***	0.176***	0.144***
	(0.046)	(0.045)	(0.045)	(0.039)	(0.039)	(0.039)
Dictator*HighPD	-0.171***					
	(0.059)					
Voting3		0.153**		0.027		
		(0.077)		(0.078)		
Voting3*HighPD		-0.207***		-0.037		
		(0.061)		(0.057)		
Voting11			0.008		-0.103	-0.154**
			(0.068)		(0.073)	(0.073)
Voting11*HighPD			-0.021		0.142**	0.172***
			(0.060)		(0.056)	(0.056)
Age	-0.012	0.022*	-0.004	0.029***	0.006	0.023*
	(0.011)	(0.013)	(0.006)	(0.011)	(0.007)	(0.012)
Male	0.080	0.041	0.055	0.110	0.168**	0.108
	(0.069)	(0.062)	(0.060)	(0.073)	(0.078)	(0.066)
Econ	-0.004	0.042	-0.053	-0.011	-0.134**	-0.051
	(0.072)	(0.064)	(0.057)	(0.073)	(0.067)	(0.062)
LeftRight	0.006	0.016	0.005	0.008	0.004	0.013
	(0.019)	(0.017)	(0.016)	(0.017)	(0.016)	(0.016)
GenHonesty	-0.001	0.035*	0.037**	0.009	0.014	0.048**
	(0.020)	(0.019)	(0.015)	(0.020)	(0.018)	(0.019)
ClimateIndividual	-0.143***	-0.075*	-0.040	-0.097**	-0.075**	-0.035
	(0.034)	(0.043)	(0.040)	(0.045)	(0.038)	(0.042)
ClimateChangeFear	-0.000	0.043	-0.025	0.014	-0.038	-0.038
	(0.042)	(0.058)	(0.044)	(0.044)	(0.039)	(0.046)
OffsetUse	0.009	-0.064*	-0.047	-0.031	-0.007	-0.070*
	(0.036)	(0.036)	(0.031)	(0.044)	(0.041)	(0.040)
OffsetNeg	0.010	0.020	0.038*	-0.033	-0.015	-0.011
	(0.023)	(0.026)	(0.022)	(0.027)	(0.026)	(0.027)
Constant	0.978**	-0.264	0.396	0.117	0.613**	0.067
	(0.381)	(0.456)	(0.243)	(0.416)	(0.282)	(0.403)
R^2	0.148	0.164	0.200	0.141	0.174	0.208
N	1152	1152	1104	1152	1104	1104

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) clustered on subject-level. Dependent variable is a dummy = 1 if the selfish option is chosen. Male is a dummy = 1 if the subject identified as male. Econ is a dummy = 1 if the subject studies economics or business. LeftRight indicates the self-stated position on the political spectrum from 1 to 10, higher values = more right-wing orientation. Honesty captures self-stated honesty, higher value = more honest. Higher values of the variable ClimateIndividual indicate that the subject agrees with the statement that individual actions matter for climate change mitigation. Higher values of the variable ClimateChangeFear indicate that the subject is afraid of climate change. OffsetUse indicates the subject's experience with offsets (from 1 = never used to 4 = frequently used) and OffsetNeg captures if the subject holds a negative view towards offsets, higher values = more negative view. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14: Selfish Choices under Hidden Information

	(1) M vs. D	(2) M vs. V3	(3) M vs. V11	(4) D vs. V3	(5) D vs. V11	(6) V3 vs. V11
Period	0.003	0.002	0.007***	0.003*	0.009***	0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Dictator	-0.057					
	(0.070)					
HighPD	0.139***	0.141***	0.125***	0.194***	0.186***	0.139***
	(0.034)	(0.034)	(0.034)	(0.035)	(0.035)	(0.043)
Dictator*HighPD	0.055					
	(0.049)					
Voting3		-0.041		0.071		
		(0.069)		(0.077)		
Voting3*HighPD		0.009		-0.045		
		(0.055)		(0.056)		
Voting11			-0.004		0.102	0.047
			(0.062)		(0.073)	(0.070)
Voting11*HighPD			0.041		-0.020	0.026
			(0.054)		(0.054)	(0.060)
Age	-0.000	-0.007	-0.004	0.007	0.009	0.002
	(0.008)	(0.008)	(0.008)	(0.011)	(0.010)	(0.013)
Male	0.040	0.159**	0.090	0.122*	0.035	0.114*
	(0.067)	(0.064)	(0.060)	(0.063)	(0.056)	(0.059)
Econ	0.098	0.141**	0.101*	0.019	0.031	0.047
	(0.065)	(0.062)	(0.055)	(0.072)	(0.066)	(0.056)
LeftRight	-0.011	-0.003	-0.009	0.009	0.013	0.011
	(0.015)	(0.014)	(0.015)	(0.015)	(0.015)	(0.013)
GenHonesty	0.026	0.024	0.010	0.008	0.009	-0.004
	(0.016)	(0.020)	(0.017)	(0.020)	(0.015)	(0.018)
ClimateIndividual	-0.051	0.039	-0.013	-0.034	-0.069*	-0.024
	(0.044)	(0.045)	(0.047)	(0.040)	(0.040)	(0.039)
ClimateChangeFear	-0.034	-0.022	0.010	-0.122**	-0.079	-0.040
	(0.049)	(0.047)	(0.040)	(0.053)	(0.052)	(0.055)
OffsetUse	-0.040	-0.045	-0.000	-0.044	-0.014	-0.009
	(0.050)	(0.030)	(0.033)	(0.037)	(0.037)	(0.025)
OffsetNeg	0.015	-0.037*	-0.023	0.029	0.028	-0.007
	(0.030)	(0.021)	(0.024)	(0.030)	(0.033)	(0.024)
Constant	0.836**	0.757**	0.661**	0.842**	0.630*	0.665**
	(0.334)	(0.314)	(0.293)	(0.364)	(0.329)	(0.297)
R^2	0.078	0.092	0.085	0.112	0.127	0.095
N	1152	1152	1104	1152	1104	1104

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) clustered on subject-level. Dependent variable is a dummy = 1 if the selfish option is chosen. Male is a dummy = 1 if the subject identified as male. Econ is a dummy = 1 if the subject studies economics or business. LeftRight indicates the self-stated position on the political spectrum from 1 to 10, higher values = more right-wing orientation. Honesty captures self-stated honesty, higher value = more honest. Higher values of the variable ClimateIndividual indicate that the subject agrees with the statement that individual actions matter for climate change mitigation. Higher values of the variable ClimateChangeFear indicate that the subject is afraid of climate change. OffsetUse indicates the subject's experience with offsets (from 1 = never used to 4 = frequently used) and OffsetNeg captures if the subject holds a negative view towards offsets, higher values = more negative view. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Moral Wiggle Room Exploitation

	(1) ML	(2) DL	(3) V3L	(4) V11L
Period	0.001	0.003	0.005**	0.018***
	(0.002)	(0.002)	(0.002)	(0.002)
HighPD	0.370***	0.197***	0.158***	0.318***
	(0.046)	(0.039)	(0.040)	(0.039)
Hidden	0.266***	0.065	0.092	0.266***
	(0.066)	(0.079)	(0.075)	(0.065)
HighPD*Hidden	-0.226***	-0.004	-0.012	-0.153***
	(0.055)	(0.053)	(0.059)	(0.056)
Age	-0.016*	0.005	0.028*	0.002
	(0.009)	(0.009)	(0.015)	(0.007)
Male	0.045	0.078	0.135**	0.095
	(0.057)	(0.070)	(0.065)	(0.070)
Econ	0.152**	-0.033	0.107*	-0.039
	(0.061)	(0.072)	(0.064)	(0.058)
LeftRight	-0.019	0.014	0.016	0.009
	(0.017)	(0.015)	(0.016)	(0.015)
GenHonesty	0.029*	0.003	0.035*	0.018
	(0.017)	(0.017)	(0.021)	(0.016)
ClimateIndividual	-0.028	-0.134***	0.013	-0.015
	(0.041)	(0.034)	(0.041)	(0.038)
ClimateChangeFear	0.024	-0.046	-0.048	-0.057
	(0.042)	(0.040)	(0.055)	(0.035)
OffsetUse	-0.061*	0.014	-0.066*	-0.012
	(0.034)	(0.051)	(0.034)	(0.030)
OffsetNeg	-0.002	0.011	-0.026	0.006
	(0.022)	(0.030)	(0.024)	(0.026)
Constant	0.722*	0.833**	-0.092	0.296
	(0.375)	(0.325)	(0.448)	(0.221)
R^2	0.145	0.147	0.149	0.214
N	1152	1152	1152	1056

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) clustered on subject-level. Dependent variable is a dummy = 1 if the selfish option is chosen. Male is a dummy = 1 if the subject identified as male. Econ is a dummy = 1 if the subject studies economics or business. LeftRight indicates the self-stated position on the political spectrum from 1 to 10, higher values = more right-wing orientation. Honesty captures self-stated honesty, higher value = more honest. Higher values of the variable ClimateIndividual indicate that the subject agrees with the statement that individual actions matter for climate change mitigation. Higher values of the variable ClimateChangeFear indicate that the subject is afraid of climate change. OffsetUse indicates the subject's experience with offsets (from 1 = never used to 4 = frequently used) and OffsetNeg captures if the subject holds a negative view towards offsets, higher values = more negative view. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16: Revelation Decisions

	(1) M vs. D	(2) M vs. V3	(3) M vs. V11	(4) D vs. V3	(5) D vs. V11	(6) V3 vs. V11
Period	-0.002	-0.000	-0.003*	-0.003*	-0.006***	-0.003**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Dictator	0.014					
	(0.067)					
HighPD	-0.105***	-0.106***	-0.105***	-0.116***	-0.117***	-0.153***
	(0.030)	(0.030)	(0.030)	(0.029)	(0.029)	(0.030)
Dictator*HighPD	-0.011					
	(0.041)					
Voting3		0.014		-0.027		
		(0.069)		(0.073)		
Voting3*HighPD		-0.048		-0.038		
		(0.042)		(0.042)		
Voting11			-0.164***		-0.149**	-0.201***
			(0.059)		(0.074)	(0.065)
Voting11*HighPD			0.059		0.070*	0.107***
			(0.039)		(0.038)	(0.039)
Age	0.006	0.005	0.011	-0.003	0.003	0.003
	(0.008)	(0.010)	(0.009)	(0.012)	(0.011)	(0.014)
Male	-0.038	-0.048	0.004	0.016	0.022	0.059
	(0.067)	(0.065)	(0.072)	(0.069)	(0.068)	(0.063)
Econ	-0.077	-0.082	-0.105*	-0.040	-0.067	-0.070
	(0.067)	(0.069)	(0.057)	(0.075)	(0.066)	(0.058)
LeftRight	0.001	-0.012	-0.007	-0.036***	-0.032**	-0.044***
	(0.015)	(0.014)	(0.016)	(0.013)	(0.016)	(0.012)
GenHonesty	-0.057***	-0.024	-0.009	-0.037*	-0.027	0.012
	(0.017)	(0.021)	(0.017)	(0.021)	(0.018)	(0.017)
ClimateIndividual	0.005	0.009	-0.002	0.015	-0.007	0.035
	(0.045)	(0.049)	(0.058)	(0.041)	(0.048)	(0.044)
ClimateChangeFear	0.018	0.010	0.047	-0.032	0.029	-0.018
	(0.054)	(0.049)	(0.054)	(0.058)	(0.058)	(0.055)
OffsetUse	0.009	0.012	-0.031	0.023	-0.018	-0.011
	(0.053)	(0.036)	(0.034)	(0.042)	(0.040)	(0.025)
OffsetNeg	0.018	0.063**	0.027	-0.008	-0.034	0.003
	(0.033)	(0.026)	(0.030)	(0.032)	(0.033)	(0.026)
Constant	0.331	0.160	0.036	0.850**	0.652	0.473
	(0.374)	(0.368)	(0.334)	(0.430)	(0.402)	(0.342)
R^2	0.071	0.075	0.080	0.078	0.089	0.091
N	2304	2304	2208	2304	2208	2208

Notes: Output from random-effects panel regressions. Standard errors (in parentheses) clustered on subject-level. Dependent variable is a dummy = 1 if information is revealed. Male is a dummy = 1 if the subject identified as male. Econ is a dummy = 1 if the subject studies economics or business. LeftRight indicates the self-stated position on the political spectrum from 1 to 10, higher values = more right-wing orientation. Honesty captures self-stated honesty, higher value = more honest. Higher values of the variable ClimateIndividual indicate that the subject agrees with the statement that individual actions matter for climate change mitigation. Higher values of the variable ClimateChangeFear indicate that the subject is afraid of climate change. OffsetUse indicates the subject's experience with offsets (from 1 = never used to 4 = frequently used) and OffsetNeg captures if the subject holds a negative view towards offsets, higher values = more negative view. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.3.7. Supplementary Graphs

Figure 6: Selfish Choices under Full Information

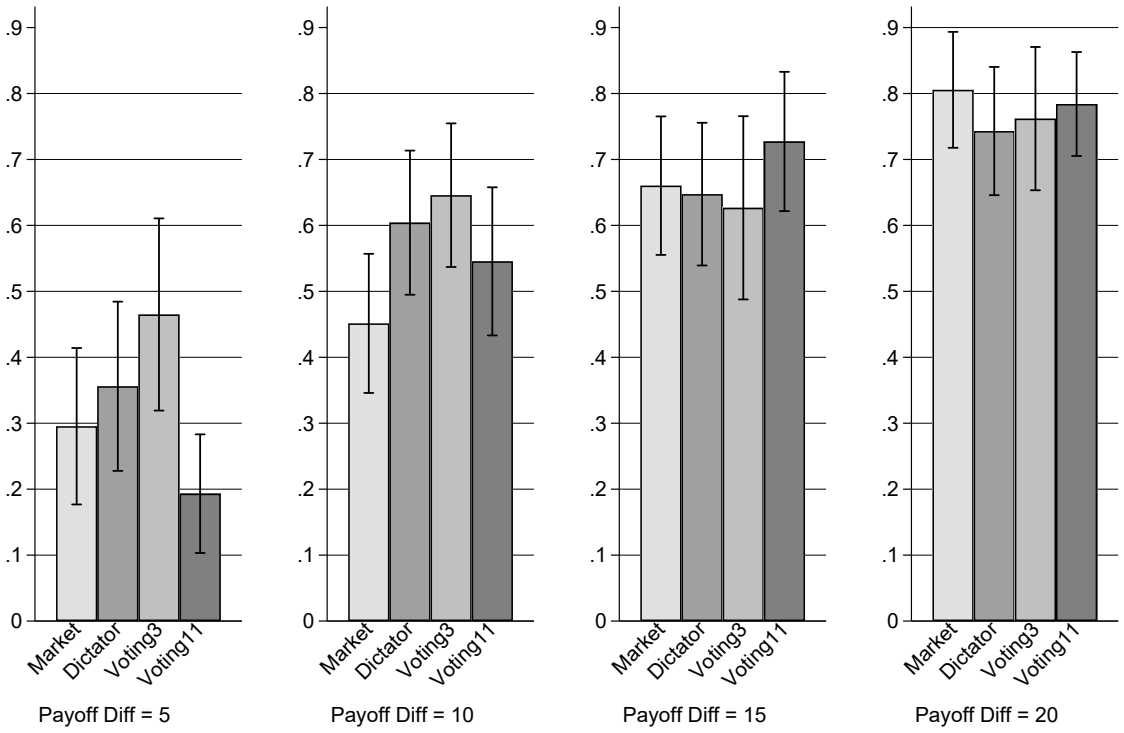


Figure 7: Selfish Choices under Hidden Information

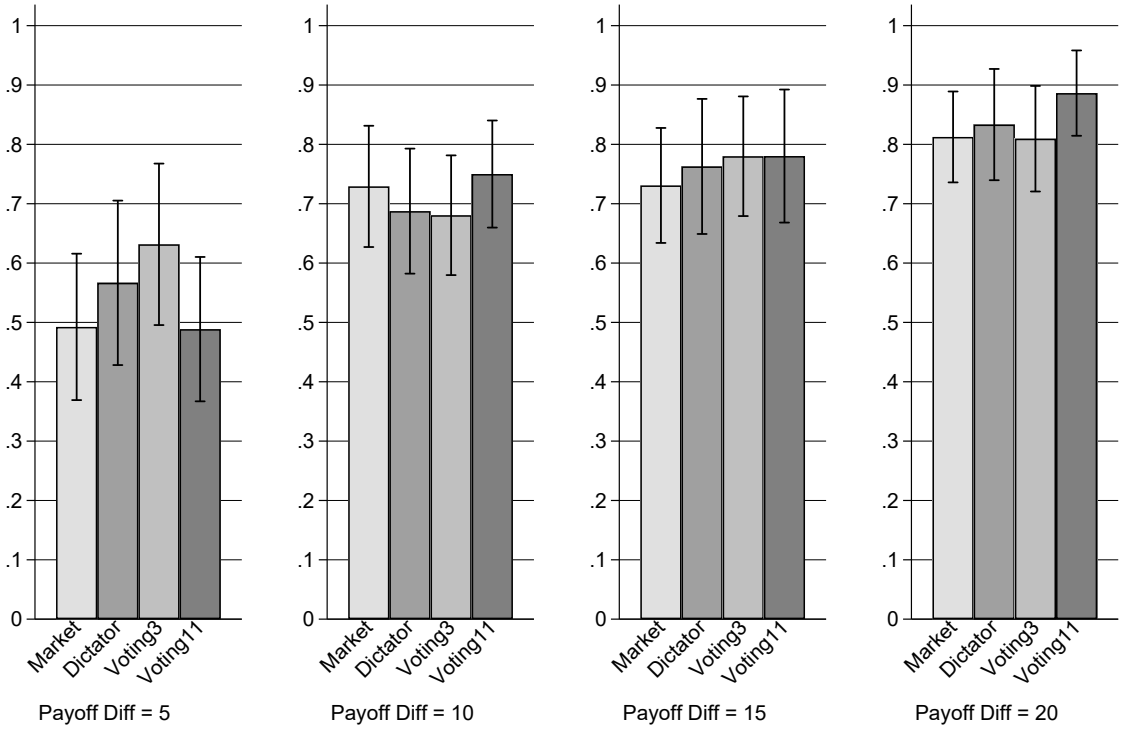
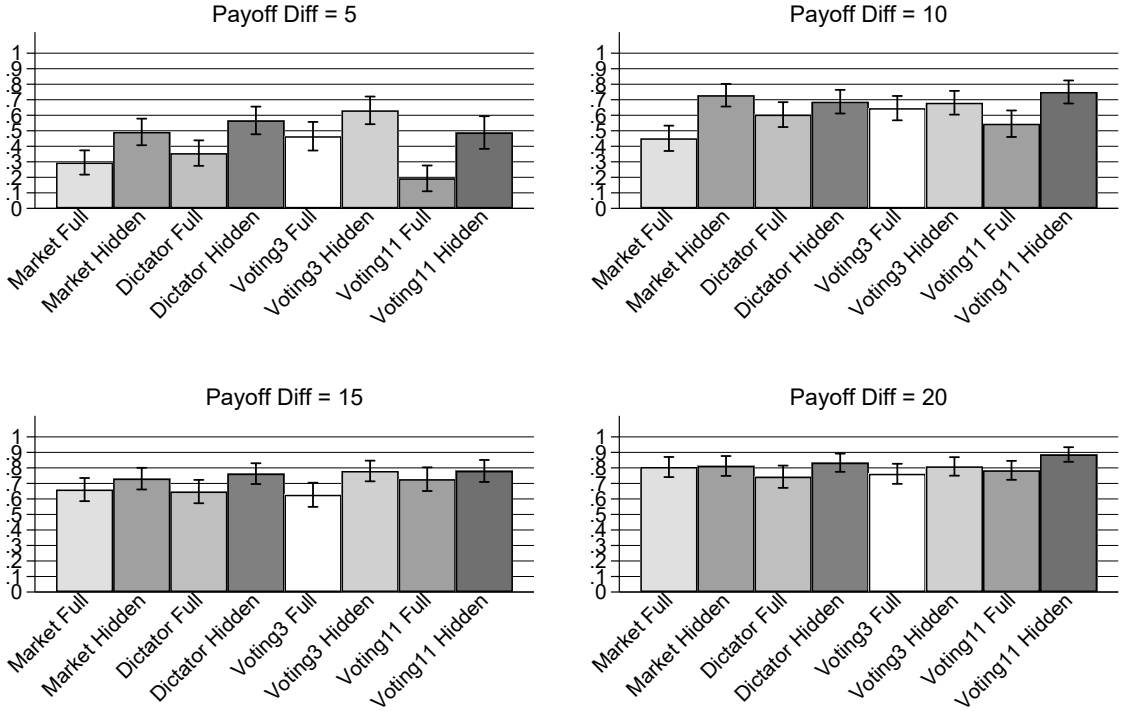


Figure 8: Moral Wiggle Room



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Katharina Momsen, Markus Ohndorf

Expressive Voting vs. Self-Serving Ignorance

Abstract
We experimentally examine the effect of self-serving information avoidance on democratic and individual decisions in the context of climate change mitigation. Subjects need to choose between two allocations which differ in own payoffs and contributions to carbon offsets. In a between-subjects design, we vary the observability of the offset contribution, as well as the institutional decision context: individual consumption, dictatorship, and majority voting in small and large groups. If information is directly observable, we find robust evidence for expressive voting. However, in cases where information is initially unobservable but revealable without cost, there is no significant difference in selfish decisions between institutional decision contexts. We also find robust evidence for the exploitation of moral wiggle room via self-serving information avoidance in our consumption context, as well as with voting in large groups. Our results indicate that information avoidance effectively substitutes expressive ethical voting as an instrument to manage self-image on the part of the voter. This suggests that moral biases might be less likely in elections than previously thought.

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