The Preference Survey Module: A Validated Instrument for Measuring Risk, Time, and Social Preferences

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Abstract

Incentivized choice experiments are a key approach to measuring preferences in economics, but are also costly. Survey measures are a low-cost alternative, but can suffer from additional forms of measurement error due to their hypothetical nature. This paper seeks to leverage the strengths of both approaches by proposing a new survey module on risk aversion, time discounting, trust, altruism, positive and negative reciprocity, in which survey items are selected based on ability to predict choices in corresponding, incentivized experiments. The methodology and results provided in the paper can also potentially provide a model for researchers who have specific requirements and want to design their own modules.

1 Introduction

In economic models, preferences are traits that drive decision making. Certain types of preferences – regarding risk, time, and social interactions, – are central in economic theory because they affect such a broad range of economic decisions. Having measures of these fundamental preferences is valuable because of the opportunity to better explain economic behavior.

Incentivized choice experiments have emerged as a key approach to measuring preferences. Experiments seek to hold constant the decision environment across individuals, so that differences in choices reveal different preferences. The use of real incentives can help address measurement issues that arise with alternative approaches, specifically survey measures, due to their hypothetical nature. For example, the lack of incentives could lead survey measures to suffer from measurement error due to inattention.[1] One limitation of incentivized experiments, however, is they are costly in terms of money and also time. Thus, while a researcher might prefer to conduct incentivized experiments, it may not always be feasible to do so.

This paper seeks to develop survey modules that leverage the strengths of both experimental and survey approaches. We propose a survey module on risk aversion, time discounting, trust, altruism, positive reciprocity, and negative reciprocity, which is parsimonious and low cost to implement, but where the survey items are selected based on ability to predict choices in corresponding, incentivized choice experiments. The paper describes in detail the methodology used for item selection.

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[1] An alternative methodology for measuring preferences is to use life outcomes as a proxy for preferences. While this has the advantage of involving real (typically self-reported) behavior, for potentially large stakes, a disadvantage is that a given life outcome may depend on many personal and environmental factors besides the preference of interest. By contrast, both experiments and survey measures can pose individuals with carefully designed scenarios and choice options, which can isolate a particular preference with a reasonably high degree of precision, and which are held exactly the same across respondents. This can help eliminate a major source of unobserved heterogeneity that affects the inference of preferences from life outcomes.

The main idea is that there are many different wordings and formats one could choose for survey measures. These may differ in their accuracy in predicting choices in experiments, e.g., because of varying degrees of measurement error, or because what they measure is more or less tightly linked to the determinants of experimental choices.[2] Because accuracy of survey measures is difficult to judge a priori, we conduct incentivized choice experiments, and from a large set of candidate survey items, identify those that do best in terms of predicting incentivized choices.

Our survey module is suitable for a wide range of applications and settings. One important class of applications is within firms and organizations. Preference measures are potentially valuable to managers due to the role of preferences in determining how employees behave. For example, economic theory predicts a role of risk preference in determining how employees sort into incentive schemes, and how managers make investment decisions; time preference is relevant for how employees respond to threat of firing in the future and other dynamic incentives; social preferences can shape how employees work in teams. Survey measures of preferences can be easily introduced into the flow of workplace assessments or screenings in the same way as psychometric tools that are already used as part of management practices.[3] Alternative methods to measure preferences, such as incentivized choice experiments, are more costly and difficult to implement in such field settings.[4] Sur-

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[2]In psychology, the strength of the relationship between the survey measure and the construct in the absence of measurement error is known as criterion validity. Criterion validity for a survey measure could be low if, e.g., it asks about a willingness to engage in a behavior that is mainly determined by other traits besides the trait(s) that drive choices in the respective experiment.

[3]Unlike psychometric measures, economic preference measures have an interpretation in the context of economic theory and can be used to generate qualitative or quantitative predictions from economic models.

[4]While experimental and empirical work – in line with economic theory – has highlighted the role of economic preferences in workplace decisions, most work has used incentivized experiments to measure preferences and therefore relied on student or other convenience samples (see, e.g., Dohmen and Falk (2011) on sorting of employees into incentive schemes; Bandiera et al. (2005) and Falk and Kosfeld (2006) for employees' responses to changes in the incentive structure; Falk et al. (2005) for contract enforcement; Cohn et al. (2015) for investment behavior of financial

vey measures are also well suited for applications that involve measuring preferences on a large scale, whether it be across a large population of workers in a multinational organization, or across representative population samples in a cross-country survey.[5] Moreover, it is useful to have access to valid survey measures in applications, ranging from lab experiments to collecting observational data, in which researchers or practitioners require preferences measures, but need to allocate the bulk of their time and financial resources to other aspects of the study. The simplicity of administering survey measures also has advantages in the context of certain types of research settings in which logistics are particularly complicated, for example, field experiments.

For our survey item selection exercise, we used a sample of German university students. For each participant, we elicited each preference using both incentivized experimental measures *and* using a comprehensive set of survey items. We conducted multiple experiments for preferences, to reduce measurement error in the dependent variable, and induced a time lag of one week between experiments and corresponding candidate survey measures to minimize spurious correlations arising from consistency bias. When selecting survey items, we considered all possible linear combinations of survey items intended to measure a particular preference, and identified the combination that best predicted behavior in the respective experimental preference elicitation task. Specifically, we used standard model selection criteria to guide our choice, and, in addition, took into account the risk of overfitting by evaluating out-of-sample predictive power, or alternatively by conducting cross-validation procedures.

We present the module selected through this procedure, which turns out to

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professionals).

[5]Incentivized experiments have been implemented for non-student and also representative samples, see, e.g., Harrison et al. (2002), Andersen et al. (2008), and Fehr et al. (2003).

involve two survey items for the elicitation of each preference. The preference module is symmetric, in that most preferences are measured with one quantitative and one qualitative item. These quantitative questions are typically the single best measure for explaining behavior in the corresponding experiment. The qualitative measures are self-assessments, but are relatively simple and direct, and do contribute additional explanatory power regarding behavior in incentivized choice experiments. Responses to the survey module provide an ordinal measure of preferences. This may be sufficient for many applications, but like with choices in incentivized experiments, it is also possible to transform the predicted choices from the survey measures into cardinal preference parameters using additional assumptions, e.g., about functional form of utility.

We provide information on the properties of the survey module in terms of predictive power for choices in experiments. We show that the module does sacrifice some predictive accuracy compared to more costly types of predictors (e.g., incentivized experiments as predictors), but at the benefit of lower cost. We provide information on test-retest correlations for the survey items, which show that they contain measurement error and thus suffer from some attenuation bias when it comes to predicting choices in experiments. One implication is that predictive power of the survey module can be improved if a researcher has the opportunity to implement repeated measurements of the survey module.

Even though our proposed survey modules were selected using German university students, there are conceptual and empirical reasons to expect that they will still be useful proxies for incentivized experiments in a diverse set of non-student populations. What is needed is that the types of survey questions that best predict choices in experiments by German students be similar to the types of questions that

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best predict such choices in a given other population.[6] In a final section we discuss findings from other studies, which show that the types of survey measures included in our modules do in fact work well for predicting choices in incentivized experiments, and also predicting relevant life economic outcomes, in non-student samples across a wide range of cultures.

While the proposed survey module was preferred in our validation exercise, researchers might have specific needs that cause them to prefer single survey items, or different combinations of survey items. For this reason, in an appendix we also show results on the performance of various individual items, as well as different combinations of items, so that users can select their own module out of this set. It could also be that researchers want to develop new survey modules for themselves, which are optimized to a particular population, or application. In this case, our survey-selection methodology provides a potential model for how researchers might develop such survey modules.

This paper ends by providing one example of how our module can be adapted to serve particular purposes. We explain how we modified our preference module for the implementation in applications where time constraints are particularly severe, such as large-scale, international telephone surveys. We call the resulting model the Global Preferences Survey (GPS) module. The GPS version sacrifices a modest amount of explanatory power, in exchange for being even simpler and more time efficient. This module has subsequently been included in the Gallup World Poll 2012, a survey that was conducted with representative samples using telephone and face-to-face interviews in 76 countries around the globe. The resulting data set is

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[6]One reason why survey measures that work well for one population might be sub-optimal for another is if the survey measures suffer from hypothetical bias, and this bias is different for different populations. For evidence on hypothetical bias see, e.g., Blackburn et al. (1994), List and Gallet (2001), Murphy et al. (2005), and Harrison et al. (2008).

described in Falk et al. (2018).[7]

One benefit of the survey modules proposed in this paper stems from the transparency of the methodology for selecting the measures. For most existing survey measures of economic preferences, the criteria and methodology of how the measures were developed is typically not explicit. Even if there was an *ex ante* optimization process for the measures, this is typically not reported. A few previous survey measures have been validated, in the sense that they were found to be correlated with behavior in experiments, but there was not an optimization process that involved a horserace between different types of survey measures.[8] The transparent methodology helps make the measures less ad hoc from the perspective of potential users, and users will be able to cite the underlying design methodology as a reason for confidence, *ex ante*, in the viability of the measures. Another notable feature of the proposed survey preference modules is that they include proxies for a comprehensive set of preference experiments, measured using a consistent methodology. The modules thus provide a low-cost way to capture a whole bundle of preferences.

The remainder of the paper is organized as follows. Section 2 describes the procedures to elicit preferences in experiments and survey questions. Section 3 explains the methodology for selection of items for the preference module. It presents the preference module measuring each of the six preferences, which performed best in out-of-sample prediction. Section 4 discusses important properties of the preference

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[7]Falk et al. (2018) analyze the GPS data and find that the survey preference measures are related to economic outcomes in a similar way across 76 countries. This provides an additional indication that the survey module is useful across a wide range of cultures.

[8]Fehr et al. (2003), for example, examine six different attitudinal trust questions in terms of their ability to predict behavior in an investment game as introduced by Berg et al. (1995), and find that self-rated trusting behavior and willingness to trust strangers are most strongly associated with behavior in the incentivized experiment. Dohmen et al. (2011) show that self-rated willingness to take risk "in general" is significantly correlated with decisions in an incentivized lottery choice experiment. Vischer et al. (2013) relate answers to a survey question asking respondents to rate their general level of impatience to behavior in an experiment involving inter-temporal trade-offs.

module, such as explanatory power and viability in non-student and non-German samples. Section 5 gives information needed to construct alternative preference modules. It also provides an example of modifying the preference module for the Global Preference Survey, an international telephone survey. Section 6 concludes.

2 Design of the Survey Module

In this section we describe the methodology underlying the design of our survey modules. The design involved implementing incentivized choice experiments, asking the same subjects a battery of survey measures, and then selecting the combinations of survey items that did the best job of predicting choices in the experiments in linear, multivariate regression models. In order to reduce potential measurement error in the dependent variable, we had subjects participate in more than one experiment for a given preference and averaged over the choice-based preference measures. We designed the validation to limit spurious interdependencies in choices and survey responses by never asking survey questions relating to a particular preference experiment in the same session in which the respective preference elicitation experiment was conducted, i.e., surveys and experiments were conducted one week apart. We also restricted the subject pool to subjects who had never participated in an experiment before, to help rule out possible biases in behavior due to experiences gained in previous experiments.

2.1 Procedural Details

409 subjects participated in our study. Subjects were students from the University of Bonn, who were recruited using ORSEE (Greiner 2004, Greiner 2015). They were required to have never taken part in an experiment before. Subjects signed

up for two laboratory sessions. These were scheduled one week apart and run at the Laboratory for Experimental Economics at the University of Bonn in winter 2010/2011. Both sessions consisted of incentivized experiments and non-incentivized surveys, programmed in zTree (Fischbacher 2007). Each session lasted about two hours. Payoffs earned in the incentivized experiments were paid out to subjects at the end of each session.[9] Average earnings over both sessions amounted to 64 Euros (corresponding to approximately 83 US-dollars at the time of the experiment), including a fixed fee of 10 Euros for participating in both sessions.

In order to minimize spillovers between the experimental and the survey measures, e.g., because individuals might try to avoid cognitive dissonance (Festinger, 1957) and strive for giving consistent responses (Falk and Zimmermann, 2016, and Falk and Zimmermann, 2018), we never ran survey and experiment for the same preference during the same session. More specifically, we conducted all experiments relating to social preferences and all surveys relating to time discounting and risk taking in one session. The other session then contained the experiments relating to time discounting and risk taking as well as the surveys on social preferences. In addition, we reversed the order of experimental and survey elicitation of preferences for about half of our subjects to take care of potential order effects, i.e., differences in behavior or responses due to differences in the way preferences were measured first. Table 1 gives an overview of the general study design.

We also conducted a pre-test with 80 students. This pre-test was intended to provide information on the duration and feasibility of the experiment. Experimental

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[9]The payments resulting from the choice experiments on time discounting were delivered to the subjects in cash via regular mail, either at the same day of the session or 12 months later, depending on the payoff relevant choice.

Table 1: Overview of Study Design

	Week 1	**Week 2**
Group 1 (n=198)	Experiments on risk taking and time discounting; Surveys on social preferences	Experiments on social preferences; Surveys on risk taking and time discounting
Group 2 (n=211)	Experiments on social preferences; Surveys on risk taking and time discounting	Experiments on risk taking and time discounting; Surveys on social preferences

measures for negative reciprocity and altruism were not elicited in this pre-test and the constraints on the participants regarding previous participation were not applied. Otherwise, the protocol was identical. In Section 3 we use data from this pre-test for assessing the out-of-sample predictive performance of different candidate modules.

2.2 Choice Experiments

We elicited choices in standard economic choice experiments on risk taking, time discounting, altruism, trust, positive and negative reciprocity, respectively.[10] The experiments that were used in each of the preference dimensions are summarized in Table 2. A detailed description of the experiments is relegated to Appendix A. Monetary stakes were presented to subjects in points, where 100 points equaled 80 Cents. Subjects received feedback about the outcome of the experiments only at the end of the sessions in order to limit the impact of possible income effects on subsequent choices within a session. All experiments involving social or strategic interaction were one-shot to isolate social preferences from repeated game motives. Specifically, we implemented a perfect stranger random matching protocol implying that subjects never interacted more than once with the same person. Subjects

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[10]There are other types of experiments that can be used to measure the respective preferences. See, for example, Andreoni and Sprenger (2012), Toubia et al. (2013) or Chapman et al. (2018) for alternative measures of time and risk preferences. Future research could explore the relative predictive powers of survey items for these alternative measures.

were informed about this at the beginning of each session as well as before each experiment involving social interaction.

For risk taking, time discounting, trust, and positive reciprocity we conducted two experiments each. These experiments had the same structure, but payoffs in the second experiment differed slightly, such that subjects were never asked to make tradeoffs between alternatives that involved the exact same amounts. For instance, the first lottery choice experiment involved 21 choices between a safe payment option, which increased in steps of 50 points from 0 points in the first choice to 1000 points in the last choice, and a lottery that yields 1000 points with probability 0.5 and 0 points otherwise. The row in which a subject switches from preferring the safe payment to the lottery gives bounds on the subject's certainty equivalent for the lottery.[11] We perturbed the safe payments in the second experiment by adding or subtracting a very small (up to five points) amount from each safe payment alternative. The number of points added or subtracted was determined by a randomly drawn integer value between -5 and +5. In the discounting experiments, in which subjects made choices between an immediate payment and a larger payment with a 12-months delay, the switching row gives bounds on the annual internal rate of return that makes the individual willing to wait.[12] We perturbed the delayed payment in the second experiment in the same manner as was done for the risk experiments.

The experimental measure of risk aversion was constructed by averaging over the switching rows in the two lottery choice experiments, which is equivalent in ordinal terms to averaging the implied monetary certainty equivalents.[13] This averaging

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[11]The implied certainty equivalent lies between the safe payment in the switching row and the safe payment in the preceding row.

[12]The implied internal rate of return lies between the rate of return offered in the switching row and the one offered in the proceeding row.

[13]We abstract away from the negligible impact of the perturbed safe payments on the intervals for the certainty equivalent implied by switching row in a given experiment. As is common for this type of elicitation method, some subjects exhibit multiple switching points. We observe that

reduces measurement error compared to using a single experimental measure. Analogously, we constructed our experimental measure of time preference by averaging the switching rows, or equivalently annual internal rates of return, in the discounting experiments.[14]

Trust and positive reciprocity were elicited as first and second mover behavior, respectively, in two versions of the investment game (Berg et al., 1995). Each subject was in the role of the first and the second mover twice, such that overall each subject participated in four investment games. In one version, the amount sent by the first mover was tripled, in the other one it was doubled. For the second mover behavior, we implemented the contingent response method (Selten, 1967). As our measure of trust, we again took the averages from the two decisions made as a first mover. For positive reciprocity, we first averaged all second mover decisions from the contingent response method in the two versions of the investment game. The average of these two amounts constitutes our preference measure of positive reciprocity.

For altruism, we conducted a dictator game with a charitable organization as recipient. The size of the donation constitutes our preference measure of altruism. For negative reciprocity, we conducted two different experiments. A subject's minimum acceptable offer in an ultimatum game (Güth et al., 1982) serves as one assessment of negative reciprocity. We obtain a second assessment from a subject's investment into punishment after unilateral defection of their opponent in a prisoner's dilemma

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22 percent of individuals switch more than once from preferring the lottery to the safe payment in either of the two lottery choices experiments, 9 of them have multiple switch points in both experiments. For subjects who make that kind of inconsistent choices, we calculate the average switching row in each choice table and construct the experimental measure of risk aversion as the mean of the two averages.

[14]We abstract away from the negligible impact of the perturbed early payments on the intervals for the internal rate of return implied by switching row in a given experiment. In the discounting experiments, we observe that around 16 percent of subjects switch more than once in one or the other experiment, and about 3 percent switch multiple times in both experiments. For these subjects we construct the experimental measure by taking the mean of the average switching row in the two experiments involving intertemporal choices.

(Falk et al., 2005). In order to obtain our preference measure of negative reciprocity, we standardized both variables to account for the different response scales and then took the average.

Table 2: Overview: Experimental Measures

Preference	Experiment	Measure
Risk Taking	Two multiple price lists in which subjects choose between a lottery and varying safe options.	Average of rows in both price lists in which subjects switch from preferring the lottery to the safe option.
Time Discounting	Two multiple price lists in which subjects choose between a payment "today" and a larger payment "in 12 months".	Average of rows in two price lists in which subjects switch from preferring the early to the delayed payment.
Trust	First mover behavior in two investment games.	Average amount sent as a first mover in both investment games.
Altruism	First mover behavior in a dictator game with a charitable organization as recipient.	Amount of donation.
Positive Reciprocity	Second mover behavior in two investment games (contingent response method).	Average amount sent back in both investment games.
Negative Reciprocity	Investment into punishment after unilateral defection of the opponent in a prisoner's dilemma (contingent response method) and minimum acceptable offer in an ultimatum game	Average score: amount invested into punishment and minimum acceptable offer in an ultimatum game.

2.3 Candidate Survey Items

For each type of incentivized choice experiment we identified a set of candidate survey items for predicting choices in the experiment. The set for each experimental measure was on average roughly 30 survey items. In total, we included 188 survey items as candidates for selection into our survey module.[15] Candidate items included both quantitative and qualitative questions. Many survey items were taken or adapted from existing surveys, like the German Socio-Economic Panel Study (SOEP) or the National Longitudinal Study of Youth (NLSY), or from previous research (e.g., Weber et al., 2002; Perugini et al., 2003). Additionally, we designed

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[15]Section A in the online appendix gives a list of all survey items in the candidate set.

and included a number of new items. In defining this set of candidate items we only included items that seemed widely applicable, i.e., that were not limited to certain subject pools, e.g., university students, or employed individuals. In particular, we excluded some items found in the literature that refer to betting on horses, gambling, drug consumption, risky sports, taking a hitchhiker, or that require respondents to be employed.[16] Each battery of survey questions for a given preference domain began with a qualitative measure, asking respondents to self-assess their preference "in general" on an 11-point scale.[17] Next, respondents were asked to state how they believe others judge them with respect to that preference and to compare their preference to the preferences of others. Then, respondents had to assess their preference in qualitative terms with respect to different domains, e.g., financial decision-making. Subsequently, subjects were confronted with a battery of additional qualitative and quantitative survey items.

Quantitative items typically included a hypothetical version of the incentivized choice experiment. Since the multiple price lists used in the lottery choice experiment and in the inter-temporal choice experiment involve 30 choices and are rather time-consuming, we also included an alternative elicitation procedure in which subjects only had to make five sequential choices. In the five-question measure of risk preference all subjects first decided between the lottery versus a safe payment that slightly exceeds the expected value of the lottery. In the second decision (and all subsequent decisions) the lottery remained the same. If the participant had chosen the safe option in the first question, the safe option in the subsequent decision was

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[16]Some of these items might work well for particular sub-samples of the population, but will most likely be uninformative and inappropriate for large fractions of more general population samples. Although not included in the set of candidate items for the module selection exercise, some of these items were nevertheless included in the questionnaire for the study, because they formed part of standard scales found in the literature.

[17]An example of this type of question is the general risk question that was validated in Dohmen et al. (2011).

smaller. If the participant had opted for the lottery, the safe payment increased. In the same manner, the safe option was increased or decreased in the third decision when the lottery or the safe payment were preferred in the second decision, respectively. This procedure was repeated five times. Figure E1 in Appendix E.1 illustrates the method underlying this condensed quantitative measure, which is commonly referred to in psychology as the "staircase" method (Cornsweet 1962). For the case of time discounting, an analogous staircase elicitation was used in which the early option was identical in every choice while the delayed option varied. The procedures are described in detail in Appendix E.1 (for risk taking) and Appendix E.2 (for time discounting). Finally, we asked all subjects to rate the reliability of their survey answers.

3 Development of the Preference Module

3.1 Item Selection Procedure

Our aim was to develop a survey preference module that contains the set of items that best predict choices (revealed preferences) in incentivized laboratory experiments.[18] While some previous studies have investigated whether particular survey items are significantly correlated with experimental preference measures, our approach was to identify the combination of survey items from a large menu of alternative items that *best* predicts choices in incentivized experimental preference elicitation tasks. The basic idea is that different survey wordings and formats may be more or less accurate in predicting choices in experiments, e.g., because of vary-

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[18]Another important ex ante criterion for developing the module was cost efficiency, i.e., considering the tradeoff between predictive power and conciseness of the module, but as it turns out, the statistical criteria favored combinations that are quite parsimonious in terms of the number of items.

ing degrees of measurement error leading to more or less attenuation bias, or due to weaker or stronger links between what the survey items measure and the trait(s) that drive choices in the respective experiment. This is difficult to judge based on intuition alone, so we conduct incentivized choice experiments and use the observed choices as the benchmark for item selection.

We use a model selection approach, in the spirit of best subset selection (see, e.g., Hocking et al., 1967; Bertsimas et al., 2016), which consists of testing all possible combinations of our items using information criteria and then selecting the best model in terms of minimizing mean squared prediction error.[19] In order to identify the best linear combination of items for measuring a particular preference, we proceeded in two stages, the first of which was running OLS regressions of each experimental preference measure on all possible combinations of the respective set of candidate survey items as regressors. We used the results of this stage to identify, for each possible number of regressors, the best model in terms of explanatory power, using statistical criteria.[20] For selecting the best model with a given number of regressors it is equivalent to use $\bar{R}^2$, adjusted $\bar{R}^2$, AIC, or BIC as these are identical up to a constant and only differ otherwise in terms of how they penalize adding independent variables.[21] We checked robustness to the linearity assumption

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[19]Alternative model selection procedures like forward selection and backwards selection also use information criteria, but do not consider all possible combinations of items, and to some extent suffer from problems of order dependence. Such approaches are also different from ours because they do not include the additional step of minimizing (out-of-sample) mean squared prediction error, a step that helps address the problem of overfitting.

[20]In the following we will only report results from OLS regressions. However, all results reported here are robust to estimating Ordered Probit models and selecting items using the criteria of maximum log-likelihood or Pseudo-$\bar{R}^2$.

[21]To see this note that $AIC(\hat{\theta}) = (-2)log(L) + 2k$ and $BIC(\hat{\theta}) = -(2)log(L) + k * log(n)$, with k held constant by the number of model parameters and the sample size n held constant for the purpose of comparing models. We also checked robustness to pooling the survey items for all six preferences, and then using $\bar{R}^2$ to identify the best model of a given length out of the entire set of roughly 180 survey items. We find for each preference that the same two-item survey modules are selected, e.g., we do not find a better two-item module for predicting risk that includes one of the candidate time preference survey items.

in our selection procedure. Appendix C.4 provides reassurance that linearity is not misleading because the relationships between survey item responses and choices in the experiments are approximately linear.

In the second step, we compared the models identified in the first step using tests of predictive power. Whenever possible, we considered out-of-sample predictive power, making use of a truly independent sample of 80 subjects for whom we had collected data on the same experimental and survey measures on risk taking, time discounting, positive reciprocity and trust. For each of these we used the candidate survey models to derive predicted outcomes for each individual in the corresponding experiments.[22] For each preference, we then compared the predictions of the alternative models to actual behavior, using the mean squared prediction error (MSPE). Comparing out-of-sample predictive performance helps avoid selecting models that do well in-sample because of overfitting. For all four preference experiments, the two-item model was preferred over modules of other lengths in that it had a lower MSPE.

Since data on altruism and negative reciprocity experiments were lacking in our independent sample, we evaluated the predictive power of the models for these experiments based on a proxy for out-of-sample prediction, provided by cross-validation using the original sample. Cross validation involves using different subsets of the data for the fitting and prediction exercises, respectively. We ran 5 and 10 fold cross-validations with 100 repetitions.[23] In line with our out-of-sample prediction

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[22]Predicted values were calculated as the product of the vector of observed answers to the specific preference module and the vector of estimated coefficients from the regression of the experimental preference measure on the respective preference module in the main sample on which the selection procedure was based.

[23]Each cross validation involved randomly splitting the sample into k partitions (with $k=5$ or $k=10$). We used k-1 of the partitions to fit the model (the training sample) and used the resulting coefficient estimates to predict choices for the remaining kth partition (the prediction or hold out sample). This yielded k measures of prediction error, which we averaged. We repeated this procedure 100 times for a given model and took the overall average.

results for the other four preference experiments, the two-item models are preferred according to the cross-validation.[24] Based on these findings, we selected two-item models as the best predictors for each of the preference experiments.

As a robustness check we explored the results of using an alternative, popular model selection procedure based on the so-called Lasso-technique as introduced by Tibshirani (1996).[25] For each preference lasso selects the same items that were identified using our two-step procedure. It also, however, selects a substantial number of additional items to include, leading to less parsimonious models.[26] Because parsimony is a key goal of our exercise for practical reasons, we prefer the two-item modules selected using our initial procedure, but Section D.3 in the appendix displays the items selected by lasso.

3.2   Survey Items Contained in the Preference Module

Table 3 displays the items that were selected for the preference module with two survey questions for each preference dimension. Appendix B presents the wording of the survey items in the preference module, translated from German to English; the original wording of the items in German is provided in section D in the online appendix.

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[24]This is true for both 5 and 10 fold cross validation. Furthermore, the two item modules would also be selected based on a range of standard information criteria (BIC, AIC, Adjusted R-squared, and LRT). Note that due to pessimistic bias in the cross validation procedure it is standard to not select the model with the minimum prediction error, but rather the most parsimonious model that falls within a narrowly defined confidence interval of the minimum. In our case the minimum was obtained with the three item module for each of the two preferences, but the two item module had only a slightly larger error while being more parsimonious. See Appendix C.5 for error plots from the cross-validation. Often, one standard error above the minimum is allowed, but we chose a tighter bound of one-fifth of a standard deviation to sacrifice only minimal prediction accuracy.

[25]Lasso is particularly useful when there are more potential explanatory variables than observations, since in such cases there is not a unique solution for OLS. Lasso is also particularly useful when it is not feasible to consider all possible item combinations. Neither is the case in our setting.

[26]This is true regardless of whether we run a simple linear LASSO with cross-validation or whether we allow the LASSO penalty parameter to be adaptive.

A notable feature of the preference module is its symmetry: For most preference dimensions, it contains a measure based on a hypothetical choice experiment and a qualitative item.[27] These two types of measures are complementary in the sense that the quantitative measure is akin to the standard revealed preference approach whereas the qualitative item is a subjective self-assessment. Previous research has shown that subjective assessments with abstract framings can lead to strong all-around predictors of life choices across many different life contexts. For example, a general assessment of willingness to take risks can predict a variety of behaviors ranging from holding risky assets, to being self-employed, to smoking (Dohmen et al., 2011). Quantitative survey measures that involve explicit monetary stakes are no exception, as they are somewhat tied to the context of financial decision making by construction; they may be better predictors of financial decisions in life than qualitative measures of a general disposition, but less predictive of choice in other domains. The preference module has a balance between both approaches.[28]

The last column of Table 3 shows how the individual survey items for each preference can be combined into a single measure for predicting choices in the experiments, and also what their relative contributions are for predicting choices. The weights are the coefficients from OLS regressions of a given standardized experimental measure on the standardized responses to the corresponding survey items (more details on the regressions are reported in Appendix C.1). The preference measure is obtained by applying the weights to the survey items and adding up. Due to the standardization the weights directly show the relative contributions of the two items.

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[27]The only exception is positive reciprocity.

[28]One explanation for why the procedure selects a balanced module is that quantitative survey formats may have some form of measurement error in common, and likewise qualitative survey formats may have a common error component, but measurement error may be less correlated across these different types of survey formats. If this is the case, it tends to favor having a balanced module, because this contains more independent information than having two items with the same format.

Specifically, by how much choices in the experiments are shifted in the distribution by a one standard deviation change in responses to an item. One can see, for example, that the quantitative item for risk preference has a roughly equal contribution to the qualitative item. In robustness checks we investigated whether the optimal weights might differ for different demographic groups in our sample. Specifically, we ran regressions of the experimental choices on the survey items, including interaction terms with two observable demographics that have meaningful variation in our student sample: Gender, and an indicator for above median math grades. We do not find significant differences in the weights across these demographics, with the exception of positive reciprocity, for which women are slightly more reciprocal than men in the experiment even after controlling for survey responses.

The combined measure for each preference is an ordinal measure of preferences that ranks individuals in terms of predicted choices in incentivized experiments. For researchers who are interested in mapping survey responses into particular, cardinal representations of preferences (preference parameters), Appendix C.2 provides the necessary information.[29]

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[29]The table in Appendix C.2 shows how responses to survey items map into (non-standardized) monetary values associated with predicted choices in the experiments. For example, in the case of risk, the information allows mapping responses to the risk survey items into predicted certainty equivalents for the lottery that we use in our risk experiments. By making additional assumptions such as EUT and a particular functional form of utility, e.g., CRRA, it is possible to infer bounds for a preference parameter.

Table 3: The Preference Module

Preference		Item Description	Weights
Risk Taking	R2	Multiple price list (31 hypothetical choices between a lottery and a safe option)	0.2758
	R3	Are you a person who is generally willing to take risks, or do you try to avoid taking risks?	0.2034
Time Discounting	D2	List of 25 hypothetical choices between an early payment "today" and a delayed payment "in 12 months"	0.4849
	D4	In comparison to others, are you a person who is generally willing to give up something today in order to benefit from that in the future?	-0.1712
Trust	T24	Hypothetical investment game: first mover behavior	0.6289
	T16	Self-assessment: As long as I am not convinced otherwise, I assume that people have only the best intentions.	0.1331
Altruism	A11	You won 1,000 Euro in a lottery. Considering your current situation, how much would you donate to charity?	0.1845
	A10	How do you assess your willingness to share with others without expecting anything in return when it comes to charity?	0.3210
Positive Reciprocity	PR11	Hypothetical investment game: second mover behavior	0.4857
	PR9	Hypothetical scenario: Which bottle of wine do you give as a thank-you gift?	0.1640
Negative Reciprocity	NR10	Minimum acceptable offer in hypothetical ultimatum game	0.3284
	NR1	Are you a person who is generally willing to punish unfair behavior even if this is costly?	0.1479

The second column displays the item number as listed in section G in the appendix. See section B in the appendix for the exact wordings of the survey questions. The weights shown in the final column are OLS coefficients in a regression of the standardized experimental measure on the standardized module items. The survey measure for each preference is constructed by multiplying the items by the weights and adding. For details see the regression tables in section C in the online appendix. Section D lists the survey items with the highest correlations with the experimental measure for each preference.

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4 Properties of the Preference Module

4.1 Within-sample explanatory power of the preference module

As a first indication of the properties of the survey module we present the within-sample correlations between the observed experimental choices and the choices predicted by the respective survey measure (each measure is constructed from responses to two survey items). The correlations are 0.41 for risk taking, 0.59 for time discounting, 0.67 for trust, 0.42 for altruism, 0.58 for positive reciprocity, and 0.37 for negative reciprocity. Thus, the survey module has substantial, but also imperfect, explanatory power within sample. One reason for finding correlations less than 1 can be measurement error in the survey measures, which leads to attenuation bias for the purposes of predicting choices.

Although 1 is a possible benchmark, this is not the only relevant benchmark, if the goal is deciding whether or not to use the survey module. In this case a relevant benchmark could be the performance of alternative approaches that might be more accurate but entail higher cost. For example, a potentially superior approach for predicting choices in an incentivized experiment, in terms of accuracy, could be choices measured in exactly the same incentivized experiment.

To assess the (within-sample) predictive power provided by incentivized experiments, we use additional experiments with 44 subjects, who participated in preference elicitation experiments twice.[30] The experimental sessions were scheduled one week apart (there was no perturbation of experimental parameters across ses-

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[30]Similar to participants in the main sample, these 44 participants came to the lab twice. Both times, they participated in the set of incentivized experiments for each preference. We did not elicit survey measures for these participants.

sions) so the time difference is similar for our survey predictors. The correlations are 0.59 for risk taking, 0.82 for time discounting, 0.77 for trust, and 0.65, 0.66, 0.67 for altruism, positive reciprocity and negative reciprocity respectively.[31] Thus, it is the case that the survey module sacrifices some predictive power, for each of the preference experiments, relative to using corresponding incentivized experiments as predictors, but the difference is less stark than comparing to a benchmark of 1. At the same time, the survey module has the benefit of being less costly.

Measurement error in the survey module can attenuate explanatory power for incentivize choices in experiments, or other outcome variables, as well as make the module items imperfect statistical controls (for discussions see, e.g., Spearman, 1904; Gillen et al., 2019). To provide a measure for the extent of measurement error in the survey module, and the potential benefits of multiple measurements, we also conducted additional sessions, in which 85 subjects answered the survey module questions in one session, and then answered the survey module again when they returned for a second session, one week later. The correlations between the repeated measures of the survey module (test-retest correlations) are 0.76, 0.86, 0.79, 0.84, 0.71, and 0.85 for risk, time, trust, altruism, positive reciprocity, and negative reciprocity, respectively. The fact that these correlations are less than 1 indicates that the survey items do contain measurement error, which contributes to attenuation bias in predicting choices in experiments.[32] One implication is that having two or more measurements of the survey module for the same individual can be beneficial

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[31] A more detailed regression table is relegated to Section C.3 in the online appendix.

[32] The test-retest correlations for the incentivized experiments, and the survey module, respectively, allow a measurement error correction of the correlations between experiment choices and choices predicted by the survey module (see, e.g., Fan, 2003). Eliminating measurement error in both experiments and the survey module, the correlations would be 0.61 for risk taking, 0.70 for time discounting, 0.86 for trust, 0.57 for altruism, 0.85 for positive reciprocity, and 0.50 for negative reciprocity. This is an average increase in the correlation between observed and predicted choice of about 35 percent.

because of the potential to reduce measurement error. For example, with two measures of the survey module for each individual, one week apart, one can purge the survey module of measurement error using a standard instrumental variables approach involving instrumenting for survey response at time t with survey response at $t-1$ (under the assumption that measurement error in the survey is uncorrelated over time; for a discussion see, e.g., Vansteelandt, 2009). Our test-retest correlations suggest that this can lead to a non-trivial increase in ability to explain incentivized choices in experiments. [33] This approach comes at a cost, however, of needing to implement the survey twice for each person. As the module does have explanatory power even with a single measure, researchers face a trade-off, and can decide for their particular application whether reduced error justifies the logistical cost of multiple measures.

4.2 Out-of-Sample Prediction of the Preference Module

Another relevant property of the module is its (absolute) performance in out-of-sample prediction. For the subjects in our pretest panel we used their survey responses to predict their choices in the four experimental preference elicitation tasks (measuring risk and time preferences, trust and positive reciprocity), and regressed the actual choices on the predicted choices. If our preference module perfectly cap-

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[33]The one-week test-retest correlations for the survey module allow calculating the resulting correlation of (instrumented) predicted choices with observed choices in the experiment (assuming experiment choices are measured without error): 0.47 for risk taking, 0.64 for time discounting, and 0.75 for trust, 0.46 for altruism, 0.69 for positive reciprocity, and 0.40 for negative reciprocity. This is an average increase of 12 percent in the correlation between predicted and observed choices (equivalently, a 25 percent increase in R^2 for a regression of observed choices in a given experiment on responses to the corresponding survey measure). Thus, there is a modest but nontrivial improvement in ability to explain experiment choices, due to reduced measurement error, from implementing the survey module twice for an individual. Researchers may also consider an alternative correction based on having two measures of the survey module for each individual, proposed by Gillen et al. (2019), which is similar but uses each of the two measures to instrument for the other, and takes the average.

tured the preferences of individuals in this sample, one would expect the intercept of the regression of actual on predicted choices to be zero and the coefficient of the predicted value to be exactly 1. In fact, we cannot reject the hypothesis that the constant is zero and the slope coefficient equals one for all preferences, except for trust, at the 10 percent significance level. For trust, we find that the slope coefficient is not statistically different from one if we suppress the constant in the regression. It is also reassuring that the out-of-sample predicted and actual choices are strongly and statistically significantly correlated. The correlations are 0.29 for risk preferences, 0.59 for time discounting, 0.26 for trust, and 0.44 for positive reciprocity.

4.3 Evidence on the viability of individual survey items in non-student and international samples

Although the selection procedure was based on data from a German student population, there are several reasons to expect that the resulting module is useful for other populations.

First, although the distribution of preferences might very well differ across populations, the module will be meaningful as long as the correlation structure is not too different. Note that the top two survey predictors for our student sample were typically superior to other measures by a substantial margin, so it is likely that the two measures would perform well if one were to do a similar validation exercise for other populations. Second, the quantitative survey items in our modules closely resemble experimental measures of preferences, which are largely context-free and have been widely used to elicit preferences in non-student and culturally diverse samples. Third, and most importantly, there are also various pieces of empirical evidence, which show that survey measures similar to, or identical to, the ones used

in our modules are significantly correlated with experimental preference measures in non-student and non-German samples.

Regarding non-student samples, Fehr et al. (2003) used a representative sample of German adults, and documented a significant correlation between subjects' behavior in an incentivized investment game, and survey measures on trust of the type contained in our preference module. Likewise it has been shown that answers to the qualitative survey question to elicit risk attitudes, contained in our preference module, are significantly correlated with incentivized lottery choices in a large representative subject pool of German adults (Dohmen et al., 2011). In fact, they report a correlation coefficient between the survey measure and behavior in the lottery choice experiment in their representative sample that is almost identical to the one in our validation sample consisting of students.[34] It is also notable that the correlation is not significantly different for students versus non-students in their representative sample. Similarly, Ziegelmeyer and Ziegelmeyer (2012) predict risk-taking behavior in an alternative lottery choice experiment (Holt and Laury, 2002) using the same survey item that is part of our module. In addition, the qualitative survey risk measure contained in our preference module has previously been administered in the German Socio-Economic Panel Study, and other large representative surveys in the US, Asia and Australia as well as in other European countries. Various studies have documented that for representative and therefore heterogeneous population samples answers to this question are related to risky behaviors in many contexts of life, for example, occupational choice and self-employment, geographical mobility, ownership of risky assets, as well as smoking (see, e.g., Barasinska et al.,

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[34]The correlations are 0.25 in the representative sample of Dohmen et al. (2011), and 0.24 in our validation sample if we focus on the same survey measure for predicting behavior in a single risk experiment (as shown above, the correlation is even higher for the validation sample if we use choices from both risk aversion experiments).

2012; Bauernschuster et al. 2014; Bonin et al., 2007; Caliendo et al., 2009; Dohmen et al., 2011; Fouarge et al., 2014; Jaeger et al., 2010). These findings illustrate that the types of survey items selected in our preference module provide behaviorally valid preference measures in non-student samples.

Moreover, there is previous supporting evidence that items from our preference survey module are valid across a wide range of cultures. For example, recent empirical work by Vieider et al. (2015) uses the same qualitative measure of risk attitudes that is included in our module and documents that it correlates with incentivized lottery choice experiments conducted in 30 different countries. In addition, Hardeweg et al. (2013) replicate the validation exercise of Dohmen et al. (2011) and confirm the significant relationship between this risk question and incentivized lottery choices for a representative sample of 900 inhabitants of rural Northern Thailand. Ding et al. (2010) corroborate these results for a sample of 121 Beijing University students.

Finally, section 5.2 discusses further evidence on the validity of the items in non-student and non-German samples.

4.4   Potential Limitations

Naturally, some aspects of our design choices in this validation exercise imply potential limitations. For example, despite ample evidence discussed in the preceding section that many of our module items have predictory power in non-German and non-student samples, we fully acknowledge that we cannot rule out that items or item combinations other than the ones selected for our modules might perform even better in non-German or non-student samples. While this goes beyond the scope of the current paper, we think that running our validation exercise using different samples would provide valuable results on the usefulness of different preference

measures, e.g., in other countries or in specific subgroups of populations, such as managers or entrepreneurs.

Similarly, we picked a very specific benchmark by which we measured the usefulness of preference measures: incentivized choice experiments that were largely context-free. Perhaps somewhat unsurprisingly, survey items that best predict choices in these experiments are largely context free themselves, such as hypothetical versions of these choice experiments or questions about one's *general* willingness to take risks. In the light of evidence on the context-dependence of preferences (Tversky and Simonson, 1993; Ellingsen et al., 2012; Barseghyan et al., 2011; Einav et al., 2012), our approach might come with the caveat that more context-specific items might work even better than the more context-free items selected for our preference modules. However, this does not imply that our modules are not valid in more specific contexts. For example, Dohmen et al. (2011) show that the general risk question often outperforms more context-specific risk questions in predicting domain-specific risk taking.

Moreover, even though preferences affect a range of important life outcomes, such as consumption, labor market, or health related choices, it might very well be the case that measures other than our selected survey measures perform better at predicting such choices. After all, these choices are consequences not only of preferences, but also of beliefs, constraints, or institutions. Future work might want to shed light on which survey measures perform best in predicting such life outcomes.

5 Recipes for constructing alternative preference modules

While our proposed survey module is the best module according to the specified criteria, researchers might have other needs that call for developing alternative preference modules. For example, it might be desirable for certain applications to only use qualitative survey items, or to have a survey module that is even briefer than the one we develop.

5.1 Performance of Individual Survey Items and Alternative Two-Item Modules

For researchers who might want to use individual survey items, or alternative survey modules based on our survey items, we provide additional information in the appendix. Tables D1 to D6 give the correlations between individual survey measures and the corresponding preference experiment, focusing on the 10 items with the highest correlations for each preference. Notably, the items selected in our preferred preference module are always included in these sets of best individual performers. Table D7 gives the adjusted $\bar{R}^2$ for alternative two-item survey measures for each preference, focusing on all possible combinations of the set of the 10 best individual measures. Researchers can use these alternative measures if for some reason they prefer the included survey formats, knowing how this performs relative to the benchmark of the best overall measure and a range of alternative measures.

5.2 The Global Preference Survey (GPS) Module

The survey module developed so far offers an easily implementable and lower cost alternative to conducting incentivized experiments, and it is optimal relative to a wide variety of alternative possible survey measures. Nevertheless, there are applications for which this module will not be ideal, as some of the quantitative items either require instructions that are as complex as corresponding experiments (e.g., the hypothetical investment game) or entail a considerable number of decisions (e.g., multiple price lists for eliciting risk and time preferences). Particularly if time constraints are severe or if respondents have limited cognitive capacity, an even simpler and shorter module seems useful, although this might come at some costs in terms of lower explanatory power.

A prime example of an application for which our main module might not be implementable is a large-scale international survey. In 2012, we wanted to collect preference measures for nationally representative samples in 76 countries around the globe through the professional infrastructure of the Gallup World Poll framework.[35] This required us to tailor our initial module version to this specific application in which we faced tight survey time constraints, heterogeneous population samples, and the fact that data collection would be conducted using telephone interviews in the majority of cases. In what follows, we will give an overview over the process of fine-tuning our module to this large-scale cross-cultural study, describe the adjustments we made, and present the resulting GPS module. This can potentially provide a roadmap for researchers with similar goals. A more detailed description is relegated to Section E in the Appendix.

Developing the GPS module involved two main steps. First, in light of the tight

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[35]The World Poll are annual nationally representative surveys conducted in more than 160 countries, see http://www.gallup.com/analytics/213704/world-poll.aspx for more information.

survey time constraints we faced, the heterogeneous population samples, and the implementation method, we discarded the hypothetical versions of our experimental preference elicitation tasks, which are relatively time-consuming, as they involve a large number of choices or require rather complex instructions that do not seem advisable in telephone surveys. We then implemented the selection procedure described in section 3 on the set of remaining survey items. As this restricted set still included (simpler) analogues of the discarded items, this restriction ultimately only led to a minimal reduction in explanatory power (R^2) (see Appendix E). For example, in the case of risk taking and time discounting the "staircase" measures were selected. These measures are very comparable to the more complicated quantitative measures based on the multiple price lists for lottery choices and intertemporal choice respectively, yet their implementation is much more time-efficient, as the "staircase" procedures only require five interdependent choices (lottery vs. safe payments and early vs. delayed payments, respectively).[36] Since these preference measures are highly correlated with the respective multiple price list measure and with the respective experimental preference measure (see section C in the online appendix), the reduction in explanatory power of the streamlined version compared to the original version in terms of R^2 is only 0.02 in the case of risk taking and 0.04 in the case of time discounting.

Second, we tested the resulting preference module, which is based on the modified set of candidate measures, in an in-depth pilot study in 22 countries. In collaboration with Gallup Europe, we surveyed respondents from 10 countries in central Asia (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Uzbekistan), 2 countries in South-East Asia (Bangladesh and Cambodia), 5 countries in Southern and Eastern Europe (Croatia, Hungary, Poland,

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[36]The staircase procedures are presented in detail in Appendix E.1 and Appendix E.2.

Romania, Turkey), 4 countries in the Middle East and North Africa (Algeria, Jordan, Lebanon, and Saudi-Arabia), and 1 country in Eastern Africa (Kenya).[37] In this test phase, in each country 10 to 15 people were interviewed, resulting in more than 220 interviews being conducted overall. In almost all countries, the sample composition was heterogeneous in terms of gender, age, educational background, and area of residence (urban vs. rural). In order to detect potential difficulties in the understanding of module items and differences in the respondents' interpretation, respondents were explicitly asked to give extensive feedback with respect to the appropriateness and understandability of the module. In particular, we asked respondents to rephrase the items in their own words and to state any concerns or difficulties in understanding of the items that they had or that they thought future respondents of their country or culture might have.[38] Likewise, if the meaning of an item was unclear to a respondent, the interviewer would explain it to him or her and then ask the respondent to rephrase it in his or her own words.

Overall, the understanding and implementability of our module was very good. Nevertheless, respondents' feedback induced some additional changes to some items. In terms of wording changes, the use of the term "lottery" in hypothetical risky choices was troubling to some Muslim participants, and some refused to answer the item completely since gambling is taboo (*haram*) in Islam. As a consequence, we dropped the term "lottery" and replaced it with the more neutral but equally accu-

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[37]Gallup Europe ensured that the items of the preference module were translated into the major languages of each target country, using state-of-the-art techniques. The translation process involved three steps. As a first step, a translator suggested an English, Spanish or French version of a German item, depending on the region. A second translator, being proficient in both the target language and in English, French, or Spanish, then translated the item into the target language. Finally, a third translator would review the item in the target language and translate it back into the original language. If differences between the original item and the back-translated item occurred, the process was adjusted and repeated until all translators agreed on a final version.

[38]For example, respondent were explicitly asked to explain a "50-percent chance" in their own words and give their own interpretation of "safe payment".

rate term "random draw". Second, the term "charity" caused confusion in Eastern Europe and Central Asia, so it was replaced with "good cause". Third, some respondents had difficulties answering the question asking about one's willingness to punish unfair behavior without knowing who was treated unfairly. We therefore decided to split the question into two separate items, one item asking for one's willingness to punish unfair behavior towards others, and another asking for one's willingness to punish unfair behavior towards oneself. Fourth, some participants, especially in countries with current or relatively recent phases of volatile and high inflation rates, stated that their answer to questions involving intertemporal tradeoffs would depend on the rate of inflation, or said that they would always take the immediate payment due to uncertainty with respect to future inflation. Therefore, we added the following phrase to each question involving hypothetical choices between immediate and future monetary amounts: "Please assume there is no inflation, i.e., future prices are the same as today's prices." The final version of the GPS module is presented in Table 4. Finally, the survey questions were brought into a format that is consistent with the Gallup World Poll questionnaire style, a well-validated format for eliciting responses in an international sample. For example, the first question of the module, which happened to be the qualitative survey question on risk taking, was commenced by the request "Please tell me". The complete module version including exact wordings is relegated to Section F in the appendix.

For the purpose of implementing the module in the Gallup World Poll, all items involving hypothetical monetary amounts we adjusted the stake sizes for each country in terms of their real value such that they represent the same share of a country's median income in local currency as the share of the amount in Euro of the German median income, where our initial validation study had been conducted. Monetary

amounts used in the validation study with the German sample were rounded numbers to facilitate easy calculations (e.g., the expected return of a lottery with equal chances of winning and losing) and to allow for easy comparisons (e.g., 100 Euro today versus 107.50 in 12 months). To proceed in a similar way in all countries, monetary amounts were always adjusted to the next "round and easy" number after adjusting the amounts in terms of their real values.[39]

A comprehensive analysis of the resulting GPS data on economic preferences from nationally representative samples in 76 countries is presented in Falk et al. (2018). While they document pronounced heterogeneity in preferences both across and within countries, they also show that within countries preferences are systematically related to outcomes in ways which economic theory would predict, and these relationships are similar for almost all countries. For example, patience as measured by the two item modules is positively correlated with savings and education in more than 90% of the countries. Likewise, risk aversion is negatively associated with being self-employed and with smoking intensity, and there is a positive relationship between altruism and different giving behaviors in the vast majority of countries. This provides a further important and independent check of the validity of our measures and their applicability across cultures.

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[39]While this necessarily resulted in some (minor) variations in the real stake size between countries, it minimized cross-country differences in the understanding and complexity of the quantitative items due to difficulties in assessing the involved monetary amounts.

Table 4: The GPS Module

Preference	Item Description	Weights
Risk	1. *Staircase measure (five interdependent choices between a lottery and a safe option)*	0.2159
Taking	2. Please tell me, in general, how willing or unwilling you are to take risks.	0.2406
Time	1. *Staircase measure (five interdependent choices between an early and a delayed amount of money)*	0.4417
Discounting	2. How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future?	0.1791
Trust	1. I assume that people have only the best intentions.	0.2656
Altruism	1. *Hypothetical donation.*	0.1845
	2. How willing are you to give to good causes without expecting anything in return?	0.3210
Positive	1. *Hypothetical choice: size of a "thank-you"-gift.*	0.2876
Reciprocity	2. When someone does me a favor I am willing to return it.	0.2705
Negative	1. If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so.	0.0884
Reciprocity	2. How willing are you to punish someone who treats **you** unfairly, even if there may be costs for you?	0.0741
	3. How willing are you to punish someone who treats **others** unfairly, even if there may be costs for you?	0.0741

The second column displays the items as they were adapted to serve the purpose of the GPS study. Appendix section E describes how the wordings etc. were adjusted. The weights shown in the last column are coefficients resulting from OLS regressions using the items with the original wording from the validation sample. The survey measure for each preference can be constructed by multiplying the items by the weights and adding.

6   Conclusion

This paper presents survey modules designed to proxy for incentivized measures of economic preferences from experiments – risk aversion, patience, trust, altruism, positive and negative reciprocity. The guiding methodology for developing the modules is identifying survey items that can predict well the choices in incentivized experiments. Responses to the resulting survey measures provide predictions about choices in such settings and thus reveal preferences, in an ordinal sense, and in a cardinal sense under additional assumptions about, e.g., the functional form of utility. The paper offers two versions of the module. One provides the maximum explanatory power, subject to having a parsimonious number of survey items (two items) per preference. This module is particularly well-suited for eliciting preferences in studies for which time constraints are not too severe, such as lab experiments and many field experiments. This version of the module is also likely to work well for surveys that use detailed questionnaires, or that are based on written or computer-assisted personalized interviews (CAPI) that can implement more complex types of survey items. The second version of the module, the GPS module, was tailored to the requirements and particular characteristics of a multinational survey with nationally representative population samples: tight time constraints and respondents that are diverse in terms of education, socioeconomic status, and culture. It is streamlined in that it prioritizes time efficiency and simplicity at the expense of a modest reduction in explanatory power.

Both versions of the preference module share several desirable features. First, the module items are experimentally validated. The ability of the items to explain behavior in incentivized choice experiments helps ensure that they are meaningful for predicting choices under real incentives, mitigating one of the major concerns

about hypothetical questions. The selected items are not just significant predictors of behavior, but are jointly the best predictors out of a large set of alternative measures. The validation is based on a consistent research design across preferences, and applies state-of-the-art experimental techniques and transparent, quantitative criteria for module selection. Second, the modules consist of a balanced mix of qualitative self-assessments and questions involving quantitative hypothetical trade-offs. This gives the module an attractive balance between different approaches to assessing preferences. Third, the module has a wide range of possible applications. The two versions can be implemented in various survey modes, including modes with tight time constraints. Fourth, by providing an attractive and low cost approach to measuring preferences the modules have the potential for widespread adoption, with potentially significant positive externalities in terms of easier comparison of results across studies.

Beyond the specific survey modules provided in the paper, the paper includes information that researchers can use to design their own preference modules. This includes findings about the explanatory power of a wide range of different survey items, as well as alternative combinations of the items. While lacking some of the predictive power of the modules designed in our procedure, these individual questions or alternative modules may suit the purposes of researchers depending on the circumstances they face. The paper also provides a recipe for validating survey modules as proxies for incentivized experiments. This can be used by researchers to develop new types of preference modules.

Directions for future research include developing survey modules that are optimized for particular populations or cultures, or developing survey modules for other important aspects of preferences, e.g., present-bias, or loss aversion, or ambiguity

aversion. By varying the context embedded in experiments, it may be possible to develop survey modules optimized to particular contexts, in line with research on the domain specificity of preferences (see, eg., Chapman, 1996; Weber et al., 2002). Survey modules on economic preferences might also be used to study the related notion of constructed preferences (Slovic, 1995; for a survey see Warren et al., 2011).

References

ANDERSEN, S., G. HARRISON, M. LAU, AND E. RUTSTRÖM (2008): "Eliciting Risk and Time Preferences," *Econometrica*, 76(3), 583–618.

ANDREONI, J., AND C. SPRENGER (2012): "Estimating Time Preferences from Convex Budgets," *American Economic Review*, 102(7), 3333–56.

BANDIERA, O., I. BARANKAY, AND I. RASUL (2005): "Social Preferences and the Response to Incentives: Evidence from Personnel Data," *Quarterly Journal of Economics*, 120(3), 917–962.

BARASINSKA, N., D. SCHÄFER, AND A. STEPHAN (2012): "Individual Risk Attitudes and the Composition of Financial Portfolios: Evidence from German Household Portfolios," *The Quarterly Review of Economics and Finance*, 52(1), 1–14.

BARSEGHYAN, L., J. PRINCE, AND J. C. TEITELBAUM (2011): "Are Risk Preferences Stable Across Contexts? Evidence from Insurance Data," *American Economic Review*, 101(2), 591–631.

BAUERNSCHUSTER, S., O. FALCK, S. HEBLICH, J. SUEDEKUM, AND A. LAMELI (2014): "Why are Educated and Risk-Loving Persons More Mobile Across Regions?," *Journal of Economic Behavior & Organization*, 98, 56–69.

BERG, J., J. DICKHAUT, AND K. MCCABE (1995): "Trust, Reciprocity, and Social History," *Games and Economic Behavior*, 10(1), 122–142.

BERTSIMAS, D., A. KING, R. MAZUMDER, ET AL. (2016): "Best subset selection via a modern optimization lens," *Annals of statistics*, 44(2), 813–852.

BLACKBURN, M., G. W. HARRISON, AND E. E. RUTSTRÖM (1994): "Statistical Bias Functions and Informative Hypothetical Surveys," *American Journal of Agricultural Economics*, 76(5), 1084–1088.

BONIN, H., T. DOHMEN, A. FALK, D. HUFFMAN, AND U. SUNDE (2007): "Cross-sectional Earnings Risk and Occupational Sorting: The Role of Risk Attitudes," *Labour Economics*, 14(6), 926–937.

CALIENDO, M., F. M. FOSSEN, AND A. S. KRITIKOS (2009): "Risk Attitudes of Nascent Entrepreneurs: New Evidence from an Experimentally Validated Survey," *Small Business Economics*, 32(2), 153–167.

CHAPMAN, G. B. (1996): "Temporal Discounting and Utility for Health and Money," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 22(3), 771.

CHAPMAN, J., E. SNOWBERG, S. WANG, AND C. CAMERER (2018): "Loss Attitudes in the US Population: Evidence from Dynamically Optimized Sequential Experimentation (DOSE)," Discussion paper, National Bureau of Economic Research.

COHN, A., J. ENGELMANN, E. FEHR, AND M. A. MARECHAL (2015): "Evidence for Countercyclical Risk Aversion: An Experiment with Financial Professionals," *American Economic Review*, 105(2), 860–885.

CORNSWEET, T. N. (1962): "The Staircase-Method in Psychophysics," *American Journal of Psychology*, 75(3), 485–491.

DING, X., J. HARTOG, AND Y. SUN (2010): "Can We Measure Risk Attitudes in a Survey?," IZA Discussion Paper No. 4807.

DOHMEN, T., AND A. FALK (2011): "Performance Pay and Multidimensional Sorting: Productivity, Preferences, and Gender," *American Economic Review*, 101(2), 556–590.

DOHMEN, T., A. FALK, D. HUFFMAN, AND U. SUNDE (2010): "Are Risk Aversion and Impatience Related to Cognitive Ability," *American Economic Review*, 100(3), 1238–1260.

DOHMEN, T., A. FALK, D. HUFFMAN, U. SUNDE, J. SCHUPP, AND G. WAGNER (2011): "Individual Risk Attitudes: Measurement, Determinants, and Behavioral Consequences," *Journal of the European Economic Association*, 9(3), 522–550.

EINAV, L., A. FINKELSTEIN, I. PASCU, AND M. R. CULLEN (2012): "How General Are Risk Preferences? Choices Under Uncertainty in Different Domains," *American Economic Review*, 102(6), 2606–2638.

ELLINGSEN, T., M. JOHANNESSON, J. MOLLERSTROM, AND S. MUNKHAMMAR (2012): "Social framing effects: Preferences or beliefs?," *Games and Economic Behavior*, 76(1), 117–130.

FALK, A., A. BECKER, T. DOHMEN, B. ENKE, D. HUFFMAN, AND U. SUNDE (2018): "Global Evidence on Economic Preferences," *Quarterly Journal of Economics*, 133(4), 313–332.

FALK, A., E. FEHR, AND U. FISCHBACHER (2005): "Driving Forces Behind Informal Sanctions," *Econometrica*, 73(6), 2017–2030.

FALK, A., AND M. KOSFELD (2006): "The Hidden Costs of Control," *American Economic Review*, 96(5), 1611–1630.

FALK, A., AND F. ZIMMERMANN (2016): "Consistency as a Signal of Skills," *Management Science*, 63(7), 2197–2210.

———— (2018): "Information Processing and Commitment," *The Economic Journal*, 613(1), 1983–2002.

FAN, X. (2003): "Two approaches for correcting correlation attenuation caused by measurement error: Implications for research practice," *Educational and Psychological Measurement*, 63(6), 915–930.

FEHR, E., U. FISCHBACHER, B. ROSENBLADT, J. SCHUPP, AND G. WAGNER (2002): "A Nation-Wide Laboratory: Examining Trust and Trustworthiness by Integrating Behavioral Experiments into Representative Surveys," *Schmollers Jahrbuch*, 122(4), 519–542.

FEHR, E., AND S. GÄCHTER (2000): "Cooperation and Punishment in Public Goods Experiments," *American Economic Review*, 90(4), 980–994.

FESTINGER, L. (1957): *A Theory of Cognitive Dissonance*. Stanford: Stanford University Press.

FISCHBACHER, U. (2007): "zTree: Zurich Toolbox for Ready-made Economic Experiments," *Experimental Economics*, 10, 171–178.

FOUARGE, D., B. KRIECHEL, AND T. DOHMEN (2014): "Occupational Sorting of School Graduates: The Role of Economic Preferences," *Journal of Economic Behavior & Organization*, 106, 335–351.

GILLEN, B., E. SNOWBERG, AND L. YARIV (2019): "Experimenting with measurement error: Techniques with applications to the caltech cohort study," *Journal of Political Economy*, 127(4), 1826–1863.

GREINER, B. (2004): "An Online Recruitment System for Economic Experiments," in *Forschung und wissenschaftliches Rechnen*, ed. by K. Kremer, and V. Macho. Gesellschaft für Wissenschaftliche Datenverarbeitung, Göttingen.

——— (2015): "Subject pool recruitment procedures: organizing experiments with ORSEE," *Journal of the Economic Science Association*, 1(1), 114–125.

GÜTH, W., R. SCHMITTBERGER, AND B. SCHWARZE (1982): "An Experimental Analysis of Ultimatum Bargaining," *Journal of Economic Behavior & Organization*, 3(4), 367–388.

HARDEWEG, B., L. MENKHOFF, AND H. WAIBEL (2013): "Experimentally-Validated Survey Evidence on Individual Risk Attitudes in Rural Thailand," *Economic Development and Cultural Change*, 61(4), 859–888.

HARRISON, G., M. LAU, AND M. WILLIAMS (2002): "Estimating Individual Discount Rates for Denmark: A Field Experiment," *American Economic Review*, 92(5), 1606–1617.

HARRISON, G. W., AND E. RUTSTRÖM (2008): "Experimental Evidence on the Existence of Hypothetical Bias in Value Elicitation Methods," *Handbook of Experimental Economics Results*, 1, 752–767.

HOCKING, R. R., AND R. LESLIE (1967): "Selection of the best subset in regression analysis," *Technometrics*, 9(4), 531–540.

HOLT, C. A., AND S. K. LAURY (2002): "Risk Aversion and Incentive Effects," *American Economic Review*, 92(5), 1644–1655.

JAEGER, D. A., T. DOHMEN, A. FALK, D. HUFFMAN, U. SUNDE, AND H. BONIN (2010): "Direct Evidence on Risk Attitudes and Migration," *The Review of Economics and Statistics*, 92(3), 684–689.

LIST, J. A., AND C. A. GALLET (2001): "What Experimental Protocol Influences Disparities Between Actual and Hypothetical Stated Values?," *Environmental and Resource Economics*, 20(3), 241–254.

MURPHY, J. J., P. G. ALLEN, T. H. STEVENS, AND D. WEATHERHEAD (2005): "A Meta-Analysis of Hypothetical Bias in Stated Preference Valuation," *Environmental and Resource Economics*, 30(3), 313–325.

PERUGINI, M., M. GALLUCCI, F. PRESAGHI, AND A. ERCOLANI (2003): "The Personal Norm of Reciprocity," *European Journal of Personality*, 17(4), 251–283.

SELTEN, R. (1967): "Die Strategiemethode zur Erforschung des eingeschränkt rationalen Verhaltens im Rahmen eines Oligopolexperimentes," in *Beiträge zur experimentellen Wirtschaftsforschung*, ed. by H. Sauermann. J.C.B. Mohr (Paul Siebeck), Tübingen.

SLOVIC, P. (1995): "The Construction of Preference," *American Psychologist*, 50(5), 364.

SPEARMAN, C. (1904): "The Proof and Measurement of Association between Two Things," *The American Journal of Psychology*, 15(1), 72–101.

TIBSHIRANI, R. (1996): "Regression Shrinkage and Selection via the Lasso," *Journal of the Royal Statistical Society. Series B (Methodological)*, 58(1), 267–288.

TOUBIA, O., E. JOHNSON, T. EVGENIOU, AND P. DELQUIÉ (2013): "Dynamic Experiments for Estimating Preferences: An Adaptive Method of Eliciting Time and Risk Parameters," *Management Science*, 59(3), 613–640.

TVERSKY, A., AND I. SIMONSON (1993): "Context-dependent Preferences," *Management Science*, 39(10), 1179–1297.

VANSTEELANDT, S., M. BABANEZHAD, AND E. GOETGHEBEUR (2009): "Correcting Instrumental Variables Estimators for Systematic Measurement Error," *Statistica Sinica*, 19, 1223.

VIEIDER, F. M., M. LEFEBRE, R. BOUCHOUICHA, T. CHMURA, R. HAKIMOV, M. KRAWCZYK, AND P. MARTINSSON (2015): "Common Components of Risk and Uncertainty Attitudes across Contexts and Domains: Evidence from 30 Countries," *Journal of the European Economic Association*, 13(1), 421–452.

VISCHER, T., T. DOHMEN, A. FALK, D. HUFFMAN, J. SCHUPP, U. SUNDE, AND G. WAGNER (2013): "Validating an Ultra-Short Survey Measure of Patience," *Economics Letters*, 120(2), 142–145.

WARREN, C., A. P. MCGRAW, AND L. VAN BOVEN (2011): "Values and Preferences: Defining Preference Construction," *Wiley Interdisciplinary Reviews: Cognitive Science*, 2(2), 193–205.

WEBER, E., A.-R. BLAIS, AND N. BETZ (2002a): "A Domain-Specific Risk Attitude Scale: Measuring Risk Perceptions and Risk Behaviors," *Journal of Behavioral Decision Making*, 15(4), 263–290.

WEBER, E. U., A.-R. BLAIS, AND N. E. BETZ (2002b): "A Domain-Specific Risk-Attitude Scale: Measuring Risk Perceptions and Risk Behaviors," *Journal of Behavioral Decision Making*, 15(4), 263–290.

ZIEGELMEYER, F., AND M. ZIEGELMEYER (2012): "Parenting is a Risky Business: Parental Risk Attitudes in Small Stakes Decisions on Their Child's Behalf," Unpublished Manuscript.

A   Experiments

Risk Taking   We used a multiple price list format to elicit how subjects trade off risky payments and sure payments. Subjects made choices in two tables. In each of the 21 rows of a given table they had to choose between a safe payment and a lottery that yielded 1000 points with probability 0.5 and 0 points otherwise. The lottery was always the same in all rows of both price lists, while the safe payment varied. We call these tables "price lists" as is commonly done in the literature. In one price list, we increased the safe payment in steps of 50 points from 0 points in the first choice to 1000 points in the last choice. In the other price lists we perturbed these safe payments by adding or subtracting up to five points to each safe payment alternative. The number of points added or subtracted was determined by a randomly drawn integer value between -5 and +5. These integer values were randomly drawn once and for all before the experiment was programmed. As a result, all subjects faced the same lists of choices. After subjects had made their choices, one of the choices was randomly selected for payment. Subjects were informed about this procedure in advance. The row in which a subject switched from preferring the lottery to preferring the safe payment informs us about the subjects' risk preferences. Earlier switching points indicate a lower certainty equivalent than later switching points.

Time Discounting   In order to obtain a measure of the subjects' willingness to trade off monetary payoffs at two different points in time we adapted a the design from Dohmen et al. (2010), and asked subjects to make choices in two price lists. In both price lists, subjects had to trade off a payment of 400 points "today" and a higher payment that would be received 12 months in the future. In one price list, we increased the delayed amount such that the implied annual return from waiting

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would rise in steps of 2.5 percentage points from 0 percent in the first row to 60 percent in the 25th row, assuming semiannual compounding. In the second price list we perturbed the actual delayed payments by adding or subtracting an amount of up to 0.6 points. Again, one choice made in the two price lists was randomly selected by the computer for payment. Subjects were informed about this procedure in advance.

We also notified subjects ex ante about the payment mode. In particular, they were told that any payment resulting from this experiment would be delivered to them via regular mail. If they chose the payment "today" the respective amount would be sent on the same day. If they chose the payment "in 12 months", it would be sent to them exactly 12 months after the experiment. By keeping the payoff mode identical over all time horizons we can rule out concerns about differential credibility of payments dependent on timing, or simply a taste for a certain payoff mode, as drivers of decision making. These features were made very salient to subjects: To enhance credibility an envelope was placed in each cubicle and subjects had to write on the envelope the address to which they wanted the payment delivered. In order to allow us to identify the relevant payment they also had to note their identification number on the envelope. No participant expressed any concern with respect to this procedure.

The row in which a subject switched from preferring the earlier payment to the larger delayed payment (or, equivalently, the implied annual rate of return in the switching row) provides a measure of impatience.

Trust   We conducted two versions of the Investment Game as introduced by Berg et al. (1995). We refer to this as the Trust Game. In one version of this game the amount sent by the first to the second mover was doubled by the experimenter, in the second version the amount was tripled. In every version of this experiment

both subjects were endowed with 500 points. The choice set of the first mover was restricted to amounts in $\{0, 50, 100, ..., 500\}$, because we applied the contingent response method for the second mover. Each subject acted in the role of the first and second mover in each version, such that overall each subject took part in four Investment Games. All outcomes of the four decisions of the Investment Games were payoff relevant. The average amount sent as a first mover in the two versions serves as our measure of the subjects' willingness to trust strangers.

Altruism   Subjects were endowed with 300 points and had to decide how many of these points to assign to a charitable organization. We gave them a list of well-established and well-known charitable organizations with various purposes but they could also name a different charitable organization to which they wanted the money to be donated. The list of charitable organizations included: Brot für die Welt, Kindernothilfe, German Red Cross, Welthungerhilfe, Bund für Umwelt und Naturschutz Deutschland, Greenpeace, Terre des Hommes, and Aktion Mensch. At the end of the laboratory session we gave the subjects an address of a website on which they could look up all donations made to the charitable organizations. Subjects were informed again about the possibility to check their donation after all sessions had been conducted and the money had been transferred to the charitable organizations. This was done in order to ensure credibility and transparency of the procedure. The amount an individual transferred to charity serves as a measure of their altruistic inclination.

Positive Reciprocity   We elicited positive reciprocity from second mover behavior in the Trust Games described above. The use of the contingent response method for second mover behavior allowed us to measure how much a subject wanted to

send back for each possible amount sent to them by the first mover. The payoff relevant choice was the one corresponding to the actual choice made by the first mover. Average second mover behavior in the Investment Games then constitutes our behavioral measure of the individual's willingness to reciprocate positively. Subjects were informed about their opponents' decisions and the resulting payoffs at the end of the laboratory session.

Negative Reciprocity We conducted two different types of experimental game in order to elicit subjects' willingness to reciprocate negatively. First, subjects took part in two Ultimatum Games as introduced by Güth et al., 1982. Subjects were randomly assigned the role of the proposer in one game and the role of the responder in the other game. Proposers had to decide how many of 500 points they wanted to offer to the responder. Responders, in turn, had to indicate their minimum acceptable offer and this was taken as a first measure of the individuals' level of negatively reciprocal inclination. A higher minimum acceptable offer increases the rejection probability, and is hence a measure of the higher willingness to forego a monetary payoff in order to reduce the payoff of the proposer.

We also conducted a Prisoner's Dilemma with a subsequent punishment stage (see e.g., Falk et al., 2005 or Fehr and Gächter, 2000). The Prisoner's Dilemma was framed as a project in which both players could decide to participate or not. If both players decided to participate they both received 480 points. If both players decided not to participate, both received 300 points. If one player decided not to participate while the other decided to do so, the former received 540 points while the latter received 240 points. Figure A1 illustrates the payoff structure of this part of the experiment. First, subjects had to decide how many points to invest into punishing their opponent contingent on every possible first stage outcome. Punishment was

costly.[40] Then they were asked to decide whether they wanted to participate in the project or not. All decisions were taken simultaneously.

As a measure of the individuals' willingness to reciprocate negatively we consider behavior in both experiments, i.e., minimum acceptable offer in the Ultimatum Game and the amount invested into punishment given unilateral defection of the other player. We standardized both measures to account for the different response scales and took the average. This constitutes the score for the level of negative reciprocity.

		Player 2	
		In	Out
Player 1	In	480, 480	240, 540
	Out	540, 240	300, 300

Figure A1: Payoff Matrix: Prisoner's Dilemma

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[40]We implemented two different punishment technologies: in 7 sessions the technology was such that each point invested into punishment resulted in one point being deducted from the opponent. In the other sessions each point invested into punishment lead to three points being deducted from the other player.

B Preference Module Wording

B.1 English

1. Risk Taking

   (a) List of 31 hypothetical choices between a lottery (300 Euro with a 50-percent chance and 0 Euro with a 50-percent chance) and varying safe options (starting at 0 Euro and increasing to 300 Euro in increments of 10 Euro)

   (b) How do you see yourself: are you a person who is generally willing to take risks, or do you try to avoid taking risks? *Please use a scale from 0 to 10, where a 0 means you are "completely unwilling to take risks" and a 10 means you are "very willing to take risks". You can also use the values in-between to indicate where you fall on the scale.*

2. Time Discounting

   (a) List of 25 hypothetical choices between an early payment "today" (100 Euro) and a varying delayed payment "in 12 months" (100.0/103.0/106.1/ 109.2/112.4/115.6/118.8/122.1/125.4/128.8/132.3/135.7/139.2/ 142.8/ 146.4/150.1/153.8/157.5 161.3/165.1/169.0/172.9/176.9/180.9/185 Euro).

   (b) In comparison to others, are you a person who is generally willing to give up something today in order to benefit from that in the future or are you not willing to do so? *Please use a scale from 0 to 10, where a 0 means you are "completely unwilling to give up something today" and a 10 means you are "very willing to give up something today". You can also use the values in-between to indicate where you fall on the scale.*

3. Trust

   (a) Please consider the following situation: You participate in a game. This game has the following rules: First, you are assigned a co-player. You do not know your co-player, and you will never meet him or her. Both of you get 100 Euro each. You can transfer any part of that amount to your co-player. According to the rules of the game, your co-player will receive the tripled amount of your transfer. Then, your co-player can transfer any part of his or her total amount back to you. You and your co-player cannot communicate or meet at any point during the game. After the game, your ways will part and you will never know who your co-player was. We would like to know the following: How much would you transfer to your co-player. (*Values between 0 and 100 are allowed.*)

   (b) How well does the following statement describe you as a person? As long as I am not convinced otherwise, I assume that people have only the best intentions. *Please use a scale from 0 to 10, where 0 means "does not describe me at all" and a 10 means "describes me perfectly". You can also use the values in-between to indicate where you fall on the scale.*

4. Altruism

   (a) Imagine the following situation: you won 1,000 Euro in a lottery. Considering your current situation, how much would you donate to charity? *(Values between 0 and 1000 are allowed)*

   (b) How do you assess your willingness to share with others without expecting anything in return when it comes to charity? *Please use a scale from 0 to 10, where 0 means you are "completely unwilling to share" and a 10*

means you are "very willing to share". You can also use the values in-between to indicate where you fall on the scale.

5. Positive Reciprocity

   (a) Please consider the following situation: You and another person, whom you do not know, both participate in a study where you can decide on how to assign a certain amount of money and thereby determine the outcome. The rules are as follows. Both participants get an account with 20 Euros. At the beginning, both participants thus own 20 Euros. The other person decides first. She can transfer money to your account. She can transfer any amount: 0, 1, 2 Euro, etc. up to 20 Euro. Each Euro that she transfers to you is tripled by the conductors of the study and booked to your account. After this first stage the other person therefore has 20 Euro minus the amount she transferred to you in her account. You have 20 Euro plus the tripled amount of the transfer of the other person on your account. Now you get to decide: you have the opportunity to transfer money back to the other person. You can transfer any amount up to 80 Euro, depending on how much you have in your account. This will be the end of the study and the account balances will be final. The other person has in her account 20 Euros minus the amount she transferred to you plus the amount you transferred back. You have 20 Euro plus the tripled amount of what the other person transferred to you minus the amount you transferred back to her. We would like to know how much you would choose to transfer back to the other person, for a given transfer of her to you.

   Suppose the other person transfers 5/10/15/20 Euro to your account.

After the first stage you then own 20+3*5/10/15/20=35/50/65/80 Euro, the other person owns 20-5/10/15/20=15/10/5/0 Euro. What amount do you choose to transfer back?

(b) Imagine the following situation: you are shopping in an unfamiliar city and realize you lost your way. You ask a stranger for directions. The stranger offers to take you with their car to your destination. The ride takes about 20 minutes and costs the stranger about 20 Euro in total. The stranger does not want money for it. You carry six bottles of wine with you. The cheapest bottle costs 5 Euro, the most expensive one 30 Euro. You decide to give one of the bottles to the stranger as a thank-you gift. Which bottle do you give?

Respondents can choose from the following options: The bottle for 5, 10, 15, 20, 25, or 30 Euro)

6. Negative Reciprocity

(a) Imagine the following situation: together with a person whom you do not know you won 100 Euro in a lottery. The rules stipulate the following: One of you has to make a proposal about how to divide the 100 Euro between you two. The other one gets to know the proposal and has to decide between two options. He or she can accept the proposal or reject it. If he or she accepts the proposal, the money is divided according to the proposal. If he or she rejects the proposal, both receive nothing. Assuming, the other person has to make a proposal about how to split the money, and you have to decide about whether to accept or reject the proposal. What is the minimum amount the other person has to offer you so that you are willing to accept it? (*Values between 0 and 100 are*

allowed.)

(b) How do you see yourself: Are you a person who is generally willing to punish unfair behavior even if this is costly? *Please use a scale from 0 to 10, where 0 means you are "not willing at all to incur costs to punish unfair behavior" and a 10 means you are "very willing to incur costs to punish unfair behavior". You can also use the values in-between to indicate where you fall on the scale.*

B.2   German

1. Risk Taking

(a) Wie schätzen Sie sich persönlich ein? Sind Sie im Allgemeinen ein risikobereiter Mensch oder versuchen Sie, Risiken zu vermeiden? Bitte klicken Sie ein Kästchen auf der Skala an, wobei der Wert 0 bedeutet "gar nicht risikobereit", und der Wert 10 bedeutet "sehr risikobereit". Mit den Werten dazwischen können Sie Ihre Einschätzung abstufen.

(b) *Liste mit 31 hypothetischen Entscheidungen:* Stellen Sie sich bitte folgende Situation vor: Sie haben die Wahl zwischen einer sicheren Auszahlung und einer Lotterie. Bei der Lotterie erhalten Sie mit 50 Prozent Chance 300 Euro, und mit 50 Prozent Chance erhalten Sie nichts. Bitte stellen Sie sich nun vor, Sie müssten sich zwischen der Lotterie (die immer gleich bleibt), und einer sicheren Auszahlung (die sich von Situation zu Situation unterscheidet), entscheiden. Auf dem folgenden Bildschirm werden Ihnen verschiedene Entscheidungssituationen angezeigt. Anschliessend bitten wir Sie, für jede dieser hypothetischen Situationen einzeln Ihre Entscheidung zwischen der Lotterie und der sicheren Auszahlung anzugeben.

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Bitte überlegen Sie: Was hätten Sie lieber: eine 50-prozentige Chance 300 Euro zu gewinnen bei gleichzeitiger 50-prozentiger Chance nichts zu gewinnen, oder einen Geldbetrag von ___ [41] Euro als sichere Auszahlung?

2. Time Discounting

   (a) Sind Sie im Vergleich zu anderen im Allgemeinen bereit, heute auf etwas zu verzichten, um in der Zukunft davon zu profitieren, oder sind Sie im Vergleich zu anderen dazu nicht bereit? Bitte klicken Sie ein Kästchen auf der Skala an, wobei der Wert 0 bedeutet "gar nicht bereit", und der Wert 10 bedeutet "sehr bereit". Mit den Werten dazwischen können Sie Ihre Einschätzung abstufen.

   (b) *Liste mit 25 hypothetischen Entscheidungen:* In diesem Teil des Experiments bitten wir Sie, sich Folgendes vorzustellen: Nehmen Sie an, Sie hätten folgende Wahl: eine Auszahlung heute oder eine Auszahlung in 12 Monaten. Im Folgenden werden Ihnen verschiedene Situationen präsentiert. In jeder Situation ist die heutige Auszahlung dieselbe, die Auszahlung in 12 Monaten ist jedoch in jeder Situation anders. Wir möchten für jede dieser Situationen wissen, wie Sie sich entscheiden würden. Bitte überlegen Sie: Würden Sie lieber 100 Euro heute bekommen oder ___ [42] Euro in 12 Monaten?

3. Trust

   (a) Überlegen Sie bitte, was Sie in folgender Situation tun würden: Sie nehmen an einem Spiel teil. Dieses Spiel hat folgende Regeln: Zunächst werden Sie einem Mitspieler zugeordnet. Diesen Mitspieler kennen Sie

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[41]Compare Section G.1
[42]Compare Section G.2

nicht, und Sie werden ihm auch niemals begegnen. Jeder von Ihnen erhält 100 Euro. Sie haben die Möglichkeit, Ihrem Mitspieler etwas von diesen 100 Euro zu überweisen. Die Spielregeln besagen, dass der Mitspieler dann das Dreifache des Betrages, den Sie überwiesen haben, vom Spielleiter bekommt. Anschliessend hat Ihr Mitspieler die Möglichkeit, Ihnen einen Betrag zurück zu überweisen. Sie haben zu keinem Zeitpunkt des Spiels die Möglichkeit, miteinander zu kommunizieren, oder sich zu treffen. Nach dem Spiel werden Sie getrennte Wege gehen, und niemals wissen, wer Ihr Mitspieler war. Wir würden gerne Folgendes von Ihnen wissen: Wie viel würden Sie Ihrem Mitspieler überweisen? (*Erlaubt sind Werte zwischen 0 und 100.*)

(b) Wie sehr trifft die folgende Aussage auf Sie zu? Solange man mich nicht vom Gegenteil überzeugt, gehe ich stets davon aus, dass andere Menschen nur das Beste im Sinn haben. Bitte klicken Sie ein Kästchen auf der Skala an, wobei der Wert 0 bedeutet "trifft gar nicht zu", und der Wert 10 bedeutet "trifft voll zu". Mit den Werten dazwischen können Sie Ihre Einschätzung abstufen.

4. Altruism

(a) Wie schätzen Sie Ihre Bereitschaft mit anderen zu teilen, ohne dafür eine Gegenleistung zu erwarten, in Bezug auf den folgenden Bereich ein: wenn es um gemeinnützige Zwecke geht? Bitte klicken Sie ein Kästchen auf der Skala an, wobei der Wert 0 bedeutet "gar nicht bereit zu teilen ohne eine Gegenleistung zu erwarten", und der Wert 10 bedeutet "sehr bereit zu teilen ohne eine Gegenleistung zu erwarten". Mit den Werten dazwischen können Sie ihre Einschätzung abstufen.

(b) Stellen Sie sich folgende Situation vor: Sie haben in einem Preisausschreiben 1.000 Euro gewonnen. Wie viel würden Sie in Ihrer momentanen Situation für einen gemeinnützigen Zweck spenden? *(Values between 0 and 1000 are allowed)*

5. Positive Reciprocity

(a) Überlegen Sie bitte, was Sie in folgender Situation tun würden: Sie und eine andere Person, die Sie nicht kennen, treffen beide eine Entscheidung über die Verwendung von Geld und erzielen zusammen ein Ergebnis. Die Regeln gehen so: Jeder Teilnehmer erhält ein Konto mit 20 Euro. Am Anfang haben Sie und die andere Person also jeweils 20 Euro auf dem Konto. Zuerst entscheidet die andere Person. Sie kann Ihnen Geld auf Ihr Konto überweisen. Sie kann Ihnen einen beliebigen Eurobetrag überweisen, also 0 Euro, 1 Euro, 2 Euro usw. bis 20 Euro. Jeder Euro, den die andere Person an Sie überweist, wird von den Leitern der Studie verdreifacht und Ihrem Konto gutgeschrieben. Nach dem ersten Schritt sind also auf dem Konto der anderen Person 20 Euro minus der Überweisung an Sie. Auf Ihrem Konto sind 20 Euro plus dem Dreifachen der Überweisung an Sie. Jetzt entscheiden Sie: Sie haben die Möglichkeit, der anderen Person Geld zurück zu überweisen. Sie können jeden beliebigen Eurobetrag zurück überweisen, also 0, 1, 2, 3, usw. bis 80 Euro, je nachdem, wie viel Geld Sie insgesamt auf Ihrem Konto gutgeschrieben haben, nachdem Sie die Überweisung der anderen Person erhalten haben. Damit ist die Studie beendet. Die endgültigen Kontostände sind erreicht. Auf dem Konto der anderen Person sind jetzt 20 Euro minus der Überweisung an Sie plus Ihrer Rücküberweisung. Auf

Ihrem Konto sind jetzt 20 Euro plus das Dreifache der Überweisung an Sie minus Ihrer Rücküberweisung. Wir möchten nun von Ihnen wissen, welche Rücküberweisung Sie wählen würden, wenn die andere Person Ihnen einen bestimmten Betrag überweist.

Angenommen, die andere Person überweist Ihnen 5(10/15/20) Euro. Sie haben dann nach dem ersten Schritt 20+3*5(10/15/20)=35(50/65/80) Euro, die andere Person hat 20-5(10/15/20)=15(10/5/0) Euro. Wie hoch ist Ihre Rücküberweisung?

(b) Stellen Sie sich folgende Situation vor: Sie sind beim Einkaufen unterwegs in einer fremden Stadt, und merken, dass Sie sich verlaufen haben. Sie fragen eine fremde Person nach dem Weg. Die Person bietet Ihnen an, Sie mit dem Auto zu Ihrem Ziel zu fahren. Die Fahrt dauert etwa 20 Minuten, und kostet die fremde Person alles in allem etwa 20 Euro. Die fremde Person will aber kein Geld dafür. Sie haben 6 Flaschen Wein dabei. Die billigste Flasche kostet 5 Euro, die teuerste kostet 30 Euro. Sie entscheiden, der fremden Person eine Flasche Wein als Dankeschön zu geben. Welche Flasche schenken Sie? [Die Flasche für 5/10/15/20/25/30 Euro]

6. Negative Reciprocity

(a) Sind Sie jemand, der im Allgemeinen bereit ist, unfaires Verhalten zu bestrafen, auch wenn das für Sie mit Kosten verbunden ist? Bitte klicken Sie ein Kästchen auf der Skala an, wobei der Wert 0 bedeutet "gar nicht bereit Kosten auf sich zu nehmen um zu bestrafen", und der Wert 10 bedeutet "sehr bereit Kosten auf sich zu nehmen um zu bestrafen". Mit den Werten dazwischen können Sie ihre Einschätzung abstufen.

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(b) Stellen Sie sich folgende Situation vor: Zusammen mit einer anderen Person, die Sie nicht persönlich kennen, haben Sie 100 Euro bei einem Preisausschreiben gewonnen. Die Regeln besagen nun Folgendes. Einer von Ihnen soll einen Vorschlag darüber machen, wie die 100 Euro aufgeteilt werden. Der andere erfährt den Vorschlag, und hat dann zwei Möglichkeiten. Er kann die Aufteilung annehmen oder ablehnen. Wenn er den Vorschlag annimmt, wird das Geld so aufgeteilt, wie die andere Person es vorgeschlagen hat. Wird die Aufteilung abgelehnt, gehen beide leer aus. Angenommen, die andere Person macht einen Vorschlag über die Aufteilung. Sie wiederum sollen entscheiden, ob Sie den Vorschlag annehmen oder ablehnen. Welchen Betrag muss die andere Person Ihnen mindestens anbieten, damit Sie bereit sind, den Vorschlag über die Aufteilung anzunehmen? (*Werte zwischen 0 und 100 erlaubt.*)

C   Regressions and Robustness Checks for the Preference Module

C.1   Preference Module Regressions with Standardized Variables

Table C1: Standardized choices in experiments regressed on the standardized responses to preference module items

	Risk (1)	Time (2)	Trust (3)	Altruism (4)	Pos. Reciprocity (5)	Neg. Reciprocity (6)
	Dependent variable: Choices in incentivized experiments					
R2 (risk item)	0.276*** (0.057)					
R3 (risk item)	0.203*** (0.049)					
D2 (time item)		0.485*** (0.052)				
D4 (time item)		-0.171*** (0.050)				
T24 (trust item)			0.629*** (0.043)			
T16 (trust item)			0.133*** (0.038)			
A11 (altruism item)				0.185*** (0.049)		
A10 (altruism item)				0.321*** (0.044)		
PR11 (pos. reciprocity item)					0.486*** (0.049)	
PR9 (pos. reciprocity item)					0.164*** (0.049)	
NR10 (neg. reciprocity item)						0.328*** (0.059)
NR1 (neg. reciprocity item)						0.148** (0.059)
Observations	382	382	382	382	360	360
Adjusted R^2	0.162	0.340	0.452	0.175	0.329	0.134

Notes. OLS regressions of standardized choices observed in a given incentivized experiment on the standardized responses to the two survey items that were selected for the corresponding preference module measure. The items can be found in section G in the appendix. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

C.2 Preference Module Regressions with Non-Standardized Variables

Table C2: Choices in experiments regressed on selected preference module items (Part 1)

	Risk: Average CE	Time: Average IRR	*Dependent variable:* Trust: 1st mov. TG (tripled)	Trust: 1st mov. TG (doubled)
	(1)	(2)	(3)	(4)
R3 (risk item)	0.0061*** (0.00)			
R3 (risk item)	0.12*** (0.03)			
D2 (time item)		0.46*** (0.05)		
D4 (time item)		-0.019*** (0.01)		
T24 (trust item)			0.027*** (0.00)	0.025*** (0.00)
Constant	2.38*** (0.14)	0.39*** (0.05)	0.44*** (0.10)	0.43*** (0.10)
Observations	382	382	382	382
R^2	0.166	0.339	0.436	0.393

Notes. OLS regressions of choices observed in a given incentivized experiment on responses to the two survey items that were selected for the corresponding preference module measure. The items can be found in section G in the appendix. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table C3: Choices in experiments regressed on selected preference module items (Part 2)

	Altruism: Donation	PosRecip: 2nd mov. TG (tripled)	*Dependent variable:* PosRecip: 2nd mov. TG (doubled)	NegRecip: MAO	NegRecip: Punishment
	(1)	(2)	(3)	(4)	(5)
A11 (altruism item)	0.0011*** (0.00)				
A10 (altruism item)	0.12*** (0.02)				
PR11 (pos. reciprocity item)		10.1*** (1.02)	7.70*** (0.75)		
PR9 (pos. reciprocity item)		19.8*** (6.72)	19.1*** (4.94)		
NR10 (neg. reciprocity item)				0.016*** (0.00)	0.0052** (0.00)
NR1 (neg. reciprocity item)				0.020 (0.01)	0.039** (0.02)
Constant	0.088 (0.13)	56.1* (21.77)	41.7*** (15.99)	0.67*** (0.11)	-0.054 (0.13)
Observations	382	360	360	360	360
R^2	0.179	0.300	0.335	0.144	0.032

Notes. OLS regressions of choices observed in a given incentivized experiment on responses to the two survey items that were selected for the corresponding preference module measure. The items can be found in section G in the appendix. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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C.3 Alternative Benchmark for Assessing the Survey Module: Explanatory Power of Incentivized Experiments for Incentivized Experiments

Table C4: Regressions of experiment choices in week 1 on experiment choices in week 2

	Dependent variable: Choices in incentivized experiments (week 1)					
	Risk	Time	Trust	Altruism	Pos. Recip.	Neg. Recip.
	(1)	(2)	(3)	(4)	(5)	(6)
Risk (week 2)	0.51***					
	(0.12)					
Time (week 2)		0.78***				
		(0.08)				
Trust (week 2)			0.73***			
			(0.09)			
Altruism (week 2)				0.59***		
				(0.09)		
Pos. Recip. (week 2)					0.61***	
					(0.10)	
Neg. Recip. (week 2)						0.64***
						(0.13)
Observations	44	44	44	44	44	44
Adjusted R^2	0.331	0.664	0.589	0.406	0.420	0.431

Notes. OLS regressions of the choices observed in a given incentivized experiment in week 1 on the choices observed in the corresponding incentivized experiment in week 2. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

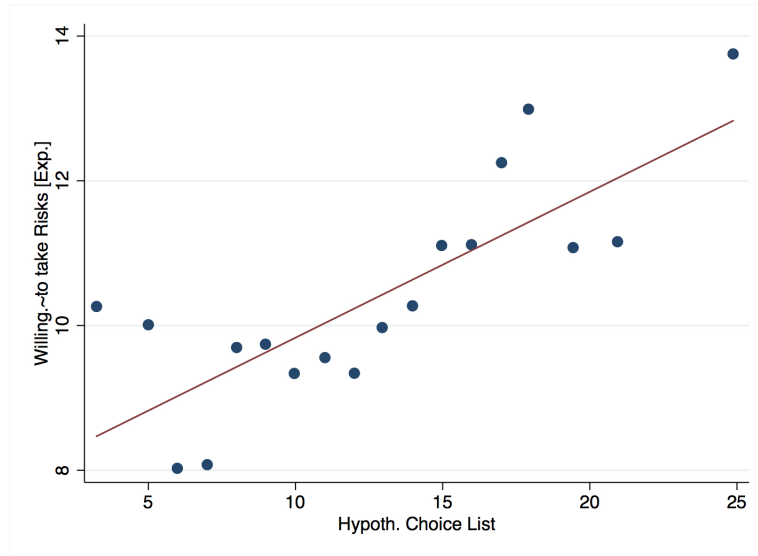## C.4   Checks for Non-Linearity

C.4.1   Risk

Figure C1: Binscatter Plot: Hypothetical switching row (survey) and switching row in incentivized list of choices between lottery and safe options.
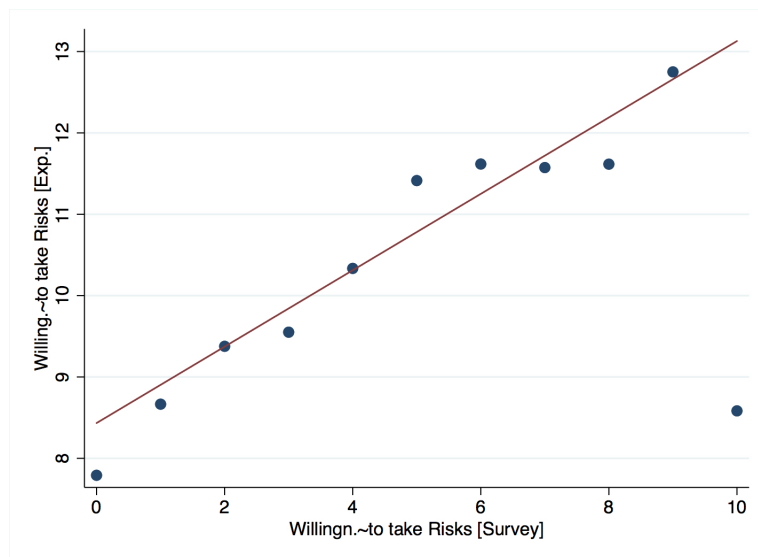

Figure C2: Binscatter Plot: Willingness to take risks (survey) and switching row in incentivized list of choices between lottery and safe options.
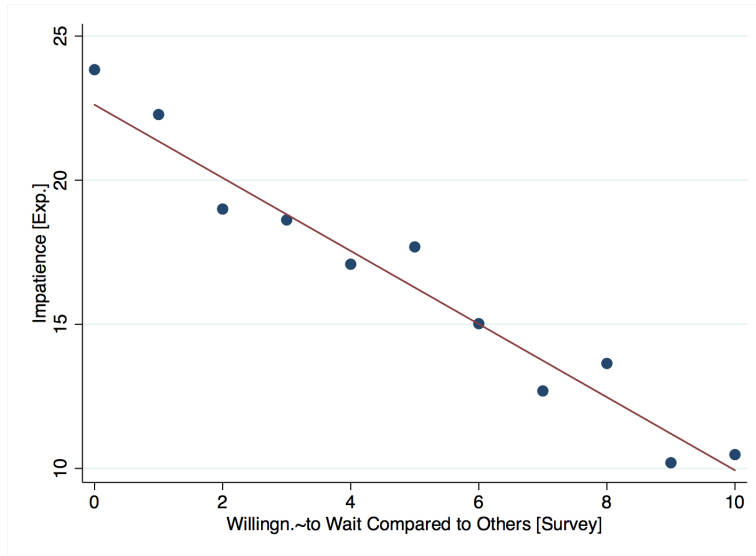
C.4.2 Time

Figure C3: Binscatter Plot: Willingness to wait (survey) and switching row in incentivized list of choices between money 'today' and 'in one year'.
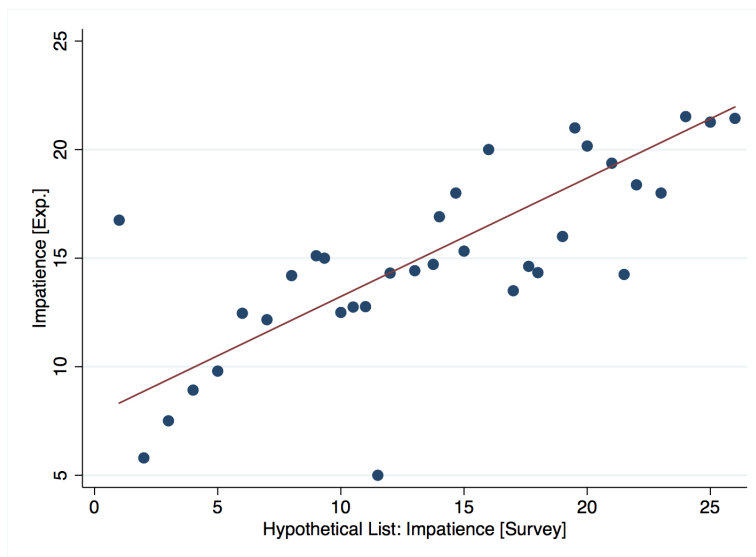

Figure C4: Binscatter Plot: Hypothetical switching row (survey) and switching row in incentivized list of choices between money 'today' and 'in one year'.
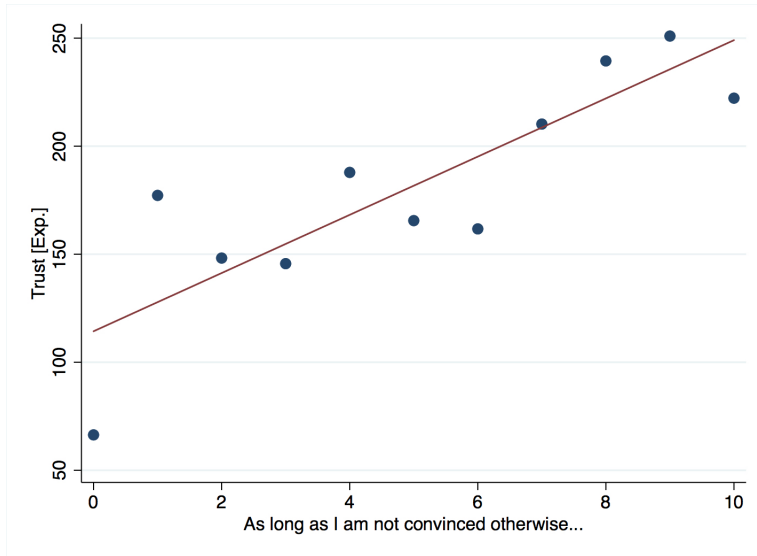
C.4.3 Trust

C.4.4 Altruism

Figure C5: Binscatter Plot: Stated willingness to trust (survey) and amount sent in trust game.
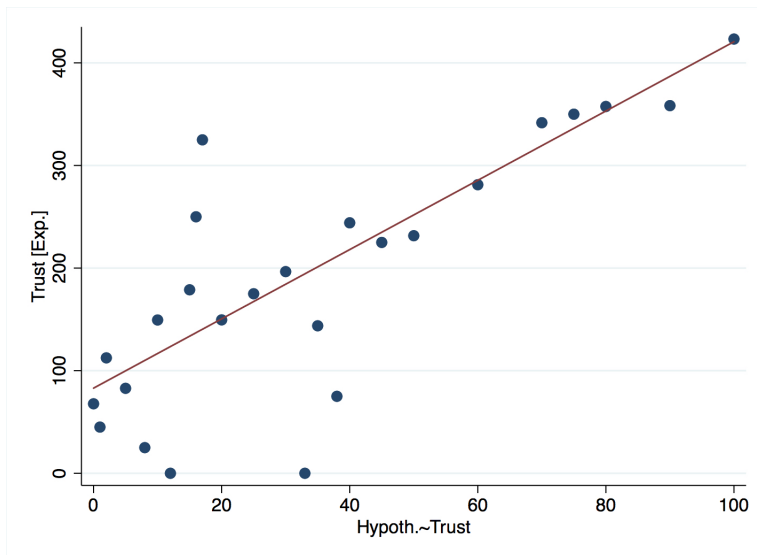

Figure C6: Binscatter Plot: Hypothetical trust (survey) and amount sent in trust game.
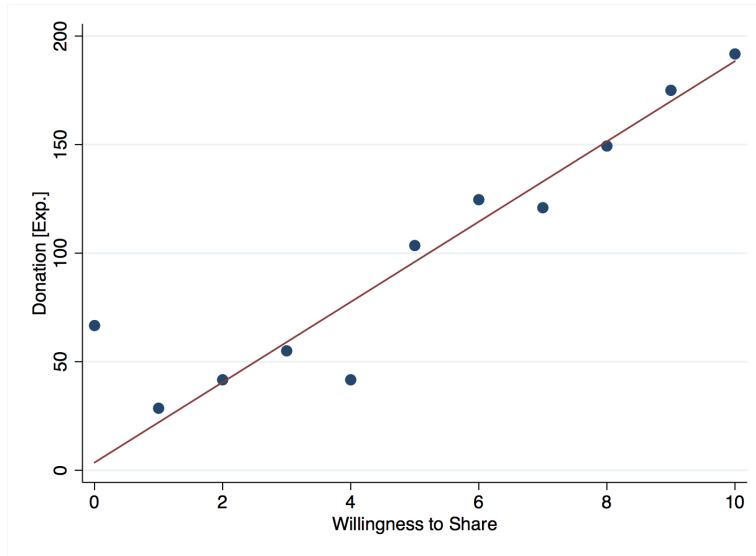
C.4.5 Positive Reciprocity

Figure C7: Binscatter Plot: Willingness to share (survey) and donation in experiment.
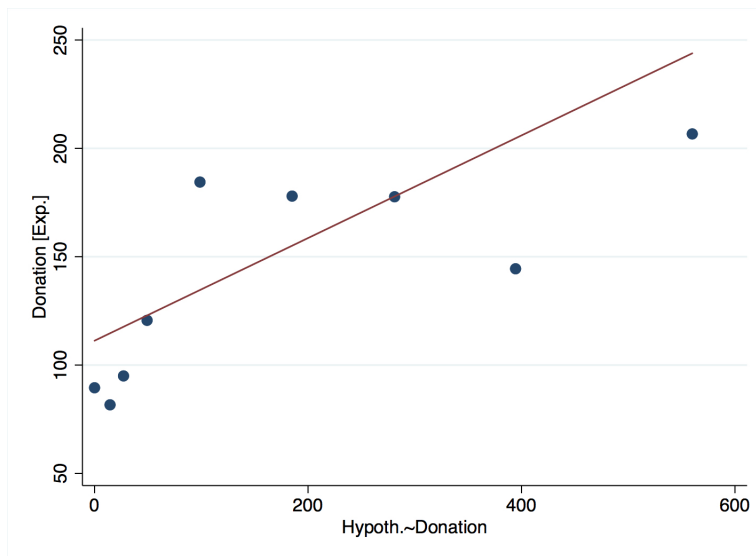

Figure C8: Binscatter Plot: Hypothetical donation (survey) and donation in experiment.

C.4.6 Negative Reciprocity
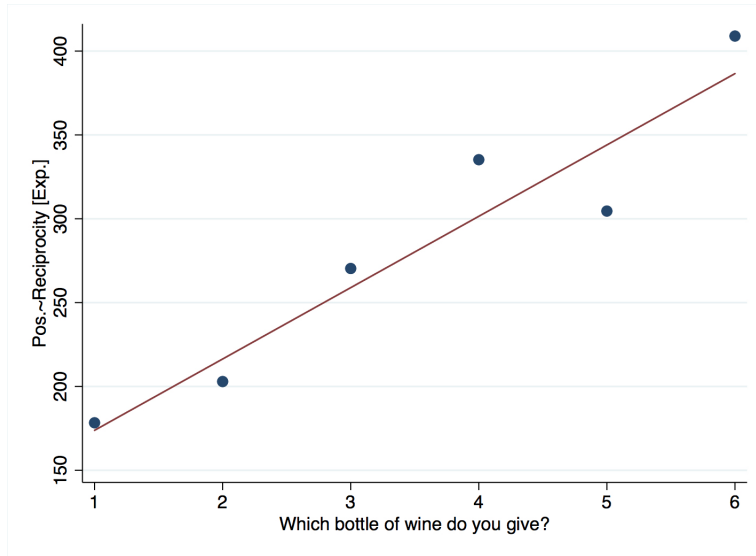
Figure C9: Binscatter Plot: Willingness to reward stranger (survey) and amount sent back in trust game.
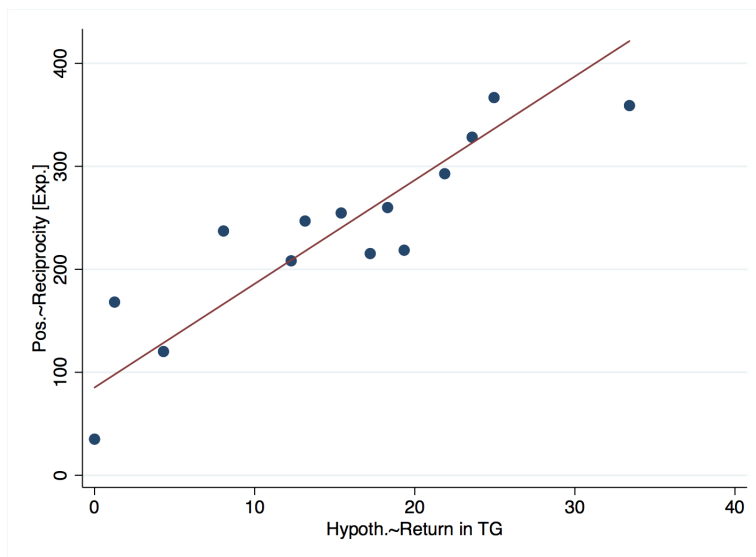
Figure C10: Binscatter Plot: Hypothetical amount sent back (survey) and amount sent back in trust game.

C.5 Cross-Validation Error of Modules

C.5.1 Altruism
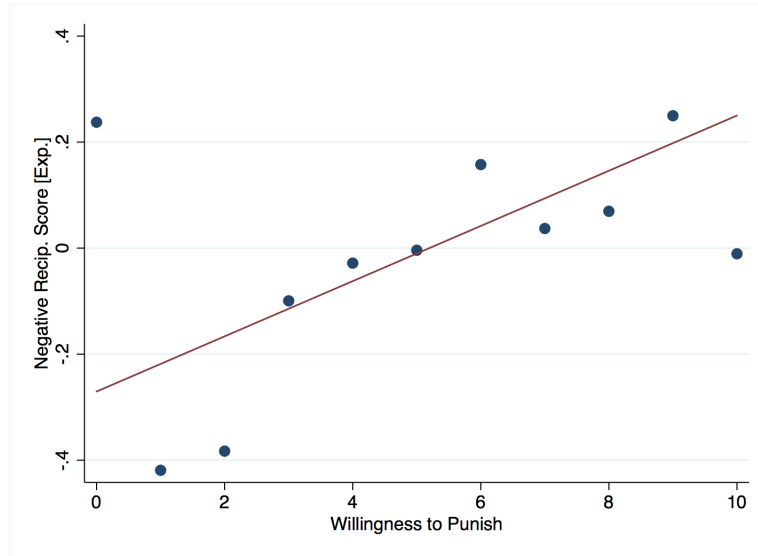
Figure C11: Binscatter Plot: Willingness to punish (survey) and negative reciprocity score (exp.).
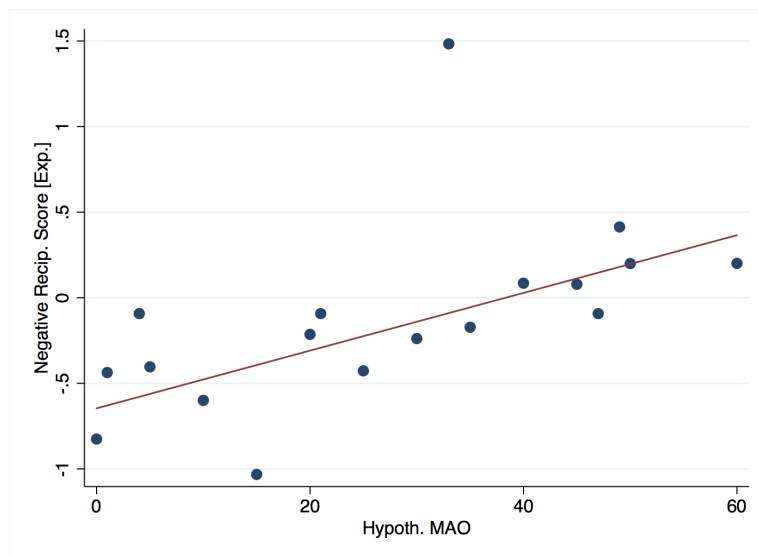
Figure C12: Binscatter Plot: Hypothetical MAO (survey) and negative reciprocity score (exp.).

C.5.2 Negative Reciprocity

Figure C13: Cross-Validation Error by Module Length: Altruism.
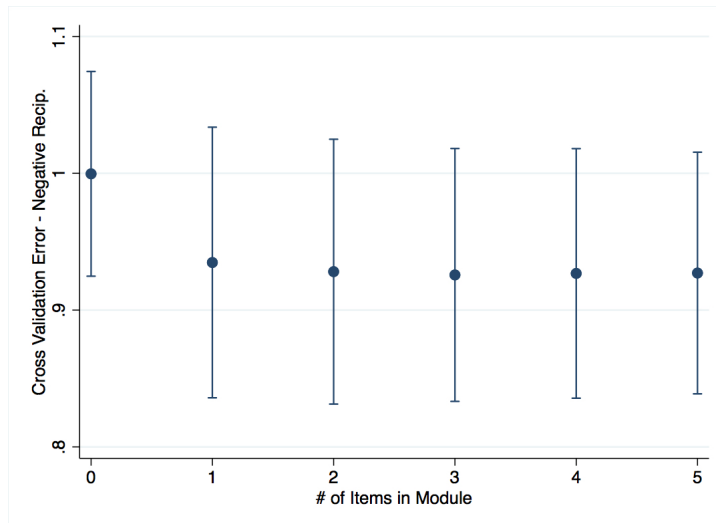
Figure C14: Cross-Validation Error by Module Length: Negative Reciprocity.

D   Information for Constructing Alternative Preference Modules

D.1   Highest Correlations between Experimental and Survey Measures

D.1.1   Risk Taking

Table D1: Highest Correlations: Risk Taking

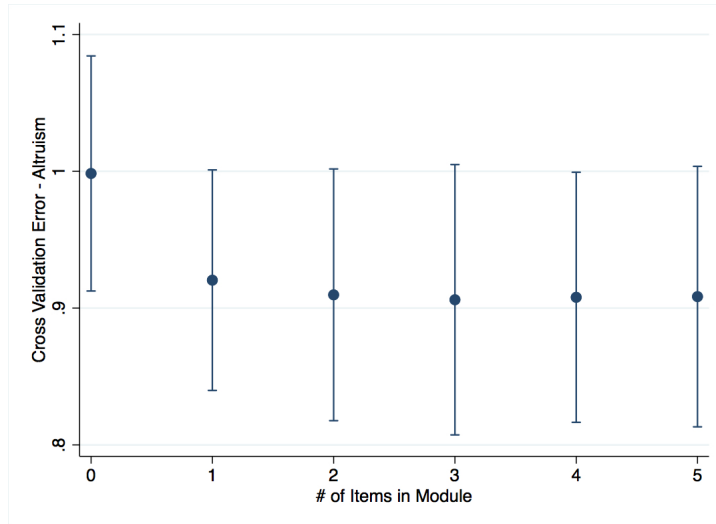| Item	Item Description	Correlation	Rank
R2	List of hypothetical choices: lottery vs. varying safe options	0.4095	1
R3	General willingness to take risks	0.3524	2
R1	Staircase measure: 5 interdependent choices between a lottery and varying safe options	0.3356	3
R49	Estimation of certainty equivalent (safe amount to give up lottery)	0.3070	4
R6	Willingness to take risks: financial decisions	0.2937	5
R4	Willingness to take risks: in comparison to others	0.2913	6
R48	Choice over how much to invest into a risky lottery	0.2560	7
R24	How likely is it that you invest 5 % of your annual income into a speculative asset?	0.2125	8
R47	I like taking risks.	0.2030	9
R4	Willingness to take risks: when it comes to your professional career	0.2030	10

The detailed wording of each item can be found in Appendix G.1. The first column displays the item number as given in Appendix G.1. The third column displays the Spearman correlation coefficient between the survey item and the experimental measure. All correlations are significant at the 1-percent level.

D.1.2 Time Discounting

Table D2: Highest Correlations: Time Discounting

Item	Item Description	Correlation	Rank
D2	List of hypothetical choices: early vs. delayed amounts of money	0.5826	1
D1	Staircase measure: 5 interdependent choices between an early and a delayed amount of money	0.5547	2
D3	General willingness to abstain from something today	-0.4091	3
D4	General willingness to abstain from something today: in comparison to others	-0.4039	4
D6	General willingness to abstain from something today: financial decisions	-0.3802	5
D5	General willingness to abstain from something today: how others assess you	-0.2712	6
D39	Hypothetical scenario: how many extra days of vacation would you want to delay the vacation	0.2606	7
D42	I give up something today so that I can afford more tomorrow.	-0.2454	8
D41	I try hard to always have some extra money for unexpected expenditures.	-0.2425	9
D9	General willingness to abstain from something today: when it comes to bigger purchases	-0.2191	10

The detailed wording of each item can be found in Appendix G.2. The first column displays the item number as given in Appendix G.2. The third column displays the Spearman correlation coefficient between the survey item and the experimental measure. All correlations are significant at the 1-percent level.

D.1.3 Trust

Table D3: Highest Correlations: Trust

Item	Item Description	Correlation	Rank
T24	First mover decision in a hypothetical trust game	0.6201	1
T7	General willingness to trust: in strangers	0.3477	2
T9	Hypothethical scenario: willingness to lend money to a stranger	0.2848	3
T16	As long as I am not convinced otherwise I assume that people have the best intentions.	0.2829	4
T4	General willingness to trust: towards people in your city.	0.2778	5
T17	In general one can trust other people.	0.2756	6
T1	General willingness to trust	0.2672	7
T2	General willingness to trust: in comparison to others.	0.2592	8
T8	General willingness to trust: in people in your neighborhood.	0.2581	9
T13	In comparison to others I quickly (build up) trust in strangers.	0.2551	10

The detailed wording of each item - except for item T24 - can be found in Appendix G.4. The first column displays the item number as given in Appendix G.4. Item T24 can be found in Appendix G.5. The third column displays the Spearman correlation coefficient between the survey item and the experimental measure. All correlations are significant at the 1-percent level.

D.1.4 Altruism

Table D4: Highest Correlations: Altruism

Item	Item Description	Correlation	Rank
A11	Hypothetical donation	0.3913	1
A10	General willingness to share: charitable purposes	0.3845	2
A12	I am willing to spend time and money on a charitable purpose, even if I don't profit from that directly.	0.3171	3
A13	I am willing to help others even if I presume that I will never meet them again.	0.2658	4
A16	I do not comprehend why some people spend their lifetime fighting for a cause which they do not benefit from directly.	-0.2612	5
A2	General willingness to share: in comparison to others.	0.2268	6
A9	General willingness to share: with people in need.	0.2186	7
A7	General willingness to share: with strangers.	0.2095	8
A1	General willingness to share	0.2057	9
A14	When I spend time and money on something I expect to benefit from that in the future.	-0.2034	10

The detailed wording of each item can be found in Appendix G.3. The first column displays the item number as given in Appendix G.3. The third column displays the Spearman correlation coefficient between the survey item and the experimental measure. All correlations are significant at the 1-percent level.

D.1.5 Positive Reciprocity

Table D5: Highest Correlations: Positive Reciprocity

Item	Item Description	Correlation	Rank
PR11	Second mover decision in a hypothetical trust game.	0.5560	1
PR9	Hypothetical scenario: willingness to pay for a thank-you-gift	0.3530	2
PR12	When someone does me a favor, I am willing to return it.	0.2970	3
PR13	I go out of my way to help someone who has helped me before.	0.2175	4
PR17	Hypothetical scenario: willingness to pay for a thank-you-gift	0.2137	5
PR7	General willingness to return a favor: towards strangers.	0.2082	6
PR10	Hypothetical scenario: willingness to pay for a thank-you-gift.	0.2032	7
PR4	General willingness to return a favor: towards people in hometown	0.1648	8
PR-NR-1	General willingness to return a favor or punish unfair behavior	0.1559	9
PR6	General willingness to return a favor: towards people at work	0.1543	10

The detailed wording of each item can be found in Appendix G.5. The first column displays the item number as given in Appendix G.5. The third column displays the Spearman correlation coefficient between the survey item and the experimental measure. All correlations are significant at the 1-percent level.

D.1.6 Negative Reciprocity

Table D6: Highest Correlations: Negative Reciprocity

Item	Item Description	Correlation	Rank
NR10	Minimum acceptable offer in a hypothetical ultimatum game.	0.3416	1
NR1	General willingness to punish unfair behavior	0.1609	2
NR22	You sometimes have to play tough in order not to be taken advantage of.	0.1487	3
NR6	General willingness to punish: people among your circle of friends.	0.1436	4
NR2	General willingness to punish: in comparison to others.	0.1422	5
NR3	General willingness to punish: how others assess you	0.1349	6
NR17	If someone behaves unfairly towards me in sports, I will also behave unfairly towards them.	0.1343	7
NR12	If I suffer a serious wrong, I will take revenge at the first occasion.	0.1101	8
NR13	When someone puts me in a difficult position, I will do the same to them.	0.1096	9
NR20	I absolutely dislike being the fool.	0.1030	10

The detailed wording of each item can be found in Appendix G.5. The first column displays the item number as given in Appendix G.5. The third column displays the Spearman correlation coefficient between the survey item and the experimental measure. The correlations of rank 1 to 5 are significant at the 1-percent level. The correlations of rank 6 to 9 are significant at the 5-percent level. The correlation of rank 10 is significant at the 10-percent level.

D.2 Explanatory Power of Alternative Modules

Table D7: Explanatory Power of Alternative Preference Modules

	Item Combination									
Preference	**(1,2)**	**(1,3)**	**(1,4)**	**(1,5)**	**(2,3)**	**(2,4)**	**(2,5)**	**(3,4)**	**(3,5)**	**(4,5)**
Risk Taking	0.1663	0.1353	0.1409	0.1614	0.1440	0.1286	0.1170	0.1112	0.1311	0.1172
Time Discounting	0.3257	0.3407	0.3435	0.3387	0.3025	0.2996	0.2975	0.1960	0.1923	0.1899
Trust	0.4523	0.4389	0.4553	0.4499	0.1292	0.1195	0.1005	0.1139	0.1063	0.0990
Altruism	0.1793	0.1509	0.1278	0.1313	0.1637	0.1650	0.1639	0.1298	0.1300	0.1010
Pos. Reciprocity	0.3331	0.3221	0.3194	0.3137	0.1981	0.1600	0.1300	0.1262	0.1461	0.0984
Neg. Reciprocity	0.1390	0.1229	0.1306	0.1368	0.0377	0.0350	0.0323	0.0324	0.0355	0.0333

Each cell depicts the R-squared of regressing the experimental measure of the respective preference (row) on a combination of two items which are indicated by their rank as shown in the tables in section D.1.

D.3   Selecting Items Using LASSO

Table D8: Selected Items Using LASSO

Preference	Linear LASSO	Adaptive LASSO
Risk	**R3**, R6, R10, R48, R49, **R2**, R1, R16, R24, R33, R37, R40	**R3**, R48, R49, **R2**, R16, R24, R37, R40
Time	D3, **D4**, D6, D9, D32, D41, D1, **D2**	**D4**, D9, D32, D41, **D2**
Altruism	**A10**, A12, A13, A16, A19, **A11**	**A10**, A12, A13, A16, A19, **A11**
Trust	T1, T2, T7, T10, T14, T15, **T16**, T20, T22, **T24**	T1, T7, T10, T14, T15, **T16**, T20, T22, **T24**
Pos. Recip.	PR7, PR12, PR13, **PR9**, **PR11**	PR7, PR12, **PR9**, **PR11**
Neg. Recip.	**NR1**, NR2, NR6, NR15, NR17, NR24, **NR10**	**NR1**, NR17, **NR10**

Item labels refer to items as listed in section G. Items in bold are those selected for our main preference module.

The second column diplays items selected via standard linear LASSO. The third column displays items selected

via adaptive LASSO. Note that in every case the set of items selected by LASSO contains both items of our main

preference module.

E   Development of the Global Preference Survey (GPS) Module

In this appendix, we document the steps involved in developing the GPS module for each preference domain.

Risk Taking   For the sub-module for risk taking, we discarded the multiple price list measure from the set of candidate items, and ran the selection procedure described in section 3.1 on the restricted set of items. The "staircase" procedure for a hypothetical lottery choice (see Appendix E.1) was selected. This quantitative measure is very comparable to the choice list measure, as it contains the same lottery. Yet, it is much more time-efficient to use "staircase" procedure, as it only requires five interdependent choices between a lottery and a safe payment. The other item selected for risk was the same qualitative measure selected in the original module. The resulting reduction in explanatory power of the streamlined version compared to the original version in terms of R^2 is only 0.02. Since the term "lottery" in the description of the hypothetical risky choices was troubling to some Muslim participants in our pilot study, we replaced the term "lottery" with the more neutral but equally accurate term "random draw".

Time discounting   For the sub-module for time discounting, we discarded the multiple price list measure from the set of candidate items, and ran the selection procedure described in section 3.1 on the restricted set of items. The "staircase" procedure for intertemporal choice (see Appendix E.2) was selected. This quantitative measure mirrors the hypothetical choice list for the same intertemporal trade-off as in the original version of the module, as it contains the same monetary amount for

the early payment. Yet, it is much more time-efficient to use "staircase" procedure, since it only requires five interdependent choices between an early payment and a delayed payment. The other item selected for time discounting is again a subjective self-assessment, albeit a slightly different one than in the original module version. Instead of the item asking for a self-assessment of one's willingness to abstain from something today in order to benefit from that in the future *in comparison to others*, the item selected asks for the same self-assessment *in general*. Since this change was only minor relative to the original module we modified the sub-module accordingly. The resulting reduction of 0.04 in adjusted R^2 compared to the original module version is again rather modest.

Since some participants in our pilot study stated that their answer in questions involving intertemporal tradeoffs would depend on the rate of inflation, or said that they would always take the immediate payment due to uncertainty with respect to future inflation, we added the following phrase to each question involving hypothetical choices between immediate and future monetary amounts: "Please assume there is no inflation, i.e., future prices are the same as today's prices."

Trust We discarded the hypothetical investment game, which involves rather lengthy and complex instructions. Since there was no adequate and implementable alternative for the hypothetical experiment, and since trust has been widely measured using qualitative measures, we opted for a one-item sub-module for trust.

Altruism Since the term "charity" caused confusion in Eastern Europe and Central Asia, we replaced it with "good cause".

Positive Reciprocity For positive reciprocity, we discarded the hypothetical choices as a second mover in the investment games before running the selection

procedure. Corresponding to the original sub-module, the procedure selected the quantitative item measuring one's willingness to reciprocate by asking for which wine bottle (a cheaper or a more expensive one) one would give to a stranger in order to reciprocate kindness in a hypothetical scenario. Since giving a bottle of wine is a very common and popular gesture in Western industrialized societies but very uncommon or even inappropriate in other cultures, e.g., Muslim societies, we replaced "bottles of wine" with the more neutral term "thank-you-gift". As a second item, the selection procedure picked a simple subjective self-assessment: "When someone does me a favor I am willing to return it". The resulting modified sub-module for positive reciprocity comes with a reduction in adjusted R^2 to 0.19 in our experimental subject pool.

Negative Reciprocity In the case of negative reciprocity we discarded the hypothetical experiment. The item selection procedure resulted in selecting two qualitative self-assessments, the first of them being the "general willingness to punish"-item that was also included in our original module version. In this case, there was a reduction in adjusted R^2 by 0.0975 relative to our original module. Since the second item strongly resembled the first item ("general willingness to punish"), we decided to instead include an item asking for one's willingness to take revenge, thereby adding a more emotional and less neutral item to the sub-module. This change resulted in a negligible reduction of adjusted R^2 of 0.0047).

Since some respondents in our pilot study stated that they had difficulties answering the question asking about one's willingness to punish unfair behavior because they did not understand who was treated unfairly, we decided to split the question into two separate items, one item asking for one's willingness to punish unfair behavior towards others, and another asking for one's willingness to punish unfair

behavior towards oneself.

E.1 Staircase Risk

The staircase procedure for eliciting risk preferences consists of a sequence of lottery choices. Everybody starts with the same first question. The choice for the lottery or the safe payment option then determines the next question in the sequence. This procedure is repeated four times. Subjects were instructed as follows:

Please imagine the following situation: You can choose between a sure payment and a lottery. The lottery gives you a 50 percent chance of receiving 300 Euro. With an equally high chance you receive nothing. Now imagine you had to choose between the lottery and a sure payment. We will present to you five different situations. The lottery is the same in all situations. The sure payment is different in every situation.

1. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 160 Euro as a sure payment?

   (a) lottery → *go to question 17*

   (b) sure payment → *go to question 2*

2. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 80 Euro as a sure payment?

   (a) lottery → *go to question 10*

(b) sure payment → *go to question 3*

3. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 40 Euro as a sure payment?

   (a) lottery → *go to question 4*

   (b) sure payment → *go to question 7*

4. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 60 Euro as a sure payment?

   (a) lottery → *go to question 5*

   (b) sure payment → *go to question 6*

5. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 70 Euro as a sure payment?

   (a) lottery

   (b) sure payment

6. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 50 Euro as a sure payment?

   (a) lottery

   (b) sure payment

7. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 20 Euro as a sure payment?

   (a) lottery → *go to question 8*

   (b) sure payment → *go to question 9*

8. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 30 Euro as a sure payment?

   (a) lottery

   (b) sure payment

9. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 10 Euro as a sure payment?

   (a) lottery

   (b) sure payment

10. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 120 Euro as a sure payment?

    (a) lottery → *go to question 14*

    (b) sure payment → *go to question 11*

11. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 100 Euro as a sure payment?

   (a) lottery → *go to question 13*

   (b) sure payment → *go to question 12*

12. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 90 Euro as a sure payment?

   (a) lottery

   (b) sure payment

13. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 110 Euro as a sure payment?

   (a) lottery

   (b) sure payment

14. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 140 Euro as a sure payment?

   (a) lottery → *go to question 15*

   (b) sure payment → *go to question 16*

15. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 150 Euro as a sure payment?

   (a) lottery

   (b) sure payment

16. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 130 Euro as a sure payment?

   (a) lottery

   (b) sure payment

17. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 240 Euro as a sure payment?

   (a) lottery → *go to question 25*

   (b) sure payment → *go to question 18*

18. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 200 Euro as a sure payment?

   (a) lottery → *go to question 22*

   (b) sure payment → *go to question 19*

19. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 180 Euro as a sure payment?

    (a) lottery → *go to question 20*

    (b) sure payment → *go to question 21*

20. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 190 Euro as a sure payment?

    (a) lottery

    (b) sure payment

21. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 170 Euro as a sure payment?

    (a) lottery

    (b) sure payment

22. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 220 Euro as a sure payment?

    (a) lottery → *go to question 23*

    (b) sure payment → *go to question 24*

23. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 230 Euro as a sure payment?

   (a) lottery

   (b) sure payment

24. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 210 Euro as a sure payment?

   (a) lottery

   (b) sure payment

25. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 280 Euro as a sure payment?

   (a) lottery → *go to question 29*

   (b) sure payment → *go to question 26*

26. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 260 Euro as a sure payment?

   (a) lottery → *go to question 27*

   (b) sure payment → *go to question 28*

27. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 270 Euro as a sure payment?

   (a) lottery

   (b) sure payment

28. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 250 Euro as a sure payment?

   (a) lottery

   (b) sure payment

29. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 300 Euro as a sure payment?

   (a) lottery → *go to question 31*

   (b) sure payment → *go to question 30*

30. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 290 Euro as a sure payment?

   (a) lottery

   (b) sure payment

31. What would you prefer: a 50 percent chance of winning 300 Euro when at the same time there is 50 percent chance of winning nothing, or would you rather have the amount of 310 Euro as a sure payment?

   (a) lottery

   (b) sure payment

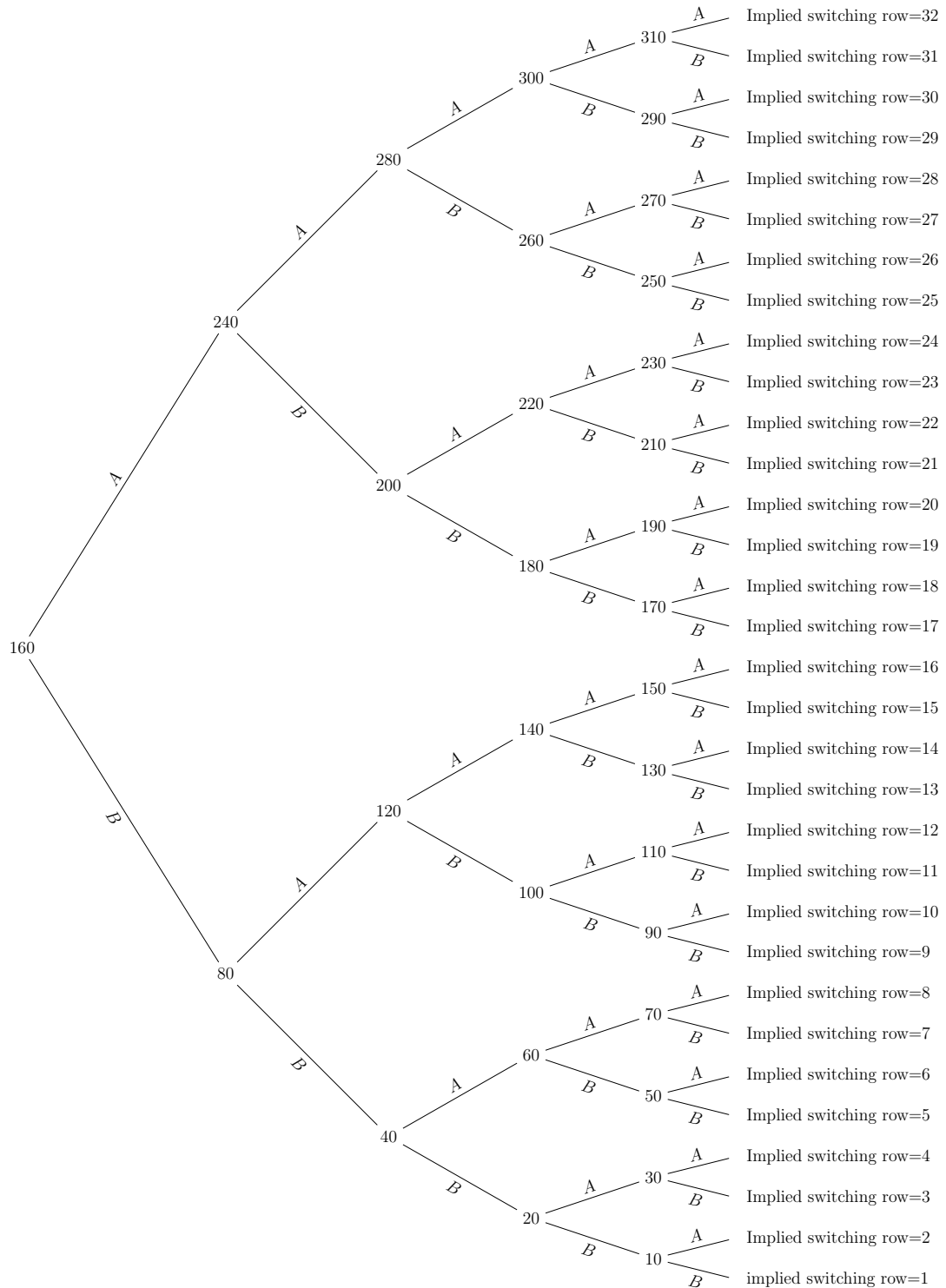The staircase procedure is illustrated in Figure E1.

Figure E1: Tree for the staircase risk task (numbers = sure payment, A = choice of sure payment, B = choice of lottery)

Notes. The staircase procedure worked as follows. First, each respondent was asked whether they would prefer to receive 160 euros for sure or whether they preferred a 50:50 chance of receiving 300 euros or nothing. In case the respondent opted for the safe choice ("B"), the safe amount of money being offered in the second question decreased to 80 euros. If, on the other hand, the respondent opted for the gamble ("A"), the safe amount was increased to 240 euros. Working further through the tree follows the same logic.

E.2 Staircase Time

Start with the first question. Depending on whether the participant chooses the earlier or the delayed option, go to the respective next question. This procedure is repeated four times.

Suppose you were given the choice between the following: receiving a payment today or a payment in 12 months. We will now present to you five situations. The payment today is the same in each of these situations. The payment in 12 months is different in every situation. For each of these situations we would like to know which you would choose.

1. Would you rather receive 100 Euro today or 153.8 Euro in 12 months?

    (a) today → *go to question 17*

    (b) in 12 months → *go to question 2*

2. Would you rather receive 100 Euro today or 125.4 Euro in 12 months?

    (a) today → *go to question 10*

    (b) in 12 months → *go to question 3*

3. Would you rather receive 100 Euro today or 112.4 Euro in 12 months?

    (a) today → *go to question 7*

    (b) in 12 months → *go to question 4*

4. Would you rather receive 100 Euro today or 106.1 Euro in 12 months?

    (a) today → *go to question 6*

(b) in 12 months → *go to question 5*

5. Would you rather receive 100 Euro today or 103.0 Euro in 12 months?

   (a) today

   (b) in 12 months

6. Would you rather receive 100 Euro today or 109.2 Euro in 12 months?

   (a) today

   (b) in 12 months

7. Would you rather receive 100 Euro today or 118.8 Euro in 12 months?

   (a) today → *go to question 8*

   (b) in 12 months → *go to question 9*

8. Would you rather receive 100 Euro today or 122.1 Euro in 12 months?

   (a) today

   (b) in 12 months

9. Would you rather receive 100 Euro today or 115.6 Euro in 12 months?

   (a) today

   (b) in 12 months

10. Would you rather receive 100 Euro today or 139.2 Euro in 12 months?

   (a) today → *go to question 14*

   (b) in 12 months → *go to question 11*

11. Would you rather receive 100 Euro today or 132.3 Euro in 12 months?

    (a) today → *go to question 13*

    (b) in 12 months → *go to question 12*

12. Would you rather receive 100 Euro today or 128.8 Euro in 12 months?

    (a) today

    (b) in 12 months

13. Would you rather receive 100 Euro today or 135.7 Euro in 12 months?

    (a) today

    (b) in 12 months

14. Would you rather receive 100 Euro today or 146.4 Euro in 12 months?

    (a) today → *go to question 16*

    (b) in 12 months → *go to question 15*

15. Would you rather receive 100 Euro today or 142.8 Euro in 12 months?

    (a) today

    (b) in 12 months

16. Would you rather receive 100 Euro today or 150.1 Euro in 12 months?

    (a) today

    (b) in 12 months

17. Would you rather receive 100 Euro today or 185.0 Euro in 12 months?

(a) today → *go to question 18*

(b) in 12 months → *go to question 25*

18. Would you rather receive 100 Euro today or 201.6 Euro in 12 months?

    (a) today → *go to question 22*

    (b) in 12 months → *go to question 19*

19. Would you rather receive 100 Euro today or 193.2 Euro in 12 months?

    (a) today → *go to question 20*

    (b) in 12 months → *go to question 21*

20. Would you rather receive 100 Euro today or 197.4 Euro in 12 months?

    (a) today

    (b) in 12 months

21. Would you rather receive 100 Euro today or 189.1 Euro in 12 months?

    (a) today

    (b) in 12 months

22. Would you rather receive 100 Euro today or 210.3 Euro in 12 months?

    (a) today → *go to question 23*

    (b) in 12 months → *go to question 24*

23. Would you rather receive 100 Euro today or 214.6 Euro in 12 months?

    (a) today

(b) in 12 months

24. Would you rather receive 100 Euro today or 205.9 Euro in 12 months?

   (a) today

   (b) in 12 months

25. Would you rather receive 100 Euro today or 169.0 Euro in 12 months?

   (a) today → *go to question 29*

   (b) in 12 months → *go to question 26*

26. Would you rather receive 100 Euro today or 161.3 Euro in 12 months?

   (a) today → *go to question 28*

   (b) in 12 months → *go to question 27*

27. Would you rather receive 100 Euro today or 157.5 Euro in 12 months?

   (a) today

   (b) in 12 months

28. Would you rather receive 100 Euro today or 165.1 Euro in 12 months?

   (a) today

   (b) in 12 months

29. Would you rather receive 100 Euro today or 176.9 Euro in 12 months?

   (a) today → *go to question 31*

   (b) in 12 months → *go to question 30*

30. Would you rather receive 100 Euro today or 172.9 Euro in 12 months?

   (a) today

   (b) in 12 months

31. Would you rather receive 100 Euro today or 180.9 Euro in 12 months?

   (a) today

   (b) in 12 months

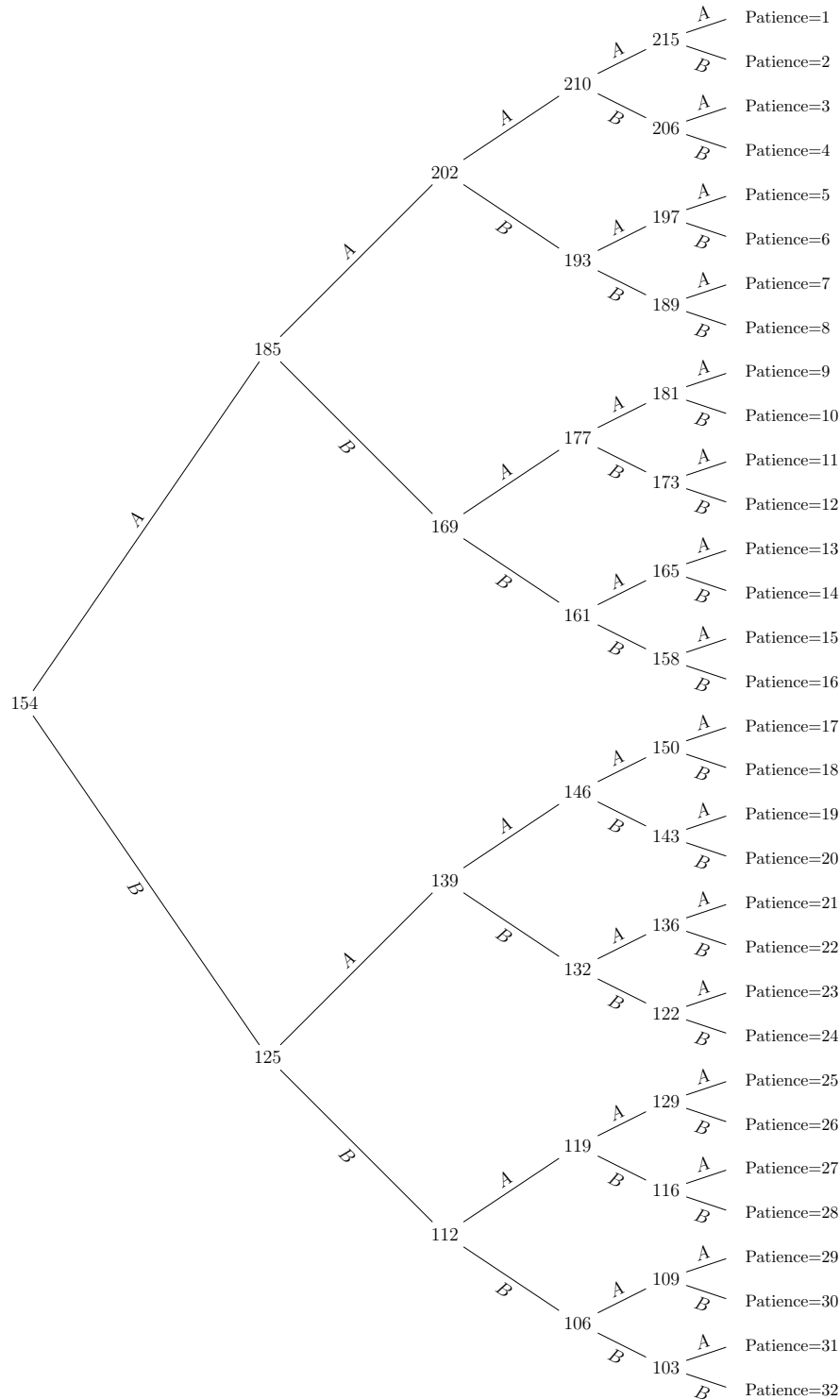The staircase procedure is illustrated in Figure E2.

Figure E2: Tree for the staircase time task (numbers = payment in 12 months, A = choice of "100 euros today", B = choice of "x euros in 12 months"

Notes. The staircase procedure worked as follows. First, each respondent was asked whether they would prefer to receive 100 euros today or 154 euros in 12 months from now (leftmost decision node). In case the respondent opted for the payment today ("A"), in the second question the payment in 12 months was adjusted upwards to 185 euros. If, on the other hand, the respondent chose the payment in 12 months, the corresponding payment was adjusted down to 125 euros. Working further through the tree follows the same logic.

F Streamlined Version of the Preference Module

This module was piloted by the survey company Gallup, and ultimately included in the questionnaire for the Gallup World Poll, 2012. We present the streamlined survey module in the format used by Gallup.

Streamlined Preference Module

1. Please tell me, in general, how willing or unwilling you are to take risks.

Please use a scale from 0 to 10, where **0** means you are **"completely unwilling to take risks"** and a **10** means you are **"very willing to take risks"**. You can also use any numbers between 0 and 10 to indicate where you fall on the scale, like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

completely unwilling to take risks										very willing to take risks
0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

2. We now ask for your willingness to act in a certain way in four different areas.

Please again indicate your answer on a scale from 0 to 10, where **0** means you are **"completely unwilling to do so"** and a **10** means you are **"very willing to do so"**. You can also use any numbers between 0 and 10 to indicate where you fall on the scale, like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

	completely unwilling to do so										very willing to do so
How willing are you to give up something that is beneficial for you today in order to benefit more from that in the future?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
How willing are you to punish someone who treats **you** unfairly, even if there may be costs for you?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
How willing are you to punish someone who treats **others** unfairly, even if there may be costs for you?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
How willing are you to give to good causes without expecting anything in return?	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

3. **How well do the following statements describe you as a person?**

Please indicate your answer on a scale from 0 to 10. A **0** means **"does not describe me at all"** and a **10** means **"describes me perfectly"**. You can also use any numbers between 0 and 10 to indicate where you fall on the scale, like 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

	does not describe me at all										describes me perfectly
When someone does me a favor I am willing to return it.	0	1	2	3	4	5	6	7	8	9	10
If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so.	0	1	2	3	4	5	6	7	8	9	10
I assume that people have only the best intentions.	0	1	2	3	4	5	6	7	8	9	10

4. **Please imagine the following situation: You can choose between a sure payment of a particular amount of money, or a draw, where you would have an equal chance of getting 300 Euro or getting nothing. We will present to you five different situations.**

4.1 What would you prefer: a draw with a 50 percent chance of receiving 300 Euro, and the same 50 percent chance of receiving nothing, or the amount of 160 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.17**
= Sure payment => *Go to question* **4.2**

4.2 Would you prefer the 50/50 chance or the amount of 80 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.10**
= Sure payment => *Go to question* **4.3**

4.3 Would you prefer the 50/50 chance or the amount of 40 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.4**
= Sure payment => *Go to question* **4.7**

4.4 Would you prefer the 50/50 chance or the amount of 60 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.5**
= Sure payment => *Go to question* **4.6**

4.5 Would you prefer the 50/50 chance or the amount of 70 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.6 Would you prefer the 50/50 chance or the amount of 50 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.7 Would you prefer the 50/50 chance or the amount of 20 Euro as a sure payment?

= 50/50 chance => *Go to question 4.8*
= Sure payment => *Go to question 4.9*

4.8 Would you prefer the 50/50 chance or the amount of 30 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.9 Would you prefer the 50/50 chance or the amount of 10 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.10 Would you prefer the 50/50 chance or the amount of 120 Euro as a sure payment?

= 50/50 chance => *Go to question 4.14*
= Sure payment => *Go to question 4.11*

4.11 Would you prefer the 50/50 chance or the amount of 100 Euro as a sure payment?

= 50/50 chance => *Go to question 4.13*
= Sure payment => *Go to question 4.12*

4.12 Would you prefer the 50/50 chance or the amount of 90 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.13 Would you prefer the 50/50 chance or the amount of 110 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.14 Would you prefer the 50/50 chance or the amount of 140 Euro as a sure payment?

= 50/50 chance => *Go to question 4.15*
= Sure payment => *Go to question 4.16*

4.15 Would you prefer the 50/50 chance or the amount of 150 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.16 Would you prefer the 50/50 chance or the amount of 130 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.17 Would you prefer the 50/50 chance or the amount of 240 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.25**
= Sure payment => *Go to question* **4.18**

4.18 Would you prefer the 50/50 chance or the amount of 200 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.22**
= Sure payment => *Go to question* **4.19**

4.19 Would you prefer the 50/50 chance or the amount of 180 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.20**
= Sure payment => *Go to question* **4.21**

4.20 Would you prefer the 50/50 chance or the amount of 190 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.21 Would you prefer the 50/50 chance or the amount of 170 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.22 Would you prefer the 50/50 chance or the amount of 220 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.23**
= Sure payment => *Go to question* **4.24**

4.23 Would you prefer the 50/50 chance or the amount of 230 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.24 Would you prefer the 50/50 chance or the amount of 210 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.25 Would you prefer the 50/50 chance or the amount of 280 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.29**
= Sure payment => *Go to question* **4.26**

4.26 Would you prefer the 50/50 chance or the amount of 260 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.27**
= Sure payment => *Go to question* **4.28**

4.27 Would you prefer the 50/50 chance or the amount of 270 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.28 Would you prefer the 50/50 chance or the amount of 250 Euro as a sure payment?

= 50/50 chance => *Go to question 5*
= Sure payment => *Go to question 5*

4.29 Would you prefer the 50/50 chance or the amount of 300 Euro as a sure payment?

= 50/50 chance => *Go to question* **4.31**

= Sure payment => *Go to question* **4.30**

4.30 Would you prefer the 50/50 chance or the amount of 290 Euro as a sure payment?

= 50/50 chance => *Go to question* **5**

= Sure payment => *Go to question* **5**

4.31 Would you prefer the 50/50 chance or the amount of 310 Euro as a sure payment?

= 50/50 chance => *Go to question* **5**

= Sure payment => *Go to question* **5**

5. **Please think about what you would do in the following situation.**

   You are in an area you are not familiar with, and you realize that you lost your way. You ask a stranger for directions. The stranger offers to take you to your destination. Helping you costs the stranger about 20 Euro in total. However, the stranger says he or she does not want any money from you. You have 6 presents with you. The cheapest present costs 5 Euro, the most expensive one costs 30 Euro. Do you give one of the presents to the stranger as a "thank-you"-gift? If so, which present do you give to the stranger?

   no present

   the present worth 5 Euro

   the present worth 10 Euro

   the present worth 15 Euro

   the present worth 20 Euro

   the present worth 25 Euro

   the present worth 30 Euro

6. **Imagine the following situation: Today you unexpectedly received 1,000 Euro. How much of this amount would you donate to a good cause?** *(Values between 0 and 1,000 are allowed)*

7. **Suppose you were given the choice between receiving a payment today or a payment in 12 months. We will now present to you 5 situtations. The payment today is the same in each of these situations. The payment in 12 months is different in every situation. For each of these situations we would like to know which you would choose. Please assume there is no inflation, i.e. future prices are the same as today's prices.**

   7.1 Please consider the following: would you rather receive 100 Euro today or 154 Euro in 12 months?

   = Today => *Go to question* **7.17**

   = In 12 months => *Go to question* **7.2**

   7.2 Would you rather receive 100 Euro today or 125 Euro in 12 months?

= Today => *Go to question* **7.10**

= In 12 months => *Go to question* **7.3**

7.3 Would you rather receive 100 Euro today or 112 Euro in 12 months?

= Today => *Go to question* **7.7**

= In 12 months => *Go to question* **7.4**

7.4 Would you rather receive 100 Euro today or 106 Euro in 12 months?

= Today => *Go to question* **7.6**

= In 12 months => *Go to question* **7.5**

7.5 Would you rather receive 100 Euro today or 103 Euro in 12 months?

= Today => *Final question*

= In 12 months => *Final question*

7.6 Would you rather receive 100 Euro today or 109 Euro in 12 months?

= Today => *Final question*

= In 12 months => *Final question*

7.7 Would you rather receive 100 Euro today or 119 Euro in 12 months?

= Today => *Go to question* **7.8**

= In 12 months => *Go to question* **7.9**

7.8 Would you rather receive 100 Euro today or 122 Euro in 12months?

= Today => *Final question*

= In 12 months => *Final question*

7.9 Would you rather receive 100 Euro today or 116 Euro in 12 months?

= Today => *Final question*

= In 12 months => *Final question*

7.10 Would you rather receive 100 Euro today or 139 Euro in 12 months?

= Today => *Go to question* **7.14**

= In 12 months => *Go to question* **7.11**

7.11 Would you rather receive 100 Euro today or 132 Euro in 12 months?

= Today => *Go to question* **7.13**

= In 12 months => *Go to question* **7.12**

7.12 Would you rather receive 100 Euro today or 129 Euro in 12 months?

= Today => *Final question*

= In 12 months => *Final question*

7.13 Would you rather receive 100 Euro today or 136 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.14 Would you rather receive 100 Euro today or 146 Euro in 12 months?

= Today => *Go to question* **7.16**
= In 12 months => *Go to question* **7.15**

7.15 Would you rather receive 100 Euro today or 143 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.16 Would you rather receive 100 Euro today or 150 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.17 Would you rather receive 100 Euro today or 185 Euro in 12 months?

= Today => *Go to question* **7.18**
= In 12 months => *Go to question* **7.25**

7.18 Would you rather receive 100 Euro today or 202 Euro in 12 months?

= Today => *Go to question* **7.22**
= In 12 months => *Go to question* **7.19**

7.19 Would you rather receive 100 Euro today or 193 Euro in 12 months?

= Today => *Go to question* **7.20**
= In 12 months => *Go to question* **7.21**

7.20 Would you rather receive 100 Euro today or 197 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.21 Would you rather receive 100 Euro today or 189 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.22 Would you rather receive 100 Euro today or 210 Euro in 12 months?

= Today => *Go to question* **7.23**
= In 12 months => *Go to question* **7.24**

7.23 Would you rather receive 100 Euro today or 215 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.24 Would you rather receive 100 Euro today or 206 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.25 Would you rather receive 100 Euro today or 169 Euro in 12 months?

= Today => *Go to question **7.29***
= In 12 months => *Go to question **7.26***

7.26 Would you rather receive 100 Euro today or 161 Euro in 12 months?

= Today => *Go to question **7.28***
= In 12 months => *Go to question **7.27***

7.27 Would you rather receive 100 Euro today or 158 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.28 Would you rather receive 100 Euro today or 165 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.29 Would you rather receive 100 Euro today or 177 Euro in 12 months?

= Today => *Go to question **7.31***
= In 12 months => *Go to question **7.30***

7.30 Would you rather receive 100 Euro today or 173 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

7.31 Would you rather receive 100 Euro today or 181 Euro in 12 months?

= Today => *Final question*
= In 12 months => *Final question*

G All Survey Items

This section presents all survey items on preferences that subjects answered.[43] Unless stated otherwise, all items were answered on an eleven-point scale from 0 to 10. For example, all items asking for one's willingness to behave in a certain way were answered on a scale from 0 meaning "not willing to do so" to 10 meaning "very willing to do so". Likewise, items asking for how well a statement describes the participant as a person were answered on a scale from 0 "does not describe me at all" to 10 "describes me very well". Items which were not answered according to this pattern are, for example, hypothetical experiments. In these cases, the potential answers are presented at the end of the respective item.

G.1 Risk Taking

R1 Staircase Measure (see Appendix E)

R2 List of 31 hypothetical choices between a lottery (300 Euro with a 50 percent chance, 0 Euro with a 50-percent chance), which is the same in all choices, and varying safe options (starting at 0 Euro and increasing to 300 Euro in increments of 10 Euro). Answer options: lottery or safe payment.

R3 Sind Sie im Allgemeinen ein risikobereiter Mensch, oder versuchen Sie, Risiken zu vermeiden? [*Generally speaking, are you a person who is willing to take risks or do you try to avoid risks?*]

R4 Sind Sie im Vergleich zu anderen ein risikobereiter Mensch, oder versuchen Sie im Vergleich zu anderen, Risiken zu vermeiden? [*In comparison to others, are you a person who is willing to take risks or do you try to avoid risks?*]

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[43]Subjects were required to answer each question, i.e. they did not have an option to skip items.

R5 Schätzen andere Sie im Allgemeinen als einen risikobereiten Menschen ein, oder schätzen andere Sie als jemanden ein, der versucht, Risiken zu vermeiden? [*Do other people assess you as a person who is willing to take risks or as a person who tries to avoid risks?*]

– Wie schätzen Sie Ihre Risikobereitschaft in Bezug auf folgende Bereiche ein? [*How do you assess your willingness to take risks in the following contexts?*]

R6 Wenn es um Geldanlagen geht? [*When it comes to financial investments?*]

R7 Wenn es um wichtige Entscheidungen im Leben geht? [*When it comes to important decisions in life?*]

R8 Wenn es um die berufliche Karriere geht? [*When it comes to your professional career?*]

R9 Wenn es um Freizeit und Sport geht? [*When it comes to leisure and sports?*]

R10 Wenn es um Verhalten im Straßenverkehr geht? [*When it comes to behavior in road traffic?*]

R11 Wenn es um den Umgang mit anderen Menschen geht? [*When it comes to dealing with other people?*]

– Wie wahrscheinlich ist es, dass... [*How likely is it, that...*][44]

R12 Sie zugeben, dass Ihr Geschmack sich von dem Ihrer Freunde unterscheidet? [*you admit that your tastes are different from those of your friends?*]

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[44]Most of these items are adapted from Weber et al. (2002).

R13 Sie in der Wildnis zelten, fernab der Zivilisation oder eines Camping-platzes? [*you go camping in the wild, far away from civilization or camp-grounds?*]

R14 Sie illegale Drogen für Ihren eigenen Konsum kaufen? [*you buy an illegal drug for your own use?*]

R15 Sie 10% Ihres Jahreseinkommens in einen Anlagefonds mit moderaten Wachstumsraten investieren? [*you invest 10% of your annual income into an investment funds with moderate growth rates?*]

R16 Sie fünf oder mehr als fünf alkoholische Getränke an einem einzigen Abend verzehren? [*you drink five or more alcoholic drinks on one evening?*]

R17 Sie einen wesentlichen Betrag bei der Steuererklärung falsch angeben? [*you cheat subtantially on your income tax?*]

R18 Sie sich mit Ihrem Vater in Bezug auf ein wichtiges Thema nicht einig sind? [*you disagree with your father on a major issue?*]

R19 Sie eine Affäre mit einem verheirateten Mann oder Frau haben? [*you have an affair with a married man or woman?*]

R20 Sie die Unterschrift einer anderen Person fälschen? [*you forge somebody's signature?*]

R21 Sie die Arbeit einer anderen Person als Ihre eigene darstellen? [*you present somebody else's work as your own?*]

R22 Sie in ein Land der Dritten Welt reisen, ohne vorher festgelegte und arrangierte Reiseroute und Übernachtungsmöglichkeiten? [*you go on vacation in a third-world country without a pre-arranged travel route and without booking accomodations ahead?*]

R23 Sie sich mit einem Freund/einer Freundin über etwas streiten, bei dem sich seine/ihre Meinung stark von Ihrer unterscheidet? [*you argue with a friend who has a very different opinion on an issue?*]

R24 Sie 5% Ihres Jahreseinkommens in eine sehr spekulative Aktie anlegen? [*you invest 5% of your annual income in a very speculative stock?*]

R25 Sie Ihren Chef um eine Gehaltserhöhung bitten? [*you ask your boss for a raise?*]

R26 Sie illegal Software kopieren? [*you illegally copy a piece of software?*]

R27 Sie Wildwasser-Rafting bei reißenden Wasserströmungen im Frühling betreiben? [*you go whitewater rafting at high water in the spring?*]

R28 Sie einem Freund oder einer Freundin erzählen, dass sein oder ihr Partner mit Ihnen geflirtet hat? [*you tell a friend that his/her partner flirted with you?*]

R29 Sie 5% Ihres Jahreseinkommens in einer konservativen Aktie anlegen? [*you invest 5% of your annual income in a conservative stock?*]

R30 Sie einen kleinen Gegenstand in einem Geschäft klauen (z.B. einen Stift oder einen Lippenstift)? [*you shoplift a small item (e.g., a pen or a lipstick?*]

R31 Sie provokative oder unkonventionelle Kleidung bei Gelegenheiten tragen? [*you wear unconventional or provocative clothes?*]

– Wie wahrscheinlich ist es, dass... [*How likely is it, that...*][45]

R32 Sie ungeschützten Sex haben? [*you engage in unprotected sex?*]

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[45]Most of these items are adapted from Weber et al. (2002).

R33 Sie von Ihrem Kabelanschluss, den Sie bezahlen, noch einen weiteren Anschluss abzweigen? [*you steal an additional TV cable connection?*]

R34 Sie sich nicht anschnallen, wenn Sie im Auto vorne sitzen? [*you don't wear a seatbelt when in the front seat?*]

R35 Sie 10% Ihres Jahreseinkommens in Staatsanleihen investieren? [*you invest 10% of your annual income in government bonds (treasury bills)?*]

R36 Sie dann und wann eine gefährliche Sportart ausüben (z.B. Bergsteigen oder Sky Diving)? [*you periodically engage in a dangerous sport (e.g. mountain climbing or sky diving)?*]

R37 Sie das Einkommen einer Woche im Casino verspielen? [*you gamble away a week's income at a casino.*]

R38 Sie einen Job annehmen, der Ihnen Spaß macht, anstelle eines Jobs, der angesehener ist, Ihnen aber weniger Spaß macht? [*you take a job that you like instead of a job that is very reputable but that you like less?*]

R39 Sie einen unbeliebten Standpunkt, von dem Sie überzeugt sind, bei einer Gelegenheit vertreten? [*you openly express an opinion or viewpoint that is unpopular but of which you are convinced?*]

R40 Sie sich der Sonne aussetzen, ohne Sonnenschutz benutzt zu haben? [*you don't wear sunscreen when you expose yourself to the sun?*]

R41 Sie zumindest einmal im Leben Bungee Jumping ausprobieren? [*you try bungee jumping at least once in your life?*]

R42 Sie ein eigenes kleines Flugzeug fliegen, wenn Sie könnten? [*you fly a small plane if you could?*]

R43 Sie nachts alleine in einer eher unsicheren Gegend der Stadt herumlaufen? [*you walk alone through a rather unsafe part of the city at night?*]

R44 Sie regelmäßig Essen mit hohem Cholesterin-Gehalt essen? [*you regularly eat high-cholesterol food?*]

– Wie sehr treffen folgenden Aussagen auf Sie zu? [*How well do the following statements describe you as a person?*]

R45 Ich handle oft nach dem Motto: Vorsicht ist besser als Nachsicht. [*I often behave according to the motto: It is better to be safe than sorry.*]

R46 Ich vermeide riskante Dinge. [*I avoid risky things.*]

R47 Ich mag es, Risiken einzugehen. [*I like taking risks.*]

R48 Stellen Sie sich vor, dass Sie in einem Preisausschreiben 100.000 Euro gewinnen. Unmittelbar nach Erhalt des Gewinns bekommen Sie ein Angebot für folgende Lotterie: Es gibt eine Chance, das Geld zu verdoppeln. Es gibt aber auch ein gleich hohes Risiko, die Hälfte des eingesetzten Geldes zu verlieren. Sie können mit Ihren 100.000 Euro ganz oder teilweise an der Lotterie teilnehmen. Wir würden von Ihnen gerne wissen: Welchen Teil des Gewinns aus dem Preisausschreiben würden Sie für die einerseits riskante, andererseits gewinnversprechende Lotterie einsetzen? [*Imagine you win 100.000 Euro in a lottery. Immediately after receiving the money you get an offer to participate in the following lottery: There is a chance to double the money. But there is an equally high chance to lose half of the money invested in the lottery. You can participate in the lottery using the whole amount you won or only a part of it. We would like to know: How much of the money you won in the lottery would you invest in the risky yet profitable lottery?*]

R49 Stellen Sie sich vor Sie haben in einem Preisausschreiben gewonnen. Sie können zwischen zwei Auszahlungsalternativen wählen. Entweder erhalten Sie ein Los oder eine sichere Auszahlung. Wenn Sie sich für das Los entscheiden erhalten Sie mit 50% Wahrscheinlichkeit 1.000 Euro und mit 50% Wahrscheinlichkeit nichts. Überlegen Sie bitte: Wie hoch müsste die sichere Auszahlung mindestens sein, damit Sie die sichere Auszahlung gegenüber dem Los bevorzugen? [*Imagine you won a prize in a lottery. You can choose between two payment options. Either you get a raffle ticket or you get a safe payment. If you decide to take the raffle ticket you receive 1,000 Euro with a probability of 50% and you receive nothing with a probability of 50%. Please consider: How much money would the safe payment need to be in order for you to prefer it over the raffle ticket?*]

R50 Stellen Sie sich folgende Situation vor: Sie sind die einzige Person im Haushalt mit einem monatlichen Einkommen, und Sie haben einen guten Job, durch den Ihr aktuelles Familieneinkommen für den Rest Ihres Lebens gesichert ist. Nun wird Ihnen die Möglichkeit angeboten einen neuen und ebenso guten Job anzunehmen. Bei dem neuen Job ist die Bezahlung variabel, so dass sich mit einer Wahrscheinlichkeit von 50% Ihr Haushaltseinkommen verdoppeln wird, und mit gleicher Wahrscheinlichkeit Sie eine Einkommenseinbuße von 30% haben. Wären Sie bereit diesen neuen Job anzunehmen? [*Imagine the following situation: you are the only member of your household that has a monthly income, and you have a good job which would guarantee your family income for the rest of your life. Now you have the option to take a new and equally good job. The payment at this new job is variable, so that your household income will double with a probability of 50% and will decrease by*

30% with the same probability. Would you be willing to take the new job?]

G.2   Time Discounting

D1 Staircase Measure (see Appendix F)

D2 List of 25 hypothetical choices between 100 Euro today or an equal or larger payment in 12 months. The larger payment starts at 100 Euro and increases up to 185 Euro.[46]

D3 Sind Sie jemand, der im Allgemeinen bereit ist, heute auf etwas zu verzichten, um in der Zukunft davon zu profitieren, oder sind Sie dazu nicht bereit? [*Are you a person who is generally willing to give up something today in order to benefit from that in the future, or are you not willing to do so?*]

D4 Sind Sie im Vergleich zu anderen im Allgemeinen bereit, heute auf etwas zu verzichten, um in der Zukunft davon zu profitieren, oder sind Sie im Vergleich zu anderen dazu nicht bereit? [*In comparison to others, are you a person who is generally willing to give up something today in order to benefit from that in the future or are you not willing to do so?*]

D5 Schätzen andere Sie im Allgemeinen als jemanden ein, der bereit ist, heute auf etwas zu verzichten, um in der Zukunft davon zu profitieren, oder als jemanden, der dazu nicht bereit ist? [*Do other people generally assess you as a person who is willing to give up something today in order to benefit from that in the future or as someone who is not willing to do so?*]

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[46]The larger payments are 100.0/103.0/106.1/109.2/112.4/115.6/118.8/122.1/125.4/128.8/ 132.3/135.7/139.2/142.8/146.4/150.1/153.8/157.5/161.3/165.1/169.0/172.9/176.9/180.9/185 Euro.

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– Wie schätzen Sie Ihre Bereitschaft, auf etwas zu verzichten, um in Zukunft davon zu profitieren, in Bezug auf die folgenden Bereiche ein? [*How would you assess your willingness to give up something today in order to benefit from that in the future in the following contexts:*]

D6 Wenn es um finanzielle Entscheidungen geht. [*When it comes to financial decisions.*]

D7 Wenn es um wichtige Entscheidungen im Leben geht. [*When it comes to important decisions in life.*]

D8 Wenn es um die berufliche Karriere geht. [*When it comes to your professional career.*]

D9 Wenn es um größere Anschaffungen geht. [*When it comes to bigger purchases.*]

D10 Wenn es um eine größere Reise geht. [*When it comes to a longer journey/trip.*]

– In welchen Maße treffen folgende Aussagen auf Sie zu? [*How well do the following statements describe you as a person?*]

D11 Ich stelle oft fest, dass ich Entscheidungen treffe, von denen ich weiß, dass ich sie künftig bereuen werde. [*I often realize that I make decisions knowing that I will regret them in the future.*]

D12 Ich denke oft über die Zukunft nach. [*I often think about the future.*]

D13 Mir fällt es oft schwer, auf ungesundes, aber leckeres Essen zu verzichten. [*I find it hard to resist unhealthy but delicious food.*]

D14 Ich bin jemand, dem es ziemlich egal ist, was morgen passiert, und der nur

im Hier und Jetzt lebt. [*I am a person who does not care about tomorrow and who only lives for the moment.*]

D15 Ich bin eine Person, die häufig getroffene Entscheidungen bereut. [*I am a person who often regrets my own decisions.*]

D16 Ich bin eine Person, die oft vorschnell handelt. [*I am a person who often acts hastily/prematurely.*]

D17 Ich spare für meine Rente. [*I save for my retirement.*]

D18 Mir fällt es nicht allzu schwer, Versuchungen zu widerstehen. [*I do not find it hard to resist temptations.*]

D19 Ich gebe zu viel Geld aus. [*I spend too much money.*]

D20 Ich esse zu viel. [*I eat too much.*]

D21 Ich mache zu wenig Sport. [*I work out too little.*]

D22 Ich wünschte, ich hätte mehr Selbstdisziplin. [*I wish I was more self-disciplined.*]

D23 Ich bin meistens ausreichend auf Klausuren vorbereitet. [*Usually I am sufficiently prepared for exams.*]

D24 Ich handle oft, ohne alle Alternativen in Betracht gezogen zu haben. [*I often act without considering all alternatives.*]

D25 In Gesprächen neige ich dazu, Leute zu unterbrechen. [*I tend to interrupt people in conversations.*]

D26 Wenn ich mir ein Ziel gesetzt habe, erreiche ich dieses in der Regel auch. [*Once I set a goal for myself I usually achieve it.*]

D27 Mir fällt es schwer, schlechte Angewohnheiten abzulegen. [*I find it hard to give up bad habits.*]

D28 Ich bin immer pünktlich. [*I am always on time.*]

D29 Ich mag es überhaupt nicht, an der Ampel darauf zu warten, dass sie grün wird. [*I completely dislike waiting for a red light to turn green.*]

D30 Wenn ich auf etwas warten muss, empfinde ich das als unangenehm. [*I find waiting uncomfortable.*]

D31 Dinge, die Spaß machen, halten mich oft davon ab, andere wichtigere Dinge zu erledigen. [*Things that are fun often keep me from taking care of more important things.*]

D32 Ich neige dazu, Dinge auf später zu verschieben, auch wenn es besser wäre, diese sofort zu erledigen. [*I tend to postpone things even though it would be better to take care of them right away.*]

– In welchem Maße treffen folgende Aussagen auf Sie zu? [*How well do the following statements apply to you:*]

D33 Ich kann mir gut vorstellen, wie mein nächster Job aussieht. [*I have a good idea of what my next job will look like.*]

D34 Mein derzeitiges Leben ist völlig anders, als ich es mir vor drei Jahren vorgestellt habe. [*My life at the moment is completely different from what I imagined it would be like three years ago.*]

D35 Ich habe ein klares Bild von dem, was ich im kommenden Jahr erwarten kann. [*I have a precise idea/clear picture of what I can expect in the upcoming year.*]

D36 Letztes Jahr ist ziemlich anders verlaufen, als ich vorher erwartet hatte. [*Last year went very differently from what I previously expected.*]

D37 Wenn ich eine wichtige Entscheidung treffen muss, bilde ich mir eine sehr genaue Vorstellung über die Konsequenzen dieser Entscheidung. [*When I have to make an important decision, I try to paint a clear picture/get a precise idea of the consequences of that decision.*]

D38 Wenn ich eine wichtige Entscheidung getroffen habe, stimmt das Ergebnis gewöhnlich mit dem überein, was ich mir vorgestellt hatte. [*When I make an important decision, the outcome usually corresponds with what I have imagined it to be.*]

– Stellen Sie sich vor, Sie hätten eine 10-tägige Urlaubsreise im Wert von 2.000 Euro für 2 Personen zu einem spannenden Reiseziel gewonnen. Aufgrund von großer Nachfrage bei der Buchung werden Sie gefragt, ob Sie bereit wären, drei Jahre auf den Urlaub zu warten. [*Imagine you had won a 10-day trip for two people worth 2,000 Euro to an exciting destination. Due to high demand you are asked whether you would be willing to wait three years before making the trip.*]

D39 Im Gegenzug würde man Ihnen zusätzliche Reisetage schenken. Bitte überlegen Sie: Wie viele zusätzliche Reisetage müsste man Ihnen anbieten, damit Sie bereit wären, die Reise erst in drei Jahren zu unternehmen? [*In return for waiting you would be given an extension of the trip. Please consider: how many extra days would one have to offer you for you to be willing to postpone the trip for three years?*]

D40 Wenn es ebenfalls möglich wäre, die Urlaubsreise gegen einen Geldbetrag zu tauschen: wie viel Geld müsste man Ihnen anbieten, so dass Sie bereit wären, auf die Urlaubsreise zu verzichten? [*If it was possible to exchange the trip for money: how much money would one need to offer you for you*]

to be willing to forgo the trip?]

– Die folgenden Aussagen kennzeichnen verschiedene Einstellungen zum Leben und zur Zukunft. [*The following statements characterize different attitudes towards life and the future.*]

D41 Ich bemühe mich, immer eine Geldreserve für unerwartete Ausgaben zu haben. [*I try hard to always have some extra money for unexpected expenditures.*]

D42 Ich verzichte heute auf etwas, damit ich mir morgen mehr leisten kann. [*I give up something today so that I can afford more tomorrow.*]

D43 Ich will lieber heute meinen Spaß haben, und denke dabei nicht an morgen. [*I would rather have some fun today and not think about tomorrow.*]

D44 Meine monatlichen Ausgaben sind oft höher, als ich es mir leisten kann. [*My monthly expenses often exceed what I can afford.*]

D45 Ich bin jemand, der sich an die eigenen guten Vorsätze oft nicht hält. [*I am a person who often does not keep my own good resolutions.*]

D46 Wie viel Geld sparen Sie pro Monat? Versuchen Sie bitte, Ihren monatlichen Sparbetrag so genau wie möglich anzugeben. [*How much money do you save per month? Please try to specify the amount you save per month as exactly as possible.*]

D47 Wenn Sie plötzlich in eine unvorhergesehene Situation geraten würden, und Sie innerhalb von zwei Wochen etwa 1.000 Euro bezahlen müssten, könnten Sie das schaffen? [*I you suddenly got into an unforeseen situation, and you had to pay about 1,000 Euro within two weeks: could you manage that?*]

G.3 Altruism

A1 Sind Sie jemand, der im Allgemeinen bereit ist, mit anderen zu teilen, ohne dafür eine Gegenleistung zu erwarten, oder sind Sie dazu nicht bereit? [*Are you a person who is generally willing to share with others without expecting something in return, or are you not willing to do so?*]

A2 Sind Sie im Vergleich zu anderen jemand, der im Allgemeinen bereit ist, mit anderen zu teilen, ohne dafür eine Gegenleistung zu erwarten, oder sind Sie im Vergleich zu anderen dazu nicht bereit? [*In comparison to others, are you a person who is generally willing to share with others without expecting something in return, or are you not willing to do so (in comparison to others)?*]

A3 Schätzen andere Sie als jemanden ein, der im Allgemeinen bereit ist, mit anderen zu teilen, ohne dafür einen Gegenleistung zu erwarten, oder als jemanden, der dazu nicht bereit ist? [*Do other people assess you as a person who is generally willing to share with others without expecting something in return or as a person who is not willing to do so?*]

– Wie schätzen Sie Ihre Bereitschaft mit anderen zu teilen, ohne dafür einen Gegenleistung zu erwarten, in Bezug auf die folgenden Bereiche ein? [*How do you assess your willingness to share with others without expecting anything in return in the following contexts:*]

  A4 Gegenüber Menschen in Ihrer Stadt. [*With people in your hometown.*]

  A5 Gegenüber Menschen in Ihrem Freundeskreis. [*With people in your circle of friends.*]

  A6 Im beruflichen Umfeld. [*With people from your professional environment.*]

A7 Gegenüber Fremden. [*With strangers.*]

A8 Gegenüber Menschen in Ihrer Nachbarschaft. [*With people in your neighborhood.*]

A9 Gegenüber Menschen in Notlagen. [*With people in distress or emergency situations.*]

A10 Wenn es um gemeinnützige Zwecke geht. [*When it comes to charity.*]

A11 Stellen Sie sich folgende Situation vor: Sie haben in einem Preisausschreiben 1.000 Euro gewonnen. Wie viel würden Sie in Ihrer momentanen Situation für einen gemeinnützigen Zweck spenden? [*Imagine the following situation: you won 1,000 Euro in a lottery. Considering your current situation, how much would you donate to charity?*]

– Wie sehr treffen folgende Aussagen auf Sie zu? [*How well do the following statements describe you as a person?*]

A12 Ich bin bereit, Zeit und Geld für einen mir sinnvoll erscheinenden gemeinnützigen Zweck aufzuwenden, auch wenn mir das nicht direkt selber nützt. [*I am willing to donate time and money to charity, even if I don't profit from that directly.*]

A13 Ich bin bereit anderen zu helfen, auch wenn ich davon ausgehe, dass ich diesen Menschen nie wieder begegnen werde. [*I am willing to help others even if I expect that I will never meet them again.*]

A14 Wenn ich Zeit und Geld für etwas aufwende, erwarte ich, in Zukunft selbst davon zu profitieren. [*When I spend time and money on something I expect to profit from that in the future.*]

A15 Wenn ich Geld spende, erwarte ich, dass dies zur Kenntnis genommen wird, und ich Bestätigung erhalte. [*When I donate money I expect that this is recognized and acknowledged.*]

A16 Ich kann nicht nachvollziehen, warum manche Menschen ihre Lebenszeit dafür verwenden, für einen Zweck zu kämpfen, der ihnen nicht unmittelbar nützt. [*I do not understand why some people spend their lifetime fighting for a cause which they do not benefit from directly.*]

A17 Ich bin jemand, der sein letztes Hemd gibt, um anderen zu helfen. [*I am a person who would give their shirt off their back to help others.*]

A18 Im Vergleich zu anderen bin ich eher selbstlos. [*In comparison to others I am a rather selfless person.*]

A19 Ich bin nur bereit Menschen zu helfen, wenn ich davon ausgehe, dass diese dasselbe für mich tun würden. [*I am only willing to help others if I expect that they would do the same for me.*]

A19 Andere Menschen betrachten mich als eine uneigennützige Person. [*Other people regard me as an unselfish person.*]

A20 Geben Sie bitte möglichst genau an, wie viele Stunden Sie pro Monat aufwenden, um sich für gemeinnützige Zwecke einzusetzen, wie etwa Umweltschutz, Jugendarbeit, usw. [*Please specify as precisely as possible how many hours per month you volunteer for good causes, e.g. protecting the environment.*]

A21 Wie viele Menschen wissen von Ihrem gemeinnützigen Engagement? [*How many people know that you commit time to charitable purposes?*]

G.4   Trust

T1 Sind Sie im Allgemeinen jemand, der bereit ist, anderen Menschen zu vertrauen, oder sind Sie nicht bereit, anderen zu vertrauen? [*Generally speaking, are you a person who is willing to trust other people, or are you not willing to trust other people?*]

T2 Sind Sie im Vergleich zu anderen im Allgemeinen bereit, anderen Menschen zu vertrauen, oder sind Sie im Vergleich zu anderen nicht bereit, anderen zu vertrauen? [*In comparison to others are you a person who is generally willing to trust other people, or a you not willing to trust others (in comparison to others)?*]

T3 Schätzen andere Sie im Allgemeinen als jemanden ein, der bereit ist, anderen zu vertrauen, oder als jemanden, der nicht bereit ist, anderen zu vertrauen? [*Do other people assess you as a person who is generally willing to trust others or as a person who is not willing to trust others?*]

– Wie schätzen Sie Ihre Bereitschaft, anderen zu vertrauen, in Bezug auf die folgenden Bereiche ein? [*How do you assess your willingness to trust others in the following contexts?*]

T4 Gegenüber Menschen in Ihrer Stadt. [*When it comes to people in your hometown.*]

T5 Gegenüber Menschen in Ihrem Freundeskreis. [*When it comes to people in your circle of friends.*]

T6 Im beruflichen Umfeld. [*When it comes to your professional environment.*]

T7 Gegenüber Fremden. [*When it comes to strangers.*]

T8 Gegenüber Menschen in Ihrer Nachbarschaft. [*When it comes to people in your neighborhood.*]

T9 Sie sind im Urlaub in einem fremden Land, und eine Person, die Sie im Hotel treffen, die Sie aber nicht kennen, bittet Sie um einen Gefallen: Sie benötigt schnell Bargeld, um den Arztbesuch ihres Partners zu bezahlen, und versichert Ihnen, das Geld am kommenden Tag zurück zu geben. Wie viel wären Sie bereit, dieser Person zu leihen? [*You are on vacation in a foreign country. A person, whom you meet in your hotel but whom you do not know, asks you for a favor. He or she urgently needs cash in order to pay for their partner's doctor visit, and promises to pay you back the following day. How much money would you be willing to lend to that person?*]

– Wie oft kommt es vor, dass... [*How often does it happen that...*]

T10 Sie einen Anhalter mitnehmen? [*you take a hitchhiker with you?*]

T11 Sie Ihre persönlichen Wertgegenstände an einem öffentlichen Ort unbeobachtet lassen? [*you leave your personal belongings unattended in a public place?*]

T12 Sie Ihre Wohnungstür nicht abschließen? [*do not lock your apartment door?*]

– Wie sehr treffen folgende Aussagen auf Sie zu? [*How well do the following statements describe you as a person?*]

T13 Im Vergleich zu anderen Menschen fasse ich schnell Vertrauen in fremde Personen. [*In comparison to others I quickly (build up) trust with strangers.*]

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T14 Andere Menschen halten mich für zu vertrauensselig. [*Other people regard me as too credulous and trusting.*]

T15 Mir fällt es nicht schwer, persönliche Dinge mit Menschen zu besprechen, die ich noch nicht lange kenne. [*I find it difficult to talk about personal issues with people I haven't known for a long time yet.*]

T16 Solange man mich nicht vom Gegenteil überzeugt, gehe ich stets davon aus, dass andere Menschen nur das Beste im Sinn haben. [*As long as I am not convinced otherwise, I assume that people have only the best intentions.*]

– Was glauben Sie, wie sehr treffen die folgenden Aussagen im Allgemeinen zu? [*What do you think: how well do the following statements apply?*]

T17 Im Allgemeinen kann man den Menschen vertrauen. [*In general, one can trust other people.*]

T18 Heutzutage kann man sich auf niemanden mehr verlassen. [*Nowadays one cannot rely on anyone anymore.*]

T19 Im Umgang mit Fremden ist es besser, vorsichtig zu sein, bevor man sich auf sie verlässt. [*When dealing with strangers it is better to be careful before one relies on them.*]

– Glauben Sie... [*Do you think...*]

T20 dass die meisten Menschen Sie ausnutzen würden, wenn sie die Gelegenheit hätten, oder... [*that most people would take advantage of you when they have the chance, or...*]

T21 dass sich die meisten Menschen fair Ihnen gegenüber verhalten würden? [*that most people would be fair to you?*]

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– Würden Sie eher sagen... [*Would you rather say...*]

T22 dass Menschen meistens versuchen hilfsbereit zu sein, oder... [*that most people try to be helpful/cooperative, or...*]

T23 dass die Menschen meistens nur in ihrem eigenen Interesse handeln? [*that most people only act in their own best interest?*]

G.5 Positive Reciprocity and Negative Reciprocity

PR1 Sind Sie jemand, der sich im Allgemeinen besonders anstrengt einen Gefallen oder eine Hilfe zu erwidern, auch wenn das für Sie mit Kosten verbunden ist, oder sind Sie dazu nicht bereit? [*Are you a person who is generally willing to go out of their way to return a favor or a help even if it is costly, or are you not willing to do so?*]

PR2 Sind Sie im Vergleich zu anderen jemand, der sich besonders anstrengt einen Gefallen oder eine Hilfe zu erwidern, auch wenn das für ihn mit Kosten verbunden ist, oder sind Sie im Vergleich zu anderen dazu nicht bereit? [*In comparion to others, are you a person who goes out of their way to return a favor or a help even if it is costly, or are you not wiling to do so (in comparison to others)?*]

PR3 Schätzen andere Sie im Allgemeinen als jemanden ein, der sich besonders anstrengt einen Gefallen oder eine Hilfe zu erwidern, auch wenn das für ihn mit Kosten verbunden ist, oder als jemanden, der dazu nicht bereit ist? [*Do other people assess you as a person who goes out of their way to return a favor or a help even if it is costly or as a person who is not willing to do so?*]

– Wie schätzen Sie Ihre Bereitschaft, einen Gefallen oder eine Hilfe zu erwidern, in Bezug auf die folgenden Bereiche ein? [*How do you assess your willingness*

to return a favor or a help in the following contexts?]

PR4 Gegenüber Menschen in Ihrer Stadt. [*When it comes to people in your hometown.*]

PR5 Gegenüber Menschen in Ihrem Freundeskreis. [*When it comes to your circle of friends.*]

PR6 In Ihrem beruflichen Umfeld. [*When it comes to your professional environment.*]

PR7 Gegenüber Fremden. [*When it comes to strangers.*]

PR8 Gegenüber Menschen in Ihrer Nachbarschaft. [*When it comes to people in your neighborhood.*]

NR1 Sind Sie jemand, der im Allgemeinen bereit ist, unfaires Verhalten zu bestrafen, auch wenn das für Sie mit Kosten verbunden ist, oder sind Sie dazu nicht bereit? [*Are you a person who is generally willing to punish unfair behavior even if it is costly?*]

NR2 Sind Sie im Vergleich zu anderen jemand, der im Allgemeinen bereit ist, unfaires Verhalten zu bestrafen, auch wenn das für Sie mit Kosten verbunden ist, oder sind Sie im Vergleich mit anderen dazu nicht bereit? [*In comparison to others, are you a person who is generally willing to punish unfair behavior even if it is costly, or are you not willing to do so (in comparison to others)?*]

NR3 Schätzen andere Sie als jemanden ein, der im Allgemeinen bereit ist, unfaires Verhalten zu bestrafen, auch wenn das für ihn mit Kosten verbunden ist, oder als jemanden, der im Allgemeinen nicht dazu bereit ist? [*Do other people assess you as a person who is generally willing to punish unfair behavior even if it is costly, or as a person, who is generally not willing to do so?*]

NR4 Wie würden Sie Ihre Bereitschaft, unfaires Verhalten zu bestrafen, auch wenn das für Sie mit Kosten verbunden ist, in Bezug auf die folgenden Bereiche einschätzen? [*How would you assess your willingness to punish unfair behavior even if it is costly in the following contexts?*]

NR5 Gegenüber Menschen in Ihrer Stadt. [*When it comes to people in your hometown.*]

NR6 Gegenüber Menschen in Ihrem Freundeskreis. [*When it comes to your circle of friends.*]

NR7 Im beruflichen Umfeld. [*When it comes to your professional environment.*]

NR8 Gegenüber Fremden. [*When it comes to strangers.*]

NR9 Gegenüber Menschen in Ihrer Nachbarschaft. [*When it comes to people in your neighborhood.*]

PR-NR-1 Sind Sie jemand, der im Allgemeinen bereit ist, faires Verhalten zu belohnen und unfaires Verhalten zu bestrafen, auch wenn das für Sie mit Kosten verbunden ist, oder sind Sie dazu nicht bereit? [*Are you a person who is generally willing to reward fair behavior and punish unfair behavior even if it is costly, or are you not willing to do so?*]

PR-NR-2 Sind Sie im Vergleich zu anderen jemand, der im Allgemeinen bereit ist, faires Verhalten zu belohnen und unfaires Verhalten zu bestrafen, auch wenn das für Sie mit Kosten verbunden ist, oder sind Sie im Vergleich zu anderen dazu nicht bereit? [*In comparison to others, are you a person who is generally willing to reward fair behavior and punish unfair behavior, even if it is costly, or are you not willing to do so (in comparison to others)?*]

PR-NR-3 Schätzen andere Sie als jemanden ein, der im Allgemeinen bereit ist, faires Verhalten zu belohnen und unfaires Verhalten zu bestrafen, auch wenn das für ihn mit Kosten verbunden ist, oder als jemanden, der dazu nicht bereit ist? [*Do other people assess you as a person who is generally willing to reward fair behavior and punish unfair behavior even if it is costly, or as a person who is not willing to do so?*]

– Stellen Sie sich folgende Situation vor: Zusammen mit einer anderen Person, die Sie nicht kennen, haben Sie 100 Euro bei einem Preisausschreiben gewonnen. Die Regeln besagen nun folgendes: Einer von Ihnen soll einen Vorschlag darüber machen, wie die 100 Euro aufgeteilt werden. Der andere erfährt den Vorschlag, und hat dann zwei Möglichkeiten. Er kann die Aufteilung annehmen oder ablehnen. Wenn er den Vorschlag annimmt, wird das Geld so aufgeteilt, wie die andere Person es vorgeschlagen hat. Wird die Aufteilung abgelehnt, gehen beide leer aus.

[*Imagine the following situation: together with a person whom you do not know you won 100 Euro in a lottery. The rules stipulate the following: One of you has to make a proposal about how to divide the 100 Euro between you two. The other one gets to know the proposal and has to decide between two options. He or she can accept the proposal or reject it. If he or she accepts the proposal, the money is divided according to the proposal. If he or she rejects the proposal, both receive nothing.*]

NR10 Angenommen, die andere Person macht einen Vorschlag über die Aufteilung. Sie wiederum sollen entscheiden, ob Sie den Vorschlag annehmen oder ablehnen. Welchen Betrag muss die andere Person Ihnen mindestens anbieten, damit Sie bereit sind, den Vorschlag über die Aufteilung anzunehmen?

[Assume that the other person makes the proposal about how to divide the money. You on the other hand have to decide whether to accept or reject the proposal. What is the minimum amount the other person has to offer you for you to be willing to accept the proposal?]

PR9 Stellen Sie sich folgende Situation vor: Sie sind beim Einkaufen unterwegs in einer fremden Stadt, und merken, dass Sie sich verlaufen haben. Sie fragen eine fremde Person nach dem Weg. Die Person bietet Ihnen an, Sie mit dem Auto zu Ihrem Ziel zu fahren. Die Fahrt dauert etwa 20 Minuten, und kostet die fremde Person alles in allem etwa 20 Euro. Die fremde Person will aber kein Geld dafür. Sie haben 6 Flaschen Wein dabei. Die billigste Flasche kostet 5 Euro, die teuerste kostet 30 Euro. Sie entscheiden, der fremden Person eine Flasche Wein als Dankeschön zu geben. Welche Flasche schenken Sie? *[Imagine the following situation: you are shopping in an unfamiliar city and realize you lost your way. You ask a stranger for directions. The stranger offers to take you with their car to your destination. The ride takes about 20 minutes and costs the stranger about 20 Euro in total. The stranger does not want money for it. You carry six bottles of wine with you. The cheapest bottle costs 5 Euro, the most expensive one 30 Euro. You decide to give one of the bottles to the stranger as a thank-you gift. Which bottle do you give?* (Options: The bottle for 5/10/15/20/25/30 Euro)]

PR10 Angenommen, Sie sind im Ausland und müssen ärztlich behandelt werden. Es ist in diesem Land üblich, dass der Arzt nur gegen Barzahlung behandelt. Die Behandlung kostet umgerechnet 100 Euro. Sie haben aber kein Bargeld bei sich. Eine fremde Person im Wartezimmer beobachtet dies, und schenkt Ihnen umgerechnet 100 Euro. Sie nehmen das Geschenk gerne an. Sie fragen nach

der Adresse der Person. Als Sie zwei Wochen später wieder zu Hause sind, überlegen Sie, dass Sie sich bei der Person bedanken und ein Geschenk nach Hause schicken möchten. Wie viel investieren Sie in ein Geschenk, das Sie dann verschicken? [*Assume that you are abroad and need medical treatment. In the country you are in it is common that the doctor treats patients only for cash. The treatment costs about 100 Euro. You don't have any cash with you. A stranger in the waiting room observes the situation and gives 100 Euro as a gift to you. You are happy to take the gift. You ask the stranger for their address. When returning home two weeks later you decide that you want to thank the stranger and send them a present. How much do you spend on a present that you then send to the stranger?*]

NR11 Überlegen Sie bitte, was Sie in folgender Situation tun würden: Sie sind mit einer fremden Person in einen Verkehrsunfall verwickelt. Sie trifft keinerlei Schuld, aber die andere Person behauptet, Sie seien über Rot gefahren, obwohl die Person selbst über Rot gefahren ist. Obwohl die Behauptung der Person falsch ist, glaubt man ihr und Sie müssen eine Strafe in Höhe von 300 Euro bezahlen. Es hab einen Augenzeugen, der gesehen hat, was passiert ist. Wenn der Augenzeuge aussagt, müssen Sie die Strafe von 300 Euro nicht zahlen, sondern der fremde Fahrer. Zusätzlich muss der fremde Fahrer eine Strafe wegen Falschaussage in Höhe von 1.000 Euro bezahlen. Nehmen Sie an, dass ein Detektiv den Augenzeugen auf jeden Fall findet, und dass der Augenzeuge aussagt, wenn er gefunden wird. Wie viel Geld sind Sie höchstens bereit, für den Detektiv auszugeben? [*Please consider what you would do in the following situation: you and a stranger are involved in a car accident. You are not to blame for the accident, but the stranger claims that you ran a red light even*

though it was the stranger himself who ran the red light. Even though the stranger's claim is false, the claim is believed to be correct and you have to pay a fine of 300 Euro. There was an eyewitness who saw what really happened. If the eyewitness testifies, you don't have to pay the fine but the stranger has to instead. In addition the stranger will then have to pay a fine for making a false testimony. Assume that there is detective who will definitely find the eyewitness, and that the eyewitness will testify if the detective finds him. What is the maximum amount of money that you are willing to spend on hiring the detective?]

PR11 Überlegen Sie bitte, was Sie in folgender Situation tun würden: Sie und eine andere Person, die Sie nicht kennen, treffen beide eine Entscheidung über die Verwendung von Geld und erzielen zusammen ein Ergebnis. Die Regeln gehen so: Jeder Teilnehmer erhält ein Konto mit 20 Euro. Am Anfang haben Sie und die andere Person also jeweils 20 Euro auf dem Konto. Zuerst entscheidet die andere Person. Sie kann Ihnen Geld auf Ihr Konto überweisen. Sie kann Ihnen einen beliebigen Eurobetrag überweisen, also 0 Euro, 1 Euro, 2 Euro, usw. bis 20 Euro. Jeder Euro, den die andere Person an Sie überweist, wird von den Leitern der Studie verdreifacht und Ihrem Konto gutgeschrieben. Nach dem ersten Schritt sind also auf dem Konto der anderen Person 20 Euro minus der Überweisung an Sie. Auf Ihrem Konto sind 20 Euro plus dem Dreifachen der Überweisung an Sie. Jetzt entscheiden Sie: Sie haben die Möglichkeit, der anderen Person Geld zurück zu überweisen. Sie können jeden beliebigen Eurobetrag zurück überweisen, also 0 Euro, 1 Euro, 2 Euro, usw. bis 80 Euro, je nachdem, wie viel Geld Sie insgesamt auf Ihrem Konto gutgeschrieben haben, nachdem Sie die Überweisung der anderen Person er-

halten haben. Damit ist die Studie beendet. Die endgültigen Kontostände sind erreicht. Auf dem Konto der anderen Person sind jetzt 20 Euro minus der Überweisung an Sie plus Ihrer Rücküberweisung. Auf Ihrem Konto sind jetzt 20 Euro plus das Dreifache der Überweisung der anderen Person an Sie minus Ihrer Rücküberweisung. Wir möchten nun von Ihnen wissen, welche Rücküberweisung Sie wählen würden, wenn die andere Person Ihnen einen bestimmten Betrag überweist. [*Please consider what you would do in the following situation: you and a person whom you do not know both have to make a decision about the employment of money and together you achieve an outcome. The rules are the following: both of you get an account with 20 Euro. Thus, at first, both you and the other person have 20 Euro each on their account. The other person has to decide first. She can transfer money to your account. She can transfer any round amount, i.e. 0 Euro, 1 Euro, 2 Euro, etc. up to 20 Euro. Each Euro that the other person decides to transfer to you is tripled by the people conducting the study and then credited to your account. Thus, after the first step the other person has 20 Euro minus the amount she transferred to you on her account. You on the other hand have 20 Euro plus three times the amount that was transferred to you on your account. Now you have to make a decision. You can transfer money back to the other person. You can transfer any amount to the other person, i.e. 0 Euro, 1 Euro, 2 Euro, etc. up to 80 Euro depending on how much money is on your account after receiving the transfer from the other person. After this decision the study is over, and the amount on the two accounts are final. The other person has 20 Euro minus the amount she transferred to you plus the amount you transferred back on her account. You have 20 Euro plus three times the amount the other person*

transferred to you minus the amount you transferred to the other person on your account. For a given transfer of the other person we would now like to know how much money you would decide to transfer back.]

PR11-1 Angenommen, die andere Person überweist Ihnen 5 Euro. Sie haben dann nach dem ersten Schritt 20+3*5 Euro = 35 Euro, die andere Person hat 20-5 Euro = 15 Euro. Wie hoch ist Ihre Rücküberweisung? [*Assume that the other person transfers 5 Euro to your account. After the first step you have 20+3*5 Euro = 35 Euro, the other person has 20-5 Euro = 15 Euro. Which amount do you transfer back?*]

PR11-2 Angenommen, die andere Person überweist Ihnen 10 Euro. Sie haben dann nach dem ersten Schritt 20+3*10 Euro = 50 Euro, die andere Person hat 20-10 Euro = 10 Euro. Wie hoch ist Ihre Rücküberweisung? [*Assume that the other person transfers 10 Euro to your account. After the first step you have 20+3*10 Euro = 50 Euro, the other person has 20-10 Euro = 10 Euro. Which amount do you transfer back?*]

PR11-3 Angenommen, die andere Person überweist Ihnen 15 Euro. Sie haben dann nach dem ersten Schritt 20+3*15 Euro = 65 Euro, die andere Person hat 20-15 Euro = 5 Euro. Wie hoch ist Ihre Rücküberweisung? [*Assume that the other person transfers 15 Euro to your account. After the first step you have 20+3*15 Euro = 65 Euro, the other person has 20-15 Euro = 5 Euro. Which amount do you transfer back?*]

PR11-4 Angenommen, die andere Person überweist Ihnen 20 Euro. Sie haben dann nach dem ersten Schritt 20+3*20 Euro = 80 Euro, die andere Person hat 20-20 Euro = 0 Euro. Wie hoch ist Ihre Rücküberweisung? [*Assume that the other person transfers 20 Euro to your account. After the first*

step you have 20+3*20 Euro = 80 Euro, the other person has 20-20 Euro = 0 Euro. Which amount do you transfer back?]

T24 Zum Schluss noch eine andere Frage. Angenommen Sie wären in der Rolle der anderen Person, d.h. Sie müssten entscheiden, welchen Betrag Sie überweisen würden. Welchen Betrag würden Sie überweisen? [*Finally, a different question: assume you were in the position of the other person and had to decide which amount to transfer. Which amount would you transfer?*]

– In welchem Maße treffen folgende Aussagen auf Sie zu? [*How well do the following statements describe you as a person?*]

PR12 Wenn mir jemand einen Gefallen tut, bin ich bereit, diesen zu erwidern. [*When someone does me a favor I am willing to return it.*]

NR12 Wenn mir schweres Unrecht zuteil wird, werde ich mich bei nächster Gelegenheit um jeden Preis dafür rächen. [*If I suffer a serious wrong I will take revenge at the first opportunity.*]

NR13 Wenn mich jemand in eine schwierige Lage bringt, werde ich das Gleiche mit ihm machen. [*When someone puts me into a difficult situation I will do the same to them.*]

PR13 Ich strenge mich besonders an, um jemandem zu helfen, der mir früher schon einmal geholfen hat. [*I go out of my way to help someone who has helped me before.*]

NR14 Wenn mich jemand beleidigt, werde ich mich auch ihm gegenüber beleidigend verhalten. [*If someone insults me I will also behave in an insulting way towards him.*]

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PR14 Ich bin bereit Kosten auf mich zu nehmen, um jemandem zu helfen, der mir früher schon mal geholfen hat. [*I am willing to incur costs to help someone who has helped me before.*]

NR15 Wenn mir jemand mit Absicht Schaden zufügt, werde ich versuchen, es dieser Person mit gleicher Münze heimzuzahlen. [*If someone harms me on purpose I will try to give that person a taste of his own medicine.*]

NR16 Ich bin jemand, der sich nicht für dumm verkaufen lässt. [*I am not a person who is taken for a fool.*]

PR15 Ich mag das Gefühl nicht, jemandem etwas zu schulden. [*I do not like the feeling of owing something to someone.*]

NR17 Wenn sich jemand im Sport unfair mir gegenüber verhält, werde ich mich bei nächster Gelegenheit auch unfair verhalten. [*If someone behaves unfairly towards me in sports, I will also behave unfairly towards them.*]

NR18 Ich bin jemand, der sich nicht auf der Nase herumtanzen lässt. [*I am not a person who lets others push me around.*]

PR16 Wenn mir ein Kollege am Arbeitsplatz einen Gefallen tut, achte ich besonders darauf, diesen bei nächster Gelegenheit zu erwidern, auch wenn ich dafür kostbare Zeit aufwenden muss. [*If a colleague does me a favor at work, I make sure to return the favor at the next occasion, even if I have to invest precious time to do so.*]

NR19 Wenn mich jemand schlecht behandelt, lasse ich das nicht einfach so stehen. [*When someone treats me in a bad way, I don't just let it go.*]

NR20 Ich kann es überhaupt nicht leiden, der Dumme zu sein. [*I absolutely dislike being the fool.*]

NR21 Mir ist es wichtig, von anderen respektiert zu werden. [*It is important to me to be respected by others.*]

NR22 Man muss manchmal eine gewisse Härte an den Tag legen, sonst wird man immer über den Tisch gezogen. [*You sometimes have to play tough in order not to be taken advantage of.*]

PR17 Stellen Sie sich folgende Situation vor: Sie sind beim Einkaufen unterwegs in einer fremden Stadt, und merken, dass Sie sich verlaufen haben. Sie fragen eine fremde Person nach dem Weg. Die Person bietet Ihnen an, Sie mit dem Auto zu Ihrem Ziel zu fahren. Die Fahrt dauert etwa 20 Minuten, und kostet die fremde Person alles in allem etwa 20 Euro. Die fremde Person will aber kein Geld dafür. Sie haben 6 Flaschen Wein dabei. Eine Flasche Wein kostet 5 Euro. Sie entscheiden, der fremden Person eine Flasche Wein als Dankeschön zu geben. Wie viele Flaschen Wein schenken Sie der fremden Person? [*Imagine the following situation: you are shopping in an unfamiliar city and realize you lost your way. You ask a stranger for directions. The stranger offers to take you with their car to your destination. The ride takes about 20 minutes and costs the stranger about 20 Euro in total. The stranger does not want money for it. You have six bottles of wine with you. One bottle costs 5 Euro. You decide to give a bottle to the stranger as a thank-you gift. How many bottles do you give?* (Options: One/two/three/four/five/six bottles.)]

NR23 Stellen Sie sich folgendes Szenario vor: In einer Gemeinde mit hoher Arbeitslosigkeit gibt es ein Unternehmen, das trotz Rezession noch Gewinne macht. Der Vorstand des Unternehmens kündigt an, ab dem kommenden Quartal alle Löhne und Gehälter um 5% zu kürzen. Wie fair finden Sie diese Entscheidung? [*Imagine the following scenario: A business in a city with a high level*

of unemployment makes profits despite a recession. The enterprise's chairman announces a decision to cut all wages and salaries by 5%. How fair do you think is this decision?]

NR24 Stellen Sie sich folgendes Szenario vor: Es ist das Wochenende eines alljährlichen Volksfestes, das wie immer gut besucht ist. Die Temperaturen sind dieses Jahr unerwartet hoch, so dass die Besucher des Festes viel mehr an Getränken konsumieren wollen, als in den Vorjahren. Daraufhin erhöhen die Besitzer der Festzelte die Preise der Getränke. Wie fair finden Sie diese Entscheidung? [*Imagine the following scenario: It is the weekend of the annual fair, which is well-attended as usual. It is warmer than expected, so that the people at the fair drink much more than in the preceding years. As a result, the hosts decide to raise the prices of the drinks. How fair do you think is this decision?*]

– Stellen Sie sich folgendes Szenario vor: In einem Unternehmen, in dem Sie arbeiten, steht der Jahresabschluss an, so dass alle Mitarbeiter länger im Büro sein müssen, um die Arbeit, die ihr Vorgesetzter von ihnen erwartet, schaffen zu können. Einer der Mitarbeiter verlässt das Büro dennoch täglich pünktlich zur gewohnten Zeit, so dass Sie und Ihre Kollegen seinen Teil der Arbeit zusätzlich übernehmen müssen. Drücken Sie die Intensität Ihrer Empfindung gegenüber diesem Mitarbeiter aus. [*Imagine the following scenario: The preparation of the annual accounts is coming up for the business you are employed by. Hence, all employees have to work overtime in order to manage and finish the workload that the boss expects from them. Nevertheless, one of your co-workers leaves the office every day at the usual time, so that you and the other colleagues additionally have to take on his workload as well. Please express the intensity of your feelings towards that co-worker.*]

NR25 Wie verärgert sind Sie auf einer Skala von 0 bis 10? [*How upset are you on a scale from 0 to 10?*]

NR26 Wie wütend sind Sie auf einer Skala von 0 bis 10? [*How angry are you on a scale from 0 to 10?*]

H Wording of Experiments

H.1 Risk Taking

H.1.1 German

In diesem Experiment haben Sie in jeder Entscheidungssituation die Wahl zwischen einer Lotterie und einer sicheren Auszahlung.

Im Folgenden werden Ihnen 21 Situationen präsentiert. In jeder Situation ist die Lotterie dieselbe, aber die sichere Auszahlung variiert.

Bei der Lotterie erhalten Sie mit 50 Prozent Chance 1000 Punkte, und mit 50 Prozent Chance 0 Punkte.

Auf dem folgenden Bildschirm werden Ihnen alle 21 Entscheidungssituationen angezeigt.

Anschliessend wird Ihnen jede Situation einzeln gezeigt, und Sie werden gebeten, jeweils die Wahl zwischen der sicheren Auszahlung und der Lotterie zu treffen.

Am Schluss wird eine der 21 Situationen zufällig vom Computer für Sie ausgewählt, die am Ende des Experimentes ausbezahlt wird.

Gemäss Ihrer Entscheidung in dieser Situation nehmen Sie dann entweder an der Lotterie teil, oder Sie erhalten die sichere Auszahlung.

Falls Sie sich in dieser Situation für die Lotterie entschieden haben, wird diese ebenfalls am Ende per Zufallszug vom Computer ausgelost.

Ihre Auszahlung wird Ihnen am Ende des Experimentes in bar ausgezahlt.

Hier sehen Sie eine Übersicht über alle Entscheidungen die Sie gleich treffen werden.

[*Es folgt zuerst eine Übersicht mit den Entscheidungen zwischen der Lotterie und der sicheren Auszahlung, die von 0 bis 1000 in Schritten von 50 Punkten ansteigt. Anschliessend folgt für jede der Entscheidungen ein separater Entscheidungsbildschirm.*]

H.1.2 English

In this part of the experiment you choose between a lottery and a safe option.

In what follows, you will face 21 scenarios. In each scenario, the lottery is the same but the safe option varies between scenarios.

The lottery gives you 1000 points with a 50 percent chance, and 0 points with a 50 percent chance.

The next screen will display all 21 scenarios. Then, each scenario will be shown separately and you will be asked to decide between the safe option and the lottery.

At the end, one of the 21 scenarios will be selected randomly by the computer. You will receive the payments resulting from this scenario.

Depending on your decision in that scenario, you will either participate in the lottery or receive the safe option.

If you opted for the lottery, a computer will make the random draw.

You will receive your payment at the end of the experiment.

You will now see an overview of the scenarios in which you have to take the decisions. [*The subjects are first presented with an overview of the decisions between the lottery and the safe option that varies between 0 and 1000 points in increments of 50 points. Then, they take their decisions for each scenario on a separate screen.*]

H.2 Time Discounting

H.2.1 German

In dem folgenden Experiment bitten wir Sie, eine Reihe von Entscheidungen zu treffen, bei denen Sie jeweils die Wahl zwischen einer kleineren Auszahlung zu einem früheren Zeitpunkt und einer grösseren Auszahlung zu einem späteren Zeitpunkt haben.

Der Betrag, den Sie aus diesem Teil des Experimentes erhalten, wird Ihnen per Post zugeschickt.

Je nach Entscheidungssituation können Sie im Folgenden zwischen einem Betrag heute, einem Betrag in 6 Monaten, oder einem Betrag in 12 Monaten wählen.

Entsprechend Ihrer Entscheidung wird also entweder heute, in 6 Monaten, oder in 12 Monaten ein Brief mit dem entsprechenden Betrag an Sie verschickt. Bitte adressieren Sie für diesen Zweck den Briefumschlag, der in Ihrer Kabine liegt.

Es folgt nun also eine Reihe von Entscheidungssituationen. Eine dieser Situationen wird im Anschluss an das Experiment zufällig vom Computer ausgewählt und Ihnen ausgezahlt. Das bedeutet, dass jede der kommenden Entscheidungssituationen fÃ$\frac{1}{4}$r Ihre Auszahlung relevant sein kann.

Bei den kommenden Entscheidungssituationen haben Sie jeweils die Wahl zwischen einem kleineren Betrag, der Ihnen heute per Post zugestellt wird, und einem grösseren Betrag, der Ihnen in 12 Monaten per Post zugestellt wird.

Hier sehen Sie eine Übersicht über alle Entscheidungen die Sie gleich treffen werden. [*Es folgt zuerst eine Übersicht mit den Entscheidungen zwischen 1600 Punkten heute und 1600,..., 2959.4* [47] *Punkten in 12 Monaten. Anschliessend folgt für jede der Entscheidungen ein separater Entscheidungsbildschirm.*]

H.2.2 English

In the following experiment we ask you to take a series of choices between a smaller, earlier payment and a larger, delayed payment.

Any payment from this experiment will be sent to you via mail.

Depending on the choice situation, you choose between a payment today, a payment

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[47] 1600/1648.4/1697.4/1747.2/1797.8/1849/1901/1953.6/2007/2061.2/2116/ 2171.6/2227.8/2284.8/2342.6/2401/2460.2/2520/2580.6/2642/2704/2766.8/2830.2/2894.4/2959.4

in 6 months, or a payment in 12 months.

That means that, according to the choice you make, a payment will be sent to you via mail either today, in 6 months, or in 12 months. To this end, please write your address on the envelope that you find on the desk next to the screen in your cubicle.

In what follows, you will face a series of choices. At the end of the experiment, the computer will randomly draw one of these choices. This choice will determine your payment. This means that any of the upcoming choices can be relevant for your payment.

In the following situation, you have the choice between a smaller payment sent to you via mail today and a larger payment sent to you via mail in 12 months.

Here is an overview over all choices you will have to make.

[*First, subjects are shown an overview over the choices between 1600 points today and 1600,..., 2959.4* [48] *points in 12 months. The, subjects are shown a separate screen for each choice they make.*]

H.3 Altruism

H.3.1 German

Im Folgenden geht es um Spendenverhalten. Sie bekommen eine Liste von Organisationen, an die Sie spenden können. Wenn Sie lieber an eine andere Organisation spenden möchten, können Sie uns eine Organisation nennen, an die die Spende gehen soll. Dies muss allerdings eine offiziell registrierte Spendenorganisation sein.

In Kürze können Sie dann auf einer Homepage, deren Adresse wir Ihnen am Ende des Experimentes mitgeben werden, die Spendenquittungen einsehen, so dass Sie

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[48] 1600/1648.4/1697.4/1747.2/1797.8/1849/1901/1953.6/2007/2061.2/2116/ 2171.6/2227.8/2284.8/2342.6/2401/2460.2/2520/2580.6/2642/2704/2766.8/2830.2/2894.4/2959.4

sicher sein können, dass Ihre Spende bei der betreffenden Organisation angekommen ist.

Sie erhalten von uns nun einen Betrag von 300 Punkten gutgeschrieben. Wie viele dieser Punkte möchten Sie spenden?

An welche Organisation soll Ihre Spende überwiesen werden?

- Brot für die Welt

- Kindernothilfe

- Deutsches Rotes Kreuz

- Welthungerhilfe

- BUND (Bund für Umwelt und Naturschutz Deutschland)

- Greenpeace

- Terre des hommes

- Aktion Mensch

- Andere (dies muss eine offiziell registrierte Spendenorganisation sein)

H.3.2 English

The following experiment is about donation behavior. You will receive a list of organization to which you can make a donation to. In case you'd rather donate to a different organization, you can indicate the organization you'd like your donation to go to. However, this needs to be an officially registered charitable organization.

In a few days, you can visit a website where we will upload the receipts for you to verify the donation. We will provide you with the website's address at the end of the experiment.

You will now receive an amount of 300 points. How many of these points would you like to donate?

Which organization should receive your donation?

- Brot für die Welt

- Kindernothilfe

- Deutsches Rotes Kreuz (German Red Cross)

- Welthungerhilfe

- BUND (Bund für Umwelt und Naturschutz Deutschland)

- Greenpeace

- Terre des hommes

- Aktion Mensch

- A different one (this has to be an officially registered charitable organization)

H.4   Trust

H.4.1   German

In diesem Experiment werden Sie und ein anderer Teilnehmer beide eine Entscheidung über die Verwendung von Geld treffen und zusammen ein Ergebnis erzielen. Sie und der andere Teilnehmer werden einander zufällig zugelost. Weder Sie noch der andere Teilnehmer werden erfahren, wer der andere ist. Zudem ist sicher gestellt, dass Sie dem anderen Teilnehmer in keinem der vorangegangenen Experimente zugelost wurden, und Sie dem anderen Teilnehmer in keinem der zukünftigen Experimente zugelost werden.

Jedem von Ihnen wird in diesem Teil des Experimentes eine Rolle zuteil: entweder die Rolle des Senders oder die Rolle des Rücksenders.

Jeder Teilnehmer erhält für dieses Experiment eine Anfangsausstattung von 500 Punkten.

Das Experiment hat zwei Stufen:

Auf der ersten Stufe kann der Sender eine Überweisung an den Rücksender tätigen. Die Überweisung ist eine Zahl zwischen 0 und 500 Punkten in Schritten von 50 Punkten. Der Sender kann dem Rücksender also entweder 0 Punkte, 50 Punkte, 100 Punkte, ..., 450 Punkte oder 500 Punkte überweisen. Der überwiesene Betrag wird von den Leitern des Experiments verdoppelt.

Überweist der Sender beispielsweise 100 Punkte, dann erhält der Rücksender 200 Punkte. Überweist der Sender 200 Punkte, erhält der Rücksender 400 Punkte, überweist er 0 Punkte, erhält der Rücksender 0 Punkte, usw.

Am Ende der ersten Stufe steht dem Rücksender also die Summe aus seiner Anfangsausstattung und dem Doppelten der Überweisung zur Verfügung.

Auf der zweiten Stufe kann der Rücksender nun seinerseits eine beliebige Anzahl von Punkten and den Sender zurück überweisen. Diese Rücküberweisung wird nicht verdoppelt. Die Rücküberweisung muss eine Zahl zwischen 0 und 1500 Punkten sein.

Nach der Rücküberweisung stehen die Auszahlungen des Experiments fest.

Die Auszahlungen für den Sender und Rücksender werden wie folgt berechnet:

Für den Sender: 500 Punkte - Überweisung + Rücküberweisung

Für den Rücksender: 500 Punkte + 2 * Überweisung - Rücküberweisung

Ein Beispiel: Angenommen der Sender überweist 150 Punkte. Am Ende der ersten Stufe hat der Sender dann 500 - 150 = 350 Punkte und der Rücksender 500 + 2* 150

= 800 Punkte. Auf der zweiten Stufe wählt der Rücksender eine Rücküberweisung von 200 Punkten. Die Auszahlungen betragen dann: Für den Sender: 500 - 150 + 200 = 550 Punkte. Für den Rücksender: 500 + 2* 150 - 200 = 600 Punkte.

Auf dem nächsten Bildschirm werden Sie darüber informiert ob Sie in der Rolle des Senders oder Rücksenders sind und Sie können Ihre Entscheidung treffen.

Falls Sie Fragen haben, melden Sie sich bitte. Wir kommen dann zu Ihnen und beantworten Ihre Frage.

Sie sind in der Rolle des Senders!

Wie viele Punkte wollen Sie dem Rücksender überweisen?

Sie sind in der Rolle des Rücksenders!

Da Sie noch nicht wissen, welchen Betrag Ihnen der Sender tatsächlich überweist, müssen Sie für jede mögliche Überweisungsentscheidung angeben, welchen Betrag Sie zurück überweisen möchten. Die Rücküberweisung ist ein Betrag zwischen 0 und 1000 Punkten. [*Angabe des gewählten Betrags für Rücküberweisung falls Sender 0, 50, 100, 150,..., 500 Punkte überwiesen hat.*]

H.4.2   English

In this experiment you and one of the other participants will both make a choice over how to use an amount of money and together your choices will determine the outcome. You and the other participant will be matched randomly. Neither you nor the other participant will ever know who they are matched to. Moreover, it is ensured that you and the other participant have not been matched in one of the preceding experiments and that you will not be matched again in any of the upcoming experiments.

In the experiment, each of you is assigned a role: either you are assigned the role of the sender or of the recipient.

For the experiment, each participant is endowed with 500 points.

The experiment has two stages:

In the first stage, the sender can make a transfer to the recipient.

The transfer is an amount between 0 and 500 points in increments of 50 points. Thus, the sender can transfer 0 points, 50 points, 100 points,..., 450 points, or 500 points to the recipient. The amount transferred is doubled (tripled) by the people running the experiment.

If the sender transfers 100 points, the recipient gets 200 (300) points. If the sender transfers 200 points, the recipient gets 400 (600) points. If the sender transfers 0 points, the recipient gets 0 points, etc.

Thus, at the end of the first stage, the recipient has his/her initial endowment plus twice (three times) the transfer that the sender made.

In stage two, the recipient can transfer back any amount to the sender. This back-transfer will not be doubled (tripled). The back transfer has to be an amount between 0 and 1500.

After the back transfer, the payments resulting from the experiment are determined.

The payments for the sender and the recipient are calculated as follows:

For the sender: 500 points - transfer + back transfer.

For the recipient: 500 points + 2 * transfer[49] - back transfer.

As an example: Assume the sender makes a transfer of 150 points. At the end of the first stage the sender has 500 - 150 = 350 points and the recipient has 500 + 2* 150 = 800 points[50]. In stage two, the recipient chooses to transfer back 200 points. Then, the payments are: for the sender: 500 - 150 + 200 = 550 Punkte. For the recipient: 500 + 2* 150 - 200 = 600 Punkte.[51]

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[49]3 * transfer in triple version
[50]500 + 3*150 = 950 points in the triple version of the game.
[51]500 + 3*150 - 200 = 750 points.

On the next screen you will be assigned the role of the sender or of the recipient and you can make your choices.

Let us know if you have any questions. We will come to your cubicle to answer them.

You are assigned the role of the sender!

How many points do you want to transfer to the recipient?

You are assigned the role of the recipient!

Since you do not know yet how much the sender transfers to you, you have to indicate how much you want to transfer back to the sender for every possible amount the sender can transfer to you. The back transfer is an amount between 0 and 1000 (1500) points. [*Recipients have to indicate how much to transfer back for each possible transfer of the sender (0, 50, 100, 150,..., 500 points).*]

H.5 Positive Reciprocity

See the instructions for the trust game in the preceding subsection on trust.

H.6 Negative Reciprocity

H.6.1 German

Ultimatum Game: In diesem Teil des Experimentes werden Sie und ein anderer Teilnehmer einander zufällig zugelost. Weder Sie noch der andere Teilnehmer werden zu irgendeinem Zeitpunkt erfahren, wer der andere ist. Zudem ist sichergestellt, dass Sie und der andere Teilnehmer in keinem der kommenden Experimente einander zugelost werden. Ihnen und dem anderen Teilnehmer wird jeweils eine Rolle zuteil: die Rolle des Senders oder die Rolle des Empfängers.

In dem Experiment geht es darum, einen Betrag von 500 Punkten zwischen dem Sender und dem Empfänger aufzuteilen.

Der Sender macht einen Vorschlag darüber, wie die 500 Punkte zwischen ihm und dem Empfänger aufgeteilt werden sollen. Dazu schreibt der Sender auf, wieviele der 500 Punkte er dem Empfänger schicken möchte.

Der Empfänger entscheidet darüber, ob die vom Sender vorgeschlagene Aufteilung angenommen oder abgelehnt wird. Dazu muss der Empfänger angeben, wie viele Punkte er mindestens erhalten möchte, damit er die Aufteilung annimmt. Der Empfänger trifft diese Entscheidung, bevor er weiss, welche Aufteilung der Sender tatsächlich anbietet.

Wenn die Auszahlung, die der Sender an den Empfänger schickt, grösser oder gleich der niedrigsten Auszahlung ist, die der Empfänger gerade noch anzunehmen bereit ist, wird die vom Sender vorgeschlagene Aufteilung durchgeführt. Umgekehrt wird das Angebot des Senders abgelehnt, wenn die Auszahlung, die der Sender an den Empfänger schickt, geringer ist als die niedrigste Auszahlung, die der Empfänger gerade noch anzunehmen bereit ist.

Nachdem sowohl der Sender als auch der Empfänger sich entschieden haben, werden die Entscheidungen verglichen. War der Empfänger bereit, die vom Sender gewählte Aufteilung anzunehmen, dann wird der Betrag entsprechend der Entscheidung des Senders aufgeteilt. War der Empfänger nicht bereit, die Aufteilung anzunehmen, dann erhalten beide 0 Punkte.

Bitte lesen Sie jetzt diese Einführung noch einmal grÃ¼ndlich durch, um sicherzustellen, dass Sie alles verstanden haben. Sollten noch Unklarheiten bestehen, melden Sie sich bitte. Wir werden dann zu Ihnen kommen und Ihre Fragen beantworten.

Sie sind in der Rolle des Senders!

Bitte geben Sie den Betrag ein, den Sie der anderen Person senden wollen.

Sie sind in der Rolle des Empfängers!

Bitte geben Sie den kleinsten Betrag an, den Sie bereit sind anzunehmen.

Prisoner's Dilemma with Punishment

Im folgenden Teil des Experimentes werden Sie zufällig einem anderen Teilnehmer zugeordnet. Weder Sie noch der andere Teilnehmer werden erfahren, wer der andere ist. Zudem ist sicher gestellt, dass Sie dem anderen Teilnehmer in keinem der vorangegangenen Experimente zugelost wurden, und Sie dem anderen Teilnehmer in keinem der zukünftigen Experimente zugelost werden.

Dieses Experiment besteht aus zwei Stufen.

In Stufe 1 müssen Sie und der andere Teilnehmer eine Entscheidung treffen, ohne zu wissen, was die Entscheidung des jeweils anderen ist. Beide Entscheidungen zusammen bestimmen dann die Auszahlung von Ihnen und dem anderen Teilnehmer.

In Stufe 2 können beide Spieler Abzugspunkte an den jeweils anderen Spieler vergeben, wodurch das Gesamteinkommen des anderen Spielers verringert wird. Nach der zweiten Stufe ist dieser Teil des Experimentes vorbei.

Auf dem folgenden Bildschirm werden Ihnen die Regeln genauer erläutert.

Stufe 1

Sie und der andere Teilnehmer erhalten jeweils 300 Punkte.

Beide Teilnehmer können sich nun entscheiden, ob sie die 300 Punkte zu einem Projekt beitragen möchten, oder nicht.

Wenn beide beitragen, erhalten beide am Ende dieser Stufe 480 Punkte.

Wenn keiner beiträgt, behalten beide die 300 Punkte.

Wenn einer beiträgt, der andere die Punkte für sich behält, erhält derjenige der beiträgt am Ende dieser Stufe 240 Punkte,der andere erhält 540 Punkte.

Auf der zweiten Stufe können Sie durch die Vergabe von Abzugspunkten das Einkommen des anderen Teilnehmers verringern. Der andere Teilnehmer kann ebenso durch Vergabe von Abzugspunkten Ihr Einkommen verringern.

Wenn Sie an den anderen Teilnehmer Abzugspunkte vergeben, verringert dies das Einkommen des anderen Teilnehmers in Höhe der vergebenen Abzugspunkte. Wenn Sie 0 Abzugspunkte wählen, verändern Sie das Einkommen des anderen Teilnehmers natürlich auch nicht.

Wenn Sie Abzugspunkte vergeben, entstehen Ihnen hierdurch Kosten. Für jeden Abzugspunkt entstehen Ihnen Kosten von einem Punkt. Wenn Sie keine Abzugspunkte vergeben, entstehen Ihnen natürlich auch keine Kosten aus der Vergabe von Abzugspunkten. Ihr gesamtes Punkteeinkommen aus diesem Experiment:

Ihr gesamtes Punkteeinkommen am Ende der ersten Stufe ergibt sich also aus dem Einkommen aus der ersten Stufe, minus die erhaltenen Abzugspunkte, und minus die Kosten der von Ihnen vergebenen Abzugspunkte.

Wenn Sie Fragen haben, melden Sie sich bitte bei einem der Experimentsleiter. Wir kommen dann zu Ihnen und beanworten Ihre Frage an Ihrem Platz.

Im Folgenden möchten wir nun wissen, wie Sie sich in der zweiten Stufe des Experimentes verhalten möchten, und zwar für jeden möglichen Ausgang des Experimentes in Stufe 1.

Im Anschluss daran werden Sie Ihre Entscheidung auf Stufe 1 angeben.

Danach werden die Entscheidungen per Computer einander zugeordnet, und Ihre Auszahlung bestimmt. Diese wird Ihnen dann am Ende des heutigen Experiments ausgezahlt.

Wie sieht Ihre Entscheidung in Stufe 2 aus, wenn folgende Entscheidungen in Stufe 1 getroffen wurden:

Sie haben "beitragen"/"nicht beitragen" gewählt. Der andere Teilnehmer hat "beitragen"/"nicht beitragen" gewählt.

Daher erhalten Sie 480/300/240 Punkte.

Der andere Teilnehmer erhält 480/300/240 Punkte.

[*Für jedes Szenario:*] Wie viele Abzugspunkte möchten Sie in diesem Fall an den anderen Teilnehmer vergeben?

H.6.2   English

Ultimatum Game: In this part of the experiment, you and another participant are randomly matched. Neither you nor the other participant will ever know who the person is they are matched to. Moreover, it is ensured that you and the other participant are not matched again in any of the upcoming experiments. You and the other participant are each assigned one of two roles: the role of the sender or the role of the recipient.

The experiment is about splitting an amount of 500 points between the sender and the recipient.

The sender makes a proposal about how the 500 points should be split between him/her and the recipient. To this end, the sender indicates how many of the 500 points s/he wants to send to the recipient.

The recipient decides whether s/he accepts or rejects the proposal about how to divide the points. To this end, the recipient has to indicate how many points s/he at least wants to receive so that s/he is willing to accept the proposed division of points. The recipient will make this decision before knowing the actual proposal of the sender.

If the amount of points that the sender sends to the recipient is larger or equal to the minimum amount that the recipient is willing to accept, the proposal about the

division of points made by the sender gets implemented. On the other hand, the proposal made by the sender gets rejected in case the amount of points the sender sends to the recipient is smaller than the minimum amount that the recipient is willing to accept.

After both the sender and the recipient have made their decisions, the decisions are compared. If the recipient is willing to accept the proposal about the division of the points made by the sender, the amount of points gets split between the two according to the proposal of the sender. If the recipient is not willing to accept the proposal, both the sender and the recipient receive 0 points.

Please read the instructions again to make sure you understand everything. If anything is unclear, please let us know. We will come to your cubicle and answer your question.

You are assigned the role of the sender!

Please indicate the amount you want to send to the other person.

You are assigned the role of the recipient!

Please indicate the minimum amount that you are willing to accept.

Prisoner's Dilemma with Punishment

In the following part of the experiment, you will get randomly assigned to another participant. Neither you nor the other participant will ever know who the person they are matched to is. Moreover, it is ensured that you have not been matched to the same participant in any of the preceding experiments, and that you will not be matched again to the same participant in any of the upcoming experiments.

This experiment has two stages.

In stage 1, you and the other participant have to make a decision without knowing the decision of the respective other. Together, the two decisions determine your

payment and the payment of the other participant.

In stage 2, both players can deduct points from the other player which decreases the total payment of the other player.

After the second stage this part of the experiment is over.

The next screen will give you the rules in more detail.

Stage 1:

You and the other participant both get 300 points.

Then, both participants can decide whether they contribute 300 points to a project or not.

If both contribute, both get 480 points at the end of this stage.

If neither one contributes, both keep their 300 points.

If one contributes and the other one keeps the points for him/herself, the one who contributes will get 240 points at the end of this stage and the other one gets 540 points.

In stage 2, you can reduce the other participant's income by deducting points from him/her. Similarly, the other participant can reduce your income by deducting points from you.

If you decide to deduce points from the other participant, his/her income will be reduced by the amount of points you deducted. If you decide not to deduct points from the other participant, his/her income remains unchanged.

Deducting points from the other participant is costly. Each point you deduce from the other player costs one point. Of course, if you decide not to deduce points from the other participant, you do not incur any costs.

Your total income from this experiment:

Your total income in points is determined by the income from the first stage minus

the points deducted from you, minus the costs you incur for deducting points.

If you have any questions, please let the people conducting the experiment know. We will come to your cubicle and answer your question.

In what follows, we would like to know your decisions in stage 2 of the experiment, contingent on every possible outcome of stage 1 of the experiment.

Afterwards, you will indicate your decision for stage 1.

Then, the decisions of you and the other participant will be matched by the computer and the payments will be determined. You will receive the payment at the end of today's experiment.

What is your decision in stage 2, if the following decisions have been made in stage 1:

You chose "contribute"/"do not contribute". The other participant chose "contribute"/"do not contribute".

Therefore, you receive 480/300/240 points.

The other participant receives 480/300/240 points.

[*For each potential scenario:*] How many points would you like to deduct from the other participant?