

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

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Abstract

This paper proposes a new survey module for measuring six key economic preferences – risk aversion, time discounting, trust, altruism, positive and negative reciprocity – in a reliable, parsimonious and cost-effective way. The paper also describes in detail the survey design methodology, in which module items were selected out of large menus of alternatives, based on ability to explain behavior in incentivized choice experiments. The methodology allows confidence in the validity of the measures, and can also potentially serve as a model for researchers wishing to design their own types of survey modules. In addition, we provide information on the performance of alternative modules which could be useful when researchers want to design their own modules and have specific requirements, e.g., because of survey time constraints, survey implementation mode, or population sample characteristics.

Keywords: survey validation, experiment, preference measurement

JEL-Codes: C81, C83, C90

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1 Introduction

Economic theory typically studies how fundamental preferences drive decision making in prototypical decision contexts, such as in the face of risk, intertemporal choice, or in social interactions. Preferences in these contexts are often characterized through abstract functional or parametric representations, such as risk preferences, time preferences, or social preferences. The value of this approach in the context of business problems has been recognized for a long time, see, e.g., Hammond (1967) for a widely influential paper on the usefulness of “preference theory” regarding attitudes toward risk in the corporate context. Since Hammond’s work, it has been clear that knowledge about preferences such as attitudes toward risk has the potential to improve the understanding of managerial decisions and predictions regarding behavior. However, the measurement of relevant preference parameters has been complicated by the lack of a standardized approach to measuring preferences that is sufficiently simple and yet able to reliably capture the traits of interest.

This paper presents a new survey module for eliciting economically relevant preference concepts regarding risk, time, and social preferences. The paper describes in detail the methodology used to design the survey modules which helps give confidence in the validity of the measures, and provides a potential model for researchers who wish to design their own survey modules, e.g., ones optimized to a particular setting or application. Having survey measures of economic preferences is valuable for a range of important applications. The brevity and ease of measuring preferences with survey questions facilitates studying preferences in settings where time constraints are severe and subject attention is limited. For example, an important class of applications for measuring preferences is within firms and organizations, as preferences are theorized to determine how employees sort into and react to incentive schemes, how managers make investment decisions, and how individuals 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. Alternative methods to measure preferences, such as incentivized choice experiments, are more costly and difficult to implement in such field settings.¹ Survey 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. 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.

The analysis focuses on six types of preferences – risk preference, time preference, and three types of social preferences, altruism, positive reciprocity, and negative reciprocity – because these preferences are particularly central in economic theories about behavior in a diverse set of contexts, from consumer choice, to the decisions of managers and employees in the workplace.² The methodology used to design the survey modules addresses a key challenge, that of identifying the particular survey items that are best for capturing preferences, out of a large set of alternative possible survey wordings and formats. The central idea of the methodology is to take preference measures based on incentivized experiments as a benchmark, and evaluate

¹While 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., Bonin et al. (2007), Dohmen and Falk (2011), Fouarge et al. (2014) 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; Fehr et al. (2007); Falk et al. (2005) for contract enforcement; Cohn et al. (1975); Cohn et al. (2015); Menkhoff and Schmidt (2005) for investment behavior of financial professionals).

²Economic models abstract away from many details of preferences, but have modeled preferences regarding risk, timing, and implications of actions for the payoffs of others, as these are attributes that are a feature of almost all economic decisions.

survey items in terms of their ability to capture choices in the experimental measures. Incentivized choice experiments provide a valuable benchmark because they involve real choices, and because their quantitative nature holds constant information conditions, stakes and probabilities across individuals. This helps addressing key concerns with survey measures, both that they are hypothetical, and that they may have varying interpretations across individuals.³ At the same time, choice experiments are too costly and time consuming for many important applications. Developing a survey module using an experiment-based benchmark helps leverage the strengths of both approaches to measuring preferences.

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 each preference, to reduce measurement error, 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 chose the combination that best explained behavior in the respective experimental preference elicitation task. This selection of a best-subset regression model from the candidate family entailed the well-known trade-off between parsimony and explanatory power that is inherent to model selection in statistics. 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.

³An alternative methodology 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.

We present the best performing module from this selection exercise, which turns out to 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.

Even though our proposed survey modules were optimized using German university students, and might not be optimal for every population, there are conceptual and empirical reasons to expect that they will still be useful measures of preferences in a diverse set of non-student populations. What is needed is that the types of survey questions that best capture preferences for German students not be too different from the best types of questions for measuring preferences of a given other population. 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 capturing preferences, and predicting relevant economic outcomes, in non-student samples across a wide range of cultures.

While the proposed survey module is optimal in its performance in the 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 provides one example of how the module can be adapted to serve particular purposes. We successfully modified our preference module for the imple-

mentation of the Global Preferences Survey (GPS), a survey that was conducted with representative samples using telephone and face-to-face interviews in 76 countries around the globe (see Falk et al. forthcoming). The GPS version sacrifices a modest amount of explanatory power, in exchange for being even simpler and more time efficient.

As a first step in the development of the GPS module we excluded some relatively lengthy quantitative survey items – hypothetical versions of the choice experiments – and then re-ran the survey selection exercise, which led to the selection of more time-efficient quantitative items that are almost as good in terms of explanatory power. In a second step, we piloted the GPS module in 22 countries with a broad range of cultures, and conducted interviews afterwards with respondents to assess understanding of the survey items. The pilot indicated a good and common understanding of the GPS module despite a highly heterogeneous sample. A few minor wording changes were implemented to maximize clarity across cultural contexts. Falk et al. (forthcoming) 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.

One benefit of the survey modules proposed in this paper, relative to existing survey measures of preferences, stems from the transparency of the methodology for selecting the measures. For most existing survey measures, it is typically not explicit how the measures were developed. 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.⁴ The transparent methodology helps

⁴Fehr 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

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 additional confidence, *ex ante*, in the viability of the measures.

Another notable feature of the proposed survey preference modules is that they include a comprehensive set of preferences, measured using a consistent methodology. By contrast, the existing literature is piecemeal, with differing approaches and different sets of preferences measured across studies. This poses a substantial obstacle to the comparability of results across studies. Our modules capture, in a consistent way, a set of preferences identified by economic theory as being fundamental determinants of behavior in many contexts. We have launched a website (www.global-preferences.org) from which the two preference modules can be downloaded, with the GPS version provided in more than 90 languages. The website also provides supplementary material and detailed information on the construction of the module.

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 survey design methodology and the criteria for the selection of items. It presents the preference module measuring each of the six preferences, which performed best in out-of-sample prediction. It also discusses additional important properties of the preference module, such as explanatory power and viability in non-student and non-German samples. Section 4 explains the criteria used to develop the GPS module, and presents the module items. The section discusses the international pilot study, as well as evidence on the viability of the survey items for diverse cultures. Section 5 concludes.

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.

2 Design of the Survey Module

In this section we describe the methodology underlying the design of our survey modules. The survey design involved measuring preferences with incentivized choice experiments, asking the same subjects a battery of survey measures about the corresponding preferences, and then selecting survey items that performed best against the benchmark provided by the experiments. We took particular care to address various issues related to measurement error and response bias: We strove to reduce measurement error in the experimental preference measures by having subjects participate in more than one experiment for a given preference and averaging over the choice-based preference measures; we designed the validation to limit spurious interdependencies in decision-making and response behavior by never asking survey questions relating to a particular preference in the same session in which the respective preference elicitation experiment was conducted, i.e., surveys and experiments were conducted one week apart; we 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). They were required to have never taken part in an experiment before in order to minimize potential confounds due to earlier experiences in (similar) experiments. 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.⁵ 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, forthcoming), 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.

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

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 measures for negative reciprocity and altruism were not elicited in this pre-test and

⁵The 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.

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 Preference Elicitation in Choice Experiments

We conducted standard economic choice experiments on risk taking, time discounting, altruism, trust, positive and negative reciprocity, respectively, in order to obtain behaviorally valid preference measures. 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 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. We perturbed the safe payments in the second experiment 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. In the discounting experiments, in which subjects made choices between an immediate payment and a larger payment with a 12-months delay, we perturbed the delayed payment in the second experiment in the same manner.

The experimental measure of risk aversion was constructed by averaging over the switching rows in the two lottery choice experiments.⁶ This averaging reduces measurement error compared to using a single experimental measure. Analogously, we constructed our experimental measure of time preference by averaging the switching rows in the discounting experiments.⁷

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 chosen donation then 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 sub-

⁶As is common for this type of elicitation methods, some subjects exhibit multiple switching points. We observe that 86 individuals switch more than once from preferring the lottery to the safe payment in either of the two lottery choices experiments, 36 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.

⁷In the discounting experiments, we observe that around 7 percent of subjects switch more than once from preferring the early payment to the late payment. For these subjects we construct the experimental measure by taking the mean of the average switching row in the two experiments involving intertemporal choices.

ject’s investment into punishment after unilateral defection of their opponent in a prisoner’s dilemma (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 Preference Elicitation in Surveys

In the survey, we asked both quantitative and qualitative questions to measure a given preference. In total, we included 188 survey items as candidates for selection into our survey module.⁸ 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 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

⁸Section A in the online appendix gives a list of all survey items in the candidate set.

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.⁹ Each battery of survey questions on a particular preference began with a qualitative measure, asking respondents to self-assess their preference “in general” on an 11-point scale.¹⁰ 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 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 2 in the Appendix illustrates the method underlying this condensed quantitative measure, which is commonly re-

⁹Some 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.

¹⁰An example of this type of question is the general risk question that was validated in Dohmen et al. (2011).

ferred 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 I (for risk taking) and Appendix J (for time discounting). Finally, we asked all subjects to rate the reliability of their survey answers.

3 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 capture revealed preferences in incentivized laboratory experiments.¹¹ 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.

In order to identify the best linear combination of items for measuring a particular preference, we proceeded in three stages, the first of which was running OLS regressions of each experimental preference measure on all possible combinations of the respective survey items as regressors, in the spirit of best subset selection approaches to model selection.¹² We used the results of this stage to identify, for

¹¹Another 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.

¹²Alternative selection procedures commonly applied in, e.g., personality psychology are stepwise selection procedures, including forward selection and backward elimination procedures, which do not consider all possible models. In forward selection approaches the analysis starts with the null model and chooses the predictor variable which explains the highest share of variance in the dependent variable. Given this predictor, the next variable is selected applying the same criterion. This process is repeated until no additional predictor variables can be found that meet a certain criterion, e.g., an F -statistic above a certain threshold (compare, e.g., Kadane and Lazar, 2004). In backward selection approaches the analysis starts with the model that includes all potential predictor variables and then, one by one, eliminates variables from the model that perform worst

each possible number of regressors, the best model in terms of explanatory power, using an \bar{R}^2 criterion.¹³

In the second step, we took the candidate models so identified, i.e., one for each possible number of items, and used information criteria to help shed light on which numbers of items are optimal in terms of providing good explanatory power but minimizing the risk of overfitting. Naturally, R^2 will increase with the number of regressors, but adding regressors may result in overfitting; different criteria such as adjusted \bar{R}^2 , the Akaike information criterion (AIC), or the Bayesian information criterion (BIC) contain a penalty term for the number of items. Since these information criteria differ with respect to the extent to which the inclusion of additional regressors is penalized, the different information criteria will not necessarily all favor a model with the same number of items. For the alternative criteria, however, the two-item and three-item models were always among the set of best modules for each preference, in the sense that they were reasonably close to each other according to the different information criteria, and superior to longer or shorter modules.¹⁴ For

according to a predetermined criterion. Again, this procedure is repeated until only predictor variables are left in the model that fulfill a certain criterion. Clearly, the resulting model in both forward selection and backward elimination procedures strongly depends on the order of selecting (eliminating) items. Consequently, they do not necessarily result in the same model (see also Graybill, 1976). Stepwise regression approaches combine backward elimination and forward selection procedures and mitigate the problem of order dependence. However, all three approaches share the feature that not all possible models are evaluated. A further potential alternative would be to use the so-called Lasso-technique as introduced by Tibshirani (1996). Lasso is particularly useful, however, when there are more potential explanatory variables than observations, which is not the case in our setting in which we consider linear models only that are additively separable in explanatory variables. In fact, in this case Lasso selects largely the same modules as other approaches such as best subset selection. We deliberately did not consider non-linear and fully interacted prediction models for reasons of simplicity, to facilitate applicability and interpretation of the preference module, and to enhance comparability of results across studies.

¹³In 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 .

¹⁴In particular, in our case, the one-item module is never selected, irrespective of whether we consider AIC or BIC. Many previous studies have relied on only one item, which suggests that many of the results in previous literature understate the strengths of correlations between different preference dimensions or the strength of estimated relationships between preferences and outcome variables, due to attenuation bias that results from measurement error. Moreover, studies using survey measures of preferences are often not based on survey preference measures that exhibit the highest correlation with the experimental preference measure (cf. Online Appendix C). The pairwise correlations of single items with the experimental preference measure are also informative with respect to comparability of results across existing studies that are based on single but different

example, according to the Bayesian Information Criterion (BIC), which contains an intermediate size penalty for additional regressors, the two-item model is best for altruism, negative reciprocity and trust, while the three-item model is selected for risk taking, time discounting and positive reciprocity.¹⁵

In the third step, we used tests of predictive power to further refine the distinction between the two and three item candidate module for each preference. 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 preferences we used the candidate survey models to derive predicted outcomes for each individual in the corresponding experiments.¹⁶ 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 preferences, the two item model was preferred over the three item in that it had a lower MSPE.

Since data on altruism and negative reciprocity were lacking in our independent sample, we evaluated the predictive power of the models for these preferences based on cross-validation using the original sample, i.e., by randomly using different subsets of the data for the fitting and prediction exercises, respectively.¹⁷ In line with our out-of-sample prediction results for the other four preferences, the two item models lead to smaller cross validation errors than the three item models for negative measures.

¹⁵The AIC, which includes a weaker penalty, favors the two-item module over the three item module only in the case of positive reciprocity.

¹⁶Predicted 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.

¹⁷The sample was randomly split into k partitions. One partition was used as a validation sample, whereas the remaining $k - 1$ samples were used as the “training” sample. The procedure simultaneously considered all possible versions of models of all possible lengths.

reciprocity and altruism.¹⁸ The cross-validation procedure also selects the same two item modules for risk preference, time preference, positive reciprocity, and trust if we use this approach rather than out of sample prediction. Based on these findings, we selected two-item models for each of the preferences.

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.

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.¹⁹ 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 an attractive balance between both approaches.

Table 3 also documents the correlations between the module items and the re-

¹⁸Our results obtain using $k = 5$ or using $k = 10$ partitions.

¹⁹The only exception is positive reciprocity.

spective behavioral measures. The last column of Table 3 provides estimated OLS coefficients obtained from a multivariate regression of the standardized experimental preference measure on standardized measures of the two survey items for the respective preference dimension. In applications, these coefficients can be used to calculate weights, and then construct measures for each preference as the weighted sum of the two items that capture the respective preference.

3.3 Correlation between Survey Preference Measures and Experimental Preference Measures

As one indication of the quality of the preference module, we present the within-sample correlations between the experimental preference measure and its predicted value based on the two survey items. The correlations are 0.4079 for risk taking, 0.5861 for time discounting, 0.6748 for trust, 0.4235 for altruism, 0.5771 for positive reciprocity, and 0.3729 for negative reciprocity. One might be inclined to evaluate these correlations against a benchmark of 1. This benchmark would only be appropriate, however, if the experimental preference measures and the survey based preference measures were each measured without error and perfectly aligned with the respective underlying preference. The assumption that there is no measurement error is unlikely to be correct in the case of either type of preference measure, experimental or survey-based. For example, measuring preference parameters that are inherently continuous on a discrete grid, the typical approach in choice experiments, gives rise to measurement error (see Einav et al., 2012).

With measurement error, the correlation between the experimental preference measure and a candidate item from our battery of survey questions would be smaller than one, even if the survey item measured the underlying preference equally well as the experimental measure. It seems therefore more appropriate to consider a benchmark that recognizes the consequences of measurement error. An obvious

Table 3: The Preference Module

Preference	Item Description	Correlation	OLS Coef.
Risk	Multiple price list (31 hypothetical choices between a lottery and a safe option)	0.4095***	0.2758***
Taking	Are you a person who is generally willing to take risks, or do you try to avoid taking risks?	0.3524***	0.2034***
Time	List of 25 hypothetical choices between an early payment "today" and a delayed payment "in 12 months"	0.5826***	0.4849***
Discounting	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?	-0.4039***	-0.1712***
Trust	Hypothetical investment game: first mover behavior	0.6201***	0.6289***
T16	Self-assessment: As long as I am not convinced otherwise, I assume that people have only the best intentions.	0.2829***	0.1331***
Altruism	You won 1,000 Euro in a lottery. Considering your current situation, how much would you donate to charity?	0.3913***	0.1845***
A10	How do you assess your willingness to share with others without expecting anything in return when it comes to charity?	0.3845***	0.3210***
Positive	Hypothetical investment game: second mover behavior	0.5560***	0.4857***
PR11	Hypothetical scenario: Which bottle of wine do you give as a thank-you gift?	0.3530***	0.1640***
Reciprocity	PR9	0.3416***	0.3284***
Negative	NR10	0.1609***	0.1479***
Reciprocity	NR1		

The second column displays the item number as listed in section K in the appendix. See section B in the appendix for the exact wordings of the survey questions. The column "Correlation" displays Spearman correlations between the survey item and the respective experimental measure. The final column displays OLS coefficients in a regression of the standardized experimental measure on the standardized module items. For details see the regression tables in section B in the online appendix. ***, **, and * denote significance at the 10-, 5-, and 1-percent level, respectively.

benchmark is the correlation θ between two experiment-based measurements that arises from the repetition of the exact same experiment. This is because the best predictor of behavior in an experiment would arguably be a prior choice in the same experiment. In what follows, we describe the use of a test-retest sample to measure θ . This test-retest correlation then becomes our benchmark for the highest possible correlation one might achieve between survey measures and experiment, should the two be perfectly aligned. We compared the actual explanatory power of the survey measures to this revised benchmark.

In order to assess the size of measurement error in the experimental preference measures, we conducted additional experiments with 44 subjects, who participated in preference elicitation experiments twice. The experimental sessions were scheduled one week apart (there was no perturbation of experimental parameters across sessions). The data on two identical experimental measures elicited one week apart allow us to compute the test-retest correlations (i.e., θ) between two experimental measures of the same underlying preference.

We assess the extent of measurement error by regressing the preference measure revealed in the experiments in the first session on the respective preference measure obtained in the second session and calculating the R^2 for this regression. The share of variance that can be explained by the second experimental measure is substantially lower than 1, indicating the presence of measurement error in the experimental measures. The test-retest correlation for a given experimental measure (θ) is the square root of the corresponding R^2 . The correlations are 0.5890 for risk taking, 0.8194 for discounting, 0.7737 for trust, and 0.6483, 0.6585, 0.6668 for altruism, positive reciprocity and negative reciprocity respectively.²⁰ These correlations serve as a sensible benchmark against which to evaluate the explanatory power of our preference module, since these values measure the explanatory power for behavior in the experiments of an identical repeated measure of the experiment itself. Compared

²⁰A more detailed regression table is relegated to section B in the online appendix.

to this benchmark, our survey module achieves high explanatory power.

3.4 Out-of-Sample Prediction of the Preference Module

Another indication of the quality of the module is in terms of (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 captured 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 0.2919 for risk preferences, 0.5868 for time discounting, 0.2629 for trust, and 0.4424 for positive reciprocity.

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

The selection of the survey items in the streamlined module was based on an initial optimization exercise using a sample of German university students. Although the module was not optimized for non-student and non-German populations, there are several reasons to expect that the module we propose is likely to be useful for other and more diverse populations.

First, although the distribution of preferences might very well differ across pop-

ulations, 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.²¹ 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 admin-

²¹The 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).

istered 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., 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 4 discusses further evidence on the validity of the items in non-student and non-German samples.

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

While our proposed survey module is the best module according to the specified criteria, researchers might want to use individual survey items, or alternative survey modules, for particular applications. We therefore provide additional information

in the appendix. Tables A.2 to A.7 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 A.8 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.

4 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, even though it 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.²² This required us to tailor our initial module version to this specific application in

²²The 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.

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. A more detailed description is relegated to section G in the Appendix.

Developing the GPS module involved two main steps. First, in light of the tight 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 G). 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).²³ 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

²³The staircase procedures are presented in detail in Appendix I and Appendix J.

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, Romania, Turkey), 4 countries in the Middle East and North Africa (Algeria, Jordan, Lebanon, and Saudi-Arabia), and 1 country in Eastern Africa (Kenya).²⁴ 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). For 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.²⁵ In order to detect potential difficulties in the understanding of module items and differences in the respondents’ interpretation, respondents were explicitly asked to

²⁴Gallup 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.

²⁵While 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.

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.²⁶ 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 accurate 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

²⁶For example, respondent were explicitly asked to explain a "50-percent chance" in their own words and give their own interpretation of "safe payment".

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 H in the appendix.

A comprehensive analysis of the resulting GPS data on economic preferences from nationally representative samples in 76 countries is presented in Falk et al. (forthcoming). 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.

Table 4: The GPS Module

	Module Items
Preference	
Risk Taking	<ol style="list-style-type: none"> 1. <i>Staircase measure (five interdependent choices between a lottery and a safe option)</i> 2. Please tell me, in general, how willing or unwilling you are to take risks.
Time Discounting	<ol style="list-style-type: none"> 1. <i>Staircase measure (five interdependent choices between an early and a delayed amount of money)</i> 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?
Trust	<ol style="list-style-type: none"> 1. I assume that people have only the best intentions.
Altruism	<ol style="list-style-type: none"> 1. <i>Hypothetical donation.</i> 2. How willing are you to give to good causes without expecting anything in return?
Positive Reciprocity	<ol style="list-style-type: none"> 1. <i>Hypothetical choice: size of a "thank-you"-gift.</i>
Negative Reciprocity	<ol style="list-style-type: none"> 1. If I am treated very unjustly, I will take revenge at the first occasion, even if there is a cost to do so. 2. How willing are you to punish someone who treats you unfairly, even if there may be costs for you? 3. How willing are you to punish someone who treats others unfairly, even if there may be costs for you?

5 Conclusion

This paper presents survey modules to measure key economic preferences – risk aversion, patience, trust, altruism, positive and negative reciprocity – in a reliable, parsimonious and cost-effective way. 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 assess-

ing 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. For example, while empirical research on behavior in organizations often employs standardized personality scales to assess individual differences (see, e.g., Ones et al. 2003, Tett et al. 1991 or Barrick and Mount 1991 for metastudies), measures of economic preferences have been only rarely employed, potentially due to the previous lack of standardized, reliable survey measures. Our modules promise to fill this gap and complement psychological personality measures when studying individual differences in decision making.

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A Design of Experimental Preference Elicitation Tasks

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 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 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 $\{0, 50, 100, \dots, 500\}$, 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 1 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.²⁷ 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

²⁷We 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.

reciprocity.

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

Figure 1: Payoff Matrix: Prisoner's Dilemma

B The Preference Module

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 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 you were assigned the role of the other person. Which amount would you choose to transfer?

- (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.

Suppose that the other person offered the following split: 50 Euro for you and 50 Euro for himself/herself. Do you accept this split? If you do, you

will receive 50 Euro and the other person will receive 50 Euro. If you reject, both of you receive 0 Euro.

Note that individuals answered a total of 5 questions that use the same wording but vary the amount that was offered by the other person. These amounts were 50, 40, 30, 20, and 10.

- (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.*

C Regression Tables

Table A.1: The Preference Module

	(1) Risk	(2) Time	(3) Trust	(4) Altruism	(5) Pos. Reciprocity	(6) Neg. Reciprocity
R2	0.276*** (0.057)					
R3	0.203*** (0.049)					
D2		0.485*** (0.052)				
D4		-0.171*** (0.050)				
T24			0.629*** (0.043)			
T16			0.133*** (0.038)			
A11				0.185*** (0.049)		
A10				0.321*** (0.044)		
PR11					0.486*** (0.049)	
PR9					0.164*** (0.049)	
NR10						0.328*** (0.059)
NR1						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
F	28.14	111.8	126.3	60.69	86.49	19.68

Robust standard errors in parentheses. OLS regressions of the standardized behavioral measure (obtained from incentivized experiments) on the two standardized items that were selected for the preference module.

The items can be found in section K in the appendix.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

	(1) Risk	(2) Time	(3) Trust	(4) Altruism	(5) Pos. Recip.	(6) Neg. Recip.
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

Robust standard errors in parentheses OLS Regressions: Test-Retest Correlations. The dependent variables are the preference measures obtained from behavior in the experiments in the first week. These are regressed on the preference measures obtained from behavior in the respective experiments in the second week. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D Highest Correlations between Experimental and Survey Measures

D.1 Risk Taking

Table A.2: 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 K.1. The first column displays the item number as given in Appendix K.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.2 Time Discounting

Table A.3: 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 K.2. The first column displays the item number as given in Appendix K.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.3 Trust

Table A.4: 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	Hypothetical 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 K.4. The first column displays the item number as given in Appendix K.4. Item T24 can be found in Appendix K.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.4 Altruism

Table A.5: 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 K.3. The first column displays the item number as given in Appendix K.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.5 Positive Reciprocity

Table A.6: 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 K.5. The first column displays the item number as given in Appendix K.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.6 Negative Reciprocity

Table A.7: 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 K.5. The first column displays the item number as given in Appendix K.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.

E Explanatory Power of Alternative Modules

Table A.8: Explanatory Power of Alternative Preference Modules

Preference	Item Combination									
	(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.

F The Preference Module: Original Wording

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. 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 ___²⁸ 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

²⁸Compare Section K.1

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 ___²⁹ Euro in 12 Monaten?

3. Trust

- (a) *(after reading the instructions for the Trust Game, see paragraph on Positive Reciprocity)* Angenommen, Sie sollen den Vorschlag über die Aufteilung machen. Welchen Betrag würden Sie der anderen Person anbieten?
- (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

²⁹Compare Section K.2

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 abstimmen.

- (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.

- (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?

G 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.

G.1 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 on the restricted set of items. The “staircase” procedure for a hypothetical lottery choice (see Appendix I) 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”.

G.2 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 on the restricted set of items. The “staircase” procedure for intertemporal choice (see Appendix J) 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.”

G.3 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.

G.4 Altruism

Sine the term “charity” caused confusion in Eastern Europe and Central Asia, we replaced it with “good cause”.

G.5 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.

G.6 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 ques-

tion 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.

H 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.

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	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I assume that people have only the best intentions.	0	1	2	3	4	5	6	7	8	9	10	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 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. 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 12 months?

- = 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**

I 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 2.

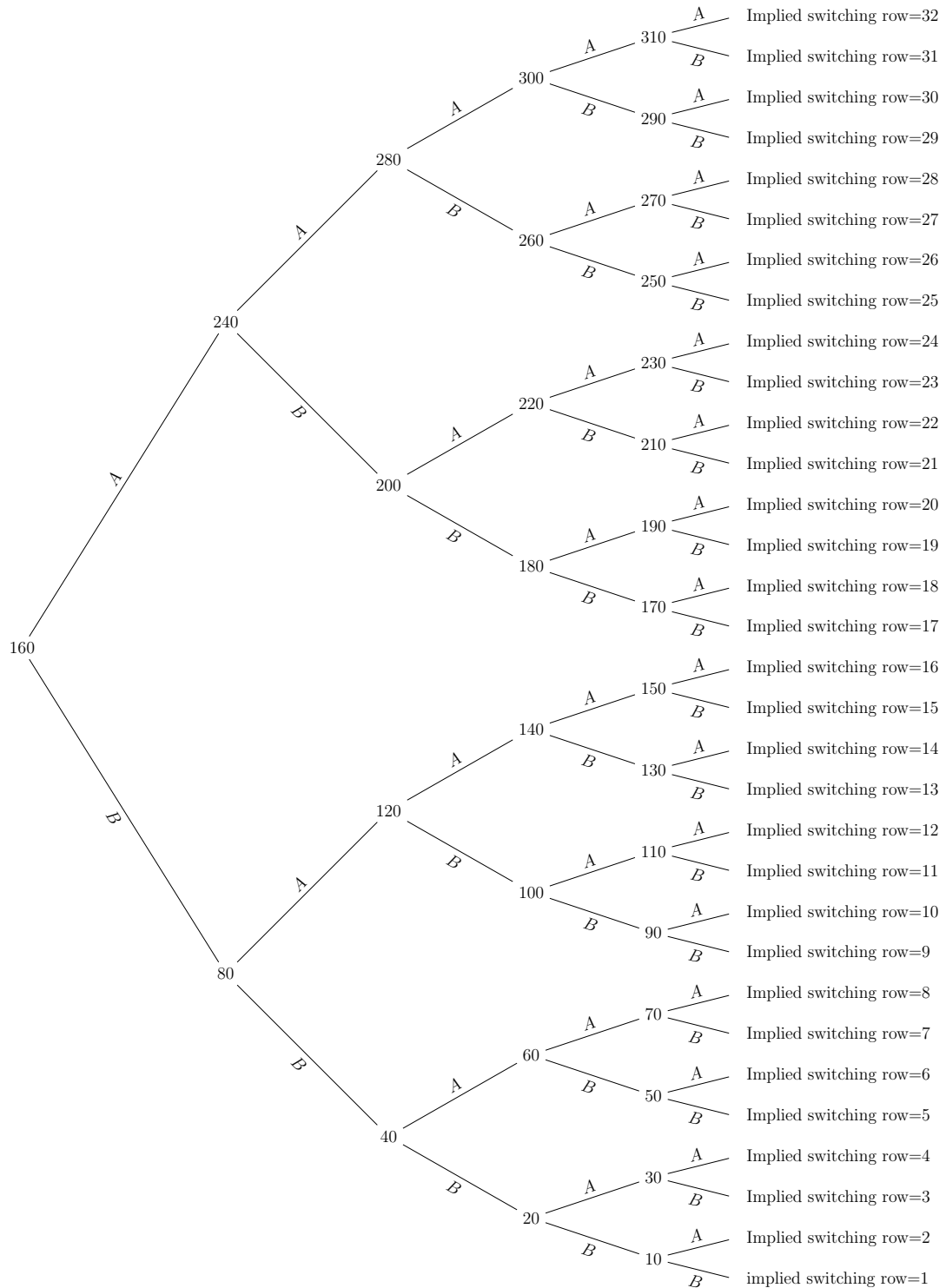


Figure 2: Tree for the staircase risk task (numbers = sure payment, A = choice of sure payment, B = choice of lottery)

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.

J 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 \rightarrow *go to question 28*
 - (b) in 12 months \rightarrow *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 \rightarrow *go to question 31*
 - (b) in 12 months \rightarrow *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 3.

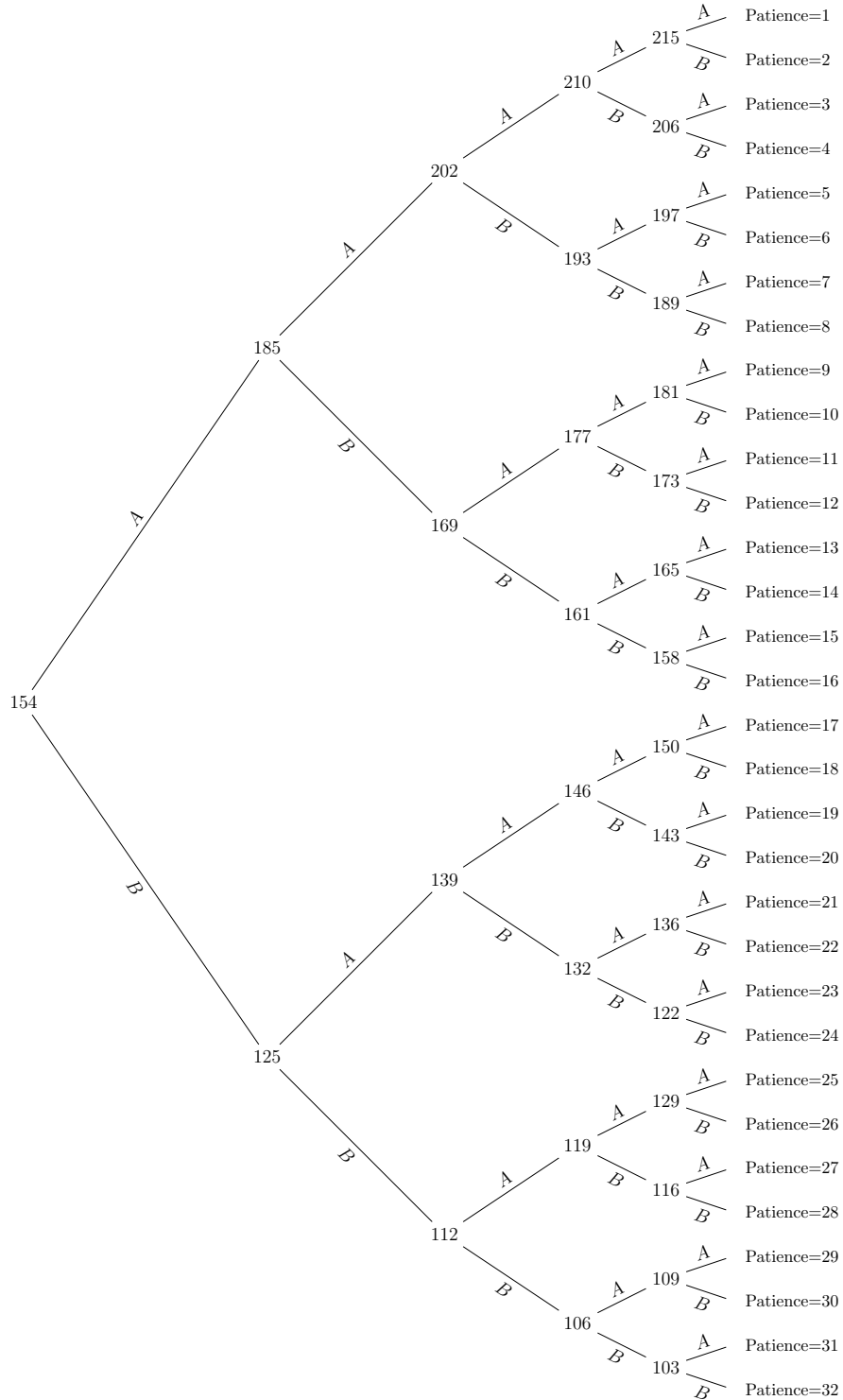


Figure 3: Tree for the staircase time task (numbers = payment in 12 months, A = choice of “100 euros today”, B = choice of “ x euros in 12 months”)

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.

K All Survey Items

This section presents all survey items on preferences that subjects answered.³⁰ 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.

K.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?*]

R5 Schätzen andere Sie im Allgemeinen als einen risikobereiten Menschen ein, oder schätzen andere Sie als jemanden ein, der versucht, Risiken zu vermeiden? [*Do*

³⁰Subjects were required to answer each question, i.e. they did not have an option to skip items.

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...]*³¹

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

R13 Sie in der Wildnis zelten, fernab der Zivilisation oder eines Campingplatzes? *[you go camping in the wild, far away from civilization or campgrounds?]*

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

³¹Most of these items are adapted from Weber et al. (2002).

- 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 substantially 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...*]³²
- R32 Sie ungeschützten Sex haben? [*you engage in unprotected sex?*]
- 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)?*]

³²Most of these items are adapted from Weber et al. (2002).

- 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?*]

K.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.³³

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*

³³The 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.

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?*]

– 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 welchem 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?*]

K.3 Altruismus

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 eine 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 eine 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 uneigennützig 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 gemeinnützigem Engagement? [*How many people know that you commit time to charitable purposes?*]

K.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.*]
- 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?*]

– 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?*]

K.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 comparison 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 willing 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 hat 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 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 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.*]

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 Empfind-

ung 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?*]