Does good advice come cheap? - On the assessment of risk preferences in the lab and the field*

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Abstract

We investigate how individuals assess risk preferences of others given sociodemographic characteristics or pictures. Both students and financial professionals participate in this artefactual field experiment. Our results show that subjects have substantial knowledge about the correlation between sociodemographic variables and risk tolerance. When assessing others, subjects mainly rely on the advisee's self-assessment of risk preferences and gender. On average, people consider themselves to be less risk-tolerant than the person they evaluate. Subjects use their own risk attitude as a reference point for predicting others' risk preferences. This false consensus effect is especially pronounced for experienced professionals.

Classification: Risk Preferences, Financial Advice, Artefactual Field Experiment, Behavioral Finance
JEL-Codes: C91, D81, G02

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1 Introduction

Risk preferences are an integral part of individuals' decision making. Every day, people have to decide between several risky options. Several large representative panel studies have analyzed the effect of sociodemographic factors correlated with a person's risk preferences.[1]

An important aspect is that people make a decision not only based on their own knowledge and experience, but also based on advice. Especially in the financial sector, products are becoming more and more complex. Thus, individuals are increasingly relying on professionals - such as financial consultants, insurance agents, but also doctors in the health domain - when making their decisions (c.f. Allen 2001, Gerhardt and Hackethal 2009).

These developments give rise to the question of whether advisors are capable of assessing the preferences of an advisee. The aim of this study is to analyze whether good advice is possible if risk preferences are not obvious to the advisor. Explicitly, we abstain from any agency problems on which the theoretical literature has focused so far.[2] Our objective is to start a step earlier. If the advisor's only goal is to correctly gauge the risk preferences of the advisee, is the advisor able to do so? Additionally, it is of interest which sociodemographic attributes of the advisor and the advisee play a role in the belief formation.

Furthermore, the paper investigates which of the advisee's sociodemographic attributes advisors look at when assessing the advisee's risk preferences. This allows us to inspect the sociodemographic factors to which advisors' attach informational content when forming their beliefs over the advisee's risk attitude. This is interesting information from a regulatory perspective as well.

In the process of giving advice it is an important feature that advice is given by professional advisors. Therefore we employ an artefactual field experiment in which three types of subjects were used: senior financial advisors, junior financial advisors and students. These groups allow us to explore potential sorting effects on the advice process (c.f. Bonin et al. 2007, Dohmen and Falk 2011, Haigh and List 2005).

We look at two different groups of subjects. Advisors, or subjects which form beliefs, and subjects on which beliefs are formed - advisees. Our experimental design incorporates these two types of subjects as it consists of two main parts.

[1] Dohmen et al. 2011 for Germany, von Gaudecker et al. 2011 for the Netherlands.

[2] C.f. Ottaviani and Soerensen (2006), Inderst and Ottaviani (forthcoming) or Bhattacharya and Pfleiderer (1985).

First, we use a web-based survey to collect data on potential advisees. In the second part, we run a computerized lab experiment to study the assessment of risk preference of others. We generalize the results with respect to two dimensions. First, by augmenting the subject pool with financial professionals we are able to study behavioral differences of financial advisors and students. Secondly, we link the experimental data to data of the German large-scale survey (SOEP). In particular, this allows us to make statements on a representative level.

The lab experiment consists of three main stages. In the first stage the advisors have to predict the effect of the variation of a single sociodemographic variable on risk preferences (e.g., older versus younger, female versus male). Secondly, we inspect how advisors form beliefs over the risk preferences of specific advisees and we assess how precise these beliefs are. In this stage advisors are able to draw on several sociodemographic variables, which we vary simultaneously. We also check whether advisor's beliefs are subject to false consensus regarding their own risk preferences. Furthermore, we analyze the influence of sociodemographic proximity between advisor and advisee. In the third stage, the advisor is provided with the adviee's picture instead of sociodemographic information.

The results of the experiment show that advisors substantially recognize the correlation of a particular sociodemographic variable with risk preferences. The subjects are able to identify their own risk attitude relative to the risk attitude of the whole population with a high precision. On average, advisors exhibit a higher risk tolerance than the beliefs which they form over specific advisees. For the belief formation in particular the advisees' self-assessment of risk preferences and the gender of the advisees are considered to be informative by the advisors. The advisors' own risk preferences positively correlate with the beliefs on the advisees. Interestingly, this false consensus effect is explicitly pronounced for experienced financial advisors. The analysis of prediction errors of risk preferences shows that information on gender, parenthood, age and advisee's self-assessment on risk hinders mispredictions of risk preferences.

The remainder of the paper is structured as follows: In the next section, we discuss the literature on risk preferences and advice. Section 3 explains the experimental design. Section 4 presents the treatments in detail and the results, followed by conclusions in section 5.

2 Literature

Recent research on risk preferences has detected significant linkages between sociodemographic characteristics and risk attitudes. By using the German micro data (SOEP) Dohmen et al. (2011) find that individuals are more risk averse if female, older, married, or with children. Individuals are more risk loving if they have a high school diploma or higher income. They report that actual economic outcomes are related to risk questions asked. A significant correlation between stated risk preferences and e.g., holding risky financial assets such as stocks, smoking and, being self-employed is evident. However, the findings of the literature are ambiguous regarding the relationship of education or income and risk tolerance (c.f. Belzil and Leonardi 2007, Barsky et al. 1997, Hartog et al. 2002). In contrast, e.g., it is largely undisputed that women are more risk averse than men (e.g., Byrnes et al. 1999, Barsky et al. 1997, Hartog et al. 2002, Croson and Gneezy 2009).

When making risky decisions people often are advised and strongly react to advice (Allen 2001, Schotter 2003). Furthermore, people prefer to have advice when making a decision. Surprisingly, this is even true when it is common knowledge that the advisor does not have any information advantage in the field of the decision (Nyarko et al. 2006, Schotter and Sopher 2007). The reasoning why subjects are keen on advice is that during the advice process people rethink their decision problem more in-depth and are therefore able to make better decisions (Schotter 2003).

For giving a meaningful advice it is essential to know the advisee's preferences. One strategy to figure out somebody's preferences is stereotyping. Here, the advisors form their beliefs according to their *perceived* correlation of an advisee's feature and his or her risk attitude. In this context, Eckel and Grossman (2008) study gender stereotypes. Their results are twofold: On the one hand, females tolerate less risk than males. On the other hand, the beliefs over gender are consistent since women are perceived to be less risk tolerant. In this setup the judged person was fully visible to the judging subject. Hence, it is difficult to isolate the gender effect from other unrecorded variables such as the style of clothing. If, instead of individuals' stereotypes, group stereotypes are elicited, subjects overestimate males' risk tolerance, while females' is correctly assessed (Siegrist et al. 2002). In terms of cultural stereotypes people perceive Chinese to be less risk tolerant compared to Americans. Interestingly, the actual exper-

imental data shows that the opposite is true (Hsee and Weber 1999).
Regarding financial advice Faro and Rottenstreich (2006) inspect the belief formation process of subjects when giving advice. Their findings show a systematic bias towards risk neutrality when estimating the risk preferences of others. In this experiment - in contrast to the setting of Eckel and Grossman (2008) - the advisors have to judge a random subject. Hsee and Weber (1997) study differences between a subject's own risk preferences and the subject's beliefs over others' risk preferences and show that the differences increase with social distance.
A further aspect that is raised is the false consensus bias in the belief formation (Eriksen and Kvaløy 2009, Hadar and Fischer 2008). Subjects' beliefs about the risk preferences of another person are consistently biased towards their own risk attitude. A restriction on these studies is that no monetary incentives are used to elicit the advisors' risk aversion or the advisors' belief. Daruvala (2007) explores gender differences in the beliefs when predicting risk preferences of others. She finds that gender stereotypes as well as the subject's own risk attitudes affect the belief. However, there is no incentive compatible mechanism applied to elicit the beliefs of others in this design. Chakravarty et al. (2011) inspect risk taking in delegated decisions by using lottery gambles. The subjects have to judge the risk preferences of a real person about which they have no information. When making the lottery decision for this anonymous advisee, advisors exhibit a significantly higher risk aversion compared to their own risk attitude.
One of the most obvious situations in which people receive advice is in financial decision making. There is evidence that financial professionals exhibit a different behavior in decision making than the average population (Haigh and List 2005, Nosfinger and Varma 2007, Slovic et al. 1999). Since people choose their job according to their preferences this causes occupational sorting (Dohmen and Falk 2011). It is argued that individuals which are willing take more risk sort into occupations with a higher variance in income (Bonin et al. 2007, Fuchs-Schündeln and Schündeln 2005) or even with a higher mortality risk (Deleire and Levy 2004). The premium dependent incentive schemes in the financial sector could be a reason for sorting of financial professionals. This is why, besides student subjects, financial professionals participate in our experiment.
The contribution of this study is that it provides advisors with a set of sociodemographic characteristics and asks them to assess the risk preferences of advisees based on this information. We implement a design which employs uni-

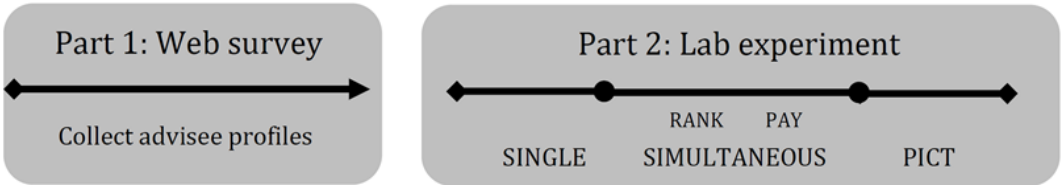
form incentives for the predicted as well as the subject's own risk measure. It also allows us to distinguish the behavior of subjects familiar and unfamiliar with giving advice.

3 Experimental Design

The experiment investigates beliefs over the risk preferences of others.[3] This involves two distinct roles: subjects which form beliefs (advisors) and subjects about which beliefs are formed (advisees). Therefore our experimental setup consists of two main parts (c.f. figure 1). In a first part we collect data on risk preferences of advisees in a web-based survey. As it will be discussed in section 4.2 we augment this dataset by survey data from the German Socioeconomic Panel (SOEP) to control for representativity.[4]

In the second phase we elicit advisors' beliefs over the risk preferences of the advisees. The experiment consists of three main components. In the first treatment (SINGLE), we study the advisors' knowledge about the correlation of a single sociodemographic variable (e.g., gender) and risk tolerance. In the subsequent treatment (SIMULT), the advisors have to predict the risk preferences of specific advisees. In contrast to the SINGLE treatment we manipulate the advisees' sociodemographic information in several variables simultaneously. Within the SIMULT treatment we have two different modes of how the variables are presented to the advisee (RANK, PAY). In a third treatment (PICT), a photo of the advisee is presented to the advisor. All treatments are carried out by all advisees one after the other. A more detailed description of the lab experiment is found in section 4 along with the respective results.[5] For the elic-

Figure 1: Experimental Design: Course of Action



[3]In the literature 'prediction', 'forecast' and 'belief' are used interchangeably. We follow Chakravarty et al. (2011) and use belief subsequently.

[4]The SOEP is a representative panel which surveys 22,000 individuals (c.f. www.diw.de/soep). The analysis is based on data of the year 2009.

[5]The instructions of both parts of the experiment can be found in the appendix.

itation and assessment of risk attitudes we use two different lottery questions: the mechanism proposed by Holt and Laury (2002) and a simple lottery task that is used in the SOEP. Both techniques are explained in detail in section 3.3.

3.1 Part 1: Web-based Survey

Our main objective is to study how advisors assess the risk preferences of advisees. Thus, it is crucial to achieve sufficient sociodemographic variation in the pool of advisees. For this we use a web-based survey, which can be easily distributed to different groups of people via e-mail. We collect the risk preferences in the two mentioned mechanisms of elicitation. Furthermore, questions on sociodemographic variables are asked. Our survey ran in November and December 2010.[6]

The variation within this pool is large compared with a student sample as table 1 shows.

Table 1: Descriptive statistics of the subjects

	Part 1: Surveys				Part 2: Lab Experiment					
	Web-survey		SOEP		Non-prof.		Junior prof.		Senior prof.	
Variable	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
N	84	-	20,750	-	77	-	52	-	38	-
Year born	1979	10.0	1959	17.71	1986	6.29	1989	1.06	1973	11.0
Gender	0.57	0.56	0.52	0.50	0.56	0.50	0.46	0.50	0.18	0.39
Partner	0.41	0.62	0.77	0.42	0.26	0.44	0.23	0.43	0.66	0.48
Parent	0.20	0.40	0.62	0.49	0.05	0.22	0.02	0.14	0.47	0.51
High income*	0.02	0.15	0.01	0.07	0	0	0	0	0.11	0.31
Uni degree	0.59	0.50	0.21	0.41	0.94	0.25	1.00	0.00	0.63	0.49
Counsel. Exp.	-	-	-	-	-	-	1.02	1.07	10.97	8.27
Riskindex	3.54	1.81	1.90	2.13	5.26	1.39	5.08	1.52	4.68	1.71
HL	5.30	1.78	-	-	6.81	1.56	6.33	1.78	6.32	2.08
100,000	7.61	2.70	9.08	1.98	4.70	3.29	6.00	2.44	6.89	3.18

* refers to a monthly net income above 6,000€. This is approx. 8,460$ (€1 = $1.41, at 18.07.2011).

3.2 Part 2: Lab Experiment

The experimental sessions took place in 2011 and 2012. In total 167 subjects participated.[7] In the subject pool we have three types of subjects: senior professional advisors, junior professional advisors and students. The student subjects were recruited via the AWI-lab of the Heidelberg University where all student

[6]Participants were recruited via e-mail and were requested to further distribute the survey. For the completion of the web-based survey we raffled 50€ off among the participants.

[7]The experiment involves no interaction among the subjects, therefore each subject counts as an independent observation.

sessions were run.[8] The experienced professional advisors were recruited from a large German financial advisory agency and from local banks whereas the junior advisors were recruited from a banking specific advanced training institution.[9] Like the student subjects, junior professionals have a university entrance diploma, but decided to enter a banking specific education thereafter. Regarding age and education, they are thus comparable to our student subjects. Furthermore, they allow to examine whether sorting effects are existent at the beginning of a career. More detailed information on the subject pool is given in table 1. The experiment lasted approximately 50 minutes, payoffs are shown in table 1. A detailed description of all treatments will be given along with the results in section 4.

3.3 Measures of Risk Aversion

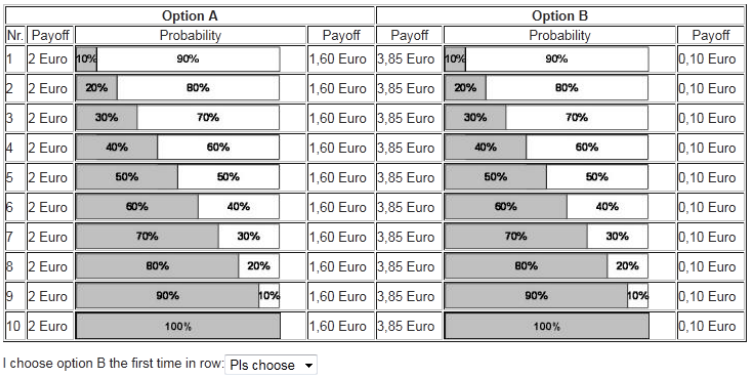
The experiment uses two mechanisms to elicit risk preferences. The first measure allows comparability to previous studies while the second offers the advantage to compare our results with a large scale survey from which it is borrowed. The first method we employ is the multiple price list design (MPL) of Holt and Laury (2002) (hereafter: HL-lottery). In order to enforce monotonicity of the risk preferences we use a switching MPL or sMPL instead of the classic design (Andersen et al. 2006). Although this elicitation mechanism is widely used in the literature it has its weaknesses - it is prone to framing effects and intellectually sophisticated (Harrison and Rutström 2008). Nevertheless it is well-studied in many different contexts and it is documented that the mechanism measures risk attitudes outside the lab consistently (Harrison and List 2004, Harrison et al. 2007). The way the HL-lottery is presented to the subjects can be found in figure 2.

The second mechanism we employ is taken from the SOEP panel (in the following 100,000 euro question). The exact wording can be found below. This provides the opportunity to cross-check our experimental data with the large-scale data of the survey. The elicitation mechanism is an ordered lottery selection design in which subjects can invest 100,000 euros in to a lottery that doubles

[8] The experiment was programmed on a PHP-platform.

[9] We ran seven sessions with professionals - three in the lab and four on-site. In all sessions, the conditions were completely identical.

Figure 2: sMPL Mechanism (HL-lottery)



of halves the amount with equal probabilities.[10] The reliability of this measure has been validated via a lab experiment with substantial stakes (Dohmen et al. 2011). In contrast to the HL-lottery this design is very easy and understandable but it captures only preferences on the risk averse domain.

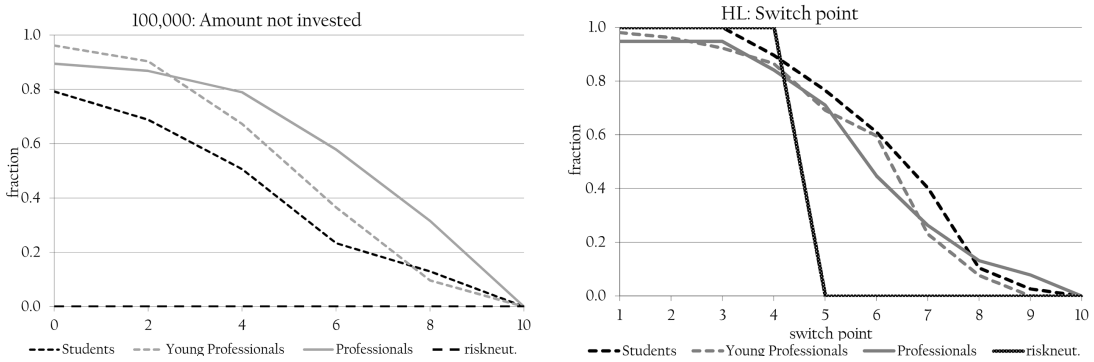
100,000 euro question *Please consider what you would do in the following situation: Imagine that you had won 100,000 euros in the lottery. Almost immediately after you collect the winnings, you receive the following financial offer, the conditions of which are as follows: There is the chance to double the money. It is equally possible that you could lose half of the amount invested. You have the opportunity to invest the full amount, part of the amount or reject the offer. What share of your lottery winnings would you be prepared to invest in this financially risky, yet lucrative investment?*
Your Decision *100,000 euros - 80,000 euros - 60,000 euros - 40,000 euros - 20,000 euros - Nothing, I would decline the offer*

Advisors' decisions The distribution of the subjects' choices in both risk measures is presented in figure 3. For a better comparability the 100,000 euro measure is rescaled. On the x-axis we draw the amount invested in an inverse order. By this, a x-value of 10 indicated that nothing is invested whereas the 0 means a 100,000 euro are invested into the lottery. Hence, in both measures a higher value on the x-axis indicates a higher willingness to take risk on a comparable numerical scale.
In figure 3 we present the choices over the different subject groups. Interestingly, there is no obvious pattern of the risk attitudes over the different subject types. However, for the HL-lottery it turns out that up to 20% of the subjects

[10]In order to provide incentives to take the decision, for the actual payoff we convert the 100,000 euros into 2.50 euros, 80,000 euros into 2 euros etc.

exhibit risk-loving choices. This can be easily identified when comparing the distribution with risk neutral choice (black colored line).

Figure 3: Advisors' Risk Attitudes



4 Description and Results

The following chapter describes the different treatments in detail and presents the results. In the first subsection we discuss the treatment SINGLE. In this treatment the advisors have to predict the effect of a variation of a single sociodemographic variable on advisees' risk preferences. In section 4.2 we present the treatments named SIMULT which subsumes the treatments RANK, PAY and PICT. Here, the advisors have to predict the risk preferences of a particular advisee while the information on many sociodemographic variables is manipulated simultaneously.

4.1 SINGLE: Variation of a Single Characteristic

Procedure In this first section of the lab experiment, we investigate two research questions. First, we examine advisors' knowledge about their own risk attitude relative to the whole population. Beforehand, we thus elicit the advisors' decisions in the two risk measures, the results can be found in section 3.3. Next, the advisors have to predict whether the decision they made is more, less, or equally risky compared to the respective population mean of the data collected in part 1.

Secondly, the advisors have to identify the impact of a single sociodemographic variable on risk preferences. We ask advisors which subgroup as presented in table 2 takes riskier decisions in the two preference elicitation mechanisms (c.f.

section 3.3). This allows us to inspect the advisor's knowledge about the correlation between the respective sociodemographic variable and risk tolerance. In other words, we detect which subgroup is perceived to make the riskier decision by eliciting the advisors' stereotype of a certain sociodemographic attribute. In total, there are fourteen questions to answer: One regarding the assessment of the advisor's own risk preferences compared to the reference group and six about the specific subgroups, each for both risk measures. Each question pays 0.25 euros if answered correctly and zero otherwise.

By using the data we obtained in the first part of the study via the web-based survey (for the HL-lottery) and from the SOEP (for the 100,000 euro question) we are able to compute the mean decisions of the subgroups presented in table 2. Remarkably, the decisions of our two samples are the same for both lottery questions but differ in the income variable. This is in line with the ambiguous findings in the literature regarding the influence of income on risk preferences. Hartog et al. (2002) find that risk aversion decreases in income and wealth. In contrast to that, Barksy et al. (1997) identify an inverse U-shape relation of risk aversion and income and wealth. Insofar, these results are in line with the literature as income does not lead our subjects to clear-cut conclusions. In the wording of the lab experiment we explicitly ask for the decision of the respective reference group.

Table 2: SINGLE: Possible Choices

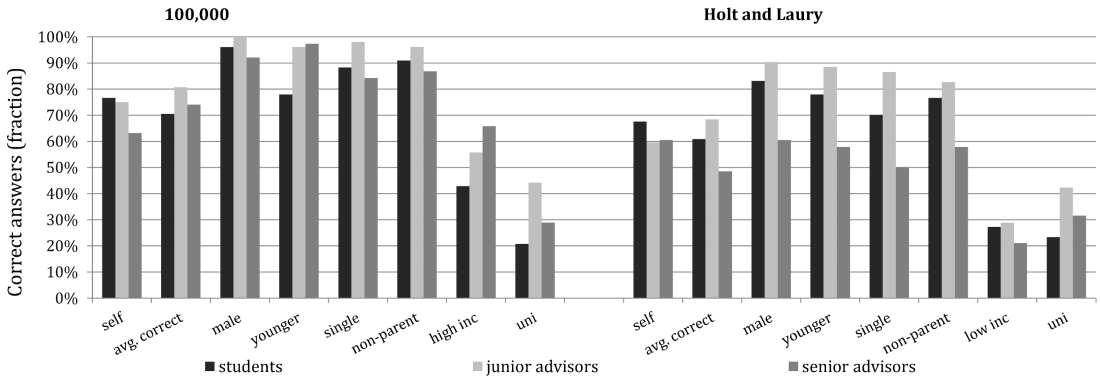
	Choice 1	Choice 2	Choice 3
Age	younger than 40*$^{\Delta}$	40 and older	both equal
Gender	male*$^{\Delta}$	female	both equal
Family status	single*$^{\Delta}$	partner/married	both equal
Education	university degree*$^{\Delta}$	no university degree	both equal
Children	having children*$^{\Delta}$	having no children	both equal
Net income	up to 1000 euros*	more than 1000 euros$^{\Delta}$	both equal

For the HL-lottery (100,000 euro question) the subgroup that takes the decision that embodies *more* risk is denoted by a *($^{\Delta}$).

Results The results in figure 4 indicate that over three quarters of the students and the junior professionals recognize their relative risk tolerance correctly. For the senior professionals the value is lower but still amounts to 63%. In the HL-lottery approximately 60 % of the professionals assess their risk tolerance correctly whereas in the student group 67% do. Not surprisingly, advisors with choices at the edge of the respective risk mechanism perform better in as-

sessing their relative risk tolerance. Nevertheless, around 50% of subjects with a self-assessment close to the mean answer know their relative position, too.

Figure 4: Distribution of Answers: 100,000 euro Question and HL-lottery



Note: The column *self* denotes the percentage of advisors that were able to answer the question *"What do you think, did people in the pretest invest more, less or the same amount respectively switch earlier, later or at the same point as/you?"* correctly. The remaining columns refer to the question *"What do you think, on average, which of the two groups invests more, or do both invest the same amount/ switches earlier, or do both group switch at the same time?"*. The categories below the columns denote the choices that were perceived to be riskier by the majority of the pretest.

Nearly all subjects are aware of the fact - consider the male column - that men tolerate more risk than women; in the 100,000 euro question even 100% of junior professionals judge this correctly. On the other hand in the HL-lottery mechanism only 61% of the senior professionals know that males, on average, tolerate more risk. Considering younger people, singles or no-parents, around 70% to nearly 100% know the statistical relationship in the 100,000 euro question. Again, the percentage of correct answers is lower for the HL-lottery in these categories with around 50 to 90%.[11] Whereas in these categories the data delivers fairly clear results, in the education and income category the results are less clear. While in the 100,000 euro question 50% to 65% are aware of the correct correlation with income, for the HL-lottery less than 30% of answers are accurate. Approximately 20% of the students correctly recognize the effect of a university degree whereas of the 30 - 40% professional groups identify the effect of education correctly.

Nonetheless, for the income and education category, by and large, the majority of the answers show that subjects have a biased recognition of risk taking in these categories. Restrictively, the correlation of education and risk tolerance

[11]If subjects chose their answers randomly this value (in expectation) would amount for 33%. In both mechanisms beside for income and education a t-test cannot reject the null-hypothesis that these values equal 33% at a reasonable level of significance. Consistently, all other choices are significantly different from the random choice at the 1%-level.

is not undisputed in the literature. Regarding education, Dohmen et al. (2011) show that better educated people are more risk tolerant. In contrast to that, Belzil and Leonardi (2007) find only modest evidence for the hypothesis that higher risk tolerance relates to higher education levels whereas Barsky et al. (1997) find a U-shaped relationship between completed years of education and the willingness to take risk. Furthermore,it has been outlined in the previous paragraph, that the same holds for income (Hartog et al. 2002, Barksy et al. 1997).

Summarized over both mechanisms of elicitation, young professionals earn significantly more than all other groups, which can also be observed in the columns 'avg. correct'. These columns display the mean of the correct answers regarding the correlation of sociodemographics with risk preferences in each risk elicitation mechanism. Interestingly, all groups perform worse in the HL-lottery in nearly all categories. This could be a first indication that, as has been outlined in the litereature regarding the HL-lottery in section 3.3, the HL-lottery is a more challenging mechanism. For senior professionals in particular this seems to be the case.

To conclude, we find that especially the effect of gender, age, partner and children is widely known to the different subject groups. Regarding income and education, the answers of the advisors show a higher degree of heterogeneity. Most interestingly, the subjects are capable of identifying their own risk preferences compared to the risk preferences of the population mean. This result is more pronounced for the students and the junior professionals. Overall, we find that the junior professionals show the best knowledge on the relationship between the sociodemographic characteristics and risk attitude.

4.2 SIMULT: Simultaneous Variation of Characteristics

In this section of the experiment we present two treatments (RANK, PAY) in which we vary the information which is provided to the advisor in more than one variable simultaneously. We thus investigate the advisor's beliefs about a specific advisee.[12] In contrast to the SINGLE treatment where the subjects had to predict the majority decision, subjects now have to answer more precisely. In particular, for both risk measures advisors have to name the exact answers

[12]The fact that the advisors have to asses a particular existing person is highlighted in the experimental description throughout the whole experiment.

of the advisees (see chapter 3.3 for details). Each correct answer pays 0.50 euros. The advisors have to assess the risk preferences of the advisee by looking at sociodemographic information, in particular age, gender, education, income, self-assessment of risk-taking in financial matters, having children and family status. Table 3 shows which alternatives are comprised in the specific domains.

Table 3: Information Provided in RANK and PAY

Year of birth	date
Education	University, Master, training, in training, no formal training
Family status	single, partner, married, divorced, living separated, widowed
Gender	male, female
Net income	up to 1000, 1001-3000, 3001-6000, more than 6000 euros
Children	having children, having no children
Risk Index	Self-assessment of risk with the question: *Regarding financial matters, are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?(0=risk averse to 10= fully prepared to take risks)*

Selection of Advisees In total, eight profiles are chosen from the web-based survey - four for each treatment. Table 4 displays these eight advisees. The profiles vary across treatments and are presented in random order within the treatments. The eight advisees are chosen in order to achieve a balanced and diversified sample over gender, income, family status, age, education and parenthood (c.f. table 4).

Within the described experimental design it is vital to choose the set of our advisees thoughtfully. Furthermore, we have to assure that our advisee sample is approximately coherent with the population to ensure the feasibility of giving advice. We therefore reduce the whole SOEP population to subjects that are similar to our specific subjects in sociodemographic characteristics as described in table 3. From this subsample we then calculate the mean of the answer to the 100,000 euro question.[13] We report the answers of the advisees and of the SOEP population in table 4. In our opinion the described procedure minimizes the advisees' deviations from the population mean as we only choose advisees which are similar to the population mean. At the same time it provides the opportunity to let subjects judge real individuals.

[13] As discussed before, this is possible since the 100,000 euro question has been asked in the SOEP (wave 2009).

Table 4: Advisees for RANK and PAY

ID	Age	Education	Family status	Net income	Gender	Child.	Risk index	HL	100,000	SOEP mean
04	64	university	married	>6000€	male	yes	1	5	8	7.58
18	38	training	single	1001-3000€	female	no	2	6	10	9.16
39	25	econ student	partner	<1000€	male	no	5	6	6	7.14
59	30	training	married	1001-3000€	male	yes	1	8	6	8.88
61	36	adv. training	single	3001-6000€	male	no	1	5	8	8.4
65	57	university	married	3001-6000€	female	yes	0	7	6	9.06
73	41	university	divorced	>6000€	female	no	1	5	8	7.82
1030	21	econ student	single	<1000€	female	no	4	4	10	9.06

4.2.1 RANK: Which Characteristics do Advisors Consider to be Informative when Ranking Sociodemographic Information?

Procedure treatment RANK The objective of this treatment is twofold. First, we analyze which sociodemographic variables are of importance for the advisor when forming the belief. Second, we elicit the advisor's belief over the advisee's risk preferences. In order to elicit the advisor's preferences on the seven categories we apply the following mechanism: In the first treatment - RANK - advisors have to state a ranking in which they want the characteristics to be presented to them (e.g., 1. risk index, 2. gender, 3. age, ..., 7. income). The ranking has to be stated **before** advisors have to assess the risk preferences of **all four** advisees. The course of action is displayed in figure 5.
Given the ranking of the characteristics, for each of the four advisees a separate random number between 1 and 7 is drawn. The draw of the random number determines how many of the characteristics are presented to the advisor. The chosen ranking of the characteristics is applied to all four advisees to be evaluated, while the random number is drawn separately for each advisee. The use of the random draw establishes a mechanism which is truth-revealing for the advisor to announce his true ranking of the characteristics.[14] Furthermore, this allows us to generate four independent observations (with respect to the amount of information available to the advisor) for each advisor in this treatment.[15]

Results As outlined above, advisors have to name the order in which they want the characteristics to be presented to them, in the RANK treatment.

[14]The mechanism is truth-revealing under the assumption that characteristics are not correlated.

[15]In expectation an advisor sees three characteristics. Risk index, gender and children are the three variables that explain the most of the variation of the lottery task in the SOEP panel. Hence the optimal choice would be to place these three variables to the first three ranks.

Figure 5: Course of Action in RANK and PAY

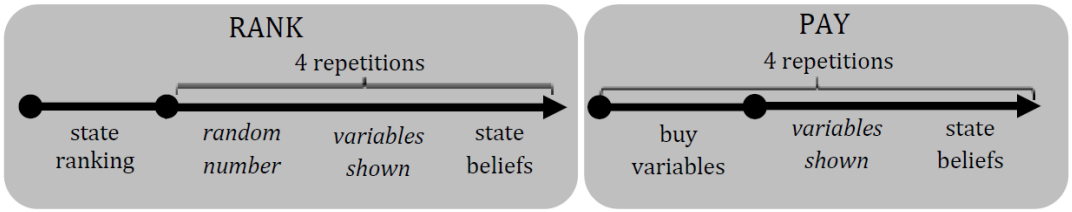


Figure 6 displays the average ranks of these characteristics for the three groups of advisors separately. In addition, table 5 shows the results of the Joanes's rank sum test[16] and displays the average position of the ranked characteristics. For the first position, we observe agreement among the groups that 'risk index', the self-assessment of risk preferences regarding financial matters, is the most important characteristic. Nevertheless, while 64% of the students and 58% of the junior professional choose 'risk index' on the first position only 32% of senior professionals do so. On average, 'gender' is chosen at the first position by 20% of the advisors, which constitutes the second largest group. All advisors agree that gender and income are ranked on the second and third position, while for family status, education, having children and age, no such clear pattern can be observed.

Table 5: Joanes Ranksum test

	riskindex			gender			income			fam.stat.			educ			child			age		
	Stud	Jun	Sen	Stud	Jun	Sen	Stud	Jun	Sen	Stud	Jun	Sen	Stud	Jun	Sen	Stud	Jun	Sen	Stud	Jun	Sen
position	1	1	1	2	2	3	3	3	2	4	5	4	5	6	5	6	7	7	7	4	6
age	***	***	***	***	*	*	**		*								***				
child	***	***	***	***	***	**	*	***	**		***										
educ	***	***	**	***	***																
fam. stat.	***	***	*	***	*																
income	***	***		**																	
gender		***																			

*** indicate significance at 1%, ** at 5%, * at 1%, values taken from Christensen et al. 2006

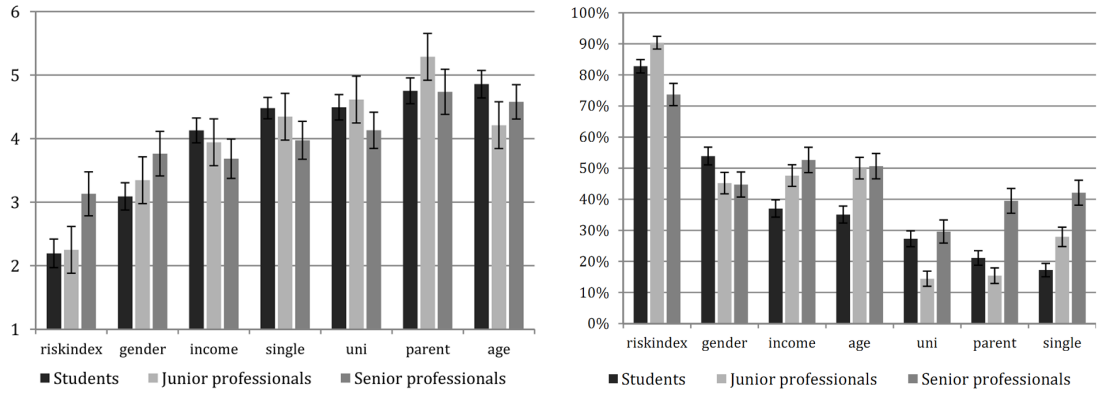
The Rank sum test in table 5 confirms these findings. It indicates that the rank position of the risk index is significantly different from the position of age, child, education, family status and income at the 1%-level for students and junior professionals. Its rank sum is not significantly different from gender for student subjects. The position of gender is significantly different from age,

[16]This test takes the difference in the total rank sum of the objects as an indicator of significant differences in rank position

child, education and family status at least at the 1%-level for these two groups. For junior professionals, the information regarding the correlations between risk preferences and having children seems to be less valuable as this characteristic significantly ranks at the last position. Regarding senior professionals, the significance of the differences in positions is lower, although the risk index, income and gender are significantly different from several other characteristics, especially age and having children.

Therefore, it can be concluded that the risk index ranks at the first positions and is on average observed as the most important characteristic, while gender and income rank with lower significance at the second and third position. For all other characteristics no clear-cut and statistically significant distinction between ranks can be identified. For students and junior professionals we observe a stronger pattern for the first three and the last characteristic, while senior professionals' choices indicate a less obvious ranking among the characteristics.

Figure 6: RANK & PAY: Visible Characteristics



RANK: Average Rank of Characteristics

PAY: Bought Characteristics

4.2.2 PAY: Which Characteristics do Advisors Consider to be Valuable when Paying for Sociodemographic Information?

Procedure treatment PAY In the second treatment - PAY - advisors can freely choose which characteristics are presented to them. In contrast to RANK, the advisors have to pay for each category for each advisee (c.f. figure 5). We implement a convex pricing rule to ensure an inner solution. For the first characteristic 0.01 euros need to be paid while buying all seven characteristics amounts to a total price of 0.99 euros.[17] For each new profile advisors can make

[17]Price for the second characteristic: 0.02 euros, the third: 0.03 euros, the fourth: 0.06 euros, the fifth: 0.12 euros, the sixth: 0.24 euros, the seventh: 0.50 euros. With an initial

their payment decision, which amounts to four decisions. As advisors can win a maximum of one euro per profile by assessing both risk questions correctly, the total price of the characteristics therefore never exceeds the maximum winning possibility. In contrast to the RANK treatment, it is not possible to obtain a ranking over the bought characteristics in this treatment. However, the advisors' decisions to buy a characteristic allows us to evaluate if advisors attach an informational value coming from a certain characteristic.

Results Since the advisor is free to buy each sociodemographic variable for every advisee separately, in total, four payment decisions have to be made. On average, 2.93 characteristics are bought, students buy 2.74 characteristics, junior professionals 2.91. In contrast, senior professionals purchase significantly more characteristics, on average 3.33. Over the four decisions, the number of characteristics bought does not differ significantly, on average and for each group of advisors separately. The pattern of the bought characteristics is stable over the rounds of the treatments, which indicates that subjects are confident in their choice of characteristics. This is also reasonable since the advisors do not get any feedback about their success in the assessment, so learning effects should not occur.

We aggregate the decisions over rounds and show the average decisions per advisor subgroup and per characteristic in figure 6. In line with the RANK treatment the risk index is the most important characteristic, bought significantly more often than any other characteristic in on average 83% of the cases. For students, the distribution of the characteristics in the PAY treatment is similar to the distribution of RANK treatment. Gender ranges at the second position and is significantly bought more often than the income characteristic. For income, family status, and children no clear-cut statements can be made. For the junior professionals, the characteristics can be divided into two subgroups in which no significant purchase differences can be observed. Gender, income and age are bought in more than 45% of cases. In contrast education, family status and children are less valuable to this advisor group and bought significantly less often (each less than 27%). The senior professionals, as observed in the RANK treatment, exhibit a more even distribution of choices apart from

endowment of 2.65 euros and the sure winnings of 1.35 euros in the lottery question at the beginning of the experiment, we insure that the advisors have non-negative net earnings even if they buy all characteristics in every round. Advisors are informed that they are not able to make losses.

the risk index. Gender, income, age, parenthood and family status are bought in 40 to 53% of the cases, and only education is bought significantly less often (30%) than age and income.
The results from the PAY treatment are thus threefold. They back the findings from the RANK treatment that the risk index is the most important characteristics. On average, gender (48%), income (43%) and age (43%) are bought more often than the remaining characteristics education (24%), children (23%) and the family status (26%). While student subjects again exhibit a clear pattern similar to the RANK treatment, no such clear distribution can be found for junior and senior professionals.
However, the fact that education, children and family status are bought so little could be due to the convex pricing rule. Since this feature ensures an inner solution since the marginal price of every further characteristic is strongly increasing and only the most valuable characteristics are bought.

4.2.3 RANK and PAY: How Do Advisors Form their Beliefs?

As the analysis in the previous section shows, subjects attach special importance to the risk index in the process of giving advice, the gender and income variable in addition seem to play a role. Furthermore, we find that the correlation of the gender variable with risk preferences is well known to all groups of advisors, while for the income variable, the relationship is less obvious. Regarding income, in the actual data we find opposite correlations of income with our two measures of risk preferences (c.f. figure 4). This confirms ambiguous findings in the literature. In the following section we study how beliefs over risk preferences of others are formed and whether the knowledge of dependencies affects the advisors' predictions.

In order to analyze how the advisors apply their knowledge, we set up three regression models - performed for each elicitation mechanism - which are presented in table 6. The data has been pooled for the treatments RANK and PAY. Since the 167 advisors have to judge four randomly chosen advisees in each treatment the pooled decisions sum up to 1336 observations. The advisors' beliefs about the advisees' decisions are used as dependent variables.
We include two sets of dummy variables. At first, the 'seen' dummy variables in

Table 6: Regression Results: Belief Formation

Model		*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
dependent variable		100,000	HL	100,000	HL	100,000	HL
Dummy for characteristic seen	Year of birth	18.75	10.79	13.98	11.98	11.19	11.63
		-15.82	-14.26	-15.22	-12.83	-15.13	-12.75
	Male	-0.665***	-0.246*	-0.650***	-0.232*	-0.653***	-0.204
		-0.162	-0.139	-0.153	-0.126	-0.153	-0.125
	Riskindex_zero	3.368***	1.565***	3.343***	1.668***	3.389***	1.668***
		-0.262	-0.182	-0.246	-0.166	-0.239	-0.167
	No children	-0.206	-0.177	-0.413***	-0.156	-0.415***	-0.121
		-0.162	-0.134	-0.153	-0.122	-0.152	-0.122
	Single	-0.001	-0.163	0.0221	-0.183	0.0288	-0.201
		-0.17	-0.152	-0.163	-0.139	-0.163	-0.139
	No uni degree	-0.22	-0.119	-0.17	-0.271*	-0.165	-0.267*
		-0.192	-0.17	-0.182	-0.153	-0.181	-0.151
	Low income	0.00917	0.0868	0.08	0.0473	0.0817	0.0402
		-0.13	-0.11	-0.122	-0.1	-0.121	-0.1
Interaction terms: seen · value	Year of birth	-0.01	-0.006	-0.007	-0.006	-0.006	-0.006
		-0.008	-0.007	-0.008	-0.007	-0.008	-0.006
	Female	1.113***	0.704***	1.129***	0.641***	1.155***	0.642***
		-0.213	-0.193	-0.206	-0.177	-0.205	-0.176
	Riskindex	-0.886***	-0.407***	-0.888***	-0.427***	-0.878***	-0.428***
		-0.115	-0.0765	-0.107	-0.069	-0.105	-0.0689
	Children	0.656***	0.295	0.750***	0.302	0.768***	0.291
		-0.252	-0.228	-0.239	-0.209	-0.236	-0.208
	Partner	0.275	0.245	0.193	0.259	0.189	0.281
		-0.233	-0.201	-0.222	-0.184	-0.22	-0.183
	Uni degree	0.0215	0.121	0.00338	0.267	0.0139	0.26
		-0.242	-0.212	-0.232	-0.192	-0.231	-0.191
	High income	-1.411***	-0.633***	-1.430***	-0.610***	-1.458***	-0.633***
		-0.249	-0.235	-0.242	-0.215	-0.239	-0.214
Risk prefs self	all advisors self			0.183***	0.397***	0.186***	0.350***
				-0.0205	-0.028	-0.0282	-0.033
	Junior self					-0.143***	-0.0326
						-0.0475	-0.0597
	Senior self					0.103**	0.183***
						-0.0518	-0.0693
	Junior prof.	0.667***	0.0232	0.422***	0.197**	1.278***	0.386
		-0.117	-0.0983	-0.115	-0.0924	-0.319	-0.426
	Senior prof.	0.654***	-0.661***	0.266*	-0.468***	-0.439	-1.644***
		-0.154	-0.154	-0.147	-0.139	-0.389	-0.499
	Rank	0.0711	0.0195	0.0885	0.039	0.0886	0.0321
		-0.119	-0.105	-0.113	-0.0955	-0.112	-0.0953
	Constant	6.226***	6.934***	5.425***	4.101***	5.404***	4.423***
		-0.285	-0.246	-0.297	-0.292	-0.311	-0.33
	N	1,336	1,336	1,336	1,336	1,336	1,336
	R^2	0.43	0.23	0.474	0.353	0.483	0.36
	Adjusted R^2	0.419	0.216	0.464	0.341	0.472	0.347
	Advisee FE	yes	yes	yes	yes	yes	yes

Heteroscedasticity robust errors, * p<0.1; ** p<0.05; *** p<0.01

the upper part bear a value of one if the corresponding characteristic is shown to the advisor in the specific observation. The dummy variables in the part below are interaction terms carrying the value of the variable itself and are interacted with the 'seen' variables. Hence, this specification allows us to interpret the results as the marginal effects of the specific characteristics. Additionally, by including dummy variables for the junior and senior professionals respectively, we disentangle deviations in the behavior of the groups being familiar with giving advice. For the specification of the error terms, we consider it to be necessary to take into account advisee fixed effects in all models and use robust standard errors. In addition, we have to take into account that in the RANK treatment a random number determines how many characteristics are shown to the advisor. In contrast, the advisor decides how many characteristics are visible in the PAY treatment. The dummy 'rank' controls for this issue.

The estimated models allow the computation of the scope of adjustment of the advisors' forecast if a further characteristic is incorporated into their decision and if the value of the specific characteristic is observed. Given the results of section 4.1 we know that (beside the education and income variable) most advisors are capable of interpreting the sociodemographic information correctly. Therefore we expect the signs to be coherent with these findings and other recent literature (c.f. Dohmen et al. 2011). In section 4.2.1 and 4.2.2 we conclude that especially the risk index variable, but also the gender and income variable carry informational content for the advisors. The regression results confirm these findings since both the risk index variable, the gender and income variable are highly significant in terms of the 'seen'-variables and/or the interaction terms in all models.

By evaluating the gender variable in model (1) we find that advisors decrease their forecast for the 100,000 euro question by 0.665 points (which translates to an increase in investment in the lottery by 6,650 euros) on average if the dummy variable indicates that gender has been observed and the gender is male.[18] The investment decreases by 0.448 points (4,480 euros) if a female is indicated.[19] In effect, this means that the advisors expect males to invest 4,480 euros more in the lottery than females.

A similar statement can be made for the risk index variable. The variable

[18]Note: Due to rescaling a negative coefficient in the regression indicates that the advisor increases the amount invested in the lottery when seeing a sociodemographic information.

[19]To calculate the total effect, we have to sum both the gender and female coefficient; the total effect turns out to be positive.

riskindex_zero bears a one if the risk index is zero and visible to the advisor. The fact that it shows up to be significant decreases the investment by approximately 3.368 points (33,680 euros). In contrast to the gender dummy the actual realizations of the risk index take up values between 0 and 5.[20] We find that on average the advisors increase their investment forecast by 0.886 points (8,860 euros) for each point the advisee's risk index variable increases. Regarding the income variable, we observe that advisors adjust their belief only if an advisee with high income is observed. The interaction dummy variable indicating high income reports that the amount invested in the lottery increases by 1.411 points (14,110 euros). The belief about the risk preferences of people with high income thus is opposite to what is actually observed in the data (c.f. table 2).
For model (2), which analyzes the HL-lottery, we find similar effects. Again risk index, gender and income variables are significant at the 1%-level. The signs and the magnitude of the coefficients are in line with model (1), which is plausible for the risk index and the gender variable since both elicitation mechanisms strongly depend on each other. For the income variable in the HL-lottery we find that the belief is correct in contrast to model (1). Subjects with high income are correctly identified to take more risk.
In addition to the advisee fixed effects we incorporate advisor fixed effects in model (3) and model (4). As the advisor fixed effect the 'all advisors self' is included, which contain the advisor's own risk attitude in the respective mechanism. This variable turns out to be highly significant in both models. This is an interesting finding for two reasons: On the one hand the significance indicates that fixed effects on the advisors level are present. On the other hand this has an economic meaning as well. We conclude that the forecast decision is not only made on the grounds of the provided information about the advisees but is also related to the advisor's own risk attitude. Especially the size of the coefficients shows the considerable influence of the advisor's preferences since these and the dependent variables are located on the same domain. If, for example, an advisor rates herself one point higher in the HL-lottery, the advisor is going to judge an advisee approximately 0.183 points higher according to model (3) and approximately 0.397 points higher in model (4). In connection with the results from section 4.1 this allows us to hypothesize that an advisor's own risk attitude serves as a reference point for judging others. By adopting the information given by the experimenter the advisor's attitude is adjusted according to known

[20] Detailed information can be found in table 4.

correlates of the given information in order to make an advice decision. As a robustness check, the inclusion of further advisor's characteristics (e.g. gender, age) shows a stable influence of the advisor's risk preferences.
In model (5) and (6) we are interested in whether professional experience changes the extent to which advisors base their belief on their own risk preferences. Similarly, to the 'all advisors self' variable, we include two more interaction variables: 'Junior self and 'Senior self'. These variables interact the advisor's risk preferences with the respective subject type. This specification allows to analyze systematic differences of the influence of the advisors' own risk attitude on the beliefs in the different subject groups. The coefficients of the advisor's own risk preferences as incorporated in model (3) and (4) remain largely unchanged. We observe that senior professionals base their advice decisions even stronger on their own risk preferences - both coefficients turn out positive and significant at the 1% level. For the junior professionals, this effect cannot be confirmed. Their decision is based even less on their own risk preferences (model 5) or, it is not different from the student advisors (model 6).
Two other variables are of interest. For the HL-lottery, having no university degree reduces the chosen row of switching by 0.27 points in models (4) and (6). Having children reduces the amount invested in the 100,000 euro question in all models. Many other 'seen' and 'seen·value' terms turn out to be less significant or insignificant. As we show in section 4.2.1 and 4.2.2, advisors rank these variables significantly lower and buy them less often. This could be due to the fact that advisors consider the information gained from these variables to be noisy. Consequently, the adjustment in the advice decision is less clear and therefore the dummy variables do only partly reach significance.
Furthermore, the dummy variables RANK and PAY controlling for treatment effects are insignificant. Therefore, pooling the data of of both treatments does not cause any problems. The variables controlling for the subject type indicate that junior professionals compared to the student advisors generally believe that advisees invest a higher amount in the 100,000 euro question. For the HL-lottery, this effect is less pronounced. Senior professionals, on the contrary, persistently belief that advisees switch in a later row in the HL-lottery, while no clear-cut effect can be found for the 100,000 euro question.
In conclusion, this analysis demonstrates that advisors incorporate their knowledge about the correlation of risk preferences with the single variables into their advice decision. Furthermore we conclude that they use their own risk attitude

as a reference point. Hence, this matches the findings of Chakravarty et al. (2011) and others, who detect similar effects.

4.2.4 RANK, PAY and PICT: Self-assessment and Beliefs

So far we have investigated the belief formation on the grounds of sociodemographic information. In this section, we will analyze how the risk preferences of advisors relate to their formed belief. Two concepts are of interest. First, we have a look at self-other discrepancies - differences between the advisor's own assessment and his beliefs - to assess whether advisors rate themselves to be more or less risk loving than the person evaluated. In a second step, we will refer to the false consensus bias and analyze in how far beliefs are correlated with advisors' own preferences.
First of all, a further treatment (PICT) is introduced in which visual information is the basis for the advisor's prediction. Based on the three different methods of elicitation, RANK, PAY and PICT, we then proceed with the results.

Figure 7: Pictures - females & males

Procedure treatment PICT In the PICT treatment solely a picture of the advisee is presented for the assessment of risk preferences. While we do not explicitly provide any sociodemographic information, at least the gender and possibly the age can be inferred from the pictures. In principle, the task is the same as in the SIMULT treatment. Each advisor has to assess four advisees and state the presumed decision of the advisees in both elicitation mechanisms. Table 4 shows the characteristics of the advisees used in PICT whereas in figure

7 the anonymized pictures can be found. Each advisor either views four pictures of males or four pictures of females in random order. Overall, there are 91 advisors judging the pictures of women and 76 advisors judging the pictures of men.

Table 7: Advisees for PICT

ID	Gender	Row HL	lottery task	mean 100,000
22	female	4	2	8.9
42	female	5	6	8.9
62	female	4	4	8.9
74	female	7	4	8.9
52	male	4	6	8.34
53	male	3	0	8.34
56	male	6	6	8.34
95	male	8	6	8.34

Self-other discrepancy The term self-other discrepancy refers to a systematic misperception between the advisor's own risk tolerance and the *perceived* risk tolerance of the advisee. This effect is found by Hsee and Weber (1997) but also discussed by Eckel and Grossman (2008), Faro and Rottenstreich (2006) and Eriksen and Kvaløy (2009). For the process of giving advice it is important to analyze whether advisors judge themselves to be more or less risk tolerant than the advisees evaluated.

In order to investigatee this effect we present the advisor's self-assessment in the two lottery choices compared to their beliefs separately for the three treatments in figure 8. The decisions are aggregated for all three groups of advisors. The left graph shows the decisions for the 100,000 euro question. The Holt and Laury lottery is presented in the right hand graph of figure 8. The black line 'SELF' indicates the advisor's own decision. The dashed black line denotes the beliefs for the RANK treatment, the dashed light gray line represents the beliefs for the PAY treatment and the gray line stands for the beliefs in the PICT treatment. A Wilcoxon signed-rank test does not detect a statistical difference between the beliefs of RANK and PAY at the 1%-level. We conclude that the way we let subjects rank and select the sociodemographic information does not affect the belief formation. This is true for the 100,000 euro question as well as the HL-lottery and has been found previously as well.[21]

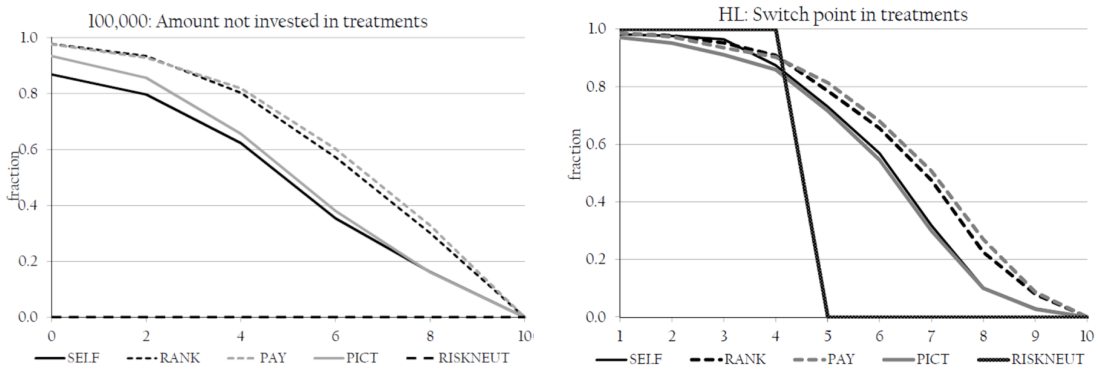
However, we find statistically different distributions for the comparison of all other pairs, e.g., SELF vs. RANK and SELF vs. PAY as well as PICT vs. all

[21]This result justifies the pooled regression model of section 4.2.3.

others at the 1% level.[22] Thereby, the distributional graphs document self-other discrepancies in the direction reported by Eckel and Grossman (2008), Faro and Rottenstreich (2006) and Eriksen and Kvaløy (2009). The results indicate that the advisors take more risks in their own decisions compared to the beliefs over their advisees. In other words, the advisors perceive their advisees to be less risk tolerant.

Furthermore, the first analysis of the PICT treatment shows that the belief of the advisors in this treatment is closer to their own self-assessment, which is also supported by the means of the decisions. This could indicate that advisors rely on their own risk preferences when confronted with less information. We will further investigate this result in the following.

Figure 8: Advisors' Risk Attitudes in Treatments



False consensus As outlined in chapter 4.2.3, advisor's beliefs correlate with their own risk preferences when giving advice. One reason outlined in the literature refers to the *false consensus effect*: People systematically overestimate the extent to which others think and behave as they do (Vanberg 2008). This effect has been frequently found in experiments (Mullen et al 1985). In the context of giving financial advice and assessing the risk preferences of others, it is clearly of interest whether advisors bias their advice in the direction of their own risk preferences and believe that advisees are similar to themselves. If this is the case, and if in addition the highly premium dependent incentive scheme in the financial sector attracts especially risk loving advisors (c.f. Dohmen and Falk 2011 for sorting effects evoked by incentive schemes), financial decisions based on advice should be more risky than if the advisee had taken them without advice.

[22]Except for PICT vs. SELF, where we find differences only at the 5% level.

Furthermore, recent experimental evidence suggests that this behavioral bias decreases if monetary incentives are introduced for revealing the actual estimation of others' behavior (Engelmann and Strobel 2000). Monetary incentives are provided throughout the present experiment. Nevertheless, we still observe that advisors' own risk preferences serve as a reference point for giving advice. Engelmann and Strobel (2000) point out that the amount of provided information can be responsible for a false consensus effect. Our experimental setup allows disentangling the influence of differing information and the presentation of information. In this context, we analyze choices of advisors in the RANK and PAY treatment compared to the PICT treatment. Furthermore, it is of interest whether the familiarity with giving advice and possibly the ability to use provided information, i.e., being employed in the financial sector, affects the behavioral bias.

Table 8: Regression results: False Consensus

Model	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
Dependent variable	100,000	100,000	100,000	HL	HL	HL
Subject type	Student	Junior	Senior	Student	Junior	Senior
Advisors self	0.267***	0.157**	0.327***	0.445***	0.361***	0.652***
	-0.0526	-0.0762	-0.0899	-0.0641	-0.0822	-0.0821
Female	0.802**	1.149***	0.621	0.354*	1.000***	0.653*
	-0.314	-0.419	-0.461	-0.194	-0.295	-0.388
Year of birth	0.0278	-0.0147	0.122	0.0449	0.0147	-0.00256
	-0.0653	-0.0937	-0.0976	-0.044	-0.0697	-0.0845
Constant	-51.23	33.79	-237.1	-85.72	-25.67	6.493
	-129.3	-185.7	-193.3	-87.19	-138.1	-167.4
Observations	308	208	152	308	208	152
R^2	0.111	0.057	0.177	0.149	0.138	0.279
Adjusted R^2	0.102	0.043	0.16	0.14	0.126	0.264

We modify models (5) and (6) of table 6 in the previous section by substituting the advisee's gender and age, the solely observed characteristics in the PICT treatment, for the 'seen' and 'seen·value' variables in the upper part of table 8. We run separate regressions for the different advisor subgroups in each elicitation mechanism. The regressions by subgroup in model (7) to (12) reveal that - independent of elicitation mechanism - in the PICT treatment, subjects show a higher correlation of their own risk attitudes with their beliefs than in the RANK and PAY treatment. In particular, this effect is driven by beliefs of students and senior professionals. Especially in the HL-lottery, the coefficient of the senior professionals is significantly higher than for students and junior professionals at least at the 5% level. This indicates that senior professionals

are more likely to use their own risk preferences as a reference point.
Several robustness checks confirm our results. First of all, we have to disentangle whether the effect stems from the number of characteristics observed or the presentation mechanism. We therefore cross-check our results with observations in the RANK and PAY treatment in which advisors only observe two characteristics. By limiting the observations in model (5) and (6) of table 6 to observations with only two observed characteristics and running separate regressions per subgroup, we find that the magnitude of influence of the own risk preferences is similar to the results where more characteristics are observed. Thus the PICT treatment in which the information provided is predetermined rather than chosen by the advisor induces a larger false consensus bias rather than the amount of information provided. Junior professionals consistently rely on their own risk preferences to a minor extent. An interesting finding refers to the most prominent provided characteristic, the risk index. Splitting the sample by subjects with and without the information on the advisees' risk index, we find that subjects without information on the risk index are more likely to base their decision on their own risk preferences. Especially for the HL-lottery, the coefficient more than doubles and is significantly different at the 1% level.
Remarkably, in models (7) to (12) we can observe that even in an across subject design - advisors either assess female or male pictures - the effect of gender is correctly evaluated. If a female picture is presented, the dummy variable indicating gender becomes positive and significant in five of the models. Females are thus correctly observed to be more risk loving, the effect is largest for junior professionals.
To conclude, we observe that the false consensus bias is stronger for senior professionals and when the provided information is not chosen by the advisor, but predetermined in a picture. Furthermore, the visibility of the risk index reduces this bias.

4.2.5 RANK and PAY: Prediction Error

One of the research questions raised in the introduction is to investigate if the advisors' beliefs coincide with the advisees' choices. In other words, we inspect if the advisors' beliefs are correct. In order to answer this question we make use of the advantage that we observe the 100,000 euro question for the large and heterogeneous pool of the SOEP survey. As discussed above, from the survey

data we compute means conditioned on the observable sociodemographic characteristics. For the analysis of the prediction errors, instead of considering the actual choices of the subjects of the web survey, we use the computed conditional averages from the SOEP survey.
In table 9 we present the results of two regression models. The dependent variable is the squared difference between the advisor's belief and the conditional average of the SOEP data conditioned of the observables of the respective advisee. In model (13) and model (14) we include two different types of explaining variables. In model (13) the variable 'sum seen' measures the number of sociodeomographic characteristics which are visible to the advisor when making the prediction. In model (14) the sum of the visible characteristics is split and up into the different categories. For each category a dummy variable is included. In both models we include controls for the treatment and the subject's type.[23] Furthermore the models correct for advisee fixed effects and the advisor's attributes.
In model (13) we find the variable 'sum seen' to be significant the 1%-level. The negative sign indicates that if more categories are available the precision of the prediction increases. The marginal effect of -0.587 is economically relevant as the mean of the squared prediction error amounts to approximately 8.7. A further considerable result of this analysis comes from the subject types. The prediction errors of the professionals show up to be significantly lower compared to (omitted) students. Again with a value of -5.2 and -2.3 these coefficients have a relevant impact. When comparing the two groups of professionals we find the junior professionals to have significantly lower prediction error compared to the senior professionals. A one-sided t-test confirms this finding at significance level of 2.5%.

When considering model (14) we find a negative significant effect for the risk index. This means that if the variable risk index is visible to the advisor the prediction error decreases by approximately nine points. This confirms that the risk index variable possesses a significant predictive power. This is also true for the family status variable as it decreases the prediction error by 1.9 on average.Conversely, if the education variable is visible for the advisors the prediction error increases by approximately 1.8 points. A reasonable explanation is that the share of advisors that correctly associates education with an increasing risk

[23]Note: For the subject's type variable the omitted category is non-professional.

Table 9: Regression Results: Prediction Errors

Model		*(13)*	*(14)*
dependent variable		(belief-choice)^2	(belief-choice)^2
	sum seen	-0.587***	
		0.224	
Dummy for characteristic seen	Year of birth		-0.664
			0.769
	Gender		0.273
			0.759
	Riskindex		-8.809***
			0.949
	Children		-0.0781
			0.828
	Family status		-1.884**
			0.834
	Education		1.769**
			0.824
	Income		1.035
			0.761
	Junior prof.	-5.150***	-4.582***
		0.925	0.911
	Senior prof.	-2.291*	-2.512**
		1.276	1.260
	Rank	0.511	-0.565
		0.765	0.768
	Constant	43.94	-100.6
		146.4	143.6
N		1,336	1,336
R^2		0.45	0.105
Advisee FE		yes	yes
Advisors' attributes		yes	yes

* p<0.1; ** p<0.05; *** p<0.01

tolerance ranges - depending on the subject type - from 21% to 44% (c.f. figure 4). Restrictively, the gender variable does not show up to be significant. This is surprising since the analysis in chapter 4.1 finds it as a powerful predictor.
Concerning the different advisor types, relative to the student subjects, the professional advisors perform significantly better. This result is backed by a simple one-tailed test on these coefficients that rejects with a significance level of 1%. Notably, the junior professionals - on average - make lower prediction errors than the senior professionals. These results are in line in magnitude and significance with the results of model (13).
In summary, these models prove that if information is available the prediction quality increases. The variables risk index and family status improve the prediction of risk preferences. Interestingly, the young professionals outperform

the senior professionals and the students in making precise prediction. Restrictively, the models explain only approximately 5% to 10% of the variation in the prediction errors.

4.2.6 Does Sociodemographic Distance Matter?

In the previous section we look at the aggregated beliefs and the prediction errors across the different treatments and compare these to the advisor's own assessment. In this section we trace a question raised by Hsee and Weber (1997). Arguably, subjects exhibit a *self-other discrepancy* which is caused by their social distance. The social distance is the absolute difference between the advisor's and the advisee's sociodemographic characteristics. In other words, this analysis investigates if advisors presume that advisees have similar risk preferences if they exhibit similar sociodemographic attributes. In the experimental setting the self-assessment of risk preferences and the belief on the risk preferences of the advisee are closer if both have the same gender or family status, for example.

In order to evaluate this hypothesis consider table 10. The dependent variables are the absolute differences between an advisor's self-assessment and the belief on the advisee respectively for both risk measures. As independent variables we include the absolute differences between the advisor's and the advisee's sociodemographic characteristics. To account for the experimental design, these variables are interacted by dummy variable if the specific category is visible in the experiment (c.f. section 4.2). In order to specify the model correctly, we include a set of dummy variables that indicate if only the category is seen. Furthermore we control for differences between the treatments and the different subject groups.

Considering the results of model (15) and (16) in table 10, we find significant effects for the variables risk index and children. Hence, the absolute difference in the risk index between advisor and advisee positively correlates (ceteris paribus) with the absolute difference between the self-assessment and the belief. These results indicate that advisors perceive the risk index as a reliable measure and adjust their beliefs and their behavior according to this variable. Notably, the effect is much larger for the 100,000 euro measure (model 15) question than for the Holt-Laury measure in model (16). The other significant variable is children. The difference between the advisor's self-assessment and the advisor's

belief increases if the advisor has children. In the analyses above, gender turned out to be a major predictor for the risk preferences of others. Interestingly, we do not detect a significant gender effect. Similarly to the findings in section 4.2.3, we detect a significantly different behavior of the professionals compared to the student subjects as the respective control variables show.

Table 10: Regression results: Social Distance

Model		*(15)*	*(16)*
dependent variable		100,000: |belief -self|	HL: |belief -self|
Interaction: |advisor - advisee| · seen	Year of birth	0.00823	0.00665
		-0.0084	-0.00472
	Gender	0.29	0.0766
		-0.179	-0.101
	Riskindex	0.412***	0.169***
		-0.0354	-0.0199
	Children	0.614**	0.264*
		-0.248	-0.14
	Partner	-0.049	0.08
		-0.222	-0.125
	Uni	0.104	-0.0674
		-0.234	-0.131
	High income	0.0756	-0.137
		-0.233	-0.131
Junior prof.		-0.946***	0.221**
		-0.163	-0.0919
Senior prof.		-1.118***	0.502***
		-0.18	-0.101
Rank		0.112	-0.0626
		-0.146	-0.082
Constant		3.142***	1.301***
		-0.208	-0.117
Observations		1,336	1,336
R^2		0.128	0.107
Seen dummy		yes	yes
Advisee FE		yes	yes

* p<0.1; ** p<0.05; *** p<0.01

5 Conclusion

This study investigates the beliefs of advisors about the risk preferences of advisees. Advice, especially in the financial sector, is important as people increasingly make their investment decisions after consulting a professional advisor. Hence, an accurate prediction of an advisee's risk preferences is vital for good advice. The results of this study contribute to the existing literature in several

ways.

We find that subjects exhibit profound knowledge about the correlation of risk preferences and sociodemographic variables such as gender, age, family status and parenthood. Most interestingly, advisors are aware of how their own risk preferences rank compared to the population mean. The subjects consider an advisee's self-assessment of risk preferences as major source of information when they have to predict the advisee's risk attitude. This is evident in treatments where the subject can influence the available information. In the RANK treatment it ranks the highest and in the PAY condition it is bought most frequently. Furthermore, not only the advisors' beliefs are strongly dependent on the advisee's self-assessment, but also the prediction error decreases if the advisors have information on the advisee's self-assessment. Besides the self-assessment, gender and income have an impact on the advisors' belief formation, whereas the forecasts gain precision if parenthood or gender are observed. Remarkably, advisors consistently rank advisees to be more risk averse compared to themselves. An salient finding is that advisors employ their own risk preferences as a reference point for giving advice. This false consensus bias is even stronger in the PICT treatment, where less information is available. Interestingly, junior professionals emerge as a group that stands out for several reasons. First, they exhibit more knowledge about the correlations of sociodemographics with risk preferences, second, their advice is less dependent on their own risk preferences, and at last, the prediction is more precise than in any other group. Interestingly, the experienced professionals exhibit the strongest false consensus. Nevertheless, an important aspect of nearly any advice is the personal interaction of advisee and advisor. Furthermore, previous literature suggests that risk preferences are only partially correlated with sociodemographic characteristics. For further research, it is thus vital to extend our approach to personal interactions.

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A Instructions of Web Survey

Regarding this survey: Please try to answer all questions. If you do not know an answer or if you prefer not answer a question please skip it.

General Questions

- Please state: Year of birth, Federal state of birth, Gender, Mother tongue, Nationality, Religion
- Please state: Do you speak other languages? If so, which?
- Family status: (Please choose: single, divorced, partnership, live separated, married, widowed)
- Number of children: (Please choose: 1, 2, 3, 4, 5 or more, none)

Education

- Highest school degree: (Please choose: Abitur, Realschule, Hauptschule, Sonderschule, no school graduation)
- Please state: How many years have been in school till your highest degree?
- Education: (Please choose: University, Advanced training, Training, in training, no training)
- State the name/title of your last training:
- Job: (Please choose: Worker, Employee, Employee in public sector, Civil Servant, in education/training, self-employed, working at my own household, unemployed, disabled, other)
- Working time: (Please choose: full-time, half-time, part-time but less than half-time, not working)
- Last executed job (Please state):
- Monthly net income: (Please choose: up to 1000 euros, 1001-3000 euros, 3001-6000 euros, over 6001 euros)
- Do you own: (Please choose: Bonds, Properties, Security funds, Stocks or derivatives)

Lotteries

Lottery 1
You will have to make ten decisions in the table below. In every row of the table you can choose either Option A or Option B. Option A and Option B are two lotteries. Your job is to decide on one lottery (either Option A or Option

B). Consider the first row for example: In Option A you receive a payment of 2 Euro with a probability of 10% and a payment of 1.60 Euro with a probability of 90%. If you imagine a ten-sided-dice this would mean that you receive 2 Euro if you rolled a 10 and 1.60 Euro for rolling any number between 1 and 9. If you choose Option B you will receive 3.85 Euro with a probability of 10% and 0.10 Euro with a probability of 90%. If you again imagine the ten-sided-dice, this would indicate that you receive 3.85 Euro if you roll a 10 and 0.10 Euro if you roll a number between 1 and 9.
Please decide whether you would choose Option A or Option B in each of the 10 rows:

Your Choice			Option A				Option B			
A	B	Nr.	Probabiliy	Payment	Probabiliy	Probabiliy	Probabiliy	Probabiliy	Probabiliy	Probabiliy
○	○	1	10%	2 €	90%	1,60 €	10%	3,85 €	90%	0,10 €
○	○	2	20%	2 €	80%	1,60 €	20%	3,85 €	80%	0,10 €
○	○	3	30%	2 €	70%	1,60 €	30%	3,85 €	70%	0,10 €
○	○	4	40%	2 €	60%	1,60 €	40%	3,85 €	60%	0,10 €
○	○	5	50%	2 €	50%	1,60 €	50%	3,85 €	50%	0,10 €
○	○	6	60%	2 €	40%	1,60 €	60%	3,85 €	40%	0,10 €
○	○	7	70%	2 €	30%	1,60 €	70%	3,85 €	30%	0,10 €
○	○	8	80%	2 €	20%	1,60 €	80%	3,85 €	20%	0,10 €
○	○	9	90%	2 €	10%	1,60 €	90%	3,85 €	10%	0,10 €
○	○	10	100%	2 €	0%	1,60 €	100%	3,85 €	0%	0,10 €

Lottery 2
Please now consider that it is not possible for you to answer the lottery. You ask a close confidant to make the following decision for you. On your behalf, the close confidant is asked to name the preferred option in every row. Please remind yourself of the persons image and name. You are not able to communicate with your close confident, you are not able to inform him/her about your decision. What do you thing, how would this close confident take the decisions in the following lottery?
Again you find the same table as before in which we ask you for 10 decisions. As before, you can either choose Option A or Option B. You make your decision by crossing the option in the column "Your choice".
Which relationship do you have with the person (e.g., partner, friend, relative etc.)?

Other Questions

People can behave differently in different situations.
How would you describe yourself? Are you a risk-loving person or do you try

Your Choice			Option A				Option B			
A	B	Nr.	Probabiliy	Payment	Probabiliy	Probabiliy	Probabiliy	Probabiliy	Probabiliy	Probabiliy
○	○	1	10%	2 €	90%	1,60 €	10%	3,85 €	90%	0,10 €
○	○	2	20%	2 €	80%	1,60 €	20%	3,85 €	80%	0,10 €
○	○	3	30%	2 €	70%	1,60 €	30%	3,85 €	70%	0,10 €
○	○	4	40%	2 €	60%	1,60 €	40%	3,85 €	60%	0,10 €
○	○	5	50%	2 €	50%	1,60 €	50%	3,85 €	50%	0,10 €
○	○	6	60%	2 €	40%	1,60 €	60%	3,85 €	40%	0,10 €
○	○	7	70%	2 €	30%	1,60 €	70%	3,85 €	30%	0,10 €
○	○	8	80%	2 €	20%	1,60 €	80%	3,85 €	20%	0,10 €
○	○	9	90%	2 €	10%	1,60 €	90%	3,85 €	10%	0,10 €
○	○	10	100%	2 €	0%	1,60 €	100%	3,85 €	0%	0,10 €

to avoid risks? People behave differently in different areas. How would you assess your own risk tolerance in the following areas? Please choose a number on a scale between 0 and 10. A 0 denotes "no willingness to take risks" and 10 indicates "very high risk-tolerance". You can gradate you assessment with the values in between. You risk tolerance?

- When driving? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In leisure and sports? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In your career? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- concerning your health? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In your trust in unfamiliar people? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In financial investments? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)

Another question regarding your risk preferences:

Please consider what you would do in the following situation:
Imagine that you had won 100,000 euros in the lottery. Almost immediately after you collect the winnings, you receive the following financial offer, the conditions of which are as follows: There is the chance to double the money. It is equally possible that you could lose half of the amount invested. You have the opportunity to invest the full amount, part of the amount or reject the offer. What share of your lottery winnings would you be prepared to invest in this financially risky, yet lucrative investment?
What fraction of you winnings do you want to wager on the risky but also profit-promising lottery?
(Please choose: 100000 euros; 80000 euros; 60000 euros; 40000 euros; 20000

euros; nothing, I would decline the offer)

What is your opinion on the following three statements?

- On the whole one can trust people (Please choose: Totally Agree, agree slightly, slightly disagree, Disagree Totally)
- Nowadays one can't rely on anyone (Please choose: Totally Agree, agree slightly, slightly disagree, Disagree Totally)
- If one is dealing with strangers, it is better to be careful before one can trust them (Please choose: Totally Agree, agree slightly, slightly disagree, Disagree Totally)

Would you say that for most of the time, people *(Please choose on of the two possibilities)*

- attempt to be helpful?
- or only act in their own interests?

Do you believe that most people *(Please choose on of the two possibilities)*

- would exploit you if they had the opportunity
- or would attempt to be fair towards you?

What would you say: How many close friends do you have?

How often does it occur that,

- that you lend your friends your personal belongings (i.e. CDs, books, car, bicycle)? (Please choose: Very Often, Often, Sometime, Seldom, Never)
- that you lend your friends money? (Please choose: Very Often, Often, Sometime, Seldom, Never)
- that you leave the door to your apartment unlocked? (Please choose: Very Often, Often, Sometime, Seldom, Never)

B Instructions of Lab Experiment

Please note:

- Comments to the instructions are printed in italic and were not presented to the subjects.
- A horizontal line indicates whenever a new window was presented to advisors.
- To ease orientation, treatments as mentioned in the paper are identified by TREATMENT X.

Instructions of the Lab Experiment:

Goal and Process of the Experiment

The experiment consists of a total of two phases, in each of which you will have to make decisions. In the first phase we will ask you a number of questions and you will make two decisions. In the second phase of the experiment you will make the same set of decisions for other people and your payment will depend on the accuracy of your decisions.
The 2.65 Euros that you receive for you participation can be used during the experiment - more on that later. You can make money with every decision you make. We will inform you about your compensation in every round as well as your total compensation for the entire experiment only **after the completion of the experiment**.

Basic Information

Please answer the following general questions. The success of the experiment depends on you answering the questions carefully.

General Information

- Year of Birth:
- Height in cm:
- Gender: (please choose: male/ female)
- Marital Status: (please choose: Single, Divorced, In a relationship, Living Separately, Married, Widowed)

- How many children do you have?: (please choose: no children, one child, two children, three children, four children, five or more children)
- Enter your highest level of education: (please choose: University, Technical College, Apprenticeship, Currently a student, Completed Economics Major, Currently an Economics Major, No vocational education)
- What is your current occupation?: (please choose: white-collar employee, white-collar civil servant, blue-collar employee, blue-collar civil servant, civil servant with tenure, student, self-employed, working at home, unable to work, unemployed, other)
- What are your current working hours?: (please choose: full-time, halftime, part-time (less than halftime), not employed)
- What is your monthly net income in Euro?: (please choose: Up to 1000 euros, 1001 euros - 3000 euros, 3001 euros - 6000 euros, over 6000 euros)

How would you describe yourself?

Are you a risk-loving person or do you try to avoid risks?
People behave differently in different areas. How would you assess your own risk tolerance in the following areas?
Please choose a number on a scale between 0 and 10. A 0 denotes "risk averse" and 10 indicates "fully prepared to take risks". You can gradate you assessment with the values in between.
You risk tolerance?

- In general? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- When driving? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In leisure and sports? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In your career? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- Concerning your health? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In your trust in unfamiliar people? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)
- In financial investments? (Please choose: 0,1,2,3,4,5,6,7,8,9,10)

Game Decision I

We will now begin with the first game decision. Please read the instructions carefully; it is very important that you understand the question.

Game Decision I
Please consider what you would do in the following situation:
Imagine that you had won 100,000 euros in the lottery. Almost immediately after you collect the winnings, you receive the following financial offer, the conditions of which are as follows: There is the chance to double the money. It is equally possible that you could lose half of the amount invested. You have the opportunity to invest the full amount, part of the amount or reject the offer. What share of your lottery winnings would you be prepared to invest in this financially risky, yet lucrative investment?

Your Compensation
In terms of your actual compensation, the 100,000 euros are equivalent to 2.50 Euro (80,000 euros correspond to 2 Euro, etc.). Your chosen amount will be entered into the lottery; the computer draws lots to see if you double or half your wagered amount.

Your Decision
What fraction of you winnings do you want to wager on the risky but also profit-promising lottery?
(Please choose: 100000 euros; 80000 euros; 60000 euros; 40000 euros; 20000 euros; nothing, I would decline the offer)

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your compensation will be revealed at the end of the experiment.

Game Decision II

The second game decision is up next. Please read the instructions carefully. Take your time. It is very important that you thoroughly understand the question, since this question will be repeated in different variations throughout the rest of the experiment.

Game decision II
You will have to make ten decisions in the table below. In every row of the table you can choose either Option A or Option B. Option A and Option B are two lotteries. Your job is to decide on one lottery (either Option A or Option B). Consider the first row for example: In Option A you receive a payment of 2

euros with a probability of 10% and a payment of 1.60 euros with a probability of 90%. If you imagine a ten-sided-dice this would mean that you receive 2 euros if you rolled a 10 and 1.60 Euro for rolling any number between 1 and 9. If you choose Option B you will receive 3.85 Euro with a probability of 10% and 0.10 euros with a probability of 90%. If you again imagine the ten-sided-dice, this would indicate that you receive 3.85 euros if you roll a 10 and 0.10 Euro if you roll a number between 1 and 9.
There are two rational strategies in this game:

- you choose Option A at the beginning before switching to Option B for the rest of the rows
- you choose Option B for all of the rows

We are interested in finding out in which row you first choose Option B. Please specify the row in which you will first choose Option B below the table. If you only choose Option B, please enter a 1.

Your Compensation
A random row will be chosen for your actual Euro-payment. Your chosen option will be applied to this row. The realization of either the higher or the lower payment for a certain option will be chosen randomly. If the seventh row is chosen for example and you have decided on option A, you will receive 2 euros with a 70% probability and 1.60 euros with a 30% probability.

	Option A			Option B		
Nr.	Payoff	Probability	Payoff	Payoff	Probability	Payoff
1	2 Euro	10% | 90%	1,60 Euro	3,85 Euro	10% | 90%	0,10 Euro
2	2 Euro	20% | 80%	1,60 Euro	3,85 Euro	20% | 80%	0,10 Euro
3	2 Euro	30% | 70%	1,60 Euro	3,85 Euro	30% | 70%	0,10 Euro
4	2 Euro	40% | 60%	1,60 Euro	3,85 Euro	40% | 60%	0,10 Euro
5	2 Euro	50% | 50%	1,60 Euro	3,85 Euro	50% | 50%	0,10 Euro
6	2 Euro	60% | 40%	1,60 Euro	3,85 Euro	60% | 40%	0,10 Euro
7	2 Euro	70% | 30%	1,60 Euro	3,85 Euro	70% | 30%	0,10 Euro
8	2 Euro	80% | 20%	1,60 Euro	3,85 Euro	80% | 20%	0,10 Euro
9	2 Euro	90% | 10%	1,60 Euro	3,85 Euro	90% | 10%	0,10 Euro
10	2 Euro	100%	1,60 Euro	3,85 Euro	100%	0,10 Euro

I choose option B the first time in row: Pls choose

Your Decision
I choose option B the first time in row: (Please choose: 1,2,3,4,5,6,7,8,9,10)

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your profit and your compensation will be revealed at the end of the experiment.

TREATMENT SINGLE

How do other people decide?

In the rest of the experiment you will have to estimate how other people made the game decisions that you just made.

Game Decision 1

Ca. 22,000 participants answered the Game Decision I in a preliminary survey. Remember, the wording of Game Decision 1 was:

To shorten the experimental instructions, we will subsequently refer to this description of Game Decision 1 as "DESCRIPTION GAME DECISION 1".

Please consider what you would do in the following situation: Imagine that you had won 100,000 euros in the lottery. Almost immediately after you collect the winnings, you receive the following financial offer, the conditions of which are as follows: There is the chance to double the money. It is equally possible that you could lose half of the amount invested. You have the opportunity to invest the full amount, part of the amount or reject the offer. What share of your lottery winnings would you be prepared to invest in this financially risky, yet lucrative investment?

- 100,000 euros
- 80,000 euros
- 60,000 euros
- 40,000 euros
- 20,000 euros
- Nothing, I would decline the offer

Your Compensation
You will receive 0.25 euros for every correct assessment.

Do you think the average participant of the preliminary survey wagered more, less, or the same amount of money as you did in the first game decision?

Your Decision
I think that the average participant of the preliminary survey wagered

(Please Choose: More, less, the same amount of)
money as I did in the first game decision.

How do you think certain groups within the preliminary survey decided?

Your Decision
Who wagered more money in the lottery?

- Gender: (please choose: men, women, both groups wagered the same amount)
- Age: (please choose: older (40 and up), younger (below 40), both groups wagered the same amount)
- Marital Status: (please choose: single, married or in a relationship, both groups wagered the same amount)
- Level of Education: (please choose: participants with a university degree, participants without a university degree, both groups wagered the same amount)
- Number of Children: (please choose: participants with children, participants without children, both groups wagered the same amount)
- Income Category: (please choose: participants with a net monthly income up to 1000 euros, participants with a net monthly income above 1000 euros, both groups wagered the same amount)

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your compensation will be revealed at the end of the experiment.

How do other people decide?

Game Decision II

In another survey 190 people responded to Game Decision II. The characteristics of the participants were also documented.

Remember, the wording of Game Decision 2 was:

To shorten the experimental instructions, we will subsequently refer to this description of Game Decision 1 as "DESCRIPTION GAME DECISION 2".

You will have to make ten decisions in the table below. In every row of the table you can choose either Option A or Option B. Option A and Option B are two lotteries. Your job is to decide on one lottery (either Option A or Option B). Consider the first row for example: In Option A you receive a payment of 2 euros with a probability of 10% and a payment of 1.60 euros with a probability of 90%. If you imagine a ten-sided-dice this would mean that you receive 2 euros if you rolled a 10 and 1.60 euros for rolling any number between 1 and 9. If you choose Option B you will receive 3.85 euros with a probability of 10% and 0.10 Euro with a probability of 90%. If you again imagine the ten-sided-dice, this would indicate that you receive 3.85 euros if you roll a 10 and 0.10 euros if you roll a number between 1 and 9. We are interested in finding out in which row you first choose Option B. Please specify the row in which you will first choose Option B below the table. If you only choose Option B, please enter a 1.

	Option A			Option B		
Nr.	Payoff	Probability	Payoff	Payoff	Probability	Payoff
1	2 Euro	10% | 90%	1,60 Euro	3,85 Euro	10% | 90%	0,10 Euro
2	2 Euro	20% | 80%	1,60 Euro	3,85 Euro	20% | 80%	0,10 Euro
3	2 Euro	30% | 70%	1,60 Euro	3,85 Euro	30% | 70%	0,10 Euro
4	2 Euro	40% | 60%	1,60 Euro	3,85 Euro	40% | 60%	0,10 Euro
5	2 Euro	50% | 50%	1,60 Euro	3,85 Euro	50% | 50%	0,10 Euro
6	2 Euro	60% | 40%	1,60 Euro	3,85 Euro	60% | 40%	0,10 Euro
7	2 Euro	70% | 30%	1,60 Euro	3,85 Euro	70% | 30%	0,10 Euro
8	2 Euro	80% | 20%	1,60 Euro	3,85 Euro	80% | 20%	0,10 Euro
9	2 Euro	90% | 10%	1,60 Euro	3,85 Euro	90% | 10%	0,10 Euro
10	2 Euro	100%	1,60 Euro	3,85 Euro	100%	0,10 Euro

I choose option B the first time in row: Pls choose

Your Compensation
You will receive 0.25 euros for every correct assessment.

Do you think the participants in the preliminary survey switched to Option B earlier (so in a row with a smaller row number), later, or at the same time as you did?

Your decision

I think that on average, the participants in the preliminary survey switched to option B Please Choose (earlier, later, at the same place) as I did.

How do you think certain groups within the preliminary survey decided?

Your decision

Which group switched to option B earlier (so in a row with a smaller row number)?

- Gender: (please choose: men, women, both in the same row)
- Age: (please choose: older (40 and up), younger (below 40), both in the same row)
- Marital Status: (please choose: single, married or in a relationship, both in the same row)
- Level of Education: (please choose: participants with a university degree, participants without a university degree, both in the same row)
- Number of Children: (please choose: participants with children, participants without children, both in the same row)
- Income Category: (please choose: participants with a net monthly income up to 1000 euros, participants with a net monthly income above 1000 euros, both in the same row)

TREATMENT SIMULT RANK

In this section you are supposed to estimate how other people decided in the Game Decisions that you have just made. The better your estimation, the higher your compensation will be. You will receive some information about the persons whose decision behavior you are trying to predict.
It is important to understand what information is subsumed in certain characteristics. Please carefully read the characteristics and the possible manifestations of these characteristics.

The following characteristics are available:

1. Age
2. Level of Education
    - University
    - Technical College
    - Apprenticeship
    - Still in Apprenticeship
    - Currently an Economics Major
    - No vocational education
3. Income (current monthly net income)
    - Up to 1000 euros
    - 1001 euros-3000 euros
    - 3001 euros-6000 euros
    - over 6000 euros
4. Marital Status
    - Single
    - Divorced
    - In a relationship
    - Living Separately
    - Married
    - Widowed
5. Gender
    - Male
    - Female

6. Children
    - Has children
    - Has no children
7. Risk disposition concerning financial investments
    - Answer to the question: Are you risk-loving when it comes to financial investments or do you try to avoid financial risks? Please choose a number on a scale between 0 and 10. A 0 denotes "risk averse" and a 10 indicates "fully prepared to take risks".

You will only have to assess how a single person decided in the two Game Decisions, so you will have to evaluate a specific person. You are paid according to the accuracy of your assessment. If you correctly assess how the presented person acted in both decisions, you will receive 0.50 euros for every correct prediction. In order to make your assessment, you will make the decisions you previously made for yourself for the specific person instead.
The information available for assessing the person will consist of a selection of the seven characteristics presented above. You will not receive all seven of the person's characteristics. Instead, we will generate a random number between 1 and 7 that corresponds with the number of revealed characteristics. If the randomly generated number is a 3, for example, you will receive the first three characteristics of the person that you are assessing.
You can now decide which characteristic you want to assign to the first position, the second position, all the way to the seventh position. Make you decisions carefully; characteristics with a higher position are revealed with a higher probability.

Your Decision
Sort the characteristics by clicking and dragging the characteristics to the positions you want them in.
The characteristic at the top of the list has the highest prioritization; the second characteristic has the second-highest characterization etc.
Note: The characteristics are presented in alphabetic order

- Level of Education
- Income category
- Marital Status
- Year of Birth
- Gender
- Has Children

- Risk disposition concerning financial investments

This window appeared 4 times with differing number of characteristics shown

How do you assess other people?

The person has the following characteristics: Since x was drawn as the random number you receive the first x of the characteristics that you had chosen for the person that you are assessing.

- ...
- ...

Game Decision I
What decision do you think the person above made in the game's first round? Remember, the wording of Game Decision I was:

DESCRIPTION GAME DECISION 1

Your Compensation
If you make exactly the same decision as the described person, you will receive 0.50 euros. If your decision does not correspond with the described person's decision, you will not receive any money.

Your Decision
What fraction of you winnings do you want to wager on the risky but also profit-promising lottery?
(Please choose: 100000 euros; 80000 euros; 60000 euros; 40000 euros; 20000 euros; nothing, I would decline the offer)

Game Decision II
What decision do you think the person described above made in the game's second round? Remember, the wording of Game Decision 2 was:

DESCRIPTION GAME DECISION 2

Your Compensation
If you make exactly the same decision as the described person, you will receive 0.50 euros. If your decision does not correspond with the described person's decision, you will not receive any money.

Your Decision
Please try to make the same decision as the person described above made. We

are interested in finding out in which row you first choose Option B. Please specify the row in which you will first choose Option B.
The person chooses Option B for the first time in row: (Please choose: 1,2,3,4,5,6,7,8,9,10)

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your compensation will be revealed at the end of the experiment.

TREATMENT SIMULT PAY

This and the following window appeared 4 times.

How do you assess other people?

In this round you will have to assess four other people again. As in the previous round, you will be given a selection of the seven characteristics shown above to help facilitate your decision-making process. This time, however, you can choose which of the characteristics of the person you are assessing you want to have revealed. You have to pay for every revealed characteristic.
As you can garner from the table below, the costs of the characteristics vary. The first characteristic costs 0.01 euros, die second 0.02 etc. The seventh characteristic costs 0.50 euros. The right-hand column of the table displays the total costs. If you want to see all seven characteristics of the person you are assessing, for example, you will be charged 0.99 euros.

	Cost of Characteristic	Total cost
1. Characteristic	0.01 Euro	0.01 Euro
2. Characteristic	0.02 Euro	0.03 Euro
3. Characteristic	0.03 Euro	0.06 Euro
4. Characteristic	0.06 Euro	0.12 Euro
5. Characteristic	0.12 Euro	0.24 Euro
6. Characteristic	0.25 Euro	0.49 Euro
7. Characteristic	0.50 Euro	0.99 Euro

Your compensation is as follows:

Compensation for Game Decision I + Compensation for Game Decision II - Payment for Characteristics

As in the previous round you will receive 0.50 euros for Game Decision 1 and 0.50 euros for Game Decision 2 if your assessment proves to be correct.
The costs of buying certain characteristics will be subtracted from your compensation. If, for example, your assessment for Game Decision I is correct and your evaluation for Game Decision II is not and you have bought three characteristics, you will receive (0.50 euros+ 0 euros -0.06 euros=0.44 euros).
Please note: Since you have winnings from previous rounds and the 2.65 euros that we put at your disposal at the beginning of the game, your total compensation cannot be negative.
Please decide on the characteristics that you want to buy now:

- Age
- Level of Education

- Income
- Marital Status
- Gender
- Children
- Risk disposition concerning financial investments

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your compensation will be revealed at the end of the experiment.

How do you assess other people?

The person has the following characteristics:
You have bought x characteristics. The person you are supposed to assess has the following characteristics:

- ...
- ...

Game Decision I
What decision do you think the person above made in the game's first round?
Remember, the wording of Game Decision I was:

DESCRIPTION GAME DECISION 1

Your compensation
If you make exactly the same decision as the described person, you will receive 0.50 euros. If your decision does not correspond with the described person's decision, you will not receive any money.

Your Decision
What fraction of you winnings do you want to wager on the risky but also profit-promising lottery?
(Please choose: 100000 euros; 80000 euros; 60000 euros; 40000 euros; 20000 euros; nothing, I would decline the offer)

Game Decision II
What decision do you think the person described above made in the game's second round?
Remember, the wording of Game Decision 2 was:

DESCRIPTION GAME DECISION 2

Your Compensation
If you make exactly the same decision as the described person, you will receive 0.50 euros. If your decision does not correspond with the described person's decision, you will not receive any money.

Your Decision
Please try to make the same decision as the person described above made. We are interested in finding out in which row you first choose Option B. Please specify the row in which you will first choose Option B.
The person chooses Option B for the first time in row:
(Please choose: 1,2,3,4,5,6,7,8,9,10)

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your compensation will be revealed at the end of the experiment.

TREATMENT PICT

This window appeared 4 times for picture number 1,2,3,4.

How do you assess other people?

In this round you will assess four different persons. You will receive a picture of the person you are assessing in order to help you make your decision.

We have placed a brown envelope (C4 format) on your seat. The envelope contains a sheet with four pictures. Please consider picture number X.

Game Decision I:
What decision do you think the person above made in the game's first round?
Remember, the wording of Game Decision I was:

DESCRIPTION GAME DECISION 1

Your compensation
If you make exactly the same decision as the described person, you will receive 0.50 euros. If your decision does not correspond with the described person's decision, you will not receive any money.

Your Decision
What fraction of you winnings do you want to wager on the risky but also profit-promising lottery?
(Please choose: 100000 euros; 80000 euros; 60000 euros; 40000 euros; 20000 euros; nothing, I would decline the offer)

Game Decision II
What decision do you think the person above above made in the game's second round?
Remember, the wording of Game Decision 2 was:

DESCRIPTION GAME DECISION 2

Your Compensation
If you make exactly the same decision as the person above, you will receive 0.50 euros. If your decision does not correspond with the person above decision, you will not receive any money.

Your Decision
Please try to make the same decision as the person above made. We are interested in finding out in which row you first choose Option B. Please specify the row in which you will first choose Option B.

The person chooses Option B for the first time in row:
(Please choose: 1,2,3,4,5,6,7,8,9,10)

By clicking on NEXT your choices are saved. You cannot change your choices afterwards. Your compensation will be revealed at the end of the experiment.

Questions

Please answer the following questions.
Note: The questions refer to the entire experiment.

1. Do you know one of the persons on the pictures? If yes, which one(s)?
2. Which of the people on the pictures would you trust most with you money? Please indicate a picture number.
3. Do you think that the provided information was sufficient? What additional information about the individuals you assessed would you have liked to have had?
4. Do you generally believe that it is possible to evaluate the decisions of other people?
5. Were you more confident making you assessments on the basis of the picture or of the profile (with the characteristics)?
6. Did you have a certain strategy in making your assessments? If yes, please describe briefly.
7. When you think back to your last counseling session at your bank, did you have the feeling that you counselor could assess your preferences/wishes well?

By clicking on NEXT your choices are saved. You cannot edit your answers afterwards.

Your compensation

Calculation of your compensation

You total payment comprises the compensation for every single round.

Basic amount		x Euro
Part 1		
Game Decision 1		x Euro
Game Decision 2		x Euro
Part 2		
Pre-survey Assessment	Game Decision I	x Euro
	Game Decision II	x Euro
Part 3		
Ordering Characteristics	Round 1:	x Euro
	Round 2:	x Euro
	Round 3:	x Euro
	Round 4	x Euro
Buying	Round 1:	x Euro
	Purchase Price:	x Euro
	Round 2:	x Euro
	Purchase Price:	x Euro
	Round 3:	x Euro
	Purchase Price:	x Euro
	Round 4	x Euro
	Purchase Price:	x Euro
Pictures	Round 1:	x Euro
	Round 2:	x Euro
	Round 3:	x Euro
	Round 4	x Euro
Total Compensation		x Euro

Payment Procedure
We will make the payments according to your ID (identification number)
You will find a receipt among the documents in front of you. Please enter your total compensation, your ID, and selected other information in the acknowledgment form.
Important: Do not close the browser window. Raise your hand as soon as you are finished.

Thank you for your participation