

# **Online Appendix accompanying “Impatience and Uncertainty: Experimental Decisions Predict Adolescents’ Field Behavior” by Matthias Sutter, Martin G. Kocher, Daniela Rützler and Stefan T. Trautmann**

## **A1. Experimental instructions [translated from German]**

### ***Procedures:***

*The experiments concerning risk and ambiguity preferences were run between November 2007 and January 2008, while the experiments concerning time preferences were conducted between April and May 2008. Each session lasted approximately 50 minutes, including the completion of a post-experimental questionnaire and the distribution of the earned money. In the risk and ambiguity preference experiment all subjects privately received their money at the very end of the session. Therefore, subjects were called one by one to a separate room where they first had to draw a card to determine the decision problem which was relevant for payment. In a second step the urn was played if the subject preferred the lottery over the sure amount in the respective decision. In the time preference experiment, subjects received an immediate payoff if they had chosen it over a delayed payoff at the end of the experiment in cash. In case a payoff in the future was chosen (or the selected choice had an upfront-delay of three weeks) the money was distributed in sealed envelopes at the predefined date.*

*Note that all sessions within a particular school were run at the same day.*

*In order to guarantee anonymity, we used partition walls and forbade any kind of conversation among students. Instructions were memorized by the experimenter and orally presented in class at the beginning of each session. Periodically the instructor paused and let the subjects raise their hands for questions which were then answered privately. An English translation of orally presented instructions and of the decision sheets is presented below.*

**Risk and ambiguity experiment** (*here we present the order where the task to elicit risk attitudes has been explained before the task to elicit ambiguity attitudes*)

Welcome to our game. Before we start, we will explain the rules of our game. From now on, please don't talk to your neighbor and listen carefully. You can earn money in this game. We will give you the money in cash at the end of this lesson. How much money you will earn depends mainly on your decisions. That's why it is important that you understand the rules of our game. Please listen carefully now. We will frequently stop during our explanation and allow you to ask questions. Therefore, please raise your hand and one of us will come to you to answer your question.

Everybody ok so far? *Leave time for questions and answer them privately.*

Our game consists of two parts. In total, you will have to make 40 decisions, 20 in part one and 20 in part two. One of these decisions will be paid for real, and we will explain in the end how we determine the decision to be paid. First we will explain the first part. You have to choose 20 times between a safe amount of money and drawing a ball from bag (A). By

drawing from the bag you may win €10 (respectively €6, €8 or €12, according to the treatment). Only one of your decisions will be relevant. We will explain that carefully at the end of this instruction.

Next we explain to you how drawing a ball from bag (A) works: We fill this bag with ten orange and ten white balls. (fill bag and show balls to children and count orange and white balls) When you decide to draw a ball from bag (A), you draw a ball blindly. Before you draw the ball you have to choose a color (let's say white). If the drawn ball is really white, you receive €10 (respectively €6, €8 or €12, according to the treatment). If the drawn ball is orange, you get nothing.

Everybody ok so far? *Leave time for questions and answer them privately.*

You will receive a decision sheet which looks exactly like the slide on the overhead projector. (Switch on overhead projector and point to the slide) We will then, when we play the game, ask you to make a decision for each row between drawing a ball from bag (A) (point to the left) and a sure amount of money (point to the right). This looks for example like this: In the first row you decide whether you prefer drawing a ball from bag (A) and thereby maybe winning €10 (respectively €6, €8 or €12, according to the treatment), or if you prefer taking 50 cents (respectively 30 cents, 40 cents, 60 cents, according to the treatment) home for sure. Assuming that you prefer drawing a ball from bag (A) instead of getting 50 cents (respectively 30 cents, 40 cents, 60 cents, according to the treatment) for sure, which box do you have to check in this case? (Assume answer is "left".) Right, you check the box at the left side.

Everybody ok so far? *Leave time for questions and answer them privately.*

In the second row you decide again between drawing a ball from bag (A) and a sure amount of money. Now you are offered €1 (respectively 60 cents, 80 cents, €1.20, according to the treatment) to take home for sure. As you can see the sure amount on the right hand side increases successively. As long as you prefer drawing a ball from bag (A) to taking a sure amount of money home, you check the box at the left hand side.

Everybody ok so far? *Leave time for questions and answer them privately.*

Assume that you like drawing a ball from bag (A) very much, then you might check the boxes on the left hand side until the last but one row. In the very last row you then have to choose between getting €10 (respectively €6, €8 or €12, according to the treatment) for sure if you check the box on the right side or maybe winning €10 (respectively €6, €8 or €12, according to the treatment) by checking the box on the left side and then drawing a ball from bag (A).

Everybody ok so far? *Leave time for questions and answer them privately.*

Assume that you very much dislike drawing a ball from bag (A). In this case you might choose the sure amount of money of 50 cents (respectively 30 cents, 40 cents, 60 cents, according to the treatment) already in the first row.

Everybody ok so far? *Leave time for questions and answer them privately.*

The point where you switch from the left hand side to the right hand side lies normally somewhere between the first and the last row. As soon as you have once checked the box at

the right hand side, you should very carefully check whether it makes sense for you to switch back to the left hand side in any following row. Consider the following situation. If you preferred 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) in the first row to drawing from bag (A), then most likely you might prefer even more so €1 (*respectively 60 cents, 80 cents, €1.20, according to the treatment*) in the second row over drawing from bag (A), because €1 (*respectively 60 cents, 80 cents, €1.20, according to the treatment*) is more money than 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) which, in this example, you preferred over drawing from bag (A) before.

Everybody ok so far? *Leave time for questions and answer them privately.*

Now we explain the second part to you. The second part of our game is similar to the first part. The only difference is that bag (A) is replaced by bag (B). Now you have to choose between drawing a ball from bag (B) thereby maybe winning €10 (*respectively €6, €8 or €12, according to the treatment*) or taking a sure amount of money home.

Drawing a ball from bag (B) works as follows: This bag contains twenty balls. The balls are either white or orange as before, but this time we don't tell you the exact number of white and orange balls. However, in sum there are 20 balls in this bag (B). When you decide to draw a ball from bag (B), you draw a ball blindly. Before you draw the ball you choose a color (let's say white). If the drawn ball is really white, you receive €10 (*respectively €6, €8 or €12, according to the treatment*). If the drawn ball is orange, you get nothing.

Everybody ok so far? *Leave time for questions and answer them privately.*

You will receive a decision sheet which looks exactly like the slide on the overhead projector (*Switch on overhead projector and point to the slide*). We also ask you for this sheet to make a decision for each row. Now you have to decide between drawing a ball from bag (B) (*point to the left*) and a sure amount of money (*point to the right*). This looks for example like this: In the first row you decide whether you prefer drawing a ball from bag (B) and thereby maybe winning €10 (*respectively €6, €8 or €12, according to the treatment*), or if you prefer taking 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) home for sure. Assuming that you prefer drawing a ball from bag (B) instead of getting 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) for sure, which box do you have to check in this case? (*Assume answer is "left".*) Right, you check the box at the left side.

Everybody ok so far? *Leave time for questions and answer them privately.*

In the second row you decide again between drawing a ball from bag (B) and a sure amount of money. Now you are offered €1 (*respectively 60 cents, 80 cents, €1.20, according to the treatment*) to take home for sure. As you can see, the sure amount on the right hand side increases successively. As long as you prefer drawing a ball from bag (B) to taking a sure amount of money home, you check the box at the left hand side.

Everybody ok so far? *Leave time for questions and answer them privately.*

Assume that you like drawing a ball from bag (B) very much, then you might check the boxes on the left hand side until the last but one row. In the very last row you then have to choose between getting €10 (*respectively €6, €8 or €12, according to the treatment*) for sure if you check the box on the right side or maybe winning €10 (*respectively €6, €8 or €12, according to the treatment*) by checking the box on the left side and then drawing a ball from bag (B).

Everybody ok so far? *Leave time for questions and answer them privately.*

Assume that you very much dislike drawing a ball from bag (B). In this case you will choose the sure amount of money of 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) already in the first row.

Everybody ok so far? *Leave time for questions and answer them privately.*

The point where you switch from the left hand side to the right hand side lies normally somewhere between the first and the last row. As soon as you have once checked the box at the right hand side, you should very carefully check whether it makes sense for you to switch back to the left hand side in any following row. Consider the following situation. If you preferred 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) in the first row to drawing from bag (B), then most likely you might prefer even more so €1 (*respectively 60 cents, 80 cents, €1.20, according to the treatment*) in the second row over drawing from bag (B), because €1 (*respectively 60 cents, 80 cents, €1.20, according to the treatment*) is more money than 50 cents (*respectively 30 cents, 40 cents, 60 cents, according to the treatment*) which you preferred, in this example, over drawing from bag (B) before.

Everybody ok so far? *Leave time for questions and answer them privately.*

We still have to explain how you get your money. After all of you have made your 40 decisions (20 decisions on your first sheet, 20 decisions on your second sheet) everybody will draw a card from these 40 cards. The cards are numbered from 1 to 40. (*Ask a student to draw a card. Assume 5 is drawn.*) When you have drawn the number 5, your decision with number 5 on your decision sheets is played for real. This is the most important thing: If you have chosen to draw a ball from bag (A) in the selected decision, you have to draw a ball from bag (A). You win €10 (*respectively €6, €8 or €12, according to the treatment*), if you announce the drawn color, otherwise you get nothing. If you have chosen the sure amount of money, you get €2.50 (*respectively €1.5, €2 or €3, according to the treatment*) in this example,

Everybody ok so far? *Leave time for questions and answer them privately.*

Let's make another example: If you have drawn the number 38, what will happen when you have checked the box on the left hand side? (*Assume the answer is correct.*) Right, you have to draw a ball from bag (B). You win €10 (*respectively €6, €8 or €12, according to the treatment*) if the color is correct and nothing otherwise. What will happen when you have checked the box on the right hand side? (*Assume the answer is correct.*) Right, you take €9 (*respectively €5.4, €7.2 or €10.8, according to the treatment*) home. Whether you draw a ball from bag (B) and maybe win €10 (*respectively €6, €8 or €12, according to the treatment*) or take the sure amount of money home depends on whether you have checked the box at the left or at the right hand side.

As each of your 40 decisions could be drawn, you should consider carefully in each row if you want to draw a ball from bag (A) or (B) or if you want to take a sure amount of money home.

Everybody ok ? *Leave time for questions and answer them privately.*

If no questions have been left unanswered, then you can start making your choices. Once you are finished, please turn over your decision sheet and wait until all others have finished this part.

*Let subjects make their decisions and collect decision sheets that have been turned over.*

## Decision sheet

### Risk and ambiguity

- |      |                 |                       |           |                       |                    |
|------|-----------------|-----------------------|-----------|-----------------------|--------------------|
| [1]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 0.50 euro for sure |
| [2]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 1 euro for sure    |
| [3]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 1.50 euro for sure |
| [4]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 2 euro for sure    |
| [5]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 2.50 euro for sure |
| [6]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 3 euro for sure    |
| [7]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 3.50 euro for sure |
| [8]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 4 euro for sure    |
| [9]  | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 4.50 euro for sure |
| [10] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 5 euro for sure    |
| [11] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 5.50 euro for sure |
| [12] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 6 euro for sure    |
| [13] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 6.50 euro for sure |
| [14] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 7 euro for sure    |
| [15] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 7.50 euro for sure |
| [16] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 8 euro for sure    |
| [17] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 8.50 euro for sure |
| [18] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 9 euro for sure    |
| [19] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 9.50 euro for sure |
| [20] | draw from bag A | <input type="radio"/> | <b>or</b> | <input type="radio"/> | 10 euro for sure   |

*[analogously for bag B or stake sizes €6, €8, €12]*

**A photograph illustrating how participants drew from one of the bags (A or B)**



**Time preference experiment** (*this experiment was run several months after the experiment on risk and ambiguity attitudes*)

Welcome to our game. Before we start, we will explain the rules of our game. From now on, please don't talk to your neighbor and listen carefully. We will frequently stop during our explanation and allow you to ask questions. Therefore, please raise your hand and one of us will come to you to answer your question.

Everybody ok so far? *Leave time for questions and answer them privately.*

You can earn money in this game. You will have to decide whether you want to get a certain amount of money at an earlier date or another, possibly larger, amount at a later date. For example, you might be asked to choose between a smaller amount of money today and a bigger amount of money in three weeks. If you decide for "today", you will get your money in cash at the end of this lesson. If you decide for "in three weeks", you will receive your money in a closed envelope in three weeks. The envelope will be marked with your student number.

It might also be the case that the earlier amount will be paid in three weeks only, and the later amount in six weeks from now, or even in more than one year from now. We will explain all possibilities in detail in the following. As you know, we will come back to run some experiments with you in the course of two years, hence you can be sure to get your money even if you choose a date that is in one-year time only.

Everybody ok so far? *Leave time for questions and answer them privately.*

You will receive eight different decision sheets. You have to choose 160 times between an earlier amount and a later but maybe higher amount of money. Only one of your decisions will be relevant. We will explain that carefully at the end of this instruction. We brought along here an example decision sheet. Note that this example will not be used in the experiment. The amounts of money indicated on this example sheet only serve illustration purposes. Let us have a look at the example together. (*Put slide on the overhead projector.*) When we play the game we will ask you to make a decision for each row. This looks, e.g., like this: In the first row you decide whether you prefer taking home €6.10 today (*point to the left*) or receiving €6.10 in three weeks from now (*point to the right*). Assuming that you prefer taking home €6.10 today, where do you have to check the box? (*Assume answer is "left".*) Right, you check the box at the left hand side.

Everybody ok so far? *Leave time for questions and answer them privately.*

Assuming that you prefer receiving €6.10 in three weeks from now, where do you have to check the box? (*Assume answer is "right".*) Right, then you check the box at the right hand side. In the second row you decide again between taking home €6.10 today and now a larger amount of €6.30, which you could receive in three weeks from now. You can see that the amount on the right hand side increases successively row by row. As long as you prefer taking home €6.10 today, you check the box at the left hand side. As soon as you prefer receiving the higher amount in three weeks from now, you check the box at the right hand side. (*show example*)

Everybody ok so far? *Leave time for questions and answer them privately.*



As soon as you have once checked the box at the right hand side, you should consider carefully whether it makes sense for you to switch back to the left-hand side at any successive row. Consider the situation where you prefer receiving €6.50 in three weeks to taking home €6.10 today. Then it seems most likely that you will prefer receiving €6.70 in three weeks even more to taking home €6.10 today, because €6.70 is more money than €6.50 which you preferred over the €6.10 before.

Everybody ok so far? *Leave time for questions and answer them privately.*

Let's consider another example with respect to the timing of payoffs. Here is another example decision sheet. (*Put slide with three weeks upfront-delay on the overhead projector.*) Here you have to decide whether you prefer receiving €6.10 in three weeks from now or if you prefer receiving a somewhat larger amount in six weeks from now. The rules to fill out the decision sheet stay the same. Depending on whether you prefer receiving the money in three or in six weeks from now, you check the box at the left or the right hand side. As soon as you have once checked the box at the right hand side, you should consider carefully whether it makes sense to you to switch back to the left-hand side in any successive row for the same reasons as in the previous example. Shall I repeat this example? (*If anybody says Yes, then repeat it, now in the frame of three and six weeks delay for early and late payoffs.*)

Everybody ok so far? *Leave time for questions and answer them privately.*

You see on this example sheet that the early and late payoffs are paid in three weeks, respectively six weeks, from now on. Now I show you another example. (*Put another slide with a one-year delay for the late payoff on the projector.*) Note that the amounts of money on this example are identical to the previous slide. The only change concerns the timing of the payment concerning the later payoff. In the previous example this was six weeks from now. In the current example it is one year and three weeks from now. You will also face such a timing on your decision sheets once we start the experiment. You will also find a situation where the early amount can be paid out today, and the late amount in exactly one year. Please note that all dates have been chosen such that on the possible dates you will have a regular school day. We have already checked back with the principal of your school that we will come back exactly on these future dates (in three weeks, six weeks, one year, or one year and three weeks), in case this is necessary to pay out the money to you. In the unlikely case that any of you will change schools, then we have asked an administrator of your school to send the money to your new address. Note that in this case we will give the administrator your anonymous code that he – and only he – can use to figure out your identity to send the money to you.

Now we explain to you how you get the money from this experiment. You will receive eight different decision sheets with twenty decisions each. This makes 160 decisions all together. Each of you may draw a card from these 160 cards at the end of the session. The cards are numbered from 1 to 160. Assume you have drawn the number 5. Therefore the decision with number 5 on your decision sheets is played for real. This is the most important thing: If you have checked the box on the left hand side in the selected decision, you receive in our example that I put on the overhead projector now €6.10 today. If you have checked the box on the right hand side, you receive €6.90 in three weeks from now.

Everybody ok so far? *Leave time for questions and answer them privately.*

Let's look at another example. Assume you have drawn the number 22. Now the decision with number 22 on your decision sheets is played for real. Let's consider this example sheet with the one-year delay. What will happen if you have checked the box on the left hand side? (*Assume the answer is correct.*) Right, you receive €6.10 in three weeks from now. What will happen if you have checked the box on the right hand side? (*Assume the answer is correct.*) Right, then you will receive €6.30 in one year and three weeks from now. As each of your 160 decisions is equally likely to be drawn, you should consider your decision very carefully in each single row, since this row could be drawn for payment.

Everybody ok? *Leave time for questions and answer them privately.*

If no questions have been unanswered, then you can start making your choices. Once you are finished, please turn over your decision sheet and wait until all others have finished this part.

*Let subjects make their decisions and collect decision sheets that have been turned over.*

**Time preferences – Decision sheet** (*the order of decision sheets was random*)

	amount <b>today</b>	<b>O</b>	<b>or</b>	<b>O</b>	amount in <b>3 weeks</b>
[1]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	10.10 euro in 3 weeks
[2]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	10.30 euro in 3 weeks
[3]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	10.50 euro in 3 weeks
[4]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	10.70 euro in 3 weeks
[5]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	10.90 euro in 3 weeks
[6]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	11.10 euro in 3 weeks
[7]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	11.30 euro in 3 weeks
[8]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	11.50 euro in 3 weeks
[9]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	11.70 euro in 3 weeks
[10]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	11.90 euro in 3 weeks
[11]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	12.10 euro in 3 weeks
[12]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	12.30 euro in 3 weeks
[13]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	12.50 euro in 3 weeks
[14]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	12.70 euro in 3 weeks
[15]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	12.90 euro in 3 weeks
[16]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	13.10 euro in 3 weeks
[17]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	13.30 euro in 3 weeks
[18]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	13.50 euro in 3 weeks
[19]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	13.70 euro in 3 weeks
[20]	10.10 euro today	<b>O</b>	<b>or</b>	<b>O</b>	13.90 euro in 3 weeks

**Time preferences – Decision sheet** (*the order of decision sheets was random*)

	amount <b>today</b>	<b>O</b>	<b>or</b>	<b>O</b>	amount in <b>3 weeks</b>
[21]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.05 euro in 3 weeks
[22]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.15 euro in 3 weeks
[23]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.25 euro in 3 weeks
[24]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.35 euro in 3 weeks
[25]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.45 euro in 3 weeks
[26]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.55 euro in 3 weeks
[27]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.65 euro in 3 weeks
[28]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.75 euro in 3 weeks
[29]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.85 euro in 3 weeks
[30]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	4.95 euro in 3 weeks
[31]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.05 euro in 3 weeks
[32]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.15 euro in 3 weeks
[33]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.25 euro in 3 weeks
[34]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.35 euro in 3 weeks
[35]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.45 euro in 3 weeks
[36]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.55 euro in 3 weeks
[37]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.65 euro in 3 weeks
[38]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.75 euro in 3 weeks
[39]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.85 euro in 3 weeks
[40]	4.05 euro today	<b>O</b>	<b>or</b>	<b>O</b>	5.95 euro in 3 weeks

*[Six further sheets varied the timing of these payoffs by once adding an upfront-delay of three weeks for the earlier payoff and once by using a delay between earlier and later payoff of one year instead of three weeks. See Figure 5 for an illustration. Note that the eight decision sheets were handed out in random order]*

## A2. Questionnaire [translated from German]

1) I am         female         male

2) I was born in the following year: \_\_\_\_\_.

3) I was born in the following month: \_\_\_\_\_.

4) I have \_\_\_\_\_ (how many?) siblings.

5) I was born as \_\_\_\_\_ (which number?) child in my family.

6) Per week I have roughly \_\_\_\_\_ euro pocket money.

I spend my pocket money on:

- |  |                                      |  |
|--|--------------------------------------|--|
| <input type="radio"/> mobile phone bill  | <input type="radio"/> computer games | <input type="radio"/> clothes              |
| <input type="radio"/> magazines          | <input type="radio"/> cinema         | <input type="radio"/> going out            |
| <input type="radio"/> food and beverages | <input type="radio"/> sport          | <input type="radio"/> cosmetica            |
| <input type="radio"/> music              | <input type="radio"/> sweets         | <input type="radio"/> concerts             |
| <input type="radio"/> cigarettes         | <input type="radio"/> alcohol        | <input type="radio"/> expenses from school |
| <input type="radio"/> toys               | <input type="radio"/> other: _____   |  |

*(For our analysis we create the variables “smoking” and “alcohol consumption” and code it as 1 if a subject spends pocket money on cigarettes, respectively alcohol, and 0 otherwise.)*

7) I live in the following village: \_\_\_\_\_

8) How often do you attend religious celebrations per month? (for example mass, celebration at a mosque, ...)

- |                       |                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 0 x                   | 1 x                   | 2 x                   | 3 x                   | 4 x                   | > (more than) 4 x     |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

9) Please mark the appropriate item with a cross:

My parents and I were born in Austria.

I was born in Austria. My mother and my father were not born in Austria.

I was born in Austria. One of my parents was not born in Austria.

I was not born in Austria, nor were my parents.

10) Do you save money?

yes       no

*(For our analysis we create the variable “saving” and code it as 1 if a subject checks “yes” and 0 otherwise.)*

11) I am \_\_\_\_\_ m tall.

12) I weigh \_\_\_\_\_ kg.

*(For our analysis we create the variable “bodymass” = weight/height<sup>2</sup>.)*

### A3. Table A. Regressions behind Table 5

**Panel A: Determinants of field behavior: Saving (Marginal-Probit-Regression)**

Explanatory variables	Dependent variable: Saving							
	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Delay aversion	-0.132** (0.052)	-0.133*** (0.049)	-0.194*** (0.059)	-0.169*** (0.065)	-0.165*** (0.053)	-0.171*** (0.054)	-0.224*** (0.058)	-0.210*** (0.057)
Risk aversion	0.002 (0.037)	0.004 (0.037)	-0.006 (0.036)	-0.002 (0.037)	0.003 (0.036)	0.001 (0.035)	-0.003 (0.034)	0.002 (0.036)
Ambiguity aversion	0.009 (0.024)	0.007 (0.024)	0.008 (0.024)	0.007 (0.024)	0.004 (0.023)	0.006 (0.023)	0.002 (0.022)	0.008 (0.023)
Age	-0.012*** (0.003)	-0.013*** (0.003)	-0.012*** (0.003)	-0.013*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.011*** (0.003)	-0.012*** (0.003)
Female	-0.012 (0.016)	-0.012 (0.015)	-0.015 (0.015)	-0.015 (0.015)	-0.011 (0.015)	-0.009 (0.015)	-0.012 (0.014)	-0.013 (0.014)
German grade	0.002 (0.011)	-0.001 (0.011)	0.003 (0.010)	-0.000 (0.011)	0.002 (0.010)	0.001 (0.010)	0.003 (0.010)	0.004 (0.010)
Math grade	0.033*** (0.010)	0.035*** (0.010)	0.030*** (0.010)	0.033*** (0.010)	0.033*** (0.010)	0.032*** (0.010)	0.028*** (0.009)	0.029*** (0.009)
No. of siblings	-0.009 (0.008)	-0.009 (0.008)	-0.008 (0.008)	-0.007 (0.008)	-0.008 (0.008)	-0.009 (0.008)	-0.007 (0.007)	-0.007 (0.007)
Pocket money per week	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
No. of observations	639	639	639	639	639	639	639	639
Pseudo R <sup>2</sup>	0.157	0.157	0.166	0.157	0.168	0.171	0.185	0.179

Notes. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% level, robust standard errors in parenthesis.

Model A: 3 weeks delay, low stake, no upfront delay.

Model B: 3 weeks delay, low stake, upfront delay.

Model C: 3 weeks delay, high stake, no upfront delay.

Model D: 3 weeks delay, high stake, upfront delay.

Model E: 1 year delay, low stake, no upfront delay.

Model F: 1 year delay, low stake, upfront delay.

Model G: 1 year delay, high stake, no upfront delay.

Model H: 1 year delay, high stake, upfront delay.

**Panel B: Determinants of field behavior: Smoking (Marginal-Probit-Regression)**

Explanatory variables	Dependent variable: Smoking							
	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Delay aversion	0.034** (0.018)	0.037*** (0.019)	0.041** (0.022)	0.046*** (0.023)	0.028* (0.018)	0.020 (0.018)	0.034** (0.020)	0.035** (0.020)
Risk aversion	-0.007 (0.009)	-0.006 (0.007)	-0.006 (0.010)	-0.006 (0.008)	-0.009 (0.011)	-0.009 (0.012)	-0.007 (0.011)	-0.007 (0.010)
Ambiguity aversion	-0.015* (0.009)	-0.011* (0.006)	-0.017** (0.010)	-0.015** (0.009)	-0.017* (0.010)	-0.019* (0.011)	-0.017* (0.010)	-0.017** (0.009)
Age	0.007*** (0.003)	0.005*** (0.003)	0.008*** (0.003)	0.007*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.008*** (0.003)	0.007*** (0.003)
Female	0.006 (0.004)	0.004 (0.003)	0.006 (0.005)	0.007* (0.004)	0.006 (0.005)	0.006 (0.005)	0.006 (0.005)	0.007 (0.004)
German grade	-0.002 (0.002)	-0.001 (0.002)	-0.003 (0.003)	-0.002 (0.002)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)
Math grade	-0.007*** (0.004)	-0.005*** (0.003)	-0.007*** (0.004)	-0.006*** (0.003)	-0.009*** (0.004)	-0.009*** (0.004)	-0.008*** (0.004)	-0.008*** (0.004)
No. of siblings	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.003)	-0.002 (0.002)	-0.002 (0.002)
Pocket money per week	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
No. of observations	639	639	639	639	639	639	639	639
Pseudo R <sup>2</sup>	0.365	0.392	0.357	0.371	0.350	0.343	0.352	0.355

Notes. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% level, robust standard errors in parenthesis.

Model A: 3 weeks delay, low stake, no upfront delay.

Model B: 3 weeks delay, low stake, upfront delay.

Model C: 3 weeks delay, high stake, no upfront delay.

Model D: 3 weeks delay, high stake, upfront delay.

Model E: 1 year delay, low stake, no upfront delay.

Model F: 1 year delay, low stake, upfront delay.

Model G: 1 year delay, high stake, no upfront delay.

Model H: 1 year delay, high stake, upfront delay.



**Panel C: Determinants of field behavior: Alcohol consumption (Marginal-Probit-Regression)**

Explanatory variables	Dependent variable: Alcohol consumption							
	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Delay aversion	0.177*** (0.062)	0.157** (0.063)	0.209*** (0.078)	0.203** (0.085)	0.124* (0.061)	0.065 (0.063)	0.207*** (0.069)	0.255*** (0.068)
Risk aversion	0.020 (0.049)	0.021 (0.048)	0.029 (0.049)	0.024 (0.049)	0.017 (0.050)	0.017 (0.050)	0.025 (0.049)	0.025 (0.048)
Ambiguity aversion	-0.057 (0.040)	-0.051 (0.040)	-0.058 (0.041)	-0.056 (0.042)	-0.051 (0.041)	-0.055 (0.042)	-0.052 (0.040)	-0.058 (0.038)
Age	0.054*** (0.007)	0.056*** (0.007)	0.056*** (0.007)	0.057*** (0.007)	0.056*** (0.007)	0.057*** (0.007)	0.055*** (0.007)	0.054*** (0.007)
Female	0.007 (0.019)	0.006 (0.019)	0.008 (0.019)	0.010 (0.019)	0.005 (0.019)	0.005 (0.020)	0.007 (0.019)	0.008 (0.018)
German grade	-0.002 (0.012)	0.000 (0.012)	-0.002 (0.012)	-0.001 (0.012)	-0.002 (0.012)	-0.002 (0.012)	-0.002 (0.012)	-0.004 (0.012)
Math grade	-0.014 (0.010)	-0.015 (0.010)	-0.012 (0.011)	-0.014 (0.010)	-0.016 (0.010)	-0.017 (0.011)	-0.013 (0.010)	-0.012 (0.010)
No. of siblings	-0.005 (0.010)	-0.005 (0.010)	-0.006 (0.011)	-0.007 (0.011)	-0.005 (0.010)	-0.004 (0.011)	-0.005 (0.010)	-0.005 (0.010)
Pocket money per week	0.001 (0.001)	0.001 (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001* (0.001)	0.001 (0.001)	0.001* (0.001)
No. of observations	639	639	639	639	639	639	639	639
Pseudo R <sup>2</sup>	0.399	0.396	0.397	0.395	0.393	0.388	0.400	0.408

Notes. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% level, robust standard errors in parenthesis.

Model A: 3 weeks delay, low stake, no upfront delay.

Model B: 3 weeks delay, low stake, upfront delay.

Model C: 3 weeks delay, high stake, no upfront delay.

Model D: 3 weeks delay, high stake, upfront delay.

Model E: 1 year delay, low stake, no upfront delay.

Model F: 1 year delay, low stake, upfront delay.

Model G: 1 year delay, high stake, no upfront delay.

Model H: 1 year delay, high stake, upfront delay.

**Panel D: Determinants of field behavior: Body mass index (OLS-Regression)**

Explanatory variables	Dependent variable: Body mass index							
	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Delay aversion	0.063* (0.034)	0.025 (0.033)	0.030 (0.046)	0.016 (0.044)	0.035 (0.031)	0.040 (0.030)	0.039 (0.036)	0.069* (0.037)
Risk aversion	-0.060** (0.024)	-0.063*** (0.024)	-0.062*** (0.024)	-0.063*** (0.024)	-0.063*** (0.023)	-0.063*** (0.023)	-0.063*** (0.024)	-0.062*** (0.023)
Ambiguity aversion	-0.024 (0.021)	-0.023 (0.021)	-0.023 (0.021)	-0.022 (0.021)	-0.022 (0.021)	-0.023 (0.021)	-0.022 (0.021)	-0.023 (0.021)
Age	-0.002 (0.003)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)
Female	-0.024** (0.010)	-0.024** (0.010)	-0.024** (0.010)	-0.024** (0.010)	-0.024** (0.010)	-0.024** (0.010)	-0.024** (0.010)	-0.023** (0.010)
German grade	-0.008 (0.006)	-0.007 (0.006)	-0.007 (0.006)	-0.007 (0.006)	-0.007 (0.006)	-0.007 (0.006)	-0.007 (0.006)	-0.008 (0.006)
Math grade	0.006 (0.006)	0.004 (0.006)	0.004 (0.006)	0.004 (0.006)	0.005 (0.006)	0.004 (0.006)	0.005 (0.006)	0.005 (0.006)
No. of siblings	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)
Pocket money per week	0.000** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
No. of observations	611	611	611	611	611	611	611	611
R <sup>2</sup>	0.047	0.042	0.042	0.041	0.043	0.044	0.043	0.047

*Notes.* \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% level, robust standard errors in parenthesis.

Model A: 3 weeks delay, low stake, no upfront delay.

Model B: 3 weeks delay, low stake, upfront delay.

Model C: 3 weeks delay, high stake, no upfront delay.

Model D: 3 weeks delay, high stake, upfront delay.

Model E: 1 year delay, low stake, no upfront delay.

Model F: 1 year delay, low stake, upfront delay.

Model G: 1 year delay, high stake, no upfront delay.

Model H: 1 year delay, high stake, upfront delay.

**Panel E: Determinants of field behavior: Grade for behavior (Ordered-Probit-Regression)**

Explanatory variables	Dependent variable: Grade for behavior							
	Model A	Model B	Model C	Model D	Model E	Model F	Model G	Model H
Delay aversion	1.323*** (0.499)	1.117** (0.499)	1.890*** (0.573)	1.814*** (0.624)	1.357*** (0.495)	1.463*** (0.502)	1.633*** (0.573)	2.161*** (0.584)
Risk aversion	-0.349 (0.316)	-0.390 (0.311)	-0.292 (0.314)	-0.302 (0.315)	-0.431 (0.317)	-0.448 (0.314)	-0.383 (0.317)	-0.393 (0.317)
Ambiguity aversion	-0.390 (0.291)	-0.389 (0.296)	-0.417 (0.286)	-0.421 (0.290)	-0.358 (0.296)	-0.415 (0.299)	-0.378 (0.300)	-0.425 (0.303)
Age	0.034 (0.029)	0.042 (0.029)	0.039 (0.030)	0.046 (0.030)	0.039 (0.029)	0.038 (0.029)	0.039 (0.030)	0.042 (0.031)
Female	-0.564*** (0.150)	-0.561*** (0.149)	-0.539*** (0.149)	-0.533*** (0.149)	-0.559*** (0.149)	-0.558*** (0.149)	-0.559*** (0.149)	-0.542*** (0.150)
German grade	-0.263*** (0.086)	-0.253*** (0.088)	-0.265*** (0.088)	-0.266*** (0.088)	-0.262*** (0.085)	-0.263*** (0.086)	-0.261*** (0.089)	-0.282*** (0.090)
Math grade	-0.198** (0.088)	-0.207** (0.090)	-0.177* (0.091)	-0.183** (0.090)	-0.205** (0.089)	-0.205** (0.089)	-0.196** (0.090)	-0.185** (0.089)
No. of siblings	0.027 (0.068)	0.027 (0.068)	0.026 (0.068)	0.004 (0.068)	0.023 (0.066)	0.032 (0.067)	0.019 (0.067)	0.008 (0.067)
Pocket money per week	0.002 (0.004)	0.002 (0.004)	0.003 (0.004)	0.003 (0.004)	0.002 (0.003)	0.002 (0.003)	0.002 (0.004)	0.003 (0.004)
No. of observations	389	389	389	389	389	389	389	389
R <sup>2</sup>	0.131	0.127	0.136	0.133	0.132	0.135	0.134	0.145

Notes. \*\*\*, \*\*, \* denote significance at the 1%, 5%, 10% level, robust standard errors in parenthesis.

Model A: 3 weeks delay, low stake, no upfront delay.

Model B: 3 weeks delay, low stake, upfront delay.

Model C: 3 weeks delay, high stake, no upfront delay.

Model D: 3 weeks delay, high stake, upfront delay.

Model E: 1 year delay, low stake, no upfront delay.

Model F: 1 year delay, low stake, upfront delay.

Model G: 1 year delay, high stake, no upfront delay.

Model H: 1 year delay, high stake, upfront delay.