Appendices: Questionnaires

of

"Eliciting Decision Weights by Adapting de Finetti's Betting-Odds

Method to Prospect Theory"

by

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Appendix A. Instructions for: Choosing between two alternatives (May 16, 2001)

Welcome to this investigation into choice behavior, and thanks for your willingness to participate.

In this investigation we will ask you to make a number of choices. You will choose between different options, indicated as columns in figures, with uncertain outcomes. The situations in which you will choose are depicted as follows:

In the middle of the figure you see a grey column. This column is the "reference-option". The amounts in this colum are the amounts, in guilders, that you might win if you were to receive this option. In this case, these amounts are Dfl. 10, Dfl. 40 or Dfl. 70. Which of these amounts

25   you win depends on the outcome in the first column. The outcome in the first column is

26   determined by the results today of two stock-exchange indexes: the *Dow Jones IA* (DJ; the

27   most important stock-index in New York) and the *Nikkei 225* (NK; the most important stock-

28   index in Tokio). It is unknown at this moment whether the indexes will increase or decrease.

29   This will only be known after the next closures of the stock-exchanges. If both the DJ and the

30   NK increase (indicated by $\uparrow\uparrow$ in the first column) then the grey colum yields Dfl. 10. If both

31   stock-indexes decrease (indicated by $\downarrow\downarrow$ in the first column) then the grey column yields Dfl.

32   40. In all other cases, where one index decreases and the other increases or one or both remain

33   constant (indicated by $\downarrow\uparrow=$ in the first column), the grey column yields Dfl. 70.

34

35   To illustrate, we give the information concerning yesterday:

36   Yesterday both indexes decreased. The grey column would have yielded Dfl. 40. Of course,

37   past results are no guarantee for future results. Let us return to the experiment, which

38   concerns the increases or decreases of today and not those of yesterday.

39

40   Consider the above choice again. On both sides of the grey column you see another column,

41   the left one indicated with a big plus (**+**) and the right one with three small plusses (**+++**). In

42   this investigation we ask you each time to choose between these two columns. As you can

43   see, both columns are improvements compared to the grey column, the "reference-option":

44   • The column with the single large plus (**+**) gives a single large improvement. This means

45   that one of the outcomes is considerably better than in the grey column. The other two

46   outcomes are the same as in the grey column. In the example you see that the outcome

47   Dfl. 10 has been increased by Dfl. 10, it is now Dfl. 20.

48   • The column with the three small plusses (**+++**) gives three small improvement. This

49   means that all outcomes are somewhat better than those of the grey column. In the

50   example you see that all outcomes have been increased by Dfl. 2 (they are now Dfl. 12,

51   Dfl. 42 and Dfl. 72).

52

53   Therefore, if both indexes increase ($\uparrow\uparrow$), then you receive Dfl. 20 if you chose the (**+**) column

54   and Dfl. 12 if you chose the (**+++**) column. If both indexes decrease ($\downarrow\downarrow$), then you receive Dfl.

55   40 if you had chosen the (**+**) column and Dfl. 42 if you had chosen the (**+++**) column. In all

56   other cases ($\downarrow\uparrow$=) you receive Dfl. 70 if you chose the (**+**) column and Dfl. 72 if you chose the

57   (**+++**) column.

58

59   In this investigation we ask you to indicate in various figures which of the two improvements

60   you prefer, the (**+**) column or the (**+++**) column. You can indicate your choices by putting a

61   cross under the column of your choice. We want to emphasize that there are no right or wrong

62   answers, only your own preference matters. We are interested in your preferences.

63

64   Do you have questions about the explanation so far?

65

66   [1]The performances of the indexes on a specific day are hard to predict. It is, therefore, still

67   uncertain at this moment what will happen today. Will both indexes increase ($\uparrow\uparrow$), will both

68   decrease ($\downarrow\downarrow$), or will another case occur ($\downarrow\uparrow$=)? Although we do not know what will happen

69   today, we do know that these three possibilities were not equally likely during the last two

70   months. The most likely possibility was $\downarrow\uparrow$=. This occurred in almost half of the cases. Of the

71   other two possibilities, $\uparrow\uparrow$ occurred considerably more often than $\downarrow\downarrow$; $\uparrow\uparrow$ occurred in about 1/3

72   of the cases and $\downarrow\downarrow$ in about 1/5 of the cases. Thus, after having mostly decreased for over a

73   year, the indexes performed well during the last two months. When deciding, you will pay

74   most attention to $\downarrow\uparrow$=, because this is most likely possibility. Obviously, markets today are in a

75   different position than in the past, and results obtained in the past are no guarantee for results

76   in the future.

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[1] The information in the following paragraph varied some between different groups, depending on the
day of the experiment.

77

78   We next show what a page of the questionnaire looks like.

79

80   Each page contains a row with 10 choice-situations. For the moment, let us only consider the

81   first choice situation:

82

83

	+		**+++**
↑↑	80	50	53
↓↓	10	10	13
↓↑=	30	30	33
Choice	☐		☐

84

85

86   Here you have to choose again between the two improvements: the (**+**) column, an

87   improvement of Dfl. 30 if both indexes increase, or the (**+++**) column, an improvement of Dfl.

88   3 in all cases. Put a cross indicating your choice. When you are done, consider the second

89   choice-situation in the row, depicted below. You see that the (**+**) column and the grey column

90   are still the same, but that each outcome in the (**+++**) column has been further improved by an

91   additional Dfl. 3, so it is now Dfl. 6 better than the grey column.

92

93

	+		**+++**
↑↑	80	50	56
↓↓	10	10	16
↓↑=	30	30	36
Choice	☐		☐

94

95

96   Indicate again which of the two columns you prefer, the (**+**) column or the (**+++**) column. In

97   the third choice situation the same thing is repeated. The first two columns remain the same,

98   whereas each outcome in the third column has been further improved by an additional Dfl. 3,

99   so that it is now Dfl. 9 better than the grey column.

100

101   **+**   **+++**

	+		+++
↑↑	80	50	59
↓↓	10	10	19
↓↑=	30	30	39

102   Choice ☐   ☐

103

104   Indicate again which of the two columns you prefer, the (**+**) column or the (**+++**) column.

105   The whole row consists of 10 such choice-situations. In all ten choice-situations the (**+**)

106   columns are the same, and the grey column likewise, where in the first one amount has been

107   increased relative to the grey column (e.g., Dfl. 80 instead of Dfl. 50).

108   In the (**+++**) column all three amounts are increased compared to the grey column, where the

109   increase augments with fixed step sizes as we move more to the right. The (**+++**) column,

110   therefore, becomes more and more favorable.

111

112   You will mostly prefer the (+) column in the first choice situation. Because the other column,

113   the (+++) column, becomes increasingly favorable, you will probably change preference in

114   one of the choice-situations. Then you choose the (+++) column. Because this column

115   continues to become more favorable, you will probably continue choosing the (+++) column in

116   the rest of the series.

117

118   We next explain the payment that you receive for this investigation. You surely receive a

119   fixed amount of Dfl. 25 for your participation. In addition, there is a chance to make more

120   money. How much more you earn depends on the choices that you make during this

121   investigation. At the end of the investigation, we will randomly select 1/10 of you. For those

122   selected we will, again randomly, select one of the choices from the whole set, and on the

123   basis of the choice of the participant and the result of the indexes, the selected participant will

124   be paid. If you have been selected to play for real then you can collect your gain starting

125   tomorrow in office B. 9.11. It is, therefore, important to carefully indicate the option of your

126   preference, because it is possible that you will really play the chosen column eventually with

127   real payments. Again, there are no right or wrong answers, the only relevant thing is what you

128   prefer yourself! This is also what we are interested in.

129

130   To conclude, a practice question. Imagine that we would play the following choice for real

131   money. Indicate which column you would choose:

132   **+**   **+++**

	+		+++
↑↑	80	50	62
↓↓	10	10	22
↓↑=	30	30	42

133   Choice ☐   ☐

134

135   Imagine the tomorrow it turns out that both indexes have decreased. How much would you

136   receive with your choice?

137   (fill in your answer) ……

138

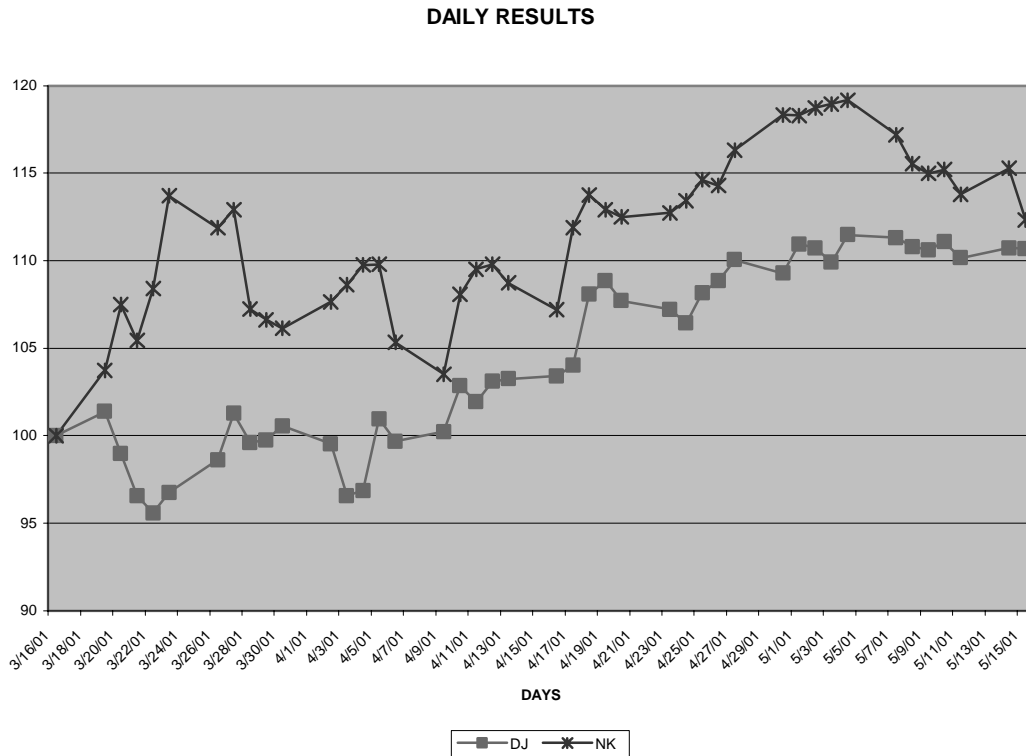139   Do you have any questions? If not, then good luck with the experiment.

140

141

141 **Appendix B. A Chart**

142   The chart given to the students on May 16, 2001 was stated in Dutch, was twice the size of

143   the picture below (printed in landscape orientation), and used colors.

144

DAILY RESULTS

145

146

147

147 **Appendix C. Intermediate Questions**

148

149 Do you find it easy or difficult   ❐   easy

150 to decide which column

151 you prefer?   ❐   difficult

152

153

154

155 Do you consider, during your decision,   ❐   yes

156 how often the events ↑↑, ↓↓

157 and ↑↓= have happened in the past?   ❐   no

158

159

160

161 Which of the events seems to be most   ❐   ↑↑

162 likely today?   ❐   ↓↓

163   ❐   ↑↓=

164

165

166 Good luck with the remaining questions!