Exercise Experiment.1. Het is makkelijker maar minder inzichtelijk U(α0) = 0 te stellen en U(α1) = ¼, etc.Consider Figure 4.1.1 (TO upwards; do not consider the other figures). Assume that both candidates have a nonzero probability of winning. Show that, under EU (with α0 = 10, p1 for the (subjective) probability of cand1 winning, and p2 = 1 − p1):

U(α4) − U(α3) = U(α3) − U(α2) = U(α2) − U(α1) = U(α1) − U(α0) . (E.1)

First derive the last equality using only Figs. 4.1.1a and b.

Exercise Experiment.2. Assume EU for Figures 4.1.1 and 4.1.2, with nonzero probabilities of winning for both candidates.

1. Show that U(β4) − U(β3) = U(β3) − U(β2) = U(β2) − U(α1) = U(α1) − U(α0).
2. Show that βj = αj for all j.

Exercise Experiment.3. Assume EU for Figures 4.1.1 and 4.1.3, with nonzero probabilities of winning for both candidates. Show that j = αj for all j.

Exercise Experiment.4. Do not assume EU (deviating from the title of this section). Assume only weak ordering of your preference relation. Further assume *strong monotonicity*, which means that any prospect becomes strictly better as soon as one of its outcomes is strictly improved. Under EU, not assumed here, the latter assumption would amount to all outcome events being nonnull. Show that δj = αj for all j in Figures 4.1.1 and 4.1.4.

Exercise Experiment.5. Assume EU for Figure 4.1.5. Throughout we normalize U(α0) = 0 and U(α4) = 1. Assume the data of Figure 4.1.1, and the implications of EU there. Do not consider your own answers PEj in Figure 4.1.5. Instead, consider the answers PEj that EU predicts given U(αj) = j/4 for all j. Show that EU predicts PEj = j/4 for all j. In other words, your answers in Figures 4.1.1 and 4.1.5 violate EU unless PEj = j/4 for all j.