README for ergEx_Run.py

This is the main run-file of the ergEx experiment. The ergEx experiment consists of a predetermined and even amount of sessions, where half of the sessions are multiplicative, and the other half are additive sessions. A session is comprised of a passive and an active phase. At the beginning of a phase, instructions are shown. After the last session is completed, some questionnaires are to be filled in to assess the general risk preference of the participant. All steps are initiated and controlled in this run-file.

The goal of this experiment is to assess whether the choices a participant makes are according to classical economical theory (a participant having a personal risk preference), or according to ergodicity theory (everyone has the same risk preference, independent of the "world" being multiplicative or additive).

A session begins with the passive phase. This phase consists of 3 times 45 trials. During a trial, the participant is shown a fractal, after which their wealth is updated accordingly. Throughout these trials, the participant is to learn how a particular fractal influences their wealth. After every 45 trials, the participants' wealth is reset to the starting value of 1000.

After every 45 trials, the participant is given 15 'no-brainer' tasks. In such a task, two fractals are shown, out of which one clearly results in an increase in wealth, and the other one clearly results in a decrease in wealth. These 'no-brainers' are used to determine whether the participant has learned the value of the fractals shown during the passive phase.

After the passive phase is completed, the active phase is initiated. This phase consists of 160 combinations of 4 fractals. These fractals are presented in two gamble pairs of two fractals, left and right. The pair on the left is shown slightly earlier to allow the participant to assess the pairs separately. The participant chooses one of the pairs, after which one of the fractals in the pair is randomly selected through a coin toss. Therefore, the participant has to assess which gamble pair allows for the biggest reward/smallest loss, considering the random coin toss. It is expected that the risk preference of the participant is influenced by the 'world' in which the pairs are chosen, which would prove that humans choose according to ergodicity theory.

As the participant is rewarded with the money won during the experiment in real life, it is important that the wealth of the participant does not exceed certain bounds. Therefore, the gamble pairs offered to the participant are adapted to ensure that the wealth of the participant stays within the predetermined bounds. To determine the final amount of money won by the participant, their final wealth is pooled with the final wealth of other participants, after which the percentage of their wealth on the whole is used to determine their final sum won.