**Information on Data shared from:**

“Experimental data from studies of human decision making under risk and perception of randomness” PI Paul A. Warren, University of Manchester

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**High level Summary**

Data from 7 experimental studies are organized in 7 folders.

In each folder there are multiple sub-folders from different sub-experiments and a read me file which outlines the format of filenames and data in each file.

Attraction effect studies (Folders 1-5) probe questions associated with the attraction effect of (Huber, Payne & Puto, Journal of Consumer Research, 1982). This is a well know contextual preference reversal phenomenon which presents a major challenge to the notion of rational utility maximizing decision making. Briefly, participants are asked to choose between 3 competing options based on 2 attributes (e.g. probability of reward and value of reward) – the target, the competitor and the decoy. The decoy is objectively worse than either the target or the competitor but is closer to the target in attribute space. The attraction effect suggests choices are biased towards the target in the presence of the decoy relative to when it is absent.

Randomness studies (Folders 6-7) probe questions associated with human production and judgement of random binary sequences. These experiments were designed to test consistency of behaviour with the account of randomness perception given by Hahn & Warren, Psych Review, 2009.

**Folder 1: Attraction effect absolute EVD**

We manipulate the absolute expected value difference (0, 3, 6, 9 points) between 2 (Target and Competitor) lotteries (defined by probability and value attributes) and explore the effect on choice proportions of adding a decoy which is strictly dominated by the target on both attributes but by the competitor on only one attribute.

**Folder 2: Attraction effect relative EVD**

We manipulate the relative expected value difference (0%, 20%, 100%, 300%) between 2 (Target and Competitor) lotteries (defined by probability and value attributes) and explore the effect on choice proportions of adding a decoy which is strictly dominated by the target on both attributes but by the competitor on only one attribute. We examine this question using identical designs in multiple paradigms:

* descriptive (probability and value information provided in written format)
* grids (probability and value information represented in 10 x 10 grid form where e.g. a 36% probability is represented by 36 green squares placed at random within the 10 x 10 grid of squares with the remainder white)
* area (probability and value represented as height and width of a rectangle). Note that this is a pictorial analogue of expected value (EV = probability x value; Area = height x width)

**Folder 3: Attraction effect Loss domain Lab**

Data for novel attraction effect experiment in which options are in the loss domain rather that the standard approach in which all values are positive. This data was collected in the lab in contrast to the Web-based data in folder 4.

**Folder 4: Attraction Effect Loss Domain MTurk Wedell Rep**

Data for novel attraction effect experiment in which options are in the loss domain. This data was collected using Amazon Mechanical Turk and is a partial replication of Weddell (1991) in the loss domain. Detailed design information is included in the folder.

**Folder 5: Attraction Effect pointing**

Data for novel attraction effect experiment in which participants make speeded pointing movements to try and hit a target region to earn points. From this process they learn about their motor noise which determines the probability of successfully hitting the target region. In a subsequent stage they are asked to choose between 3 target regions to hit in which target size and value of success trade off. This is a perceptuo-motor variant of the classic attraction effect experiment (Huber, Payne & Puto, 1982). However probabilities of reward for each option are now determined by intrinsic motor noise rather than explicitly providing probability information.

**Folder 6: Random Generation and Chunking**

In this experiment we are probing the Hahn & Warren (2009) account of randomness perception and assessing the extent to which generation and judgement of random sequences depends upon recent experience. Data provided are from experiments in which participants either generated 2 x 100 blocks of binary digits or made judgements about the randomness of a set of binary sequences (Falk & Konold, 1997). In both judgement and generation cases the task was completed both before and after being exposed to output from a random source. The binary digits presented in the exposure phase were identical for 3 between participants groups but presentation of outputs from the random source was given in a different way for each group(2 x blocks of length 100, 20 x blocks of length 10, 40 x blocks of length 5).

**Folder 7: Random Generation Experiment**

In this experiment we are probing the Hahn & Warren (2009) account of randomness perception and assessing the extent to which generation and judgement of random sequences depends upon recent experience.

Data are provided from participants generating 30 x 20 blocks of binary digits (600 in total) after being exposed to 30 x 20 outputs of either an unbiased or biased random source. Biases in the exposure phase are detailed in the readme file.

**For detailed information on experimental design and analysis for each of the experiments see the Experiments Guide document.**