A 'task' for the Experimental session on Tuesday the 29th of March 2022

In the 22nd of March lecture, I proposed the following task:

"Suppose you wanted to design (and later) implement an experiment to *explore the effect different sources of information have on* **beliefs** *and* **decisions**. You might like to choose a particular context, for example: Covid vaccination; the war in Ukraine; the validity of the last US presidential election, and so on. The different sources are, in the first instance (though you could add to them):

- Official government information.
- Information from friends or from self-reflection.
- Information from social media.

You will have to think how you might observe the two key variables, *beliefs and decisions*. How will you provide an incentive for honest reporting?"

In the lecture, the students came up with an experiment that had potential, and so did Ellam. Subsequent to the lecture, I asked them to write up a description of their proposed experiment, but I have not heard from them since. This is a pity, as I would like to discuss how to develop their ideas further. Instead, I would like the students attending the 29th March lecture to discuss the following possible experiment: to discuss whether it might achieve the above objectives and what problems it might have.

Proposed Experiment

This will be in two parts:

Part 1: to elicit the risk preferences of the subjects, and estimate their (individual) risk-aversion parameter. This would be done using one of the many experimental techniques for eliciting risk-aversion (pairwise choice, Holt-Laury price lists, allocation problems, the Becker-Degroot-Marschak method and so on).

Part 2: In this, subjects would be presented with a decision problem consisting of a number of periods. In each period, they would be endowed with some income, denoted by Y, and be subject to a random loss of income. For simplicity, this random loss would be actually either zero with probability $1-q$ or some amount L with probability q, and they would be told this. If the loss occurs, then, without insurance, the loss would be taken out of their income, and so they would end a period with either Y or $Y-L$. (This is important, as what they would be paid at the end of the experiment is their net income in a randomly chosen period). However, they can take out insurance against the loss. This would cost p for each item of insurance purchased. If they bought L units, they would be completely covered, and so whether the loss occurred or not, they would end the period with a net income of $Y-p*L$. If they only bought l $(<L)$ units of insurance, then only part of the loss would be covered, and so they would end the period with either $Y-l*p-(L-l)$ or $Y-l*p.$ Each period they will be asked how many units of insurance they want to buy. Clearly, this decision will depend upon the price of insurance, p, the individual subject's risk-aversion (which we have elicited in Part 1) and their perception of the probability of the loss happening. Each period we will 'play out' the loss and they will get a net income for that period.

We are going to tell them the true probability; this is 'official information'.

In addition, at the end of every period they will know whether the loss occurred or not; this is private information, and they might use this to revise their perception of the probability of the loss happening.

In addition, perhaps just in some treatments, we will tell them the decisions of the other subjects in the previous period; this is sort of 'social media' information.

We can therefore track their perception of the probability of the loss happening as they go through the periods, and to see what influences it.