**Protocol**

*Participation*

Participants are recruited online and participate synchronously via an otree application (Chen et al., 2016) mounted on a web server.

*Experimental game*

Multiple players take part simultaneously in a session. Each round, groups of 4 are formed randomly (with different groupings every round). Players have no knowledge of the identity of the other players or whether they have interacted previously. Each round, each group member makes the simultaneous choice, without knowledge of the decisions of others, of one of the following three options.

1. *Work alone*. The player works alone and neither gains nor loses energy points.
2. *Cooperate*. All players choosing to cooperate put in 10 energy points to a joint venture and receive 15 in return, this giving a net energy gain of 5 points. However, if anyone in the group chooses to steal and does so successfully (see below), the cooperators do not receive their 15 energy points return. In this case, they have an energy loss of 10 points. If only one member of the group chooses to cooperate and all others work alone, the player who wished to cooperate is also mandated to work alone.
3. *Steal*. If a player chooses to steal, then there are two probabilistic outcomes. The player may succeed, in which case they gain 20 energy points. However, they may be caught and punished, in which case they lose 40. The default probabilities of success and failure for stealing are 1/3 and 2/3 respectively. If one player chooses to steal and the rest choose to work alone, the player who wished to steal is also mandated to work alone.

In addition to the payoffs of the actions, in each round there is a small random fluctuation in energy levels (drawn from a Normal distribution with mean 0 and standard deviation of 3, truncated at -5 and 5).

Participants do not know the energy level of other players, but have access to their own energy level at all times. After the decisions in each round, participants are shown the frequencies of the different choices in the group.

*Payoffs*

Participants earn cash for the energy points level at which they finish the session, at a rate of 3 pence per point. However, for every round of the game that they spend with an energy level of less than 100 points, their eventual earnings are slashed from what they would otherwise be by 50 pence, down to a potential earnings of zero. Participants thus have strong incentive not to fall below the threshold of 100 points, and to regain it immediately should they do so. The number of rounds is unknown to the participants, and drawn from a uniform distribution between 8 and 16.

For Benoit:

Can we show the stochastic change separately each round, as well as the result of the game?

Can we track and show the number of rounds below the threshold? Or the amount of money the participant would get if the game ended now?

Measure trust

*Study 1*

Set up game and study the basic frequencies of behaviour; say, with some people close to threshold and some well above it. how do decisions depend on energy points; how do they depend on experience of what others have done;

*Study 2 –* Effect of inequality, two starting distributions with same mean and different sigma

*Study 3* – Punishment severity versus punishment probability. Should we tell them what the probability of success of stealing is? YES