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All equals in front of inequalities?

Using Strategy Method to observe individuals' reactions in front of inequalities.

(First Draft¹)

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Mutual comparison is a deep-rooted human behaviour. Living in a society exposes every member to a huge number of comparisons indeed every interaction with another society's member constitutes a source for comparison. Comparing two situations can reveal inequalities and drive necessarily to a status or to a hierarchy: being the well-off if I get more than my opponent (e.g. my neighbour) or on the contrary being the worst-off if I get less than my opponent. A comparison between two individuals is expected to trigger a specific action which depends on the status resulting from this comparison. Indeed, there are some people who only care about their own position and payoff (selfish persons) whereas some individuals are careful about the difference between their situation and the situation of the others (target afterwards), i.e. they do not want to increase or to decrease the existing gap. Not increasing the gap may follow two distinct paths. On the one hand, a subject can wish to invest or to make costly efforts in order to reach the desired and targeted position. On the other hand, a person can be willing to invest in order to reduce the position of the target, even by incurring a cost. While the final result may seem identical, i.e. reduction of the gap, the implications are

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very different. In the first case, the difference between an individual and his target enhanced individuals to realise constructive efforts which are required to reach the targeted position. In the second case, the action consists in destroying one's efforts to achieve a specific position.

How do people face inequalities? In other words, how do people react against an economic inequality? Can the inequality be a source of emulation, i.e. inducing the individual to make additional and positive efforts which will increase his/her own situation in order to reduce the inequality (i.e. the difference between his/her situation and the other's situation) or on the contrary can the inequality be a source of negative will, i.e. inducing the individual to realise negative efforts in order to reduce the gap by destroying the other's situation? Do people exhibit higher efforts (positive or negative) when the difference is at their advantage or at their disadvantage? Do they care about the difference between their situation and other's situation? Does the absolute difference between one's situation and other's situations exert an influence on individuals' reactions? In other words, do people react differently when the absolute difference is lower than in the case in which the absolute difference is higher? On the contrary, does the relative difference exert a stronger influence on individual behaviour?

We aim at identifying the individuals' reactions to inequalities, measuring the intensity of (re)actions and the influence of both absolute and relative difference between two subject's payoffs, on the individual behaviour. We elaborate an experimental protocol and we use the *Strategy Method* (Selten, 1967) in order to identify the different forms of (re)actions of people facing a specific economic inequality and to measure their intensity. We are also able to investigate the role and impact of the absolute difference on decision making process. Using *Strategy Method* we can observe the strategies used by subjects facing different inequalities and their best reply functions.

Relying on previous studies of philosophy, we hypothesize that subjects are more likely to take into account the difference between their situation and the other's situation when the existing gap is low⁴. On the contrary, when the gap between two situations is high, subjects are expected to behave in a selfish way, i.e. maximising their own situation without any regard on the other's situation (e.g. as a PhD student I will not take into account the difference

⁴ To illustrate our hypothesis we can quote John Rawls who argues that “*we tend to compare our circumstances with others in the same or in a similar group as ourselves, or in positions that we regards as relevant to our aspirations.*” (J. Rawls, *A Theory of Justice*, 1971, revised edition, Cambridge, Mass., The Belknap Press of Harvard University Press).

(of merit) between my own situation and my PhD advisor's situation, because the gap is too high).

All subjects receive an initial capita. We use four different treatments; the difference between treatments lies in the absolute difference between players' endowments. In the first treatment, the absolute difference between both players is very low and then the absolute difference increases. In all treatments, the relative difference is kept constant; the well-off player receiving an endowment which corresponds to twice the worst-off player's endowment. In the fourth and last treatment, both players receive the same endowment⁵.

In all treatments, subjects receive information about their own endowment (conditional on the treatment) and about the endowment received by the other member of the pair (opponent afterwards). Then they must choose a specific action among three different actions denoted A, B and C. The first action (labelled action A) consists in investing part of an initial capita in order to decrease the opponent's final payoff. This action is representative of the negative and destructive side of people, the will to destroy one's effort or one's situation in order to decrease the existing gap. Choosing this first action, an individual shows that he is not indifferent to the absolute difference between his/her own endowment and the endowment of his/her opponent. On the contrary, when choosing action B, the subject must decide to invest part of his/her initial capita in order to increase his/her own payoff. Whereas the previous action embodied the negative side of people, this action represents the constructive and positive side of people who care about any existing gap. Choosing this action is a signal sent by the individual indicating that he takes into consideration the gap between his/her endowment and the endowment of the opponent and that he wants to make efforts in order to stand out from the crowd and to achieve a more enjoyable position. In other words; individuals who chose either action A or B take into account the existing difference (although this difference is positive or negative, high or low) in his/her decision making process. The last action (action C) allows the player to win the highest payoff but choosing that action increases the opponent's payoff and as a consequence the present gap.

From first results, we observe that individuals are strongly concerned about the absolute difference between their position and the position of the target individual. Negative actions

⁵ Obviously in this last treatment the relative difference is different and equal to 1.

are very intense (concerning negative actions, subjects chose to invest 82.5% of their initial capita) and only taken by individuals in the worst-off position when the absolute difference is high. By contrast when the absolute difference is low, worst-off players are more likely to choose the last action in order to increase their own payoff; the gap consideration seems to be less important. On the contrary in the same situation, i.e. when the absolute difference is low, well-off individuals act in more selfish way, in other words they maximise their own payoff without decreasing the existing gap and exhibit more intense positive actions (concerning positive actions they chose to invest 86% of their initial capita). Results are different when both players receive the same endowment. Actually players in a situation of equality are more likely to increase their own payoff, the consideration of the existing gap seems to be secondary. Nevertheless players in equal situations exhibit the more intense positive actions (players chose to invest 93.3% of their initial capita in action B).

The absolute difference seems to play a significant role in decision making process, exerting people to take actions in order to reduce the existing gap. Although the Inequity Aversion model (Fehr & Schmidt, 1999) seems to give accurate predictions of the behaviour of well-off individuals, it fails at predicting the worst-off individuals' behaviour. More treatments still need to be done in order to test the impact of the relative difference on decision making process (using the Equity, Reciprocity and Competition's model developed by Bolton & Ockenfels, 2000).