

DOUBLE ASYMMETRY OF RECIPROCITY IN HUMANS: A BEHAVIORAL AND NEUROBIOLOGICAL STUDY

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Reciprocity is a key regularity in human social behavior. People tend to respond to (un)kind behavior with (un)kindness. However, there seems to exist some “asymmetry” in reciprocal exchange. People exhibit “greater” sensitivity to unkind than to equivalent kind behavior. Losses weigh heavier than gains (Kahneman & Tversky, 1979) and responses to losses are stronger than responses to gains. Since perceived gains and losses are likely to be influenced by expectations the relevant reference point is endogenously constructed via beliefs. To account for this, we measured beliefs about expected gains/losses where subjects in a brain scanner received money transfers from others and then could reciprocate with sanctioning or rewarding them. The behavioral data show symmetric responses to positive and negative transfers. However, when taking expectations into account we observed clearly asymmetric responses towards perceived gains/losses. Although higher perceived gains are not rewarded more, higher perceived losses are more heavily punished. The neuro-imaging data supports this finding and suggests more elaborate insights. The subjects' brain activity showed higher sensitivity to the negative context (in contrast to their expectation) than the positive one. Moreover, when the subjects received a very negative offer, the pain network in the brain was activated. Contrary, when the subjects faced a very positive offer, they process it positively as a reward. Both behavioral and neuro-imaging results confirmed that humans seem to evaluate perceived unfair offers stronger than fair offers. We believe that our finding will shed light on our understanding of evolutionary origins of human sociality.

Keywords: reciprocity, loss aversion, trust game, neuroeconomics