Abstract

Social discounting has been attracting attention in behavioral psychology, econophysics and neuroeconomics. Several models have been proposed for social discounting; an exponential discounting model, a hyperbolic discounting model, a q-exponential discounting model based on Tsallis' statistics. In order to examine the fitness of the models to behavioral data of social discounting of gain and loss, we estimated the parameters and AIC (Akaike Information Criterion) of the social discounting models by assessing the points of subjective equality (indifference points) at seven social distances. Our results demonstrated that, for social discounting of gain and loss, the orders of the goodness-of-fit were [q-exponential discounting> Exponential discounting> Hyperbolic discounting] and [Exponential discounting> q-exponential discounting> hyperbolic discounting], respectively. Furthermore, gain was more steeply socially-discounted than loss, and "hyper-generosity" was observed for both gain and loss. Indications of the results for social physics, econophysics, and cultural neuroeconomics are discussed.

Keywords: Social discounting, Altruism, Neuroeconomics, Econophysics, Social physics; Tsallis' statistics