

Supplementary Material: Evolution of Cooperation with Peer Punishment under Prospect Theory

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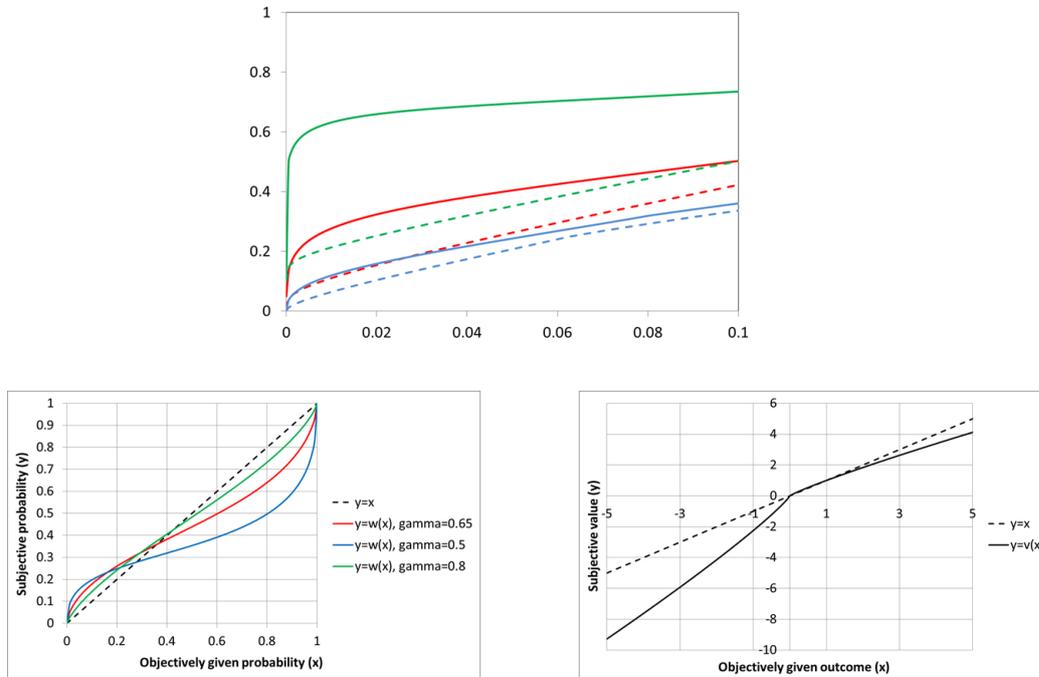


Figure S1. Different domains in the parameter space $(\epsilon, \frac{s}{s_{max}})$ for prospect theory (the upper panel) and the used weighted function and value function (the left-lower panel and the right lower panel). The parameter γ is varied from 0.5 to 0.8 with α and λ fixed (at 0.88 and 2.25 respectively). The blue curves correspond to $\gamma = 0.5$, red curves to $\gamma = 0.65$ and green curves to $\gamma = 0.8$. The solid curves in the upper panel are obtained by numerically solving the equation $H_{24} = H_{44}$ and the dashed curves by $H_{22} = H_{42}$. See Figure 3 in the main text for how to read the figure.

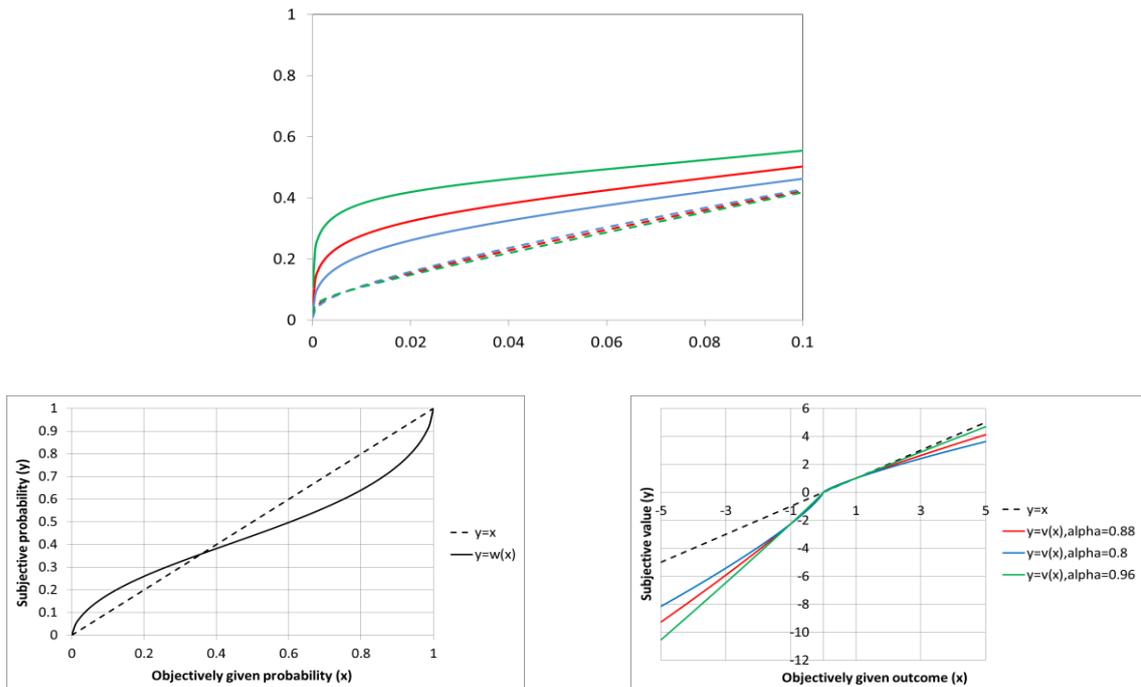


Figure S2. Different domains in the parameter space $(\varepsilon, \frac{s}{s_{max}})$ for prospect theory (the upper panel) and the used weighted function and value function (the left-lower panel and the right lower panel). The parameter α is varied from 0.8 to 0.96 with γ and λ fixed (at 0.65 and 2.25 respectively). The blue curves correspond to $\alpha = 0.8$, red curves to $\alpha = 0.88$ and green curves to $\alpha = 0.96$. The solid curves in the upper panel are obtained by numerically solving the equation $H_{24} = H_{44}$ and the dashed curves by $H_{22} = H_{42}$. See Figure 3 in the main text for how to read the figure.

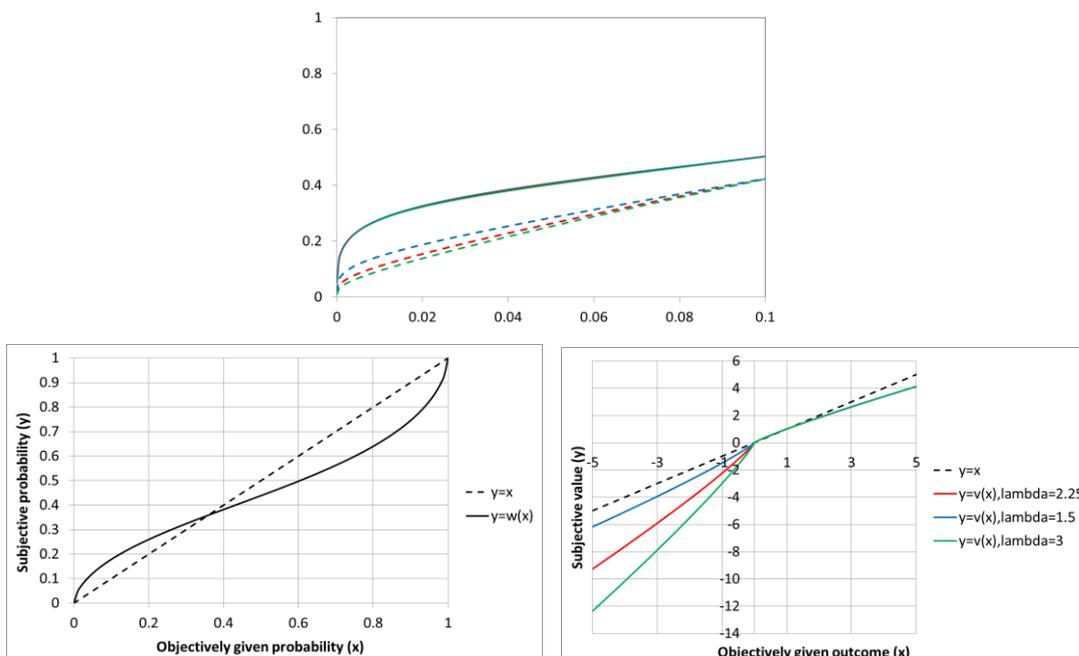


Figure S3. Different domains in the parameter space $(\varepsilon, \frac{s}{s_{max}})$ for prospect theory (the upper panel) and the used weighted function and value function (the left-lower panel and the right lower panel). The parameter λ is varied from 1.5 to 3.0 with γ and α fixed (at 0.65 and 0.88 respectively). The blue curves correspond to $\lambda = 1.5$, red curves to $\lambda = 2.25$ and green curves to $\lambda = 3.0$. The solid curves in the upper panel are obtained by numerically solving the equation $H_{24} = H_{44}$ and the dashed curves by $H_{22} = H_{42}$. See Figure 3 in the main text for how to read the figure.