

# The Social Discount Rate: An Evolutionary Approach

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Martin Sewell

mvs25@cam.ac.uk

University of Cambridge

## **Abstract**

If we wish to perform a cost-benefit analysis on a future public sector project, such as climate change mitigation, we must choose a discount rate that reflects society's preference for present benefits over future benefits. But how should one determine the social discount rate? Thus far, philosophy and economics have failed to come up with any consensus, so this paper takes a bottom-up evolutionary approach. Although humans are simply vehicles that have evolved as if to help ensure that their genes survive in perpetuity, all that is required of individuals is that they are motivated to reproduce, so we seek to maximize gene replication within our lifetime, but not beyond. During a lifetime, generally the risk that a reward will not be available decreases as one approaches the time that the reward is expected, which leads to a hyperbolic discount function. This account is descriptive, but as we cannot transcend our genes, a prescriptive social discount rate must accommodate our motivational set, so optimally coincides. An individual's discount function is hyperbolic and reaches 100% at the end of their lifetime. An equitable social discount function should average the population's individual discount functions. Such prescriptive myopic behaviour is consistent with both reality and the human race prospering in perpetuity.