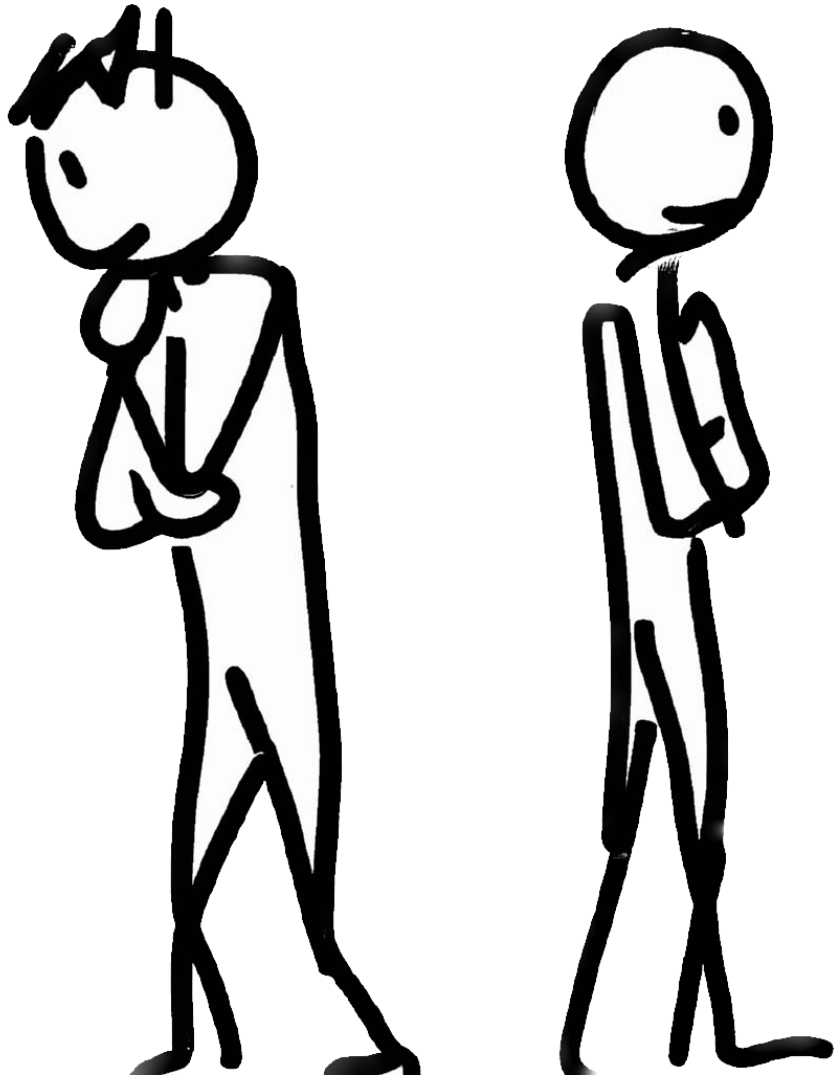
Present bias

Notes on Behavioural Economics

Jason Collins



The $\beta\delta$ model

β: Short term discount factor

δ: Usual discount factor

The $\beta\delta$ model

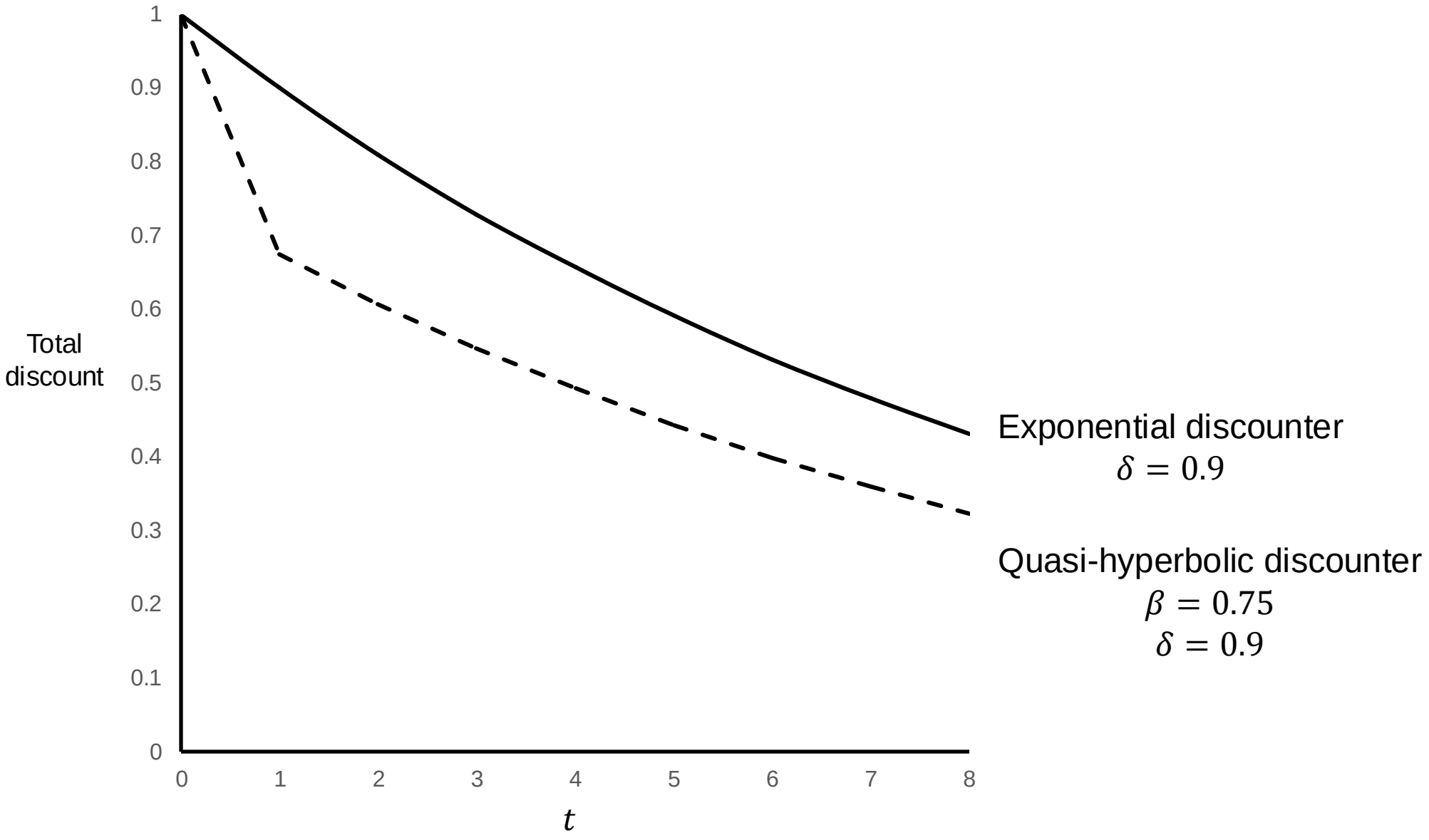
$$U_0 = u(x_0) + \beta\delta u(x_1) + \beta\delta^2 u(x_2) + \beta\delta^3 u(x_3) \ \ldots + \beta\delta^T u(x_T)$$

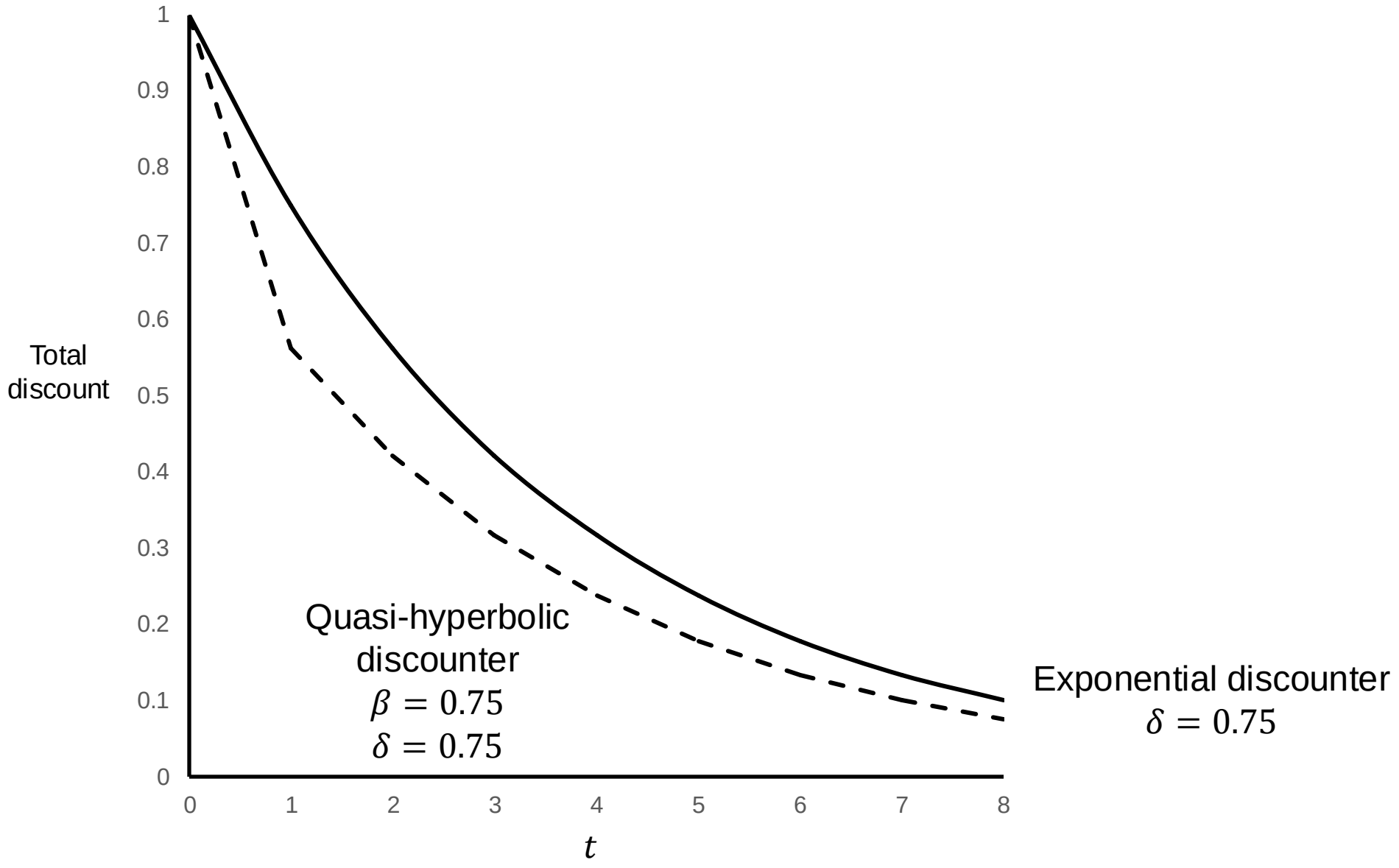
$$= u(x_0) + \beta \sum_{t=1}^{t=T} \delta^t u(x_t)$$

$$0 \leq \delta \leq 1 \qquad 0 \leq \beta \leq 1$$

The $\beta\delta$ model

$1, \beta\delta, \beta\delta^2, \beta\delta^3, \beta\delta^4, \ldots$


1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Total discount
0
1
2
3
4
5
6
7
8
t
Exponential discounter
$\delta = 0.9$
Quasi-hyperbolic discounter
$\beta = 0.75$
$\delta = 0.9$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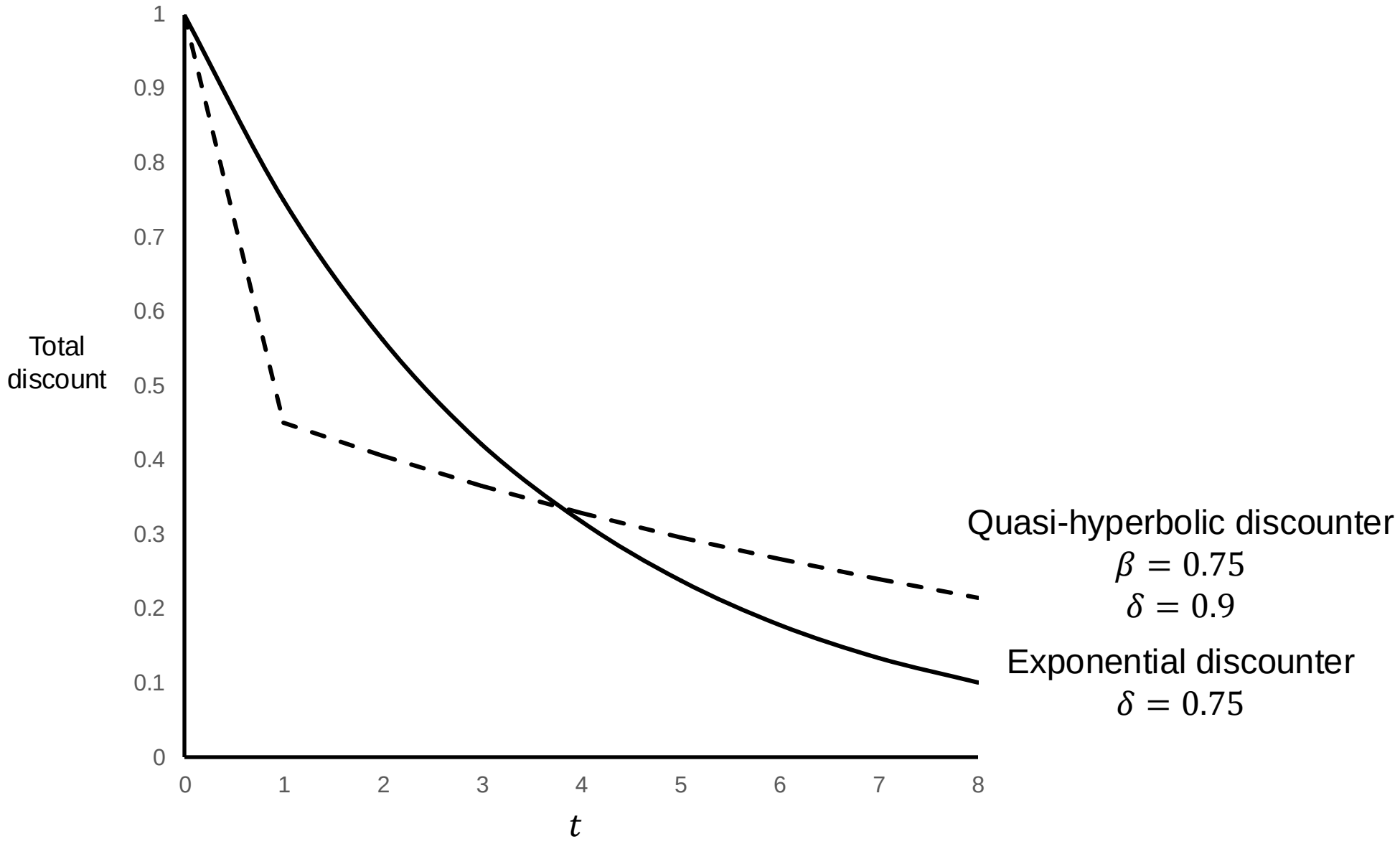
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- Time−consistency
- Consumption independence
- Stationary preferences
- Utility Independence

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