

Hyperbolic discounting example:

A student, on day $t=1$, faces the following choice, study (S) on day $t=2$ for a test on day $t=3$ or not study (NS). The choice set is therefore : $\{S,NS\}$.

The student has the following preferences:

$$U_t = C_t + \beta \sum_{i=t+1}^T C_i \delta^{(i-t)}$$

Assume that $\beta = .5$, $\delta = 0$ (this is just for simplicity) and that the values of consumption, C , are :

	t=2	t=3
S	$C_2^S = -5$	$C_3^S = -5$
NS	$C_2^{NS} = 0$	$C_3^{NS} = -14$

ON day t=1 :

	Utility
S	$U_1 = \beta(C_2^S + C_3^S) = .5(-5 + -5) = -5$
NS	$U_1 = \beta(C_2^{NS} + C_3^{NS}) = .5(0 + -14) = -7$

The student, ON DAY $t=1$, chooses to study on day $t=2$.

ON day t=2 :

	Utility
S	$U_2 = C_2^S + \beta(C_3^S) = -.5 + .5(-5) = -7.5$
NS	$U_2 = C_2^{NS} + \beta(C_3^{NS}) = 0 + .5(-14) = -7$

The student, ON DAY $t=2$, chooses NOT to study on day $t=2$.

The student fails to follow his $t=1$ preferences on day $t=2$: his preferences are time inconsistent.

MIT OpenCourseWare
<http://ocw.mit.edu>

14.41 Public Finance and Public Policy
Fall 2010

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.