

**EXAMPLE 2.** Choice is between

- \$100 in 12 months or
- \$160 in 16 months

$$u_t(\$x) = \sqrt{x}, \text{ for all } t \text{ and } \delta = 0.95$$

**(A) Exponential discounter:**

$$U_0(\$100,12) =$$

$$U_0(\$160,16) =$$

so that

$$U_{12}(\$100,12) =$$

$$U_{12}(\$160,16) =$$

so that

**(B) Hyperbolic discounter with  $\beta = 0.8$**

$$U_0(\$100,12) =$$

$$U_0(\$160,16) =$$

so that

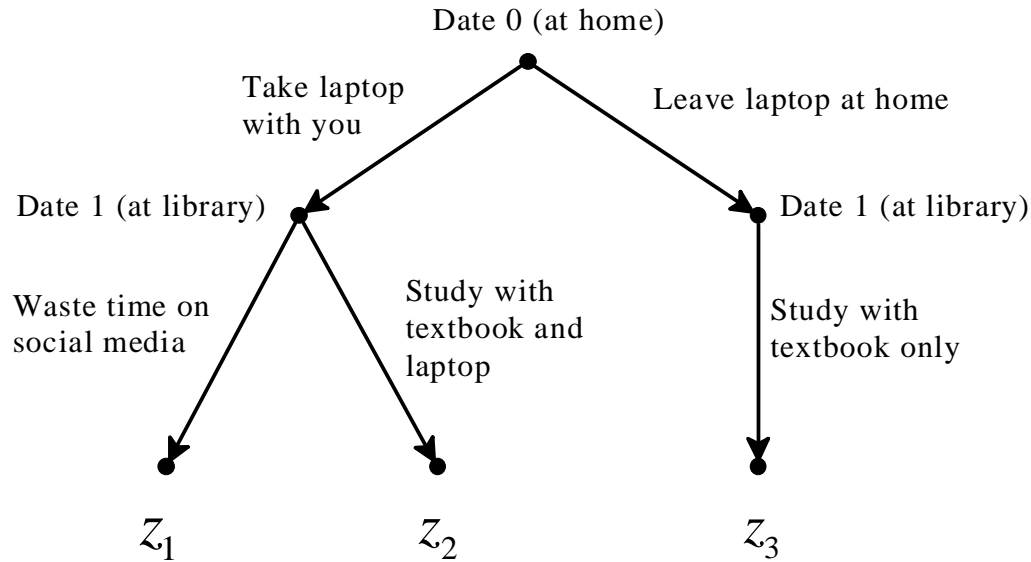
$$U_{12}(\$100,12) =$$

$$U_{12}(\$160,16) =$$

so that

# Dealing with time inconsistency

**EXAMPLE 1.** You have a final tomorrow. You are going to the library to study.



*Utility:*

best

Your ranking at Date 0 is:

worst

*Utility:*

best

You realize that your ranking at Date 1 will be:

worst

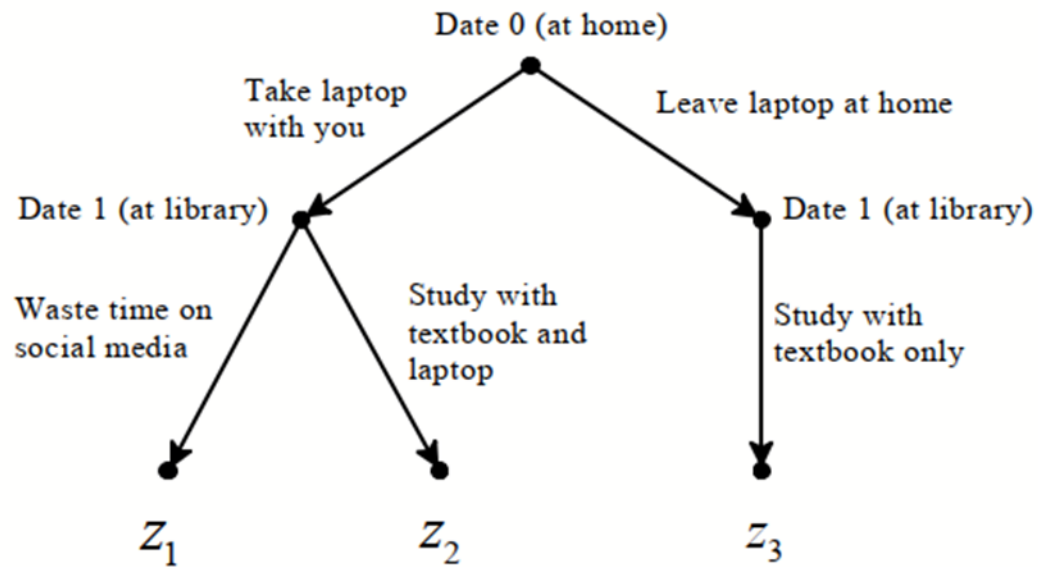
*Utility:*

best

Your ranking at Date 0 is:

worst

**IF you can commit:**



## HOW CAN YOU COMMIT?



# SelfControl

A free Mac application to help you avoid distracting websites.

[View code on GitHub](#) [Download SelfControl](#)

SelfControl is a free and open-source application for Mac OS X (10.5 or above) that lets you block **your own** access to distracting websites, your mail servers, or anything else on the Internet. Just set a period of time to block for, add sites to your blacklist, and click "Start." Until that timer expires, you will be unable to access those sites--even if you restart your computer or delete the application.

Once started, **it cannot be undone by the application**, by deleting the application, or by restarting the computer – you must wait for the timer to run out.

### [Concentrate](#)

When I activate “Writing,” the app automatically closes my email client and Internet Browser; blocks me from Twitter, Facebook, and YouTube; launches Microsoft Word; and sets my instant messaging status to “away”. *For Macs only.*

### [FocusWriter](#)

FocusWriter re-creates a word processor-like environment, blocking out absolutely everything on your screen except for the words you type on a simple grey background – all menus (date, timer, dock, etc) are tucked away until rollover. *For Macs and PCs.*

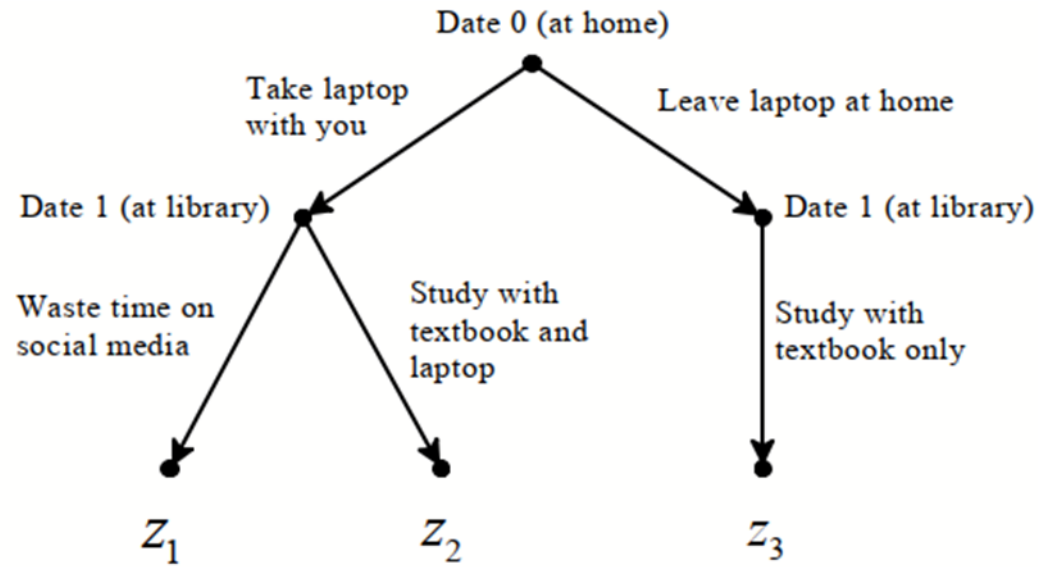
## [Anti-Social](#)

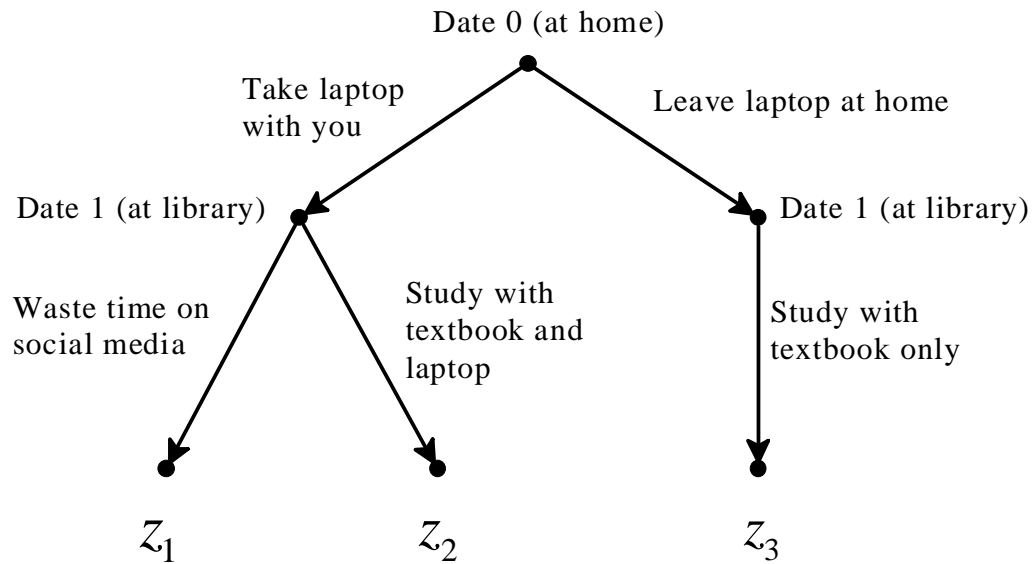
Rather than blocking the Internet in its entirety, Anti-Social automatically blocks all of the known time-sinks for a set period of time. Sites that are off-limits include Twitter, Facebook, Flickr, Digg, Reddit, YouTube, Hulu, Vimeo, and all standard web email programs. *For Macs and PCs.*

## [StayFocusd](#)

This extension, for users of Google's Chrome browser, works in the reverse manner to Anti-Social or Self-Control. Rather than setting a period of time for which you CANNOT use the Internet, it allows you to set a period of time to indulge in time-wasting sites. Only want to give yourself 60 minutes a day for Twitter, vanity Googling, and updating your Netflix queue? This is your app. Rather like when you were a kid and only allowed to watch 2 hours of TV a day. For Firefox users, [LeechBlock](#) performs a similar function. *For Macs and PCs.*

## What is commitment? Elimination of options:





*Utility:*

best

Your ranking at Date 0 is:

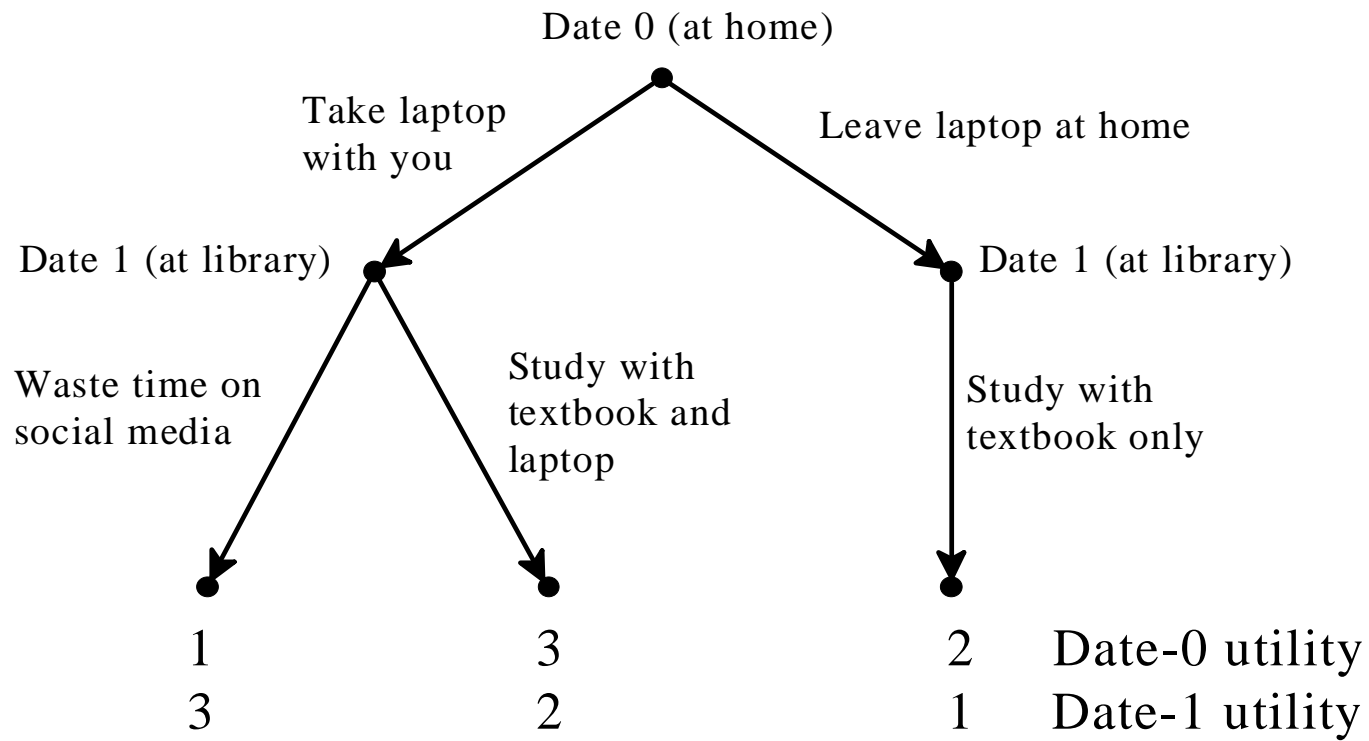
worst

*Utility:*

best

You realize that your ranking at Date 1 will be:

worst





## EXAMPLE 2.

You have promised to help a friend paint her house (activity  $x$ ) either this weekend (Date 1) or the next (Date 2) or the following one (Date 3). The instantaneous utility of  $x$  is the same at every date:  $u_t(x) = 1$ , for every  $t = 1, 2, 3$ . You are also a member of the snowboarding club which has trips planned for all three weekends. Call  $y$  the activity of joining the trip and suppose that

$$u_1(y) = 6 \qquad u_2(y) = 8 \qquad u_3(y) = 12$$

So you have three possible plans:

Choice	First weekend (Date 1)	Second weekend (Date 2)	Third weekend (Date 3)
A	$x$	$y$	$y$
B	$y$	$x$	$y$
C	$y$	$y$	$x$

Replacing outcomes with instantaneous utilities:

Choice	First weekend (Date 1)	Second weekend (Date 2)	Third weekend (Date 3)
A			
B			
C			

Choice	First weekend (Date 1)	Second weekend (Date 2)	Third weekend (Date 3)
A	1	8	12
B	6	1	12
C	6	8	1

Suppose that your preferences are represented by the hyperbolic utility model with discount factor  $\delta = 0.85$  and present-bias parameter  $\beta = 0.7$ .

$$U_1(A) =$$

$$U_1(B) =$$

$$U_1(C) =$$

So your ranking at Date 1 is:

However, if you know your own preferences you know that

$$U_2(B) =$$

$$U_2(C) =$$

So that you understand that your ranking at Date 2 will be:

