What Every Advisor Needs to Know About Hyperbolic Discounting and Why

by Dr. Vicki Bogan

Two fundamental assumptions of investment theory are: 1) People are comfortable and capable enough with mathematics to figure out how much to save and invest, and 2) People have enough willpower to implement the relevant financial plan. Yet, you know as a financial advisor that neither assumption holds true most of the time. Most of your clients likely say they should be saving more, and they will tell you they plan to do so, but a large number probably never follow through. The question is: "Why?"

The short answer is they are not being fully rational. The longer answer is that they are doing what economists call "hyperbolic discounting." Hyperbolic discounting occurs when someone puts too much weight on the present when making decisions about their money. It happens every day. Most hyperbolic discounters make savings mistakes and exhibit self-control issues with their money when choices, and their consequences, are separated in time. Economists call this having "time-inconsistent preferences," and these preferences can cause someone to make savings, investment, and consumption choices that they regret in the long run. You likely have several clients in this camp. Let's take a minute to learn about time-inconsistent preferences and hyperbolic discounting.

Most financial models assume that all people are exponential discounters (and rational). That means, given two equal payouts, most individuals prefer one that arrives sooner rather than later. People discount the value of a later payout by a factor that increases as time passes – exponential discounting. However, numerous studies have demonstrated that the constant discount rate assumption in exponential discounting is not what people actually do when making financial decisions.

With hyperbolic discounting, a person's valuations drop sharply for short delay periods and then drop more gradually for longer delay periods. So for short delays, the value of future payouts is much lower under hyperbolic discounting than under exponential discounting. As a result, hyperbolic discounters have a tendency to make choices that are inconsistent over time. They make choices today that, in the future, they will wish they had not.

An example: Suppose someone were to offer you the choice between receiving \$750 right now or \$1000 tomorrow. \$1000 tomorrow would seem to be the obvious choice.

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However, as the time delay between the \$750 payout and the \$1000 payout increases, the value of the extra \$250 rapidly declines for most people. When given a choice between \$750 today or \$1000 one year from now, the majority of people (exponential and hyperbolic discounters) would take the \$750 now. However, for hyperbolic discounters the devaluing effect diminishes over time. For example, most hyperbolic discounters who would select \$750 today over \$1000 a year from now, would choose to take \$1000 in 10 years over \$750 in nine years (even though the amount of time to wait for the extra \$250 is the same—one year). That means, over time, the pattern of choices (preferences) follows a hyperbola.



Each client has their own valuation system for money now versus money later, and you will need to talk with them about various scenarios to determine their level of hyperbolic discounting tendencies. No matter how good a financial advisor you are, you will not be able to change people who are hyperbolic discounters, but you can help them. One way is by recommending financial commitment devices that can help a client commit to a financial decision now that they will not regret in the future. Things like direct deposit, automatic savings and investment, and automatic increases of retirement savings contributions are important tools that can help protect clients from themselves. These tools can enable your clients, who are hyperbolic discounters, benefit in the future from actions you help them take – and stick to – today.

Key Takeaways:

- 1. You are usually dealing with some form of hyperbolic discounting.
- 2. Rational and thoughtful people can be hyperbolic discounters.
- 3. Don't try to change them; rather, try to find ways to work with them.