Consider the following questions: If someone offers you $1 today or $1.10 next week, which would you pick? If they offered to give you $1 a year from today or $1.10 a year and a week from today, which would you pick?

Economists like to think that people will behave in a rational, consistent manner with their money, but that is often not the case. That has left them hypothesizing and puzzling over how such ill-formed decisions are made. Recently neurobiologists have stepped into this messy fray— and have come up with a rather simple theory that appears to explain a common inconsistency.

In the questions above, it turns out that most people pick the dollar today rather than $1.10 in a week, but $1.10 53 weeks from now rather than $1 in 52 weeks. Economists say that is irrational because the extra ten cents is just as valuable now as in a year, so why would you reject it now but not later?

To answer that question, Jonathan Cohen from Princeton University and colleagues designed a study in which volunteers could choose between a series of rewards of varying amounts—Amazon.com coupons ranging in value from $5 to $40— depending on when they would receive them: immediately or in a couple of weeks. The key to the study was that the 14 volunteers, all students at Princeton, were lying in the magnetic resonance imaging (MRI) scanner when they received the offers and made their decisions.

Because functional MRI allows the researchers to see what parts of the brain are active during a given task, Cohen and his colleagues could see that when someone was offered immediate reward, most of the activity was in the brain's limbic system, which controls emotions. There was activity in the prefrontal cortex, a region involved in cognition, but to a lesser degree. By contrast, when they were contemplating a reward that they would receive down the road, there was less activation in the limbic system and more activity in the frontal and parietal cortices.

In other words, the possibility of an immediate reward induced an emotional decision, whereas a deferred one became a matter of logic. Although this behavior may seem irrational to economists looking at our current banking system and market, Cohen suggests that this sort of emotional pull to reap rewards immediately could have been an important adaptive trait when resources were scarce and only intermittently available, as was likely the case in a hunter-gatherer society.