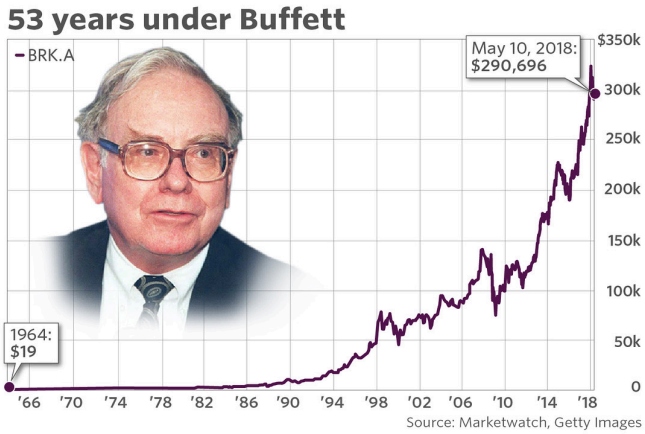
Economic Method



An investment of **$20** in Buffett's Berkshire Investment Co. in 1956 is now worth over **$300K**. Not bad. (For fun, what if you had invested **$2,000**? Hint. 300,000/19 = x15789 =**$31.5M**)

So, how did he do it?

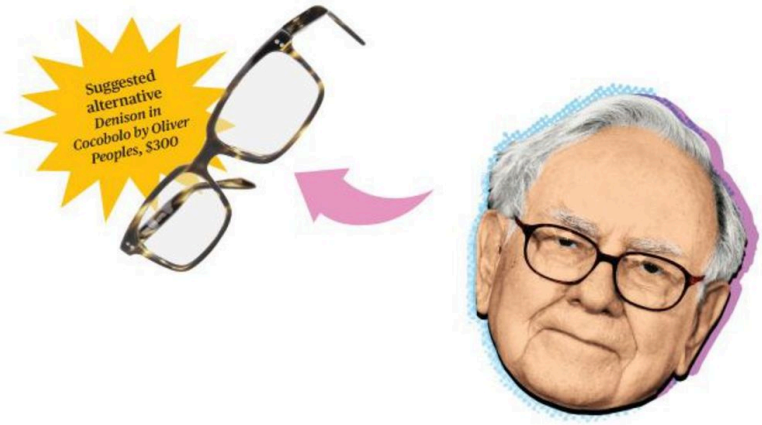
Not only does Mr. Buffett love McDonald's coffee and chocolate candies, but he also wears "special" eco eyeglasses, which enable him to make good investment **choices**. (e.g., Did **not** buy Pets.com or GE a few years ago - like I did)

The couple who left their investments to Warren Buffett

When it comes to making money, it probably helps to have a pal like Warren Buffett on hand to help you make good choices. That was the case for lucky couple Donald and Mildred Othmer, who left a massive $750 million (£583m) behind when they passed away.

The two Omaha natives just made one simple investment: they each put $25,000 into a partnership run by Buffett, which allowed them to convert it into Berkshire Hathaway stock. This $50,000 investment kept growing until they had $750 million (£583m).

Let's see why Buffett's eyeglasses are **special**. More importantly, can we get our own unique pair? (Yes - of course. Stay tuned.)



The Buffett eyeglasses are made up of "special" eco-lenses. They are a composite of the following five elements. Most professional economists and (professional) investors wear them and see the world from a unique perspective. This perspective enables them to make good **choices.**

But please be careful. You may not want to take the eyeglasses off. And some will accuse you of being cold and calculating. (But I say let them.)

Now, the five composite elements are:

Choices. With scarcity, everyone has to make choices. Why? We cannot do everything (or buy or build everything).

As discussed, we are constrained by limited resources. Hence, a choice has to be made, and it comes with an **opportunity cost:** the “next” best thing you give up.

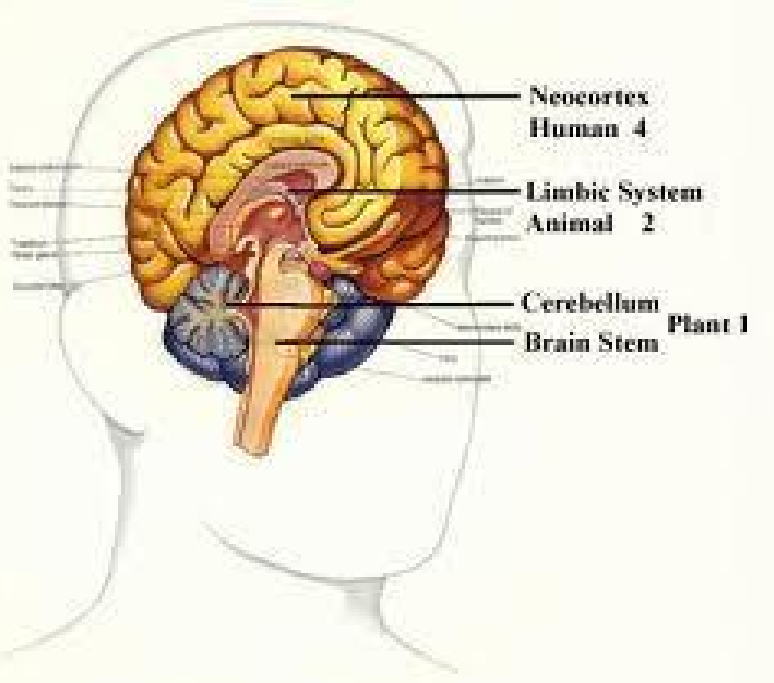
For this reason, economists believe there is no “free” lunch. There is always a cost associated with what we choose to do or not choose to do.

For this reason, economists believe that observing (actual) **choices** enables them to understand better what people (actually) prefer over their alternatives (or opportunity costs.).

And yes - talk is cheap.

Rationality. Economists assume that when we try to make "good" choices (like Mr. Buffett), then we need to make them logically or rationally (e.g., cost and benefit analysis). Mr. Franklin also recommended this approach (e.g., pros & cons).

This explains why economists tend to be less emotional when analyzing and making decisions. Economists rely more on the brain's neocortex (e.g., Excel brain) than the limbic system (e.g. emotional brain) and conduct calm and calculating **cost and benefit** analyses.



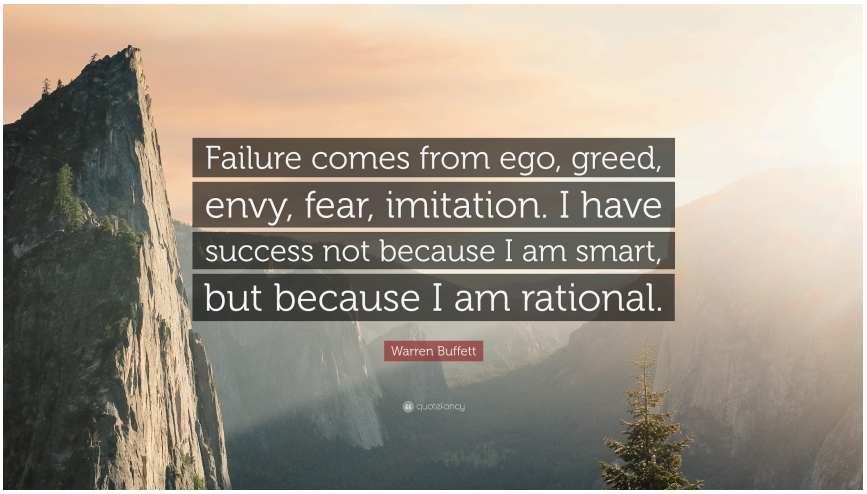
As a by-product, it is important to recognize that if rationality prevails (in decision-making), we should be able to make reliable **predictions** on how we make choices (e.g., prices go down, we buy more…).

This enables economists to build **models** that describe how our real (material) world operates.

Mr. Buffett attributed much of his investment success to making rational choices. In other words, he made good predictions about which stocks would likely perform well.

In fact, Charlie Munger, vice-chairman of Berkshire Hathaway and Buffett's intellectual partner for almost 50 years, notes that Buffett's "**brain is a superbly rational mechanism**."

Roger Lowenstein, author of *Buffett: The Making of an American Capitalist*, wrote, "Buffett's genius is largely a genius of character — of patience, discipline, and **rationality**."



That said, our cognitive framework and the process of decision-making depends in many important ways on neural substrates that regulate homeostasis, emotion and feeling.

Original article

Neural substrates of decision-making
Bases neurales de la toma de decisiones ☆

Y. Broche-Pérez [a], L.F. Herrera Jiménez [a], E. Omar-Martínez [b]

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Refers to **Bases neurales de la toma de decisiones**

Neurología, Volume 31, Issue 5, June 2016, Pages 319-325
Y. Broche-Pérez, L.F. Herrera Jiménez, E. Omar-Martínez

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Abstract

Introduction

Decision-making is the process of selecting a course of action from among 2 or more alternatives by considering the potential outcomes of selecting each option and estimating its consequences in the short, medium and long term. The prefrontal cortex (PFC) has traditionally been considered the key neural structure in the decision-making process. However, new studies support the hypothesis that describes a complex neural network including both cortical and subcortical structures.

Therefore, it is difficult for most of us to take emotion and feeling out of our decision making. Now I must tell you what happened to my dog, Sandy Sunshine, in the class. It is a sad story with a bad ending (due to my bad choice.)

Finally, shall we choose to implement Bernie's policy? (My wife adores him.) But we need to think and make choices like economists. (Reality Check)

Bernie Sanders: How much would his spending plans cost?

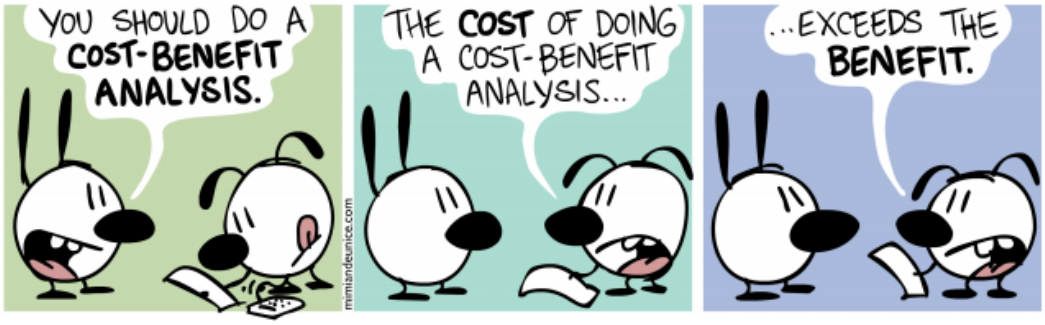
6 March 2020

Bernie Sanders' spending pledges are under scrutiny

By Reality Check team

BBC News

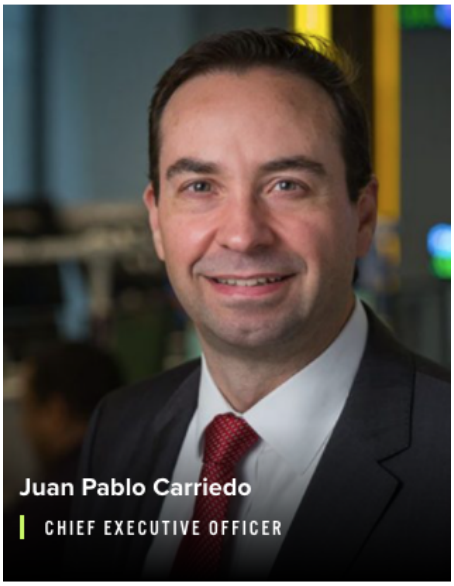
Marginal Analysis. Economists take rational decision-making, which tends to produce "good" outcomes, and turn it into a higher or more "optimal" outcome. They think "**marginally**" to optimize the decision-making process and its outcome.



Thinking marginally means examining each unit of input (cost) and assessing the incremental return or benefit associated with it.

Let's look at a real-world case study utilizing the **marginal benefit and cost analysis** to optimize a firm's investment decision. (Case Study: Monex & Tempus)

"How many salespeople are needed in the US? What is an optimal number?"



Current Openings

Data Analyst (BI)
Washington, DC Sales Operations

Digital Marketing Manager
Washington, DC Digital Marketing

FX Dealer
Los angeles, CA Trading and Dealing

IT Systems Administrator
Washington, DC IT

Product Manager
Washington, DC IT

Sales Development Representative
Washington, DC Inside Sales

Sales Operations Manager
Washington, DC Sales Operations

We are Growing! Join Us!

Bloomberg Ranks Tempus #1 Overall Accuracy Forecaster For G10 - Again!

At Tempus, we help businesses properly manage their currency needs efficiently and cost effectively- being named to this ranking reaffirms our efforts. Since 1999, Tempus has guided thousands of clients, from a broad spectrum of industry sectors, through the intricacies of global payments.

This success is attributed to our highly qualified team of professionals! We are a growing and ambitious company and seek eager team members to help us meet our growth potential.

Come join our family of tightly knit, collaborative, fun professionals! We offer great medical and dental plans, 401k matching, disability, Life, and generous PTO. We also offer a wellness program, beautiful office environment in all three of our centrally located city offices, and Friday lunches when goals are met.

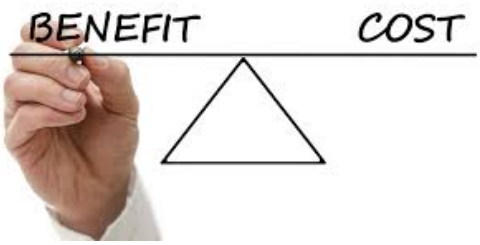
Please review our open positions and apply to the positions that match your qualifications.

Looking forward to meeting you!

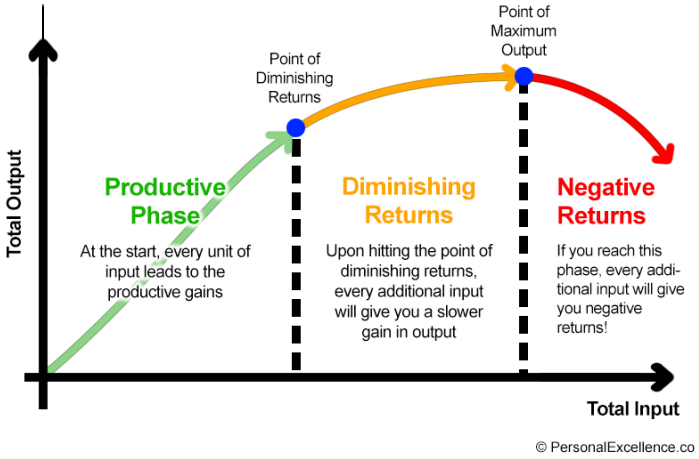
In 2018, Tempus/Monex's key question was how many sales development representatives to hire and invest in for development in the US.

Do you have any thoughts on the approach they should take? What would an economist do here?

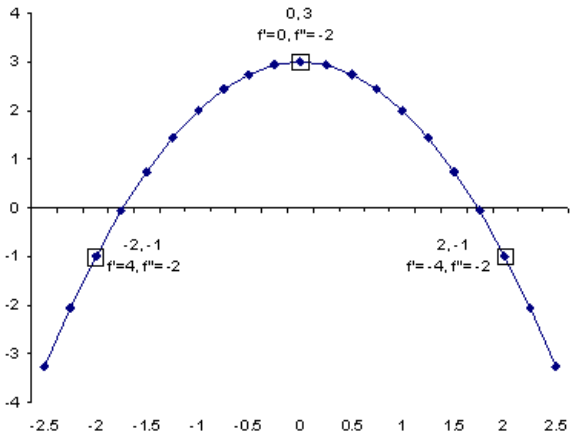
Hint? (Need to come to the class to learn what I did 🙂)



In most cases, the return on marginal inputs tends to show the effects of diminishing returns (see the graph below). Thus, the return is optimal at the top (of the hill below).



How would you know when you have reached your maximum output? (Hint: Slope = Rise/Run)



As you look at the graph from left to right along the X or input axis, you can see that the slope of the line (which represents a return) is first positive, but at a specific point on the X-axis, it turns negative.

Since this is a continuous line (or function), there is a point where the slope crosses from positive to negative. In other words, for an instant, the slope must be zero. Assuming that more of what is on the Y-axis is good, then our economic decision programming codes are:

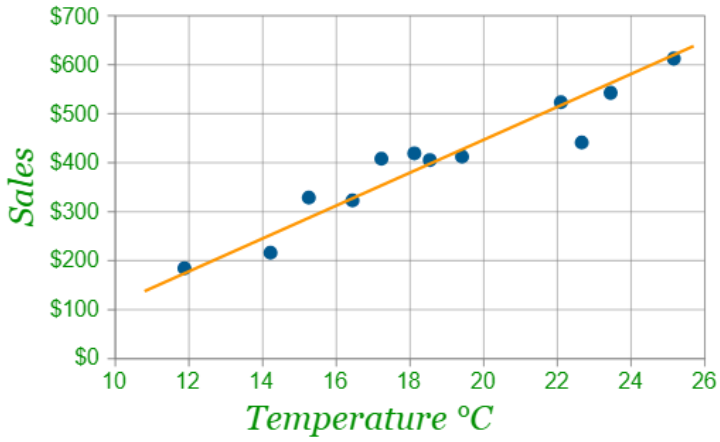
Marginal benefit > Marginal cost → Do it

Marginal benefit = Marginal cost → Stop

Marginal benefit < Marginal cost →Go back.

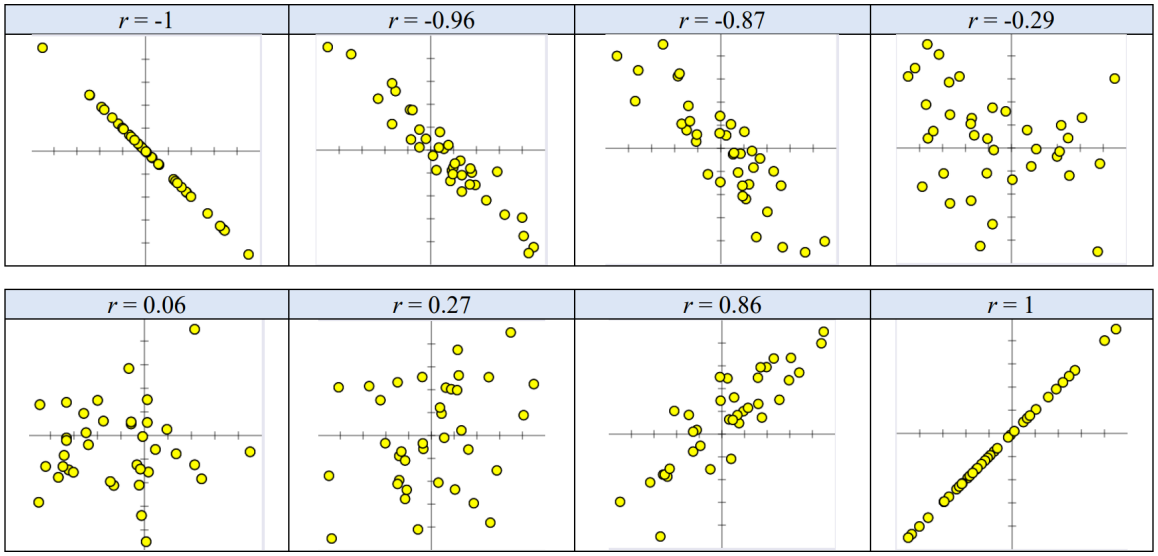
Models. Economists use models to explore their ideas about how the real world works, make **predictions,** and communicate their findings efficiently. (Of course, economists also assume rationality.)

Models help economists simplify the real world, omitting irrelevant facts and circumstances. This helps them discover and understand key underlying principles that enable them to manage complex systems, such as those found in fighters, economies, and markets.



In summary, 2-dimensional models such as the sales and temperature scatter graph above enable economists to make (hopefully reliable) forecasts or **predictions.** A scatter graph's R-square estimates its 'reliability,

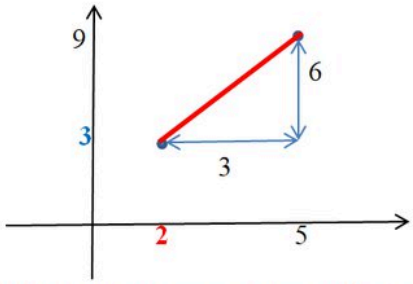
To understand how an R-square is derived, please look over this video. (This will help with the group assignment questions.)



Economists often prefer to work with scatter plots (models) to better understand cause and effect relationships and also make predictions..

They are more manageable. Since underlying mathematical relationships can represent trend lines, they can also be deduced as **mathematical** formulas (see below example.)

Just do a simple rough sketch (no formula needed!)



The gradient $m = \frac{6}{3} = 2$

So we have $y = 2x + c$

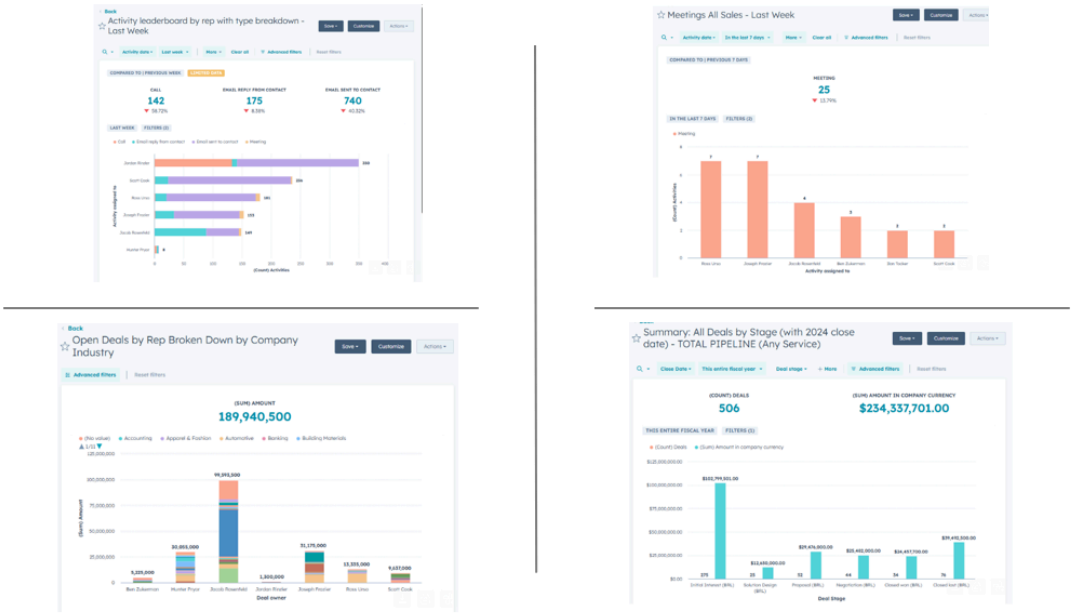
To find c just use one of the points and substitute $x = 2, y = 3$

$y = 2x + c$

$3 = 2 \times 2 + c$ so $c = -1$

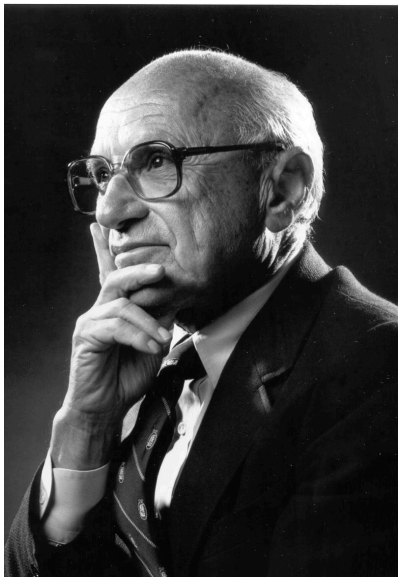
The line is $y = 2x - 1$

A simple modeling method can be utilized to help companies or systems optimize their performance or operations. (And a real world example below.)



Positive Economics. Finally, economists focus on issues or problems of *what is*, rather than *what should be.* This way, disagreements can be addressed with experimentation and data (e.g., How tall is Professor John? How would you know and confirm?)

Professor Friedman (who taught at Chicago and received a Nobel Prize) wrote:



Any policy conclusion necessarily rests on a prediction about the consequences of doing one thing rather than another, a ***prediction*** *that must be based – implicitly or explicitly - on* ***positive*** *economics.*

Two individuals may agree on the consequences of a particular piece of legislation. One may regard them as desirable on balance, and so favor the legislation; the other, as undesirable and so oppose the legislation.

*Positive economics is, in principle, independent of any particular ethical position or normative judgment. As Keynes said**, it deals with what is, not with what ought to be.***

Its task is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances.

Its performance is to be judged by the precision, scope, and conformity with the experience of the predictions it yields.

*In short, positive economics is or can be, an **"objective" science** in precisely the same sense as any of the physical sciences.*

Like the physical sciences, economics studies the underlying (sometimes hidden) **causes and effects** of our world and how it operates (e.g., force = mass × acceleration).

Is economics a pure science like physics? (What do you think?)

Professor Paul Samuelson embraced a rigorous scientific approach but (importantly) recognized that economics doesn't exist in a vacuum. Human and political factors are also important.

Crucially, he understood mathematics didn't have all the answers. They simply raised clearer questions. For more on Samuelson, check out UBS Nobel Perspectives.

Is economics a science?

Paul A. Samuelson
Nobel Laureate, 1970

Finally, let's return to our discussion of economic method and choice.

Vanessa Bohns, professor of organizational behavior at Cornell, explains that "adults make between **33,000** and **35,000** decisions a day—about everything from what we say to what we eat."

“And because it’s impossible to weigh our options for each and every one of us, we take shortcuts by making many of these choices subconsciously or deferring to precedent.”

Ray Dalio, the founder of Bridgewater, which is one of the most successful hedge funds in the world, believes that “*life consists of an **enormous number of choices** that come at us and that each decision we make has consequences, **so the quality of our lives depends on the quality of the decisions we make.”***

“We aren’t born with the ability to make good decisions; we learn it.[26] *We all start off as children with others, typically parents, directing us. But, as we get older, we increasingly make our own choices.”* (So awesome). Check out Dailo’s Principles.

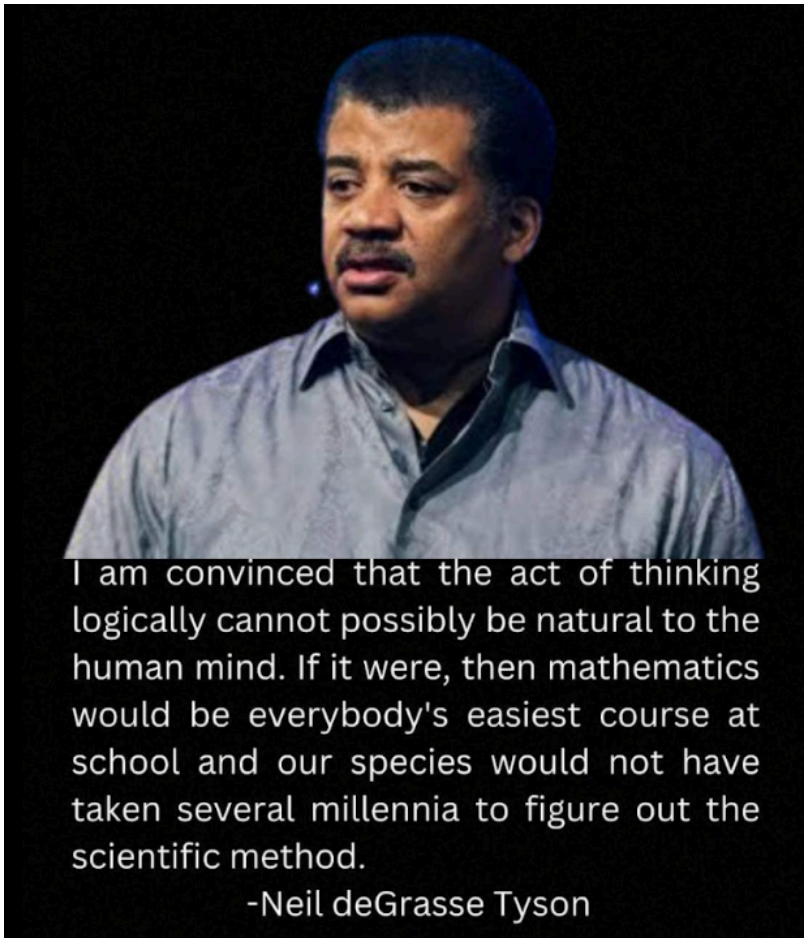
Mark Spitznagel, Founder and Chief Investment Officer of the hedge fund Universa Investments, said, ***"It is a mathematical fact: it (decision) stays with you forever.***

That's the nature of this most powerful and destructive ***multiplicative compounding****, where each subsequent return is multiplied by the next - and the unfortunate commutative property of multiplication*."

"***It reverberates like ripples on the water and for eternity****."*

Finally, please be careful with your choices, including getting married. (There are 17 behavioral biases (or tendencies) you need to identify and overcome to become more rational or become an economist. More in the class….)

If you want to continue exploring rationality, check out why it is so hard to be rational.



Eco-Philosophy

Stoic philosopher Seneca said, *"Most of humankind, Paulinus, complains about the spitefulness of Nature, on grounds that we're born for a short life span, and that these moments of time that have been given to us dart away so quickly, so swiftly, that only a few escape this pattern: Life deserts us when we're just getting ready for life."*

How many days (resources) do you have left in your life? Days

Current age in: Days: (21,676), Weeks: (3,097), Months: (723)

Based on our calculations you will die on: **Saturday, 27th September 2036**

Share on facebook Tweet

You will live to be 73 years, 0 months and 1 days old!

That's **4988** Days, **22** Hours, **23** Minutes, **16** Seconds remaining...

Avg life expectancy of other Male testers from US with your BMI: **93.2** years old
send us your reaction

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HOSPES COMESQUE CORPORIS,

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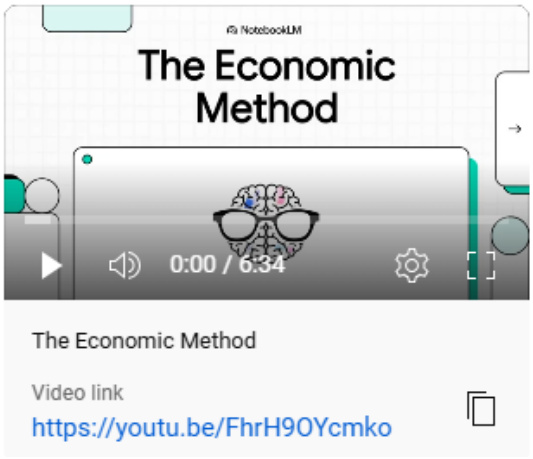
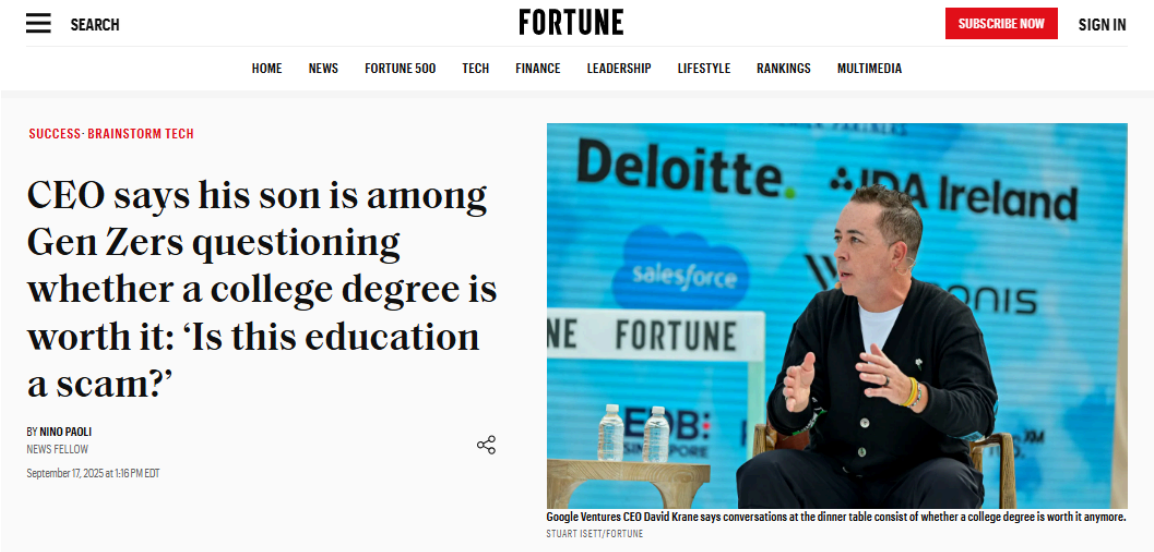
Group Question 2.0

Notebook Audio Video

Watch the lecture audio video https://youtu.be/FhrH9OYcmko



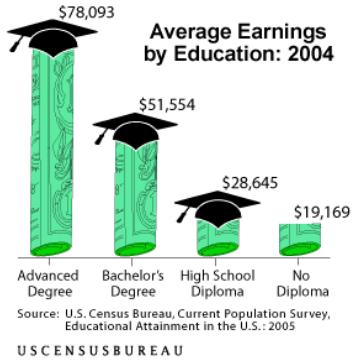


2.1 Is going to school a good choice? See what the data says. Examine the Census data on educational attainment and income at
http://www.bls.gov/opub/ted/2015/more-education-still-means-more-pay-in-2014.htm

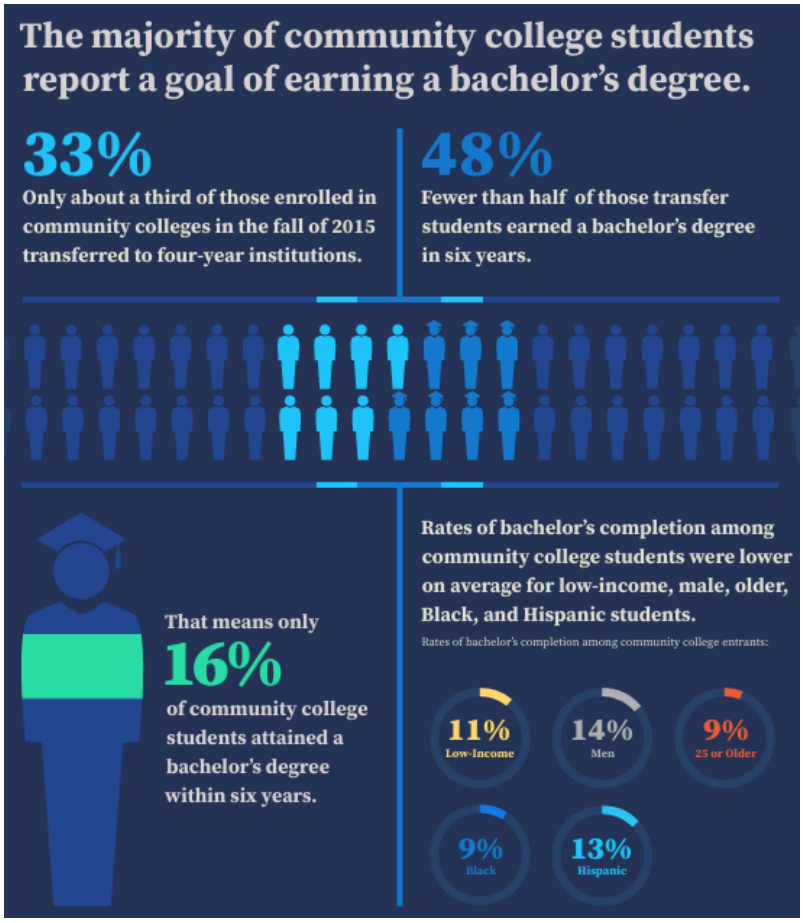
Develop a scatter graph to illustrate the relationship between the level of education (measured in years) and income (for both sexes) over the years.

Insert a trend line into the scatter graph and calculate its R-squared value. Discuss the findings (e.g., what this means).

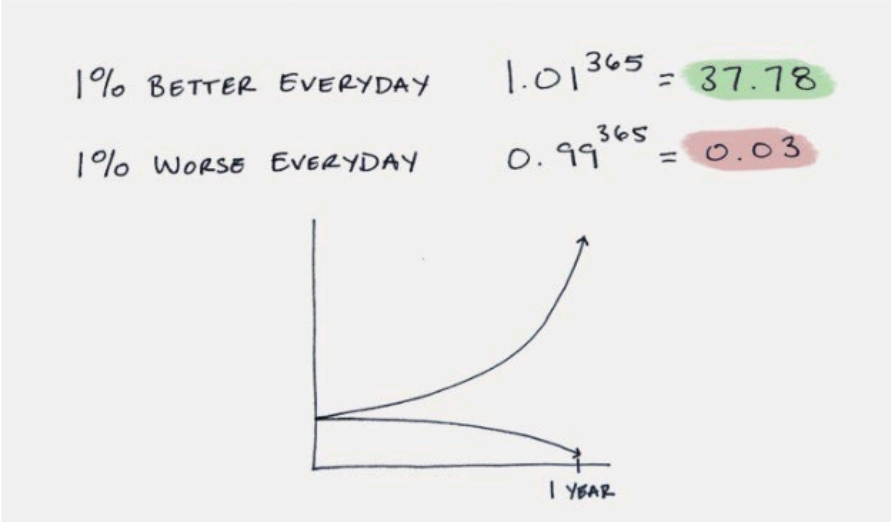
Examine the fitted trend line's equation and predict how much you expect to make after you graduate from a university or college. (How confident are you?)



2.2 Any thoughts on why "just 16 percent of students obtained a bachelor's degree six years after enrolling in community college?"



2.2. Read [The Power of Marginal Gains] and discuss why "marginal" choices can bring about significant changes.



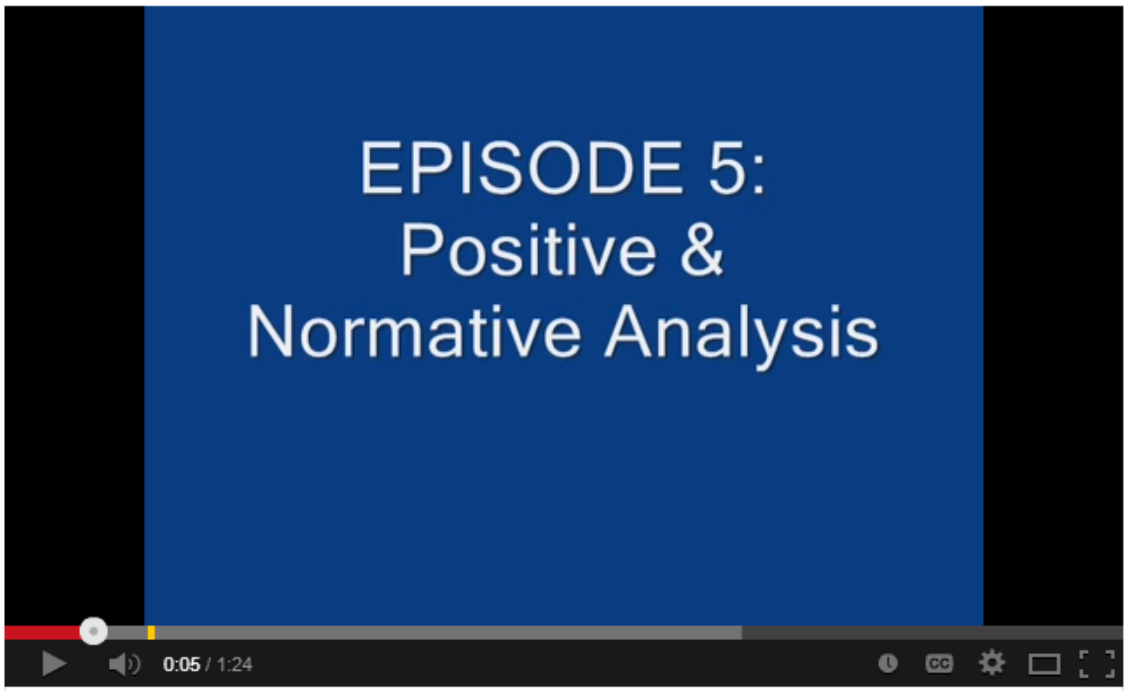
Artwork by [James Clear]

2.3 Calculate in dollars your opportunity costs for attending this course. Explain your assumptions, including your explicit and implicit costs. Show your calculations.

Discuss why it is rational for you to continue to attend the course. (Why not withdraw?).

2.4 Give two examples of "positive" and "normative" statements. Watch http://www.youtube.com/watch?v=AV_p_QntywA for an overview.

Discuss why Dr. Milton Friedman believed positive economics is essential to deriving government policy conclusions.



2.5 Review a study on how the use of AI may affect your critical thinking abilities. Summary its key findings. (Good or bad thing?)

Open Access Article

AI Tools in Society: Impacts on Cognitive Offloading and the Future of Critical Thinking

by Michael Gerlich

Center for Strategic Corporate Foresight and Sustainability, SBS Swiss Business School, 8302 Kloten-Zurich, Switzerland

Societies **2025**, *15*(1), 6; https://doi.org/10.3390/soc15010006

Submission received: 14 October 2024 / Revised: 18 December 2024 / Accepted: 29 December 2024 / Published: 3 January 2025

(Optional) Do you think Socrates would have agreed? What's the AI analogy?

" …he will write them down as memorials to be treasured against the forgetfulness of old age, by himself, or by any other old man who is treading the same path."

Plato, through Socrates

Questions to Ponder (for Fun): Economic Method
Instructions: Answer each question in 2-3 sentences.

What are the "Buffett eyeglasses," and what is their purpose in the context of economic decision-making?

Explain the concept of "opportunity cost" and why economists believe there is "no free lunch."

Why do economists prefer to observe actual choices rather than simply listening to what people say?

What is "marginal analysis," and how do economists use it to achieve optimal outcomes?

Explain the "economic decision programming codes" for marginal benefit and marginal cost, particularly at the point of optimal output.

Why do economists use "models," and what role do these models play in making predictions?

Differentiate between "positive economics" and "normative economics," as explained by Milton Friedman.

Why does the Nobel Prize in Economic Sciences exist, according to the principles of positive economics outlined in the source?

How does Ray Dalio relate the quality of our lives to the quality of our decisions?

Ponder Answer Key

The "Buffett eyeglasses" represent a unique economic perspective composed of five elements that enable individuals, such as Warren Buffett, to make informed investment choices. Their purpose is to provide a framework for logical and effective decision-making in the face of scarcity.

Opportunity cost is defined as the "next" best thing you give up when making a choice due to limited resources. Economists adhere to the principle of "no free lunch" because every decision, or even the decision not to make a decision, incurs an associated cost.

Rationality in economic choices involves making decisions logically, often through cost-benefit analysis, as recommended by Benjamin Franklin. Economists tend to rely on the brain's neocortex (the "Excel brain") rather than the emotional limbic system for this calm and calculating approach.

Economists believe that observing actual choices provides a more accurate understanding of what people truly prefer over their alternatives or the opportunity costs associated with them. This is because, as the saying goes, "talk is cheap," meaning stated preferences may not align with real actions.

Marginal analysis is a method economists use to optimize decision-making by considering the incremental costs and benefits of each additional unit of input. It aims to turn good rational decisions into higher or more "optimal" outcomes by thinking "marginally."

The economic decision programming codes state: if Marginal benefit > Marginal cost, "Do it"; if Marginal benefit = Marginal cost, "Stop" (as this is the optimal point); and if Marginal benefit < Marginal cost, "Go back." This guides decisions to maximize output or benefit.

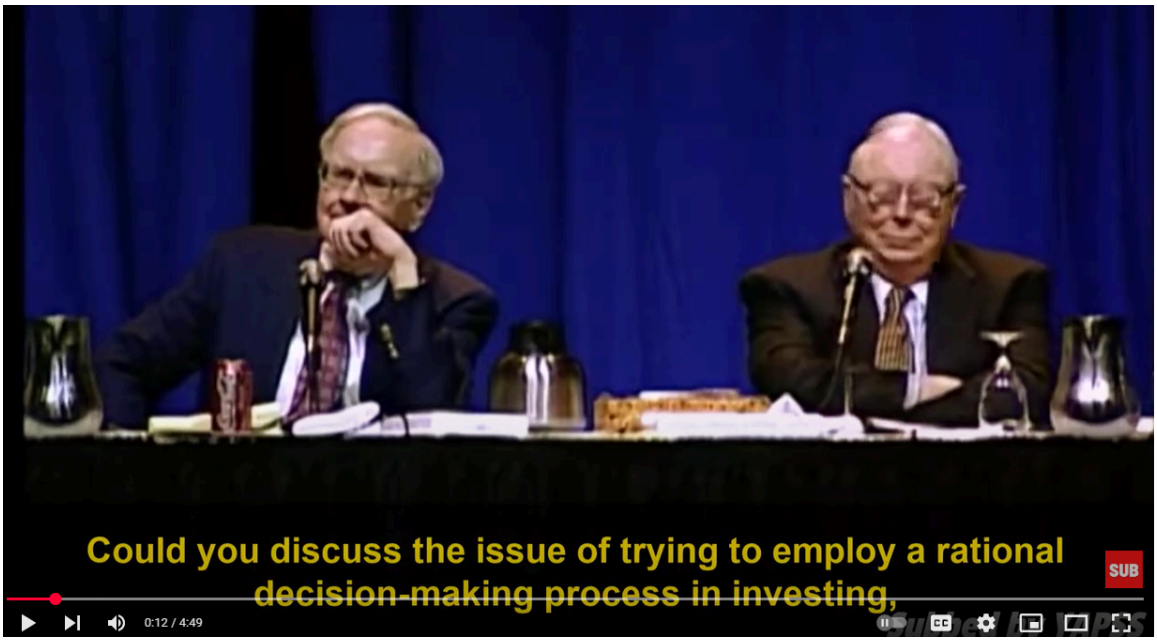
Economists use models to simplify the real world, omit irrelevant details, and understand the key underlying principles of complex systems. These models are crucial for making hopefully reliable forecasts or predictions about how various factors operate.

Positive economics focuses on "what is," dealing with factual statements that can be tested with data and experimentation. In contrast, normative economics deals with "what should be," involving value judgments and ethical positions that cannot be objectively proven or disproven.

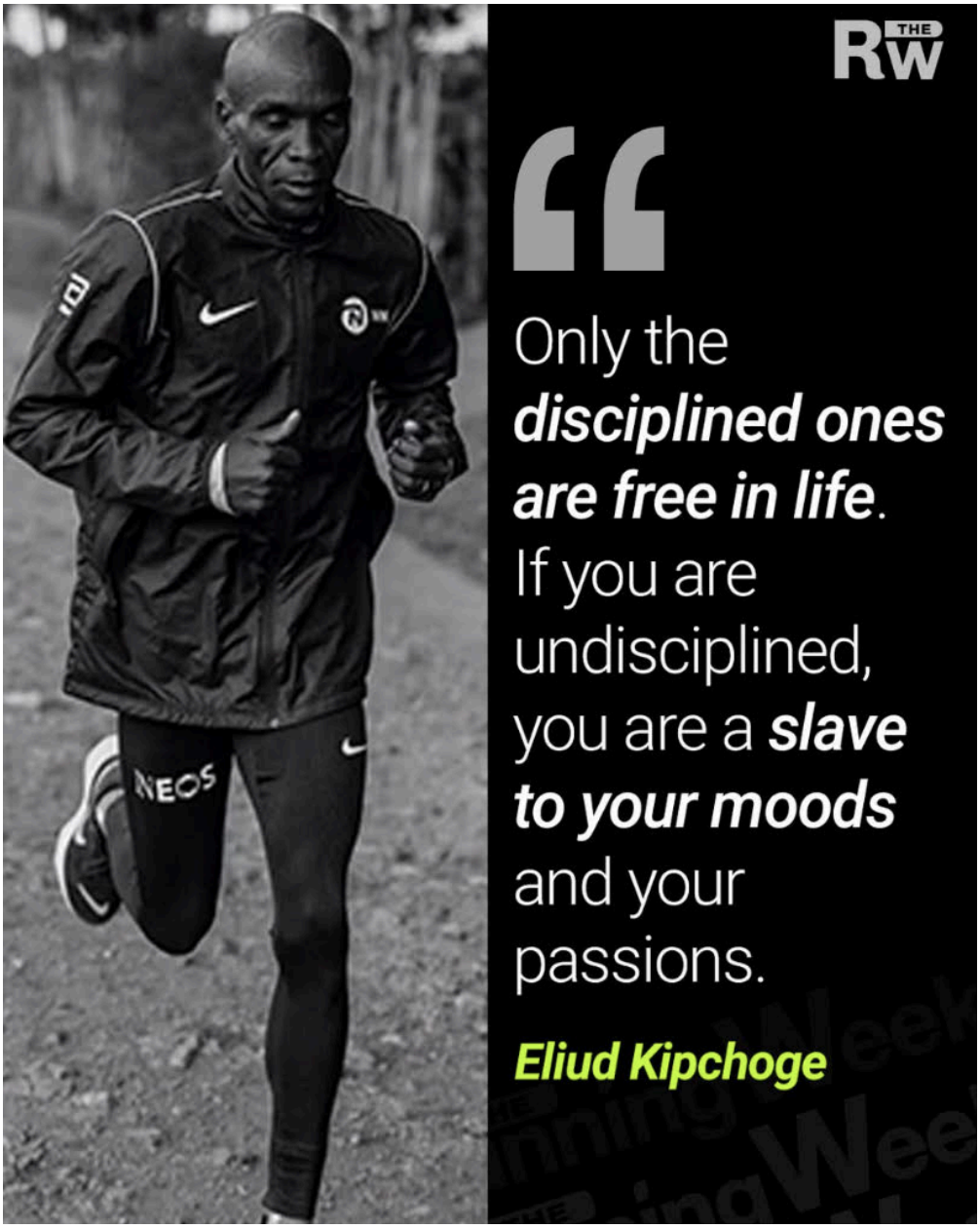
The Nobel Prize in Economic Sciences is awarded because economics, similar to physical sciences, aims to be an "objective" science. It seeks to provide a system of generalizations that can make correct and predictable forecasts about the consequences of changes in circumstances, contributing to the "greatest benefit to humankind."

Ray Dalio believes that life is comprised of an enormous number of choices, each with consequences. Therefore, the quality of our lives directly depends on the quality of the decisions we make, and he emphasizes that this ability is learned, not innate.

Watch a 4-minute video that can help you become wealthy.
https://youtu.be/F3R6ySCSgFg?si=1QjtaCMyRcGjtNdN



And one of my favorite quotes…


RW
Only the
disciplined ones
are free in life.
If you are
undisciplined,
you are a slave
to your moods
and your
passions.
Eliud Kipchoge