The Laws of Investing

A couple foundations that guide billions of outcomes.

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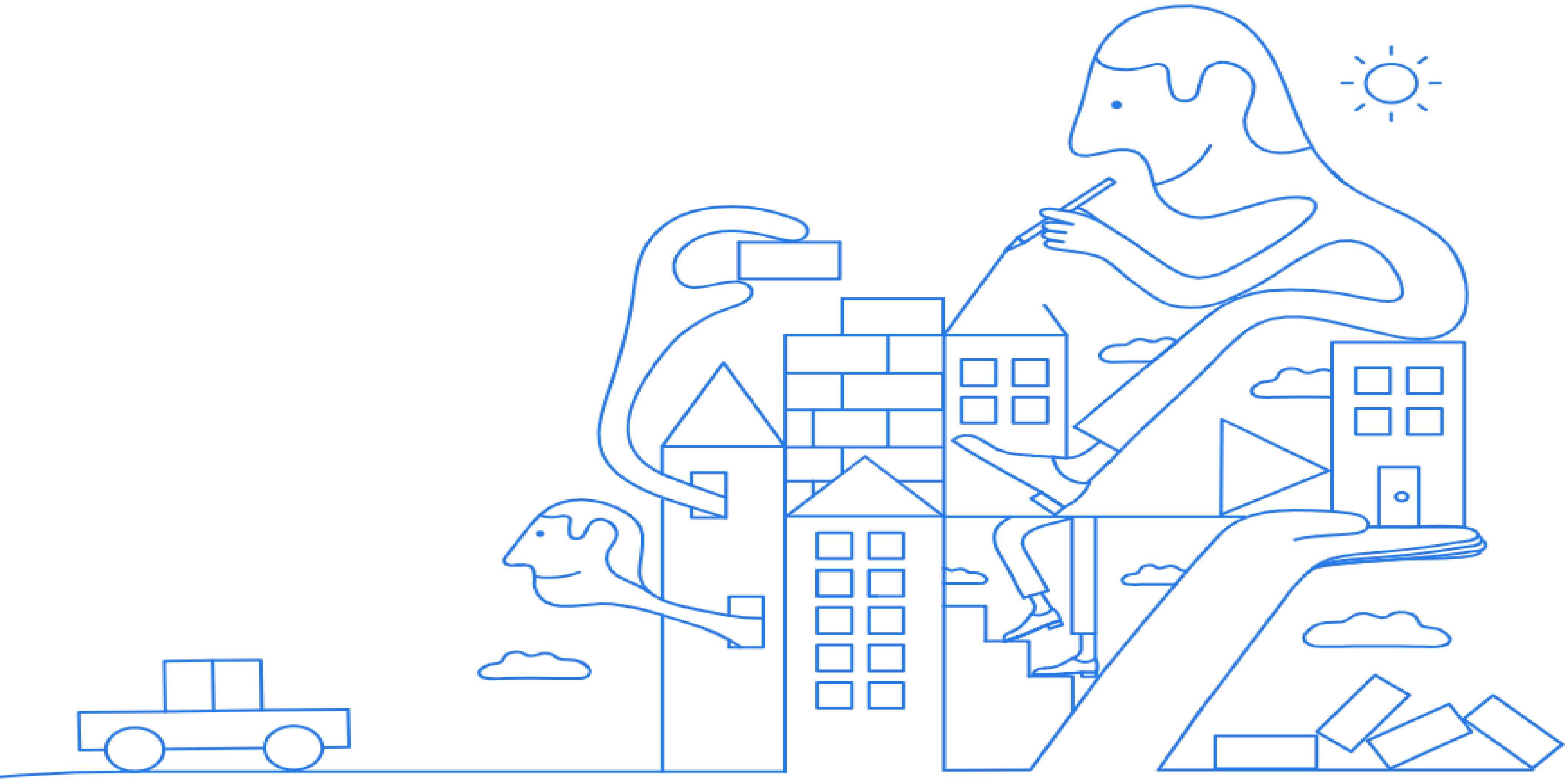

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Think of how big the world is. And how good animals are at hiding. Now think about a biologist whose job it is to determine whether a species has gone extinct.

Not an easy thing to do.

A group of Australian biologists once discovered something remarkable. More than a third of all mammals deemed extinct in the last 500 years have later been rediscovered, alive:

> We identified 187 mammal species that have been missing (claimed or suspected to be extinct) since 1500. This number includes all such mammals for which we were able to find key variables for analysis. In the complete dataset, 67 species that were once missing have been rediscovered.

A lot of what we know in science is bound to change. That's what makes science great, what makes it work, and what distinguishes it from religion. Science is filled with rules, evidence-based theories, and probabilistic observations. Laws -- immutable truths lacking exceptions -- are rare. Most fields only have a handful.

But the handful of laws that exist have a special function: they're the great grandmothers, the old wise men, of the day-to-day theories and rules used to discover a new truth. There's a hierarchy of science: laws at the bottom, specific rules above that, then theories, observations, hunches, and so on. The higher you go on the pyramid the more exciting things become. That's where discovery and opportunity live. But everything at the top of the pyramid must respect the laws at the bottom.

The idea of flexible rules deriving from unshakeable laws applies to every field. John Reed writes in his book Succeeding:

> When you first start to study a field, it seems like you have to memorize a zillion things. You don't. What you need is to identify the core principles that govern the field. The million things you thought you had to memorize are simply various combinations of the core principles.

Same thing in investing.

What's an investing law? There's no definition, so I've taken some liberties here. I try to limit them to forces that influence all types of investments, in all sectors, in all countries, throughout all of history, with few exceptions, and some explanation for why it will continue indefinitely.

A theme here is that investing is not just the study of finance. It's the study of how people behave with money. So most of these "laws" describe a universal feature of how people respond to risk, reward, and scarcity.

They are simple. But they are, I think, part of a foundation that governs most of what happens in investing, and will keep happening as long as investing exists.

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Law #1: Optimism and pessimism will always overshoot because the boundaries of both can only be known in hindsight, once they're passed.

The correct price for any asset is what someone else is willing to pay for it, because all asset prices rely on subjective assumptions about the future. And like a blind man who doesn't know where a wall is until his cane touches it, markets cannot know when optimism or pessimism has gone too far until they bump into the limits and enough investors protest in the other direction.

The peaks and bottoms of market cycles always look irrational in hindsight, like they went too far. But in real time markets are just trying to find the limits of what people can endure. And they have to do that because any gap between an asset's potential and what investors are willing to endure creates opportunities that will be exploited.

Robert Shiller won the Nobel Prize for a paper he wrote in 1981 about a similar idea. The bottom line is that markets aren't really rational; they're just pretty reasonable.

Law #2: Calm plants the seeds of crazy.

If markets never crashed they wouldn't be risky.

If they weren't risky they would get expensive.

When they're expensive they crash.

The same is true for recessions. When the economy is stable people become optimistic. When they get optimistic they go into debt. When they go into debt the economy becomes unstable.

Economist Hyman Minsky figured out that stability is destabilizing half a century ago and it's one of the most useful observations in investing because it explains why volatility is both inevitable and caused by people acting reasonably. If you view every debt-fueled recession, market crash, and asset bubble as an example of your fellow people acting crazy you might get cynical, which makes it hard to be a long-term optimist even when you should be. If you view them as inevitable you realize they're just part of the ride and an occasional reminder that the fasten-your-seatbelt sign should never be turned off.

Law #3: Career realities create a mismatch between cash flows and time horizon, antagonizing the power of compounding.

Well-meaning financial advisors will speak to 23-year-olds and say, "You're so lucky, you have 45 years before retirement. Compounding can grow your money 20-fold during that time." The confused and realistic 23-year-old will reply, "That's neat, I make $16 an hour and have $58,000 in student loans." By the time that student's career has taken off and they have substantial cash flow to invest they're usually in their 40s or 50s, when the power of compounding has diminished by perhaps 90%.

Investing is the equivalent of the NFL only being allowed to recruit players in their 50s -- well past their prime, with performance far short of what their younger selves could achieve. Some people's earnings power will peak when they're young. But when the world is that good to you when you're young you're bound to assume your paychecks will continue indefinitely and fail to take advantage of your blessed time horizon.

The gap between what's possible on a spreadsheet and practical in the real world will always be vast.

Law #4: People with different time horizons and different goals want different things out of the same asset, creating reasonable differences in opinion that can be misinterpreted as disagreements.

Pension funds own Google stock. So do index funds. And active managers. And day traders. And high-frequency traders.

Each has a different time horizon and goal, so of course they're going to react differently to news and have different opinions on what information matters and what's going to happen next.

That can create problems, because if you own an asset the last thing you want is other smart people telling you, or signaling to you, that you're crazy for owning it. A lot of intelligence can be drowned by a little social persuasion. If you are exposed to the opinions of people who own the same asset as you but have different goals and time horizons as you, you can be misled and tempted into bad decisions even if what the other person is saying is right for them.

When different goals exist, reasonable people can and will disagree. Focusing your attention on information that aligns with your own goals is critical, but harder than it sounds.

Law #5: Luck and risk are the opposite sides of the same coin but we treat them very differently.

Everything important in finance is about probability. And since most probabilities are less than 100, there's a chance that you can make a good (or bad) decision and still end up with a bad (or good) outcome.

The former is called risk. The latter is called luck.

They are blood relatives. But we treat them as different species.

Risk is generally seen as something that happens to you, while luck is treated as something you did to yourself. Returns are always adjusted for risk, never for luck.

People jump through hoops to avoid risk. Should you want to avoid luck? Of course not. But if you don't recognize luck when it happens to you you can fool yourself into thinking past performance was indicative of skill in a way that leads you to regrettable decisions.

Experiencing risk makes you realize that some stuff is out of your control, which is valuable feedback. Luck provides the opposite: A false and dangerous feeling that you are in control, because you did something and then got the outcome you wanted. Bill Gates: "Success is a lousy teacher. It seduces smart people into thinking they can't lose."

Law #6: The biggest risk is always whatever no one is talking about, because if no one's talking about it they're not prepared for it.

Everything in finance is data within the context of expectations. One doesn't matter without the other.

Expectations of a big risk can sanitize how painful that event is when it hits because people are pretty good at preparing, if only because most of the damage caused by big financial events is an overreaction to surprises and unknowns (see Law #1). I can practically gouge my eyes out putting in my contact lenses with no pain, but if I get poked in the eye by surprise, on accident, I'll wince and yelp because I don't know what the damage was done or how much is left to come. In the same vein, the difference between Donald Trump tweeting something crazy vs. Jerome Powell doing the same is a mile wide.

A universal irony of risk is that no matter how hard you try to quantify it it will always leave out the stuff you can't imagine or aren't thinking of. Which is the stuff that matters most.

Carl Richards says it best: "Risk is what's left over when you think you've thought of everything else."

Law #7: Narratives become self-fulfilling and can override visible capabilities that are easier to measure.

On January 1st 2009 the U.S. economy had roughly the same number of people, the same number of factories, machines, office buildings, computers, data centers, trucks, trains, patents, schools, creativity, and ideas as it did on January 1st 2007. But it was $16 trillion poorer and employed 10 million fewer people in 2009 than in 2007.

What changed was the narrative. Optimism to pessimism -- snap your fingers, that's all it takes.

Once the narrative that home prices will keep rising broke, mortgage defaults rose, then banks lost money, then they reduced lending to other businesses, which led to layoffs, which led to less spending, which led to more layoffs, and on and on. Other than clinging to a new narrative we had an identical capacity for wealth and growth in 2009 as we did in 2007. But the economy took its worst hit in 80 years.

Finance and economics rely on forward-looking subjective assumptions, and the whole edifice can surge or break when those assumptions change. The productive capacity doesn't have to change; the story people believe is all it takes.

At one point in time a narrative that housing prices are going to collapse sounds silly. But as soon as enough people believe it it becomes self-fulfilling. The same is true in the opposite direction and explains some of America's economic outperformance against nations with equally capable citizens. Never underestimate a group of people with strong beliefs in either direction.

Law #8: Technology will be ridiculed proportionally to how groundbreaking it is because it's hard to distinguish familiarity from utility.

Think of the most groundbreaking technologies of the last 100 years. Now go back and see what people said about them in the beginning. You will find universal criticism and skepticism. The more important the technology is today, the more skepticism it faced when it arrived. Few exceptions.

Most skepticism of new technology is warranted, either because early prototypes are awful or the whole idea was silly to begin with. But a new technology that turns out to be amazing -- cars, airplanes, antibiotics, vaccines, computers -- will be criticized for different reasons: few can imagine how it will fit into their own lives, and worry its side effects will harm their way of life. Three reasons this happens:

- To accept that something will replace the way you do things today requires admitting that the way you do things today isn't efficient and will go extinct. That's hard to accept because people want to be efficient and become sentimental over how things have always been done. One of the top criticisms of the early car was the indignity it placed on the poor horse.

- New technologies often spark cultural shifts, which for older generations are hard to distinguish from moral decline. The telephone killed the art of letter writing; email killed phone conversations; Slack killed face-to-face meetings, and so on.

- Understanding the value of new technology requires imagination, but unless you have skin in the game that doesn't seem worth the effort because technology is supposed to make things easier and simpler, not wrack your brain.

A common theme in history is the worry that we used to innovate, but haven't done anything meaningful in 10+ years. In hindsight the common cause of this worry is that takes 10+ years for us to recognize the importance of new innovations.

Law #9: Big results are driven by tail events, so winning while losing much of the time is normal.

Anything that is huge, profitable, famous, or influential is the result of a tail event -- an outlier, one-in-thousands or millions event. And most of our attention goes to things that are huge, profitable, famous, or influential. When most of what we pay attention to is the result of a tail it's easy to underestimate how rare and powerful tails are.

But tails drive almost everything. A minority of participants will capture outsized returns because opportunity attracts competition, and the winners of that competition tend to lock in because customers, employees, and investors want to associate with winners.

A diversified portfolio will derive most of its long-term returns from a minority of companies. Those companies derive most of their value from a minority of products, and those products were the brainchild of a minority of employees, who were educated at a minority of schools, on and on.

The takeaway from tails is that you should be comfortable when a lot of what you do and see doesn't work. If you become paralyzed when a few things don't work you'll never stick around long enough to enjoy the few things that do.

Law #10: Effective strategies change as markets evolve on the metrics they care about.

Good investing strategies are like the flu vaccine. Effective ones exist, but only for a limited period of time because the underlying disease evolves and becomes resistant to what used to work.

The flu vaccine changes every year based on what types of flu strains are likely to prevail. Investment strategies should do the same.

Benjamin Graham published several editions of his book The Intelligent Investor, with each new edition swapping out old formulas for new ones that worked. This wasn't an error or covering up bad mistakes. A good strategy will catch attention, and attention can sanitize opportunity in an instant.

Jim Grant's quote that "successful investing is about getting everyone to agree with you … later," has so much wisdom in it. A metric can influence you, but it won't make a difference unless masses of other investors decide it should influence them as well. The hard part is that the things investors pay attention to and agree on change over time.

In one era it was price to book value that mattered most. Then dividends reigned supreme. Then earnings per share. The P/E ratio was popular for a while. Over the last decade it's brand and maybe revenue growth, with anything happening below that line having little significance.

The hard balance is determining what's timeless and is owed patience and what's expired and should be discarded. If there were an easy answer to that question we'd all be at the beach.

Law #11: The most persuasive evidence is what you want to be true and/or have experienced personally.

A good investor turns over many rocks in a quest to find something special. But special is subjective. What you think is amazing may bore me, and vice versa. The special things we discover usually aren't like nuggets of gold, with a specific quantifiable market value. Special is in the eye of the beholder, and because of Law #10, the trick is getting others to eventually behold it. Take value stocks. They are loved by many and, by definition, hated by others. Your story vs. mine.

"Special" is defined by a story, and the undefeated Pulitzer Prize-winning storyteller inside your own head is always yourself. The story that sounds the best is typically:

- **What you want to be true**. The incentives for being right in investing are so big that it's hard to think clearly about your analysis without getting distracted by the potential rewards. Predict the right weather and you get to wear the right clothes. Predict the right investments and you get to retire on the beach. High stakes cause fuzzy thinking because they push you to desperately want something to be true even if it's not.

- **What you've personally experienced**. Familiarity is a doppelganger of accuracy in your brain. The two can be hard to tell apart. Stuff you've experienced personally is way more realistic than what you merely read about, and two equally smart investors with the same data can come to opposite conclusions, swayed only by the differences in their unique life experiences.

Evidence you don't want to be true and haven't experienced can be persuasive, of course. But the amount of reinforcement you get when you do, and have, is easy to underestimate.

Law #12: A gap between the timing of investment opportunities and faith in an investment manager will influence professional investment decisions.

A common lament of investment managers is that investors in their funds are too short term, redeeming after a few quarters of poor returns and neutralizing the manager's attempt at long-term thinking.

It's easy in this situation to blame the investors as short-sighted and emotional. Sometimes you should. But often there's a good reason investors don't align with a manager's time horizon.

Investment managers try to find opportunities for outperformance. Investors who put money in those funds try to determine whether the manager has the rare and requisite skill to do so. Those are different things.

An investment manager sees a performance lull as an inevitable pause. But a fund investor may see it as evidence to question whether the manager has any skill. And you can't blame them, given the dismal track record of managers in every asset class. The difference between "temporarily out of favor" and "past success was luck/marketing" is often only known in hindsight after many years. Fund investors remaining patient for long can look unreasonable -- even reckless -- when the odds are so high that a manager's previous outperformance was either luck or is no longer valid (Law #10). I don't think you can blame the manager or the fund investor. Most of the time they both have good intentions but are trying to do different things with limited data. (It's why communication is so key).

But that reality can push investment managers towards a shorter time horizon than they prefer because their first order of business is keeping investors happy so they can stay in business. There is a saying in fund management, "I'd rather lose half my clients than half my clients' money." It is both noble and easier to Tweet than to do.

Law #13: Diagnosis errors creating a tendency toward action in a field where the first rule of compounding is to never interrupt it unnecessarily.

It's easy to tell if your car is broken. If you turn the key and it doesn't start, something is wrong. Maybe you don't know what's wrong, but something different needs to be done if you want to drive. No ambiguity.

But how do you diagnose whether your portfolio is broken?

If it doesn't perform well for a year, is that broken?

Maybe. Or maybe it's run-of-the-mill volatility.

Two years? Still hard to tell. Maybe it's just out of favor.

Three? Five? Ten? Still don't know. "Perfect storm," and all that.

When volatility and out-of-favor periods are guaranteed, it's hard to diagnose whether your investing strategy is broken or merely requires patience. Most other things in life aren't like that. Most things are like cars -- there's no ambiguity that something is wrong.

The difficulty in diagnosing portfolio problems creates an incentive toward action because doing nothing when something might be wrong feels irresponsible. And action tends to repel potential performance, because the more knobs you fiddle with the more chances you have to screw up and the more you rely on short-term moves that are influenced by changes in investor moods more than changes in data.

Law #14: Speculation is rational because low-probability events can be massively rewarding when leverage and huge sums of money are involved.

If you're a long-term investor you might look at the cacophony of daily trading as a parade of innumerate cowboys. You views feel confirmed when you see the results of traders.

Why would someone bet on a company beating quarterly earnings?

Or whether orange juice futures are going to fall next week?

Or on the timing of the next recession?

Are these people crazy?

Sometimes, yes. But if you end there you miss an important point: The right way to think about returns is through expected value -- reward x probability. And the rewards for being right in investing can be so huge that it makes rational sense to speculate on low-probability events.

Betting on low-probability events is not innumerate. Here's what is: expecting everyone to ignore an event that has a 1% chance of happening but offers a life-changing reward if it happens.

When huge amounts of money and leverage are available, the rational barriers to speculation are not the odds of success of certain events, but transaction costs and liquidity. Reduce those barriers and it will always make sense for someone to speculate on long-shot, crazy-looking ideas.

Law #15: Behavior > analytics, because one can't be taught and the other can.

Learning about new investments for most investors a single generation ago meant going to the library and hoping there was a public filing available that was less than a year outdated. The amount things have changed, and the speed they changed, is unbelievable.

Most people can probably learn more about the health of Goldman Sachs than they can about their own health, given how much data is now free and centralized. "Anyone can know anything" is an exaggeration but directionally accurate.

The behavioral side of investing -- fear, greed, impatience, overconfidence -- is different.

It's surged in popularity, but it's not like data that can be disseminated and learned. Data is influential, but cortisol and dopamine are authoritative. And so much of what drives investing behavior is deeply ingrained personality and personal experience, not something that can necessarily be taught.

The behavioral side of investing will always be more important than the analytical side because good behavior and no data can still do well, but tons of data mixed with poor behavior is a lit fuse.

I've always believed that 10% of the population does not need help investing. They were born understanding it intuitively. Another 10% can't be helped. They're compulsive gamblers and always will be.

Law #16: An attachment to investment entertainment because money is a universal product with powerful tail-driven anecdotal stories and emotions that are easily triggered.

A hurricane barreling down on Florida poses no direct risk to 92% of Americans. But a recession barreling down on the economy could impact every single person, many of them profoundly.

Other than health, money may be the only topic that is relevant to your life whether you like it or not. So many people pay attention to, and talk about, big stories, which spreads to even more people as opinions are given and stories are told.

And back to Law #9, tail-driven results: there will always be stories of extreme successes and failures, presented in a way that makes us overestimate their prevalence and underestimate their complexity. So the stories are often extreme, causing us to dream about great outcomes or worry about terrible outcomes more than is warranted.

And money is emotional because we're dealing with our ability to retire, send our kids to school, and just our general wellbeing in life. So potential threats and opportunities can be blown out of proportion.

It all adds up to investing being a field where marketing, entertainment, flashing lights, pretty charts, and epic stories grab attention in the way, say, the weather, doesn't.

Law #17: The humble math of savings, fees, and taxes.

"Save a little bit of money each month and at the end of the year you'll be surprised at how little you still have." I forget who said that but it's true. And it's painfully easy to overlook because savings is simple and takes work, while investing is exciting and can give the impression of effortlessness. Savings can be more valuable than investment returns because they're more in your control.

Another timeless truth: Fees and taxes will reduce returns by 100% of their amount. Everyone knows this but if you compare how much effort goes into searching for small investment gains while low-hanging fruit of fees and taxes sit ignored at eye level, and you'll be reminded that knowing something and acting on it are two different things.

Russian novelist Fyodor Dostoyevsky once wrote about natural laws:

> Nature does not ask your permission, she has nothing to do with your wishes, and whether you like her laws or dislike them, you are bound to accept her as she is, and consequently all her conclusions.

So it goes with every field's laws, including investing.