Note to readers

This is an edited version of a talk I gave at John Mihaljevic's conference in Zurich in June 2017. All mistakes and errors are my own. This is for confidential and informational purposes only and is not to be reproduced. – Phil

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"It seems clear to me that I've been wrong for many years in saying that the single greatest challenge for investors is to develop self-control. In fact, the single greatest challenge investors face is to see ourselves as we actually are. What makes Warren Buffett and, perhaps even more, Charlie Munger so remarkable is how honest they are about themselves with themselves." **– Jason Zweig[1]**

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Charlie Munger's famous speech "The Psychology of Human Misjudgment" changed my life.[2] The goal of this talk is to improve my own understanding of the concepts by updating "The Psychology of Human Misjudgment" with more recent examples and case studies while also incorporating the related work of Kahneman, Tversky, and other prominent researchers. There is no substitute for the original, and this isn't an attempt to substitute or improve upon it. I highly recommend both the audio recording of the 1995 version and the comprehensive, updated account in *Poor Charlie's Almanack.*

Despite the emphasis on failure and folly, the goal of this talk is **not** to assign blame or to condemn and ridicule the mistakes; there is no place for schadenfreude here. Learning from the mistakes of others is a very effective and less costly method, but compiling a database of failures – collecting inanities, as Munger would put it – opens us up to accusations of throwing stones in a glass house. To be clear, all of us are prone to these mistakes. By studying failure I'm trying to avoid it myself. An interest in the psychology of human misjudgment is a natural outgrowth from the desire for self-improvement. By seeking an explanation for other people's mistakes, we can hope to internalize the reasons and improve our own decisions. Just bias from extra-vivid evidence can cause our brains to misfire, the goal in this exercise is to highlight vivid, interesting examples that will sear the misjudgments into our brain. By creating a readily accessible framework for decision-making – by crafting a personal system of psychology – we can all improve our outcomes in life. The idea is to avoid these common psychological traps; the goal is to be less stupid rather than to be brilliant.

I've been working on this for quite a while, and it's an ongoing effort.[3] There are sure to be errors and misapplications here, so corrections and suggestions of all kinds are welcome. This essay is also in dire need of good editing, so please forgive its length and sloppy writing.

Philip C. Ordway

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> ***"Man is a rational animal. So at least we have been told. Throughout a long life I have searched diligently for evidence in favor of this statement. So far, I have not had the good fortune to come across it." — Bertrand Russell[4]***

Danny Kahneman's book *Thinking, Fast & Slow* has filled in a lot of holes in my knowledge, and it is the best collection of thinking on the subject that I've found. I had previously listened to a recording of Munger's "The Psychology of Human Misjudgment" and read the transcript in *Poor Charlie's Almanack* and elsewhere. That probably spurred some of my initial interest in the subject, and the combination of Munger's talk with Kahneman's research and writing is especially powerful. I think those two books tell you almost everything you need to know about the psychology of investing, and a lot about life in general too.

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[1] Email exchange with the author

[2] I used the audio recording of Munger's original speech and the updates he made in the reprint in "Poor Charlie's Almanack." All errors and mistakes of transcription are my own.

[3] http://www.beyondproxy.com/investing-fast-and-slow/

[4] The Basic Writings of Bertrand Russell (2009), p. 45

A special focus here will be business and investing. That is partly because those fields are such a fertile ground for misjudgment, but these lessons apply to almost all areas of life. I didn't revisit my old college textbook in psychology, either – most or all of these examples were taken from own experiences or from the popular accounts I found online, in the newspaper, etc., over the past few months.

I'm assuming that most people are familiar with the original masterpiece, so I plan to just briefly allude to the "standard causes of human misjudgment" and the original examples so we can spend time on more recent findings and examples. As usual, Munger figured out the important ideas and left very few holes for us to patch, so I've tried to take the original material and add one or two new or supplemental topics and a few new examples. As always, the biggest bang for our buck – the lollapaloozas – will be found when the various factors *combine* and act in concert. "*Cherchez la femme,*" yes, but also search for the combination. We need a working understanding of multiple models and their interaction, and it must be derived individually – it will be different for each circumstance and each person.

A short list of topics that would likely get more attention in "The Psychology of Human Misjudgment 3.0":

- **Baseline information or base rates**
- **Prospect Theory and loss aversion**
- **Overconfidence**
- **Munger's "two-track analysis" – first, what are the fundamentals of the situation, rationally judged, and second, what are the subconscious or other psychological factors at play?**
- **Self-awareness and self-honesty**

With that in mind, here are some of standard causes of human misjudgment as illustrated by modern examples.

<u>Under-recognition of the power of reinforcement/incentives.</u>

Munger: "I've been in the top 5% of my age cohort all my life in understanding the power of incentives, and all my life I've underestimated it. And never a year passes but I get some surprise that pushes my limit a little farther."

Munger's favorite cases were Federal Express, which was finally able to fix its system by paying night-shift workers by the shift instead of the hour; Xerox, which had commission arrangements that gave an incentive to an older, inferior machine; and B.F. Skinner, the eminent researcher who made many important psychological discoveries (see below).

Update: Later called "Reward and Punishment Superrresponse Tendency." In Munger's revision, he added several new examples:

- Mark Twain's cat that, after sitting on a hot stove, never sat on another stove (hot or cold) ever again;
- Ben Franklin's maxims that "if you would persuade, appeal to interest and not to reason" and "never, ever, think about something else when you should be thinking about the power of incentives";
- The Soviet employee's phrase that "they pretend to pay us and we pretend to work";
- "Perhaps the most important rule in management is 'Get the incentives right'";
- "Another generalized consequence of incentive-caused bias is that man tends to 'game' all human systems, often displaying great ingenuity in wrong serving himself at the expense of others. Anti-gaming features, therefore, constitute a huge and necessary part of almost all system design";
- "Dread, and avoid as much as you can, rewarding people for what can be easily faked. Yet our legislators and judge…often ignore this injunction";
- "Punishments also strongly influence behavior and cognition, although not so flexibly and wonderfully as rewards." Price fixing was more common when it was met with fines rather than jail time. A European tribe in the time of Caesar, when the assembly horn blew, always killed the last warrior to reach his assigned place. And George Washington hanged deserters at a great height as an example to others who might think of deserting.

Wells Fargo recently demonstrated the power of incentives with its "fake accounts" scandal. The cause and effect of this situation reads like a script for this talk, with amazing parallels to the Salomon scandal of 1991. The Wells Fargo situation was a straightforward one: the legacy Norwest culture of "cross-selling" had been enormously successful, but the incentives involved got stretched past their breaking point and then denial, more incentive-caused bias, commitment and consistency, Persian messenger syndrome, and social proof, among other tendencies, combined to allow the problem to morph into a true scandal.

At the heart of the issue is that management and the board made efforts – some genuine, some half-hearted – to address the problem before it spread. Numerous employees raised the issue to the head of the community bank, Carrie Tolstedt, and to the company's senior executives. In almost all cases the evidence was ignored or suppressed. There were massive compliance manuals and plenty of procedures and policies, but culture and leadership trumped the manuals and policies as they often do.

And the problem festered for years. The first signs came as early as 2004 when an internal investigations unit noticed a rise in "sales integrity" issues. The report said, "Whether real or perceived, team members . . . feel they cannot make sales goals without gaming the system. The incentive to cheat is based on the fear of losing their jobs." And many people did get fired or quit. The sky-high turnover rate (42% in 2012 among all branch and call center employees) was a red flag itself, but it was dismissed internally as "slightly lower than turnover for similar types of roles in the **retail** industry" (emphasis added). The 2004 report "recommended that Wells consider reducing or eliminating sales goals, as several peer banks had done, and warned that the issue could lead to 'loss of business and . . . diminished reputation in the community.'" Wells did none of that until 2016, of course. But almost a decade after the first report, a Los Angeles Time story broke the news that the issue had festered and grown over the years. And as several more years went by, management did almost nothing to address the problem or to manage the fallout when the settlement – dismissed as small relative to Wells Fargo's financial size – was inevitably announced. The Board made some attempts that I believe were more genuine than those often seen in such circumstances, but inertia and Stumpf's opposition slowed things down.

The parallels to John Gutfreund and the scandal at Salomon Brothers are stark. Gutfreund's downfall resulted from his response to Paul Mozer's misdeeds. Had Gutfreund moved aggressive to snuff out the problem, most or all of the damage could have been avoided. But Gutfreund fell victim to reciprocation and the fact that Mozer's group had made enormous amount of money for Salomon. At Wells, John Stumpf had repeated praised Carrie Tolstedt in public as

The Board's official report spelled it out explicitly:

> "Stumpf's long-standing working relationship with Tolstedt influenced his judgment as well. Tolstedt reported to Stumpf until late 2015 and he admired her as a banker and for the contributions she made to the Community Bank over many years. At the same time, he was aware that many doubted that she remained the right person to lead the Community Bank in the face of sales practice revelations, including the Board's lead independent director and the head of its Risk Committee. Stumpf nonetheless moved too slowly to address the management issue.
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> "[Stumpf] was not perceived within Wells Fargo as someone who wanted to hear bad news or deal with conflict. In accordance with the decentralized model, a deferential culture existed whereby there was limited encouragement for the management of different businesses to challenge each other or comment on significant issues in the other lines of business. Under Stumpf, weekly Operating Committee meetings generally did not serve as a forum for discussion, engagement or challenge among its members.
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> "Stumpf wrote that Tolstedt 'knows the business cold – nothing gets by her' and that a management structure she had devised was a 'stroke of genius.' In 2013, Stumpf attributed the Community Bank's success, including in achieving 'record cross-sell,' to Tolstedt's leadership. He also pushed Tolstedt to work to increase cross-sell when strong growth proved more elusive. Many observers expressed their belief that Tolstedt operated the Community Bank in the way she did because she thought Stumpf would approve. This is also supported by contemporaneous emails, particularly with respect to the setting of aspirational sales goals and focus on improving cross-sell.
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> "[Tolstedt] was credited with the Community Bank's strong financial results over the years, and was perceived as someone who ran a 'tight ship' with everything 'buttoned down.' Community Bank employee engagement and customer satisfaction surveys reinforced the positive view of her leadership and management. Stumpf had enormous respect for Tolstedt's intellect, work ethic, acumen and discipline, and thought she was the 'most brilliant' Community Banker he had ever met. Nonetheless, Tolstedt mismanaged the Community

> Bank's response to the rise in sales practice issues, failing to appreciate both the negative impact on customers and the grave risk to Wells Fargo's brand and reputation. There is no evidence that Tolstedt showed serious concern about the effects of improper sales practices on Wells Fargo's customers or that she initiated efforts to evaluate or remediate customer harm. Tolstedt resisted change to the Community Bank's sales model even when confronted with evidence that it led to low quality sales and improper sales practices. She viewed the sales model as an engine of the Community Bank's historical success and did not want to take steps that could impede its operation. Instead, she reinforced the high-pressure sales culture…. Despite the universal criticism of the [incentive] program as an incubator of low quality sales and bad sales practices, Tolstedt was 'scared to death' that changing it could hurt sales figures for the entire year and opted instead for only incremental changes. Numerous witnesses provided a consistent account of Tolstedt's management style: she was 'obsessed' with control, especially of negative information about the Community Bank, and extremely reluctant to make changes. Tolstedt fostered an insular culture at the top of the Community Bank and had an 'inner circle' of staff that supported her, reinforced her views and protected her. She resisted and rejected the near-unanimous view of senior regional bank leaders that the sales goals were unreasonable and led to negative outcomes and improper behavior."

Tolstedt instructed her team members to avoid talking to other company executives without her presence. She went so far as to actively suppress evidence and mislead the board: "Tolstedt never voluntarily escalated sales practice issues, and, when called upon specifically to do so, she and the Community Bank provided reports that were generalized, incomplete and viewed by many as misleading… By 2015, many Board members believed that she was intentionally understating the problem which she had helped to create." [5]

Even if much of the problem could have been avoided with a proper response, the core problem of overly aggressive incentives is a common one. In fact, Munger himself recently argued as much:

> "Wells Fargo had a glitch. They made a business judgment that was wrong. They got so caught up in cross selling and having tough incentive systems that they got the incentive system so aggressive that some people reacted badly and did things they shouldn't. Then they used some misjudgment in reacting to the trouble they got in. I don't think anything is fundamentally wrong with Wells Fargo for the long pull with Wells Fargo. They made a mistake. It was an easy mistake to make and the smartest man I ever knew made a similar mistake. Henry Singleton was the smartest single human being I've ever known in my whole life…and at Teledyne [he] also had very aggressive incentive systems like Wells Fargo. And his customer was...the government and of course it's not that hard to cheat the government and two or three of 20 subsidiaries cheated the government. It's not that Henry was trying to cheat the government it's just that he got a little aggressive trying to apply the incentives and he got blinded sided. That can happen to anybody. I don't regard getting the incentives a little aggressive as Wells Fargo did as the mistake. The mistake there was when the bad news came they didn't recognize it rightly…How do you know [incentives] are aggressive until you try? They didn't react enough to the bad news fast enough. And of course, that is a very dangerous thing to do. I don't think it impairs the future for Wells Fargo. As a matter of fact they'll probably be better for it. One nice thing about doing something dumb is that you probably won't do it again. "[6]

An even more vivid example of the power of incentives – combined with social proof -- might be Valeant. This has to be one of the most important cases in business and investing of the past decade. To be clear, there are no stones being thrown in a glass house – it is genuinely humbling to look at the Valeant shareholder list at the peak in 2014-15. A lot has been written and said, of course, about this episode, but it's worth going through it and having its various attributes and the tendencies behind them at our ready disposal.

Financial institutions in general are rife with incentive-caused bias. The Global Financial Crisis ("GFC") itself had many causes, of course, and as with all insane outcomes it was the combination that enabled the enormity. But right at the heart

[5] https://www08.wellsfargomedia.com/assets/pdf/about/investor-relations/presentations/2017/board-report.pdf and http://www.vanityfair.com/news/2017/05/wells-fargo-corporate-culture-fraud

[6] https://www.youtube.com/watch?v=BLctqhNClqY

of the bubble was the fact that so many people had perverse incentives that all acted together. Securitization was a microcosm of the problem. It started out – like so many ideas in finance – as a novel and genuinely useful practice. But the incentives combined with other tendencies to metastasize into a monster. A good idea was taken too far, and generating more "product" became the only goal. There were other obvious examples found in realtors, mortgage originators, structured products traders on Wall Street, homebuilders, appraisers, rating agencies and many, many others. Almost everyone had incentives that either directly rewarded the ultimately destructive behavior or at least encouraged people to look the other way.

Consider also the fees charged by investment funds. Many complain about closet-indexing, but what do the incentives really encourage? The same is true of the capital allocators at pensions, endowments, and funds of funds. Career risk – incentive-caused bias – far outweighs the risk of underperformance. An investment officer at a major U.S. endowment once told me: "If I hire a brand-name fund and it blows up, that's bad luck or somebody else's fault. If I hire a small fund run by a less prominent manager without pedigree or prestige, and then he has a bad year, I get fired." Jeremy Grantham wrote that "the central truth of the investment business is that investment behavior is driven by career risk."[7] There he's in agreement with Keynes who said, "Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally."[8]

Self-interest in politics combined with business can create a potent brew. Consider ethanol – it can't make sense to even the most narrow-minded Iowa farmer to take his precious topsoil and use it as a substitute for readily available alternative fuels, but a higher price for his crops and the quirks of the American primary voting system have given us ethanol mandates nonetheless.

The Costco business model and its membership fee is a great example of this process put to good use in a business. Amazon Prime is a more modern incarnation. Few things are more powerful than a business model with built-in incentives that also make its own business stronger. The incentives and the reinforcement work to everyone's mutual benefit. By charging a "membership fee," Amazon and Costco customers have a subtle incentive to shop more to "earn back" the fee. That volume creates a high-turnover business that can use the savings and purchasing advantages to reinvest in lower prices. On and on it goes.

Speaking of Costco, I recently had my one and only bad experience when I had to buy a new air conditioner. I didn't know much and hadn't done my homework yet, but I knew Costco sold air conditioners through a local dealer in each market. The salesman I got – who was working on commission – tried to sell me a 26 SEER unit that would have been only marginally appropriate had I lived in an airplane hangar in Panama, let alone a single family home in suburban Chicago. But he kept trying to convince me that if I wanted to make the best investment in my home – at one point insisting that if I really loved my wife and kids – a $22,000 A/C unit that could cool a large office building in the jungle was the only way to go.

<u>Incentive-caused bias and agency costs</u>

Munger: "It's present in every profession and in every human being. And it causes perfectly terrible behavior…Human nature, with its version of what I call 'incentive-caused bias,' causes this terrible abuse. And many of the people who are doing it you would be glad to have marry into your family compared to what you're otherwise going to get."

He recalled gall-bladder removal surgeries at a community hospital wherein the doctor at fault thought the gall bladder was the source of all medical evil; he was <u>not</u> doing it out of malice or greed.

Other examples included sales pitches by CRE brokers (never in 70 years even one within hailing distance of the truth); cost-plus-percentage-of-cost contracts – a felony for the government to write one, but law firms still have this system; and "people who create things like cash registers, which make misbehavior hard, are some of the effective saints of our civilization…the cash register was a great moral instrument when it was created."

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[7] Jeremy Grantham: "My Sister's Pension Assets and Agency Problems (The Tension between Protecting Your Job or Your Clients' Money)." April 2012.

[8] John Maynard Keynes: *The General Theory of Employment, Interest, and Money.*

Update: this tendency was wrapped into the discussion on "Reward and Punishment Superresponse Tendency," but agency costs probably deserve special attention as a unique sub-segment of this phenomenon.

A stark example came recently when one member of a small team running the family office of a very wealthy, high-profile businessman described his job to me as doing just enough to make sure the head man "barely remembers we're here."

The role of the board of directors is worth considering, especially regarding Munger's rule and the zone of insolvency

Jason Zweig has also noted that while it may be impossible to quantify, both Munger and Buffett believe that Berkshire's structure minimizing agency costs has played a large role in Berkshire's success.

Consistency and commitment tendency – "a **super-power** in error-causing psychology tendencies" – "including the tendency to avoid or promptly resolve cognitive dissonance. Includes the self-confirmation tendency of all conclusions, particularly expressed conclusions, and with a special persistence for conclusions that are hard-won."

Munger: "What I'm saying here is that the human mind is a lot like the human egg, and the human egg has a shut-off device. When one sperm gets in, it shuts down so the next one can't get in. The human mind has a big tendency of the same sort." He cited Max Planck, noting that the really innovative new ideas in physics required a passing of the torch between generations, and the Chinese brain-washing system, which maneuvered people by getting people to make tiny little commitments and then building from there to get results that were better than those achieved by torture. He also warned of making a public disclosure of a conclusion because pounds it into your own head – "what you're shouting out you're pounding in."

> ***"The ability to destroy your ideas rapidly instead of slowly when the occasion is right is one of the most valuable things. You have to work hard on it. Ask yourself, what are the arguments on the other side? It's bad to have an opinion you're proud of if you can't state the arguments for the other side better than your opponents. This is a great mental discipline." — Charlie Munger***

Update: also known as **"Inconsistency-Avoidance Tendency"** and related to the concepts of cognitive dissonance. The brain is reluctant to change and we see this in all habits, both good and bad. Almost everyone has many bad habits that are long held despite knowing they are bad, but few people can list even a single bad habit they have eliminated. "First conclusion bias" is a related and powerful issue, and one often confronted in courtrooms. There are also positive effects, such as the often less-than-rational commitment and fealty of teachers, employees, public servants, religious officials, etc. As usual, one of the primary thoughts comes from Ben Franklin, who advises us that it is easier to avoid a bad habit than to break it. (**"An ounce of prevention is worth a pound of cure."**)

> ***"The investor's chief problem – even his own worst enemy – is likely to be himself."*** **– Ben Graham**[9]

Consistency and commitment bias, confirmation bias, and bias from liking/disliking are also closely related to **desirability bias**, loosely defined as the tendency to credit information you want to believe. There is a subtle but important distinction between getting confirmation of what you already believe and getting new evidence that supports something you want to believe. Sometimes there is a divergence between what you believe and what you want to believe – a pessimist who expects the worst but hopes for the best – often there is a distortion causing alignment.

A recent study polled voters ahead of the 2016 U.S. presidential election. Voters who received desirable evidence that their preferred candidate was likely to win took note of that information and incorporated it into their own subsequent beliefs about which candidate was most likely to win. But those voters who received undesirable evidence barely changed their beliefs at all.[10] And the bias in favor of the desirable evidence existed regardless of whether it confirmed or disconfirmed voters' prior beliefs. Good news is real news, but bad news is fake news.

This phenomenon of desirability bias also showed far more pronounced effects than mere confirmation bias. Evidence that merely confirmed a prior belief barely moved the needle of subsequent belief – updated beliefs changed about as

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[9] The Intelligent Investor

[10] https://aspredicted.org/idxgj.pdf

much for confirming evidenced as for disconfirming evidence. And the effect was bipartisan – both Trump and Clinton supporters showed a similar-size bias in favor of desirable evidence.

> ***"It is difficult to get a man to understand something when his salary depends on his not understanding it." — Upton Sinclair***[11]

Along the lines of Max Planck's comments about physics, the same was true of baseball. There was an old guard that was very entrenched in its way of thinking, and it had to be killed off before the game could evolve. Billy Beane of *Moneyball* fame said that he was the bridge between two worlds, the former superstar prospect who looked the part but couldn't quite produce on the field. Beane went on to hire nerdy outsiders with no athletic talent. He channeled Darwin in openly seeking disconfirming evidence. He looked for people who had no baggage or prior bias and sought to apply the base rate in various situations. He took a lot of heat from the establishment – a lot of criticism, and a lot of ad hominem attacks – but he was right and he ultimately won. He changed the way the game was played.[12]

> ***"We try and avoid the worst anchoring effect which is always your previous conclusion. We really try and destroy our previous ideas."*** **– Charlie Munger, 2016 Berkshire Hathaway annual meeting**

Update: the power of Sunk Costs is especially notable in fields dominated by long-duration research projects.

> ***"When I work I have no sunk costs. I like changing my mind. Some people really don't like it but for me changing my mind is a thrill. It's an indication that I'm learning something. So I have no sunk costs in the sense that I can walk away from an idea that I've worked on for a year if I can see a better idea. It's a good attitude for a researcher. The main track that young researchers fall into is sunk costs. They get to work on a project that doesn't work and that is not promising but they keep at it. I think too much persistence can be bad for you in the intellectual world."*** **– Danny Kahneman**[13]

Value Investors Club, SumZero, investment conferences, social media, and investment pitches of in any form all seem designed to get our commitments pounded in publicly. There is merit, to be sure, in being forced to elaborate on an idea in a scrutinized public forum, but there is also a cost in the form of anchoring. How much harder is it to reverse field and buy or sell after having publicly committed to a position?

> ***"I never liked talking to my LPs about ideas that I had…because you become somewhat wedded to it. It's harder to change your mind over time. You become pre-committed to your positions."*** **– Todd Combs**[14]
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> ***"If you speak up and put it on record, you end up getting too wedded to your thesis, and that's dangerous. Because everything that you're invested in is a function of the circumstances on a given day. It changes."*** **– Ted Weschler**[15]

It's not all bad. Most investors want or need to share their thinking with their partners. The process of writing or talking about an idea can – at least occasionally – improve the result. And publicity in prominent publications like the Manual of Ideas has undoubtedly helped me both personally and professionally. But it is a very, very tricky balance.

In general, I think Fisher is right that investors waste a lot of time and money by being irrationally tied up in their prior investment ideas. The idea of "just getting back to even" is powerful and destructive.

> ***"More money has probably been lost by investors holding a stock they really did not want until they could 'at least come out even' than from any other single reason."*** **– Phil Fisher, Common Stocks and Uncommon Profits**

When it comes to investments and allocations to certain projects and managers, how many of them still have capital for the sole reason that they were previously given capital?

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[11] *I, Candidate for Governor: And How I Got Licked* (1935), ISBN 0-520-08198-6; reprinted by the University of California Press, 1994, p. 109.

[12] Moneyall: The Art of Winning an Unfair Game by Michael Lewis

[13] http://www.collaborativefund.com/blog/a-chat-with-daniel-kahneman/

[14] https://finance.yahoo.com/news/warren-buffetts-money-managers-todd-combs-ted-weschler-speak-142643892.html

[15] https://finance.yahoo.com/news/warren-buffetts-money-managers-todd-combs-ted-weschler-speak-142643892.html

In politics, how many political opinions or decisions would be different if not for commitment and consistency? Prior hours devoted to an argument, public appearances, lots of ego and social proof – it can all combine to paint otherwise decent people into a corner.

Facebook/Twitter posts also seem prone to this phenomenon of "what you're shouting out you're pounding in."

> ***"We know from the seminal work of Daniel Kahneman, author of* Thinking, Fast and Slow*, that when addressing a problem, the first thought that comes into our minds is often not the best answer we will ultimately arrive at. Our 'fast' brain comes up with its best approximation of the answer to a problem, but our 'slow brain' often has the last laugh. This raises the question of whether it makes sense to tweet...anything."* – Seth Klarman**[16]

I've never had a Facebook account because nothing on it interests me. Twitter is a love/hate relationship for me. I find a ton of useful and interesting information on business, weather, sports, and more. I've also met and interacted with some good people. But I also find a majority of the content to be a distraction, pure noise, or worse. And my rule for posting a Tweet is derived from Warren Buffett and my friend Nadav Manham at the Private Investment Brief: never say anything bad about anyone. It's a hard rule to follow, but I can't think of a worse place to get into a war of words than Twitter. I use Twitter only to share information and pay the occasional compliment. I could spend all day going back and forth with idiots or correcting obvious mistakes being propagated by others, but where would that get me? Asynchronous communication is best used carefully and rarely.

Crossword puzzles are a favorite pastime of mine. They do fulfill some sort of urge that seeks order in chaos, but more than anything I think they're fun and relaxing. In any case, it's interesting how often I hear misconceptions about them from people, and I'm often asked by beginners how to improve. The short version is that crosswords are not so much a trivia contest as they are a problem-solving exercise, and the surest way to fail is to get one idea for an answer stuck in your head and torture the grid around it to try to make it work. An open, flexible mind that is not pre-committed to one answer is critical. Something as simple and straightforward as the clue "Run" could refer to the act of jogging, managing, operating, or fleeing, among several others. It could also be a stretch of time or a ravel in a knitted fabric or a path for animals. There are so many possibilities that your only choice is to wait until you have at least one more letter or hint from one of the crosses. But almost all new crossword solvers will immediately lock in on the first concept or definition that comes to mind and then try to make everything around that answer fit, even when it's obviously not working. Experts are amazingly adept at keeping their minds completely blank. If I don't immediately recognize the clue as answerable I move on. If possible I won't even finish reading the clue if I don't quickly recognize the answer as having only one possibility because I've learned that once a certain idea gets in my head it is extremely difficult to dislodge it.

Simple psychological denial

Munger: "The reality is too painful to bear, so you just distort it until it's bearable. We all do that to some extent, and it's a common psychological misjudgment that causes terrible problems." He recalled the mother whose son disappeared while flying off an aircraft carrier in the north Atlantic, or the mothers of obvious criminals.

Update: Consider something short of full denial – call it partial delusion – that can be just as damaging. It often ties to cognitive dissonance and confirmation bias. Also, the impossibility of proving a counterfactual is often used as a straw man argument but it can actually be a very useful tool for problem solving.

There are many types of denial: denial of fact, denial of responsibility (blaming, minimizing, justifying), denial of impact, denial of chronology or preceding events. But they all get back to the original principle of being unable to accept reality as it is. We all play the ostrich at times and bury our head in the sand rather than face the ugly world around us.

> ***"The absence of definite information concerning the outcomes of actions one has not taken is probably the single most important factor that keeps regret in life within tolerable bounds....We can never be absolutely sure that we would have been happier had we chosen another profession or another spouse.... Thus, we are often***

[16] 2016 Baupost annual letter

protected from painful knowledge concerning the quality of our decisions." **– Danny Kahneman, *The Undoing Project***

Denial seems to be having a resurgence. “Truthiness” and “alternative facts” and “fake news” may be obvious tools of political manipulation, but they're also ways for ordinary citizens to cope.

The Penn State football scandal stands out. For many years a handful of very powerful people simply denied the problem, and now the former president of the university and a few others are going to jail. And legions of the famously loyal fans insist it was some sort of "us versus them" witch hunt. These are normal, sincere, often intelligent and well-meaning people who committed no crimes of their own, but they’ve invested some portion of their lives in an institution – from the time they’ve spent publicly supporting the football team, the good memories made along the way, and even the career academics whose entire lives revolve around the school – that turned out to be far different than it appeared on the outside. Denial has swamped all other factors.

“The first principle is that you must not fool yourself, and you are the easiest person to fool.” **– Richard Feynman.**[17]

<u>**Bias from Pavlovian association**</u> – misconstruing past correlation as a reliable bias for decision making.

Munger: “So the dog salivated when the bell rang – so what? The truth is that it is an enormously powerful force in the life of all of us. We wouldn’t have money without secondary reinforcement…Three-quarters of advertising works on pure Pavlov.”

“Coca-Cola wants to be associated with every wonderful image: heroics in the Olympics, wonderful music, you name it. They don’t want to be associated with presidents’ funerals and so forth.”

Persian Messenger Syndrome – “The Persians really did kill the messenger who brought the bad news. You think that is dead? I mean you should’ve seen Bill Paley in his last 20 years. He didn’t hear one damn thing he didn’t want to hear. People knew that it was bad for the messenger to bring Bill Paley things he didn’t want to hear. Well that means that the leader gets in a cocoon of unreality, and this is a great big enterprise, and boy, did he make some dumb decisions in the last 20 years.”

In economics, we’re all taught about supply and demand, but there is also the counterintuitive result of getting more demand after raising the price, based on a Pavlovian association in the face of information inefficiency.

Bias from operant conditioning (e.g., giving the dog a reward, or Skinner’s ability to create superstitious pigeons) is also a factor.

Westinghouse lost a few billion dollars lending to hotel developers under the influence of “slick salesmen” with incentive-caused bias. It was a fiasco enabled by loose accounting standards which showed wonderful financial results in the initial phase of every transaction – an absolute sin. Joe Jett and Kidder Peabody also fell prey to this phenomenon.

Update: New examples include the association of military service and impressive music played by military bands; Napoleon and Hitler’s ill-advised extrapolation of prior military success in launching a campaign in Russia; a casino gambler on a hot streak; or an investor who “gets lucky in an odds-against venture headed by an untalented friend. So influenced, he tries again what worked before – with terrible results.”

“The proper antidotes to being made such a patsy by past success are (1) to carefully examine each past success, looking for accidental, non-causative factors associated with such success that will tend to mislead as one appraises odds implicit in a proposed new undertaking and (2) to look for dangerous aspects of the new undertaking that were not present when past success occurred.”

Persian messenger syndrome is also alive and well. There, the antidote is Berkshire’s prescription to “always tell us the bad news promptly. It is on the good news that can wait.” Dick Kovacevich of Wells Fargo offers another example. “Unlike Kovacevich, who would tell his executives, ‘The only thing I want to hear is bad news,’ Stumpf seemed to be proud that

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[17] Richard Feynman: *Surely You're Joking, Mr. Feynman!*

the culture was one of ‘Minnesota nice.’ **He ‘was not perceived within Wells Fargo as someone who wanted to hear bad news or deal with conflict,’** noted the board report.”[18]

More prosaic problems arise when Persian messenger syndrome is a legitimate threat to someone’s career or self-interest, combining with incentive-caused bias in catastrophic fashion. Munger cites the examples of union negotiators (leading to “many tragedies in labor relations”) and lawyers who, “knowing their clients will hate them if they recommend an unwelcome but wise settlement, will carry on to disaster.”

Another “serious clump of bad thinking caused by mere association lies in the common use of classification stereotypes.” Munger cites the “sort of wrong thinking that is both natural and common” in ageism and sexism.

> ***"It is frightening to think that you might not know something, but more frightening to think that by and large the world is run by people who have faith that they know exactly what is going on."*** **– Amos Tversky**

A more vivid example comes from Daryl Morey, the psychologically astute general manager of the Houston Rockets and something of a Billy Beane *Moneyball*-style manager in the NBA. Morey noted, after several years of observation, that extremely tall people had an unusual capacity to charm.

“’I don’t know if it’s like the fat kid on the playground or what.’ The trouble wasn’t the charm but what the charm might mask; addictions, personality disorders, injuries, a deep disinterest in hard work. The bigs could bring you to tears with their story about their love and the game and the hardship they had overcome to play it. They *all* have a story.’ And it was hard not to grow attached to it. It was hard not to use it to create in your mind a clear picture of future NBA success. But Daryl Morey believed – if he believed in anything – in taking a statistically based approach to decision making. ‘Your mind needs to be in a constant state of defense against all this crap that is trying to mislead you.’ Heeding the career risk that was likely if he never interviewed a player who turned into a disaster, Morey didn’t eliminate qualitative interviews but he did move toward quantitative statistical models to evaluate players. He also abhorred certainty and suggested a “new definition of the nerd: a person who knows his own mind well enough to distrust it.”

After fits and starts in building his own framework for evaluating players, one key tweak Dorsey made was to ban nicknames. That idea came after his staff started calling a certain prospect “Man Boobs” after seeing pictures of him shirtless during their pre-draft scouting. The scouts became dismissive of him and passed on the chance to draft him. The player – Marc Gasol – went on to be quite valuable and the mistake cost the Rockets dearly.

Morey also tried to eliminate the mis-weighting of vivid evidence from in-person tryouts, from “confirmation bias” – really first-conclusion bias – and liking tendency, which was especially prevalent when scouts compared prospects to themselves. Importantly, Morey also “forbid all intraracial comparison. ‘We’ve said, ‘If you want to compare this player to another player, you can only do it if they are a different race.’ [And] a funny thing happened when you forced people to cross racial lines in the minds: They cased to see analogies. Their minds resisted the leap. ‘You just don’t see it,’ said Morey.” The development and success of Jeremy Lin – a Chinese-American player from Harvard with roughly zero comparable players in NBA history – played a big role in this thought, especially since Morey’s model coveted Lin but Morey himself “chickened out” when he had the chance to draft him.[19]

A corollary to association is the representativeness heuristic, which is often used when making judgment under uncertainty. Tversky and Kahneman defined representativeness as "the degree to which [an event] (i) is similar in essential characteristics to its parent population, and (ii) reflects the salient features of the process by which it is generated."[20] The problem, of course, is that the representative examples are easy to access but may or may not reflect the base rate.

"Steve the librarian" sets the stage. "As you consider the next question, please assume that Steve was selected at random from a representative sample. An individual has been described by a neighbor as follows: 'Steve is very shy and withdrawn, invariably helpful but with little interest in people or in the world of reality. A meek and tidy soul, he has a need for order and structure, and a passion for detail.' Is Steve more likely to be a librarian or a farmer?

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[18] http://www.vanityfair.com/news/2017/05/wells-fargo-corporate-culture-fraud

[19] *The Undoing Project* by Michael Lewis

[20] http://datacolada.org/wp-content/uploads/2014/08/Kahneman-Tversky-1972.pdf

"The resemblance of Steve's personality to that of a stereotypical librarian strikes everyone immediately, but equally relevant statistical considerations are almost always ignored. Did it occur to you that there are more than 20 male farmers for each male librarian in the United States? Because there are so many more farmers, it is almost certain that more 'meek and tidy' souls will be found on tractors than at library information desks. However, we found that participants ignored the relevant statistics and relied exclusively on resemblance...as a simplifying heuristic."

Consider their classic example of "Tom W." Asked to guess Tom's field of graduate school out of nine choices, you should jump toward the base rate just as you'd want to know how many marbles of a certain color are in a jar. Participants were placed into three groups and asked to rank the likelihood of Tom as a graduate student in one of nine fields: one group was nudged toward the base rate, one was given a personality sketch, and one was given the personality sketch with the added information that the sketch was done by a trained psychologist. The results were strongly driven by how representativeness or similarity, ignoring the base rate, even among brilliant graduate students in psychology who were working on the study with Kahneman and Tversky!

Or consider their classic fictitious subject "Linda." "Amos and I made up the Linda problem to provide conclusive evidence of the role of heuristics in judgment and of their incompatibility with logic." Linda is adaptable to the times, but the original description said "Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Which is more probable? 1. Linda is a bank teller. 2. Linda is a bank teller and is active in the feminist movement." Later updates offered Linda as a teacher, a bookstore clerk who takes yoga, active in the feminist movement, a bank teller, an insurance salesperson, etc. "Even in the Facebook era, it is easy to guess the almost perfect consensus of judgements: Linda is a very good fit for an active feminist, a fairly good fit for someone who works in a bookstore and take yoga classes—and a very poor fit for a bank teller or an insurance salesperson."

On a related note, here's a thought experiment about two new investment funds being launched at the same time. Firm A is being launched as a one-man shop with no back office in a mid-sized city. The manager is clearly very bright, but he quit an Ivy League school to finish college at a state university near home. After some brief work experience he was rejected by Harvard Business School, but he did pursue his graduate education at an excellent "second choice" business school. He went on to have a very successful two-year run at a reputable fund. He's moderately rich but has invested only $1,000 of his own money in the fund. He doesn't have a specialty or a focus other than general value investing. He is in his 20s and has no experience as a portfolio manager. His LP roster is a bunch of friends, family, and neighbors. He refuses to provide any information about his holdings, and he reports performance only once per year.

Firm B is run by a team of exceptionally brilliant people. They have a collective IQ that is probably among the highest of any group in the world. They are swimming in prestigious degrees and world-renowned awards. The strategy is cutting edge, specialized, and unique. They employ the best quantitative methods and risk systems. They have well over a decade of experience at a world-class, name-brand firm, and they are enormously rich. The roster of LPs includes some of the wealthiest people and the most prestigious institutions in the world. The managers are also putting ~100% of their own net worth into the fund.

Firm A, of course, is the Buffett Partnerships, and Firm B is Long Term Capital Management.[21]

Another related topic in representativeness is the "clustering illusion," as discussed by Gilovich in *How We Know What Isn't So*.[22] "Why, beyond noting that nature abhors a vacuum, do people fall prey to the clustering illusion?" Representativeness. The 2004 and 2005 hurricane seasons, the "hot hand" issue in basketball, a string of good returns by a fund manager – everything needs to be considered in this regard. And as always, our biggest problem takes from extending a good idea too far. Gilovich notes "it is the overapplication of representativeness that gets us into trouble."

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Munger expanded greatly on the subject of association in a subsequent talk given at UC Santa Barbara in 2003:[23]

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[21] I fudged some of the figures and details to make it less obvious, but the point (hopefully) stands.
[22] *How We Know What Isn't So* by Thomas Gilovich
[23] As reprinted in *Poor Charlie's Almanack*

I have posed at two different business schools the following problem. I say, "You have studied supply and demand curves. You have learned that when you raise the price, ordinarily the volume you can sell goes down, and when you reduce the price, the volume you can sell goes up. Is that right? That's what you've learned?" They all nod yes. And I say, "Now tell me several instances when, if you want the physical volume to go up, the correct answer is to increase the price?" And there's this long and ghastly pause. And finally, in each of the two business schools in which I've tried this, maybe one person in fifty could name one instance. They come up with the idea that occasionally a higher price acts as a rough indicator of quality and thereby increases sales volumes.

This happened in the case of my friend Bill Ballhaus. When he was head of Beckman Instruments it produced some complicated product where if it failed it caused enormous damage to the purchaser. It wasn't a pump at the bottom of an oil well, but that's a good mental example. And he realized that the reason this thing was selling so poorly, even though it was better than anybody else's product, was because it was priced lower. It made people think it was a low-quality gizmo. So he raised the price by 20% or so and the volume went way up.

…And nobody has yet come up with the main answer that I like. Suppose you raise that price, and use the extra money to bribe the other guy's purchasing agent? (Laughter). Is that going to work? And are there functional equivalents in economics – microeconomics – of raising the price and using the extra sales proceeds to drive sales higher? And of course there are zillion, once you've made that mental jump. It's so simple.

One of the most extreme examples is in the investment management field. Suppose you're the manager of a mutual fund, and you want to sell more. People commonly come to the following answer: You raise the commissions, which of course reduces the number of units of real investments delivered to the ultimate buyer, so you're increasing the price per unit of real investment that you're selling the ultimate customer. And you're using that extra commission to bribe the customer's purchasing agent. You're bribing the broker to betray his client and put the client's money into the high-commission product. This has worked to produce at least a trillion dollars of mutual fund sales.

The investment management business still features this phenomenon in the extreme. Even though fees are in focus and under pressure, and even though passive index funds are taking share, there is a long way to go in that direction. In the meantime, investment managers that have already achieved scale and/or success – or at least the patina of success – can usually ride that wave years longer than we might otherwise think. And the most predictive indicator of investment fund-raising success remains, in my opinion, a spin-off from a name-brand firm. As a predictor of success the results might look different.

It's also worth thinking about how Investment environments are designed. Easy access to screens, ever-cheap commissions, beautiful data and blinking lights…they all have legitimate benefits, but they're also hugely encouraging to frequent trading. Every piece of trading software I've ever used literally rings a bell when a trade goes through. You can disable the sound, but you have to go to the trouble to do that. The broker isn't just trying to notify you of a completed trade, it's trying to encourage trading to generate more commissions.

In advertising, the world still works according to these principles, although there is some debate as to whether the world is changing in light of consumer preferences shifting away from brands toward generics. And the near-ubiquitous available of instantaneous price discovery enabled by mobile phones and Amazon must have some effect, however big, on diminishing the information inefficiencies and Pavlovian association so frequently exploited by brands. 25 years ago, it would have been hard to imagine Gillette being threatened by a start-up, or the rise of Kirkland (now with more revenue than Coca-Cola), or the slow fade of some CPG companies.

As an aside, a useful if unprovable counterfactual might be found in a hypothetical experiment: if all companies in an industry stopping advertising all together, would there be any net effect on sales? Even short of that, it follows that some or even most of the money spent on advertising is wasted. Just as I can't prove the idea about a world without advertising, most advertising executives can provide no definite proof of success or even a quantified return on investment.

Coca-Cola, as noted by Munger, used association and availability to enormous success in the 20th century. But with hundreds of millions or even billions spent on advertising every year, what progress is being made? In any case, the vivid examples of marketing success like Coke drive plenty of mindless imitation.

Going back to Munger's comments about accounting, Enron had a party – an actual party – when it won approval for an accounting change that enabled mark-to-market (and really, mark-to-model) accounting. It was as if this episode were written by Munger in talking about how prior accounting scandals (speaking in 1995) "would never have been possible if the accounting system hadn't been such [that] for the initial phase of every transaction it showed wonderful financial results." That is precisely what happened at Enron when it booked long-term energy contracts or built physical assets and immediately recognized all gains and profits up front.[24]

My opinion, which is incomplete and open to criticism, is that no one at Enron – Lay, Skilling, Fastow or anyone else – woke up one morning and decided to cook up a massive fraud. As with many such cases, there was a slippery slope. The little bad behaviors snowballed into enormous bad behaviors. I think there were incentive-caused problems and cultural issues that morphed into a monster. Just as some notable people have overdosed on Ayn Rand, Jeff Skilling talked about Richard Dawkins' book *The Selfish Gene* as his favorite book of all time, the foundation of his entire managerial philosophy. He had an extreme view of the world in which money and fear were the only possible motivators of people. He insisted on a numerical grade for all Enron employees, and it required that 15% of all people had to be given the lowest score, regardless of absolute performance, and forced to find another job inside or outside of Enron within two weeks (a practice known as "rank and yank").

That is an interesting vignette about the culture, but it can't tell the whole story. In a pattern that hopefully sounds familiar, it was a confluence of events that made the Enron situation possible. There was a load of incentive-caused bias – the entire company and culture was created as if to maximize the potential problems in that regard. There was social proof – the company was a successful, edgy, high-flying, politically connected wonderchild that was adored by the press and by Wall Street. (It was a pipeline company that quickly transformed itself and was named by Fortune as "America's Most Innovative Company" for six consecutive years.) There was over-influence by authority as higher-ups encouraged others in the organization to engage in misconduct. There were contrast effects as the transgressions and crimes started small but grew over time, aided by commitment and consistency. The auditor was central to the villainy here too, and in this case it caused an entire firm – one of the giants of American business – to be criminally indicted and implode.

Likewise, the rise of Las Vegas is often attributed to the removal of the mafia, but the development of Las Vegas wouldn't have been possible without some deep sources of capital to replace the mob. And the development was driven by a regulatory and accounting change. In 1969 the Nevada state legislature passed the Corporate Gaming Act, allowing corporate entities to purchase and build casinos without subjecting every shareholder to be thoroughly vetted by background checks as previously required. Expansion predictably exploded, and now you can play anywhere in Las Vegas: Strip casinos, local casinos, drug stores, car washes, supermarkets. Many of these places have not just the usual "reward" programs and perks, but they also offer childcare to enable more gambling. Likewise, legal and regulatory fights over sovereignty on Native American reservations was the driving force in spreading casino gambling to all corners of America. It didn't take long for the politicians to sink their teeth into the juicy tax revenues casinos could offer by rewriting the laws to justify them in otherwise asinine locations. Gambling was legal on cruise boats, so all forms of water should be a safe harbor for casinos.? I'm an illegal gambler on land but as soon as I walk across some little bridge in Gary, Indiana or Joliet, Illinois onto a makeshift riverboat and suddenly I'm legitimate? It's a Mad Hatter's Tea Party, as Munger would say.

Reciprocation tendency, including the tendency of one on a roll to act as other persons expect.

Munger: "It is so easy to be a patsy for what [Cialdini] calls the compliance practitioners of this life…a very, very powerful phenomenon." "Wherever you turn, this consistency and commitment tendency is affecting you. In other words, what you think may change what you do, but perhaps even more important, what you do will change what you think."

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[24] Bethany McLean and Peter Elkind , Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron, 2003, ISBN 1-59184-008-2.

Munger cited the example of a study that asked members of an academic campus to take juvenile delinquents on a trip to the zoo; he got one in six to say yes. Then he asked others to devote two afternoons a week to taking juvenile delinquents to the zoo, and everyone declined. But after making the initial request he backed off and asked if they would at least take them to the zoo one afternoon. Then he got half of the respondents to agree. He got three times the success by going through the "ask-for-a-lot-and-back-off" strategy.

Zimbardo's Stanford prison experiment is also an example of not just reciprocation tendency but also commitment and consistency tendency too. The actors' actions themselves pounded in the idea.

Update: "Kantian Fairness Tendency" is an important corollary – Kant's "categorical imperative" required people to follow behaviors that, if followed by all others, would make the surrounding systems work best for everybody. Examples include voluntary traffic mergers, cooperation at intersections and tunnels with no traffic signals, orderly lines even in "first come, first served" situations, and the abolition of slavery.

That is not to imply that reciprocation is dead, or even diminished. Why does every salesman have an entertainment budget? Concerts, sporting events, golf, holiday parties – they're all designed to encourage reciprocation.

The brilliant financial writer Matt Levine often harps on his idea of the "gift economy" in finance. Banks and broker-dealers will give you "free" research, conferences and management meetings, tickets to the U.S. Open, etc., and in return they expect *overpriced* trading commissions and investment banking mandates. Wouldn't it be easier to just price the underlying business reasonably and skip all the reciprocal dancing?

One of Munger's original examples was Sam Walton's practice of never letting his purchasing agents take so much as a handkerchief from a salesman. Fast forward a few years and Walmart finds itself enmeshed in a full-blown bribery scandal involving multiple government officials in multiple countries. It will likely have to settle for hundreds of millions of dollars and the total legal and compliance bill is already stretching toward $1 billion.[25] It's easy for big companies to lose their culture over time.

Environmental factors in general probably get too little attention, especially in the investment industry. Noise levels, screens with blinking lights, ringing telephones, open floor-plan offices – everything seems designed to distract.

The Buffett-Munger system at Berkshire Hathaway is one giant feedback loop of reciprocation used for good. Berkshire has had remarkable success in motivating its hundreds of managers and its hundreds of thousands of employees by intentionally cultivating a "seamless web of deserved trust" and populating it with people who find it attractive. Berkshire's managers speak frequently of feeling the need to live up to the trust Buffett and Berkshire have placed in them. Other sprawling conglomerates would have long ago succumbed to sclerotic bureaucracy. Buffett also goes out of his way to praise publicly by name – notice that he is always careful to praise specifically and criticize by category. Reciprocation is everywhere within Berkshire. And conversely, a culture that is dominated by policy manuals and rote procedurals may be sending a subtle message of distrust that is – by the anecdotal evidence, at least – often reciprocated. Berkshire has also remarkably free of scandals and misconduct for a company of its size operating in industries that have tripped up many peers.

In Munger's updated version, he focuses on the negative aspects of reciprocation. Human history suggests that turn-the-other-cheek behavior is not programmed into a natural algorithm, and it takes a lot of mental effort to overcome our genetic tendencies to avoid turn-the-other-cheek behavior. And the standard antidote is to train oneself to delay or defer any negative reaction. ***"You can always tell a man to go to hell tomorrow,"*** to paraphrase Tom Murphy of Capital Cities and Berkshire fame.

<u>Bias from over-influence by social proof -- that is, the conclusions of others, particularly under conditions of natural uncertainty and stress</u> – "a lollapalooza"

Munger: "Big-shot businessmen get into these waves of social proof…I think time and time again, in reality, psychological notions and economic notions interplay, and the man who doesn't understand both is a damned fool."

[25] https://www.bloomberg.com/news/articles/2017-05-09/wal-mart-said-close-to-resolving-bribery-probe-for-300-million

Kitty Genovese's murder is an example of not just social proof but also "microeconomic ideas and gain/loss ratios."

The wave of oil companies buying fertilizer companies was driven in part by social proof. One oil company buys a fertilizer company, and all other oil companies follow, with no one having any good reason for doing so.

Efficient Market Theory is "a wonderful economic doctrine that had a long vogue in spite of the experience of Berkshire Hathaway." The use of the past tense is interesting…

Investing as an activity provides a lot of reinforcement (you do something and market goes up and your paid and applauded) but also social proof, since prices in the market are the ultimate form of social proof in that they reflect what other people think. The combination is very powerful. [So] why would you expect general market levels to always be totally efficient (e.g., the Nifty Fifty and resulting 1973-74 bear market). "If these psychological notions are correct, you would expect some waves of irrationality, which carry general levels, so they're inconsistent with reason."

Update: Munger added several thoughts on social proof, emphasizing that it is most easily triggered in the presence of stress and/or puzzlement.

- Social proof is a huge factor for teenagers, and the respect of or interaction with their peers dominates that of the parents. So parents are wise to artfully manipulate the quality of their teenagers' peer group than any other methods of parenting.
- Outside directors on corporate boards often offer extreme examples of social proof. Joe Rosenfield said, "They asked me if I wanted to become a director of Northwest Bell, and it was the last thing they ever asked me."
- "Monkey-see, monkey-do"
- "Social-Proof Tendency often interacts in a perverse way with Envy/Jealousy and Deprival Superreaction Syndrome," citing relations in the Middle East.
- "Learn how to ignore these examples from others when they are wrong, because few skills are more worth having."

Social proof is a deeply ingrained – and indeed, an important and useful – human tendency that has been explored to such a depth in recent years that it would have to be an entirely separate topic of its own. Focusing on a just a few narrow areas still leaves many vivid examples.

Joel Greenblatt tells an interesting story involving social proof. A room full of students is asked to look at a large jar of jelly beans and guess how many are inside. The students take a moment, write down their guesses, and hand them in. Then they're asked to go one by one and tell their guess to the crowd; they can keep their prior written guess or change it as they see fit. The jar contains 1,776 jelly beans, and the written guesses averaged 1,771. The oral guesses in the second step? Those averaged 850. A weighing machine (guess #1) versus a voting machine (guess #2), all thanks to social proof. [26]

Investors are often subject to social proof on Value Investors Club, SumZero, and other message boards. How many of us feel good about an idea because we get applause or a favorable rating? That creates a marginal anchor to the idea in even the most rational man. In the realm of both social proof and liking/disliking tendency, I am often influenced when a writer I know (or even one I don't but whose writing is especially persuasive) is bullish on something I own. Likewise, how often do I dismiss a good idea because it comes from a prominent idiot? My only answer is to read only those write-ups that disagree with my previously stated thesis, or to limit myself to write-ups that are at least two years old. That practice can be helpful in other ways too, as there is often useful background information in those old write-ups. It is also a good way to learn vicariously from the mistakes of others.

On that note, one way to avoid social proof in investing is by structuring the research process. The right way to do investment research, in my opinion, is to start with what a company is legally required to disclose in a standardized format (SEC filings, regulatory reports, etc.). Then move on to secondary sources (customers, suppliers, competitors) that may have a bias or some axe to grind. Only as a last stop, once my own opinions have a basis in reality and I can argue both sides, do I seek opinions from those with a vested interest (management, sell-siders, etc.).[27] And even then – especially

[26] https://www.youtube.com/watch?v=bZfPJCAVQg0
[27] I took this idea from Jim Chanos and Charlie Munger

then – I'm looking for disconfirming evidence. If I go looking for a CEO to tell me how great his business is, or for a like-minded investor to tell me how cheap a security is, or for a barber to tell me how much I need a haircut, I've never once come up emptyhanded.

Munger's favorite bridge expert Richard Zeckhauser refers to "Monday Morning Quarterback risk" as a form of social proof.[28] He's right, and I often wonder how many investments are passed up, despite favorable prospects, due to the chance of a good-decision-bad-outcome event that will be judged harshly by outsiders (especially LPs/allocators, the media, and one's peers). We all feel that pang in our stomachs that comes from the fear of looking stupid in front our friends and our business partners.

The Yale endowment model created by David Swensen was obviously a triumph of rational thought, but as with all good ideas in economics the problem arose when a good idea was taken too far. Many smaller, less able endowments suffered during the GFC and since by trying to copy Yale. And outside of the framework itself there is still social proof at work. One endowment officer once told me that he does look for great new managers, "but to be honest almost 100% of our managers are sourced from the rolls of other endowments." Original thinking will always be at a premium.

Chuck Prince will go down in business lore for an ill-advised comment in July 2007 when he was the CEO of Citigroup. "When the music stops, in terms of liquidity, things will be complicated**. But as long as the music is playing, you've got to get up and dance. We're still dancing."** He then added, "The depth of the pools of liquidity is so much larger than it used to be that a disruptive event now needs to be much more disruptive than it used to be. At some point, the disruptive event will be so significant that instead of liquidity filling in, the liquidity will go the other way. I don't think we're at that point."[29] That attitude and mistake may or may not have been driven by social proof; it was made in the broader context of banks keeping or winning business related to corporate takeovers and buyouts, so fear of missing out and incentive-caused bias likely played a large role as well.

Marketing is an obvious field for social proof. In conjunction with Pavlovian association and other tendencies, marketers know how to exploit our innate human desire to be accepted by others. I used to think that the trend of being "cool" and wearing the "right" clothes and brands peaked in 8th grade. But then I watched as many of my friends and peers in their 20s and 30s seemed to revert to the age of 13. Many phenomena associated with otherwise grounded people in their 40s – the "midlife crisis" or the "tiger mom" – seem to draw much of their strength from social proof. In general it seems worthwhile to ask how any activity – especially when it comes to our money and our consumption habits – are driven by a subconscious desire to win the approval of others.

Social media barely needs to be mentioned here, but many software engineers are keenly aware of social proof and they design into their apps and websites. Nothing is more powerful in driving the next Instagram or Snapchat than social proof. Yes, the fans have a point that there are legitimate network effects at play, and that the human desire to share stories, pictures, and gossip is as old as the hills. But that doesn't diminish the power of social proof to drive human behavior. Entire vacations are planned around how they will appear on social media. I have a friend – as I'm sure we all do – who has literally staged entire photo shoots of various life events (weddings, birthdays, anniversaries, etc.) just to post them in the best possible light on Facebook and Instagram. In fact, I have a theory that there is an inverse relationship between the frequency and the ostensible happiness of social media posts – the seeking of social proof – and that person's actual happiness.

Politics is likewise an obvious arena of social proof, and the 2016 U.S. election proved that like none other. Social media, Mark Zuckerberg's absurd protests to the contrary, played an enormous role in creating social proof and reinforcing opinions during the election.

Home court advantage in sports is also an interesting case of social proof. Why does the home team tend to win more games? Travel fatigue? Familiarity with the field or court? Nothing shows up in the data until you get to the number of fouls called, the amount of stoppage time added, and the ratio of balls and strikes. The referees are human beings and they don't like being booed and hated by the home team fans.

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[28] https://www.hks.harvard.edu/fs/rzeckhau/InvestinginUnknownandUnknowable.pdf

[29] https://www.ft.com/content/80e2987a-2e50-11dc-821c-0000779fd2ac

"Life is marketing." **– Carlos Kaiser**[30]

Carlos Kaiser provides a fascinating example, a soccer "star" who could barely play the game and lived entirely on social proof.[31] His birth name was Carlos Henrique Raposo but he played up some youth-league hype by referring to himself as "Carlos Kaiser" to pound in his supposed resemblance to the great Franz Beckenbauer (whose nickname was *Der Kaiser*). Kaiser-nee-Raposo looked the part of a 1980s superstar from Brazil – he was the right build, he was in excellent physical condition, and had a perfectly styled mullet. Then he used early social proof that he generated from his friendships with legitimate superstars like Renato Gaucho and Bebeto to get his foot in the door. His superstar friends would recommend him to coaches they knew in various leagues, and the coaches thought that if these great players were recommending a player he must be worth at least a short-term contract.

"His staple trick was to make friends with influential people: he would befriend powerful figures at each club, telling them about his impressive football CV. If he was in the mood, he would approach journalists, players and the club owner, constructing a web of lies so elaborate that nobody could remember who had vouched for him in the first place…

"'Life,' says Kaiser, 'is marketing' – and he told his stories with such infectious conviction that it was easy to be swept along. Bebeto, the World Cup-winning striker of 1994, says: **'His chat was so good that if you let him open his mouth, that would be it. He'd charm you. You couldn't avoid it. That would be it.'**

"Upon arrival, Kaiser would claim he needed a month or two to get acclimated. Then he would promptly fake a pulled hamstring and ride out the remaining six months or so on the bench while collecting a fat paycheck and acting as an in-house cheerleader. 'He created a fun, happy and lighthearted mood,' says Alexandre Torres, the former Brazil international and son of Carlos Alberto. 'He would tell stories and he would get players dreaming. I think that's why everybody liked him so much.'"

Some other team not doing its own homework – and all four of Rio's big clubs took the bait at various points – would hear about this great player with his "promising talent" languishing on the bench of some reputable peer club due to an unlucky injury, and they would decide to take a gamble on him. Rinse and repeat. He also engaged in some forgery and fraud to prolong the ruse, at one point claiming to have been part of a championship team by passing himself off as someone else. He paid spectators to sing his name when the club owner walked by. He also helped his cause by handing out free jerseys and other memorabilia to journalists, convincing them to write fake news stories about him that would propagate his legend. One of the few times he got close was when a team owner demanded that the coach play him, but Kaiser started a fight on the sideline to earn an ejection. He made up a story about being provoked by a fan who was defaming the owner; he was forgiven with a pay raise and a six-month contact extension. This fraud went on for almost 20 years.

Man with a hammer syndrome

Munger: "What made these economists love the efficient market theory is the math was so elegant. And after all, math was what they'd learned to do. To the man with a hammer, every problem tends to look pretty much like a nail. The alternative truth was a little messy, and they'd forgotten the great economist Keynes, whom I think said, 'Better to be roughly right than precisely wrong.'"

Update: As the world's professions and businesses get ever more specialized, there is still considerable value to a broad, multi-disciplinary frame of mind. It is especially helpful in avoiding man with a hammer syndrome.

> ***"Just as many smart people fail in the investment business as stupid ones. Intellectually active people are particularly attracted to elegant concepts, which can have the effect of distracting them from the simpler, more fundamental, truths."*** **– Peter Cundill**[32]

False precision is an especially dangerous kind of error, as we'll see below in a couple of cases. Just think of all the nonsense that gets spewed in models, forecasts, and target prices, always down to the last degree or two decimal places. Not only

[30] https://www.theguardian.com/football/blog/2017/apr/26/the-forgotten-story-of-carlos-kaiser-footballs-greatest-conman

[31] http://www.atlasobscura.com/articles/soccers-ultimate-con-man-was-a-superstar-who-couldnt-play-the-game and https://www.theguardian.com/football/blog/2017/apr/26/the-forgotten-story-of-carlos-kaiser-footballs-greatest-conman

[32] *There's Always Something to Do: The Peter Cundill Investment Approach* by Christopher Risso-Gill: https://goo.gl/aMK2A0

does it convey confidence that shouldn't be there, and build up that overconfidence internally, it also destroys credibility among anyone on the receiving end who happens to know better.

Hardly a week goes by that I don't marvel at some case of man with a hammer syndrome. It is especially prevalent in the investment business. What do analysts know how to do? Create models, run DCFs, and write memos. That is the kind of rote behavior – and what Howard Marks would call "first-level thinking"[33] – that is and should be replaced in large part by algorithms.

Weather and climate are interesting areas in this regard. The long-term climate models have improved a lot and they're directionally right, but because they called for exactly X.XX degrees of warming by some specific date, and the result was far less than X, the whole framework is being cast into doubt. Had the scientists made more of an effort to convey reasonable uncertainty and avoid false precision, the result would have been more credibility and a better outcome. (It's reasonable to assume that some of them may not want to make an effort, for man-with-a-hammer and other reasons, while others' efforts may have been thwarted by noise in the world.)

Think of just meteorology on a local scale. Contrary to popular belief, weather forecasting (as distinct from long-term climate modeling) has improved by leaps and bounds in the past few decades. With plenty of rigor, a 24-hour forecast is now as accurate as a three-day forecast was a decade or two ago. Hurricane tracks can be reliably forecasted down to a few dozen miles up to a week in advance; more than 24 hours' notice was a miracle 30 years ago. But these facts are lost on the public for many reasons, and a primary cause is the communication of forecasts. Meteorologists have math and science backgrounds, and now they have access to endless amounts of data and supercomputers that can produce pinpoint forecasts for any location down to a certain zip code. And so what do they do? They issue precise, pinpoint forecasts even though they are totally useless. The average forecast reader/listener is clueless – they often don't know the first thing about what the forecast is even trying to say. The forecast itself is communicated with certainty when no such certainty exists, and so most people lose faith in the forecast and the forecaster. A simple solution would be to issue a forecast that has a range (even a small range) of temperatures throughout the day along with a range of probabilities for storms/precipitation. Point estimates and false precision do more harm than good.

Buffett in 1997 wrote a reinsurance policy for the California Earthquake Authority, risking about $600 million of BV and ~1.5% of Berkshire's market value. Buffett's notes that its securities portfolio has subjected the company to far greater volatility. The deal involved $1 billion of risk after $5 billion of aggregate insured losses had been incurred, and was being shopped at a price of 5 times the estimated actuarial value, but it found no takers. That is because the quantitative analysis at other firms ran into a dead end upon realizing the true odds could not be precisely estimated. The 1994 Northridge quake also loomed large in many people's memories: it had "laid homeowners' losses on insurers that greatly exceeded what computer models had told them to expect. Yet the intensity of that quake was mild compared to the 'worst-case' possibility for California." Unsurprisingly, Buffett stepped in. "So what are the true odds of our having to make a payout during the policy's term? We don't know – nor do we think computer models will help us, since we believe the precision they project is a chimera. In fact, such models can lull decision-makers into a false sense of security and thereby increase their chances of making a really huge mistake… Even if perfection in assessing risks is unattainable, insurers can underwrite sensibly. After all, you need not know a man's precise age to know that he is old enough to vote nor know his exact weight to recognize his need to diet."[34]

Extrapolation is a derivative of this tendency too. As Kahneman and Tversky have found, people often use heuristics to help them make decisions, but a special problem develops when people often extrapolate heuristics from situations that are appropriate to situations where they simply do not work. As always, there must be a robust and multi-disciplinary latticework of mental models – the use Munger's preferred phrasing – if there is going to be any success in the real world. It's easy to find business leaders who attach themselves to one idea or framework and try to apply it in the wrong area.

There may not be a single trait more effective in countering man with a hammer syndrome than simple intellectual curiosity. And "**Curiosity Tendency**" is its own tendency in Munger's revised framework. The curiosity trait may be partially or mostly innate, but it can also be cultivated. I remember going to the library in college and, to the detriment of my grades, spending four, six, sometimes eight hours completely lost in something that had absolutely nothing to do with my

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33 https://www.oaktreecapital.com/docs/default-source/memos/2015-09-09-its-not-easy.pdf?sfvrsn=2

34 https://www.hks.harvard.edu/fs/rzeckhau/InvestinginUnknownandUnknowable.pdf and http://www.berkshirehathaway.com/letters/1996.html

courses. Ted Weschler recently said, "I spend the vast majority of my day reading. I try to make about half of that reading random."[35] I don't know how to quantify the benefit of such an approach, but I think we've all experienced the opposite when a strict, narrow, stifling atmosphere acts as a constraint.

> ***"The secret to doing good research is always to be a little underemployed. You waste years by not being able to waste hours."*** **– Amos Tversky**[36]

Contrast-caused distortions of sensation, perception and cognition

Munger: "The sensation apparatus of man is over-influenced by contrast – it has no absolute scale but it has a contrast scale. And it's a scale with quantum effects too – it takes a certain percentage chance before it's noticed. Here the great truth is that cognition mimics sensation. People are manipulating you all day with contrast. If it comes to you in small pieces you're likely to miss it."

- Cialdini's bucket of water experiment
- A magician removing your watch
- Real estate brokers who dupe clients by first showing two awful, overpriced homes and then a moderately overpriced home. "It works pretty well, and that's why the real estate salesmen do it. And it's always going to work."
- Women who enter into bad marriages because they grew up in even worse homes. Ditto for second marriages.
- The proverbial frog in a pot of water that is slowly heated to boiling.

Update: "Few psychological tendencies do more damage to correct thinking. Small-scale damages involve instances such as man's buying an overpriced $1,000 leather dashboard merely because the price is so low compared to his concurrent purchase of a $65,000 car…One of Ben Franklin's best-remembered and most useful aphorisms is 'A small leak will sink a great ship.' The utility of the aphorism is large precisely because the brain so often misses the functional equivalent of small leak in a great ship."

Other examples of contrast-caused misperceptions abound.

- The marketer's or pollster's habit mandate to "**simplify, then exaggerate**."
- Corporate profits/markets, valuation, absolute returns in corporate markets
- **Relative valuation** – fixed income as priced over Treasurys, or a Triple-A tranche against a triple-BBB tranche. Who cares if the relative valuation is correct if the absolute valuation is garbage? Is an extra 40 bps of spread worthwhile when comparing a Treasury and a structured subprime RMBS?
- **Non-GAAP accounting** – we've all seen the explosion of "non-GAAP" or "adjusted" figures in company financial reports. That's part of why it's so important to start with standardized reporting first – what the company has to say – before they can try any magician tricks with your watch by using "look over here instead" non-GAAP numbers. And it doesn't stop with reporting – it's come to dominate incentives too. The term "non-GAAP" appeared in 58% of proxy filings for S&P 500 companies reporting so far in 2016, up from 27% of those same S&P 500 constituents five years ago.[37]
- **Perceptions of human progress and poverty** – Extreme poverty (less than $2 per day in real terms) has been cut in half between 1990 and 2015, but in a survey just 1% of respondents correctly guessed that. More than 70% of respondents said extreme poverty had increased by 25% or more during that time.[38]
- **Anchoring to recent market prices – "I missed it"**
    - Consider Buffett's preferred valuation method (i.e., not even looking at the market price until he has his own opinion of valuation)
- Investment measurement periods – quarterly, monthly, weekly, daily investment results…

[35] https://finance.yahoo.com/news/warren-buffetts-money-managers-todd-combs-ted-weschler-speak-142643892.html
[36] *The Undoing Project* by Michael Lewis.
[37] Audit Analytics
[38] https://www.gatesnotes.com/2017-Annual-Letter

- Real estate purchases
- Companies that go bankrupt slowly…then suddenly
- Climate change
- **Stock splits** – obviously pure noise, but no matter how simple the concept of one pie being cut into a different number of pieces, the contrast phenomenon and anchoring to the previously higher price briefly drove a frenzy of stock splits among tech companies in the dot com boom. Now – perhaps thanks to Berkshire – even tech companies seem to have finally swung the other way, with four-figure stock prices even emerging as a status symbol now. By my count on FactSet, there are at least a few dozen companies whose share price exceeds $500. Amazon, Markel, Alphabet/Google, Priceline, Seaboard, NVR, Constellation Software, Cable One and Graham holdings, White Mountains, and of course, Berkshire itself all have refused to split their stocks despite a price over $500 per share. And behaviors, as always, spread. Alphabet/Google's founders explicitly consulted Buffett and modeled aspects of their IPO, strategy, organization, and culture after Berkshire, despite relatively few similarities on the surface. Others like MKL, CABO, GHC, and WTM have even more direct intellectual ties to Buffett.
    - One way to avoid some contrast-related problems of cognition in investing is to focus on market capitalization and enterprise value, **<u>not</u>** the stock price. One of my favorite tests to see whether a person is really thinking like an owner of the price or a predictor of the stock price is when I hear someone start pitching an idea – usually with multiple references to current, past and future stock prices along the way – I'll let him go for a while and then casually ask what the market cap is. I would say at least half the time the stock pitcher has no idea, and in about half of those cases they stumble for a bit before offering a number that isn't even in the right ballpark. That's the worst case – it's one thing not to know, but it's a whole other thing to not know and try to fake it.

"Risk means more things can happen than will happen." **– Elroy Dimson**[39]

<u>Bias from over-influence by authority</u>

Munger: "This is a very powerful psychological tendency. It's not quite as powerful as some people think, and I'll get to that later."

Munger cites the Milgrim experiment in which an academic posing as an authority figure convinces ordinary citizens to give what they believe is heavy torture by electric shock. He later adds that it wasn't just over-influence by authority but also the contrast principle (the shocks were worked up at small increments) and the use of "why," even though it was a false explanation.

Munger also noted that co-pilots in simulators an intentionally errant pilot to "crash" 25% of the time.

Update: "Man is often destined to suffer greatly when the leader is wrong or when his leader's ideas don't get through properly in the bustle of life and are misunderstood."

"In World War II, a new pilot for a general, who sat beside him in the co-pilot's seat, was so anxious to please his boss that he misinterpreted some minor shift in the general's position as a direction to do some foolish thing. The pilot crashed the plane…

"Cases like this one get the attention of careful thinkers like Boss Buffett, who always acts like an over quiet mouse around his pilots."

Pilots and co-pilots: "There is an old saying in aviation that the reasons you get into trouble become the reasons you don't get out of it." Consider three examples: **Air France 447**[40] (a loss of airspeed indicators for one minute and 17 seconds

[39] https://www.bloomberg.com/news/articles/2007-04-08/philospher-of-risk
[40] http://www.vanityfair.com/news/business/2014/10/air-france-flight-447-crash

ending in the loss of 228 lives) vs. **Asiana 214**[41][42][43] (simple pilot error resulting in three fatalities) and **US Airways 1549**[44][45] (the complete loss of both engines resulting in zero fatalities). In the case of both AF447 and US1549, the crew had assessed the problem in 10-11 seconds – about as quickly as reasonably possible, but from there the responses deviated dramatically. In all cases, a critical factor was over-influence by authority (among others).

Air France 447 crashed in the Atlantic due to a cascading series of pilot errors and miscommunications, all of which were likely compounded by cockpit culture. "If [the pilots] had done nothing, they would have done all they needed to do" and there would have been no tragedy. Pierre-Cedric Bonin, the Pilot Flying, was the co-pilot (first officer). He was 32 and had relatively low-quality experience. Marc Dubois, the Pilot Not Flying, was the captain. He was 57 and had more than 11,000 hours of experience, much of it high-quality, but he was working on one hour of sleep the previous night and seemed distracted. They addressed each other with "tu" as is typical, but the co-pilot Bonin "was almost too deferential, and perhaps too aware of rank."

On **Asiana 214**, pilot error during the final approach was compounded by poor communication and role confusion despite perfect flying conditions. The NTSB found that "the flight crew mismanaged the airplane's vertical profile during the initial approach…leading to a period of increased workload that reduced the pilot monitoring's awareness of the pilot flying's actions. About 200 ft, one or more flight crewmembers became aware of the low airspeed and low path conditions, but the flight crew did not initiate a go-around until the airplane was below 100 ft, at which point the airplane did not have the performance capability to accomplish a go-around. The flight crew was experiencing fatigue, which likely degraded their performance during the approach. Nonstandard communication and coordination between the pilot flying and the pilot monitoring when making selections…resulted, at least in part, from role confusion and subsequently degraded their awareness of AFDS and A/T modes. Insufficient flight crew monitoring of airspeed indications during the approach likely resulted from expectancy, increased workload, fatigue, and automation reliance. The delayed initiation of a go-around by the pilot flying and the pilot monitoring after they became aware of the airplane's low path and airspeed likely resulted from a combination of surprise, nonstandard communication, and role confusion." Having just crashed landed in spectacular fashion, the pilots then instructed the crew ***not*** to evacuate given their ongoing communications with the tower. A flight attendant reported a major fire but the order to evacuate took a further 90 seconds. The cabin manager, Lee Yoon-hye was the last person off the burning plane; the SF fire chief said, "she was a hero." As an aside, six people were ejected from the aircraft when it hit the seawall and the tail broke off. Four of them were flight attendants who were properly restrained and survived the crash despite being ejected. Two of the three fatalities were ejected passengers who were not wearing seatbelts – they "would likely have remained in the cabin and survived if they had been wearing them."

In response to the crash, many pilots chimed in on a popular message board (pprune.org):

> "…if I flew with a new F/O, straight out of Line Training, once I'd completed my departure brief I would say: 'There's one important thing I need to add which is this. The reason I'm in this left-hand seat is because I've been doing this job longer than you. It doesn't mean that I'm incapable of making mistakes. So if you see or hear anything which you don't understand or appears to be not right, please speak up and tell me.'"
>
> "I don't like to use the work 'Rank' as it has caused many cockpit issues with the PNF being "Barked" at by the PF for making any remarks/suggestions/observations."
>
> "The sad thing is the guy who speaks up will maybe avoid a disaster , so you wont [sic] read about it , but mysteriously will fail his next medical and be looking for a job."
>
> "We could all very easily say 'idiots....I wouldn't do that' and walk away. But the reality is (most likely) that the pilots were not idiots and that they had good intentions and were trying very hard to do a good job. If they were put in a different environment they would most likely be as capable and competent as the next airline pilot. So

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[41] https://www.ntsb.gov/news/events/Pages/2014_Asiana_BMG-Abstract.aspx
[42] https://www.youtube.com/watch?v=d9MTLlzf8Co
[43] https://www.ntsb.gov/news/events/Pages/2014_Asiana_BMG-Presentations.aspx
[44] https://www.ntsb.gov/investigations/AccidentReports/Reports/AAR1003.pdf
[45] https://www.youtube.com/watch?v=mLFZTzR5u84

what do we need to change about the environment they were operating in? If you can answer that question you actually make an impact on flight safety…"

On **US Airways 1549**, the Captain (the now famous "Sully" Sullenberger) and First Officer were not immune from distractions. On the ground – during engine startup, taxi, etc. – they discussed the horrific state of the industry/economy, wondering if pilots at other airliners had it any better. They had flown together before but were in no way unusual in that regard. And when disaster struck, it took them approximately 11 seconds to declare and confirm the Captain's sole control of the aircraft and for the First Officer to begin (at the Captain's instruction) to consult the Quick Reference Handbook for loss on thrust on both engines. Within 30 seconds the Captain called mayday and declared his intention to return to LGA. Less than 60 seconds into the incident they were already working down the list of checklist items while considering a range of options in technical terms and communicating with the ground. In the first minute the Captain also stated the impracticality of returning to LGA and the possibility of a ditch in the Hudson. The First Officer (FO) continued to handle some communications while searching for ideas. Less than two minutes after the bird strike and with almost a minute and a half of warning, the captain told the passengers and crew to brace for impact. After approximately 120 seconds Air Traffic Control (ATC) was still trying to direct the pilots to a landing at Teterboro, NJ but the captain replied, "We're gonna be in the Hudson." ATC: "I'm sorry say again...?" The Captain ignored the noise from ATC and the automated warning systems and focused on flying the plane. He also continued with a clear chain of command and community with the FO to restart either engine or find a technical solution. Approximately two minutes and 32 seconds into the crisis, the Captain declared, "Ok let's go put the flaps out."

At this point, the Captain has misstated the call sign, the ATC has misstated the call sign, the ATC has generally been in disbelief, and the plane is rapidly descending toward the ground/river. But not once has there been a single instance of anything other than calm, professional, unemotional communication and decision-making. As the emergency warnings blare ("Terrain! Pull up!") the Captain remained calm and asked FO: "Got any ideas?" FO responds, "Actually not." Seconds later, the Captain successfully landed in the Hudson at a speed of approximately 130 knots / 240 km/h / 150 mph. "According to the flight attendants, the evacuation was relatively orderly and timely." Following the evacuation, the captain and first officer inspected the cabin to ensure that no more passengers or crewmembers were on board; the pilots were the last people to leave the aircraft.

And the issue of automation raises other, related issue that Munger raised: **attenuation of skill from disuse**. "Since ['fourth generation' airplanes'] introduction, the accident rate has plummeted to such a degree that some investigators at the National Transportation Safety Board have recently retired early for lack of activity in the field. There is simply no arguing with the success of the automation. The designers behind it are among the greatest unheralded heroes of our time. Still, accidents continue to happen, and many of them are now caused by confusion in the interface between the pilot and a semi-robotic machine. Specialists have sounded the warnings about this for years: automation complexity comes with side effects that are often unintended. One of the cautionary voices was that of a beloved engineer named Earl Wiener, recently deceased, who taught at the University of Miami. Wiener is known for 'Wiener's Laws,' a short list that he wrote in the 1980s. Among them:

- Every device creates its own opportunity for human error.
- Exotic devices create exotic problems.
- Digital devices tune out small errors while creating opportunities for large errors.
- Invention is the mother of necessity.
- Some problems have no solution.
- It takes an airplane to bring out the worst in a pilot.
- Whenever you solve a problem, you usually create one. You can only hope that the one you created is less critical than the one you eliminated.
- You can never be too rich or too thin (Duchess of Windsor) or too careful about what you put into a digital flight-guidance system (Wiener).

"Wiener pointed out that the effect of automation is to reduce the cockpit workload when the workload is low and to increase it when the workload is high. Nadine Sarter, an industrial engineer at the University of Michigan, and one of the pre-eminent researchers in the field, made the same point to me in a different way: 'Look, as automation level goes up, the help provided goes up, workload is lowered, and all the expected benefits are achieved. But then if the automation in some way fails, there is a significant price to pay. We need to think about whether there is a level where you get considerable benefits from the automation but if something goes wrong the pilot can still handle it.'"

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The dynamic between **analysts and portfolio managers, or bosses and subordinates** of any kind, often displays over-influence by authority. Throw in some incentive-caused bias, some reciprocation, some liking/disliking tendency, and before long some terrible decisions are made.

In investing the world is rife with authority-influenced decisions. For decades the **NRSROs** (Moody's, S&P, Fitch) carried an imprimatur – or at least represented a critical piece of the plumbing – in the financial world that was impossible to replicate. I remember hearing on at least a half dozen occasions in 2007 and 2008 that there was just no way Moody's would slap a triple-A rating on something that could default. And these were brilliant, high-powered people making that error.

How long would **Madoff** been able to go without over-influence by authority? There was a load of bias from his feeder funds' and helpers' incentives, along with waves of social proof. But his chairmanship of Nasdaq and his enormous size in the market and his name recognition all conveyed a simple air of authority. All of these factors lead many people to look past – or choose not to see – the obvious evidence that nothing goes up and to the right at all times, that there wasn't nearly enough liquidity in the market to do the trades he claimed, that his so-called auditor barely existed, that nobody bothered to confirm cash balances.

"**Cloning**" ideas from other investors is also an area of interest in this regard. How much money has been lost because someone's judgment was short-circuited (or because an otherwise robust investment process was abridged) on the evidence that some other legitimately brilliant and successful investor already owned the security in question? Cloning could work if done with no emotion, with no other psychological tendencies at play. But that's clearly not the case, and if the over-influence by authority that is an inherent risk of cloning can't be overcome it will may well produce inferior results.

One trick that I've seen used repeatedly by authority figures is the use of **complexity**. I immediately get uncomfortable if someone can't explain to me in three sentences what he or she does for a living, or why an investment makes sense. It's also a red flag when someone defaults to flowery language or unnecessary jargon. I've never seen definitive numbers, but there has to be a connection between success and investment professionals or management teams who can speak in clear, concise language. To the contrary, it might be worth avoiding people who automatically slip into dense, nonsensical drivel. When "consultant-speak" or "banker talk" becomes the default mode of communication it can also muddy the actual thought process as well.

Selling negativity also works. It's not just sex that sells – negativity and pessimism and doomsday warning also get a disproportionate share of attention. Look at all the smart-sounding authorities pitching their wares or just their opinions on public platforms. They take on an air of authority because they use impenetrable jargon and convey exceptional seriousness. It wouldn't be as vivid, or as entertaining, for someone to get on TV and explain that things are likely to slowly improve.

Prestigious university degrees and professional credentials are another source of mis-influence by authority. Many investors and business leaders get a pass based on their superficial profile, but we all know that the real world doesn't work that way. We've all seen people who are absolutely brilliant and far more effective than their peers in a given field but went to a no-name school, or no school at all. Likewise, we've all seen people who have sterling résumés but couldn't handle the task of managing a sock drawer.

I had an acquaintance who had roughly a decade of experience in the industry, a prestigious undergraduate degree in business, a world-class MBA, and a CFA. But despite all that, one day he looked up from his desk asked me what the difference was between "shareholder equity" and "book value." I must have choked a little bit on the answer because before I could speak he said, "And what about tangible shareholder equity and tangible book value?"

Likewise, in my first job out of college there were about 20 of us in our two-month full-time training session on accounting and finance. At least half of them got a degree in accounting or finance from the best undergrad programs in the country, but when it came time to apply that material they got smoked by a history major, a math major, and a psychology major, none of whom had studied accounting or finance in their lives.

<u>Deprival super-reaction syndrome</u> including bias caused by present or threatened scarcity, including threatened removal of something almost possessed, but never possessed.

Munger: "People are really crazy about minor decrements down…People do not react symmetrically to loss and gain. Well maybe a great bridge player like Zeckhauser does, but that's a trained response. Ordinary people, subconsciously affected by their inborn tendencies…"

The Munger cites the family dog – a sweet, harmless dog that could only be induced to bite if you try to take something out of its mouth, and labor negotiations. He added the example of a homeowner whose "next-door neighbor put a little pine tree on it that was about three feet high, and it turned his 180-degree view of the harbor into 179 3/4. Well they had a blood feud like the Hatfields and McCoys, and it went on and on and on… I mean people are really crazy about minor decrements down. And then, if you act on them, then you get into reciprocation tendency, because you don't just reciprocate affection, you reciprocate animosity, and the whole thing can escalate. And so huge insanities can come from just subconsciously over-weighing the importance of what you're losing or almost getting and not getting."

New Coke, of course, is another prime example. The Coca-Cola Company nearly torched its business – or at least handed a massive advantage to its rival – but underestimating deprival super-reaction syndrome.

Update: Munger greatly expanded his remarks on this tendency in the revision to his original talk.

- "A man with $10 million in his brokerage account will often be extremely irritated by the accidental loss of $100 out of the $300 in his wallet."
- "Bureaucratic infighting over the threatened loss of dominated territory often cause immense damage to an institution as whole." Jack Welch's long fight against bureaucracy is business's wisest-ever campaigns.
- DST often protects intense ideological or religious views by triggering hatred toward vocal nonbelievers, and that happens in part because the ideas of the nonbelievers would damage the influence of the believers if they spread.
- University liberal arts departments, law schools, and businesses all display ideology-based groupthink.
- Inconsistency-Avoidance Tendency combined with Deprival-Superreaction Syndrome is an especially powerful duo.
- Antidotes include the deliberate maintenance of extreme courtesy, as on the Supreme Court, the inclusion of "able and articulate disbelievers of groupthink."
- Labor negotiations often lead to the death of the company – it is more common for the entire company to die than to get a wage cut.
- Mis-gambling compulsion also comes into play, as losses create a passion to "just get back to even." Combined with the multiple "near misses" of some games this can lead to compulsive and ruinous gambling.
- Good poker skill is a good antidote to throwing good money after bad.

Prospect theory and loss aversion have a lot to say here. And beyond the idea of losing something owned or almost owned, there is a related deprival factor. **Scarcity** – real or perceived – is a huge driver of human behavior.

The **QVC countdown clock** is a great example of induced scarcity that drives behavior. We all know that if something is really going to sell, it's just a matter of patience in waiting to get more supply. But when people see the QVC countdown clock, or when they see lines wrapped around the **Apple store for a new iPhone release**, the sense of scarcity takes over the decision-making process.

Another example of deprival super-reaction syndrome could come from the **pension crisis**. America's pensions are underfunded by trillions and many are already running into extreme trouble. The police and fireman's pension in Dallas, Texas is already facing severe issues, that's in Dallas, not some low-growth or sclerotic economy. Millions and millions of people think they have pensions, but what will happen in the mathematically inevitable case that requires benefits to be cut and/or taxes to be raised? America's social fabric could be in for a real test by this threatened removal of something almost possessed but never actually possessed.

The **hangover from GFC** has influenced an entire generation of investors. How many bad decisions were made in 2007-08-09-10 or since, all because of deprival super-reaction syndrome? How many people were scared into liquidating their last assets, right near the bottom? (See Bannon example below.) How many were scared out of coming back into the market when assets were cheap but the psychology was scary? How many people – or institutions – have had a new or outsized focus on short exposure to protect from that double-dip recession or crisis 2.0 that was always right around the corner?

How much of the interest in **short-selling** in general derives from deprival super-reaction syndrome? Shorting is a fascinating intellectual exercise that is occasionally very profitable. I saw it firsthand when I started my first job as a very green analyst in April 2007 and was assigned to cover financials. After an immaterial false start on the long side, I quickly got religion and shorted everything I could find in 2007 and 2008. And then that success landed us a short-only SMA for a few years…starting in 2009. Even before that I was never really convinced that this was a good activity for long-term investors who are only looking to protect principal. If done well – a big if – it can protect short-term downside volatility, sure, but I think that's it – the main benefit is in subverting the deprival super-reaction syndrome effects in individuals and in institutional allocators. If you're looking at any meaningful period of time – i.e., anything more than a year or two or anything not cherry-picked to look good for short sellers – the base rate for short selling is terrible. It is a tough, tough way to accomplish most goals in investing.

Other examples of deprival super-reaction syndrome include **airline fares and "ancillary revenues**," also known as the fees the airlines charge for bags, food, etc. The fact is that airfares are down ~25-50% in real dollars over the past few decades, but they are down less or flat in nominal terms. And during that time fees on checked luggage and early boarding became the norm, and the food isn't "free" in coach anymore, and in some cases the legroom is more pinched, all of which leaves some passengers to believe they're getting a raw deal. But all the nostalgic talk of the "good old days" of airline travel is just that – nostalgic drivel fueled by deprival super-reaction syndrome and contrast phenomena. Customer behavior will tell you that the majority of customers fly on price and that all other factors rank a distant second in the decision-making process. The number of people who can afford to fly has skyrocketed, and all the economic activity and personal gain generated by more choice in travel is enormous but hard to measure. And even though some airlines have recently segmented their cabins or reduced legroom on some seats, that has always been the tug-of-war in the price-or-value experiment that all airlines experience.

And legroom isn't even down much compared to 30 years ago! Even if it were, customers in coach now have a climate-controlled, quiet jet aircraft offering myriad travel choices and little perks like wifi connectivity, seatback entertainment systems, etc. Even first- and business-class seats are cheaper in real dollars than they were decades ago, and now they have luxury lie-flat accommodations with exceptional connectivity and entertainment options. And let's not mention – vivid counterexamples notwithstanding – that modern air travel is the safest mode of transportation the world has ever seen. There are twice as many planes in the air today as there were 25 years ago, but the accident rate has made steady downward progress. The International Civil Aviation Organization reports that the fatal accident rate is one-sixth what is was in 1980.[46] The same applies to terrorism, by the way – we all remember the tragedy of 9/11, but the 1960s/70s/80s were beset by horrific bombings and hijackings that are exceptionally rare today.

On balance, customers are getting a better deal and a better experience than ever before, but high-profile customer problems and the recent diatribes in the media – accusing the airlines of answering only to their financial masters on Wall Street or being uncaring monsters in general – would have you believe that things have never been worse.[47]

Another potential example in this regard with a different twist is the pervasive effect of **inflation** over time. Do investors notice the erosion of their purchasing power? Everyone loves to complain about how "things are more expensive these days," but how many decisions actually get made with the explicit thought that a dollar today is likely to have 10%, 25%,

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[46] https://www.nytimes.com/2017/05/27/opinion/sunday/there-was-no-golden-age-of-air-travel.html
[47] https://www.nytimes.com/2017/05/28/business/corporate-profit-margins-airlines.html

or even 50% less purchasing power within the next few years/decades? Have central banks adopted this framework as a lesser of two evils?

Bias from envy/jealousy

Munger: Envy and jealousy made two of the Ten Commandments, and for good reason. Buffett: "It's not greed that drives the world, but envy." Anyone who has raised siblings, or run a law firm or an investment bank or even a faculty is familiar with this issue.

Update: Munger ponders the evolutionary process of seeking often-scare food in the face of competition and conflict as a source of envy/jealousy.

Anyone who's worked in a corporate setting, particularly in the finance industry, knows all about this. Nothing brings out the inner cave man of a slick, well paid Wall Streeter like "**bonus season**." It doesn't matter that in the very recent past a man would have been happen with a bonus of $1 million or $10 million. If he finds out that the guy next to him got more all other considerations are out the window. This is also how we get executive compensation that is so out of control. The executive compensation consultant comes in – with a boatload of incentive-caused bias, of course – and always recommended that the board pay its executives in the top quartile/decile of its peer group. And the metrics usually get massaged, and the peer group itself gets massaged, so that the targets are often achieved regardless of merit. And even still there are many executives who see that the people they think of as peers are getting paid slightly more, and they go berserk. So the consultants ratchet things up and the whole process repeats itself. This cycle of envy is a major reason why Buffett refuses to disclose the pay of his managers at Berkshire unless legally required to do so.

Envy/jealousy plays closely with social proof. Purchases of homes, cars, and luxury goods are often reliant on these two psychological tendencies. "**Keeping up with the Jonses**" is as old as human civilization.

Much of the power of **Facebook and Instagram** also derives from these two tendencies. I describe Facebook as the world's greatest envy generator. The younger crowd might also be more familiar with a related principle: **FOMO**, or fear of missing out. That tendency is made worse by the jealousy/envy, and it's also tied to deprival super-reaction syndrome. In general I haven't found any better laboratory for studying man's irrationality than social media, especially in the form of comments and replies to tweets and Facebook posts.

Chemical dependency

Munger: "it always causes moral breakdown if there's any need, and it always involves massive denial. It aggravates [denial] as in the aviator case, the tendency to distort reality so that it's endurable."

There is not much else to say about this topic specifically, which is a true tragedy on many levels and combines or exaggerates many other psychological tendencies. But for anyone who might be under the impression that things have been improving in this regard, the opioid crisis in the U.S. offers stark evidence to the contrary. Drug overdose is the leading cause of accidental death in the U.S. with more than 50,000 total and more than 30,000 of them tied to opioids.[48] It is likely that more people will die in America this year from opioid overdoses this year than from car crashes.

Munger in another talk quoted **Johnny Carson**, who said he had **three ways that were guaranteed to cause misery in your life: 1) Ingesting chemicals in an effort to alter mood or perception; 2) Envy; and 3) Resentment**. And Munger of course expanded on the topic, emphasizing inversion as an effective tool for problem solving and adding four prescriptions for misery: be unreliable, avoid learning vicariously, succumb to adversity, and ignore the rustic who said, **"I wish I knew where I was going to die, and then I'd never go there." He ended the speech with the following line: "[M]ay each of you rise high by spending each day of a long life aiming low."** (The abridged text is in the appendix.)

Mis-gambling compulsion

[48] https://www.asam.org/docs/default-source/advocacy/opioid-addiction-disease-facts-figures.pdf

Munger: Skinner showed that variable reinforcement rates in his lab animals was able to pound in a behavior better than any other method. But it not the only explanation for gambling. A lottery, for example, gets better play when it uses commitment and consistency tendency to have players pick their numbers as opposed to numbers generated by random. Slot machines do better by employing deprival super-reaction syndrome: BAR-BAR-LEMON ("near miss" after "near miss.")

Update: Prospect Theory and loss aversion are especially prevalent in this arena. To counter this tendency, consider the "**base rate**." Some gamblers may not want to understand their true odds – see below – but for others, it would really **help to avoid the "I'm due" or the "breakeven" fallacies** if they understood independent events and the baseline rates of the probabilities in the various casino games. How many gamblers would sit down to gamble – or would continue gambling, or would double down on losses – if they truly, deeply understood that dice throws are independent events?

Addiction by Design: Machine Gambling in Las Vegas by Natasha Dow Schüll is a powerful book. It was also recommended to me by a friend of a Zurich attendee last year who happened to get on my "good reading" list. In any case, a passage from the introduction will serve as a preview. It describes "the machine zone," a trancelike state manufactured by the gambling companies. The key element isn't competition or winning or social feedback, all features of what I associated with traditional casino gambling. Video gamblers want "disassociation" and talk about "numbness or escape" or "climbing into the screen and getting lost" or "a magnet [that] just pulls you in and holds you there," "a trancelike preoccupation in which perpetuating the trance was reward enough."

"When I ask Mollie if she is hoping for a big win, she gives a short laugh and a dismissive wave of her hand. 'In the beginning there was excitement about winning, but the more I gambled, the wiser I got about my chances. Wiser, but also weaker, less able to stop. Today when I win—and I do win, from time to time— I just put it back in the machines. The thing people never understand is that I'm not playing to win.' Why, then, does she play? 'To keep playing— to stay in that machine zone where nothing else matters…It's like being in the eye of a storm, is how I'd describe it. Your vision is clear on the machine in front of you but the whole world is spinning around you, and you can't really hear anything. You aren't really there— you're with the machine and that's all you're with.'"[49] And gambling companies are acutely aware of this psychological tendency – they're designing electronic games explicitly to exploit it. Electronic games have evolved from afterthoughts – stodgy slot machines tucked in the corner – to elaborate systems that occupy premier real estate and generate much of the casinos' profits. "A panel of representatives from the gambling industry had gathered from around the country to speak on the profit-promising future of machine gambling. Echoing Mollie's wish to stay in the machine zone, they spoke of gamblers' desire for 'time- on- device,' or TOD. An evolving repertoire of technological capabilities was facilitating this desire. 'On these newer products, they can really get into that zone," remarked a game developer from a top manufacturing company. Like Mollie, the industry panelists were invested in the zone state and its machinery…the solitary, absorptive activity can suspend time, space, monetary value, social roles, and sometimes even one's very sense of existence. 'You can erase it all at the machines— you can even erase yourself,' an electronics technician named Randall told me. Contradicting the popular understanding of gambling as an expression of the desire to get 'something for nothing,' he claimed to be after nothingness itself. As Mollie put it earlier, the point is to stay in a zone 'where nothing else matters." As machine gamblers tell it, neither control, nor chance, nor the tension between the two drives their play; their aim is not to *win* but simply to *continue*." And the games do *continue*. "[M]achine gambling is distinguished by its solitary, continuous, and rapid mode of wagering. Without waiting for 'horse to run, a dealer to shuffle or deal, or a roulette wheel to stop spinning,' it is possible to complete a game every three to four seconds. 'It is *the* addiction delivery device.'" Perhaps gambling addiction researcher Nancy Petry put it best: **"No other form of gambling manipulates the human mind as beautifully as these machines."**

As always, there are multiple factors working together to create this huge result in the rise of machine gambling. "The story of 'problem gambling' is not just a story of problem gamblers; it is also a story of problem machines, problem environments, and problem business practices." And there are plenty of factors in each of those categories that should be familiar from the other tendencies on our list: the passing of the torch between generations (real gambling used to be table games while machines were for old ladies; now everyone is accustomed to screen-based interaction and entertainment); the short-sighted chase for gambling tax revenues driven by politicians with an incentive to plug budget

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[49] http://press.princeton.edu/chapters/i9156.pdf

holes by any means necessary, and thereby enabling an explosion of availability with accompanying social proof of every river town and reservation having multiple casinos; the contrast principle inherent in the industry's marketing push as low-stakes gaming rather that high-risk gambling ("The low- stakes devices fit comfortably with the redefinition of gambling as "gaming" by industry spokespeople and state officials who hoped to sway public endorsement of the activity as a form of mainstream consumer entertainment rather than a form of moral failing or predatory entrapment"); and the third-degree removal of association with money – it's not cold hard cash, with all of its ties to actual expenditures, and it's not even little clay chips, but merely "units" on a screen that were linked to a master account, likely funded by a credit card or bank account.

In investing, the problem is no less acute.

> ***"More money has probably been lost by investors holding a stock they really did not want until they could 'at least come out even' than from any other single reason." – Phil Fisher[50]***

How many **distressed equities** actually produce good returns to outside shareholders? We can probably conjure up some vivid evidence – that also ignites other psychological tendencies – of a security that shot straight up and produced a quick 5x or 10x or 25x return. But out of the thousands and thousands of examples, how often does that actually occur? And in the cases where it does occur, how many investors (or traders) are actually able to capture the return without succumbing to other biases? Setting aside "penny stocks," which is a sloppy term, but considering all microcaps or even all equities, the lion's share of gains is generated by a tiny handful of companies at the top, while the preponderance of companies below that tier are middling at best. So how likely is it that you've found the next 10x microcap turnaround? Or out of all the bankrupt OTC equities trading, how many are American Airlines, GGP, or WR Grace? There is often a flurry of trading on the Pink Sheets, and lots of speculation and rumor-mongering on the message boards, but there is considerable evidence that the base-rate returns for pre-petition equities are horrendous:

> "[B]etting on these stocks on average generates large losses… Our sample's median matching-sample-adjusted monthly return is -15%, and market-adjusted monthly return is -14%. The negative abnormal returns do not cluster in a particular year but persist over time. In addition, this finding is…an indication of the poor performance during the Chapter 11 process, which can last from a few months to a few years. It is surprising that investors lose so much money investing in Chapter 11 stocks, even given the fact that shareholders are residual claim holders in bankruptcy. Thus, the finding that Chapter 11 stocks underperform indicates the existence of market frictions. Our explanation for the negative returns is motivated by the Miller (1977) theory, which argues that, when investors have heterogeneous beliefs about the value of a risky asset in a market with restricted short-selling, prices will reflect the more optimistic valuation. After Chapter 11 filings, these stocks are mostly traded on Pink Sheets, which does not require information disclosure to investors. Meanwhile, as the stock ownership data shows, institutional investors dramatically reduce their stock holdings around bankruptcy filings, and more than 90% of the shareholders post-filing are individual investors. Many analysts stop covering these stocks due to the lack of interest from institutional investors. Individual investors are presumably less efficient in gathering information and interpreting the available information (Barber and Odean, 2000). Therefore, the information uncertainty and the divergence of opinion regarding the true value of these stocks increase dramatically after filing. In addition, low institutional ownership produces binding short-sale constraints for these stocks. As a result, the high information uncertainty and binding short sale constraints cause bankrupt stocks to be overvalued."[51]

I don't doubt that market frictions play a role, but I also doubt the academic authors of that study have talked to many investors/traders who are participating in such situations. I believe that their collective psychological tendencies are a far more important factor than any market frictions. The "smart money" often finds better odds higher up the capital structure (at or near the fulcrum) while retail bagholders are usually 90% or more of the remaining equity. There is often commitment and consistency, social proof, mis-gambling compulsion, and other factors at work in concert. They're not just violating absolute priority and ignoring base rates; they've been lured into a game with an overwhelming amount of zero-return failures but a few home-run or lottery-ticket profiles that create bias from extra-vivid evidence. That happens

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[50] Common Stocks and Uncommon Profits.

[51] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1343765

in other option-like asset classes and in real lotteries, of course. (There is also good reason to believe that as secured debt and sophisticated distressed analysts proliferate, that future recoveries to pre-petition equity holders could be even lower than the pittance they received on average in prior decades.)

<u>Bias from liking/dis-liking distortion</u> **including the tendency to especially like oneself, one's own kind and one's own idea structures, and the tendency to be especially susceptible to being misled by someone liked. Disliking distortion, bias from that, the reciprocal of liking distortion and the tendency not to learn appropriately from someone disliked.**

Munger: "Well here, again, we've got hugely powerful tendencies, and…you can see that very brilliant people get into this almost pathological behavior. And these are very, very powerful, basic, subconscious psychological tendencies, or at least party subconscious."

Man with a hammer syndrome revisited and B.F. Skinner: "Why is man with-a-hammer syndrome always present? Well if you stop to think about it, it's incentive-caused bias. His professional reputation is all tied up with what he knows. He likes himself and he likes his own ideas, and he's expressed them to other people – consistency and commitment tendency. I mean you've got four or five of these elementary psychological tendencies combining to create this man-with-a-hammer syndrome."

We also can't outsource our thinking to advisors or other helpers. "Every profession is a conspiracy against the laity" is a popular phrase that captures most of the idea, but it's not quite right. It's more of a subconscious psychological tendency. "The guy tells you what is good for him. He doesn't recognize that he's doing anything wrong…So you're getting your advice in this world from your paid advisor with this huge load of ghastly bias. And woe to you. There are only two ways to handle it: you can hire your advisor and then just apply a windage factor, like I used to do when I was a rifle shooter. I'd just adjust for so many miles an hour wind. Or you can learn the basic elements of your advisor's trade. You don't have to learn very much, by the way, because if you learn just a little then you can make him explain why he's right. And those two tendencies will take part of the warp out of the thinking you've tried to hire done."

"I have never seen a management consultant's report in my long life that didn't end with the following paragraph: 'What this situation really needs is more management consulting.' Never once. I always turn to the last page. Of course, Berkshire doesn't hire them, so I only do this on sort of a voyeuristic basis. Sometimes I'm at a non-profit where some idiot hires one."

Update: also known as "Liking/Loving Tendency," and separately, "Disliking/Hating Tendency," with examples including:

- a newly hatched baby goose that is programmed to follow the first creature that is nice to it, even if that creature is not its mother or even a goose;
- the courtship habits of man, such that "many a courtship competition will be won by a person displaying exceptional devotion";
- this tendency's role as a conditioning device to make the liker/lover ignore the faults of, and comply with the wishes of, the object of his affection, and to favor anything even associated with said object;
- man's long history of almost continuous war subverted by arrangements that direct the hatred and disliking of individuals and groups into elections – "Politics is the art of marshalling hatreds";
- sibling rivalry and Buffett's quip that "a major difference between rich people and poor people is that the rich people can spend their lives suing their relatives";
- factual distortions about major events, such as the group to blame for the destruction of the World Trade Center on 9/11.

Elsewhere Munger notes that "hating and disliking also cause miscalculation triggered by mere association. In business, I commonly see people under-appraise both the competency and morals of competitors the dislike. This is a dangerous practice, usually disguised because it occurs on a subconscious basis." An extreme example of that many be Warren Buffett himself. Despite a record that is difficult to criticize, I often see people who dislike his politics attack his competency, his morals, or some other unrelated characteristic, and they often do so with totally irrational arguments.

<u>Bias from the non-mathematical nature of the human brain in its natural state as it deals with probabilities</u> employing crude heuristics, and is often misled by mere contrast, a tendency to overweigh conveniently available information and other psychologically misrouted thinking tendencies on this list. When the brain should be using the simple probability mathematics of Fermat and Pascal applied to all reasonably obtainable and correctly weighted items of information that are of value in predicting outcomes.

Munger: "The right way to think is the way Zeckhauser plays bridge. And your brain doesn't naturally know how to think the way Zeckhauser knows how to play bridge."

<u>Availability</u>: "Now, you notice I put in that availability thing, and there I'm mimicking some very eminent psychologists Kahneman, Tversky, who raised the idea of availability to a whole heuristic of misjudgment. And they are very substantially right. Nonetheless, even though I recognize that and applaud Tversky and Kahneman, I don't like it for my personal system except as part of a greater sub-system, which is you've got to think the way Zeckhauser plays bridge. And it isn't just the lack of availability that distorts your judgment. All the things on this list distort judgment. And I want to train myself to kind of mentally run down the list instead of just jumping on availability. So that's why I state it the way I do. In a sense these psychological tendencies make things unavailable, because if you quickly jump to one thing, and then because you jumped to it the consistency and commitment tendency makes you lock in, boom, that's error number one. Or if something is very vivid, which I'm going to come to next, that will really pound in. And the reason that the thing that really matters is now unavailable and what's extra-vivid wins is, I mean, the extra vividness creates the unavailability. So I think it's much better to have a whole list of things … than it is just to jump on one factor."

Examples include:

- Coke
- John Gutfreund and Salomon Brothers (also: **reciprocation, base rate, vengeance)**
- See's Candy cashiers stealing from the till – consider the base rate ("what Tversky and Kahneman call baseline information")
- Serpico – allowing corruption and terrible behavior to spread is evil
- Vengeance – don't chase the last ounce of vengeance, or any vengeance ("I don't think vengeance is much good.")

Update: Munger added "**Availability-Misweighing Tendency**" as its own category in the update, along with his much expanded thoughts.

- "When I'm not near the girl I love, I love the girl I'm near."
- "Man's imperfect, limited-capacity brain easily drifts into working with what's easily available to it. And the brain cant' use what it can't remember or what it is blocked from recognizing because it is heavily influenced by one or more psychological tendencies bearing strongly on it. "
- Antidotes: Darwin's search for disconfirming evidence; "emphasize factors that don't produce reams of easily available numbers"; "find some skeptical, articulate people with far-reaching minds"
- Use vivid images and availability to your advantage in persuasion or improving your own memory.

"We tend to judge the probability of an event by the ease with which we can call it to mind." -- Danny Kahneman

There is now a treasure trove of behavioral economic work that is widely accessible, and Kahneman and Tversky were among the pioneers. Munger even cited their work in the mid-1990s before it had achieved such wide acclaim.

"Nothing in life is as important as you think it is when you are thinking about it." -- Danny Kahneman

Bias from over-influence by extra-vivid evidence

Munger: "It's very easy to misweigh the vivid evidence, and Gutfreund did that when he looked into the man's eyes and forgave the colleague."

Munger cites the example of Belridge Oil where turned down a large block of shares because he "just mis-weighed it" based on his assessment of an extraordinarily peculiar CEO. That decision cost him a short-run profit of more than $5 million that mushroomed into the hundreds of millions of dollars on an opportunity-cost basis over the ensuing decades.

Belridge was the first of the oil company megadeals that began as a little-known California producer. It was forced onto the auction block in July 1979 when the descendants of its three land-speculator founders, owning a collective 55%, got an attempted squeeze-out offer from the Mobil/Texaco JV that owned 34%. "The two majors attempted to buy out the other shareholders, negotiations with each shareholder individually so as to gain the company on the cheap. However, the members of the founding families, mostly in their sixties and seventies, would not be pushed around, and instead decided to run an auction."[52] The market price at the time was around or slightly above $110 million, and the company rarely if ever traded on the Pink Sheets. In 1978 had posted $43.9 million in profit on a book value of roughly $177 million. Profits in the first half of 1979 were up 50%.[53]

The auction resulted in Belridge's acquisition by Shell for $3.6 billion in late 1979. At the time it was thought to be the biggest cash takeover in American history.[54] Shell reportedly topped the next highest bid by $500 million, shocking all observers.[55] The per share takeout price of more than $3,600 compared with the Munger's price of $115. The auction result even got an eventual mention in a Buffett shareholder letter, noting that Belridge was sold for $3.6 billion against its book value of $177 million, while LTV and Baldwin-United showed audited book values of $652 million and $397 million, respectively, just before they went bankrupt.[56]

As noted above, I often think about this in the context of the many investors/allocators still fighting the War of 2008.

A more recent example is a "quiz" on violence I often give to friends. Chicago has had a lot of attention in this regard, and some of it is deserved; every shooting is one too many. But the vivid evidence cited in some prominent tweets – and the contrast phenomenon that ignores Chicago's absolute size – can play tricks. The facts are that Chicago's murders per 100,000 residents spiked from 15-17 in 2005-2013 to more than 25 in 2016…but in the early/mid-1990s it was over 30.[57] And its murder rate ranked 8th among big U.S. cities in 2016. St. Louis was at nearly 60, and Baltimore was over 51.[58]

The same is true for America generally. The annual murder rate per 100,000 people bounced between eight and 10 from 1970 to ~1995 before declining sharply through ~2014 near 4.5. It has since ticked up above 5.5.[59] To keep the size in perspective, that is an extra 3,000+ Americans killed per year at the higher rate of 2016 vs. 2014's but almost 15,000 fewer Americans killed at the lower rate of 2016 vs. 1994's. Nonetheless, concern about violent crimes was at or near all-time highs in many surveys/polls of Americans.[60]

Even more broadly, from 1945-2011 the global violent death rate fell from 22 people per 100,000 to 0.3, but by 2014 it had ticked back up to 1.4.[61]

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[52] https://goo.gl/Qzdz8k
[53] http://www.nytimes.com/1979/09/29/archives/shell-appears-to-win-belridge-bidding-contest-just-550-shareholders.html
[54] https://www.washingtonpost.com/archive/politics/1979/09/30/shell-to-purchase-calif-oil-land-for-365-billion/2dda0dcd-78b7-4288-92a8-81b183837cda/?utm_term=.e685015f3115
[55] https://goo.gl/Qzdz8k
[56] http://www.berkshirehathaway.com/letters/1987.html
[57] https://fivethirtyeight.com/features/chicagos-murder-rate-is-rising-but-it-isnt-unprecedented/
[58] https://fivethirtyeight.com/features/u-s-cities-experienced-another-big-rise-in-murder-in-2016/
[59] https://fivethirtyeight.com/features/u-s-cities-experienced-another-big-rise-in-murder-in-2016/
[60] https://www.brennancenter.org/publication/crime-2016-preliminary-analysis#Executive%20Summary
[61] Joshua Goldstein and Steven Pinker: https://www.bostonglobe.com/opinion/2016/04/15/the-decline-war-and-violence/lxhtEplvppt0Bz9kPphzkL/story.html

<u>Mental confusion caused by "why"</u> – Also, mis-influence from information that apparently but not really answers the question "Why?" Also, failure to obtain deserved influence caused by not properly explaining why.

Munger: "Well we all know people who've flunked…they try and memorize and they try and spout back and they just…it doesn't work. The brain doesn't work that way. You've got to array facts on the theory structures answering the question "Why?" If you don't do that, you just cannot handle the world." "You want to persuade somebody, you really tell them why."

- Fuerstein at Salomon
- Karl Braun's communication practices

Update:

- Real knowledge requires the ability to explain why to a novice
- History's greatest leaders all explained why
- Unraveling short ideas usually requires asking "Why?" ad infinitum. Chanos has said that many of his best analysts were journalism students and practicing investigative journalists, not MBAs.
- Everyone knows what they do; most know how; but few know why. Concentric circles with "Why?" at the core.[62]
- Success ≠ straight A's in school

<u>Excessive Self-Regard Tendency</u>

Munger: Man commonly misappraises his own abilities and his own possessions.

The overappraisal-of-your-own-possessions is also known as the "**endowment effect**." If I ask one group of people how much they'd pay for a coffee mug, the answer might be $5. But if I give a coffee mug to a similar group of people and ask them how much it's worth, the answer is usually $8 or $10. The mere act of owning the coffee mug makes it more valuable to its owner.

The same effect is extremely powerful with regard to investments. "The stock doesn't know – or care – that you own it," as Buffett would say.

On a related note, lost wallets are most often returned when the contents of the wallet lead the finder to believe its owner bears a close resemblance to the finder.

The tendency to like oneself and similar people makes for self-reinforcing culture. Thus, when an institution or organization goes wrong "some of the most useful members of our civilization are those who are willing to 'clean house' when they find a mess."

Other examples from Munger:

- Foolish gambling decisions. Excessive self-regard leads to more addictive sports betting than race track betting, or to cases of stupid bets against superior players in poker or golf.
- Bad hiring decisions. The antidote here is to "underweigh face-to-face impressions and overweigh the applicant's past record. Just such a case happened on an academic search committee. Munger convinced his fellow committee members to cease all interviews and appoint the person with the superior record despite protests of his lack of "academic due process."
  - "In my opinion, Hewlett-Packard faced just such a danger [of being overinfluenced by face-to-face impressions and by skillful 'presenters'] when it interviewed the articulate, dynamic Carly Fiorina…and I believe (1) that Hewlett-Packard made a bad decision when it chose Ms. Fiorina and (2) that this bad decision would not have been made if Hewlett-Packard had taken the methodological precautions it would have taken if it knew more psychology."
- Criminal justice. "According to Tolstoy, the worst criminals don't apprise themselves as all that bad. They come to believe either (1) that they didn't commit their crimes or (2) that, considering the pressures and disadvantages of

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their lives, it is understandable and forgivable that they behaved as they did and became what they became." The antidotes are fair meritocracies and severance for the worst offenders.

Overoptimism Tendency

Munger: Demosthenes said, "What a man wishes, that also will he believe." He was referring to denial and excessive optimism. There are other factors at play too, and they lead to happy people buying lottery tickets.

Update: Kahneman is also keenly aware of this issue. He **cites overconfidence as "the most damaging" thing,** leading "governments to believe that wars are quickly winnable and capital projects will come in on budget despite statistics predicting exactly the opposite. It is the bias he says he would most like to eliminate if he had a magic wand. But it 'is built so deeply into the structure of the mind that you couldn't change it without changing many other things.'"[63]

Tetlock's principles for **Superforecasting** apply here. One giant exercise in learning to apply confidence when you should have it, and avoid overconfidence the rest of the time. "**Aggressive open-mindedness**."[64]

- Learn to avoid the gambler's fallacy of detecting nonexistent patterns.
- Learn to avoid overcompensation for previous mistakes. The false negative of 9/11 → the fall negative of WMD?
- Learn to analyze from the outside in – what is the base rate?
- Learn to apply new information (Bayesian updating) appropriately, avoiding under-adjustment ("This is just a blip") and over-adjustment ("This changes everything!")
- Learn to collaborate. Diversity on teams is helpful.
- **"You only win a forecasting tournament," Tetlock said, "by being decisive—justifiably decisive."**

Another favorite example comes from golf. A study found that on shots that were on line but misjudged for distance, eight times as many shots were short as were long.[65] Players routinely overestimate their own abilities, ignore the overall base rate of the shot and/or assume idea conditions and a perfect swing with a given club when calculating yardages.

Stress-induced mental changes

Munger: "Here, my favorite example is the great Pavlov. He had all these dogs in cages, which had all been conditioned into changed behaviors, and the great Leningrad flood came and it just went right up and the dog's in a cage. And the dog had as much stress as you can imagine a dog ever having. And the water receded in time to save some of the dogs, and Pavlov noted that they'd had a total reversal of their conditioned personality."

Munger also cited the connection to programming/de-programming and cults.

Update: Also known as Stress-Influence Tendency.

- "Everyone recognizes that sudden stress…will cause a rush of adrenaline…and everyone knows that stress makes Social-Proof Tendency more powerful."
- Light stress can slightly improve performance – say, in examinations – whereas heavy stress can cause dysfunctions or depression.

One of the more vivid – and financially tragic – examples I've seen of this tendency was in the GFC. Many, many people were acting in their personal and professional portfolios based on responses to these tendencies rather any reasoned thought process. Many people's lives were ruined or considerably worsened because they listened to someone on TV and sold at the depths. Many others were forced into it by practicalities, of course, but even Steve Bannon cites the example of his father sitting glued to the TV in October 2008 and being convinced to sell his entire retirement savings – a grubstake in AT&T amassed over five decades working for the company. "As he toggled between TV stations, financial analysts warned of economic collapse and politicians in Washington seemed to mirror his own confusion….[On] Oct. 6, financial

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63 https://www.theguardian.com/books/2015/jul/18/daniel-kahneman-books-interview
64 http://longnow.org/seminars/02015/nov/23/superforecasting/
65 https://www.wsj.com/articles/why-golfers-overestimate-their-ability-1494591233

analyst [sic] Jim Cramer told 'Today' show viewers to pull money from the stock market if they needed any cash for the next five years…So he did the unthinkable. He sold. Steve Bannon says the warning[s] spooked his father. 'I could see his confidence in the system was shattered,' Steve Bannon recalls. 'He was older, in his 80s. But all these guys from the Depression, it's a risk-averse generation because of the horrible things they saw in their youth. He was rattled.' Marty Bannon, now 95 years old, still regrets the decision and seethes over Washington's response to the economic crisis. His son Steve says the moment crystallized his own antiestablishment outlook and helped trigger a decadelong political hardening."[66]

> ***"Rationality is essential when others are making decisions based on short-term greed or fear. That is when the money is made." – Warren Buffett***[67]

Common mental illnesses and declines, including the tendency to lose ability through disuse

Update: also known as "Use-It-or-Lose-It Tendency," and related to man with a hammer tendency.

- Use the functional equivalent of the flight simulator
- "Throughout his life, a wise man engages in the practice of all his useful, rarely used skills, many of them outside his discipline, as a sort of duty to his better self."
- A reduction in the number of skills encourages a drift toward man with a hammer syndrome, along with a reduction in learning capacity.
- "It is also essential for a thinking man to assemble his skills into a checklist."
- High-level skills can be maintained only with daily practice. The pianist Paderewski said that he could notice performance deterioration if he failed to practice for a single day, and that after a week the audience would notice too.

Say-something syndrome

Munger: "[It] is a very important part of human organization to set things up so the noise and the reciprocation and so forth of all these people who have what I call say-something syndrome don't really affect the decisions." He cites the honeybee's incoherent communication "dance" when it tries to convey nectar in a location for which it has no words – rather than stay silent it dishes out gibberish.

Update: also known as "Twaddle Tendency," Munger notes that "man, as a social animal who has the gift of language, is born to prattle and to pour out twaddle that does much damage when serious work is being attempted."

"A rightly famous Caltech engineering professor once expressed his version of this ideas as follows: 'The principal job of an academic administration is to keep the people who don't matter form interfering with the work of the people that do.'"

We've all been in **meetings or classes** that didn't just feature say-something syndrome but were dominated by it. Many academic settings – including many prominent business schools – actively reinforce say-something syndrome by incorporating explicit "participation grades." It wouldn't be possible to count the amount of wasted time dedicated to meaningless drivel spouted only in the name of "participation."

Likewise, many business meetings would feel incomplete to their participants if everyone didn't pipe up at least once, regardless of any actual contribution. How many people have the intellectual desire or the political capital to say "nothing to add" when, as is often the case, they indeed have nothing to add?

I find this problem especially true in the interrelationships between investment analysts and portfolio managers, or between any business leader and a subordinate. There is an element of incentive caused-bias here (my bonus might be at risk if I'm not seen as an active participant) and agency issues (nobody ever hired a consultant and got a "nothing to add" response, even when that would have been appropriate; instead they'll get at a minimum a lot of noise in the form of data

[66] https://www.wsj.com/articles/steve-bannon-and-the-making-of-an-economic-nationalist-1489516113
[67] *Fortune*, October 30, 1989

and charts and straw man arguments). Not only do underlings generate a lot of noise – and noise that requires attention and energy to filter – but they are also prone to generating incomplete or misleading answers. A great boss will encourage people around him or her to frequently use the response, "I don't know but I'll go find out." Both parts of that sentence are equally important and equally rare.

Journalists on a deadline are another worthwhile example. Shouldn't a writer write a story because it's timely and worth telling, not because it's Thursday or the end of the month or whatever? *Outstanding Investor Digest* used to do that, and *The Private Investment Brief* does that now. But many of the columns and editorials we read suffer because of say-something syndrome. It's not the writers' fault – it is enormously hard to write a great column on investing 50 times a year. Very few writers are as talented as Jason Zweig, and even he admits that "My job is to write the exact same thing between 50 and 100 times a year in such a way that neither my editors nor my readers will ever think I am repeating myself."[68] His case might be a double exception because not only can he pull it off but in the case of trying to save investors from their own mistakes, repetition might actually be necessary. But the overall point stands.

And it's worth continuing Zweig's quote about the necessity of repeating repeat himself, part of which ties back to our prior discussion of desirability bias: "[Repetition is needed] because good advice rarely changes, while markets change constantly. The temptation to pander is almost irresistible. And while people need good advice, what they want is advice that sounds good. The advice that sounds the best in the short run is always the most dangerous in the long run. Everyone wants the secret, the key, the roadmap to the primrose path that leads to El Dorado: the magical low-risk, high-return investment that can double your money in no time. Everyone wants to chase the returns of whatever has been hottest and to shun whatever has gone cold. Most financial journalism, like most of Wall Street itself, is dedicated to a basic principle of marketing: When the ducks quack, feed 'em."

Reason-Respecting Tendency

Munger: "There is in man, particularly one in an advanced culture, a natural love of accurate cognition and a joy in its exercise. This accounts for the widespread popularity of crossword puzzles, other puzzles, and bridge and chess columns, as well as all games requiring mental skill. This tendency has an obvious implication. It makes man especially prone to learn well when a would-be teacher gives correct reasons for what is being taught, instead of simply laying out the desired belief ex cathedra with no reasons given. Few practices, therefore, are wiser than not only thinking through reasons before giving orders but also communicating these reasons to the recipient of the order."

"In general, learning is most easily assimilated and used when people consistently hang their experiences on a latticework of theory and answering **the question: Why?** Indeed, the question "Why?" is a sort of Rosetta stone opening the major potentiality of mental life."

"Unfortunately, Reason-Respecting Tendency is so strong that even a person's giving of meaningless or incorrect reasons will increase compliance with his orders and requests. This has been demonstrated in psychology experiments wherein 'compliance practitioners' successfully jump to the head of lines in front of copying machines by explaining their reason: 'I have to make some copies.' This sort of unfortunate byproduct of Reason-Respecting Tendency is a conditioned reflex, based on a widespread appreciation of the importance of reasons. And, naturally, the practice of laying out various claptrap reasons is much used by commercial and cult "compliance practitioners" to help them get what they don't deserve.

Anyone with children will surely recognize the parallel – despite the tendency to miss the many small changes that come at parents almost daily as they observe their children's growth, it is truly stunning how quickly they learn. And the question "Why?" is often asked over and over and over again by children of a certain age. Only the shame of social proof seems to dissuade older adults from doing the same.

What happens when these standard psychological tendencies combine?

[68] http://jasonzweig.com/saving-investors-from-themselves-2/

Munger: "The clear answer is the combination greatly increases power to change behavior, compared to the power of merely one tendency acting alone." When you get these lollapalooza effects you will almost always find four or five of these things working together. When I was young there was a whodunit hero who always said, "Cherchez la femme." What you should search for in life is the combination, because the combination is likely to do you in."

Tupperware parties – "Billions of dollars from a few manipulative psychological tricks."

Moonie conversion methods – "He just combines four or five of these things together."

Alcoholics Anonymous – "It's a very clever system that uses four or five psychological systems at once toward, I might say, a very good end."

The Milgrim experiment – Milgrim's explanation of "why" great changed the behavior of the people involved. "So commitment and consistency tendency and the contrast principle were both working in favor of this behavior. So again, it's four different psychological tendencies."

The McDonnell Douglas airliner evacuation disaster – A test required to certify an airliner for commercial use caused numerous severe injuries…and then was repeated later that same afternoon, with the same disastrous effects. "Again, it's a combination of tendencies. Authorities told you to do it. He told you to make it realistic. You've decided to do it. You'd decided to do it twice. Incentive-caused bias: If you pass you save a lot of money; you've got to jump this hurdle before you can sell your new airliner. Again, three, four, five of these things work together and it turns human brains into mush. And maybe you think this doesn't happen in picking investments? If so, you're living in a different world than I am."

The open-outcry auction – it is "just made to turn the brain into mush. You've got social proof, the other guy is bidding, you get reciprocation tendency, you get deprival super-reaction syndrome, the thing is going away… I mean it just absolutely is designed to manipulate people into idiotic behavior."

The board of directors – "The top guy is sitting there, he's an authority figure. He's doing asinine things, you look around the board, nobody else is objecting; social proof, it's okay. Reciprocation tendency: he's raising the directors' fees every year, he's flying you around in the corporate airplane to look at interesting plants, or whatever in hell they do. And you…really get extreme dysfunction as a corrective decision-making body in the typical American board of directors. They only act, again the power of incentives, they only act when it gets so bad it starts making them look foolish, or threatening legal liability to them. That's Munger's rule…by and large the board of directors is a very ineffective corrector if the top guy is a little nuts, which, of course, frequently happens."

Update:

Herbalife/MLM – just as Tupperware parties were a linchpin of the original talk, Herbalife is a fascinating case study of the power of these tendencies in combination.

Volkswagen emissions scandal – $24.5 billion in fines/penalties, and counting, with five or more OEMs possibly guilty of some version of this too. Incentive-caused bias, over-influence by authority, maybe social proof.

United Airlines' recent "re-accommodation" of a passenger was a huge failure. Overbooking is a common – and economically rational – practice, even if incentive-caused bias can interfere. The problem came when the policies became the process: over-influence by authority. The policy manual said to offer a max of a couple hundred dollars in vouchers. Then the policy manual said to ask the man to leave. Then the policy manual said to call the police. Over-influence by authority, incentive-caused bias, reciprocation, stress-induced behavior, etc. etc.

> It was "a failure of epic proportions that's grown to this breach of public trust. **We let our policies and procedures get in the way of doing the right thing.**"[69]

Look instead at Alaska. "…the notion of "empowered employees" was a recurring theme. That's no accident. The airline's president and chief operating officer, Ben Minicucci, makes employee empowerment a pillar of his corporate strategy. 'Airlines are bound by government regulations and federal regulations and all these policies,' Minicucci told Bloomberg. 'It's easy to become bound to them.' He recognizes, however, that most airlines' tendencies to follow rules to the letter are what get them in hot water. Cue the dragged-off doctor on United: those flight attendants and gate agents were

[69] https://www.wsj.com/articles/united-says-litany-of-failures-led-to-flight-fiasco-1493269261

blindly following protocol at every turn. 'You do need strong structure and policies in the airline business, but you also need to blend it with empowerment,' according to Minicucci. 'We double down on that.' Every employee at Alaska—from flight crew to baggage handlers to customer service reps—is given an 'empowerment toolkit' as part of training. It includes a series of incentives that employees can dole out to resolve customer complaints: miles, money, restaurant vouchers, fee waivers, and so on. It's up to employees to 'find the story and create a personal connection' with customers, and then decide—based on a series of loose guidelines—the appropriate reparation strategy… 'Do what you think is right,' Minicucci tells his employees. 'We trust you. You'll never get in trouble for making a decision. And we don't want you to call the supervisor.' J.D. Power's [Michael] Taylor agrees that this is a secret formula for success. Investing in empowerment, he says, simultaneously builds good morale and strong customer loyalty. 'We see this in top-performing companies across industries, be it hotels or utilities or telephone companies,' he says. 'If you want to win friends and influence people, you have to treat them right.'"[70] Empowerment might be the most powerful incentive a company can give its employees. By giving its employees the power and the tools to act with common sense, rather than being bound by a set of rules or a guidebook that is by definition going to miss some things, the employees are happier and more engaged. That shows in the employees' countless interactions with customers. It is a self-perpetuating feedback loop. Look at how much benefit Berkshire Hathaway has gained from hiring people and then empowering and trusting them to do their jobs. Almost every great, special company takes that attitude toward its people – it might not even be possible to run a great organization if it is bound to policies, manuals and procedures. Only a culture of hiring well and trusting those hires, of empowerment, of creating an esprit de corps seems to work over the long haul. And conversely, many of the worst companies/industries have a rules-first, manuals-and-policies driven culture that creates bitter, grumbling employees that due the bare minimum (if that).

"Isn't this list of standard psychological tendencies improperly tautological compared with the system of Euclid? That is, aren't there overlaps? And can't some items on the list be derived from combinations of other items?"

"The answer to that is, plainly, yes."

What good, in the practical world, is the thought system indicated by the list? Isn't practical benefit prevented because these psychological tendencies are programmed into the human mind by broad evolution so we can't get rid of them? By broad evolution, I mean the combination of genetic and cultural evolution, but mostly genetic."

Munger: "The answer is the tendencies are partly good and, indeed, probably much more good than bad, otherwise they wouldn't be there. By and large these rules of thumb, they work pretty well for man given his limited mental capacity. And that's why they were programmed in by broad evolution. At any rate, they can't be simply washed out automatically and they shouldn't be. Nonetheless, the psychological thought system described is very useful in spreading wisdom and good conduct when one understands it and uses it constructively.

Carl Braun's communication practices – All Braun communications had the "Five W's" (Who? What? Where? When? Why?) and if you left out the "why" you got fired.

Pilot training in simulators – abilities attenuate with disuse

Clinical training in medical schools – Watch one, do one, teach one.

The U.S. Constitutional Convention – "Totally secret, no vote until the whole vote, then just one vote on the whole Constitution. Very clever psychological rules, and if they had a different procedure, everybody would've been pushed into a corner by his own pronouncements and his own oratory and his own… And no recorded votes until the last one. And they got it through by a whisker with those wise rules. We wouldn't have had the Constitution if our forefathers hadn't been so psychologically acute. And look at the crowd we got now."

[70] https://www.bloomberg.com/news/articles/2017-05-24/how-alaska-airlines-became-the-best-airline-in-the-u-s

Granny's Rule – eat your carrots or you don't get your ice cream; "[people should] organize their day so they force themselves to do what's unpleasant and important by doing that first, and then rewarding themselves with something they really like doing."

Harvard Business School's emphasis on decision trees – "high-school algebra works in real life"

> ***"One of the advantages of a fellow like Buffett is that he automatically thinks in terms of decision trees." – Charlie Munger***[71]

Post-mortems at J&J – "At most corporations if you make an acquisition and it turns out to be a disaster, all the paperwork and presentations that caused the dumb acquisition to be made are quickly forgotten. You've got denial, you've got everything in the world. You've got Pavlovian association tendency. Nobody even wants to even be associated with the damned thing or even mention it. At Johnson & Johnson, they make everybody revisit their old acquisitions and wade through the presentations. That is a very smart thing to do. And by the way, I do the same thing routinely."

Charles Darwin – the great example of avoiding confirmation bias, which "has morphed into the extreme anti-confirmation-bias method of the 'double-blind' studies wisely required in drug research by the F.DA."

"Sam Walton won't let a purchasing agent take a handkerchief from a salesman – he knows how powerful the subconscious reciprocation tendency is."

The Warren Buffett Rule for Open-Outcry Auctions: Don't Go. – "We don't go to the closed-bid auctions too."

Update:

Granny's Rule in the military – make your bed. "If you make your bed every morning you will have accomplished the first task of the day. It will give you a small sense of pride and it will encourage you to do another task and another and another. By the end of the day, that one task completed will have turned into many tasks completed. Making your bed will also reinforce the fact that little things in life matter. If you can't do the little things right, you will never do the big things right. And, if by chance you have a miserable day, you will come home to a bed that is made—that you made—and a made bed gives you encouragement that tomorrow will be better."

Granny's rule at work: Read the SEC filings (or other independent, original-source document) first thing in the morning. Set the right tone for the day, make sure something is accomplished. Then get your crossword puzzle with breakfast while you read some news – that part may be more enjoyable but it's not as important. Also, remember that the order of the research process's steps matters greatly. And rub your nose in your mistakes. Do a pre-mortem and a post-mortem.

<u>What special knowledge problems lie buried in the thought system indicated by the list?</u>

Munger: "Now we're talking about a type of human wisdom that the more people learn about it, the more attenuated the wisdom gets. That's an intrinsically paradoxical kind of wisdom. But we have paradox in mathematics and we don't give up mathematics. I say damn the paradox. This stuff is wonderfully useful. And by the way, the granny's rule, when you apply it to yourself, is sort of a paradox in a paradox. The manipulation still works even though you know you're doing it."

<u>Don't we need more reconciliation of psychology and economics?</u>

Munger: "My answer is yes, and I suspect that some slight progress is being made. I have heard of one such example. Colin Camerer of Caltech, who works in "experimental economics" devised an interesting experiment in which he caused high I.Q. students, playing for real money, to pay price A+B for a "security" they knew would turn into A dollars at the end of the day. This foolish action occurred because the students were allowed to trade with each other in liquid market for the security. And some students then paid price A+B because they hoped to unload on other students at a higher price before

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[71] May 5, 1995 edition of "Outstanding Investor Digest," p. 50

the day was over. What I will now confidently predict is that, despite Camerer's experimental outcome, most economics and corporate finance professors who still believe in the "hard-form efficient market hypothesis" will retain their original belief. If so, this will be one more indication of how irrational smart people can be when influenced by psychological tendencies."

<u>If the thought system indicated by this list of psychological tendencies has great value not recognized and employed, what should the educational system do about it?</u>

A mystery…to be continued

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> **What causes smart people to do dumb things?** Adam Smith, author of the book "The Money Game," interviewed Warren Buffett and asked that question. Buffett replied, "That's the big question. Why do they do it in investing? Why do they do it in managing businesses? Because you have all these smart people out there. The money doesn't go to the people with the highest I.Q. There would be a very poor correlation between I.Q. and investing and results. And you say to yourself why does somebody with a 500-horsepower motor only get 100-horsepower out of it? And I would say that if you look at the intellect as being the horsepower that's available, but you look at the output as reflecting the efficiency of that motor, it is rationality that causes the capacity to be translated in output. **Now what interferes with rationality? It's ego. It's greed. It's envy. It's fear. It's mindless imitation of other people. I mean, there are a variety of factors that cause that horsepower of the mind to get diminished dramatically before the output turns out. And I would say if Charlie and I have any advantage it's not because we're so smart, it is because we're rational and we very seldom let extraneous factors interfere with our thoughts. We don't let other people's opinion interfere with it. We try to get fearful when others are greedy. We try to get greedy when others are fearful. We try to avoid any kind of imitation of other people's behavior. And those are the factors that cause smart people to get bad results**."[72]

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More questions:

- What psychological factors and tendencies are missing from the list? What helpful examples are missing?
- What are the 10-12 microeconomic models that, combined with these psychological tendencies working for good, can produce lollapalooza business results?
- What absurdities that exist today – likely caused by a confluence of psychological tendencies – will be exposed as misjudgments over the next 5, 10, or 20 years?

<u>Updates from the work of Kahneman and Tversky, et al.</u>

Other useful concepts to consider:

- System 1 and System 2
- What You See is All There Is (WYSIATI)
- Base Rate Neglect
- The Planning Fallacy
- Narrative Fallacy
- Anchoring
- Availability

[72] http://www.prnewswire.com/news-releases/buffett-warns-on-level-of-stock-prices-margin-of-safety-has-vanished-in-exclusive-interview-with-adam-smith-77907392.html

- Substitution
- Loss Aversion
- Framing
- Sunk Costs
- Divergent measures of happiness / remember self vs. experiencing self

I particularly try to use a "second look" to engage System 2. Putting down a file or pausing the research process has a lot of value to me, just as does when I come back to a stalled crossword puzzle after some time doing something else. There is a reason why great ideas often happen in the shower.

Other ideas:

- Address complex problems by sub-dividing them
  - Israeli military's practice of subdividing personal performance into smaller bits to find officer candidates
  - How should we evaluate investors, managers, etc.? Buffett wants managers who are energetic, honest, and smart. So take each of those three categories and evaluate them individually.
    - I might add humility, an attitude of partnership, frugality,

My "favorite" factors to try to avoid:

- Sunk costs
- Commitment and consistency
- Narrative fallacy

Commentary by Jason Zweig

Jason Zweig has been one of the giants of the investment universe for several decades. He was chosen as the editor of the revised edition of Ben Graham's *The Intelligent Investor*, and he spent two years working with Danny Kahneman on his book *Thinking, Fast and Slow*. Zweig is also the author of a long-running column in *The Wall Street Journal* and he has published in numerous other publications. The archives on his website are a treasure trove of good reading. Even his Twitter feed is a rare harbor of intellectual honesty in the hurricane of noise that defines social media.

Presented below are the comments that Jason was gracious enough to share when I reached out for his help with this project. As I was thinking through this material he naturally came to mind as the obvious source of expertise on the subject, and I'm extremely grateful for his contribution. I can't improve upon them so everything is presented as he wrote it.

In the spirit of his avoidance of confirmation bias, I actually stopped reading his comments after his third sentence until I was done with my own work on this project.

Please note that Jason included the following warning: "the best researchers in the field would find all kinds of errors and misinterpretations in what I said…To get these things strictly correct, I'd have to re-read all the papers and talk to the authors."

The following comments are excerpted from an email conversation.

> "I'm going to reply without reading any of the details in what you sent or re-reading Charlie's original. It's best, in this kind of exercise, not to have references handy (to avoid confirmation bias!). So some of what I set down here for you may be redundant or repetitive, but it's what feels top-of-mind."
>
> "1) People love stories. Danny Kahneman loves to say "Stories trump statistics." As I'm sure you know, Yuval Noah Harari argues in Sapiens that storytelling is, above all, what makes us human. We not only love stories, we love perceiving stories that might not even be there. In our minds, objects and events acquire propensities, or apparent tendencies from which we believe we can extrapolate the next outcomes. Once you see an animal in a Rorschach blot, you can't unsee it; the story you instantaneously told yourself is off and running inside your head. Or think of the classic Fritz Heider experiments, in which geometric shapes start to "behave." Then think of traders saying that a stock "isn't acting right," or attributing intentional behavior to an entire market. What, then, turns

a bull market into a bear market, or vice versa? The emergence of a new narrative, as Bob Shiller has often pointed out. Part of what makes market timing so difficult is that these narrative shifts can be so swift...

“2) ... which leads to a related point, that markets seem to behave somewhat like physical systems in a state of self-organized criticality. Piles of sand can grow breathtakingly high and appear to defy all physical logic, until one last grain of sand is added and the whole dune collapses. Physicists don't yet seem to understand this process fully; likewise, we know very little about the self-organized criticality of emotion. Following along with the crowd feels safer and safer and safer until the whole pile collapses, at which point following along feels terrifying. What determines critical mass in the social psychology of markets? I don't think we know. Until we do, we all need to recognize that investing with the herd is almost irresistible, offers an illusion of safety, and tends to end in a smash that astounds almost everyone.

“3) The halo effect is ubiquitous. Evaluating one aspect of a person, a product, an event, a company, an industry or an idea will inevitably bias your subsequent evaluations of its other aspects. If I rate a CEO's physical attractiveness, declaring him a 9 out of 10 on the handsomeness scale will prime me to rate him higher, also, on competency, persistence, leadership, financial sophistication, general ability and so forth. By the same token, focusing on a company's high stock price will lead me to take a rosier view of the underlying business. The human mind likes to iron out inconsistencies. We will intuitively believe that a more handsome CEO is also more competent and that a higher-priced stock signals a better-run company. Here, Danny Kahneman's idea of structured evaluation, in which a decision-maker assesses each distinctive attribute separately on the same numerical scale, can be very helpful.

“4) Positive illusions about ourselves are beneficial for us as people but toxic for us as investors. Overconfidence, unrealistic optimism, the illusion of control -- without these qualities, most of us would probably (and quite logically!) spend our lives curled up in a ball in the dark. It's misunderstanding of or blindness to the laws of probability that gets us through daily life. Given the high rates of failure, who would ever get married or start a business without a kick in the pants from a positive illusion? Without positive illusions, capitalism itself would clank to a halt. But with them, financial capitalism becomes more dangerous as they drive markets to extremes. We are so accustomed to being successfully guided by positive illusions in many aspects of daily life that it is fiendishly difficult to recognize how dangerous they are in investing. One of Peter Bernstein's wisest aphorisms is, "The most dangerous moment is when you are right."

“5) Perhaps the most pernicious of all cognitive biases is the bias blind spot. I say: "Phil is overconfident; I, however, am well-calibrated. Phil is loss-averse; I am a rational Bayesian. Phil falls prey to the law of small numbers; I rely only on base rates." Meanwhile, you are thinking exactly the same thing, in reverse. Studying cognitive biases seems to make it much easier to see them in other people, but barely any easier at all to find them in ourselves. It's been known for more than 40 years that people find it extraordinarily hard to apply research findings to their own behavior; each of us believes we are the exception. Checklists can help here, but you would be blind to the bias blind spot if you thought you could ever cure it completely.

“6) Self-serving attributions of success and failure are cognitively corrupting. Tom Gilovich has shown that I will attribute my success to overcoming obstacles, rather than to the many advantages of (for example) living in a liberal democracy -- while I will attribute yours to a beneficial environment. My failures are the result of fierce headwinds, while yours came from your inability to rise to the occasion. The old adage that success has many fathers while failures is an orphan seems to be slightly wrong: My success has only one father -- me -- while yours has many. And my failure has many fathers, while yours has only one: you. Thus we witness portfolio managers blaming their underperformance on unnaturally high correlations or the unfair advantage of index funds. When (as it surely will) their performance turns, they will declare that their alpha came from security selection. Being honest about this requires almost superhuman strength of character.

“7) Agency problems are still underrated as a cause of destabilizing behavior among professional investors. Paul Woolley and Dimitri Vayanos have demonstrated that once investors start pulling money from actively managed funds, it is rational for the active managers to chase overvalued stocks. Most clients still don't understand that their definition of risk and their managers' definition of risk are drastically different. It's impossible to quantify how much of Berkshire's success is attributable to its structure, which effectively minimizes agency conflicts. But Munger and Buffett both think it played a major role. In my opinion, portfolio managers who don't design their companies, from Day One and the ground up, to minimize agency conflicts are hamstringing their own results before they even invest a dollar.

“8) People are terrible affective forecasters. Dan Gilbert and Tim Wilson have written brilliantly about this. We underestimate how long we will feel good about a positive event or outcome. And we overestimate how long we will feel bad about a negative result. We get our predictions of intensity wrong, too. What Gilbert calls "the psychological immune system" seems to work so well because we are generally so unaware we even have one. When our lover jilts us and we say "I'll never fall in love again," we mean every word of it -- just as the investor who bails at the bottom means it when he says he'll never buy stocks again. When we do fall in love again or buy stocks again, we can do so only by pretending that we knew we would all along. Fibbing to ourselves about our own past seems to be the natural way to navigate the present. These emotional habits also seem to train us not to be honest in our intellectual life as well. Put another way, our preferences are constructed, not innate. We have a surprisingly poor grasp on what did make us happy, what does make us happy and what will make us happy. So the idea of individuals as rational utility maximizers is silly. As a result, many of the tools that investors rely on -- focus groups, survey data and so on -- may be unreliable. And the unreliability of affective forecasting helps explain why bear markets so often seem to end in a startling vertical leap: It's as if investors everywhere suddenly realize they aren't going to feel as bad as they expected to for as long as they worried they would. And then, it's off to the races.

“9) Much of what keeps us busy all day long is the attempt to minimize cognitive dissonance. Human beings will do almost anything to avert the collision of empirical evidence against their own cherished beliefs. We will tell stories to ourselves and others. We will hold positive illusions. We will overweight confirming evidence, no matter how weak, and ignore disconfirming evidence, no matter how strong. Danny Kahneman calls the human mind a machine for jumping to conclusions. But it is also, I think, a machine for reducing dissonance by keeping stories simple. And one of the simplest and most appealing of all stories is "That Doesn't Apply to Me...Because I'm Special."

“Add all of this up, and it seems clear to me that I've been wrong for many years in saying that the single greatest challenge for investors is to develop self-control. In fact, the single greatest challenge investors face is to see ourselves as we actually are. What makes Warren Buffett and, perhaps even more, Charlie Munger so remarkable is how honest they are about themselves with themselves.

“The rest of us can aspire to only a fraction of their level of self-honesty.”

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"A frequently asked question is, how do you learn to be a great investor? First of all, you have to understand your own nature, said Munger. Each person has to play the game given his own marginal utility considerations and in a way that takes into account his own psychology. If losses are going to make you miserable-and some losses are inevitable-you might be wise to utilize a very conservative pattern of investment and saving all your life. So you have to adapt your strategy to your own nature and your own talents. I don't think there's a one-size-fits-all investment strategy I can give you." – Charlie Munger[73]

APPENDIX

Recommended Reading

- *Thinking, Fast & Slow* by Daniel Kahneman
- Any/all of the various papers published by Kahneman and Tversky
- "The Marvels and the Flaws of Intuitive Thinking: Edge Master Class 2011" with Daniel Kahneman[74]
- *Poor Charlie's Almanack* by Charlie Munger, edited by Peter Kaufman
- The various books and articles by Jason Zweig, especially Your *Money and Your Brain; see also www.jasonzweig.com*
- "The Base Rate Book" by Michael Mauboussin, among his many excellent books and papers
- *The Smartest Guys in the Room* by Bethany McLean and Peter Elkind
- *Superforecasting* by Phil Tetlock
- *Influence* by Robert Cialdini
- *Pre-suasion* by Robert Cialdini
- "How Wells Fargo's Cutthroat Corporate Culture Allegedly Drove Bankers to Fraud" by Bethany Mclean
- *How We Know What Isn't So* by Thomas Gilovich
- "The Human Factor by William Langewiesche" (Vanity Fair, October 2014)
- "Investing in the Unknown and Unknowable" by Richard Zeckhauser
- *Fooled by Randomness* by Nassim Taleb
- *Seeking Wisdom* by Peter Bevelin
- *The Most Important Thing Illuminated* by Howard Marks
- *The Undoing Project* by Michael Lewis
- *Predictably Irrational* by Dan Ariely
- The various book and articles by Atul Gawande, especially *The Checklist Manifesto*
- *Against the Gods* by Peter Bernstein
- *When Genius Failed* by Roger Lowenstein

Potential Sources of Other Examples of Human Misjudgment

(These are meant solely as potential ideas for future case studies or as examples of the tendencies, both good and bad, mentioned above)

- Puerto Rico
- NRSROs – Moody's and S&P in the GFC
- Valeant
- Theranos

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[73] *Damn Right!* by Janet Lowe
[74] https://www.edge.org/conversation/daniel_kahneman-the-marvels-and-the-flaws-of-intuitive-thinking-edge-master-class-2011

- Arthur Andersen
- WorldCom
- Adelphia
- Global Crossing
- Martha Stewart – ImClone insider trading scandal
- Fannie/Freddie
- Healthsouth
- Worker’s comp fraud
- Tyco
- Refco
- Parmalat
- Bear Stearns
- Lehman Brothers
- Northern Rock
- AIG
- Anglo Irish Bank
- Stanford Financial
- Livestrong and Lance Armstrong
- The “Libor rigging” scandal
- Options back-dating
- Volkswagen emissions scandal
- Barings Bank and Nick Leeson
- Societe Generale and Jerome Kerviel
- Bruno Iksil, “The London Whale”
- First Bank of Oak Park
- Corus Bank
- Ikea
- In-n-Out Burger
- HealthSouth
- Waste Management
- Tyco
- American Express
- The AOL / Time Warner merger
- The Ron Johnson strategy at JCP
- Eastman Kodak's development of the digital camera in the 1970s
- Raj Rajaratnam
- Michael Milken

Munger and Belridge Oil

"In those days, Belridge was a pink-sheet company. It was very valuable. It had a huge oil field, it wasn't even leased, they owned everything, they owned the land, they owned the oil field, everything. It had liquidating value way higher than the per share price -- maybe three times. It was just an incredible oil field that was going to last a long time, and it had very interesting secondary and tertiary recovery possibilities and they owned the whole field to do whatever they wanted with it. That's rare, too. Why in the hell did I turn down the second block of shares I was offered? Chalk it up to my head up a place where it shouldn't be. So, that's why I made that decision. It was crazy. So if any of you made any dumb decisions, you should feel very comfortable. You can survive a few. It was a mistake of omission, not commission, but it probably cost me $300 - $400 million. I just tell you that story to make you feel good about whatever investment mischances you've had in your own life. I never found a way of avoiding them all."[75]

In a different telling Munger adds some detail to the story. "A guy called me offering me 300 shares of [Belridge] Oil and I had the cash and I said, 'Sure, I'll take the listing.' It was selling there [for] maybe a fifth of what the oil companies were. They owned the oil field. So I bought it. Then he called me back and said, 'I've got 1,500 more.' I didn't have the money on hand. I had to sell something. I think about it and I said, 'Hold it for 10 minutes and I'll call you back.' I thought about it for 10 minutes and called him back and didn't buy it. Well, [Belridge] Oil sold about for 35 times the price I was going to pay within a year and a half. If I had made the different decision, the Mungers would be ahead by way of more than a billion dollars, as I sit here now. To count the opportunity cost, it was a real bonehead decision. There was no risk. I could have borrowed. There wasn't the slightest in borrowing money to buy [Belridge] Oil. The worst that would happen was I would get out with a small profit. It was a really dumb decision. You don't get that many great opportunities in a lifetime. When life finally gave me one, I blew it. So I tell you that story to say you're no different from me. You're not going to get that many really good ones — don't blow your opportunities. They're not that common, the ones that are clearly recognizable with virtually no downside and big upsides. Don't be too timid, when you really have a cinch. Go at life with a little courage. There's an old word commonly used in the south that I never hear anybody use now, except myself, and that's gumption. I would say what you need is intelligence plus gumption."[76]

Air France 447

Summary only, with emphasis added; please read the full article, "The Human Factor," by William Langewiesche (Vanity Fair, October 2014).

> "**These were highly trained people, flying an immaculate wide-bodied Airbus A330 for one of the premier airlines of the world**, an iconic company of which all of France is proud. Even today—with the flight recorders recovered from the sea floor, French technical reports in hand, and exhaustive inquests under way in French courts—**it remains almost unimaginable that the airplane crashed. A small glitch took Flight 447 down, a brief loss of airspeed indications—the merest blip of an information problem during steady straight-and-level flight. It seems absurd, but the pilots were overwhelmed."**
>
> Dubois was listening to opera on a headset, and insisted that Bonin have a listen too. Dubois later bungled a controller's communication by answering to the wrong call sign; Bonin weakly noted the mistake but backed down when Dubois insisted. "Similar confusions arose over required reporting points and frequencies ahead, but Bonin did not intervene."
>
> Bonin repeatedly insisted on flying at RECMAX altitudes, where the plane would be operating close to aerodynamic stall, despite standard procedure dictating a lower altitude to afford a margin of safety.
>
> Dubois was reading a magazine, barely engaged in small talk, and as Bonin became more nervous with the approaching thunderstorms, Dubois decided to take his break. "The chief French investigator, Alain Bouillard, later said to me, **'If the captain had stayed in position through the Intertropical Convergence Zone, it would have**

[75] https://www.forbes.com/sites/phildemuth/2014/10/01/charlie-munger-and-the-2014-daily-journal-annual-meeting-part-three/#71d76db371d7

[76] http://www.rbcpa.com/DJCO_Meeting_Detailed_Notes_2013.pdf

delayed his sleep by no more than 15 minutes, and because of his experience, maybe the story would have ended differently. But I do not believe it was fatigue that caused him to leave. It was more like customary behavior, part of the piloting culture within Air France. And his leaving was not against the rules. Still, it is surprising. If you are responsible for the outcome, you do not go on vacation during the main event.'"

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"In the late 1970s, a team of researchers at NASA began a systematic assessment of airline-pilot performance. One of them was a young research psychologist and private pilot named John Lauber, who later served for 10 years as a member of the National Transportation Safety Board and went on to run the safety division at Airbus in France. As part of the NASA effort, Lauber spent several years riding in airline cockpits, observing the operations and taking notes. This was at a time when most crews still included a flight engineer, who sat behind the pilots and operated the airplane's electrical and mechanical systems. What Lauber found was a culture dominated by authoritarian captains, many of them crusty old reactionaries who brooked no interference from their subordinates. In those cockpits, co-pilots were lucky if occasionally they were allowed to fly. Lauber told me about one occasion, when he entered a Boeing 727 cockpit at a gate before the captain arrived, and the flight engineer said, "I suppose you've been in a cockpit before." "Well, yes." "But you may not be aware that I'm the captain's sexual adviser." "Well, no, I didn't know that." "Yeah, because whenever I speak up, he says, 'If I want your f***ing advice, I'll ask for it.' "

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"NASA talked the airline into lending it a full-motion simulator at the San Francisco airport with which to run an experiment on 20 volunteer Boeing 747 crews. The scenario involved a routine departure from New York's Kennedy Airport on a transatlantic flight, during which various difficulties would arise, forcing a return. It was devised by a self-effacing British physician and pilot named Hugh Patrick Ruffell Smith, who died a few years later and is revered today for having reformed global airline operations, saving innumerable lives. John Lauber was closely involved. The simulator runs were intended to be as realistic as possible, including bad coffee and interruptions by flight attendants.

"Lauber told me that at Pan Am some of the operations managers believed the scenario was too easy. "They said, 'Look, these guys have been trained. You're not going to see much of interest.' Well, we saw a lot that was of interest. And it had not so much to do with the pilots' physical ability to fly—their stick-and-rudder skills—or their mastery of emergency procedures. Instead, it had everything to do with their management of the workload and internal communication. Making sure that the flight engineer was doing what a flight engineer needs to be doing, that the co-pilot was handling the radios, that the captain was freeing himself to make the right decisions."

"**It all depended on the captains. A few were natural team leaders—and their crews acquitted themselves well. Most, however, were Clipper Skippers, whose crews fell into disarray under pressure and made dangerous mistakes.** Ruffell Smith published the results in January 1979, in a seminal paper, 'NASA Technical Memorandum 78482.' **The gist of it was that teamwork matters far more than individual piloting skill. This ran counter to long tradition in aviation but corresponded closely with the findings of another NASA group, which made a careful study of recent accidents and concluded that in almost all cases poor communication in the cockpit was to blame.**

"The airlines proved receptive to the research. In 1979, NASA held a workshop on the subject in San Francisco, attended by the heads of training departments from around the world. To describe the new approach, Lauber coined a term that caught on. He called it Cockpit Resource Management, or C.R.M., an abbreviation since widened to stand for Crew Resource Management. The idea was to nurture a less authoritarian cockpit culture—one that included a command hierarchy but encouraged a collaborative approach to flying, in which co-pilots (now 'first officers') routinely handled the airplanes and were expected to express their opinions and question their captains if they saw mistakes being made. For their part, the captains were expected to admit to fallibility, seek advice, delegate roles, and fully communicate their plans and thoughts. Part of the package was a new approach to the use of simulators, with less effort spent in honing piloting skills and more emphasis placed on teamwork.

This was known as line-oriented flight training. As might be expected, the new ideas met with resistance from senior pilots, many of whom dismissed the NASA findings as psychobabble and derided the early seminars as charm schools. As in the old days, they insisted that their skill and authority were all that stood in the way of death for the public. Gradually, however, many of those pilots retired or were forced to change, and by the 1990s both C.R.M. and line-oriented flight training had become the global standard, albeit imperfectly applied.

"Though the effect on safety is difficult to quantify, because these innovations lie inseparably among others that have helped to improve the record**, C.R.M. is seen to have been so successful that it has migrated into other realms, including surgery, where doctors, like pilots, are no longer the little gods they were before. In aviation, the change has been profound. Training has changed, co-pilots have been empowered, and the importance of airplane-handling skills by individual pilots has implicitly been de-valued. But the most important point as it applies to Air France 447 is that the very design of the Airbus cockpit, like that of every recent Boeing, is based upon the expectation of clear communication and good teamwork, and if these are lacking, a crisis can quickly turn catastrophic.**

"The tenets of C.R.M., which emerged from the United States, fit naturally into the cultures of Anglo-Saxon countries. Acceptance has been more difficult in certain Asian countries, where C.R.M. goes against the traditions of hierarchy and respect for elders. A notorious case was the 1997 crash of a Korean Air Boeing 747 that hit a hillside on a black night, while on approach to Guam, after a venerated captain descended prematurely and neither the co-pilot nor the flight engineer emphatically raised concerns, though both men knew the captain was getting things wrong. In the impact 228 people died. Similar social dynamics have been implicated in other Asian accidents.

"And Air France? As judged from the cockpit management on display in Flight 447 before it went down, NASA's egalitarian discipline has devolved within the airline into a self-indulgent style of flying in which co-pilots address the captain using the informal 'tu' but some captains feel entitled to do whatever they like. The sense of entitlement does not occur in a void. It can be placed in the context of a proud country that has become increasingly insecure. A senior executive at Airbus mentioned to me that in Britain and the United States the elites do not become airline pilots, whereas in France, as in less developed countries, they still do. This makes them difficult to manage. Bernard Ziegler, the visionary French test pilot and engineer behind the Airbus design, once said to me, **'First you have to understand the mentality.' I said, 'Do you really think they are so arrogant?' He said, 'Some, yes. And they have the flaw of being too well paid.' 'So there must be no problem in the United States.' But Ziegler was serious. He said, 'Second, the union's position is that pilots are always perfect. Working pilots are perfect, and dead pilots are, too."**

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'Sarter has written extensively about 'automation surprises,' often related to control modes that the pilot does not fully understand or that the airplane may have switched into autonomously, perhaps with an annunciation but without the pilot's awareness. Such surprises certainly added to the confusion aboard Air France 447. One of the more common questions asked in cockpits today is 'What's it doing now?' Robert's 'We don't understand anything!' was an extreme version of the same. Sarter said, **'We now have this systemic problem with complexity, and it does not involve just one manufacturer. I could easily list 10 or more incidents from either manufacturer where the problem was related to automation and confusion. Complexity means you have a large number of subcomponents and they interact in sometimes unexpected ways. Pilots don't know, because they haven't experienced the fringe conditions that are built into the system. I was once in a room with five engineers who had been involved in building a particular airplane, and I started asking, 'Well, how does this or that work?' And they could not agree on the answers. So I was thinking, If these five engineers cannot agree, the poor pilot, if he ever encounters that particular situation . . . well, good luck.'**

"In the straight-on automation incidents that concern Sarter, **the pilots overestimate their knowledge** of the aircraft systems, then do something expecting a certain result, only to find that the airplane reacts differently and seems to have assumed command. This is far more common than the record indicates, because rarely do such surprises lead to accidents, and only in the most serious cases of altitude busting or in-flight upsets are they necessarily reported. Air France 447 had an additional component. The blockage of the pitot tubes led to an old-fashioned indication failure, and the resulting disconnection of the autopilot was an old-fashioned response: trust the pilots to sort things out. There were definitely automation complications in what followed, and to that mix one can add the design decision not to link the two control sticks. But on Air France 447, the automation problem ran still deeper. Bonin and Robert were flying a fourth-generation glass-cockpit airplane, **and unlike the pilots who think they know more than they do, these two seemed to fear its complexities.** The Airbus was reacting in a conventional manner, but once they ventured beyond the routine of normal cruise they did not trust the nature of the machine. It is hard to imagine that this would have happened under the old Clipper Skippers, the stick-and-rudder boys. But Bonin and Robert? It was as if progress had pulled the rug out from beneath elementary aeronautical understanding."

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"For commercial-jet designers, there are some immutable facts of life. It is crucial that your airplanes be flown safely and as cheaply as possible within the constraints of wind and weather. Once the questions of aircraft performance and reliability have been resolved, you are left to face the most difficult thing, which is the actions of pilots. There are more than 300,000 commercial-airline pilots in the world, of every culture. They work for hundreds of airlines in the privacy of cockpits, where their behavior is difficult to monitor. Some of the pilots are superb, but most are average, and a few are simply bad. To make matters worse, with the exception of the best, all of them think they are better than they are. Airbus has made extensive studies that show this to be true. The problem in the real world is that the pilots who crash your airplanes or simply burn too much fuel are difficult to spot in the crowd. A Boeing engineer gave me his perspective on this. He said, 'Look, pilots are like other people. Some are heroic under pressure, and some duck and run. Either way, it's hard to tell in advance. You almost need a war to find out.' But of course you can't have a war to find out. Instead, what you do is try to insert your thinking into the cockpit.

"First, you put the Clipper Skipper out to pasture, because he has the unilateral power to screw things up. You replace him with a teamwork concept—call it Crew Resource Management—that encourages checks and balances and requires pilots to take turns at flying. Now it takes two to screw things up. Next you automate the component systems so they require minimal human intervention, and you integrate them into a self-monitoring robotic whole. You throw in buckets of redundancy. You add flight management computers into which flight paths can be programmed on the ground, and you link them to autopilots capable of handling the airplane from the takeoff through the rollout after landing. You design deeply considered minimalistic cockpits that encourage teamwork by their very nature, offer excellent ergonomics, and are built around displays that avoid showing extraneous information but provide alerts and status reports when the systems sense they are necessary. Finally, you add fly-by-wire control. At that point, after years of work and billions of dollars in development costs, you have arrived in the present time. As intended, the autonomy of pilots has been severely restricted, but the new airplanes deliver smoother, more accurate, and more efficient rides—and safer ones too.

"It is natural that some pilots object. This appears to be primarily a cultural and generational matter. In China, for instance, the crews don't care. In fact, they like their automation and rely on it willingly. By contrast, an Airbus man told me about an encounter between a British pilot and his superior at a Middle Eastern airline, in which the pilot complained that automation had taken the fun out of life, and the superior answered, to paraphrase, "Hey asshole, if you want to have fun, go sail a boat. You fly with automation or find some other job."

"He kept his job. In professional flying, a historic shift has occurred. In the privacy of the cockpit and beyond public view, pilots have been relegated to mundane roles as system managers, expected to monitor the computers and sometimes to enter data via keyboards, but to keep their hands off the controls, and to intervene only in the rare event of a failure. As a result, the routine performance of inadequate pilots has been elevated to that of average pilots, and average pilots don't count for much. If you are building an airliner and selling it globally, this turns out to be a good thing. Since the 1980s, when the shift began, the safety record has improved fivefold, to the current one fatal accident for every five million departures. No one can rationally advocate a return to the glamour of the past.

"Nonetheless there are worries even among the people who invented the future. Boeing's Delmar Fadden explained, 'We say, 'Well, I'm going to cover the 98 percent of situations I can predict, and the pilots will have to cover the 2 percent I can't predict.' This poses a significant problem. I'm going to have them do something only 2 percent of the time. Look at the burden that places on them. First they have to recognize that it's time to intervene, when 98 percent of the time they're not intervening. Then they're expected to handle the 2 percent we couldn't predict. What's the data? How are we going to provide the training? How are we going to provide the supplementary information that will help them make the decisions? There is no easy answer. From the design point of view, we really worry about the tasks we ask them to do just occasionally.' I said, 'Like fly the airplane?' Yes, that too. **Once you put pilots on automation, their manual abilities degrade and their flight-path awareness is dulled**: flying becomes a monitoring task, an abstraction on a screen, a mind-numbing wait for the next hotel. Nadine Sarter said that the process is known as de-skilling. It is particularly acute among long-haul pilots with high seniority, especially those swapping flying duties in augmented crews. On Air France 447, for instance, Captain Dubois had logged a respectable 346 hours over the previous six months but had made merely 15 takeoffs and 18 landings. Allowing a generous four minutes at the controls for each takeoff and landing, that meant that Dubois was directly manipulating the side-stick for at most only about four hours a year. The numbers for Bonin were close to the same, and for Robert they were smaller. For all three of them, most of their experience had consisted of sitting in a cockpit seat and watching the machine work.

"The solution might seem obvious. John Lauber told me that with the advent of C.R.M. and integrated automation, in the 1980s, Earl Wiener went around preaching about 'turn-it-off training.' Lauber said, 'Every few flights, disconnect all that stuff. Hand-fly it. Fly it like an airplane.' 'What happened to that idea? 'Everybody said, 'Yeah. Yeah. We gotta do that.' And I think for a while maybe they did.'

"Sarter, however, is continuing with variations on the theme. She is trying to come up with improved interfaces between pilot and machine. In the meantime, she says, at the very least revert to lower levels of automation (or ignore it) when it surprises you.

"**In other words, in a crisis, don't just start reading the automated alerts. The best pilots discard the automation naturally when it becomes unhelpful**, and again there appear to be some cultural traits involved. Simulator studies have shown that Irish pilots, for instance, will gleefully throw away their crutches, while Asian pilots will hang on tightly. It's obvious that the Irish are right, but in the real world Sarter's advice is hard to sell. The automation is simply too compelling. The operational benefits outweigh the costs. The trend is toward more of it, not less. And after throwing away their crutches, many pilots today would lack the wherewithal to walk.

"This is another unintended consequence of designing airplanes that anyone can fly: anyone can take you up on the offer. Beyond the degradation of basic skills of people who may once have been competent pilots, the fourth-generation jets have enabled people who probably never had the skills to begin with and should not have been in the cockpit. As a result, the mental makeup of airline pilots has changed. On this there is nearly universal agreement—at Boeing and Airbus, and among accident investigators, regulators, flight-operations managers, instructors, and academics. A different crowd is flying now, and though excellent pilots still work the job, on average the knowledge base has become very thin.

"It seems that we are locked into a spiral in which poor human performance begets automation, which worsens human performance, which begets increasing automation. The pattern is common to our time but is acute in aviation. Air France 447 was a case in point. In the aftermath of the accident, the pitot tubes were replaced on several Airbus models; Air France commissioned an independent safety review that highlighted the arrogance of some of the company's pilots and suggested reforms; a number of experts called for angle-of-attack indicators in airliners, while others urged a new emphasis on high-altitude-stall training, upset recoveries, unusual attitudes, flying in Alternate Law, and basic aeronautical common sense. All of this was fine, but none of it will make much difference. At a time when accidents are extremely rare, each one becomes a one-off event, unlikely to be repeated in detail. Next time it will be some other airline, some other culture, and some other failure—but it will almost certainly involve automation and will perplex us when it occurs. Over time the automation will expand to handle in-flight failures and emergencies, and as the safety record improves, pilots will gradually be squeezed from the cockpit altogether. The dynamic has become inevitable. There will still be accidents, but at some point we will have only the machines to blame.'"

Abridged text of Munger's Harvard School Commencement Speech

"I can still recall Carson's absolute conviction as he told how he had tried these things on occasion after occasion and had become miserable every time…I add my voice. The four closest friends of my youth were highly intelligent, ethical, humorous types, favored in person and background. Two are long dead, with alcohol a contributing factor, and a third is a living alcoholic – if you call that living. While susceptibility varies, addiction can happen to any of us, through a subtle process where the bonds of degradation are too light to be felt until they are too strong to be broken. And I have yet to meet anyone, in over six decades of life, whose life was worsened by over-fear and over-avoidance of such a deceptive pathway to destruction.

"Envy, of course, joins chemicals in winning some sort of quantity price for causing misery. It was wreaking havoc long before it got a bad press in the laws of Moses.

"Resentment has always worked for me exactly as it worked for Carson. I cannot recommend it highly enough to you if you desire misery.

"For those of you who want misery, I also recommend refraining from practice of the Disraeli compromise, designed for people who find it impossible to quit resentment cold turkey. Disraeli, as he rose to become one of the greatest Prime Ministers, learned to give up vengeance as a motivation for action, but he did retain some outlet for resentment by putting the names of people who wronged him on pieces of paper in a drawer. Then, from time to time, he reviewed these names and took pleasure in noting the way the world had taken his enemies down without his assistance.

"Well, so much for Carson's three prescriptions. Here are four more prescriptions from Munger:

"First, **be unreliable**. Do not faithfully do what you have engaged to do. If you will only master this one habit you will more than counterbalance the combined effect of all your virtues, howsoever great. If you like being distrusted and excluded from the best human contribution and company, this prescription is for you. Master this one habit and you can always play the role of the hare in the fable, except that instead of being outrun by one fine turtle you will be outrun by hordes and hordes of mediocre turtles and even by some mediocre turtles on crutches.

"I must warn you that if you don't follow my first prescription it may be hard to end up miserable, even if you start disadvantaged. I had a roommate in college who was and is severely dyslexic. But he is perhaps the most reliable man I have ever known. He has had a wonderful life so far, outstanding wife and children, chief executive of a multibillion dollar corporation. If you want to avoid a conventional, main-culture, establishment result of this kind, you simply can't count on your other handicaps to hold you back if you persist in being reliable.

"My second prescription for misery is to **learn everything you possibly can from your own personal experience, minimizing what you learn vicariously from the good and bad experience of others**, living and dead. This prescription is a sure-shot producer of misery and second-rate achievement.

"You can see the results of not learning from others' mistakes by simply looking about you. How little originality there is in the common disasters of mankind – drunk driving deaths, reckless driving maimings, incurable venereal diseases, conversion of bright college students into brainwashed zombies as members of destructive cults, business failures through repetition of obvious mistakes made by predecessors, various forms of crowd folly, and so on. I recommend as a memory clue to finding the way to real trouble from heedless, unoriginal error the modern saying: 'If at first you don't succeed, well, so much for hang gliding.' The other aspect of avoiding vicarious wisdom is the rule for not learning from the best work done before yours. The prescription is to become as non-educated as you reasonable can.

“Perhaps you will better see the type of non-miserable result you can thus avoid if I render a short historical account. There once was a man who assiduously mastered the work of his best predecessors, despite a poor start and very tough time in analytic geometry. Eventually his own original work attracted wide attention and he said of that work: ‘If I have seen a little farther than other men it is because I stood on the shoulders of giants.’ The bones of that man lie buried now, in Westminster Abbey, under an unusual inscription: ‘Here lie the remains of all that was mortal in Sir Isaac Newton.’

“My third prescription for misery is to **go down and stay down** when you get your first, second, third severe reverse in the battle of life. Because there is so much adversity out there, even for the lucky and wise, this will guarantee that, in due course, you will be permanently mired in misery.

“My final prescription to you for a life of fuzzy thinking and infelicity is to ignore a story they told me when I was very young about a rustic who said: **‘I wish I knew where I was going to die, and then I’d never go there.’** Most people smile (as you did) at the rustic’s ignorance and ignore his basic wisdom. If my experience is any guide, the rustic’s approach is to be avoided at all cost by someone bent on misery. To help fail you should discount as mere quirk, with no useful message, the method of the rustic, which is the same one used in Carson’s speech.

What Carson did was to approach the study of how to create X by turning the question backward, that is, by studying how to create non-X. The great algebraist, Jacobi, had exactly the same approach as Carson and was known for his constant repetition of one phrase: **“Invert, always invert.”** It is in the nature of things, as Jacobi knew, that many hard problems are best solved only when they are addressed backward…[Charles] Darwin’s result was due in large measure to his working method, which violated all my rules for misery and particularly emphasized a backward twist in that he always gave priority attention to evidence tending to disconfirm whatever cherished and hard-won theory he already had. In contrast, most people early achieve and later intensify a tendency to process new and disconfirming information so that any original conclusion remains intact. They become people of whom Philip Wylie observed: ‘You couldn’t squeeze a dime between what they already know and what they will never learn.’ The life of Darwin demonstrates how a turtle may outrun the hares, aided by extreme objectivity, which helps the objective person end up like the only player without blindfold in a game of pin-the-donkey. If you minimize objectivity, you ignore not only a lesson from Darwin but also one from Einstein. Einstein said that his successful theories came from: “Curiosity, concentration, perseverance and self-criticism. And by self-criticism he meant the testing and destruction of his own well-loved ideas.

“It is fitting now that a backward sort of speech end with a backward sort of toast, inspired by Elihu Root’s repeated accounts of how the dog went to Dover, “leg over leg.” To the class of 1986: Gentlemen, may each of you rise high by spending each day of a long life aiming low.”[77]

“Investing in the Unknown and Unknowable” by Richard Zeckhauser

“The essence of effective investment is to select assets that will fare well when future states of the world become known. When the probabilities of future states of assets are known, as the efficient markets hypothesis posits, wise investing involves solving a sophisticated optimization problem. Of course, such probabilities are often unknown, banishing us from the world of the capital asset pricing model (CAPM), and thrusting us into the world of uncertainty. Many [great] investments…are one-time only, implying that past data will be a poor guide.”[78]

“From David Ricardo making a fortune buying British government bonds on the eve of the Battle of Waterloo to Warren Buffett selling insurance to the California earthquake authority, the wisest investors have earned extraordinary returns by investing in the unknown and the unknowable (UU). But they have done so on a reasoned, sensible basis. This essay

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[77] Charlie Munger, Harvard School Commencement Speech; June 13, 1986; reprinted in *Poor Charlie’s Almanack*. (Abridged, emphasis added)

[78] https://www.hks.harvard.edu/fs/rzeckhau/InvestinginUnknownandUnknowable.pdf

explains some of the central principles that such investors employ."[79] "Were the financial world predominantly one of mere uncertainty, the greatest financial successes would come to those individuals best able to assess probabilities. That skill, often claimed as the domain of Bayesian decision theory, would swamp sophisticated optimization as the promoter of substantial returns. The real world of investing often ratchets the level of non-knowledge into still another dimension, where even the identity and nature of possible future states are not known. This is the world of ignorance. In it, there is no way that one can sensibly assign probabilities to the unknown states of the world. Just as traditional finance theory hits the wall when it encounters uncertainty, modern decision theory hits the wall when addressing the world of ignorance. I shall employ the acronym UU to refer to situations where both the identity of possible future states of the world as well as their probabilities are unknown and unknowable."[80]

Table 1. Escalating Challenges to Effective Investing

	Knowledge of States of the World	Investment Environment	Skills Needed
Risk	Probabilities known	Distributions of returns known	Portfolio optimization
Uncertainty U	Probabilities unknown	Distributions of returns conjectured	Portfolio optimization, Decision theory
Ignorance UU	States of the world unknown	Distributions of returns conjectured, often from deductions about other's behavior. Complementary skills often rewarded along side investment	Portfolio optimization. Decision theory. Complementary skills (ideal) Strategic inference.

Another level – Unknown, Unknowable and Unique events (UUU)

Speculation 1: UUU investments – unknown, unknowable and unique – drive off speculators, which creates the potential for an attractive low price.

"The major fortunes in finance, I would speculate, have been made by people who are effective in dealing with the unknown and unknowable. This will probably be truer still in the future. Given the influx of educated professionals into finance, those who make their living speculating and trading in traditional markets are increasingly up against others who are tremendously bright and tremendously well-informed."[81]

Corporate governance. (Matt Levine, Bloomberg View, May 19, 2017)[82]

Well this, from Alan Palmiter of Wake Forest University School of Law, is lovely:

Recent research in the nascent field of moral psychology suggests that we humans are not rational beings, particularly when we act in social and political settings. Our decisions (moral judgments) arise instantly and instinctively in our subconscious, out of conscious view. We rationalize our moral decisions — whether to feel compassion toward another who is harmed, to desire freedom in the face of coercion, or to honor those matters we consider sacred — after we have made the decision. We layer on a veneer of rationality, to reassure ourselves of our own moral integrity and to signal our moral values to like-minded others in our group. This is

[79] https://www.hks.harvard.edu/fs/rzeckhau/InvestinginUnknownandUnknowable.pdf
[80] https://www.hks.harvard.edu/fs/rzeckhau/InvestinginUnknownandUnknowable.pdf
[81] https://www.hks.harvard.edu/fs/rzeckhau/InvestinginUnknownandUnknowable.pdf
[82] https://www.bloomberg.com/view/articles/2017-05-19/relationships-and-glass-steagall

particularly so when we operate in the "super-organism" that is the corporation, where specialized roles have led to almost unparalleled human cooperation.

Thus, the decision-making and actions that arise from the shareholder-management relationship are best understood as the product not of rational economic incentives or prescriptive legal norms, but instead moral values. On questions of right and wrong in the corporation, the decisions by shareholders and managers, like those of other human actors, are essentially emotive and instinctive. The justifications offered for their choices — whether resting on shareholder primacy, team production, board primacy, or even corporate social responsibility — are after-the-fact rationalizations, not reasoned thinking.

A Chat With Daniel Kahneman[83]

On persistence: "When I work I have no sunk costs. I like changing my mind. Some people really don't like it but for me changing my mind is a thrill. It's an indication that I'm learning something. So I have no sunk costs in the sense that I can walk away from an idea that I've worked on for a year if I can see a better idea. It's a good attitude for a researcher. The main track that young researchers fall into is sunk costs. They get to work on a project that doesn't work and that is not promising but they keep at it. I think too much persistence can be bad for you in the intellectual world."

On the benefits of groups: "I'm a skeptic about people's ability to improve their own thinking or to get control over their own intuition. It can be done but it's very difficult. But I'm really optimistic about the potential for institutions and organizations to improve themselves, because they have procedures and they think slowly. They can have control over the way they interpret things. They can ask questions about the quality of evidence. Thinking about how to improve the decision-making in organizations is a challenge that I think we're up to. This is something that can be done."

On empathy: "There have been many experiments in which you bring together Palestinians and Israelis and good things happen between them. You just bring them together. But it's an artificial construction. It's very difficult to turn that into a massive thing. It is absolutely true that when you put together strangers in a positive atmosphere that good things are going to happen. They are going to find that they are more like the other than they were inclined to believe earlier. They're going to recognize each other's humanity. Lots of good things happen when people are in close contact. But it's extraordinarily difficult to generate that in a big way."

On flip-flopping: "Ideas become part of who we are. People get invested in their ideas, especially if they get invested publicly and identify with their ideas. So there are many forces against changing your mind. Flip-flopping is a bad word to people. It shouldn't be. Within sciences, people who give up on an idea and change their mind get good points. It's a rare quality of a good scientist, but it's an esteemed one."

On collaborations: "One of the quotes attributed to [his late partner] Amos Tversky is, 'The world is not kind to collaboration.' That's an interesting phrase. What he meant by that is when people look at a joint project, they are very curious about 'who did it.' The assumption is that one person did it.

But neither of us could have done what we did by ourselves. We had two people who were both quite good, but our joint work is clearly superior to anything we could have done alone. And yet, either one of us could talk about our work and it sounded as if we had done it alone. It didn't sound as if we needed somebody else. Amos said, 'I talk to people about our joint work and people don't think I need anybody else.' So there is a problem of how to treat collaborations and how to foster them. Quite often the actions of the environment are destructive to collaborations. The urge is to allocate credit and to single out people and not treat collaborations as units. If Michael Lewis's book makes people think about the value of collaborations it would be useful."

On education changing thinking: "There are studies showing that when you present evidence to people they get very polarized even if they are highly educated. They find ways to interpret the evidence in conflicting ways. Our mind is constructed so that in many situations where we have beliefs and we have facts, the beliefs come first. That's what makes people incapable of being convinced by evidence. So education by itself is not going to change the culture. Changing critical thinking through education is very slow and I'm not very optimistic about it."

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[83] http://www.collaborativefund.com/blog/a-chat-with-daniel-kahneman/

Asked if he could comment on brain trauma. “No, because I don’t know anything about it and I strongly believe people should stay in their own lanes when giving opinions.”

On where the world is going: “People in their 30s know where the world is going because they’re going to do it. I’m in my 80s so I have no idea.”