

A Summary of Rolf Dobelli's
“The Art of
Thinking Clearly”

by

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The failure to think clearly, or what experts call a “cognitive error,” is a systematic deviation from logic—from optimal, rational, reasonable thought and behavior. By “systematic,” I mean that these are not just occasional errors in judgement but rather routine mistakes, barriers to logic we stumble over time and again, repeating patterns through generations and through the centuries. For example, it is much more common that we overestimate our knowledge than we underestimate it.

-Rolf Dobelli



It is much more common that we overestimate our knowledge than we underestimate it!

01. Survivorship Bias - Why you should visit cemeteries

Triumph is more visible than failure. You systematically overestimate your chances of succeeding.

Guard against it - visit the graves of once-promising projects, investments, and careers. It's a sad walk that clears your mind.

02. The Swimmer's Body Illusion - Does Harvard make you smarter?

Professional swimmers don't have perfect bodies because they train extensively. They are good swimmers because of their physiques.

How their bodies are designed is a factor for selection and not a result of their activities.

Female bodies advertise cosmetics and, thus, too many female consumers believe that these products make you beautiful. It is beautiful women that are candidates for cosmetic advertising.

So before you take the plunge, look in the mirror and be honest about what you see.

03. Clustering Illusion - Why you see shapes in the clouds

The human brain seeks patterns and rules. It takes it a step further - if it finds no familiar patterns, it simply invents one.

When it comes to pattern recognition, we are oversensitive.

Regain your skepticism.

If you think you have discovered a pattern, first consider it pure chance.

If you see Jesus in your pancakes ask yourself, "If he really wants to reveal himself, why

doesn't he do it on CNN?"

04. Social Proof - If 50 million people say something foolish, is it still foolish?

In the middle of a concert, someone claps - suddenly the whole room joins you.

Social proof is the evil behind bubbles and the stock market panic.

A product is not better because it sells more.

05. Sunk Cost Fallacy - Why you should forget the past

Having paid for a movie is not a reason to stay through a bad one.

"We have invested so much money in it. If we stop now it will all have been for nothing."--the investment as a reason to carry on. The more you invest, the greater the sunk cost.

This irrational behavior is driven by a need for consistency.

Consistency signifies credibility.

Rational decision-making requires you forget about costs incurred to date, no matter how much you have invested.

Only your assessment of the future costs and benefits matter.

06. Reciprocity - Don't accept free drinks

NGOs and philanthropy - first give, and then take.

People have extreme difficulty being in another's debt.

Reciprocity - a very useful survival strategy; a form of risk management.

Without it, humanity and countless species of animals would be long extinct.

The ugly side of reciprocity - revenge and retaliation.

How many dinner parties have been endured in the name of reciprocity?

07. Confirmation Bias Part One - Beware of the special case

Facts do not exist because they are ignored.

What the human being is best at is interpreting all new information so that their prior conclusions remain intact.

08. Confirmation Bias Part Two - Murder your darlings

Whether you go through life believing that "people are inherently good," or "people are inherently bad," you will find daily proof to support your case.

Religious and philosophical beliefs are an excellent breeding ground for the confirmation bias.

The Internet is particularly fertile ground for the confirmation bias. To stay informed, we browse news sites and blogs, forgetting that our favored pages mirror our existing values. Write down your beliefs - look for disconfirming evidence.

Axing beliefs that feel like old friends is hard work but imperative.

09. Authority Bias - Don't bow to authority

The Bible - you disobey a great authority, you get ejected from paradise.

Authorities pose two main problems to clear thinking.

Their track records are sobering - no one predicted the timing of the 2008 financial

crisis, let alone how it would play out.

Airlines have learned the dangers of the authority bias.

Especially at risk - organizations with domineering heads.

Lesser opinions are kept to themselves.

When you are about to decide, think of what authority figure might be exerting an influence on your reasoning.

When you encounter authority in the flesh - challenge.

10. Contrast Effect - Leave your supermodel friends at home

We judge something beautiful, expensive, or large if we have something ugly, cheap, or small in front of us. We have difficulty with absolute judgments.

We don't notice small gradual changes.

11. Availability Bias - Why we prefer a wrong map to none at all

We create a picture of the world using examples that come most easily to us.

Things don't happen more frequently because we conceive of them more easily.

We travel through life with an incorrect risk map.

We overestimate the risk of being victims of a plane crash than from dying from diabetes.

We attach more risk to the loud and spectacular and less to the silent.

"The Internet is particularly fertile ground for the confirmation bias. To stay informed, we browse news sites and blogs, forgetting that our favored pages mirror our existing values."

We think dramatically and not quantitatively. Doctors and consultants practice what they know.

We don't have another solution, so we carry on with the incorrect tool.

We prefer wrong information to no information.

Spend time with people who are different from you - people whose experiences and expertise and outlook are different from yours.

12. The It'll-Get-Worse-Before-It-Gets-Better Fallacy - Why "no pain, no gain" should set alarm bells ringing

If someone says that alarms should ring. Situations exist where things first dip, then improve.

Not a religious zealot who believes that before we experience heaven on earth, the world must be destroyed.

13. Story Bias - Even true stories are fairy tales

Life is a muddle.

We like to knit a jumble of details into a neat story.

We want our lives to form a pattern that can easily be followed.

We try on stories like we try on clothes.

Stories attract us; abstract details repel us.

Reality is distorted.

Take them apart - what are they trying to hide?

Events that look connected today were not at the time.

Events are not linear.

Who is the sender? What are his intentions?

What did he hide under the rug?

What omitted elements may have been relevant?

The real issues with stories-they give us a false sense of understanding.

14. Hindsight Bias - Why you should keep a diary

"I told you so."

Makes us think we are better predictors than we really are, causing us to be arrogant about our knowledge and consequently take too much risk.

Keep a journal. Write down your predictions - compare.

Read history - the diaries, oral histories and historical documents, not the compacted theories of textbooks.

If you can't live without news, read media from 10 years ago. You will see how unpredictable the world is.

15. Overconfidence effect - Why you systematically overestimate your knowledge and abilities

Experts suffer more from overconfidence than lay people.

84% of Frenchmen estimate they are above average lovers.

93% of US students estimated they are above average drivers.

The return on investment in the restaurant business lies chronically below zero.

They keep opening.

Hardly any projects exist that are completed on-time and below budget.

Those with direct interests have an incentive to underestimate the costs.

Consultants, contractors, and suppliers seek follow-up orders.

Overconfidence effect is more pronounced in men.

Even pessimists overestimate themselves - just less extremely.

Challenge predictions.

16. Chauffeur Knowledge – Don't take news anchors seriously

Two kinds of knowledge:

Real knowledge - from time and effort dedicated to understand it

Chauffeur knowledge - from having learned to put on a show.

Hard to tell the difference. From anchors, easy. From journalists, hard.

Circle of competence - what lies within, you understand intuitively.

What lies outside, we comprehend only partially.

Stick to your circle of competence.

It does not matter how large the circle is so long as you know where the perimeter is.

If you play where others have the aptitude and you don't - you will lose.

Be on the look out for chauffeur knowledge.

How? True experts know the limits of what they know and what they do not know.

They unapologetically keep quiet or say, "I don't know."

17. Illusion of Control - You control less than you think

People choose numbers for a lottery thinking it makes a difference.

People throw dice harder thinking it makes a difference for a high number.

The idea that people can influence their destiny, even by a fraction, encourages prisoners not to give up hope.

Door open and door close in an elevator-many are not even connected.

Fake temperature dials in offices - reduced energy bills.

Overnight interest rates - the market reacts frenetically.

Focus on what is important to you - and the rest, *que sera, sera*.

18. Incentive Super Response Tendency - Never pay our lawyer by the hour

To control rat infestation, French colonial rulers in Hanoi passed a law - for every dead rat, the catcher would receive a reward. Many rats were destroyed but many were bred for this purpose.

Managers being paid for hitting targets - targets are lowered.

People respond to incentives by doing what is in their best interest.

Behavior changes quickly when incentives come to play.

Good incentives comprise both intent and reward.

They need not be monetary.

Crusades - incentive - if you come back alive, you could keep the spoils of war. If you died you went to the afterlife as a martyr--a win-win.

19. Regression to Mean - The dubious effect of doctors, consultants, and psychotherapists

Back pains, record period of weather, bad-performing stock - they go back to the mean by themselves. Most successful stocks for the past three years will not be the most successful, or unlikely to be, for the coming three years.

Look out for the regression to the mean error.

20. Outcome Bias - Never judge a decision by its outcome

We tend to evaluate decisions based on their results, rather than the decision process.

The Pearl Harbor attack. From today's perspective, there was plenty of evidence that an attack was imminent. Only in retrospect do the signals become clear. In 1941 there was a plethora of contradictory signals. To assess the quality of the decision, we must use the information available at the time.

Never judge a decision purely by its result especially when randomness and external factors play a role. A bad result does not automatically indicate a bad decision, or vice versa.

Were your reasons rational and understandable? If so, stick to the method even if you did not strike it lucky the last time.

21. Paradox of Choice - Less is more

We are bombarded with choice.

Abundance makes you giddy, but there is a limit.

When it is exceeded, a surfeit of choices destroys the quality of life.

A large selection may lead to inner paralysis.

A broader decision leads to poorer decisions.

How can you be sure you are making the right choice? You cannot.

Think carefully, write down the criteria, and stick to them rigidly.

You can never make a perfect decision - learn to love a good choice.

Only the best will do? Good enough as the new optimum?

22. Liking Bias - You like me, you really, really like me

There is nothing more effective in selling anything than getting the customer to believe, really believe, that you like him and care about him. The more we like someone, the more inclined we are to buy from or help that person.

What does likable even mean? We see people as pleasant if they are outwardly attractive, if they are similar to us, and if they like us.

Compliments work.

Politicians are maestros of the liking bias.

23. Endowment Effect - Do not cling to things

We consider things more valuable the moment we own them.

If we are selling something, we charge more for it than we ourselves are willing to spend to buy it.

In real estate - the endowment effect is palpable - an emotional attachment. We are better at collecting than at casting off.

Don't cling to things - consider your property something that the universe has bestowed on you temporarily!

24. Coincidence - The inevitability of unlikely events

Improbable coincidence is exactly that - rare but possible events.

“Never judge a decision purely by its result especially when randomness and external factors play a role. A bad result does not automatically indicate a bad decision or vice versa.”

It is not surprising when they finally happen. What would be more surprising is if they never came to be.

25. Groupthink - The calamity of conformity

No one wants to be the naysayer that destroys team unity.

Expressing reservations could mean exclusion from the team.

Groupthink - where a group of smart people make reckless decisions because everyone aligns their opinion with the supposed consensus.

If you find yourself in a tight unanimous group, you must speak your mind, even if your team does not like it - even if you risk expulsion from the warm nest. If you lead a group, appoint someone as a devil's advocate. She may not be the most popular, but she might be the most important.

THOSE WHO DISAGREE—INFORME WITH PROPER ARGUMENTS--ARE NOT TO BE KICKED OUT OF THE PROMISED LAND. THEY SHOULD BE BROUGHT TO THE TABLE!

26. Neglect of Probability—Why you'll soon be playing mega trillions

Leads to errors in decision-making.

Following a plane crash, we cancel flights without considering the minute probability of crashing, which remains the same before and after—maybe lower after.

People are equally afraid of a 99% chance as they are of a 1% chance of toxic chemicals.

26. Scarcity Error—Why the last cookie in the jar makes your mouth water

By invitation—makes you want it more.

Rara sunt cara—rare is valuable.

Gallery owners place red dots under most of their paintings, transforming the few remaining into rare items to be snatched quickly.

We collect stamps, coins, and vintage cars when the post office and banks won't take them, and old cars cannot be driven on the road.

The attraction—they are in short supply.

When deprived of an option, we suddenly want it—a phenomenon called reactance.

Romeo and Juliet effect - love between teenagers is forbidden.

US student parties - they drink more because of the drinking age.

28. Base-Rate Neglect - When you hear hoof beats, don't expect a zebra

Investigate the most likely ailments before you start diagnosing exotic diseases.

Base rate training.

Business school students: "Where do you see yourself?" Answer: "CEO of a Fortune 500 company" is common, but the chances are less than 0.1%.

29. Gambler's Fallacy - Why the balancing force of the universe is baloney

"If you find yourself in a tight unanimous group, you must speak your mind, even if your team does not like it - even if you risk expulsion from the warm nest. If you lead a group, appoint someone as a devil's advocate. She may not be the most popular, but she might be the most important."

With independent events, there is no harmonizing force at work.

A ball cannot remember how many times it landed on black.

If you are afraid of a bomb on a plane, taking one does not reduce the risk.

A coin flipped three times, landing on heads—what is your next bet? Tails? Heads is just as likely—Gambler's Fallacy, i.e. that something must change.

Assess independent and interdependent events.

"What goes around, comes around" simply does not exist.

30. The Anchor - Why the wheel of fortune makes our head spin

When we have to guess—we use anchors. We start with something we are sure of and then venture into unfamiliar territory.

Unfortunately, we use anchors we don't need.

Anchors abound.

We clutch at them.

Recommended sales prices are nothing but anchors.

31. Induction - How to relieve people of their millions

A farmer feeds a goose.

At first the goose is shy and hesitant.

"Why is he feeding me?"

Then his skepticism goes away.

"The farmer has my best interests at heart." Months pass.

Then, fully convinced of the man's benevolence, the goose is amazed when he takes him out of its enclosure on Christmas

Day—and slaughters him.

The goose fell victim to inductive thinking.

Same with stocks rising and being chased.

We cannot live without inductive thinking.

We trust every time we board a plane that aerodynamic laws will still be valid.

Remember - certainties are always provisional. Nothing is certain but death and taxes.

32. Loss Aversion - Why evil is more striking than good

There are more bad things than good - they are far more consequential.

In the past even more - one stupid mistake and you were dead.

People that were gung ho or reckless died before they could pass on their genes.

Those who remained were more cautious.

We are their descendants.

We fear loss more than we value gain.

If you want to convince someone - focus on how it can help them dodge disadvantages.

Employees are risk averse - why risk something that brings you, at best, a big bonus and at worse, a pink slip?

In almost all situations, safeguarding your career trumps any potential reward.

33. Social Loafing - Why teams are so lazy

The power of two animals pulling a coach does not equal the power of a single horse.

On average, two people pulling together - each invests 93%.

Three - 85%.

Four - 49%

Explains government - over employed.

It occurs when individual contributions are not evident.

Why invest all your energy when half will do?
Especially when it goes unnoticed.

We slack off mentally also. The larger the team, the weaker our individual performance.

We hide behind team decisions—the diffusion of responsibility.

People behave differently in groups than when alone.

Long live meritocracy! Long live a performance society!

34. Exponential Growth - Stumped by a sheet of paper

Linear growth we understand intuitively.

Exponential growth - we have no sense of.

Why? Because we did not need it before.
Whoever spent twice the time collecting berries earned double the amount.

Five percent inflation - not so bad - we double costs every 14 years.

A constant of 70 divided by the rate - gives you how long it will take to double.

Nothing that grows exponentially grows forever.

Everyone forgets that especially politicians, economists, and journalists.

Escherichia coli divides every 20 minutes - in a few days it would cover the entire planet.

It needs more oxygen and sugar than is available, so there is a cut off.

When it comes to growth rates - don't trust your intuition.

35. Winner's curse - Curb your enthusiasm

Winner's curse suggests that the winner of an auction often turns out to be the loser. Regular winners are systematically paid too much and eventually go bankrupt.

Bidding wars for cellphone frequencies drive telecom companies to the brink of bankruptcy.

More than half of all acquisitions destroy value.

We want to outdo our competitors.

Auctions - advice - don't go.

If you have to, set a maximum price and deduct 20% - write it down and do not go a cent over.

36. Fundamental Attribution Error - Never ask a writer if the novel is autobiographical

Every story has a face.

Be on the look out for the people angle.

The tendency is to overestimate individual's influence and underestimate external, situational factors.

Economic success depends far more on the overall economic climate and the industry's attractiveness than on brilliant leadership.

Music - the conductor - the real miracle of music is, after all, the composition, the creation of sounds, moods, and rhythms where previously only a blank paper lay. The score, in contrast to the conductor or soloist, is faceless.

Our preoccupation with other people stems from our evolutionary past. Belonging to a group was necessary for survival. That is why we are so obsessed with our fellow humans today. We spend 90% of our time thinking of other people and 10% assessing other factors and contexts.

Forget the performers - pay close attention to the dance of influence to which the actors are subjected.

“Children do better if their home is full of books. The truth, educated parents tend to value their children’s education more than uneducated ones do. Educated parents have more books at home.”

37. False Causality - Why you should not believe in the stork

Alan Greenspan - his obscure remarks gave monetary policy the aura of a secret science that kept the country on a secure path to prosperity. America’s symbiosis with China, the globe’s low-cost producer and eager buyer of US debt, played a much greater role. Greenspan was merely lucky the economy did so well during his tenure.

The Truth: Children do better if their home is full of books. The truth, educated parents tend to value their children’s education more than uneducated ones do. Educated parents have more books at home.

Correlation is not causality.

Sometimes that presented as the cause, is the effect and vice versa.

38. Halo Effect - Why attractive people climb the career ladder more quickly

When a single aspect dazzles us and affects how we see the whole picture.

A single quality that produced a positive or negative impression outshines everything - the overall effect is disproportionate.

Beauty is the best-studied example - we automatically regard good-looking people as more pleasant, honest, and intelligent. They have it easier in their professional lives.

The halo effect can lead to great injustice.

It obstructs our view of true characteristics.

39. Alternative Paths - Congratulations! You have won Russian roulette

About outcomes that could have happened but did not.

They are invisible, so we contemplate them very rarely.

Risk is not always visible.

Always consider what the alternative paths are.

Looking at them from the outside is difficult - from the inside, it is almost impossible.

40. Forecast Illusion - False prophets

In terms of forecasts, the experts fared only marginally better than a random forecast generator.

Media darlings are among the poorest prophets of doom and disintegration - the worst.

Experts enjoy free reign with few negative consequences.

41. Conjunction Fallacy - The deception of specific cases

The difference between intuitive and conscious thinking is significant.

42. Framing - It’s not what you say, but how you say it.

We react differently to identical situations, depending on how they are presented.

C’est le ton qui fait la musique.

Which piece of meat is healthier - 99% fat free or 1% fat meat.

A fallen soldier, no matter how stupid, turns into a war hero.

Realize that whatever you communicate, it has an element of framing.

“FATHER, MAY I SMOKE WHILE I PRAY? OF COURSE NOT, MY SON.”

FATHER MAY I PRAY WHILE I SMOKE? OF COURSE, MY SON. YOU CAN PRAY ALWAYS.”

43. Action Bias - Why watching and waiting is torture

On penalty shots, goalies dive to the left or to the right. Rarely do they stay in the middle.

One third comes through the middle. Why? Appearance. It's more impressive and less embarrassing diving to the wrong side than to freeze on the spot and watch the ball sail past.

It looks active, even if it achieves nothing.

In the hunter-gatherer society—deliberation could be fatal. So we are inclined to be seen as doing something.

All humanity's problems stem from man's inability to sit quietly in a room alone.

44. Omission Bias - Why you are either the solution of the problem

A drug will save 80% and kill 20%. Most will withhold approval.

You approved it; you get crucified the moment the first person dies.

Active euthanasia is punishable by law. Refusal of life-saving measures is legal.

Vaccination—okay not to vaccinate.

All society at risk.

Deliberate inaction seems less grave than a comparable action.

We are more lenient on companies that

develop no products than those that produce bad ones even if both roads lead to ruin.

Building no emission filter on a coal plant feels superior to removing one for cost reasons.

Neglecting to declare income tax is less immoral than faking tax documents.

Action is more noticeable than inaction.

If you are not part of the solution, you are part of the problem.

45. Self-serving Bias - Don't blame me

Annual reports - on a great year you read of what the CEO did. On a bad year, we read of all sorts of other dynamics like the exchange rate, government interference, and malicious Chinese trade practices.

When you do well, it's because of you. When you don't, some other reason comes to play.

Get honest opinions. Appreciate the people that give it to you.

46. Hedonistic Treadmill - Be careful what you wish for

47. Self-selection (SS) Bias - Do not marvel at your existence

“Why is it always me?” You just think you pick the wrong lines.

SS bias is pervasive.

48. Association Bias - Why experience can damage your judgment

We eat an unknown fruit, we get sick, we avoid it, in the future labeling the plant.

This is how knowledge comes to be.

This method also creates false knowledge.

Advertising creates a link between products and emotions.

You will never see a Coke around a frowning face or a wrinkly body.

False connections are the work of association bias, which influence the quality of our decisions.

We condemn bearers of bad news.

Get out of an experience only the wisdom that is in it and stop there, lest we be like the cat that sits on a hot stove lid. She will never sit down on a hot stove lid and that is well. But she will never sit on a cold one anymore.

49. Beginner's Luck - Be wary when things get off to a great start

Napoleon nor Hitler would have launched a campaign against the Russians without the previous victories in smaller battles to bolster them.

How to tell the difference? If you are much better than others over a long period of time, then you can be fairly sure that talent plays a part. If you establish yourself as the market leader among many competitors over many years, then you are probably better.

50. Cognitive Dissonance (CD) - Sweet little lies

Common errors in reasoning.

You set out to do something and fail.

You can resolve it by somehow getting the grapes, by admitting your skills are insufficient, by re-interpreting what happened retrospectively.

The last is CD.

You don't get a job. You can admit the other person was better than you or convince yourself you really did not want it.

You can play the clever fox, but you will never get the grapes that way.

51. Hyperbolic Discounting - Live each day as if it were your last - but only on Sundays

The closer a reward is, the higher our emotional interest rate rises, and the more we are willing to give up in exchange for it.

Immediacy magnetizes us - a remnant of our animal past.

An animal will never turn down an instant reward in order to attain more in the future.

The older we get, the more self-control we build up, and the more easily we can delay rewards.

Exorbitant interest rates on credit cards exploit our must-have-now instincts.

Under alcohol, we are more susceptible.

52. "Because" Justification - Any lame excuse

The word "because" greases the wheels of human interaction.

Use it unrestrainedly.

53. Decision Fatigue - Decide better, decide less

Perilous. You become susceptible to advertising messages and impulse buys. As a decision maker, you are more prone to erotic seduction.

"Get out of an experience only the wisdom that is in it and stop there, lest we be like the cat that sits on a hot stove lid. She will never sit down on a hot stove lid and that is well. But she will never sit on a cold one anymore."

Willpower is like a battery - after a while, it runs out.

It plummets to zero if your blood sugar falls to low.

Take a break - relax, eat something.

54. Contagion Bias - Would you wear Hitler's sweater?

We are unable to ignore the connection we feel to certain items.

55. The Problem With Averages - There is no such thing as an average war

Don't cross a river if it is, on average, four feet deep.

Average of a bottle of wine a day is not the same as a bottle a day.

The latter is healthy. How about the former?

The future is already here. It's just not very evenly distributed.

56. Motivation Crowding - How bonuses destroy motivation

Small monetary rewards crowd out other types of incentives.

When people do something for well-meaning, non-monetary reasons, payments throw a monkey wrench into the works.

Young people are not for sale.

57. Twaddle Tendency - If you have nothing to say, say nothing

Jabber disguises ignorance.

The worse the company is, the greater the talk of the CEO.

People are afraid to be simple because they may be seen as a simpleton.

In reality, the opposite is true.

Verbal expression is the mirror of the mind.

Clear thoughts become clear statements.

Ambiguous ideas transform into vacant ramblings.

In many cases, we lack lucid thoughts.

If you have nothing to say, say nothing.

Simplicity is the zenith of a long, arduous journey, not the starting point.

58. Will Rogers Phenomenon - How to increase the average IQ of two states

Oklahomans who pack their bags and move to California raise the IQ of both states.
Stage migration.

59. Information Bias - If you have an enemy, give him information

This is the delusion that more information guarantees better decisions.

Seeing the entire list of hotels in an area and choosing the one with the star did not give you a better decision. It wasted your time.

Studies are conducted when critical facts are already available.

There were terabytes of info on Bloomberg, yet economists still missed the 2008 crisis.

Forget trying to amass all the data. Do your best to get by with the bare facts.

Superfluous knowledge is worthless.

The greatest obstacle to discovery is not ignorance—it is the illusion of knowledge.

Give your rival reams of data and analysis.

60. Effort Justification (EJ)- It hurts so good

When you put a lot of energy into a task, you tend to overvalue the result.

Groups use EJ to bind members, e.g. initiation rites.

The harder it is to pass an "entrance exam," the greater the pride and value they attach to the membership.

MBA schools play with EJ - work students day and night without respite to the point of exhaustion, regardless whether the course proves useful later on. They'll deem the qualification essential for their careers simply because it demanded so much from them.

Ikea effect - we assembled it ourselves, so it seems more valuable than a more expensive piece.

Managers who put weeks of hard work into a strategy proposal will be incapable of appraising it objectively.

In the 1950s, housewives rejected instant cake because it made baking too easy. Firms reacted and made preparation slightly more difficult. Beat an egg yourself.

EXAMINE ONLY THE RESULT. IGNORE THE EFFORT.

And the woman you have been chasing for years...is she really better than bachelorette number two who would say yes right away?

61. The Law of Small Numbers - Why small things loom large

Watch out for statistics of small cities, small stores, etc. Averages get distorted.

62. Expectations - Handle with care

Expectations are intangible, but their effect is quite real.

They have the power to change reality.

Raise expectations for yourself and the people you love. This increases motivation.

Lower it for the things you cannot control.

The best way to shield yourself from nasty surprise is to anticipate them.

63. Simple logic - Speed traps ahead

There are intuitive answers. There are the right answers.

Thinking is more exhausting than sensing.

Intuitive people tend to scrutinize less.

The more intuitively people make decisions; the less rationally they query religious beliefs.

Not everything that seems plausible is true.

Reject the easy answers that pop into your head.

64. Forer Effect - How to expose a charlatan

There are statements that are so general that they relate to everyone.

We tend to accept statements that don't apply to us.

The text contains no negative statements.

We accept whatever corresponds to our self-image and unconsciously filter everything else out. What remains is a coherent portrait - the confirmation bias, the father of all fallacies.

65. Volunteer's Folly - Volunteer work is for the birds

"We accept whatever corresponds to our self-image and unconsciously filter everything else out. What remains is a coherent portrait - the confirmation bias, the father of all fallacies."

Does selflessness exist at all, or is it merely a balm to our egos?

The desire to help motivates many volunteers, but personal benefits play a big part such as gaining skills, experience, and contacts.

Suddenly, we are not acting so selflessly.

Personal happiness management's benefits are sometimes far removed from the real cause.

Strictly speaking, anyone who profits off even the slightest satisfaction from volunteering is not a pure altruist.

People like Bono lend something priceless to an activity - publicity.

66. Affect Heuristic - Why you are a slave to your emotions

We don't write down the pros and cons to make decisions.

We lack the imagination to list them.

It is hard to imagine the storm of the century if you are only 30 years old.

Calculating small probabilities is impossible, as we do not have the data.

Our brain is not built for those calculations.

We are the descendants of quick decision makers and we rely on mental shortcuts called heuristics.

Affect heuristic - an affect is a momentary judgment. I "like" or "dislike."

This automatic, one-dimensional impulse

prevents you from considering risks and benefits to be independent variables, which indeed they are.

If the sun is shining in the morning, the stock market will rise during the day - not always, but often. Who would have thought that sunshine could move billions.

Whether we like it or not, we are puppets of our own emotions.

We make complex decisions by consulting our feelings, not our thoughts.

We substitute "how do I think about this?" with "how do I feel about this?"

So smile - your future depends on it.

67. Introspection Illusion - Be your own heretic

You consider your conviction more valid than another - yours is internal, the other is external. Yours is different. You have searched deep inside. You are completely impartial. Or are you?

When we soul-search, we contrive the findings - introspect illusion - in the belief that reflection leads to accuracy.

When someone fails to share our views, we experience three reactions:

1. Assumption of ignorance,
2. Assumption of idiocy,
3. Assumption of malice.

Two dangers of introspection:

1. Introspect illusion - inaccurate predictions of future mental states.
2. Illusion of superiority - we believe our introspections are more reliable than others.

"You consider your conviction more valid than another - yours is internal, the other is external. Yours is different. You have searched deep inside. You are completely impartial. Or are you?"

BECOME YOUR TOUGHEST CRITIC.

68. Inability to Close Doors - Why you should set fire to your ships

Sporadic reading does not help achieve any real insights. Devote yourself to one book at a time.

Xiang Xu crossed the river to take on the Qin Dynasty and set his ships a fire. He told his army, "You now have a choice: you either fight to win, or you die."

In many realms, options seem to be free. This is an illusion. They come at a price, albeit hidden and intangible. Each decision costs mental energy and eats up precious time for thinking and living. CEOs who examine every possible expansion option often choose none in the end. Companies that aim to address all customer segments end up addressing only one.

Too many irons on the fire can destroy success. We must learn to close doors. Most doors are not worth entering.

69. Neomania - Disregard the brand new

Assume that what has existed for the past 50 years will be around for the next 50. Assume recent technology will be passé in a few years' time. Think of inventions like species. Whatever has held its own throughout centuries of innovation will probably continue to do so in the future. Old technology has proven itself.

70. Sleeper Effect - Why propaganda works

If it strikes a chord with someone, this influence will only increase over time. The source of the argument fades faster than the argument.

Even knowledge from an untrustworthy source gains credibility over time.

Political accusations - the ugly accusations persevere.

Advertising - after a few weeks, you forget where you picked up the information.

How do you thwart the sleeper effect?

1. Do not accept unsolicited advice.
2. Avoid contaminated sources.
3. Try to remember the source of every argument you encounter.

Probe the issue. *Cui bono?*--who benefits?

71. Alternative Blindness - Why it is never just a two-horse race

We systematically forget to compare an existing offer with the next best alternative--the MBA argument.

Forget about a rock and a hard place - open your eyes to other superior alternatives.

72. Social Comparison Bias - Why we take aim at young guns

Only favorable comments end up on a book's jacket. Ignore the praise or at least consider it along side the criticism.

Tendency is to withhold assistance to people who might outdo you, even if you look like a fool in the long run.

This has reached toxic levels in academia.

Higher A-players better than us - the extra is that they do not go to the competition and so you do not preside over a pack of underdogs.

The inept are gifted at overlooking the extent of their incompetence.

73. Primacy and Recency Effects - Why first impressions are deceiving

Primacy effect

The brain first pays attention to the first adjectives in a list.

People deck out their headquarters with appointed entrance halls.

If not, your lawyer would feel happy turning up in sneakers.

Grading in the order of top students vs. batches - different result.

You run the risk of hiring the person who gives the best first impression.

IN DISCUSSION - FIRST OPINION IS CRUCIAL.

Recency effect:

Last impressions are remembered better. First and last impressions dominate.

Content sandwiched in between has only weak influence.

74. Not-Invented-Here (NIH) Syndrome - Why you cannot beat homemade

NIH syndrome causes you to fall in love with your own ideas.

Companies tend to rate homegrown ideas as far more important than those from outsiders even if, objectively, it is not the case.

Split teams in two - one generates, one rates. Start-ups have miserable returns.

We overlook shrewd ideas from other cultures.

75. The Black Swan - How to profit from the implausible

Why are Black Swans so important? They are cropping up more and more frequently and they tend to become more consequential.

Our brains are designed to help us hunt and gather. And we hardly ever encounter anything truly extraordinary. The deer we chased was sometimes a bit slower or a bit faster. Today, with one breakthrough, you

can increase your income by a factor of ten thousand.

Be prepared for extremes.

76. Domain Dependence - Knowledge is transferable

Insights do not pass from one field to another.

A software salesman recruits a consumer goods salesman. The new position blunts his talents—transferring skills from products to services is difficult.

CEOs who are charismatic leaders in the office may be hopeless duds at home.

Police are twice as violent at home as civilians.

Especially daunting is the transfer from academia to real life. Book smarts do not transfer to street smarts easily.

77. False Consensus Effect (FCE)—The myth of like-mindedness

If they love 1960s music they automatically assume that the majority of their peers do, too. We frequently overestimate unanimity with others, believing that everyone else thinks and feels exactly as we do—FCE.

FCE thrives in interest groups and political factions - they consistently overrate the popularity of their causes e.g. Global Warming.

Artists are even worse- among 99% of new projects, they expect to achieve more success than before.

Our brain is not built to recognize the truth. Its goal is to leave behind as many offspring

“Our brain is not built to recognize the truth. Its goal is to leave behind as many offspring as possible. Whoever seems courageous and convincing creates a positive impression and attracts a disproportionate amount of resources, increasing their chances of passing on their genes to future generations.”

as possible. Whoever seems courageous and convincing creates a positive impression and attracts a disproportionate amount of resources, increasing their chances of passing on their genes to future generations.

Doubters are less sexy.

Do not assume that those who think differently are idiots. Before you distrust them, question your own assumptions.

78. Falsification of History - You were right all along

You can remember what you were doing on 9/11 - flashbulb memories.

They are as flawed as regular recollections. They are the product of reconstruction.

50% of recollections are incorrect 2/3 of the time.

25% fail to match a single detail.

IT IS SAFE TO ASSUME THAT HALF OF WHAT YOU REMEMBER IS WRONG.

Our faith in them can be harmless or lethal.

Eyewitness testimony in line ups - to trust such accounts without additional investigation is reckless.

79. In-Group Out-Group Bias - Why you identify with your football team

Group membership was vital. Fending for yourself was close to impossible. As people formed alliances, all had to follow suit.

Whoever rejected membership or got expelled forfeited their place not only in the group, but also in the gene pool. No wonder we are such social animals.

You perceive people outside your group to be more similar than they actually are.

Groups form biases on common values. Group

members receive a disproportionate amount of support for their own views, which can lead to infamous organizational blindness.

Pseudo kinship invokes the same emotion as family without blood relationships. This can lead to idiotic cognitive errors like going to war or laying down your life for a random group. Motherland suggests kinship. Prejudice and aversion are biological responses to anything foreign.

Identifying with a group distorts your view of facts.

80. Ambiguity Aversion - The difference between risk and uncertainty

Risk and uncertainty are cappuccino and latte macchiato with much graver consequences. Our economy resides in the realm of uncertainty.

To avoid hasty judgments, you must learn to tolerate ambiguity.

You cannot influence it actively. The more averse you are to uncertainty, the more conservative you will be.

Your amygdala (a part of the brain) processes memory and emotions.

81. Default Effect - Why you go with the status quo

The default is as warm and welcoming as a soft pillow, into which we happily collapse - house wine, default factory settings, and standard options.

How governments can direct their citizens without unconstitutionally restricting their freedom? Provide few options, including a default choice for indecisive individuals. Why? Aside from convenience, losses upset us twice as much as similar gains please us.

Renegotiating contracts - concessions you make weigh twice as much as any you receive. By changing the default setting, you can change human behavior.

82. Fear of Regret - Why last chances make us panic

Choosing not to act like acting can be the cause of regret.

Fear of regret can make us behave irrationally.

Fear of regret and the endowment effect prevents you from throwing away things you no longer require.

Fear of regret becomes really irksome when combined with a "last chance offer."

83. Salience Effect (SE) - How eye-catching details render us blind

Salience refers to a prominent feature, a standout attribute, a particular something that catches your eye. SE assures that the outstanding features receive much more attention than they deserve.

An Armenian commits rape. Prejudice against immigrants builds up. We forget that the majority of immigrants live lawful lives.

SE affects how we interpret the past and also how we imagine the future.

Gather enough mental energy to fight against seemingly obvious explanations.

84. House-Money Effect - Why money is not naked

Money - depending on how we get it, we treat it differently. It is not naked. It is wrapped in emotion.

We treat money that we win, discover, or inherit much more frivolously than hard-earned cash.

85. Procrastination - Why New Year's resolutions do not work

The tendency to delay unpleasant but important acts. No project completes itself. Willpower is like a battery - if depleted, future challenges will falter.

Self-control is not available round the clock - it needs to refuel.

86. Envy - Build your own castle

Russian tale - A farmer finds a magic lamp. He rubs it, and out of thin air a genie appears who promises to grant him one wish. The farmer thinks about this for a little while. "My neighbor has a cow and I have none. I hope his drops dead."

Of all emotions - envy is the most idiotic. It is the most stupid - because there is no single advantage to be gained.

Envy: we direct resentments toward those most similar in age, career, and residence - we do not envy people from the last century, nor do we begrudge plants or animals. Potters envy potters.

Envy has origins from the past - if one took a bigger share, there was less for the other. Today it is no longer vital. If someone buys something, it does not mean he took it from you.

It is okay to be envious - but only of the person you aspire to become.

87. Personification - Why you prefer novels to statistics

Be careful when you encounter human stories. Ask for the facts and the statistical distribution behind them.

88. Illusions of Attention - You have no idea what you are overlooking

We are confident that we notice everything that takes place in front of us. In reality, we often see only what we are focusing on. Unexpected, unnoticed interruptions can be as large and as conspicuous as a gorilla.

89. Strategic Misinterpretation (SM) - Hot air

People agreeing to something knowing they cannot just to get the deal or the job.

“If it is something to do with practiced activities - better not to reflect on the last detail. It undermines intuition. Same applied for decisions Stone Age ancestors faced - evaluating what was edible, who would make goods friends, and whom to trust.”

Most vulnerable to SM - mega projects
It is not the best offer that wins – it is the one that looks best on paper.

Reverse Darwinism - whomever produces who most hot air will be rewarded the project.

Is SM simply brazen deceit? Are women that wear make-up frauds? Yes and no. Some deceits are socially acceptable, especially if harmless.

Now for what matters: the health of future employees. Be on guard.

Look at past performance. Take proposal apart. Add penalties - in escrow.

90. Overthinking - Where's the “off” switch?

If you think too much, you cut off your mind from the wisdom of your feelings.

Emotions form in the brain just as crystal clear thoughts do.

They are merely a different form of information processing - more primordial, but not necessarily an inferior variant. Sometimes they provide wiser counsel.

So when do you listen to your head and when do you heed your gut?

If it is something to do with practiced activities - better not to reflect on the last detail. It undermines intuition. Same applied for decisions Stone Age ancestors faced - evaluating what was edible, who would make goods friends, and whom to trust.

For complex matters such as investment

decisions, sober reflection is indispensable.

91. Planning Fallacy (PF) - Why you take on too much

Overestimation of what one can achieve - too long a to-do list, systematically underestimating costs and risk. Why? Wishful thinking.

Focus on the project and overlooking outside influences.

Step by step preparation amplifies PF, narrows your focus and distracts you from anticipating the unexpected.

THE EXTERNAL MATTERS - spend time on it.

92. Deformation Professionnelle (DP) - Those wielding hammers only see nails

If your only tool is a hammer, all your problems will be nails - DP.

Multiple models come from multiple disciplines.

All the wisdom in the world is not found in one academic department.

Surgeons solving all problems with a scalpel. Armies think of military solutions first.

You ask people the crux of a particular problem - the answer will be linked to their own area of expertise.

Even in his own jurisdiction, the man with the hammer tends to overuse it.

IF YOU TAKE YOUR PROBLEM TO AN EXPERT, DON'T EXPECT AN OVERALL SOLUTION.

93. Zeigarnik Effect - Mission accomplished

Waiter - I keep the order in my head, until I have served it.

We seldom forget uncompleted tasks. They tug on us until we give them attention
A notepad on your desk will silence the cacophony of inner voices.

94. Illusion of Skill - The boat matters more than the rowing

Serial entrepreneurs – The Steve Jobses and the Richard Bransons of the world - form 1% of start-ups. Most founders sell their shares within 10 years.

You would think such self-starters would be well equipped to found numerous other start-ups. Why did they stop? They did not. They just failed at succeeding. Luck plays a bigger role than skill does. THE ILLUSION OF SKILL.

How much of it comes down to luck and how much to hard work and distinct talent? Skills and talent are necessary, but not sufficient.

THE BOAT MATTERS MORE THAN THE ROWING.

We are much more open to positive advice than negative suggestions, no matter how useful the latter may be.

WHY DOES “SOMETHING” AND “NOT NOTHING” EXIST?

95. Feature Positive Effect - Why checklists deceive you

Absence is much harder to detect than presence.

We place much greater emphasis on what is present than what is absent.

What exists means a lot more than what is missing.

FEATURE-POSITIVE EFFECT: “SMOKING CAUSES LUNG CANCER” IS MUCH MORE POWERFUL THAN “NOT SMOKING LEADS TO A LIFE FREE OF LUNG CANCER.”

We are much more open to positive advice than negative suggestions, no matter how useful the latter may be.

WHY DOES “SOMETHING” AND “NOT NOTHING” EXIST?

96. Cherry Picking - Drawing the bull’s eye around the arrow

Hotel brochures - they pick the best photographs. For annual reports, they do the same. If goals are achieved, they are talked about. If they falter, they are not even mentioned.

To rebuff an anecdote is difficult – it is a mini story. We know how vulnerable our brains are to those.

Train to be sensitive to anecdotes and shoot them down as they are uttered.

Politicians and academia are well equipped to tell us what they did for us, not what they did not do.

To tell people not to smoke is the greatest contribution of the medical profession in the past 60 years, superior to all the research and

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medical advances since World War 2.

You learn more from failed projects and missed goals than from successes.

DOUBLE CHECK TARGETS. Watch out for targets replaced with self-set goals that are always attainable.

97. Fallacy of the Single Cause - The Stone Age hunt for scapegoats

No single factor leads to events.

Hundreds, thousands... infinite number of factors that add up--we just keep trying to pin the blame on just one.

WHAT MAKES AN APPLE FALL - Is it attracted to the ground? Is it the stem that withers? Is it the sun that has dried it up? That it has grown heavier, that the wind shakes it, that the boy standing underneath wants to eat...NO ONE THING IS THE CAUSE.

98. Intention-To-Treat - Why speed demons appear to be safe drivers

Speed demons drive safer than so-called careful drivers. Hard to believe?

Reckless drivers experience more accidents.

Companies with debt on their balance sheets are more profitable than firms with no debt.

99. News Illusion - Why you should not read the news

We are incredibly well-informed, yet we know incredibly little.

News is to the mind to what sugar is to the body: appetizing, easy to digest, and highly destructive in the long run.

Without news - clearer thoughts, more valuable insights, better decisions, and MUCH MORE TIME.

WHY?

Our brains react disproportionately to different types of info. Scandalous, shocking, people-based, loud, and fast-changing details stimulate us. Abstract, complex, and unprocessed sedate us, so the latter is filtered out.

News is irrelevant. Review: what helped you make a better decision?

It is a waste of time.

EPILOGUE

MICHELANGELO: "[What is the] secret of your genius?" "Simple. I removed everything that is not David."

We do not know what makes us successful. We cannot pinpoint exactly what makes us happy.

Negative knowledge is much more potent than positive knowledge: what not to do vs. what to do.

Do not focus on what is David. Focus on what is not David.

Eliminate errors, and better thinking will follow.

Via negativa - part of renunciation, of exclusion, and of reduction

We cannot say what God is; we can only say what God is not.

We cannot say what brings us success, but we can pin down only what blocks or obliterates success.

Eliminate the downside.

To believe that we can completely control our emotions through thinking is illusory.

Thinking in itself is not pure, but prone to error.

If you go to a mall for 15 minutes, you will pass more people than our ancestors saw in their entire lifetime.

Everything is more sophisticated, but also more complex and interdependent.

In our hunter-gatherer past, activity paid off more often than reflection did.

Lightning-fast reactions were vital and our ruminations were ruinous.

We are descendants of those who tend to flee when a crowd does. Today, that may be disadvantageous.

Our brains are designed to reproduce rather than search for the truth.

"Find out your circle of competence. For consequential decisions outside your circle, apply hard, slow, rational thinking. For everything else, give your intuition a free rein."

