Better decisions by considering the brain fallacies – my top 10 from the art of thinking

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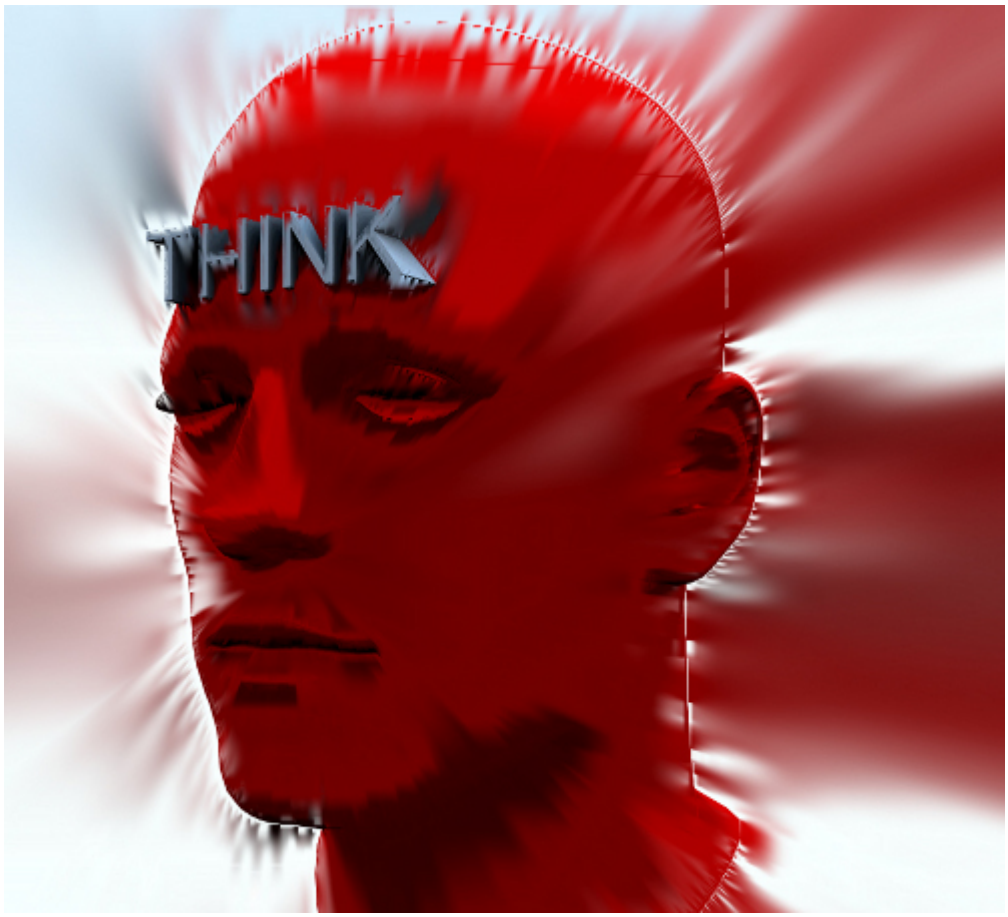


Thanks to my parents in law who gave me the book Klar denken, klug handeln: 104 Denkfehler und Irrwege, die Sie besser anderen überlassen (EN version is The Art of Thinking Clearly) written by Rolf Dobelli I got a comprehensive overview about 104 brain fallacies that can heavily influence the way we decide.

With this post I'll share my top 10 of the 104 mentioned fallacies and provide a fast to skim trough list for upcoming (bigger) decisions.

Let's start with 4 small examples – all based on the same fallacy – simple logic. Some I got to know already from the awesome book Thinking, Fast and Slow by nobel price winner Daniel Kahneman.

#1 The simple logic fallacy

All examples show how one fails with simple logic, if the fast part of our brain is used, trying to minimize energy consumption and therewith avoiding the usage of our deeper thinking brain parts (that consumes much more energy).

Example #1
A table tennis racket and a ball cost together 1,10€. The racket costs 1€ more than the ball. How much does the ball cost?
Example #2
Imagine a sea with water lilies. The water lilies double the area they cover on the sea every day. After 48 days the sea is fully covered. How long did it take to cover half of the sea's surface?
Example #3
You're driving from location A to B with 100 km/h on average. You return from B to A with 50 km/h on average. What is your overall average speed?
Example #4
In a clothing company – 5 machines need 5 minutes to produce 5 shirts. How many minutes does it take to produce 100 shirts with 100 machines?
Check your first intention to answer the questions.

For me it was really interesting to see how fast the first answer was provided and that it needs concentration and extra effort to avoid the fast answer and check for the correct one.

Example	Fast answer	Correct answer
#1	10 Cent	5 Cent (5 Cent + 1,05€)
#2	24	47
#3	75 km/h	66,66… km/h (they cover the full distance from B to A! lLet's say they need one hour from A to B, it takes 2 hours from B to A, so in total 3h … 200 km/3 h = 66,66 km/h)
#4	100′	5′ (as each machine needs 5 minutes to produce one shirt)

Learning: If a solution seems to be obvious – maybe at least do the recheck by calculating the way back 😉

#2 The Survivorship Bias

Success is more visible than failure. Thats why we systematically overrate our possible success.

- Behind every successful highly visible startup are many invisible crashed ones.
- The stock market is filled by current survivors but one has forgotten all the died companies

Learning: Ask for the failure stories. In addition to the provided numbers, how many did not survive? This provides a much better baseline for the next decision.

#3 The base rate neglect

A fallacy where one forgets to ask for the base of the distribution.
A simple example:
A thin, tall man wearing glasses who likes listening to Mozart.
What is more feasible: A) He is truck driver B) He is a professor for literature in Frankfurt
Based on intuition and blinded by the matching facts of glasses and Mozart, maybe more connected with our picture of a professor many answer B.
But based on the probabilities you have to chose A.

There are fare more truck drivers in the world than professors for literature and you can assume that at least some more of them are listening to Mozart 😉

Should I invest in a startup, assuming its the next global player? Maybe … but consider the likelihood to survive the first 5 years is just around 20%, becoming a global player… really low.

#4 Anchoring

As soon as we start estimating something, we use an anchor (something we already know) as orientation. And we use and get influenced by anchors everywhere. The more we don't know about something to estimate the value of let's e.g. take the price of a house we can get anchored by a randomly provided number (that is at least somewhere in a range we could imagine).

That behavior is heavily used by people who are experts in selling things. They provide you an anchor early on (can be days before the final price negotiation) and often one will accept the offer that is somewhere around and thereby connected with the anchor.

In addition it is an important strategy to provide an anchor that shows a much higher price. That way you can make someone feel proud when negotiating an even "better price".

Learning: Being aware of anchoring helps to avoid being manipulated. Check the facts, try to get more offers and compare.

#5 Numbers: Averages and exponential growth

Averages

Example:
You drive by bus together with 49 randomly other passengers. Further assume everyone has a possession of money of 54k€. Now let's get the richest person in Germany in there – e.g. with a possession of 25 billion €.
How does your average change?
That simple example shows that we always have to be aware of the underlying distribution and possible outliers.

Would you cross a river that is on average one meter deep? Sure?

Many things do not follow a normal distribution and applying an average is just plain wrong.

Learning: Check the underlying distribution. Is it possible that one outlier dominates the average? What is your median and standard deviation and does it support your average. If not check for percentiles and possible skewed or other than normal distributions. Get to know some good guys – statisticians 😉

Exponential growth

A simple example. Chose between:

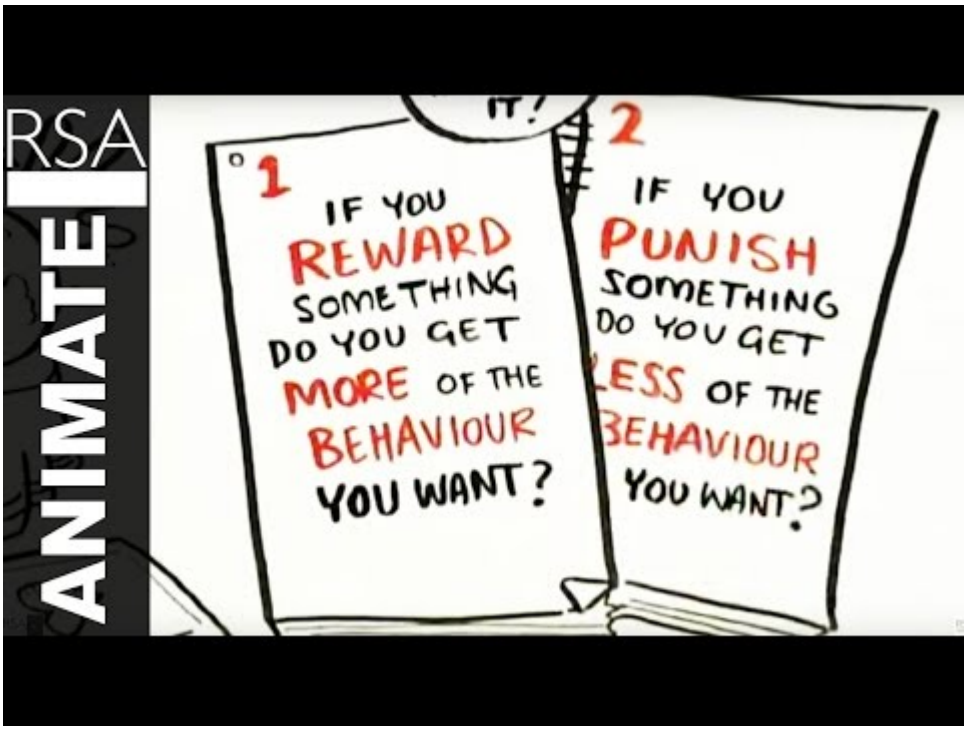
- A) For the next 30 days you'll get 1000€ every day
- B) For the next 30 days you'll get on day one 1 cent, day two 2 cents, day three 4 cents and so on … daily doubled until day 30

What would you chose based on your intuition? (answer: A = 30.000, B >10.000.000 😉

We have no feeling for exponential growth like we have it intrinsically for linear growth. But we can use a simple trick, to calculate the time for doubling fastly. Just divide 70 by the growth rate and you know how much time it takes to double something (roughly). E.g. something grows with 7% per year – it takes 70/7=10 years to double.
Learning: Don't trust your gut feeling regarding exponential growth, better use your calculator (or the as an approximation the simple 70/growth rate formula)
Also check for the stage migration or Will-Rogers-Phenomenon

#6 Motivation crowding

Everywhere where people do something without a monetary reward you destroy the underlying motivation as soon as you start offering money for the same task. The motivation drifts to earning/saving money instead of having fun doing the thing.
Nicely shown already by Dan Pinks Drive – What really motivates us.



Watch Video At: https://youtu.be/u6XAPnuFjJc

#7 Social proof and group think

One starts clapping the rest follows. One starts looking to heaven, others follow. … many more examples (like bubbles and crashes on the stock market, management practices like performance appraisals or using bonus systems) where we follow the others – social proof.
Social proof is deeply routed as in the past it was an important strategy to survive. Run when other start running or you will be eaten soon.

Special case of social proof – group think

One does not express one's real opinion because of the fear of being blamed, being disturbing. This way a group of brilliant people can make really bad decisions.
Especially dangerous in a knit group with heavy consensus tendency. (If all others share an opinion why should I say the opposite and risk being not longer a member of the group).
Learning: Especially in knit groups, express your opposite view and request the hidden assumptions. If necessary nominate an *Advocatus diaboli*
Learning: Use your brain. Even if 50 million people believe in something (stupid) it is not already the truth.

#8 The sunk cost fallacy

We already invested that much money in this project. To stop it now means all our money is lost … we cannot stop it…
The sunk cost fallacy fires as soon as we've invested time, money, energy or love in something. The investment is taken as the argumentation why something makes sense.

E.g. on the stock market many orient on the entry price. But what really counts is the possibility we connect with a share. If our underlying assumptions change, we need to sell, independently of the entry price.
Dangerous – the more money we already lost the more we start keeping the investment hoping for better times to come.
Why – because one aims for being consistent. To interrupt a project in the middle undermines our strive for consistency and creates opposition.
Learning: There are many good reasons to continue something, but it is not a good one to consider an already done investment. What counts is the current situation and our assumption about the future.

#9 The hindsight bias

Looking backward, everything seems to follow a logical order and just must have happened the way it happened. Our brain provides an order and builds a nice story around it. Every misleading fact is cleaned.
Dangerous – based on the hindsight bias we assume, that we can better predict the future, leading to wrong decisions.
Learning: Start reading more about the background of a decision and assumption a decision is based on. Start using a diary to check ones notes with the current real development of things.

#10 News Illusion

News, many news and every day more – news are today for our spirit what is industrial sugar for our body – toxic. Top 3 reasons to heavily start reducing your news consumption:

##1 Wrong risk landscape and weighting of the importance of topics

Our brains react disproportionately heavy on shocking, loudly, fast growing stimuli but less on complex, abstract and silent information. And this fact is used by the media providers.
What follows is that we lose connection to everything subtly, complex and things with more background.

##2 Most of the news are not relevant

During the past 12 months you maybe consumed about 10.000 short news, 30 per day. Name one of it that lead to a better decision…? Would it be valuable, the news producers would have to be the richest people income wise (not the people behind producing news and earning money by selling news).

##3 Waste of time

One average one person wastes 1/2 day per week consuming news. Assuming 1 billion people use 1h a week consuming plain, stupid, bla bla news – this means we waste 2000 peoples lives in a week, by just consuming nothing.

Learning: By reducing our news consumption behavior we can win a lot more freedom, time and independence.
Strongly connected with the information bias too (we collect and use too many information even if we already have all the really necessary ones).

Further readings

A comprehensive list of cognitive biases – Wikipedia
The Art of Thinking Clearly – Rolf Dobelli
Thinking, Fast and Slow – Daniel Kahneman
Why can't we read anymore – great post explaining how distracting permanent news consumption can be
Wowow – enough for today and the first post in 2016. I hope you gained some some insights and got inspired to read more about the remaining 94 fallacies. Please share your insights with your highly welcome comment 😉