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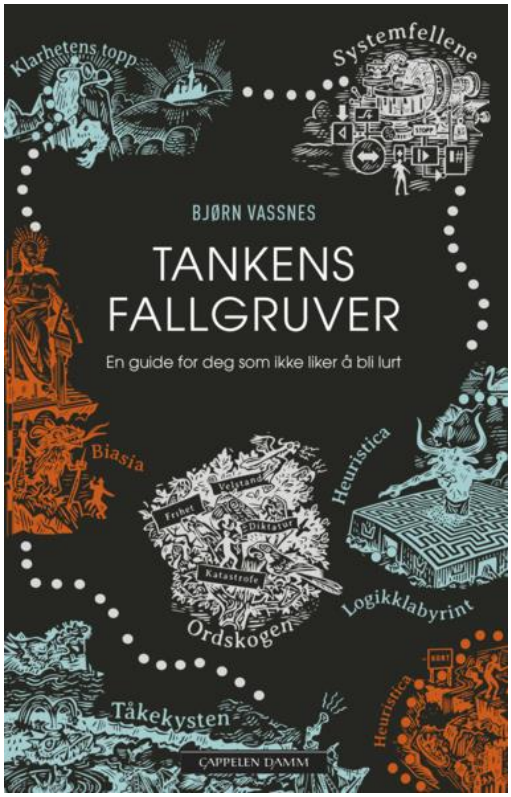

Brain Traps

Never before have we had access to so much information – but are we any the wiser? Quite the contrary, many would say, because we have never been exposed to so many lies. But this isn't just down to fake news and social media. According to science journalist, Bjørn Vassnes, the most important reason why we are taken in lies in us. Thanks to a brain that often takes instinctive short cuts, and therefore often leads us astray, and various "thought helpers" – thinking technology that we master too poorly (language, numbers, logic) – we lead ourselves time and time again into brain traps. And the new media reality has further increased the pitfalls, making them more difficult to identify.

Vassnes' book is a "travel guide" through this landscape. It makes the traps easier to discover and explains the background to their existence. The book is the first to present all types of thought traps in a single overview, but does so in an easily comprehensible way – like a kind of atlas of thought. The topics are illustrated with readily recognisable episodes from everyday life and more spectacular thought traps that the media and well-known figures have fallen into. It shows how thought traps affect all of today's most important debates – about the climate, migration, new pandemics, etc – making it difficult to understand what is happening and what we ought to do.

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Brain Traps
Bjørn Vassnes

CAPPELEN DAMM AGENCY

Bjørn Vassnes

b. 1951

Bjørn Vassnes grew up in the Norwegian Arctic, one of the coldest places on Earth. He is one of Norway's leading science journalists, has won national and international writing prizes including the Fritt Ord Honorary Award and the Golden Pen. He has a science column in one of Norway's top daily newspapers and has written several popular books and produced television programs with scientific and environmental theme. His previous book The Kingdom of Frost - The Cryosphere and life was published in 2017 and sold for translation in several territories.

BRAIN TRAPS – synopsis of chapters

Introduction

I am a science writer, and for years I have been trying to inform people. But the problem today is not lack of information, far from it, it is how we think. The brain is a wonder, but it makes mistakes, and can be misused. There has never been more cheating, not only fake news, but also in ways less easy to see. This makes us easy victims, and spoils communication and discussions. But these mistakes are systematic, and I have categorized them, to make a guide book of these brain traps.

Some of these have been with us since the stone age, in the shortcuts our brains take when we have problems to solve or decisions to make. But there are other kinds of mistakes, from faulty use of cognitive technologies (language, logic, numbers, internet). And today, many difficulties arise because many complex systems are interfering with each other in strange ways. This gives rise to Black Swans, unexpected happenings, like 9/11, and the recent corona pandemic. And the media, which should inform us, often make our mistakes bigger, amplifying our brains' biases.

Fools like us

Do we live in an age of lies? Healers are more popular than ever, and fake news seems to dominate the internet. Even respected media serve fabricated news (examples from the US and Norway), not only about politicians: The advices about food and health are not more trustworthy. But todays's lies are no worse than yesterdays's lies, which could be more serious than Trump's twitters, and were not easy to refute. For thousands of years kings could tell it was God who had placed them on the throne, so to criticize kings was blasphemy. Illnesses were caused by witches, who were put to death by fire. But because of the internet there are much more lies today.

And there will always be lies. From the start, lies have been an important part of being human. We have cheated others, not only in our own interest, but also to protect others and to «lubricate» daily communication. Because total honesty is not always wise. And we could not live with life's brutal realities without the big, collective lies: myths, religions, ideologies. So we lie, and even like being fooled. We also lie to ourselves – self-deceit – because it is easier and more convincing to lie to others about things we believe ourselves. But if we can recognize the different kinds of lies we are exposed to, we can choose which lies we would like to believe.

Trip-wires of the Mind

In addition to lies, we are exposed to brain traps, cognitive trap-wires. Some of these are inborn mental shortcuts from a time when it was more important to react fast rather than correct.

These are automatic responses, called instincts in animals, which can be complex behaviours. But we have even more instincts than the other animals. The problem is that they are not always suited to today's realities. Both the physical and the social world have changed a lot since the stone age, with new kinds of problems. The world has become more complicated, and because we don't like uncertainty and randomness, we try to create an illusion of control. Our need for consistence, for not living with cognitive dissonance (the story of Leon Festinger and the doomsday sect), has given us a bias towards confirmation: We seek only the kind of information that confirms our beliefs, whether it's personal things («am I a good driver?» «Yes!»), religion («God works in mysterious ways») or politics (climate, immigration, etc.).

The conformation bias is one of many biases we have because we cannot handle all the information we get, and need quick and «dirty» rules to make choices, what Nobel-prize winner Daniel Kahneman calls «System 1». Without thes, we couldn't survive, and science tell us this is our typical behavior, even if it often creates problems for us.

Other kinds of cognitive shortcuts are heuristics, like the accessibility rule: What you just have heard in the news, you regard as more important than the things you seldom hear about. You believe nuclear power is more dangerous than coal power, even if the latter takes many which more lives.

Biases and heuristics are inborn, but there are other traps that came with civilization: Cognitive technologies that give us advantages, but also new possiblities to do mistakes, and be cheated.

One such technology is language, which has made it possible to think and communicate things otherwise impossible, but also has made it easy to cheat. Most simply with direct lies, but also in other ways: We can use language to conjure things like «heaven», «God», «market forces», and we can even establish things by inventing words: laws, money, state. Without this, civilization would not be possible. But the back side is that such words can be used to manipulate: «Don't do that, God can see you!» Even today, such new words are invented, and fight about words can be fight about reality. Who are «migrants» and not «refugees»?

Some words are unclear. Some words have many meanings. Some words change meaning over time – concept creep (Nick Haslam), and some use words not to say things – bullshit.And experts, leaders and bureaucrats use difficult words to signal they know a lot more than they actually do.

Even a rational cognitive technology like logic - developed to ensure that arguments were rational and honest - can be misused. (An example from a play by Holberg, where a student «proves» that his mother is a stone.) Many arguments may seem like logic, but use false logic (fallacies), quasi arguments like ad hominim (attack the speaker rather than the argument), or just appeals: to authority, normality, sympathy, etc..

Numbers have made the modern world possible, but can also be used to cheat. Measurements, statistics and probability are often used in inappropriate ways. One may try to measure things that cannot be measured in any rational way, compare things that cannot be compared («apples and oranges»), or choose to measure what fits best. Statistics may be presented selectively, to promote an argument.

The most dangerous mistakes today may be system traps. The world is getting more interconnected, and complex systems interfere with each others, giving rise to black swans, unexpected happenings. We try to solve a problem, and create even worse problems, because we really do not understand complex systems like the economy, or the climate.

The mentioned brain traps are in many instances amplified by the media, especially net media. This is partly intended, as several earlier Facebook- bosses have revealed. But there are also special traps that arise from the logic of the media, like «the Google illusion», «click baits», etc.. Together they seem to drive communication in a direction that makes democratic processes more difficult.

(In the next 7 chapters, these different categories are being dealt with in more detail, and I give you only the keywords:)

(Brain traps, type 1)

Tankens skjevheter – Biases

Why scolding seems to work better than praise, and why a sugar pill can heal you. «Regression to the mean»: Why geniuses get mediocre children. How Bill Gates became the richest man in the world (the importance of luck). Why football coaches suddenly change from geniuses to idiots. Why students drink without wanting to. Failed invations and disastrous space-flights: («Group-think») How we let others influence us: We are flock animals. The «Jawohl, kaptein!» - bias. The «antropomorph» - bias (how we think dogs, robots, and even gods are like us). The Lake Wobegan – bias: Why 90% think they are better drivers than the mean. Wishful thinking. Why we always know better – afterwards. The historians' bias: How history always ends up the way it had to be. Stalin, deaths and statistics.

List of biases.

(Type 2)

(Heuristics, instinctive rules of thumb)

Mental shortcuts make life easier, but often lead to mistakes. Like the price heuristic: We think what is more expensive, is better. Or the effort heuristic: What we have worked for, we cherish. The familiarity heuristic: What you have seen in the news, you regard as bigger or more important than the more unfamiliar examples. That is why celebrities are used in advertisements.

The anchoring effect: If you have heard a number, no matter how random, you will anchor your guess in that number - a trick used by restaurants and shops. The representativity rule: When we make guesses about a person, we use representativity as a guide, and forget the statistics. False analogies: A «new Elvis». The «Thirties once again». But history never repeats itself. The «horseshoe theory». «Gut feelings». Pictures can lie better than thousand words: «Fake views». Reason needs words.

List of heuristics.

(Type 3)

Lost in the forest of words (Language traps)

How the Iroquese tried to free themselves from the veil of language. Words with unclear meanings, double meanings (amfiboli).What cannot be defined. What is «classical»? How to be «modern» but outdated. The changed meaning of «syndebukk». The different meanings of «religion»: Why Christians and Muslims don't understand each other. «Horisontal leadership»: Bureaucratic and expert language as camouflage and tactics. Words that don't mean anything real. How to use language to construct or create reality. «Concept creep»: words that «swell out»: Is Hans just lively or does he have ADHD? Who is a «victim»? Who is a «racist»? What is «illness»? Orwell's Newspeak. «Bullshit»: how to use language to not say anything. Words that close – or open – doors. Conspiracy theories. «Media panics». Synonyms for «women».

List of problematic words. List of language traps.

(Type 4)

«No, Mother Nille is not a stone» (The Labyrinth of Logic)

Example from Holberg («Erasmus Montanus») of how not to use logic. What an argument is. The elements of logic. Why Socrates is mortal, and Mother Nille is not a stone. How logic is like making sausages. How Hitler can be used in an argument (« Hitler, too, was a vegetarian»). «Strawmen», ad hominem, tu quoque and more examples of false logic. The real function of logic. The «traffic rules of argument». Formal and informal fallacies. «Appeals» (instead of real arguments): to authority, tradition, novelty, etc.. Argumentum ad absurdum, the Nirvana fallacy, etc.. Circular arguments. Category mistakes («The buildings are nice, but where is the university?»)

What is «wetness»?

List of logical fallacies and other kinds of logical mistakes.

(Type 5)

Fooled by numbers (numerical mistakes)

The tale of the goat kid who learned to count: «Does it hurt to be counted?» The corona pandemic and the importance of correct counting. Why we are so bad with big numbers. Why it is so easy to cheat with numbers, and especially with statistics. Statistics are not facts, but interpretations of data. Things that can mislead you: how the numbers were collected, how they were interpreted, and how they were presented graphically. Is the selection representative? Are the data reasonably interpreted? Are the results and the presentations scewed? Do you understand the terms? «Per cent» vs «per cent points»? Who are the «winners» of the election? Comparing «apples to oranges». Most people die at home, but is the home therefore the most dangerous place? Market research, surveys: the difficulties of calculating probability and risks. Is the selection representative? Can we trust what people say? No one predicted Trumps' victory. How many testicles does a Norwegian have? Who is the «average» person? The «small county effect». When doctors evaluate risks (be careful!). Should I operate, or take the risk? Where most doctors calculate wrongly. The «prosecuter's fallacy»: When experts send innocent people to jail. Why we drive many miles to save a few cents. The trouble with «margine of error», «confidence interval» and other statisticians' guarantees. The «tyranny of metrics»: not everything can be measured, but are measured anyway.

List of number traps to be aware of.

(Type 6)

Sea of the Black Swans (system traps)

The best intentions can result in the worst tragedies. Measles and rabbits. How «lemming years» started ecology. Beware of newcomers! Homeostasis and thermostats. The «snowball effect»: Exponential growth. The «butterfly effect». Chaos, feedbacks (positive and negative).

Black swans (the «unknown unknowns»): created by the complexity of natural systems. The ratcatchers of Hanoi. The «network effect». The «dictatorship of the minority». When the counter-moves become more dangerous than the original problem (9/11, Fukushima). «Policy resistance» (why people do the opposite of what politicians want them to). Reactions to the corona pandemic. We don't understand complex systems, like the climate, like the economy.

Misuse of science: Even scientists underrate the complexity of systems, and how systems interfere with each others. Yes, freezing can start a cold (as your grandmother knew). Do cows destroy the climate? Why so many don't trust science.

List of system traps.

(Type 7)

The Bewitched Mirror (media traps)

A teenage-idol that does not exist, but has millions of followers. Children spending more time with fictional than real persons. Hikikomori – youth leaving the real world. Our brain is not calibrated for the new media, and misinterprets the information. Not only Fake news, but also a change of context and perspective. What is the «truth»?How do you know you are made of atoms? Does it help with numbers? Even DNA-profiles may be false. Who can we trust?

Conspiracy theories. The «new conspiracism» (« I am just asking a question»): a child of the internet. Not only in «alternative media». «Russiagate». Can science be trusted? The reproduction crisis. The importance of following the crowd. But which crowd? When social norms and marked norms collide. The IKEA «family». When the state proclaims a «dugnad».

The world seen through the media. The media use our brain's ancient calibrations, playing on our biases. In the media, nothing has consequences, it is just one thing after the other. And the big changes go unnoticed. When did you hear that «since yesterday, 135 000 people have escaped poverty»? What is «important»? How the media – directed by algorithms - challenge our hierarchy of values.

Typical media- traps:

The Global Village illusion (No, the whole world is not our «village»). Dunbar's number.

The Google illusion («There is always an answer, and Google has it». And you don't have to remember it when it is only a click away)

The Facebook illsion. «The whole world backs me!» (No, it is only 23. And it is just clicks.) Why «Facebook-revolutions», like the Arab spring, fail.

Construed popularity.

Click bait. Half-baked stories to make you click.

A world without smell og taste. The media is showing us a reduced world, for two senses only.

Communicating by aliases, indirectly: Letting other people say the bad things you won't say yourself. So you don't have to explain, and take the responsibility. («Michael Moore gets massive critique», «Trump accused of lying»)

Brain traps in current debates: Climate, migration, the corona pandemic.

In the climate debate: On both sides there are biases (group thinking, confirmation bias), conspiracy theories, and use of heuristics like the effort heuristic and price heuristic (climate actions must cost to be effective!). Language is also important, to paint the standpoints in a better or worse light: What is «clean energy»? What does «sustainable» really mean? «Meat shame»? «Fly shame»? The use of numbers may be selective, especially the statistics: Which time- series are used? How are the statistics presented graphically? Which carbon outputs should be measured? The ones we cause in China? As for the arguments, in the cliamte discussions often appeals are used more than formal logic, for instance appeal to authority (the scientists), appeal to youth (they shall inherit the earth), etc.. But the biggest problem is maybe the system traps, because we don't really understand the complexity in the climate systems. The media are not much help, either, because the coverage is politically polarised, and moralistic. A case is the coverage of the EAT initiative, which boiled down to whether it is bad to eat red meat.

In the debate about migrants and refugees, there are a lot of biases, like stereotypes, about how migrants, and the opponents in the debate, are. This is amplified by confirmation bias. And

group thinking is more important here than in the other issues, because the debate is so moralistic. Also typical is the use of false analogies: Like comparing the migrants to Norway with the emigrants to the US in the 1800s, or our very temporary refugees to Sweden in the 2nd World War.

The language is also important: Who can be called «refugees», and who are «migrants» - a big difference. Also concept creep: Can we use the word «climate refugee»?

When it comes to arguments, ad hominim and strawman «arguments» are used to characterize opponents. It is very easy to be called a «racist» if you go for a strict line towards immigration. Appeal to sympathy is often used: «What if it were you?»

Numbers are important also in this debate. Both sides try to use the numbers, the statistics that illustrates their own arguments best. Who is to be counted, and in which time series? (The immigration numbers change from year too year). And opinion surveys are often tailor-made.

Also here, the system consequences are seldom mentioned. How will the reception of immigrants influence new immigrant groups? How will they change the societies they come to? And what will the total costs of immigration be?

Because this is an emotional topic, it is a popular theme for the media, who can focus on heart-breaking, individual stories. Without bothering much about the consequences, and the statistics.

The corona pandemic has shown how both the public, politicians and the media can be victims of brain traps. The slow response in Europe was conditioned by our preconceptions: It was «just another influensa», and it did not fit our shema for a pandemic that the first superspreaders were skiers in the Alps. Even the experts thought this would be over before Easter.

When the numbers, and predictions, came, the experts differed widely, partly because they operated with different baselines, depending on when they thought the first case, Patient Zero, arrived. Later, the most critical issue (apart from finding a vaccine and medicines) became how the public, more than the virus, behaved, a clash between two systems. The pandemic also got its own conspiracy theories: In one version, it was produced by the Chinese, in another, it was God's weapon against the infidels.

The Ending

Brain traps influence our lives not only on the bigger, social and economic scale, it also impacts our personal lives, in the day-to.day choices we make. Knowing about the typical traps, may make it easier for us to fall into them.

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Brain Traps

by

Bjørn Vassnes

Translated by Lucy Moffatt

'Even though the totality of all human learning is more accessible than ever before in history, indeed billions of us can now easily access it with a device we carry in our pockets, nonetheless false beliefs are as epidemic as ever.'

(Justin E.H. Smith)

'The dangers of not thinking clearly are much greater now than ever before. It's not that there's something new in our way of thinking - it's that credulous and confused thinking can be much more lethal

in ways it was never before.' (Carl Sagan)

Thought is the most fantastic thing we humans possess. Our bodies are far from impressive: many animals beat us in areas such as strength and speed. We have neither sharp claws nor fangs. So our bodies aren't the reason why we rule the world. But when it comes to thinking – using our brain to grasp problems, find solutions, make plans and communicate, collaborate, organise – no other animal can match us.

Like all other tools, though, thought can be abused. In particular, it can be used to fool other people and there is much to suggest that this is among the very reasons why our brain has evolved so dramatically. Other animals are probably also capable of deceiving and fooling their enemies and potential sex partners, but generally do so through a somewhat restricted innate repertoire and instinctive behaviours. Like the oystercatcher, which limps around pretending to be injured to lure the bird of prey away from its chicks, which lie hidden in the grass somewhere nearby. But we humans have evolved a very special capacity for lying and deceiving one another in the most imaginative ways, aided, in particular, by language – and tools such as numbers, logic and science.

Thought is not flawless either. We can rely a little too heavily on its powers, and fail to notice when we are using it in inappropriate ways. And as thought has acquired ever more powerful tools – thought technologies such as language, numbers, logic, writing, science and computers – its capacity to both *solve* problems and *create* them has increased.

It's true that we can gather and process information more efficiently than ever before: in a few keystrokes, we can find out the fastest route to Geilo or check who was the prime minister of Norway in 1935, should we need to know. At the same time, though, we are also more susceptible to being duped. And I'm not just talking about so-called *fake news* that may have been produced by a troll farm in Russia. Or the fact that 'serious' media outlets publish unfounded stories, and that even the Norwegian Broadcasting Corporation is constantly having to apologise for errors.

The problem lies more on the side of the recipients – us: because no matter how easy it may be to seek out information on the internet, it is still up to us to *interpret* this information and find out how to use it. We are often ill-equipped to judge it, to assess whether or not it is correct.

Several international surveys have demonstrated that people simply aren't as knowledgeable as the access to information seems to imply – or as we ourselves tend to believe. Many, for example, believe that vaccines can cause autism in children, or that the Great Wall of China is visible from outer space, even though neither is true. However, we have 'heard this' from people we know or the media. So we believe that we know. And we are easy to fool because we fail to detect errors in the line of reasoning. The story about the Chinese wall sounds credible because after all, it is 'great'. But its greatness largely resides in its length and since it is no more than nine metres across, it isn't visible from space, even as a thin line.

For many of the years I've spent as a science journalist, I considered it my duty to inform people. However, the main problem today isn't the lack of information but the way our brains receive and process this information. The way we think. And this is something we used to have

a completely false perception of: we believed that the brain worked like a computer, handling information logically and rationally. The truth is, though, that the brain has evolved more in the manner of a house that has undergone repeated expansion through the constant addition of new extensions that don't always fit together especially well. It's more like a house in a favela in Rio than a boxy modernist house in Sandnes. We ourselves don't notice how complicated and complex our brain is because it works so fast and so automatically – and mostly under the radar – that it fails to register on our consciousness. Most of what we do and think occurs through mechanisms that have existed for thousands or millions of years. In animals we call this instinct; in ourselves, intuition or gut feeling. After all, we like to think we are more than mere animals.

Just as animals have instincts that help them to deal with countless challenges (think of the navigation of migratory birds or the building skills of ants), we have masses of mental shortcuts we take to deal with situations that may arise. Automatic, instinctive responses that are partly innate, partly learned through experience. Even when we believe we are thinking logically and making conscious choices, our brain has covertly done the groundwork in advance. If we had to think through all the alternatives every time we were faced with a choice, we wouldn't survive for long. The snake would bite us well before we'd had a chance to Google whether it was dangerous or not.

It is easy to grasp that automatic responses were useful in the Stone Age, when we would be coming up against unforeseen dangers all the time. The person with the slowest reactions was the one who got captured by the sabre-toothed tiger or enemies from the neighbouring tribe. But these swift reactions are still a part of us: think how quickly you react when you're

driving a car and an object suddenly appears in your lane. Your feet and hands brake or steer away from it before your consciousness has a chance to register it. And you sit there afterwards thinking: what just happened?

But on top of the inbuilt shortcuts nature has given us – and without which we couldn't get by – there are many sources of error in the tools that civilisation has given us: language, numbers, logic, science, the media. These 'thought helpers' have been invaluably useful for us but, when used unwisely, they have also been the source of countless mistakes and misunderstandings – even tragedies. What's more, the world we now live in is dramatically different from the one we lived in when the brain was formed. There are an awful lot more of us, and the societies we live in have become larger and more complex. Our technologies are also much more powerful and efficient. As a result, our actions have more far-reaching consequences now than before. What worked at a summer settlement in the Stone Age doesn't necessarily work equally well in a megacity in 2020. Throwaway comments we could make with impunity around the campfire or at the pub can nowadays come back to haunt us on the internet, making us outcasts or losing us our jobs.

All these sources of error, or *brain traps*, combine to form a chaotic mess of pitfalls that are increasingly more difficult to avoid. That is why I thought it was time to put together an overview – a kind of atlas or guidebook – that would make it easier to recognise them. In this way, I hope to help readers become better equipped to identify possible brain traps along the way – because we encounter them in everything from the most commonplace, personal situations to the more serious issues that concern every single one of us.

I would even say that the most important obstacle in the way of dealing with the thorniest social challenges we face today (pandemics, the climate crisis, migration, automation, inequality) is precisely our inability to steer clear of certain fundamental brain traps. They don't just make it more difficult for individuals to understand what is happening; they also constantly place tripwires in the way of rational, objective discussion. This problem has become even more evident with the arrival of internet media, whose speed, which leaves less time for reflection, makes us more vulnerable. Many people think enlightened public debate is no longer possible; that the polarisation has gone too far; that insults and emotions now drown out any attempts at debate. Meanwhile, things presented as fact often prove to be fabrications.

So what can we do? As with so much else in life, we need to be prepared, to have a defence against trickery and forgeries. Just as we protect ourselves against contagion, we can protect ourselves against brain traps – not only all the things others try to make us believe but also the short circuits we ourselves cause when we try to use thought helpers we have not completely mastered. If we were more aware of the different traps we could fall into, we wouldn't just avoid much unpleasantness ourselves (buying the wrong house, rejecting friends, choosing the wrong job, failing as parents) but also, perhaps, contribute to democratic debate in a better way than simply clicking 'like' on statements we feel we should support.

But how can we become aware of these traps? I found it wasn't enough just to list them. There so many of them that this would simply be too overwhelming. So I tried to do what we generally do with life's challenges: sort them into categories, types; bring a bit of clarity; make the brain traps easier to recognise.

The task is actually insurmountable because the brain traps are so numerous but we have to start somewhere. I have divided the brain traps into categories – the 'seven sisters' (or step-sisters) of thought. I have also tried to sketch some maps of these traps, inspired by the theory of Nobel Prize-winner Edvard Moser and his colleagues that thinking is like moving through a landscape, from point to point. And as we all know, it can be dangerous to move through complex terrain without a map, compass or GPS. Of course this is not a real map but more like a tool to aid the memory, so you could also see it as a board game – a concept that is probably more familiar to many people than an orienteering map.

Everything in this book is based on scientific research – in the fields of psychology, brain science, behavioural science, systems theory etc – which it has been my job, as a science journalist, to keep track of over the past few decades. And the book could have been ten times as long if I had gone deeper. For ease of reading, I have placed references and theories at the end of the book for any readers who are particularly interested.

But before we strike out into brain trap territory, we need to take a little look at why we are so easy to fool. Why we even *enjoy* being fooled – and fooling both ourselves and others.

BETWEEN US SUCKERS

'The lie is a condition of life.' (Friedrich Nietzsche)

'The great enemy of truth is very often not the lie – deliberate, contrived and dishonest – but the myth--persistent, persuasive and unrealistic.' (John F. Kennedy)

How I got rid of my warts. Fake pills. Troll factories. Gods and witches. Our need for lies.

When I was a kid, I suffered from warts on my hands. Maybe because my parents didn't want to trouble the only doctor in the district – warts were, after all, not a disease – I was taken to a 'wise man' who was said to be able to help with this kind of thing. He tied yarn around the warts and read out some incomprehensible words over them. Then he told us that the warts would vanish in a few weeks' time. This 'wise man' – one of several in Northern Norway in those days – couldn't just get rid of warts. He could also stop bleeding, people said, and cure vaguer ailments such as listlessness and melancholy. People believed in this because they had found that the treatment worked. Or at least they'd heard as much from other people. And so it was with me: after a while, the warts did, indeed, disappear. But was it thanks to the 'wise man'? One common feature of all the things he could cure was that they were ailments that would generally disappear by themselves if you only gave them time. Warts vanish, bleeding stops and depression generally passes.

We still have such healers. Maybe more than ever before judging by all the ads for such services. The best known in Norway is Joralf Gjerstad, or Snåsamannen, who has been visited by thousands and was once approached for help by a Norwegian health minister, no less. There are even healers in the Norwegian royal family. But no tests have demonstrated that such people actually have healing powers – Snåsamannen will not allow himself to be tested – and nobody can provide explanations for why this should work, apart from the *placebo effect:* if

people believe they are receiving treatment it can actually help in some cases. And if a white sugar pill helps just because people believe in it, it's hardly surprising that a laying on of hands by a famous healer can work too. In some cases at least.

Placebo

Placebo (from the Latin 'I shall be pleasing') was a term used in the 1300s for women who were professional mourners at funerals. As a medical term, it dates back to the end of the 16th century, when an Italian physician, Gerbi, used extracts from a worm to treat toothache. Everything from toads' eyes to bats' wings has been used as medicine. One popular placebo was 'powdered mummy', supposedly made from Egyptian mummies, which was used for a wide range of diseases, from epilepsy to paralysis and ulcers. President Lincoln was treated with powdered mummy on his deathbed.

Placebos, nowadays generally administered as sugar pills (as a control in medical trials) but also in the form of sham operations, do actually have an effect, which varies depending upon the patient and the type of treatment. The assumption is that it works by suggestion, and its success depends on factors such as trust and prestige. And price – a question that a team of MIT scientists (led by Dan Ariely) investigated. They found that when they lowered the price of a placebo medicine, its effectiveness diminished.

There are also other reasons why people believe in Snåsamannen. Sometimes those who are sick get better all by themselves, given time – even from cancer. And we only hear about the successful cases, never those that *don't* end well. Few will admit that they went to a 'wise man' and it didn't help because they are afraid of seeming stupid. And the dead, who could not be helped, don't complain. So if people continue to visit healers, they have their reasons: of all the thousands who resort to such 'wise men', there will necessarily be many who were helped and will generally talk about it. Whether they were helped by the placebo effect or chance we shall never know.

Many people believe there are more lies now than before, that we are living in the age of lies. And maybe we have never before been presented with as many lies as today. The internet is brimming with fake and distorted news. In certain countries there are even troll farms, where government employees churn out fake news, which is then disseminated through various channels on the internet. Even respected media outlets produce stories that cannot be called anything other than fake news: in spring 2019, the American media – led by *Time* magazine and the *New York Times*, possibly the world's most respected newspaper – had spent the previous two years orchestrating a campaign whose message was that President Trump was actually a Russian agent and would almost certainly be found guilty of it. But when Special Investigator Mueller and his team of professional investigators published the report on their painstaking investigation, it turned out that they hadn't found a single piece of proof. This has since been called one of the biggest scandals in the history of the American media, especially because almost all the media hunted in a pack.

Perhaps the even bigger scandal – although one that nobody spoke about – was the absence of any major consequences: the media continued, by and large, as if nothing had happened. And almost nobody was fired. The same was true of Norway's biggest newspaper, *VG*, which – at around the time of the Mueller report – was found to have constructed a 'scandal' about Trond Giske, former deputy leader of the Norwegian Labour Party. Among others, it fabricated a quote from a girl he was supposed to have got a little too close to, although she failed to recognise her own experience in *VG*'s reporting. And this was, incidentally, impeccably timed to put a stop to Giske's political comeback.

And these are just the most widely reported lies. Every day, named people are subjected to the most monstrous claims on the internet, particularly in the notorious comment fields, although not only there: even the most high-profile commentators in major media outlets don't shrink from making undocumented claims about celebrities. And every single day, newspapers and websites are filled with ill-founded – and often downright dangerous – advice about how to prevent coronavirus, cancer, heart attacks, divorce and unsatisfactory orgasms. Some years back, eggs were life-threatening then suddenly they were among the healthiest food you could eat. The same went for coffee. And however did people in the olden days survive without fermented beetroot pills?

So, yes: a lot of lies are served up these days although they are actually no *worse* than in previous times: while there certainly weren't as *many* lies back then – there was no internet, so lies had to be either printed or yelled out – the lies were, on the other hand, often more serious and were more frequently believed because they weren't as easy to disprove. People had neither fact checkers, Google nor Wikipedia and couldn't simply brush aside the assertions of a

head of state, the way most people do with Trump's tweets. In fact, that kind of behaviour might lose you your head (a risk people still run in certain countries).

For millennia, kings and emperors held onto their thrones by claiming that God himself had placed them there, and that anybody saying otherwise would end up in hell or its equivalent. Entirely innocent people were condemned and executed for things they never came close to doing. Diseases were said to be caused by witches, who were often burnt at the stake for 'casting spells' to make people ill. And anybody who felt the world was unfairly organised could console themselves with the tale that they would be better off in the next life, or in heaven – a tale that keeps the caste system in India alive to this day.

It isn't that the lying is so very much worse these days, then; it simply happens in a different way, and because of internet media there are an awful lot more lies. And we can never be rid of lies because they are an unavoidable part of being human. Indeed, we couldn't get by without lies. From the moment we acquired speech – and presumably long before that – the lie has been a crucial part of our life. We have fooled others to survive or to promote our own interests, but often, also, with the best intentions: out of concern for others or to oil the social wheels. Total honesty is not always the smartest option, nor the most considerate one. The lie has its function in human intercourse – if used judiciously.

We have always fooled ourselves, too, or allowed ourselves to be fooled by our own brains. And that's a good thing because the brain often knows more about what is best for us than our consciousness. And it can react much more quickly than we are able to think.

Our need for lies

It is impossible to escape lies and trickery, then. Thus it has always been and thus it will always be, because it is in our nature and is further reinforced whenever new information technology comes on the scene. But why do we humans have this bug in our brain? Why hasn't evolution opted out of this enormous source of error? Why hasn't it equipped our brain with a lie detector and a radar that can spot the brain traps before we fall into them?

Because we wouldn't want to be without lies. One important reason why lies flourish – in every possible variant, from little white lies to vast conspiracy theories – is quite simply that we need them. We need lies to avoid being overwhelmed by the constant frustrations and defeats of everyday life. 'Okay, so things went badly today but of course I'll succeed in the end.' We need lies to ease our encounters with other people: 'Don't you look lovely today!' In many situations, telling the truth would actually be too brutal: 'You were just too stupid.'

And we need lies to be able to cope with life's brutal realities: that you will never be able to escape the situation you are living in, and that we must all die someday. That is why the big collective lies, like ideologies and religions, have such a strong hold on us. They tell me that even though my little life may seem hopeless, I am part of something bigger, something that will make sense some place, sometime up ahead: when the revolution is victorious, or Jesus returns. Or at least when Arsenal wins the FA Cup.

The lie is a necessary consolation, a symptom-relieving remedy, which we need because we have developed the capacity to imagine the world's atrocities and comprehend our own

tragic fate. That would be hard for most people to deal with, so our brain has evolved its own anti-anxiety medicine: lies and our inclination to believe them.

LIES AND SELF-DECEPTIONS

Lying has not just accompanied humans but other animals too, from the very simplest species. Some, like stick insects, have a body that is a lie (it looks like a stick) while certain male fish live their lives as females (to cheat their way to reproduction). This is because lying and deception can be advantageous and, in fact, vital. The same is true is for humans too, as we can already see in early childhood, with fake tears and fake laughter.

But for us humans, lying is both demanding and energy-consuming (one way of identifying liars is that they are more tense – in the way they speak, for example - and make more of an effort). That is why nature has given us a tool: it is easier to fool others when we are also fooling ourselves. That way we conserve energy and lie more convincingly. Fooling oneself can also offer more direct benefits, like the way we (especially men) often have rather too much self-belief. That makes us take chances we otherwise wouldn't (providing opportunities for big gains, on the stock market, for example) and can also give us a psychological advantage in conflicts – whether at war, in fistfights, in rivalry over a love object or in the sports arena. So there are evolutionary reasons why not just lies but also self-deception are innate traits.

We should simply be grateful for having this. But our predilection for lies does have some disadvantages: we can dream our lives away in fantasies of our own or others' making, and we

become easy prey for fraudsters, who know how to play on these propensities. This may involve innocent things, like giving money to beggars who claim to have a sick sister who can't afford medical treatment – or more serious ones, like charismatic leaders who lure us into collective insanity.

Whatever the case, we will be better equipped and better able to resist the fraudsters if we can recognise the different types of lies being used. That way, we'll be able to decide instead whether we *want* to let ourselves be seduced. Some people experience a cherished and necessary joy when singing along with fellow fans that they're 'Arsenal till I die,' or that 'Christ The Lord Is Risen Today' – just as we rejoice along with our heroes in films and novels even when the plot is far-fetched. But we can do without the rest of the trickery, and if we are to identify it, it makes sense to be able to recognise the strategies, patterns and brain traps we are lured into – or stumble into through our own inattentiveness.