

# EXECUTIVE SUMMARY

A close-up portrait of Daniel Kahneman, an elderly man with glasses, wearing a suit and tie. The background is dark, and the lighting is dramatic, highlighting his facial features and the texture of his skin.

Virtual  
Masterclass  
with Daniel  
Kahneman



NORDIC  
BUSINESS  
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## Introduction

# Digital Masterclass with Daniel Kahneman

**O**n 21 September 2021, DenkProducties organized a virtual masterclass focusing on the topics of noise and the art of critical thinking. The main expert of this masterclass was the iconic psychologist and Nobel prize winner, Daniel Kahneman. But we also got to learn from neuropsychologist and professor, Margriet Sitskoorn, and bestselling author and behavioral scientist, Ben Tiggelaar.

The masterclass was divided into four parts. Part one featured a presentation by Margriet Sitskoorn on how emotions rule our brains. During the second session, Ben Tiggelaar gave us a crash course on the key learnings from Daniel Kahneman's famous book *Thinking Fast and Slow*. The third part of the class focused on Daniel Kahneman's insights on the concept of noise as he engaged in a conversation with Ben. The last part of the masterclass featured another discussion between Daniel and Ben, focusing on the topic of behavioral economics.

This summary provides a written overview of the entire masterclass. In addition, you can find visual summaries of each part drawn by Monique van Rooyen.

## Part 1

# How Emotions Rule Our Brain

Margriet Sitskoorn's Keynote

**M**argriet Sitskoorn is one of the most renowned brain researchers and experts in the Netherlands. The first part of the masterclass focused on brain passions as Margriet shared with us the science behind how emotions rule our brains.

### Basic Brain Rules

Margriet started by asking a basic question: Why do we do what we do and want what we want? The underlying answer is that we act according to certain basic rules.

"And because of these basic brain rules, you become very predictable." According to Margriet, this predictability makes us very vulnerable to manipulation. On the other hand, if you are aware of these basic brain rules, you can also take advantage of them in order to influence people.

To show what she means by this in practice, Margriet then took us through a simple math exercise where the participants had to add numbers together. Most got the answer wrong with the first try, and here's why: Margriet

used her knowledge of the basic brain rules to manipulate us when forming and framing the task. "You were acting according to an automatic response based on some basic rules", she explained.

How are these basic rules formed in our brain? In order to be able to explain this, Margriet took a step back and introduced us to a neurology principle called experience-dependent-neuroplasticity. "It means that whatever you do, whatever you want, whatever you expose yourself to directly influences the structure and the function of your brain."

Most of us are aware of the fact that our brain determines what we do, want, and feel. However, we often forget that the "arrow goes both ways". So, your behavior and what you expose yourself to, also determines how your brain works and functions.

### Take Advantage of Your Neuroplastic Brain

Why is it so that both our brain and behavior have an effect on each other? "Because the

brain is neuroplastic; it adapts constantly.” Margriet explained that in our brains, there are neural networks that change constantly. So, in other words, our brain changes constantly.

For many, it might seem obvious that our brain impacts what we do, and what we do affects our brain. But the point Margriet wanted to underline, is that we should also live according to this principle. Ask yourself: are you living in such a way that you expose yourself to what you want to be exposed to? “If not, you will not develop into the direction that you want to develop.”

When learning and developing yourself, you should be aware of the fact that the more you expose yourself to something, the stronger the networks that underline that behavior, perception, or feeling, will be. Through those stronger networks, the easier it will become for you to act, feel, or develop that way.

## Pain and Pleasure Regulate Our Behaviour

Next, Margriet dove deeper into how it is often our pain and pleasure systems that explain our behavior. And as she mentioned earlier, it is exactly these basic emotion-related rules that regulate our behavior and make us predictable and prone to manipulation.

Here are a few practical issues related to these emotion-related rules:

- When we do something that stimulates our pleasure network, we are motivated to continue or repeat that activity. Whereas if we do things that stimulate our pain network, we want to avoid this type of activity.
- The fact that we are motivated to do certain activities (eat, drink, have sex, collect things, socialize) is to do with the fact that for thousands of years doing those things actually helped our species to survive. “We are still under the control of these systems.”

- If we have all the power, most of the time we behave in a more antisocial way. But when there are restrictions or control over our behavior, we will instantly start acting more socially.

- When we are treated (or feel that we are treated) unfairly, our pain system gets activated. “A part of this system gets activated also from social pain.”

- We also have mirror neurons in our brain that mirror the feelings of other people. For example, when we look at people in pain, we also start to feel pain ourselves. “Our brain is not only directed to our own profit and well-being. We can feel other people’s joy and pain. This helps us to build social connections.”

Margriet emphasized that we humans often think we are in control of our own feelings and actions, but the reality is that “pain and pleasure regulate your behavior a lot”.

## SCARF Model of Social Emotions

According to Margriet, these pain and pleasure systems are closely connected to the five most important social emotions. She introduced us to the so-called SCARF model by David Rock to go through these five emotions:

- **Status: How high are you on the social ladder?** “The more status you have, and the more status other people give to you, the more your pleasure system is activated. Whereas if a part of your status gets taken away, it activates your pain system.” Providing people with status or taking it away, affects hugely the way the person feels and acts.
- **Certainty: Can you predict the future?** “Do you have some sense of certainty, or do you have a feeling that everything is decided for you?” Here again, if you feel a high level of certainty, your pleasure system is stimulated, and vice versa.
- **Autonomy: Are you in control?** “You have to have some feeling of control in order to be



happy and to function well.” If you feel like you’re in control of your life and actions, your pleasure system gets activated, whereas if you feel you lack control over your life, your pain system gets stimulated.

- **Relatedness: Are you accepted and a part of a group?** “We like to belong to a group—and actually we need to belong to a group.”

When we feel accepted to be a part of a group, we feel good, while if we feel lonely, discriminated against, or left out, we feel pain.

- **Fairness: Are you treated fairly?** “If you are treated fairly or you feel that you are treated fairly, your pleasure system gets activated. But if you feel that you are being treated unfairly, your pain system gets activated.” Margriet also explained that people with high status are more focused on outcome fairness, meaning that they feel the need for the outcome to be fair. People with low status, on the other hand, are more concerned about process fairness as they feel the need for the process to be fair.

This model is something that most of us can probably easily relate to. It’s also something that can be transferred to our social relationships. So, ask yourself: how can I use SCARF to enhance my relationships?

The more you raise these five social emotions among the people you work and cooperate with, the better people will feel, and the more willing they are to work with you. On the other hand, if you take away from these emotions, you are activating the pain system of their brain, and it will become harder for you to work with them.

## The Third Force in Our Brain

As you might have guessed, it’s not as simple as that. We are not only directed and affected by these two systems. And we can’t be. Especially in the VUCA world (volatility, uncertainty, complexity, ambiguity) we live in today, we need to be able to adapt and adjust fast.

“If we would only act on the basis of pain and pleasure, our behavior would be very simple and short-term.” So, because these pain and pleasure systems work in the short term, we would never reach long-term goals, for example, if we only operated under these two systems.

Margriet then explained that there’s also a third force: the prefrontal lobe that is connected to so-called executive functions. “These executive functions make you the puppetmaster instead of the puppet.” These functions can steer us in the direction of things such as priorities or long-term goals.

What kinds of skills and characteristics are these executive functions? Margriet gave us the list of these:

- Attentional control
- Regulation of emotion & behavior
- Flexibility (=adaptiveness)
- Inhibition and initiation of behavior
- Organizing & planning
- Working memory
- Grit (=dedication)
- Zest for life
- Social intelligence and prosocial attitude
- Gratitude
- Optimism and sense of humor
- Spirituality
- Curiosity
- Self-reflection
- Ability to deal with insecurity
- Tolerance

“Research has shown that the better you are in these executive functions, the more successful you can be in the broad sense of the word.” To clarify, Margriet mentioned that she was not only talking about success as in making money but also in terms of making healthy life choices, bringing up your children well, etc.

According to Margriet, by developing these executive functions we can actually develop a neurobiological system of wisdom. What is this? "A good balance between the evolutionary older systems of pain and pleasure and the evolutionary new systems of the prefrontal lobe that are related to all these executive functions. The people that develop their neurobiological system of wisdom will no longer be slaves to certain regularities." And, in this uncertain and complex world we live in, we can't be relying only on our pain and pleasure systems—we need to be more flexible. We should strive to make our brain give a wise response, that is the best possible response for that particular situation.

## Use Your CEO Brain

Margriet has written a book, Train Your CEO Brain, that provides more practical tips on how to develop your executive functions. To leave us with some food for thought, she

revealed that it's in fact most of the time pretty simple things that can help you develop these functions. For example, sleeping enough (7-8 hours per night) is one of the most basic things you can do.

In addition, exposing yourself to new things and regularly experiencing something new can help you develop your brain. "Get inspired by things that you haven't been inspired by before. They teach you to think out of the box and to act out of the box. That can help you to step outside of the regular rules that most of the time steer you in the same direction."

To conclude her session, Margriet boosted our self-confidence as human beings by reminding us that we are all exceptional creatures. "You are the Homo Prospectus. You can not only see the future, but you can also enable it. So I would say, use that power: shape your brain and shape up."

**1 NOISE & THE ART OF CRITICAL THINKING**

Daniel Kahneman Margriet Sitskoorn Ben Tiggelaar Remy Gieling

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Why do we do/feel/want, what we do/feel/want?

With our mirror-neurons, we can also feel pain when we see it. Pain-system is triggered.

Pain and pleasure have a big impact in the SCARF-model.

Prefrontal lobe > executive functions. They make you the puppetmaster, not the puppet (pain/pleasure-system).

Executive functions: skills and characteristics related to success and wisdom.

Experience-dependant-neuroplasticity: BRAIN ↔ BEHAVIOR Your brain changes constantly. It depends how you do, to determine how you develop (expert in sports or nagging).

PAIN and PLEASURE regulate our behavior! They motivate us to behave in a necessary, predictable way.

Status = social ladder  
 Certainty = can you predict the future?  
 Autonomy = are you in control?  
 Relatedness = are you accepted (group)?  
 Fairness = are you treated fairly?  
 >> More of it stimulates pleasure, less triggers pain.  
 - high status => outcome fairness.  
 - low status => proces fairness.

Improve them by doing new things, getting enough sleep and reading the book "Train your CEO-brain".

Pain/pleasure mechanism is only short term. Learning is long term.

We try to avoid pain and repeat behavior that results in pleasure.

MONIQUE @MOJAF0

## Part 2

# Behavioural Science in the Workplace

Ben Tiggelaar's Keynote

During the second part of the course, Ben Tiggelaar, a bestselling author and behavioral scientist, gave us a crash course on Daniel Kahneman's work—specifically on the key thoughts in his bestselling book *Thinking Fast and Slow*.

### 1. Dual System Theory

Ben began by explaining one of the key ideas in Daniel's work: the idea of the two systems. System 1 refers to the brain processes that act fast, while system 2 refers to the brain processes that act slow. Ben highlighted that it's important to note that these systems are not referring to certain parts of our brains. They are rather metaphors than actual systems; it's just a way to group certain brain processes together.

#### System 1 = the Fast System

This system is important to us and, unlike some might think, it actually works really well in certain situations. It automates many of the

basic functions we need to do daily. "This is the system that helps you recognize words at a glance, or helps you to tie your shoelaces without much conscious thought." Ben underlined that according to researchers, the majority of our functions are unconscious, and therefore the majority of our brain processes can also be considered as a part of the fast system.

The fast system is:

- Unconscious, automatic
- Fast
- Effortless
- Intuitive
- Pragmatic
- Rigid

"Usually system 1 gets you where you want to be. Not exactly or in a very rational or precise way, but it's adequate. It helps you to make it through the day. And that's the most important function of this fast system."



## System 2 = the Slow System

System 2, also referred to as the slow system, helps you get over more complex tasks. For example, when solving a challenging math problem or explaining to a child how to tie their shoelaces, is when the brain processes of system 2 kick in.

Ben explained that according to Daniel's work, the slow system usually accepts what the fast system offers. If and when the fast system can't figure it out, the slow system steps in.

The slow system is:

- Conscious, controlled
- Slow
- Tiresome
- Reflective
- Logical
- Flexible

## Cognitive ease

Ben also wanted to emphasize one important element related to the dual system theory: cognitive ease.

He explained that when we get information that is for example easy, clear, and familiar, we tend to process it as true. When considering if something is true or not, we generally don't go through rigorous research, statistical analysis, or complicated steps. We rather trust the feeling that something is true.

According to Daniel's work, these are the attributes that contribute to this feeling of truth:

- Repeated experience
- Clear display
- Primed idea
- Good mood
- Feels familiar
- Feels true

- Feels good
- Feels effortless

So, it's actually sometimes silly things that we take into account when considering if an issue is true or not. Especially in today's world of information overload, it can be highly beneficial to be aware of this cognitive bias, in order to see if you are making judgments about truth in a rational way.

## Substitution

Next, Ben introduced us to the concept of substitution. This refers to our way of acting when facing a complex question. Based on Daniel's work, when confronted with a difficult and complicated question, we approach it by answering an easier question.

To elaborate this point, Ben gave us these examples from Daniel's book:

- Complex question: Is this person the right candidate to lead the country?
- Easy question: Do I feel this person is likeable?
- Complex question: How happy are you with your life these days?
- Easy question: What is my mood right now?
- Complex question: How much should you contribute to save the Sumatran tiger?
- Easy question: How sad do I feel when I think of dying tigers?

So, this is how our brain substitutes the complex questions and situations at hand with easier questions and situations in order to solve a problem. Again, being aware of this brain process can help you make better decisions instead of making judgments by answering the wrong questions.

## 2. The two systems at work

In the book *Thinking Fast and Slow*, Daniel

introduces two phenomena that play an important role in how we think and behave: heuristics and biases. Ben now gave us a short introduction to these by highlighting that “We need to make a separation between the two as many people tend to use these terms interchangeably, but they are actually quite different.”

**A heuristic is the “shortcut” in our thinking (=jumping to conclusions).** Ben underlined that often these are very useful and helpful. “Many times heuristics make you make good decisions.”

**A bias is a systematic error in our thinking.** “When there’s a constant error within these heuristics, then we talk about a bias.” In other words, these biases are distorted views of reality that often disturb our decision-making process.

There are in fact many heuristics and biases, but in the work, by Daniel and his fellow psychologist Amos Trevisky, there are three original ones:

- **Representativeness.** Simply, this heuristic can be described as estimating the likelihood of an event by comparing it to an existing prototype that already exists in our minds. The problem here is that when relying on representativeness, we are likely to make wrong judgments because the fact that something is more representative does not actually make it more likely.
- **Availability.** System 1 really loves the information that is already there. Everything that comes to our minds very fast or easily, because it’s available at hand or it’s accessible in our memory, weighs more in our decision-making than information that is harder to get access to.
- **Anchoring.** This refers to the fact that the first information that you get in a way contaminates the information that comes afterward. This is also why for example the

first impression you get when interviewing a candidate for a job taints or highlights all the things you learn about that person later.

## Prospect theory

Prospect theory is actually the theory that earned Daniel the Nobel Prize in Economic Sciences in 2002. The underlying thought behind the theory is that people are not as rational as we used to think they are.

To elaborate on the principles of the theory, Ben introduced us to the following statements:

*Albert has 5,000,000 USD in his bank.*

*Bernard has 5,000,000 USD in his bank.*

The question goes: are the two equally satisfied with their wealth? Most people would probably say yes; these people are more or less equally happy with their wealth. However, let’s see what happens if you add more information on the statements:

*Albert has 5,000,000 USD in his bank. Last year he had 9,000,000 USD.*

*Bernard has 5,000,000 USD in his bank. Last year he had 2,000,000 USD.*

Now, the answer is obviously different; Bernard is most likely a lot happier than Albert.

This leads us to the few implications of the prospect theory:

- **Value is relative to a reference point.** Basically, this means that our perception of value is dependent on the relative change and not on the resulting (absolute) value.
- **There is a law of diminishing sensitivity.** This law suggests that changes in value have a greater impact near the reference point than away from the reference point.
- **Losses loom larger than gains.** In other words, this means that we are much more sensitive to losses than gains of the same magnitude.

### 3. Some Remedies

How can we tackle these issues and make ourselves better thinkers and decision-makers? Ben shared with us a few of the remedies that Daniel provided in his book. Here are three practical tips that you can use in your daily life:

**1. What was the question again?** When our brain has to answer a complex question, we often subconsciously replace it with an easier question. To avoid this from happening, when you are confronted with a complex question, take a step back and remind yourself about the problem or question actually at hand. If you need to solve a complex problem, start the meetings by asking: what exactly is the question we want to answer here today? And keep the real question in mind or at hand repeatedly.

**2. A minute of silence and writing.** More diversity in perspectives leads to better decisions, but many discussions are dominated by the first thing said by one participant. So, before discussing an important topic, ask each participant to write down their key points during a minute of silence. Then ask each participant to briefly state their points, and only then start the discussion.

When confronted with a problem, or when you need to make a decision, first: set criteria. Which requirements must a good solution meet? Then, gather information on the solution options and evaluate how each solution scores on these individual criteria. Only after carefully going through these two steps, you can make a well-informed decision.

**2** NOISE & THE ART OF CRITICAL THINKING

Daniel Kahneman  
Margriet Sitskoorn

Ben Tiggelaar  
Remy Gieling

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Are you a good decisionmaker?

Systems at work:  
- Heuristic: shortcut in thinking, jumping to conclusions.  
- Bias: systemic error in your thinking. Distorted view of reality.

By making decisions, our brain has a system 1 (more automatic) and a system 2 (more rational).

Helps with routines, always on!

**1** Brainprocesses  
- unconscious, automatic  
- fast  
- effortless  
- intuitive  
- pragmatic  
- rigid

**2**  
- conscious, controlled  
- slow  
- tiresome  
- reflective  
- logical  
- flexible

Lazy, only 'on' when system 1 can't figure it out.

With this optical illusion, system 1 automatically 'sees' the bottom arrow is longer. But, system 2 'knows' they are equally long.

All lines are equally long.

System 1 helps you through the day...

repeated experience → feels familiar  
clear display → feels true  
primed idea → feels good  
good mood → feels effortless

Cognitive ease

Tips to make better decisions:  
- What was the question again?  
- Write down the keypoints before starting the discussion.  
- Jobinterview-approach: set criteria, gather info, then decide.

We think we are rational beings, but in fact we are not!

MONIQUE @MONIARO

## Part 3

# Noise: a Flaw in Human Judgment

## Daniel Kahneman's Interview

After the introductions to brain processes and biases, we got the chance to hear thoughts from the icon himself: Daniel Kahneman. He engaged in a conversation with Ben Tiggelaar to discuss noise and what we can do about it.

### What Is Noise?

If you are familiar with Daniel's work, you probably know that in the bestselling book, *Thinking Fast and Slow*, he talks about biases—the predictable errors in judgment and decision-making. *Noise*, on the other hand, refers to the unpredictable variation in judgment and decision-making.

"The word noise, as we use it, is really borrowed from the theory of measurement. When you're measuring, say the length of a line with a very fine ruler, and you measure it multiple times, you're not going to get the same result. Every measurement is going to be slightly different from the others. And if you know the exact length of the line, then you can look at any observation and see it has an error. Sometimes positive, sometimes negative, depending on randomness. The average of these errors is called a bias, and the variability

of these errors is noise. Both bias and noise contribute to errors. But even if on average the measurements are precise it clearly makes a difference that some measurements are way higher than the truth and others are lower than the truth. That variability is undesirable, and that variability is noise."

To demonstrate noise in the context of work, he told us about a real-life case on noise that was the most shocking to him: the judicial system in the United States. Daniel explained that through their studies they found that different judges give very different sentences for the same crime. The beliefs, attitudes, and even the mood of the judges affect the decisions they make. "The defendant that is going to court is really facing a lottery. The lottery being who is the judge, what are their beliefs and attitudes, and what is their mood on that particular day. The result of the lottery can be years in prison—plus or minus. This is completely unfair and unacceptable."

### Why Should We Care about Noise?

Daniel highlighted that what he and his colleagues found through research, is that "the amount of noise and how it affects



organizations is way larger than we actually think”.

In some jobs, there’s automatically less noise as there are strict rules and guidelines that limit subjective judgment. However, there are many jobs where individual judgments are required and often guided by informal experience and general principles. These are the kind of jobs where the amount of noise is high.

At the masterclass, Daniel talked about the example of an insurance company—the organization where he actually began his study on noise. There, he carried out an audit (now called noise audit) to find out the amount of variability in the judgment of underwriters.

First, they had executives prepare cases for underwriters; realistic and similar cases that those underwriters work on every day. Then, they asked about 50 underwriters to set a dollar premium for a particular case. Finally, they looked at the difference between two random underwriters to see what is the difference between their answers in percentages. The executives in the company were expecting around 10% difference.

Can you guess what was the true difference?

“It turned out that the answer was 50%—five times larger than those people expected. This is what motivated the book noise. Nobody in the company was aware that they had a noise problem, but in fact, the noise problem was acute.”

You probably see now why you should care. Because noise means problems: unfair treatment, loss of time, and loss of money, to mention a few.

## How Can We Get Rid of Noise?

Over the class, Daniel gave us a few practical pieces of advice on how to tackle the noise problem in your organization.

First of all, the good news is that according to Daniel, “you can eliminate noise completely”. Whereas biases are impossible to get rid of, noise is actually something that you can affect. Also, it’s important to know that noise is much easier to measure than bias.

So how to get rid of noise? Here are 3 things that Daniel mentioned:

### 1. Conduct a Noise Audit

This is where you should begin: acknowledge that you have noise and conduct a noise audit. “If you have multiple people in the same role, conducting a noise audit is the first step. If you are willing to be exposed to the amount of noise that you observe—which will almost certainly be more than you’re expecting—then you may want to do something about it.”

### 2. Break Down Problems

Daniel suggested that in order to solve problems, we need to break them down. You need to have attributes through which you look at each option to solve the problem independently. “We have a slogan: options in decision-making are like candidates. When you have a complex decision and you have multiple options, you can treat them like candidates. You can look at their attributes and try to evaluate the attributes independently of each other. Then, you can try to delay intuition and delay the final choice.”

### 3. Take a Lot of Judgement

“Noise is eliminated by taking a lot of judgment, and it’s reduced substantially by even taking two judgments. That is one thing that you can do: two heads are better than one. And we know how they are better: they don’t reduce bias but they do reduce noise.” So, simply, when you have a complex decision to make, take more people in to weigh in on the options.



## Part 4

# Behavioral Economics for Leaders

## Daniel Kahneman's Interview

In the last session of the course, Ben engaged in another conversation with Daniel to discuss the topic of behavioral economics. The rich discussion offered insights on a number of different aspects, and here we briefly list the most important ones.

### Thoughts on AI and decision making

Artificial intelligence is one of those topics that brings up a variety of feelings among us. "When there is a competition between humans and artificial intelligence, all of us root for the humans. That's completely natural. At the same time, artificial intelligence has many advantages over the human mind."

Daniel explained that in many cases, AI has access to a lot of data and it is able to also use that data in a more precise way than people can. Another advantage is that it's noise-free which makes the decisions of AI often more accurate than those of us humans. "That turns out to be one of the big advantages of rules and algorithms over people."

According to Daniel, there's no question about it: the use of AI is going to expand. However,

he also admitted that "it's a mixed blessing". He continued: "AI is not like climate change which is pretty certainly a disaster. This is possibly a disaster, and possibly a very good thing for mankind". He also reminded us that AI is currently developing at such a fast speed that for us it's even hard to imagine what are the possibilities of it in the future. "In five years, it will be able to do things that today seem impossible."

### Thoughts on Encouraging Risk-Taking

A question from the audience raised the problem that we humans often strive to be perfect and avoid mistakes, which is why we are not so willing to take risks. Does Daniel have any advice on solving this issue in an organizational context?

According to Daniel, there are some things leaders and organizations can do in order to encourage their people to take risks. "When the responsibility for failure is taken by a group rather than by an individual, people tend to feel much more comfortable and much more at ease."

Daniel's advice was to simply make sure that the responsibility for a certain decision doesn't rely on one person's shoulders—the group needs to take the responsibility for that decision. "This tends to facilitate risk-taking."

### **Thoughts on Making Judgments Based on the Past**

In his book *Thinking Fast and Slow*, Daniel is pretty critical of business books—especially those that study one or few companies and try to take suggestions to other leaders and companies based on the experience of those few examples.

"I think you should treat them as entertainment. The idea that these books would give a recipe for success is nonsensical. Most of the large, great stories of success were completely unpredictable, they involve a large amount of luck, and certainly can not be copied."

Why is that? The issue, according to Daniel, is that those books and their suggestions rely on the past.

"The problem is that the past is always too easy to explain. It gives you the illusion that the future is predictable, and that is truly an illusion. The past that seems so clear and so obvious really does not mean that it was predictable in advance. So, if you think that you can predict the future on the basis of those anecdotes, that is certainly wrong. There is really no substitute for learning how to predict, but predicting and testing how good your predictions are."

### **Thoughts on Flawed Judgments**

Ben also asked Daniel to share some of his thoughts on the biggest concerns he now has on misjudgments and fallacies in terms of current affairs.

He started by stating that, unfortunately, there are many things that are worthy of

concern. However, he mentioned that one of the biggest is actually human nature; the fact that it is possible for us to take action now which will have consequences in the distant future. "That's the problem of climate change. When there is a risk that is enormous, but it is distant, disputed, contested, and uncertain, it's very difficult to mobilize. Even though it would probably be justified to mobilize, it's extremely difficult."

Another concern he highlighted was the conflict between the rationality of the individual and the needs of the group. "For example, the 2008 recession was not produced by massive irrationality. It was produced in large part because bankers were acting quite rationally in their personal interest and in their short-term interest. So, the organization of the society, in terms of its incentives, is a concern."

### **Thoughts on Slowing Down**

An audience question was raised on whether there is a way to train ourselves to slow down the system 1.

According to Daniel, we can train ourselves to recognize situations that require us to slow down. "That is really the only advice that I have: try to slow down when you should slow down—which is not all the time. When the decision is important and it's likely that an error will be made, then slow down. It's trivial advice, but it's the best advice I know."

Ben added that based on what was discussed during the masterclass, we should also be specific. "It's always wise to be a bit more specific, and point out which situations and which kind of behavior you want to improve."

### **Thoughts on What's Next**

To wrap things up, Daniel was asked whether he already has some ideas on what he would like to study next. Despite getting closer to the age of 90, he still has an issue he would like to dig deeper into.

"I would actually like to understand more about how noise comes about and how individual differences come about. All my career I have ignored individual differences and now with noise, it's becoming quite relevant. Perhaps I will manage to learn a bit more on that."


Perhaps we will learn more from him as well.

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## NOISE & THE ART OF CRITICAL THINKING

Daniel Kahneman  
Margriet Sitskoom


Ben Tiggelaar  
Remy Gieling



Bias: predictable error in thinking.  
Noise: unpredictable variation among a people in similar group (doctors, judges).





System 1 (automatic) is used by a lot that we do. Occasionally we have to work harder and have to use system 2 (rational)



Human judgement can't be trusted!

Different judges give different sentence for the same case! Almost 4 years different in sentence > lottery?!






Noise-problems > prohibit to falling into noise trap!


AI has many advantages:

- it can process a lot of data
- use is more precise
- noise-free





Noise:

- is everywhere
- + more manageable and preventable



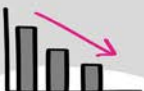
- Conduct an Noise-audit: realize and acknowledge noise to solve.
- Two heads better than one: decisionmaking by lot of people to delete noise.
- Responsibility of failing is for the group, not the individual.






Train to recognize situations where system 1 wants to rule and slow down!

Complex decisions? > more noise!




If you can reduce noise by 50%, you have the same accuracy then when you reduce bias.

- Break down problems: run structured interviews and judge on each element.
- Delay intuition by procedures/training. It reduces noise, and sometimes bias as well.



To change...

Do not use statistics (rational: system 2), but use and share story's (emotional: system 2).



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**D**aniel Kahneman, (born March 5, 1934, Tel Aviv, Israel), Israeli-born psychologist, corecipient of the Nobel Prize for Economics in 2002 for his integration of psychological research into economic science. His pioneering work examined human judgment and decision making under uncertainty. Kahneman shared the award with American economist Vernon L. Smith.

Kahneman is also the author of the legendary best-seller *Thinking Fast and Slow*.

