

# Knowledge and Reality, Lecture 04

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## Review

## Reductionism

## Rationality Wars

## Cultural Evolution

## Back to Testimony, and Fraud

# Is Testimony a Basic Knowledge Source

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1. People deceive us, either intentionally or unintentionally.
2. Sources differ.
3. Testimony isn't independent of other sources.

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None of these are conclusive, since they all overgenerate.

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# Is Testimony a Basic Knowledge Source

None of these are conclusive, since they all overgenerate.

1. Looks can be deceiving.
2. Things look different from different angles.
3. Inference isn't independent.



# Why Might Testimony be Basic

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2. It would be impossible to not act like it is (perhaps especially in childhood).

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1. In practice we act like it is.
2. It would be impossible to not act like it is (perhaps especially in childhood).
3. Language must be mostly correct in order to work.

# Plan for Today

1. Happy to answer any questions about the reading.

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2. But my priority is explaining background, because this intersects a lot of debates inside and outside philosophy.

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# Two Approaches to Testimony

## 1. Reductionism

# Two Approaches to Testimony

1. Reductionism
2. Anti-Reductionism



# Anti-Reductionism

This is basically the testimony is a pramana position.

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Two aspects, that don't need to go together.

- Evaluative: People can do well by taking speakers at their word.

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Two aspects, that don't need to go together.

- Evaluative: People can do well by taking speakers at their word.
- Psychological: People in fact take speakers at their word.

# Motivations for Anti-Reductionism

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- Mostly carried over (well, belatedly rediscovered) from Indian traditions.
- But one new motivation, a focus on infants and toddlers.
- They couldn't learn if reductionism were true.

# Reductionism

Testimony is not a pramana.

- It reduces fundamentally to perception + inference.

# Standard form of testimonial inference

1. Speaker said that p.



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3. This speaker has no reason to deceive.
4. So, probably, p.

## Two Distinct Claims

- Good hearers go through something like this inference.

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- Good hearers go through something like this inference.
- Real hearers (typically) go through something like this inference.

# Sperber et al

Both those claims are true.

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# A Very Brief History

- Late C20 psychology included included big trend of arguing that people are much less rational than they seem.



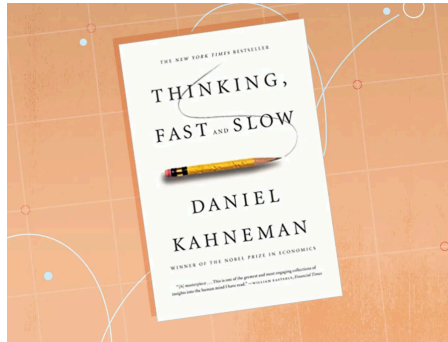
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- Late C20 psychology included included big trend of arguing that people are much less rational than they seem.
- Early C21 has featured some pushback to this.
- This paper is (a kind of important) part of the pushback.

# Heuristics and Biases



Thinking Fast and Slow, by Daniel Kahneman

# Heuristics and Biases

- Work Kahneman did with Amos Tversky.

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- Work Kahneman did with Amos Tversky.
- What looks like intelligent behavior is mostly a set of heuristics, i.e., short-cuts.

## System 1 and System 2

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- Kahneman's own view is that there is a core of something like traditional rationality.
- This is system 2, the slow of "Thinking Fast and Slow".
- But most of what we do, and everything we do fast, is basically automatic.



## More Radical Views

- Drop, or minimise, the existence of system 2.

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- Drop, or minimise, the existence of system 2.
- It's all just automatic heuristics that have evolved to be useful.

# Dan Gilbert



Daniel Gilbert

# A Famous Experiment

Show people a bunch of sentences for short amount of time each.

- Tell them the ones in black will be true, and the ones in red false.

# A Famous Experiment

Show people a bunch of sentences for short amount of time each.

- Tell them the ones in black will be true, and the ones in red false.
- Make the content of each (black and red) plausible, but not something they know about.

## Later that day...

Show them the sentences again, and ask whether they are true or false.

- They tend to say yes to both the ones in black and the ones in red.

# What is Going On?

Why do **you** think that we might see these results.

# What is Going On?

Gilbert's hypothesis (which he attributes to Spinoza):

- Understanding language involves first taking something to be true, then (perhaps) questioning whether it is.



# What is Going On?

Gilbert's hypothesis (which he attributes to Spinoza):

- Understanding language involves first taking something to be true, then (perhaps) questioning whether it is.
- This is a really strong form of (psychological) anti-reductionism.

# Pushback

- We'll get to this in more detail, but the very short version is that the 'automatic' behavior might be sensible allocation of scarce cognitive resources. More on this to follow.

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# Two Theories of Cultural Evolution

## 1. Copying

# Two Theories of Cultural Evolution

1. Copying
2. Rational adoption

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- These aren't exhaustive, plenty of other stories too.
- The Australian philosopher of biology Kim Sterelny calls the schools that center these ideas the "California school" and the "Paris School".
- This paper is an important text in the Paris school approach.



# Paris School

- The key moves in cultural evolution are rational.

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- But they aren't always conscious.

# Why Replication

- We see someone doing X and succeeding in a certain way.

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# Why Replication

- We see someone doing X and succeeding in a certain way.
- We want to succeed in that same way.
- We infer, fallibly, sub-consciously, that they are succeeding because of X.
- So we do X as well.

# Distinctive Features of Paris

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# Distinctive Features of Paris

- We won't always make that inference.
- We will tinker if we have reason to believe that we can improve.
- We will reject if we have reason to believe that X won't work for us.

# To be Sure

- The believers in replication know that people are not robots, and think for themselves.

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# To be Sure

- The believers in replication know that people are not robots, and think for themselves.
- The believers in rational adoption know that we make mistakes.
- But there is a difference in emphasis, that is interesting.

# Application to Misinformation

- The replication approach makes misinformation seem like a big political problem.

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- The replication approach makes misinformation seem like a big political problem.
- And the evidence that people are bad at correcting misinformation might push you towards the replication approach.

## Two Parisian Responses

1. People don't actually believe that much misinformation, but pretend to do so as a social/political signal. E.g., almost no one really believed 'Pizzagate'.

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1. People don't actually believe that much misinformation, but pretend to do so as a social/political signal. E.g., almost no one really believed 'Pizzagate'.
2. Misinformation is a demand side problem; people (rationally!) want rationalisations for things they want to be true.



# Citations

The following bits of text link to the relevant papers.

- Sterelny on the two schools

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- Mercier and colleagues on misinformation
- Williams on the marketplace of rationalisations

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# Credit Card Fraud

Credit card fraud is a multi-billion dollar problem, and the costs are largely borne by card issuers.

- If you were a credit card issuer, what would you do about this?

# Short Term Effects

- Each genuine transaction makes you some money.

# Short Term Effects

- Each genuine transaction makes you some money.
- Each fraudulent transaction costs you much more money.

# Long Term Effects

- If fraud detection is too onerous, people will stop using your card.



# Long Term Effects

- If fraud detection is too onerous, people will stop using your card.
- If there is a kind of fraud you never catch, people will keep carrying out that fraud.

# Four Kinds of Checks

- User based

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- Purchase based

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- User based
- Purchase based
- Interaction of the two

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- User based
- Purchase based
- Interaction of the two
- Random

# Optimal Amount of Fraud

Should you be aiming for zero fraud?

- No!

# Basic Idea of Fraud Detection System

- Really rough and ready check on each transaction.

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# Basic Idea of Fraud Detection System

- Really rough and ready check on each transaction.
- More careful check on things that get red flagged.
- But for trusted customers, even a few red flags can be ignored.

# Vigilance

Humans should be, and to some extent are, just like that.

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Humans should be, and to some extent are, just like that.

- Everything we hear gets a really rough check over.
- Red flagged assertions get checked more closely.

# Vigilance

My favorite example: walking down a busy street or corridor.

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My favorite example: walking down a busy street or corridor.

- We somehow track everyone, while attending to almost no one.
- Really big question: How on earth do we do this, and can we invent a machine that does something similar?

# Vigilant Hearers

Sperber et al think that we are also vigilant in hearing.

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# Vigilant Hearers

Sperber et al think that we are also vigilant in hearing.

- Everything gets a rough check, almost always subconsciously.
- Some things get more thorough check.

# Red Flags

- New informants



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- Surprising that info is either true or known

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- New informants
- Surprising that info is either true or known
- Reason to deceive
- High stakes

# Big Question

Is this plausible as a model of how human hearers operate?

## For Next Time

- The debate between “internalism” and “externalism” in epistemology.