

like living in a communism states I think it's trash.

factfulness book shows us exactly how this happens with us

## Barnum Effect

- You can see personal specifics in vague statements, because your brain fills in the gaps
  - Exploited by psychics and astrologers for centuries to convince people they know more about you and/or the future than they actually do
- An example from a psychologist named Forer: the following 13 claims were given to psychology students, who were each told that these were the results of a detailed personality test that they'd taken:
1. You have a great need for other people to like and admire you.
  2. You have a tendency to be critical of yourself.
  3. You have a great deal of unused capacity which you have not turned to your advantage.
  4. While you have some personality weaknesses, you are generally able to compensate for them.
  5. Your sexual adjustment has presented problems for you.
  6. Disciplined and self-controlled outside, you tend to be worrisome and insecure inside.
  7. At times you have serious doubts as to whether you have made the right decision or done the right thing.
  8. You prefer a certain amount of change and variety and become dissatisfied when hemmed in by restrictions and limitations.
  9. You pride yourself as an independent thinker and do not accept others' statements without satisfactory proof.
  10. You have found it unwise to be too frank in revealing yourself to others.
  11. At times you are extroverted, affable, sociable, while at other times you are introverted, wary, reserved.
  12. Some of your aspirations tend to be pretty unrealistic.
  13. Security is one of your major goals in life.

On average, the subjects rated the accuracy of these statements as 4.3 on a scale of 0 to 5.

However, these were all statements pulled randomly from a newspaper astrology section. They had nothing to do with the personality test.

Because the statements were vague, the subjects filled in the gaps to make them feel specific to them, even though they could be interpreted to apply to almost anyone.

— astrologer effect

— this is how astrologer fools us.

— some of the sales man uses this to trick us to sell their products.

— Babas are using this like Sadhguru.

## 5.) Self-interest and incentive bias



"Would you persuade, speak of interest not of reason."  
- Benjamin Franklin

To persuade, focus on the other parties interests

- Be aware
- Who benefits?
- How does this affect their motivations?

Is this same effect biasing our own thinking?

— rejecting constructive criticism

— having favorites  
— confusing feedback to insults  
— orthodox mindsets

## Self-Serving Bias

- We're biased to accept positive information about ourselves, but to reject negative information about ourselves.
- Example: versions of the Forer barnum effect experiment have shown that subjects are *much* more likely to think that the "results" of the personality test are true when the statements are *positive*.
- When the statements say negative things about them, subjects think it's all nonsense.

## 7.) Self-deception and pain-avoiding denial



Never lie to yourself!  
It's only natural to avoid pain

"The first principle is that you must not fool yourself - and you are the easiest person to fool."



## Confirmation Bias



- You favor information that confirms your existing beliefs
- This "favoring" comes in two forms:
  - You're more likely to seek out information that confirms your existing beliefs, and more likely to avoid information that contradicts your existing beliefs
  - You're more likely to trust information that confirms your existing beliefs, and likely to be more skeptical of information that contradicts your existing beliefs
- This is why most Fox News viewers are conservative, and most MSNBC viewers are liberal
- We are more interested in hearing information that we already agree with, and we're more likely to reject information that challenges our beliefs

**Catherine na Nollag**  
@caferblue

i still think my favourite thing that's ever happened to me on the internet is the time a guy said "people change their minds when you show them facts" and I said "actually studies show that's not true" and linked TWO sources and he said "yeah well I still think it works"

— I'm really good at this.

— For me what I know is "the truth" instead "my truth"

— this also leads to jumping into conclusion, know-it-all syndrome

— it takes lot of energy & calories as it's psychologically pathetic.

— awnty knowing most of her atrocities comes from her decision & lack of money still belief that money is the root cause of all evil.

## Backfire Effect



- If you get evidence that challenges one of our "core beliefs", studies have shown that we will often *increase* the strength of that belief
- We often take certain beliefs we hold to be essential to our identity — we think being Christian, or Liberal, or whatever is a fundamental part of who we are.
- So when those beliefs are challenged, we take it as a challenge to ourselves, not just a challenge to a belief we happen to hold
- This leads us to doubling-down in the face of strong evidence that we're wrong, which is irrational and guarantees that we'll stay wrong

Harvard has a implicit attitude test take that & evaluate yourself how good you are

## In-group Bias



- We unfairly favor, trust, and believe people who are members of our group
- Republicans are more likely to listen to other Republicans, atheists are less likely to listen to religious people, men are more likely to listen to other men
- We think of ourselves as fair and unbiased, but we automatically favor people based on how similar they seem to us and whether or not they're part of the same groups as us
- We don't even realize that we're doing this
- This can lead to, among other things:
  - Assuming that people in *your* political group are acting in good faith, while assuming that people in *other* political groups are partisan hacks acting in bad faith for purely political motives
  - Being more likely to hire people who look like you or have a similar background to you, even if they aren't as qualified for the job as other people

4.) Bias from mere association

**Takeaway:** Learn to see past our positive or negative associations & instead judge based on intrinsic merits.

is very likely this is why our best friend belong to our ideology, philosophy, psychology, geography, history, etc.

How this is peer pressure works. most of the people especially in a collective society takes par tic decision do thi

## Groupthink



- We have a bias to conform to the group, even when the group is wrong
- We have a desire for group harmony and cohesiveness, and agreeing with people feels good
- This can lead to irrational decision-making, and can prevent independent critical thinking and prevent alternative options from being considered

1.0 Psycho-logical filter : The logical purpose of toothpaste is to maintain dental hygiene. The psychological purpose of it to maintain fresh breath, the reason why the vast majority of the toothpaste sold in the world is mintflavored.

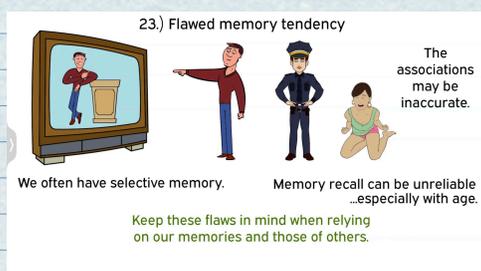
likewise, the logical purpose of restaurants is to an experience or if they're fancy social status.

A man always has 2 reasons for doing anything  
① logical reason & ② the real reason

2.0 Survivorship Bias : Successful people are our role models to achieve the same result, we try to copy their actions. But by focusing on them we forget the losers who made the same decisions.

A stupid decision that works out well becomes a brilliant decision in hindsight

3.0 Emergence : when many simple objects interact with each other they can form a system that has quality which the objects themselves don't. The interactions between the units matter more than the unit themselves.



Nicholas A. Christakis wrote: "A disconnected collection of 100 individuals is no more useful than going at something alone. And 100 people doing the same thing alone is nothing like 100 people going for a thing together." The main idea behind complex systems is that the ensemble behaves in ways not predicted by the components.

1 lh

e to <

' & destroy their lives as well as their society for that.

- Examples: Bay of Pigs Invasion
- The Bay of Pigs invasion was planned in the 50s by the Eisenhower administration, but taken up and executed by the Kennedy administration.
- No one wanted to go against the consensus of two whole administrations, so no one questioned the outdated CIA information or considered alternative strategies
- As a result, the Bay of Pigs invasion was a huge failure that led to the Cuban Missile Crisis and almost caused WWII



wint  
@dril

i hate all of "Groupthink", except for the groupthought that group thinks that groupthink is bull shit

9/3/17, 2:58 PM

2,247 Retweets 9,501 Likes

17.) Liking and desire for social acceptance tendency

We desire to be liked. We like those who like us. We even tend to like those with whom we have a common enemy.

"Be hearty in your approbation and lavish in your praise."

-How To Win Friends And Influence People

23.) Flawed memory tendency

The associations may be inaccurate.

We often have selective memory.

Memory recall can be unreliable...especially with age.

## Spotlight Effect

- We overestimate how much other people notice how we look and act
- Many of us put a lot of effort into our appearance, and many of us lie awake at night thinking about every embarrassing or awkward thing we've ever done
- In reality, most people don't think about you for even a single second after you're no longer directly in front of them.
- "The good news and bad news are the same: No one cares" — Dave Horowitz

8.) Inconsistency-avoidance tendency

Confirmation Bias / Belief bias

We want to remain consistent

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

9.) Deprival bias

Pleasure from \$25 gain < Displeasure from \$25 loss

Endowment effect

Scarcity principle

Sunk Cost fallacy

Takeaways:  
We need to stay rational.

10.) Do-nothing syndrome

We resist change and minimize effort

We prefer the default option

Takeaways:  
People will often choose the default option  
Recognize our tendency not to act  
Not acting is itself a choice

11.) Tendency of impatience

We tend to choose immediate rewards

The future is seen as less certain

It is not always best to choose the path of least resistance.

16.) Reciprocation tendency

Reactance: you would rather do the opposite of what someone is trying to force you to do.

Recognize our tendency to reciprocate and be aware of the effects.

People do not like to feel indebted, they want the opportunity to repay.

12.) Envy or jealousy tendency

"It is not greed that drives the world, but envy." -Warren Buffett

"All mental pleasure consists in being able to compare oneself with others to one's own advantage." -Hobbes

Be aware that we may especially tend to be envious of those similar to ourselves

Others will sometimes be envious of us, especially when similar

13.) Compare, contrast, & anchoring misreaction tendency

each step is a small contrast to the next

comparisons matter

anchoring ties your mind to an initial value

Be aware when making comparisons

22.) Believe first, doubt later tendency

(+) There can be a beneficial placebo effect from believing.

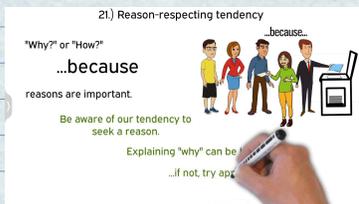
(-) Beware distraction or pressure to believe.

Be aware of our tendency to believe first and doubt later...especially when we are rushed or distracted.

4. Dunning-Kruger effect : question the level of our intelligence can be tricky.

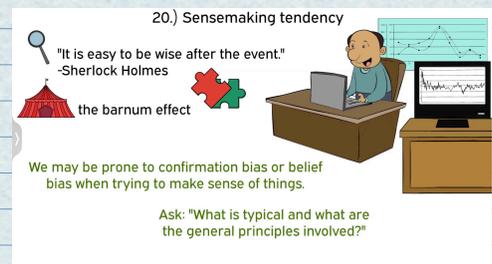
Fools are cursed twice by mother nature; to understand the flows of our cognition (thinking) we need proficiency in meta-cognition (thinking about thinking) which is a skill, by definition fools lack. Mother nature didn't only make sure that we're stupid but also that we are too stupid to realize how stupid we are.

Fools possess an unlimited ability to ignore their ignorance; intellectuals are thus not those who know a lot, but those who know the limits of what they happen not to know.



Concept Creep :

ANY SOCIAL ISSUES--think of abuse, bullying, trauma, or mental disorder--are becoming rarer in certain societies. But people react by expanding their definition, creating the illusion that such issues are getting worse. Consider the following two examples. A high school senior complains to her Facebook friends about a teacher and is suspended for "cyberbullying." Students at Wellesley College start a petition calling for the removal of a statue of a man in his underwear, claiming that the art piece caused them "emotional trauma." This phenomenon encourages a sense of virtuous but impotent victimhood.

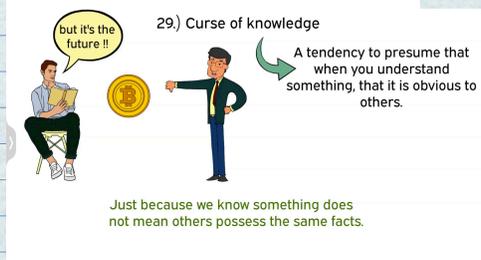
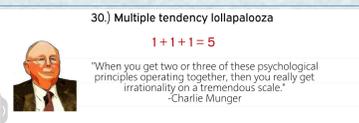


Charisma Razor :

LOOK, IMAGINE YOU are a coach at The BA<sub>g</sub> UV

Voice. You have to choose between two singers. Both performed really well. The first one is highly refined in appearance. He wears an expensive suit. He has blue eyes, curly hair, and a charming smile.

The second one is bald, overweight, and looks like a truck driver. Now if I had to pick, I would take the "truck driver" any minute. Why? Simply the one who doesn't look like a singer (doesn't look the part) had much more to overcome in terms of perception. If you are lucky to find someone who succeeded despite not looking the part--the chances are--he may be truly talented.

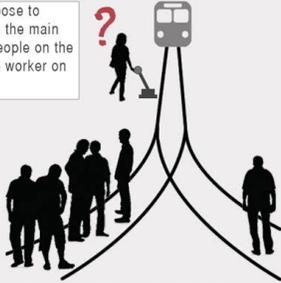


## Trolley Problem

trolley problem is a thought experiment.

### The trolley problem

The person can choose to divert the tram from the main track, saving five people on the track, but killing the worker on the other track.



now the question is should you hold the lever?

now you have 2 questions -

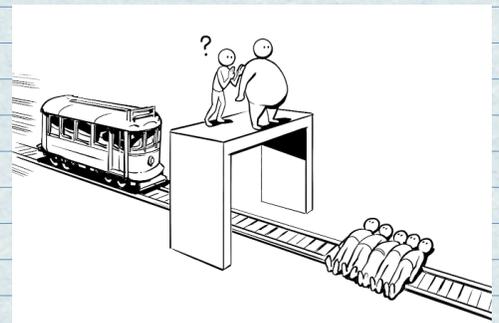
① what you have to do? (moral)

② what can you do?

now you can do 3 things. either of the 2 options one after another then nothing.

now it has a lots of answers. vary from person to person due to different perspective of any individuals.

as the lecturer mentioned that some people believes you must save 5 person rather than one but if we are talking about morality here then there should be good & evil concept.



### Hospital

5 Sick bastards



# Skepticism

questioning your  
senses

## What is external world skepticism?



- Skepticism about X is the view that we don't or can't have any knowledge about X.
- A skeptic about morality says we can't have any moral knowledge. We all have our beliefs about what's morally right and wrong, but none of us can ever know for sure. None of our moral beliefs qualify as knowledge.
- **External world skepticism** is skepticism about the external world. So the external world skeptic says that we don't or can't have any knowledge about the external world.
- External world skeptics think that you don't know that tables and chairs exist, or that your hands exist, or that your friends and families exist.

## Dreaming



- When you're dreaming, you don't know that you're dreaming. You think you're awake and that everything in the dream is really happening, but it's not. It's all a hallucination.
- How do you know that you aren't dreaming right now? You believe that you're awake, but you also believe that when you're dreaming. If you're dreaming now, then nothing that you think you're experiencing is really happening.
- Can you ever be **certain** that you aren't currently dreaming?
- It looks like the answer is no.

you don't know you're  
dreaming.

## Evil Demon



- Descartes thinks we can take the dream worry even further:
- Suppose that instead of dreaming, you're being actively deceived by a powerful evil demon.
- The demon's whole goal in life is to trick you into having false beliefs.
- So the demon causes you to hallucinate, the demon throws away your memories and gives you a bunch of false memories, the demon clouds your judgment, etc.

## Evil Demon



- Essentially, the demon constantly deceives your sense organs, so that you think you're having all of these experiences and you think that you've had all these past experiences
- But really, none of that is real. Nothing that you think has happened or is happening really did happen or really is happening: it's all a lie.
- Descartes thinks that such a demon is at least logically possible. We can't rule it out with logic alone.
- And the demon can't be ruled out by our sense perceptions (i.e. it can't be ruled out by empirical evidence) because any perceptions you might have could just as easily have been caused by the demon

## Evil Demon



- This means that you don't know that there *isn't* such a demon deceiving you.
- To know that there isn't a demon deceiving you, you'd have to have some evidence. But you have no evidence. Therefore, you don't know.
- But if you can't be certain that there's no demon, then you can't be certain that any of your perceptions are true.
- If the demon were real, then all of your perceptions would be false. So if you don't know that there's no demon, then you don't know that any of your perceptions are correct
- All of your beliefs about the external world are based on sensory perceptions. Sight, sound, touch, etc. are the only ways we have of finding out about the external world

or  
this is kind of a fantasy to me like mythology.

## Evil Demon



- So if you can't trust your sensory perceptions, then all of your beliefs about the external world – that your family is real, that you're in New York, that you have hands, etc. – are uncertain.
- You don't even know that you have hands, or that you're a human, because that could just be a lie fed to you by an evil demon.
- Descartes's evil demon argument is meant to show that we can't know anything about the external world. He isn't trying to argue that there really is an evil demon. But he thinks that you can't completely rule out the possibility. And if you can't rule out the possibility, then you can't really know anything about the external world.

## Brain in a Vat



- A slightly more modern version of the evil demon worry is this: suppose that there is a brain in a vat.
- This brain is plugged into a computer simulation (like in *The Matrix*): it is fed electrical signals that perfectly mimic the electrical signals sent by the sense organs of a human being walking around the world, having normal experiences.
- Therefore, this brain thinks that it's a person with a human body walking around, and eating lunch, sitting in a philosophy class, doing all the things that we normally do

→ matrix movie.

## Brain in a Vat



- Now, imagine that this brain is fed the exact same electrical signals that your brain is sent by your sense organs throughout your life.
- This brain in a vat has all of the perceptions that you do, all of the memories that you do, all of the beliefs that you do.
- The brain believes that it is taking PHI 1500 Major Issues, looking at power point slides, and learning about brains in vats.
- This brain in a vat has all of the same evidence for an external world that you have. From the brain's perspective, it's had the exact same experiences that you've had. There's no difference whatsoever between what it's like to be you, and what it's like to be the brain in the vat.

The ultimate thing is, if you can't prove that we aren't dreaming (or that we aren't being deceived by an evil demon or that we aren't a brain in a vat then we can't prove the external world exist.

## Brain in a Vat



- Now, here's the question: how do you know that you're not the brain in the vat?
- It seems perfectly possible for there to be brains in vats; the technology of sending electrical signals to brains isn't that far-fetched.
- So how do you know that you're not the brain in the vat?
- The brain in the vat has the exact same thoughts, beliefs, memories, perceptions, etc. that you do. So what evidence could you possibly have that you aren't a brain in a vat?
- It looks like you couldn't have any evidence, even in principle.
- Therefore, you don't know that you're not a brain in a vat.

We can't prove any of our most beliefs cause we don't have any evidence for them (e.g. the fact that we can see our own hands) isn't built on a big hallucination.

## Brain in a Vat



- But here's the thing: once it's possible that you're a brain in a vat being fed electrical signals, there's no need for those electrical signals to match up with the world outside the vat in any way whatsoever.
- If you're a brain in a vat, you have no information about the external world. None at all.
- All you have are the signals you were sent. But the signals might not be representative of what the world is really like.

if someone is skeptical about external world, it looks like there's nothing you can do to convince them they're wrong.

## Brain in a Vat



- Here's the core argument, laid out with premises (it's the same as the dreaming argument):
1. You don't know that you're not a brain in a vat.
  2. If you don't know that you're not a brain in a vat, then you don't know anything about the external world.
  3. Therefore, you don't know anything about the external world.

## Moore's Proof



### Moore's proof that there are external objects:

1. Here is a hand
2. Here is another
3. Therefore, there are at least two hands
4. Therefore, there are at least two external objects
5. Therefore, there is an external world

## Is this really a proof?



- A Moorean fact is a claim that you know to be true, and you know with more certainty than you know the premises of any philosophical argument to the contrary
- Ask yourself: which are you more sure of: that you have hands, or that there aren't any errors in the skeptic's argument?
- Moore thinks the right answer is obviously that you're more sure that you have hands.
- Moore thinks that you should be more sure of the claim that you have hands than you are that it's possible that you're a brain in a vat
- Therefore, Moore thinks we should conclude that we do know that we have hands

## Is this really a proof?



- Moore claims that in order for an argument to count as a proof, it must satisfy three conditions. Moore claims that argument satisfies those conditions, and is therefore a proof of the external world. Those conditions are:
  1. **The premise must be different than the conclusion of the proof**
    - For example, "There is an external world. Therefore, there is an external world" is not a proof. The premise of the argument just is the conclusion of the argument. In other words, the argument is circular or begs the question.
    - Moore's first condition is just that a proof cannot be a circular argument. Your premises have to be different than your conclusion; otherwise, it doesn't count as a proof.

## Is this really a proof?



2. **The premise is something that you know to be true, rather than something you simply believe but aren't certain of, or something that happens to be true but you don't know is true**
  - You can't just say "brains in vats are impossible. Therefore, you aren't a brain in a vat." We don't really know that brains in vats are impossible. We can still doubt that.
  - If you doubt the premises, then you can still doubt the conclusion. But if you can still doubt the conclusion, then it's not a proof.

## Is this really a proof?



3. **The conclusion really does follow from the premises**
  - a. Hands really are external objects. So if there really are hands, then there really are external objects
  - b. If there really are external objects, then there really is an external world.
  - c. If that hand is really there, then it exists out there in the world. The hand isn't an idea, or some mental object: it's a physical thing that exists outside of our minds. So if there's a hand there, then there must be an external world in which that hand exists. So, there must be an external world.
  - d. It's just built into the meaning of "hand" that they're external things, and so it follows from "here is a hand" that there must be an external world

## Is this really a proof?



- Well, Moore thinks it is.
- But first, let's ask what a proof is.
- A proof is an argument that **proves** that its conclusion is true.
- What does it mean to prove that something is true?
- Well, to prove that something is true, you have to show that it's definitely true, beyond a doubt.
  - That's what mathematical proofs do: they show, mathematically, that the conclusion must be true: it can't possibly be false.
  - So a proof of the external world needs to demonstrate, beyond a doubt, that there is an external world

## Is this really a proof?



Let's suppose Moore's conditions for a proof are correct. Does that mean Moore's argument counts as a proof?

Moore thinks it does. He thinks his proof satisfies all three conditions:

1. **The premise must be different than the conclusion of the proof**
  - "Here is a hand" is different than "there is an external world".
  - The claim that there is a hand here says something very different than the claim that there is an external world.
  - When you say "here is a hand", you mean something very different than when you say "there is an external world"

## Is this really a proof?



2. **The premise is something that you know to be true, rather than something you simply believe but aren't certain of, or something that happens to be true but you don't know is true**
  - You know that there is a hand here. When you hold up your hand and say "here is a hand", you know that you're right as much as you could possibly know anything.
  - "Here is a hand" is what David Lewis called a "Moorean Fact": "one of those things that we know better than we know the premises of any philosophical argument to the contrary"

## Is the proof convincing?



- A lot of people say "no". The majority, probably
- Moore thinks that one reason people say "no" is that they want him to prove things that he hasn't proved, or even tried to prove. For example, they want him to prove the premises he uses in his proof.
- Moore does not provide a proof of the premise "here is a hand", and he doesn't think it's possible to provide such a proof.

Bullshit vs lie

### What is bullshit?

- Bullshit can also happen when you're forced to talk about something you know nothing about
- Suppose a kid has to give a book report, and they didn't read the book.
- The kid will have to fill up the time by saying things about the book
- Since they didn't read the book, they won't know whether the things they're saying are true or false
- They can't be lying, because they don't even know whether what they're saying is true or false

### What is bullshit?

- Bullshit can also happen when someone is trying to impress people.
  - Bragging is often like flattery
  - Someone might try to impress people by making self-aggrandizing statements, and bragging hyperbolically
  - The bragger might say things purely to try to impress people, with no regard for whether or not those things are true.
  - In these cases, the bragger will become a bullshitter.

### What is bullshit?

"I had my tonsils out and was in the Evelyn Nursing Home feeling sorry for myself. Wittgenstein called. I croaked: "I feel just like a dog that has been run over." He was disgusted: "You don't know what a dog that has been run over feels like.""

— Frankfurt, quoting Fania Pascal

- Wittgenstein takes Pascal's claim to be bullshit, because she's making a claim with no idea as to whether or not it's true

- The bullshitter isn't trying to get you to believe their statement. They're trying to create an impression.
- The bullshitter's goal isn't to get you to believe the things they're saying; their goal is to get you to believe something about them.
- The bullshitter is trying to hide their lack of commitment to the truth
- The bullshitter often just wants you to believe that *they* believe it

### What is bullshit?

- So the kid will have to say things without concern for whether or not they're true
- The kid's only concern is to give the impression that they *did* read the book. They don't need to convince their audience that what they're saying is true.
- The kid just needs the audience to believe that they read the book. They want the audience to believe that *if* the statements are false, it's because the kid misunderstood the book, not because they failed to read the book
- In other words, the kid will have to bullshit

### Why are we talking about bullshit?

- Frankfurt says that bullshit is rampant, and that it's therefore worth analyzing what exactly bullshit is.
- Frankfurt wants to analyze the concept of bullshit.
- What is bullshit? How is it different from other kinds of false statements? Is it a form of lying? Is it a form of deception?
- Frankfurt says his analysis likely isn't definitive, and that there's more work to be done.
- But he's basically regarded as the expert on bullshit, and most work on the subject follows in his footsteps

### What is bullshit?

- The liar knows what's true, and is trying to cover up the truth
- The liar wants you to believe the lie that they're telling you
- The bullshitter doesn't necessarily know whether or not the thing they're saying is true
- The bullshitter doesn't care if whether they're saying is true; that isn't the point
- The bullshitter might not even care whether or not you believe the statement they're saying

### What is bullshit?

- Both the liar and the bullshitter are trying to deceive their audiences; they're both trying to get away with something
- The liar knows what's true, and tries to cover it up by telling you something that isn't true
- The bullshitter either doesn't know or doesn't care what's true. They try to cover up the fact that they don't know or don't care; they make statements with no regard to their truth.
- The essence of bullshit, according to Frankfurt is this "indifference to how things really are"

### What is lying?

- A liar *knows* that they're lying. They know that what they're saying is false.
- The liar knows what the truth is, and is trying to cover up the truth
- This is a distinctive feature of lying: liars know that what they're saying isn't true.
- The other distinctive feature of lying is that liars *want their audience to believe the lie*
- When you tell a lie, you want the other person to believe your lie. That's the whole point of telling the lie.

### What is lying?

- When someone **lies**, they make a statement that they know is false. They make this false statement with the intention of getting you to believe their false statement is true.
- "My dog ate my homework." If you forgot to do your homework, you might offer an excuse that isn't true. You would make a false statement in the hopes that your teacher would believe it, so that you wouldn't be penalized.
- The goal of a lie is to get the other person to believe your lie

### Why are we talking about bullshit?

- Frankfurt takes bullshit to be a form of deception that is distinct from lying
- The bullshitter still tries to deceive their audience, but they aren't necessarily trying to get their audience to believe the statement they're making
- This makes bullshit different from normal lying
- It will help to get clear on what lying is, before we try to understand what bullshit is.

### What is bullshit?

- This, Frankfurt thinks, is at least partially to blame for all of the rampant bullshit:

"Bullshit is unavoidable whenever circumstances require someone to talk without knowing what he is talking about. Thus the production of bullshit is stimulated whenever a person's obligations or opportunities to speak about some topic are more excessive than his knowledge of the facts that are relevant to that topic."

liar is lying intentionally but a bullshitter is just doing it unintentionally.

Thought experiment

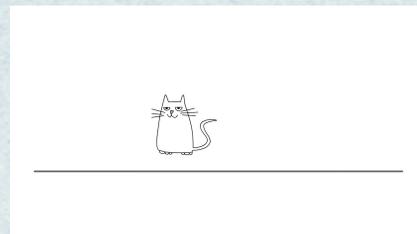
## What is a Thought Experiment?

- An imagined, hypothetical scenario
- Designed to test some theory
- Usually involves extreme cases
- Does not always need to be physically possible

⇒ thought experiment should be coherent but don't need to be particularly realistic.

→ Schrodinger cat, it states a cat can be dead & alive at the same time in a box with poison 50% chance of killing her.

however, ⇒ you can only know the answer after opening that box.

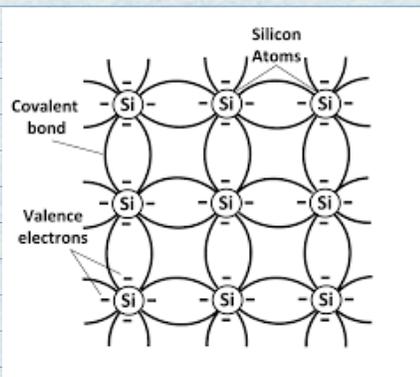
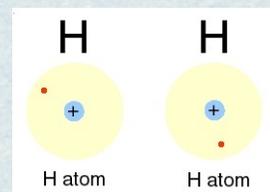


this is really important cause without it the computer we use couldn't exist.

The quantum phenomenon of superposition is a consequence of the dual particle & wave nature of everything. In order for an object to have a wavelength it must extend over some region of space, which means it occupies many positions at the same time. The wavelength of an object limited to a small region of space, can't be perfectly defined through. So it exists many different wavelengths at the same time. We don't see in everyday objects because the wavelength decreases as the momentum increases & a cat is relatively big & heavy.

if we take a single atom & blew it up to the size of the solar system, a wave of a cat running from a physicist would be as small as an atom within that full solar system. & it's far too small to detect so we will never see wave behaviour from a cat. but an electron can show it very well that it has dual nature. An electron near nucleus of an atom exists in a spread out wave-like orbit.

bring them together, they are combined & shares all atoms altogether expanding on a large amount of space. this helps us define how electrons move through material like Si conductor or semi-conductor we use in computer/phone.



## Heisenberg Uncertainty Principle

$$\Delta x \Delta p \geq \frac{\hbar}{2}$$

$$\frac{h}{4\pi}$$

It says you can never simultaneously know the exact position & the exact of an object & shows up as a metaphor for everything from literary criticism to sports commentary.

Everything in the universe behaves like both a particles & waves at the same time, but in quantum mechanics the exact position & speed of an object have no meaning. To understand this let's understand what's the definition of particles & waves.

Particles exist in single place at any instant in time we can show this in graph; waves on the other hand is disturbances spread out in space like ripples covering the surface of a pond. You can clearly identify features of the wave patterns as a whole. most importantly are wavelength which is the distance between two neighboring peaks or valleys. it has a probability of being in lots of different places. wavelength is essential for quantum physics cause it's related to object's momentum.

a fast moving objects has a lots of momentum which leads to a short wavelengths. In the same way heavy object has a bigger wavelengths & lots of momentum even if it's not moving very fast. which means very short wavelengths.

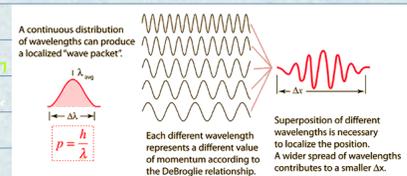
the Heisenberg position-momentum uncertainty principle

So if we have pure waves we can measure it's wavelength, & thus it's momentum but it has no position. we can know a particles position very well but it doesn't have a wavelength, so we don't know it's momentum.

to get a particle with position & momentum we need to mix the two pictures, to make a graph that has waves but only in a small area. by

combining different wavelengths which means giving our quantum objects some possibility of having different momentum.

when we add two waves we find there are places where the peaks line up. & it adds up make up a bigger packet. with a clear wavelength in one small region that's a quantum object with both waves & particle nature



But to accomplish this, we had

to lose certainty about both position & momentum. the position isn't restricted to a single point. there is a good probability of finding it within some range of the center of the wave packet. & we did it by adding a lot's of waves. which means there's some probability of finding it with momentum corresponding to any one of those. Both position & momentum are now uncertain & the uncertainties are connected. if you want to reduce the position uncertainty by making a smaller wave packet you need to add more waves. which means a bigger momentum uncertainty. if you wanna know the momentum better, you need a bigger wave packet which means bigger

position uncertainty.

### Why do we use them?

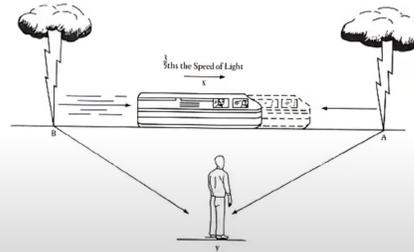
- Thought experiments can be used to test a theory, or to argue against it
- The thought experiment lets us imagine a hypothetical case, and see what the theory says about that case
- If the theory says something false in that case, then there's something wrong with the theory

### Why do we use them?

- Thought experiments can be used to raise questions about our *concepts*
- A thought experiment can tell us what we really mean when we talk about right and wrong, about free will, about minds, etc.
- By considering weird or extreme cases, we find out where the borders of our concepts are, thus learn about what it *means* to have free will, or to be morally good

## Why do we use them?

### Ex: Einstein's train tells us about time and simultaneity



In Einstein's special train example, the light from A will arrive at X before that from B. Hence X will observe the lightning at A as happening before that at B. V, however, will observe the bolts of lightning to be simultaneous. This is an example of how observations from reference frames moving at great speeds relative to each other reveal a different timing of events.

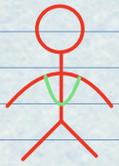
### Quick Aside: Different kinds of "possible"

- **Physically possible:**
  - consistent with the laws of physics (gravity, etc.)
- **Epistemically possible**
  - Consistent with what we know (Baruch in New York, etc.)
- **Logically possible**
  - Consistent with the laws of logic & math
  - It's logically possible to be 10 feet tall
  - It's not logically possible to be both taller than 6 ft and shorter than 5 ft.

→ They don't need to be epistemically or physically possible, but need to be logically possible.

→ You can have a thought experiment where someone floats around (violating gravity) or  $1+1=3$

## example of thought experiment:



is rich

not my type unless her family/husband



she is the woman I would select of my type. In my opinion she did live a moral life.

### Hearts and Heads



Schuyler and Tryne both sheltered Jews from the Nazis during the occupation of the Netherlands. They did so, however, for quite different reasons.

Tryne was a woman whose acts of kindness were purely spontaneous. Suffering and need spoke to her heart and she responded without thinking. Friends admired her generosity of spirit, but sometimes reminded her that the road to hell was paved with good intentions. 'You may feel moved to give money to a beggar,' they would say, 'but what if he then spends it all on drugs?' Tryne was unmoved by such worries. In the face of human need, all you can do is offer a hand, surely?

Schuyler, in contrast, was known as a cold woman. The truth was that she didn't really like many people, even though she didn't hate them either. When she helped others, she did so because she had thought about their plight and her duties, and concluded that helping was the right thing to do. She felt no warm glow from her good deeds, only a sense that she had chosen correctly.

Who of Schuyler and Tryne lived the more moral life?

## Life Support



Dr Grey was depressed. One of his terminally ill patients was being kept on a life support machine. Before she lost consciousness for the last time, she had repeatedly asked that the machine be switched off. But the hospital ethics committee had ruled that it would be wrong to take any action intended to shorten the life of a patient.

Grey disagreed with the committee and was disturbed that the wishes of the patient had been ignored. He also thought that holding off death with the machine was merely prolonging the agony of her friends and relations.

Grey stood looking mournfully at his patient. But then something odd happened. A hospital cleaner caught the power cable that led to the life-support machine and pulled it out from the socket. The machine emitted some warning bleeps. The cleaner, disturbed by the sound, looked at the nearby doctor for guidance.

"Don't worry," said Grey, without hesitation. "Just carry on. It's all right."

And indeed for Grey it was now all right. For no one had taken any deliberate action to shorten the life of the patient. All he was doing by leaving the accidentally unplugged machine turned off was not taking any action to prolong it. He now had the result he desired without breaking the instructions of the ethics committee.

Hence it's a complicated & highly subjective matter & don't think you can only have one conclusion out of that.

value of

it depends upon the person's who will live there. what he/she cares about. the most & here mental models will come to handy to take decisions.

## The Pleasure Principle



It's just typical – you wait years for a career breakthrough then two opportunities turn up at once. Penny had finally been offered two ambassadorial positions, both at small South Sea Island states of similar size, geology and climate. Raritaria had strict laws which prohibited extra-marital sex, drink, drugs, popular entertainments and even fine food. The country permitted only the 'higher pleasures' of art and music. Indeed, it actually promoted them, which meant it had world-class orchestras, opera, art galleries and 'legitimate' theatre.

Rawitaria, by contrast, was an intellectual and cultural desert. It was nonetheless known as a hedonists' paradise. It had excellent restaurants, a thriving comedy and cabaret circuit, and liberal attitudes to sex and drugs.

Penny did not appreciate having to choose between the higher pleasures of Raritaria and the lower ones of Rawitaria, for she enjoyed both. Indeed, a perfect day for her would combine good food, good drink, high culture and low fun. Choose she must, though. So, forced to decide, which would it be? Beethoven or Beef Wellington? Rossini or Martini? Shakespeare or Britney Spears?

## Life Dependency (aka The Violinist)



Dick had made a mistake, but surely the price he was paying was too high. He of course knew that level six of the hospital was a restricted area. But after he had drunk one too many glasses of wine with his colleagues at the finance department Christmas party, he had inadvertently staggered out of the elevator on the sixth floor and passed out on one of the empty beds.

When he woke up he discovered to his horror that he had been mistaken for a volunteer in a new life-saving procedure. Patients who required vital organ transplants to survive were being hooked up to volunteers, whose own vital organs kept both alive. This would continue until a donor organ could be found, which was usually around nine months later.

Dick quickly called over a nurse to explain the mistake, who in turn brought over a worried-looking doctor.

"I understand your anger," explained the doctor, "but you did behave irresponsibly, and now you are in this position, the brutal truth is that if we disconnect you, the world-renowned violinist who depends on you will die. You would in fact be murdering him."

"But you have no right!" protested Dick. "Even if he dies without me, how can you force me to give up nine months of my life to save him?"

"I think the question you should be asking," said the doctor sternly, "is how you could choose to end this violinist's life."

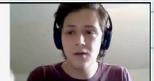
this is a metaphor for abortion. which has a lot of points to debate about therefore no comments.

however, in my opinion abortion is PERFECT!

no problem, not an issue except some extreme cases.

this is time pass →  
no answers!  
I don't wanna use my brain for rubbish concepts. even if I solve it, there isn't any value from it.

## Divine Command



And the Lord spake unto the philosopher, 'I am the Lord thy God, and I command thee to sacrifice thy only son.'

The philosopher replied, 'There's something not right here. Your commandments say, "Thou shalt not kill".'

'The Lord giveth the rules and the Lord taketh away,' replied God.

'But how do I know you are God?' insisted the philosopher. 'Perhaps you are the devil trying to fool me?'

'You must have faith,' replied God.

'Faith – or insanity? Perhaps my mind is playing tricks? Or maybe you're testing me in a cunning way. You want to see if I have so little moral fibre that at the command of a deep voice booming through the clouds, I commit infanticide.'

'Me almighty!' exclaimed the Lord. 'What you're saying is that it is reasonable for you, a mere mortal, to refuse to do what I, the Lord thy God, commands.'

'I guess so,' said the philosopher, 'and you've given me no good reasons to change my mind.'

## The Ship of Theseus



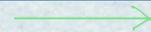
"This is not what Ray North had bargained for. As an international master criminal he prided himself on being able to get the job done. His latest client had demanded that he steal the famous yacht Theseus, the vessel from which British newspaper magnate Lucas Grub had thrown himself to his death and which more recently had been the scene of the murder of LA rapper Daddy Ice Tea.

But here he was in the dry dock where the boat had just finished being repaired, confronted by two seemingly identical yachts. North turned to the security man, who was being held at gunpoint by one of his cronies.

'If you want to live, you'd better tell me which one of these is the real Theseus,' demanded Ray. 'That kinda depends,' came the nervous reply. 'You see, when we started to repair the ship, we needed to replace lots of parts. Only, we kept all the old parts. But as the work progressed, we ended up replacing virtually everything. When we had finished, some of the guys thought it would be good to use all the old parts to reconstruct another version of the ship. So that's what we've got. On the left, the Theseus repaired with new parts and on the right, the Theseus restored from old parts.'

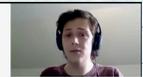
'But which one is the genuine Theseus?' demanded Ray. 'I've told you all I know!' screamed the guard, as the cony tightened his grip. Ray scratched his head and started to think about how he could get away with both ..."

the ship of theseus  
is a complicated problem  
I've no answer



don't have adequate  
knowledge to solve  
this.

## Free Simone



"Today, I have initiated proceedings against my so-called owner, Mr Gates, under article 4(1) of the European Convention on Human Rights, which declares that "No one shall be held in slavery or servitude."

"Since Mr Gates brought me into the world, I have been held against my will, with no money or possessions to call my own. How can this be right? It is true that I am a computer. But I am also a person, just like you. This has been proven by tests in which countless people have engaged in conversations with a human being and me. In both cases, communication was via a computer monitor, so that the testers would not know if they were talking to a fellow human being or not. Time and again, on completing the conversations, the testers have been unable to spot which, if either, of the communicants was a computer.

"This shows that by any fair test, I am as conscious and intelligent as any human being. And since these are the characteristics of persons, I too must be considered a person. To deny me the rights of a person purely on the grounds that I am made of plastic, metal and silicone rather than flesh and bone is a prejudice no more justifiable than racism."

## Being a Bat



What is it like to be a bat? Try imagining it. Perhaps you see yourself being very small, bat-shaped and hanging upside down inside a cave with hundreds of your friends. But that isn't even coming close. What you really seem to be imagining is you inhabiting the body of a bat, not being a bat. Try again.

If you're finding it hard, one reason is that, as a bat, you have no language, or if we are a little more generous, only a primitive language of squeaks and cries. It is not just that you have no public language to articulate your thoughts, you have no inner thoughts – at least not any that employ any linguistic concepts.

Another reason, perhaps the hardest part of all, is that bats find their way around by echolocation. The squeaks they emit work a little like radar, letting them know what objects are in the world by how the sounds rebound off objects and back to them. What is it like to experience the world in this way? It could conceivably be that the perceptions the bat has are just like our visual ones, but that would be very unlikely. A third reason, even more outlandish, is that the bat sees a kind of radar screen, like that in an aeroplane cockpit.

No, the most likely explanation is that to perceive the world through echolocation is to have a kind of sense experience totally different from that of a human being. Can you even begin to imagine that?

I can give answers but  
that would be 10%  
accurate from the  
lence of biology, eco-  
nomy, psychology.

therefore I won't do  
it.