

Welcome
to
Modernity!

René Descartes

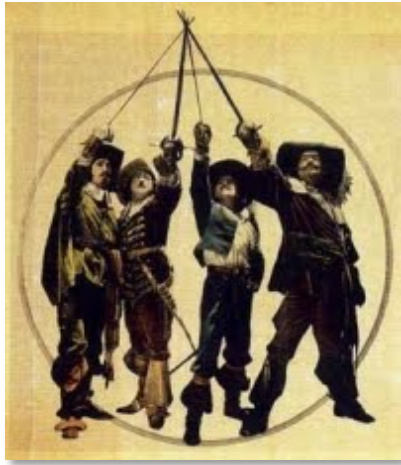
(1596-1650)

[pronounced: *day-cart*]



- *Le Monde* (1633, not publ.)
- *Discourse on Method* (1637)
- *Meditations on First Philosophy* (1641)
- *Principles of Philosophy* (1644)
- *Passions of the Soul* (1649)

17th Century France



The Three Musketeers

Athos, Porthos, Aramis, and d'Artagnan



Louis XIII
(1601-1643)



Cardinal Richelieu
(1585-1642)

The Rise of Modernism

Modern Times

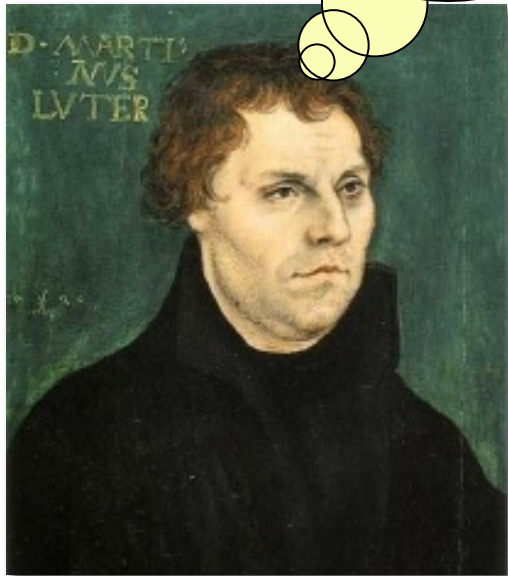
- The Birth of the Individual ...

Luther: Priesthood of all Believers

Hobbes: Selfish Atoms

The Priesthood of All Believers

We are all
priests, as
many of us as
are Christians.



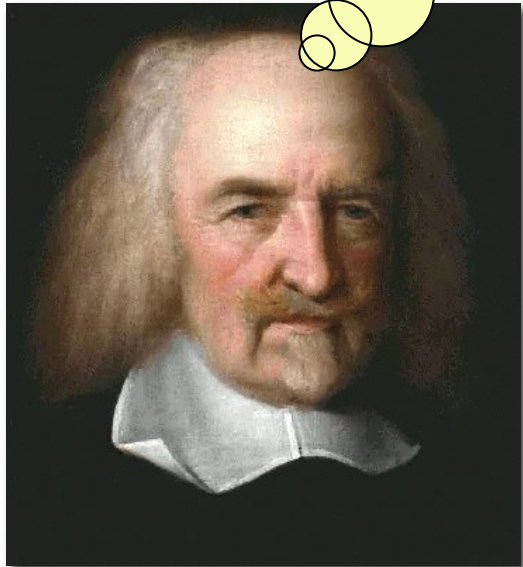
Martin Luther
(1483-1546)



Luther nailing his 95 Theses to the castle door
at Wittenberg (Nov. 1, 1517)

The Atomic Self

The life of man,
solitary, poor,
nasty, brutish,
and short.



Thomas Hobbes
(1588-1679)



Hobbes's *Leviathan* (1651)

Modern Times

- The Birth of the Individual ...

Luther: Priesthood of all Believers

Hobbes: Selfish Atoms

- ... who Questions Authority ...

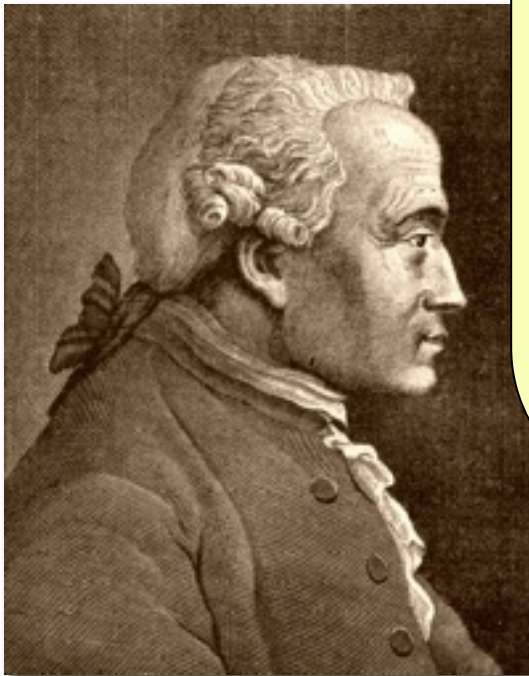
Kantian Autonomy and Enlightenment

Question Authority!

Enlightenment is man's exit from his self-incurred immaturity.

Immaturity is the inability to make use of one's own understanding without the guidance of another.

[...] *Sapere aude!* Have the courage to use your *own* understanding! is the motto of the enlightenment.



Immanuel Kant
(1724-1804)

Modern Times

- The Birth of the Individual ...
Luther: Priesthood of all Believers
Hobbes: Selfish Atoms
- ... who Questions Authority ...
Kantian Autonomy and Enlightenment
- ... and develops a New Science
Descartes, Kepler, Galileo, Bacon

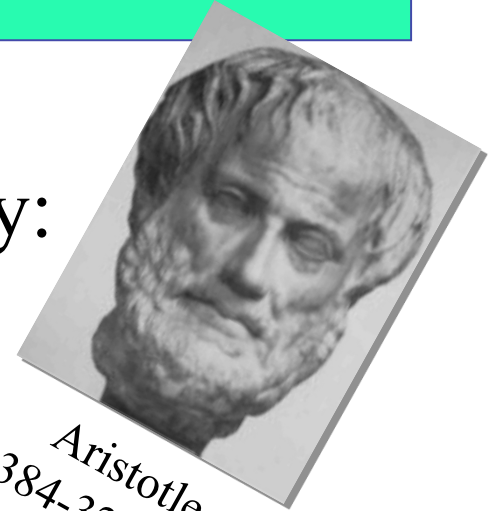
The Old Science

Out with old Aristotle ...

Aristotelian Science was marked by:

- **Teleological Explanation**

All change/motion is goal-oriented.



Aristotle
384-322 BCE

The Old Science

Out with old Aristotle ...

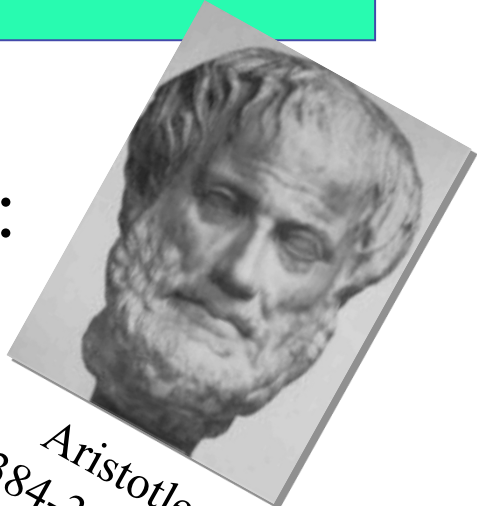
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- **Teleological Explanation**

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- **Essences**

Things are what they are because of their immanent form or essence.



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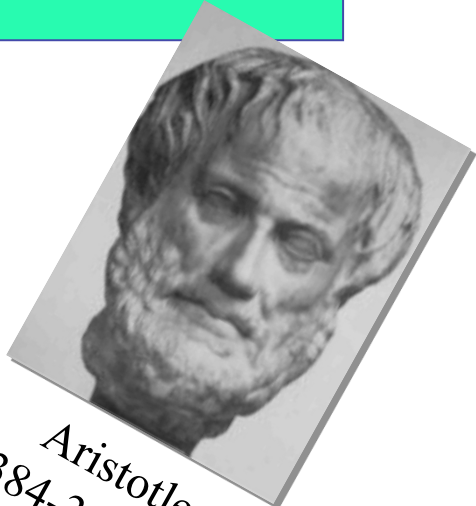
All change/motion is goal-oriented.

- **Essences**

Things are what they are because of their immanent form or essence.

- **Naïve Empiricism**

What is most real are the mid-sized objects of everyday acquaintance: dogs, trees, stones,



Aristotle
384-322 BCE

... in with the Moderns.

The New Science

Modern Science was marked by:

- Mechanical Explanation

All change is caused by earlier changes.



Galileo Galilei
(1564-1642)

... in with the Moderns.

The New Science

Modern Science was marked by:

- **Mechanical Explanation**

All change is caused by earlier changes.

- **Atomism**

What is most real are microscopically small atoms that vary only by their shape, size, and motion.



Galileo Galilei
(1564-1642)



Robert Boyle
(1627-1691)

... in with the Moderns.

The New Science

The book of nature is written in the language of mathematics.



Galileo Galilei
(1564-1642)



Robert Boyle
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atomically small
by their shape, size, and motion.

- **Mathematics**

The real and the knowable must be quantifiable.

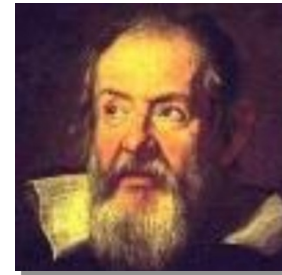
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The New Science

Modern Science was marked by:

- **Mechanical Explanation**

All change is caused by earlier changes.



Galileo Galilei
(1564-1642)

- **Atomism**

What is most real are microscopically small atoms that vary only by their shape, size, and motion.



Robert Boyle
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- **Mathematics**

The real and the knowable must be quantifiable.

- **Experimentation**

Test your hypotheses against “the tribunal of nature.”



Torricelli
(1608-1647)

Summary of the Differences

Aristotelian Science

- Teleological Explanation
- Essences
- Naïve Empiricism

Modern Science

- Mechanical Explanation
- Atomism
- Mathematics
- Experimentation

Descartes
and
Epistemology
(part one)

Epistemology

Epistemology as the study of...

- The **nature** of knowledge (in particular, how propositions are justified).

Foundationalism vs Coherentism

Greek

episteme: knowledge

logos: account

- The **source** of our knowledge.

Empiricism vs Rationalism

- The **limits** of our knowledge.

For any proposition that I can think, can I *know* whether it is true or false?

What is Knowledge?



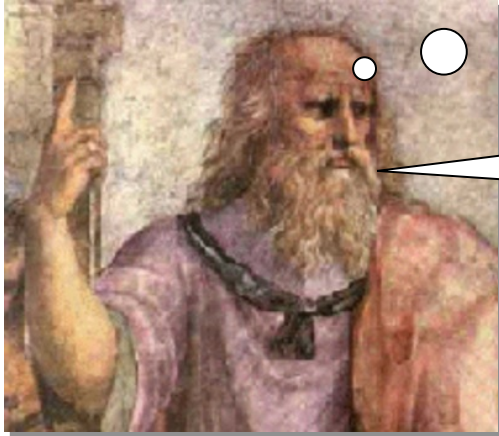
Justified True Belief.

S knows P *iff* ...

- (1) S *believes* P.
- (2) S is *justified* in believing P.
- (3) P is *true*.

What is

But how do we justify
our beliefs?



Justified True Belief.

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Reasons and Causes



- The **cause** of a belief is whatever brings you to hold that belief; this might have been some “non-rational” cause, and as such says nothing about the truth of the belief.





Reasons and Causes



- The **cause** of a belief is whatever brings you to hold that belief; this might have been some “non-rational” cause, and as such says nothing about the truth of the belief.
- The **reason** for a belief will justify the belief (“support its truth”), and thus will provide anyone else with a reason for holding the belief.



Two Models of Justification

Foundationalism

Knowledge as a formal system beginning with a set of self-evident axioms from which are inferred all the other beliefs.



Euclid
(c. 325-c.265 BCE)

Coherentism

Knowledge as a non-formal, non-linear, set of inter-connected and mutually supporting beliefs.



W. V. O. Quine
(1908-2000)

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Examples of Beliefs

- (1) I believe that John's shirt is white.
- (2) I believe that Mary has a heart.
- (3) I believe that the earth spins on its axis once each day, and moves around the sun once each year.

Foundationalism



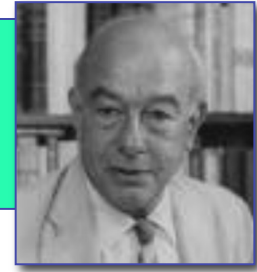
Euclid
(c. 325-c.265 BCE)

Euclid's Postulates

Let the following be postulated:

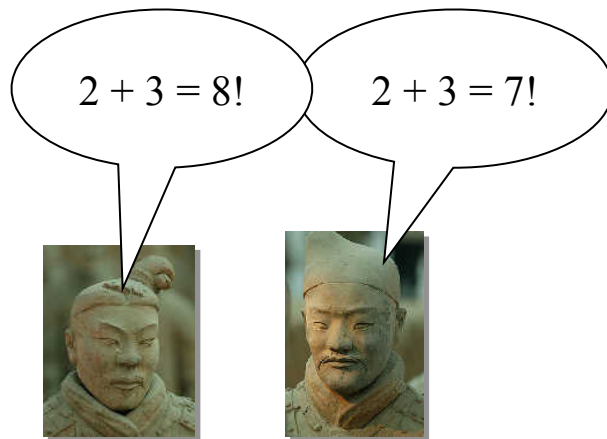
1. To draw a straight line from any point to any point.
2. To produce [extend] a finite straight line continuously in a straight line.
3. To describe a circle with any center and distance [radius].
4. That all right angles are equal to one another.
5. That, if a straight line falling on two straight lines make the interior angles on the same side less than two right angles, the two straight lines, if produced indefinitely, meet on that side on which are the angles less than the two right angles. [parallel postulate]

Coherentism

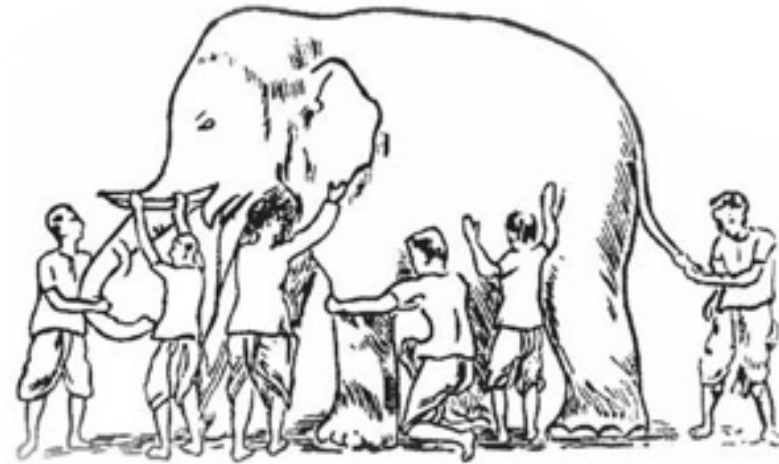


W. V. O. Quine
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- Truth is One (as accepted by Foundationalists) — but only as an ideal (for the Coherentist).
- Strategies for maintaining this unity of truth: (1) reject one or both of two contradictory claims, or (2) modify them so as to preserve what is true in each.

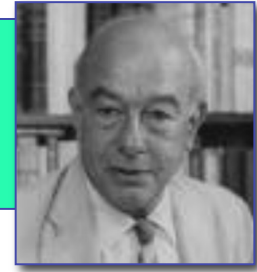


One or both is false.

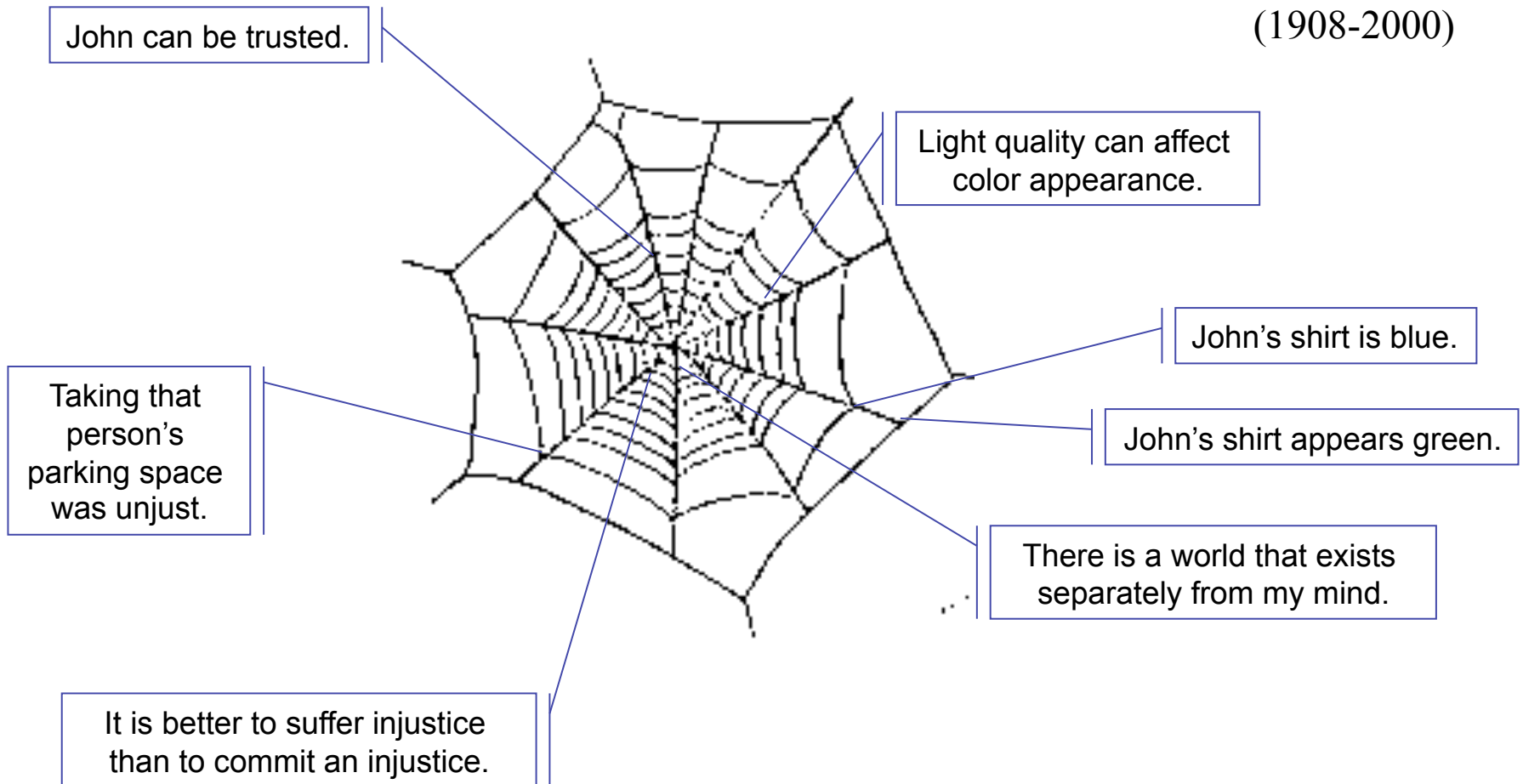


Each has some truth that should be preserved.

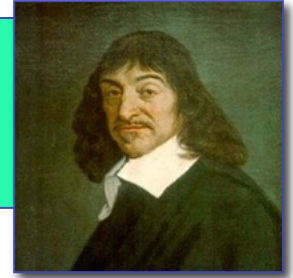
Coherentism



W. V. O. Quine
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Descartes's Foundationalism



Rene Descartes
(1594-1650)

I ought to be able to trust logic, my senses,
and my memory.

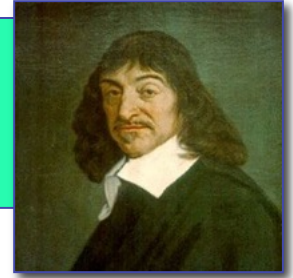


A bent pencil...



When memory fails....

Descartes's Four



Rene Descartes
(1594-1650)

I ought to
a



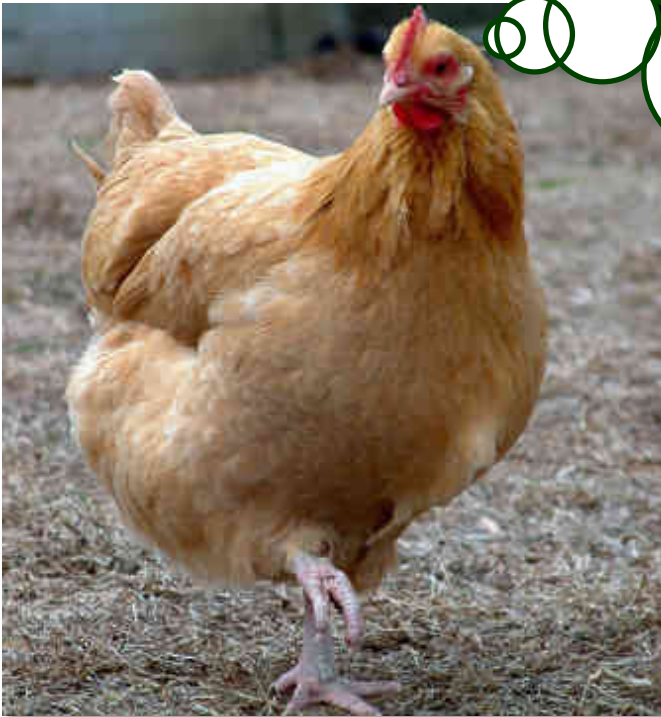
A bent pe

When memory fails....

**Some
Reasons
to
Worry...**

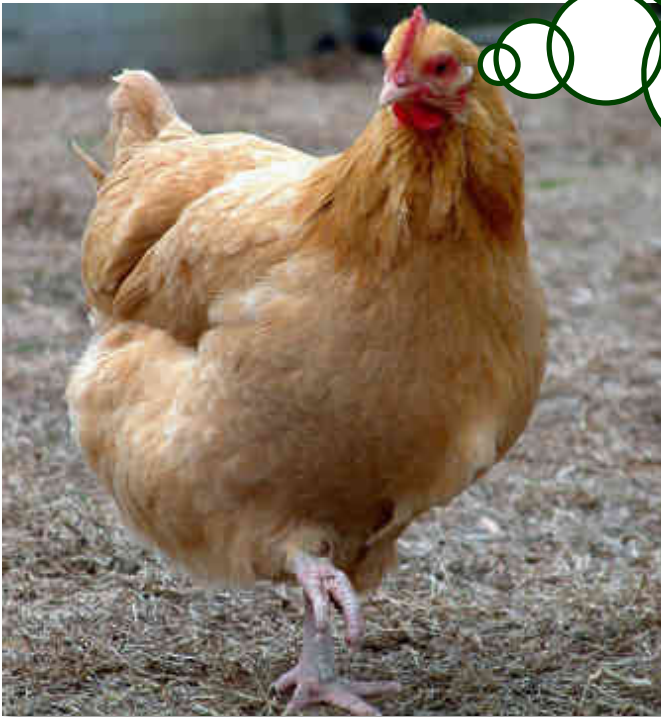
A Reasonable Chicken

“Every day for as long as I can remember, the farmer has come with corn for me to eat. Therefore, I have every reason to believe that he will do this tomorrow as well.”



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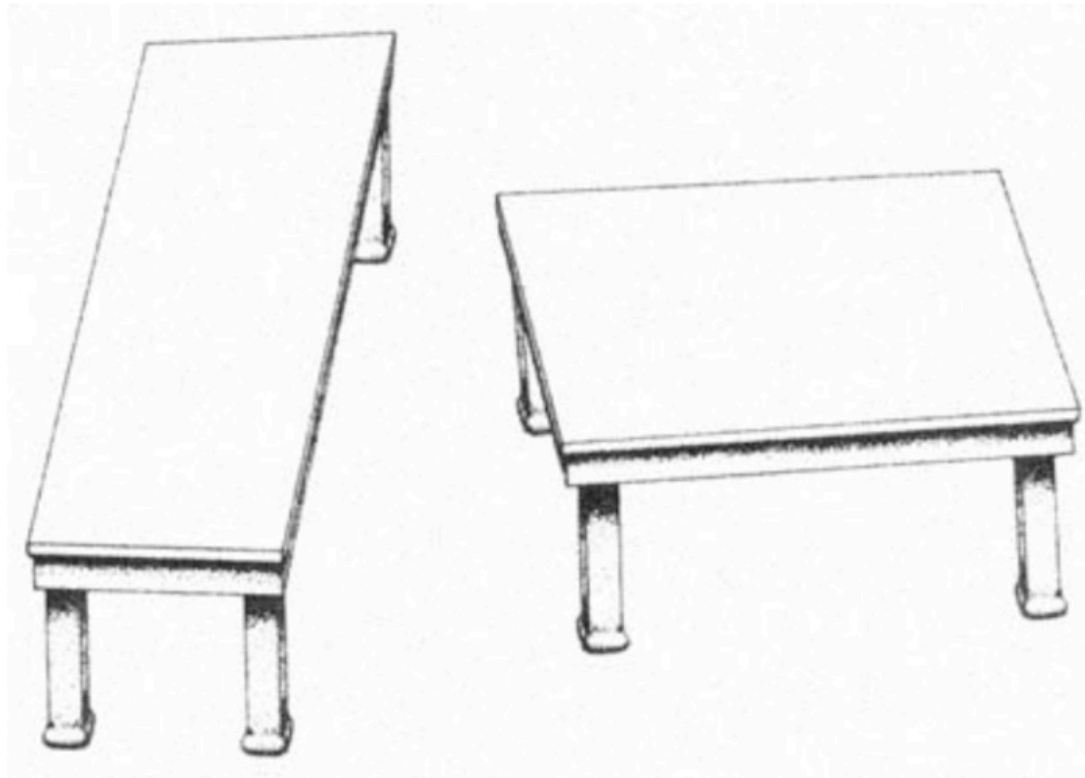
And yet the very next morning, the farmer came not with corn, but an axe.



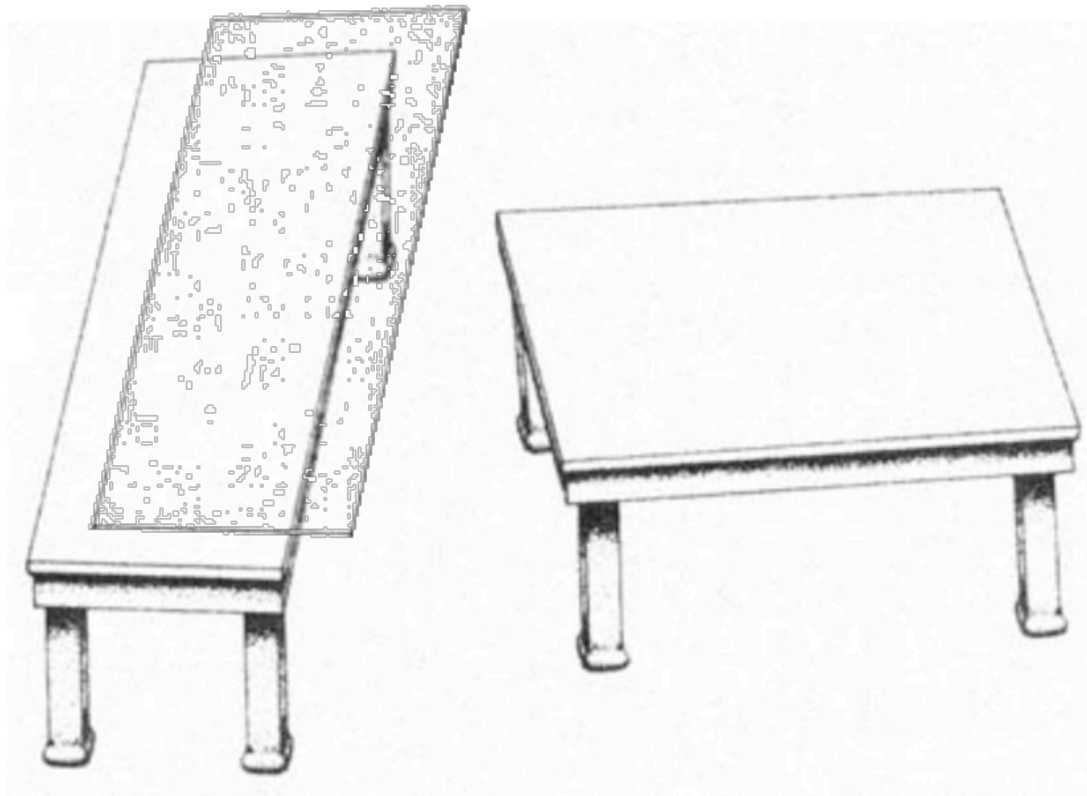
Perceiving the World #1



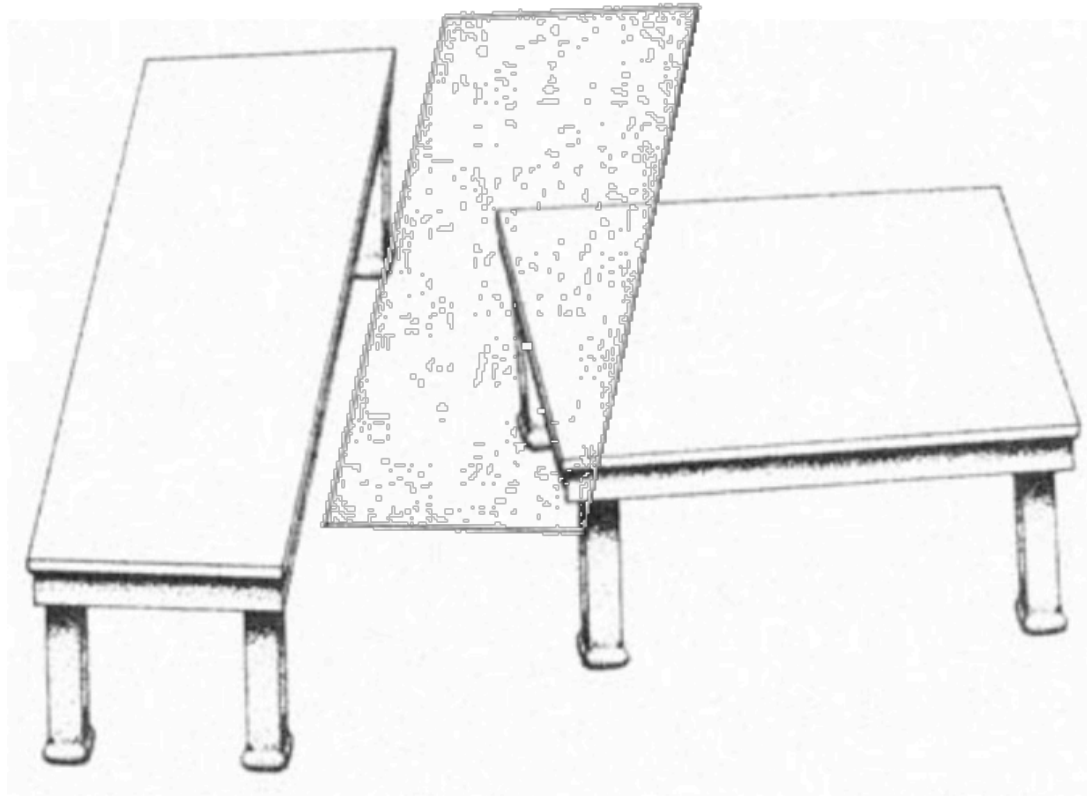
Perceiving the World #2



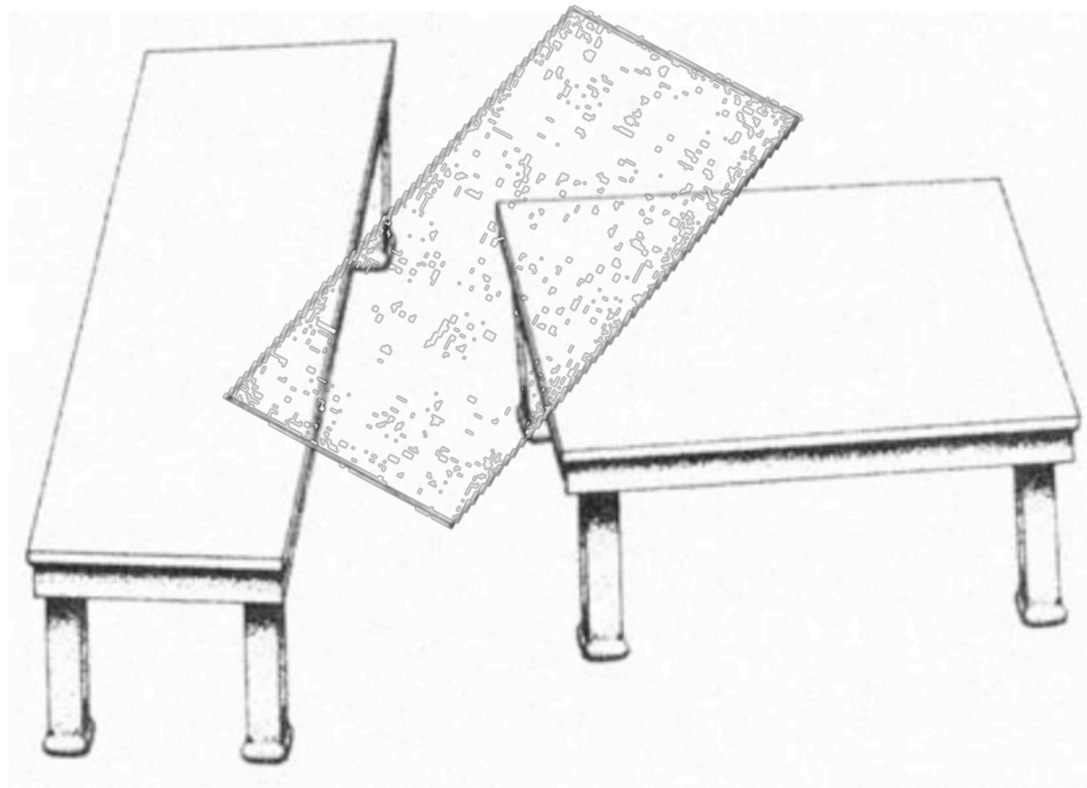
Perceiving the World #2



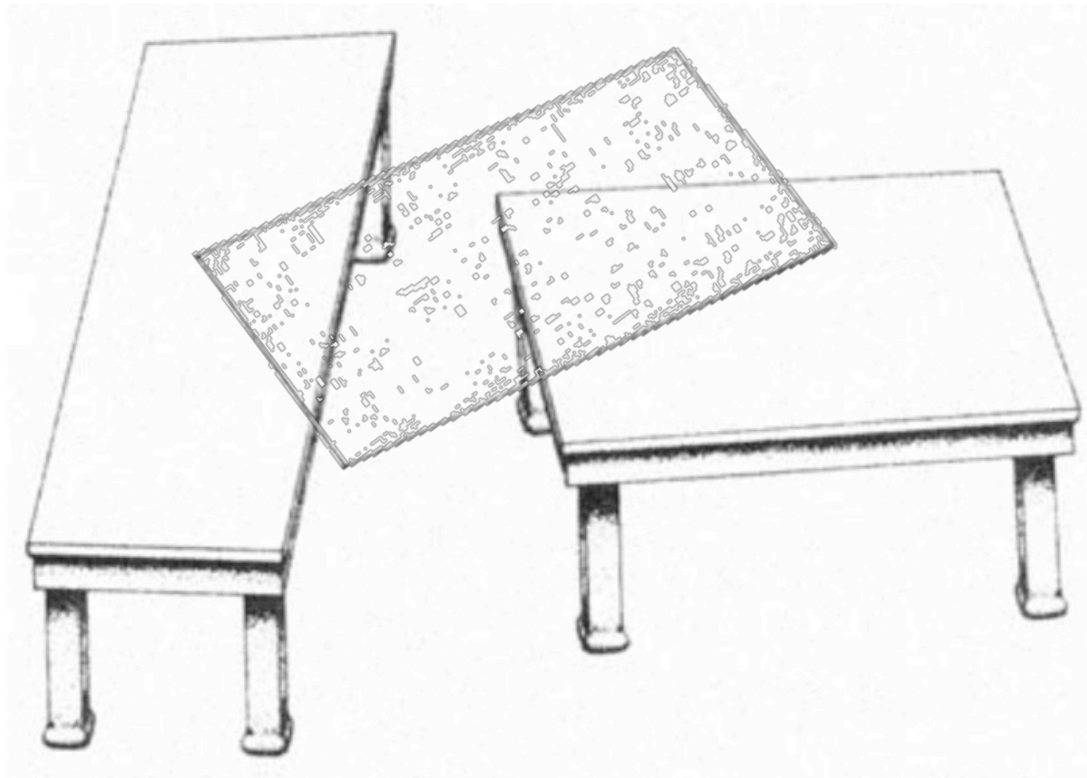
Perceiving the World #2



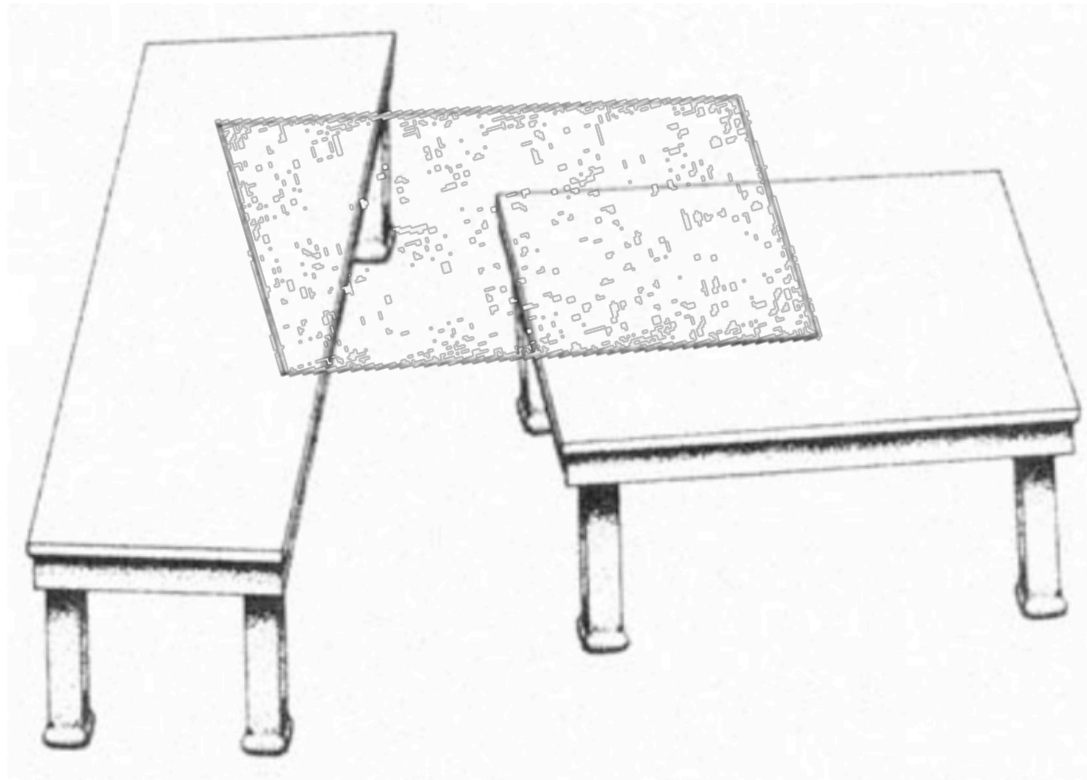
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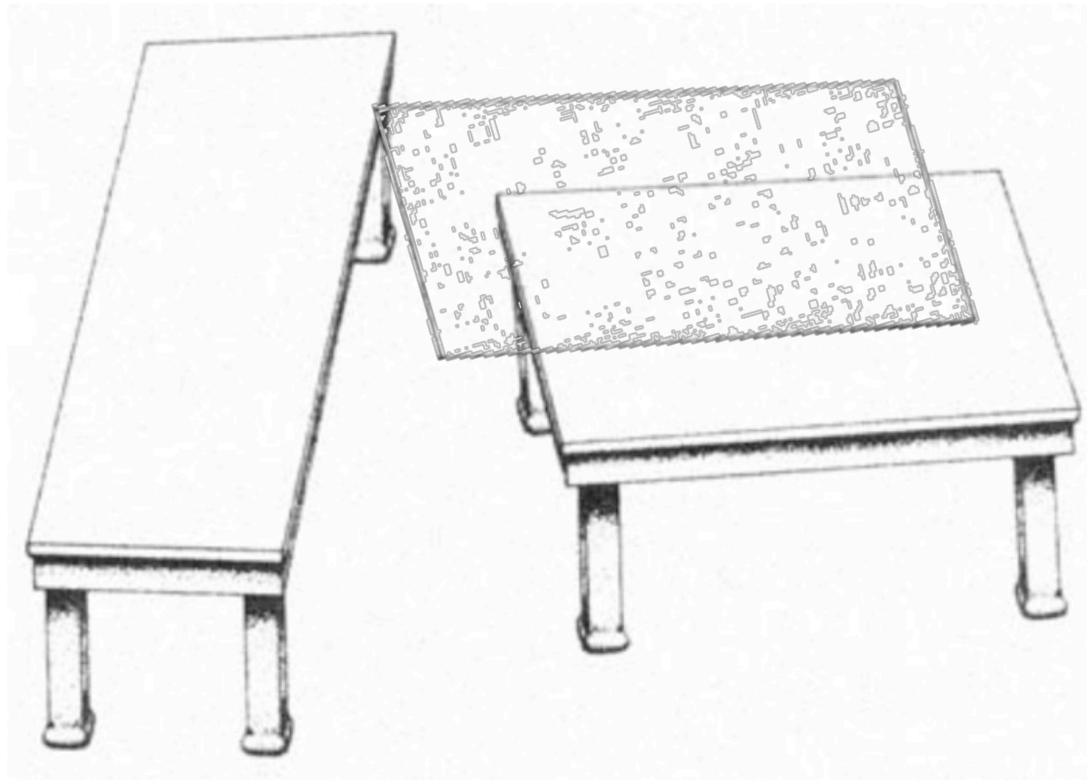
Perceiving the World #2



Perceiving the World #2



Perceiving the World #2



Descartes
and
Epistemology
(part two)

Cartesian Doubts

(First Meditation)

Descartes: Just gimme some truth

Human error is everywhere; is it avoidable?

What we want: **certainty** (just like in Euclidean geometry).

For this I need: a **foundation** that is certain.

To find this I will use: **methodological doubt**.

And so my doubts begin ...

Cartesian Doubt #1

“I have noticed that my senses sometimes deceive me.”

But only of distant things or in bad light — not of what I can easily perceive, like my own hands before me.

Cartesian Doubt #2

“I sometimes dream and, when I do, I sometimes have perceptions identical to when I am awake.”

But at least $2 + 3 = 5$, even in my dreams.

Cartesian Doubt #3

“It is possible that God is planting all this in my head — beliefs of a physical world, of mathematics, and all my memories — and that none of it is true.”

I cannot see my way out of this doubt, and am thrown into **radical skepticism**.

End of the First Meditation