

# Descartes: Interactive Dualism



# The Revival of Mechanistic Science

Copernicus—Kepler: the mechanization of the heavens

Galileo: the mechanization of terrestrial physics

Rejection of Aristotelean substantial forms and formal causation

Behavior of terrestrial object explained in terms of matter in motion



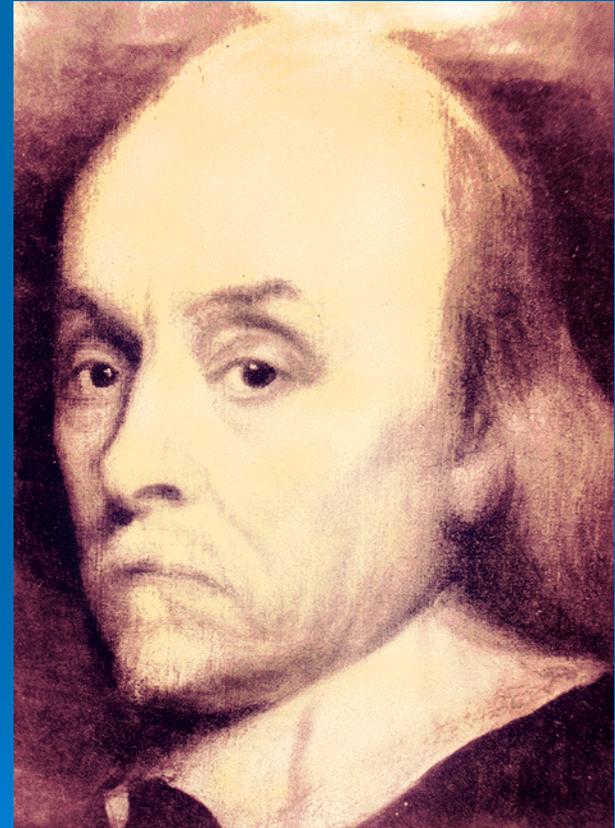
# Descartes: The Supreme 17<sup>th</sup> Century Mechanist

Physical objects for Descartes  
were defined by extension

The entire universe comprised  
of tiny corpuscles

Maintained that a vacuum was  
impossible

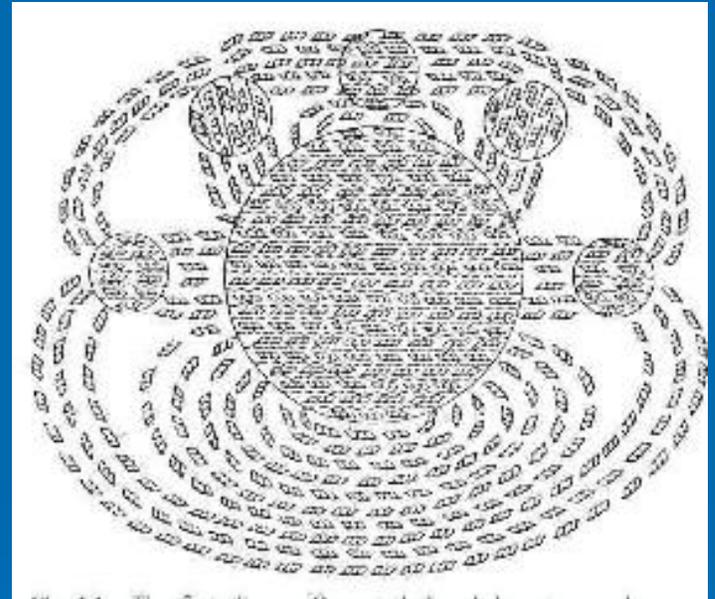
Motion involved corpuscles  
moving in to replace those that  
moved, creating vortices



# Descartes' Account of the Magnet

All properties of matter to be explained in terms shape, size, and motion of the corpuscles that comprised them

Thus, magnetism was explained in terms of screw shaped particles which would be drawn into appropriate receptors



# Gardens

Descartes was extremely interested in the behavior that was realized by water-statues in the Royal Gardens

Suggested that behavior of animal bodies could be explained in the same manner



Automated garden figures and main driving mechanism in the grottoes of the royal gardens at Saint Germain en-Laye. From engravings in Salomon de Caus, *Les roisons des forces mouvantes avec diverses machines tant utiles que plaisantes auxquelles sont adjoints plusieurs dessins de grottes et fontaines*, Frankfurt, J. Norton, 1615. This grotto is described by Descartes on page 13 of the French text.

# Reflexes

Descartes proposed that much animal (including human) was reflex action

He proposed nerves comprised circuits much like those Harvey had discovered for circulating blood but which circulated very fine *animal spirits*

Reflex action resulted from the flow of the animal spirits through the nerves



# Descartes's Conception of Mind

The only exception to the mechanical philosophy was the human mind—it was not an extended thing but a *thinking thing* (res cogito, not res extensa)

But what then am I? A thing which thinks. What is a thing which thinks? It is a thing which doubts, understands, [conceives], affirms, denies, wills, refuses, which also imagines and feels.

Is *mind* equivalent to *soul*?

# Why a non-physical mind?

Can reflexes explain all behavior?

For Descartes, they could explain everything a non-human animal could do

So anything we do that a non-human animal can do does not require our mind

This includes having emotions—these depend totally on the brain

# How does our behavior differ from other animals?

Our actions seem (to us) to be free, not caused

But couldn't this be an illusion?

Focus solely on behavior

What kind of behavior do we engage in that other animals do not?



# Descartes on Language

How does human language differ from the communication systems of other animals?

Language is a productive system

We can always create new sentences

For Descartes, this seemed to be something machines just couldn't do

A machine could be designed to utter any given sentence, but could not create novel ones

# First argument for separation of mind and body

(Part IV of *Discourse on Method*)

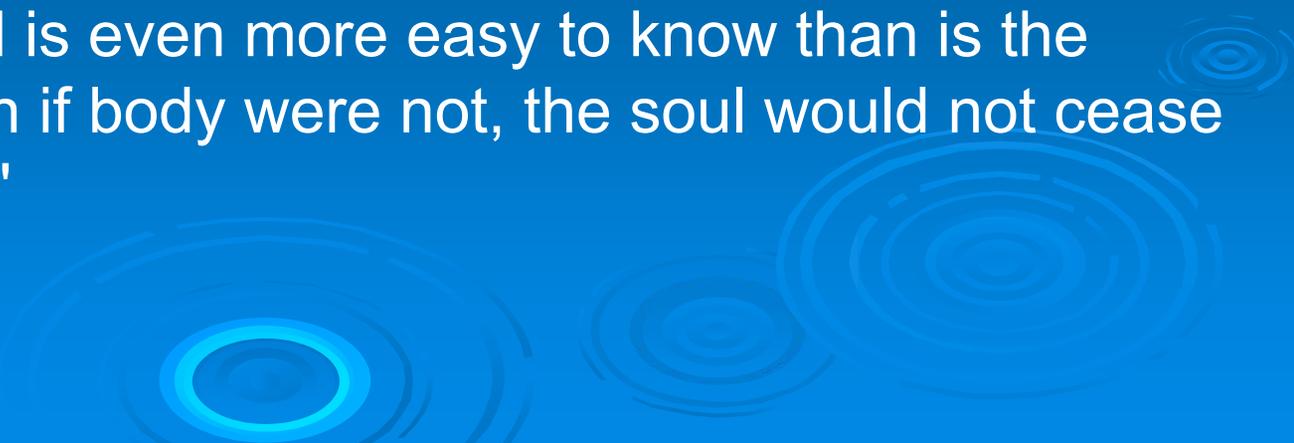
1. I cannot possibly doubt that I exist as a thinking thing.
2. I can, doubt, however, that I have a body, and thus that I exist as a physical thing.

Therefore, thinking is essential to what I am. My body is not.

# Knowledge of One's Self

I know my mind more easily than I know my body:

"From this I knew that I was a substance the whole essence or nature of which is to think, and that for its existence there is no need of any place, nor does it depend on any material thing; so that this 'me,' that is to say, the soul by which I am what I am, is entirely distinct from body, and is even more easy to know than is the latter; and even if body were not, the soul would not cease to be what it is"



# Argument Not Valid!

Need additional principle:

*Alpha:* when an entity is known for certain to have property x, but not known for certain to have property y, then x is essential to the entity, and y is not.

*Beta:* when an agent knows for certain that it has property x, but does not know for certain that it has property y, then x is essential to the agent, and y is not.

# Second argument for separation of mind and body (*Sixth Meditation*)

1. If I conceive of two things and perceive with certainty that they are separate, different kinds of things, then they are separate, different kinds of things. If, for example, I see that one thing has property *A* and another has property *not A*, then I know that they are different kinds of things, because one and the same thing cannot have a property and its opposite.
2. I perceive with certainty that I exist as a *thinking and unextended* thing.
3. I perceive with (virtual) certainty that my body, or any body for that matter, is *unthinking and extended*.

Therefore, mind and body are separate, different kinds of things.

"This I (that is to say, my soul by which I am what I am), is entirely and absolutely distinct from my body, and can exist without it."

# Third argument for separation of mind and body (*Sixth Meditation*)

1. An entity cannot have a property and its opposite.
2. My body is divisible, it has parts. Divisibility is part of what it means to be a body.
3. My mind is indivisible. It has no parts. "For . . . when I consider the mind, that is to say, myself inasmuch as I am only a thinking thing. I cannot distinguish in myself any parts, but apprehend myself to be clearly one and entire; and although the whole mind seems to be united to the whole body, yet if a foot or an arm, or some other part, is separated from my body, I am aware that nothing has been taken away from my mind.

Therefore, my mind and my body are different kinds of things.

# Once the mind is separate, what then?

How does it work?

How does it control the body?

