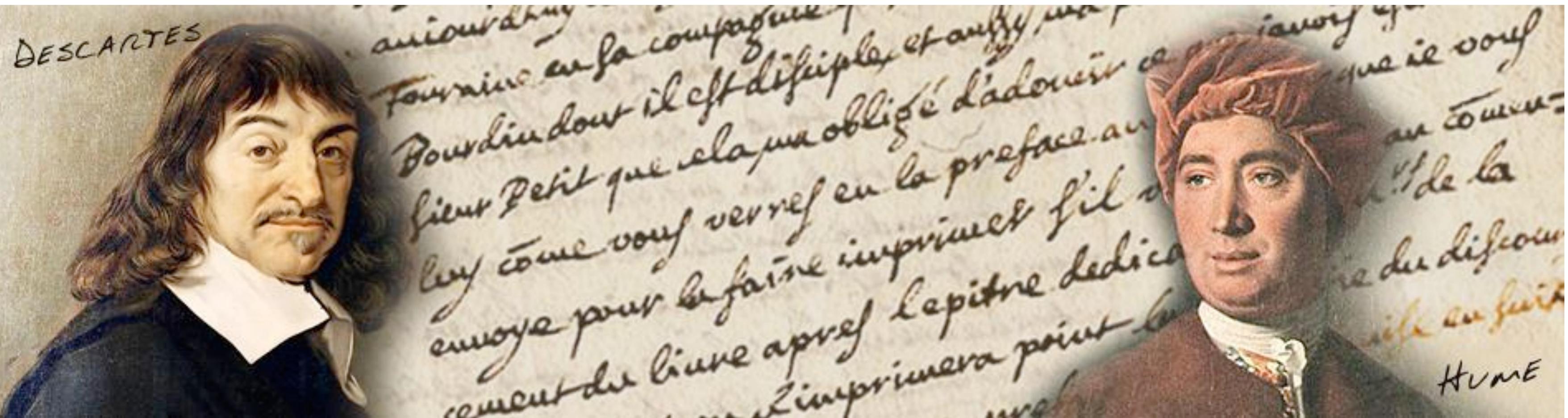
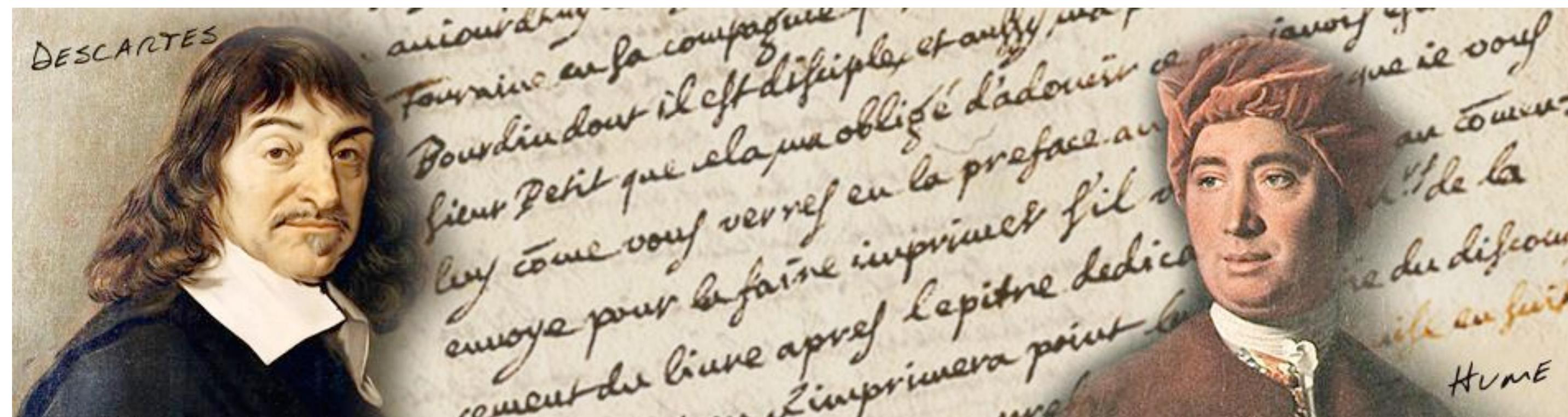


DESCARTES AND HUME ON COGNITION

FURNISHING THE MIND



FROM EPISTEMOLOGY TO PSYCHOLOGY



- Descartes and Hume were both concerned with figuring out how the mind functioned so that it could have knowledge
- En route to producing their epistemological accounts, they were responsible (along with other Modern philosophers like Hobbes and Locke) for producing prototypical theories of psychology — including theories about how the mind functions, and the sorts of mental content over which it operates

DESCARTES

- René Descartes (1596-1650) was a mathematician, astronomer, physiologist and anatomist, and philosopher
- He was a main proponent of the Mechanical Philosophy (Mechanical Science — more specifically, a version of Corpuscularianism)



DESCARTES

- He argued that we could have knowledge of the mechanical world through our sensory apparatus, but that such knowledge was only possible if we were provided with certain “guarantees”
- In particular, we can only trust the senses if we know we are not being deceived, but this requires us to know (a) that we exist, (b) that we are independent or separable from our bodies, and (c) that we are not being deceived by our senses



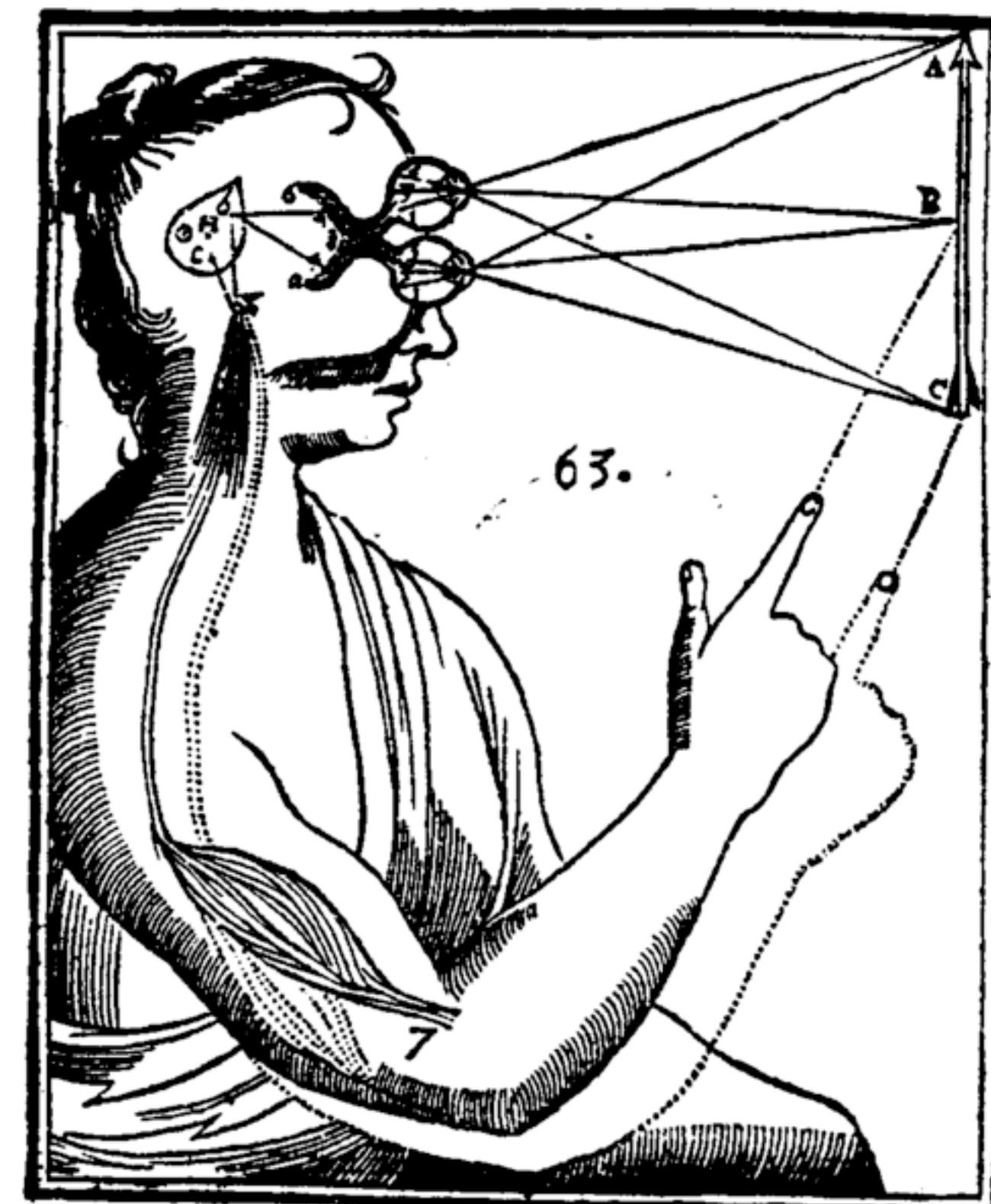
DESCARTES

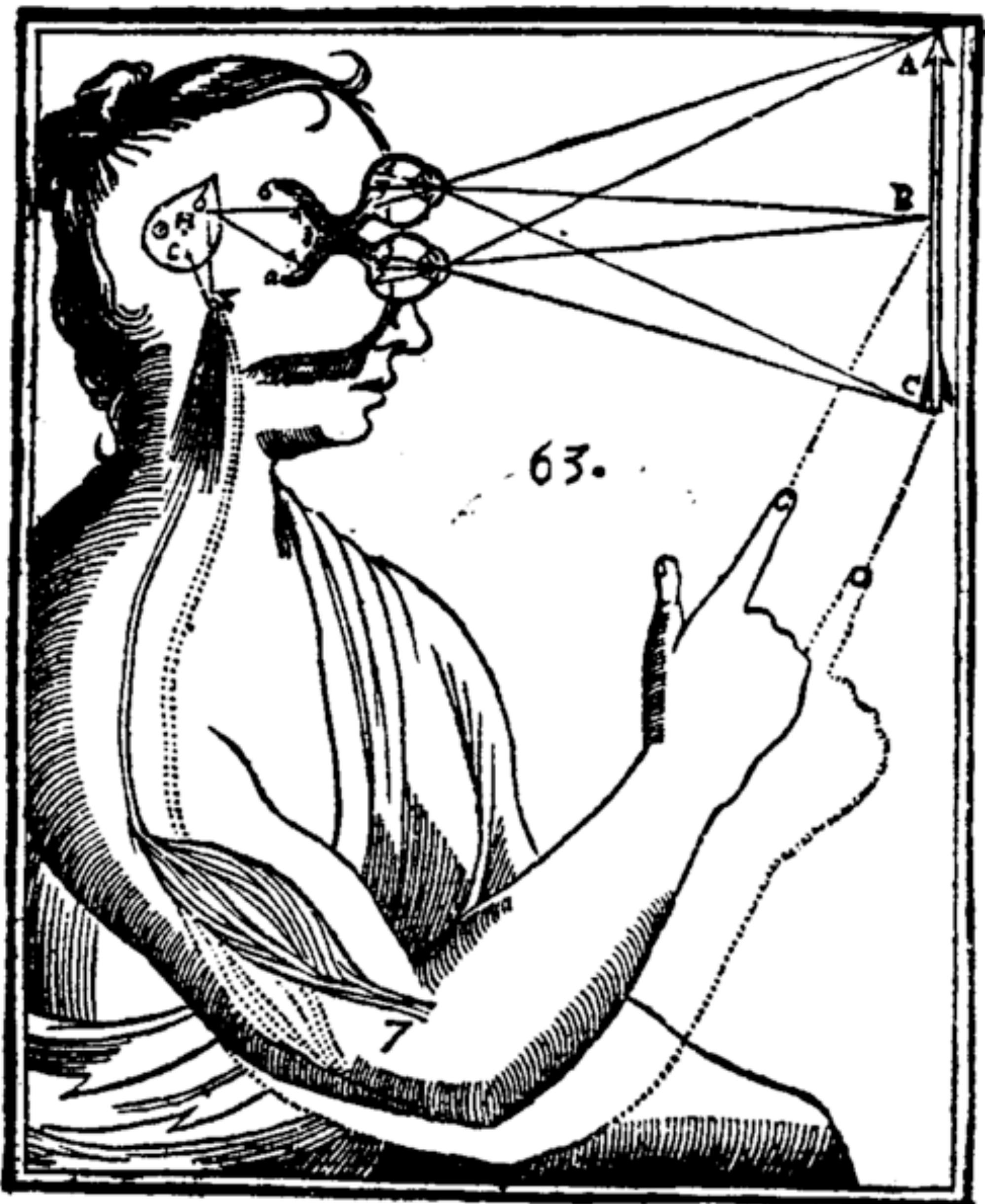
- For Descartes, this meant we needed some rational guarantee that the self existed, was eternal, and that God existed and was omni-benevolent (so that we could be sure we are not globally deceived by our sensory information)
- These arguments are not generally taken to be convincing, though Descartes still has a lasting legacy in philosophy, psychology, and cognitive science more generally — a legacy that we will examine later in the term
- For now, we aren't concerned about these arguments in Descartes' epistemology; we want to understand his theory of cognition!

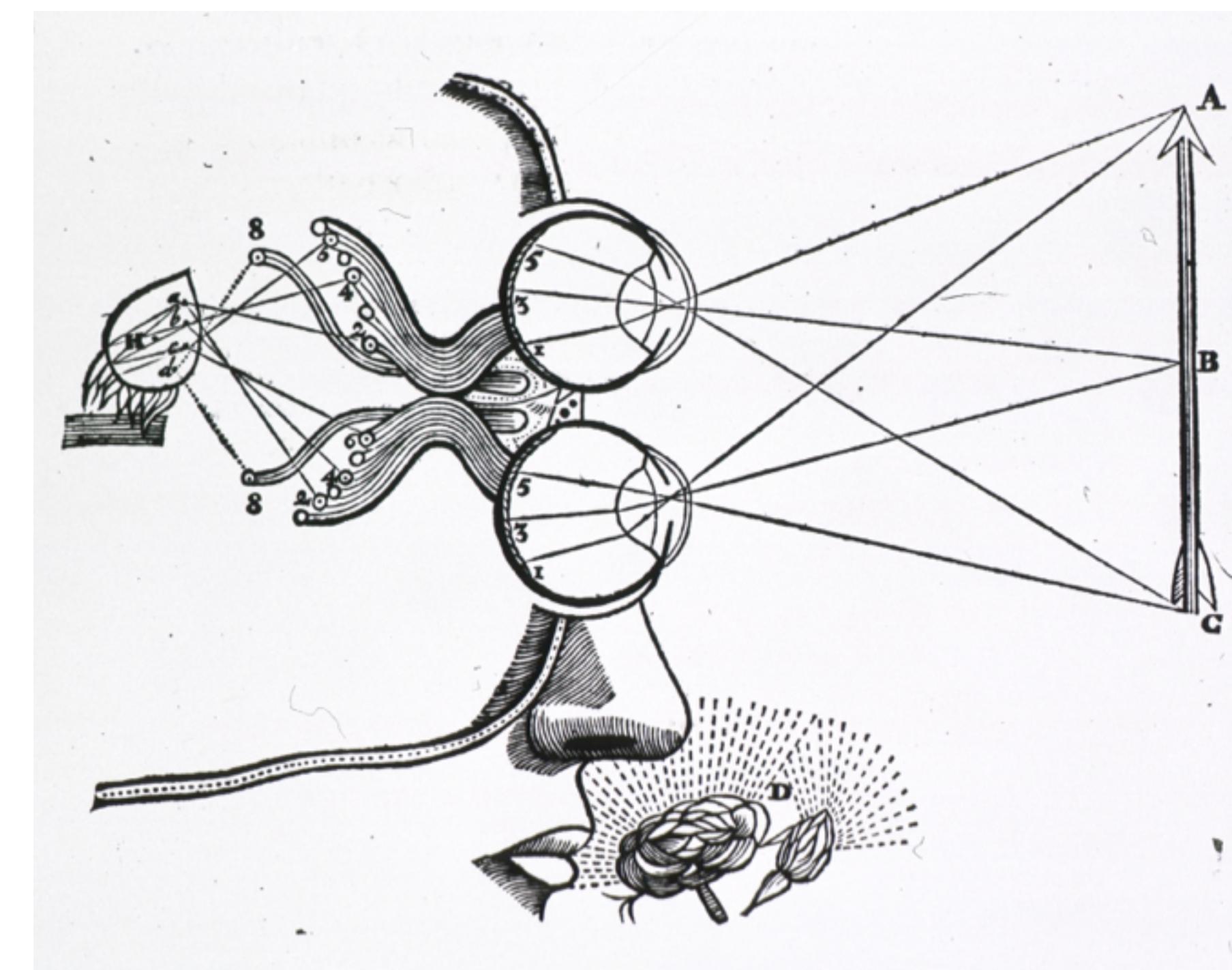
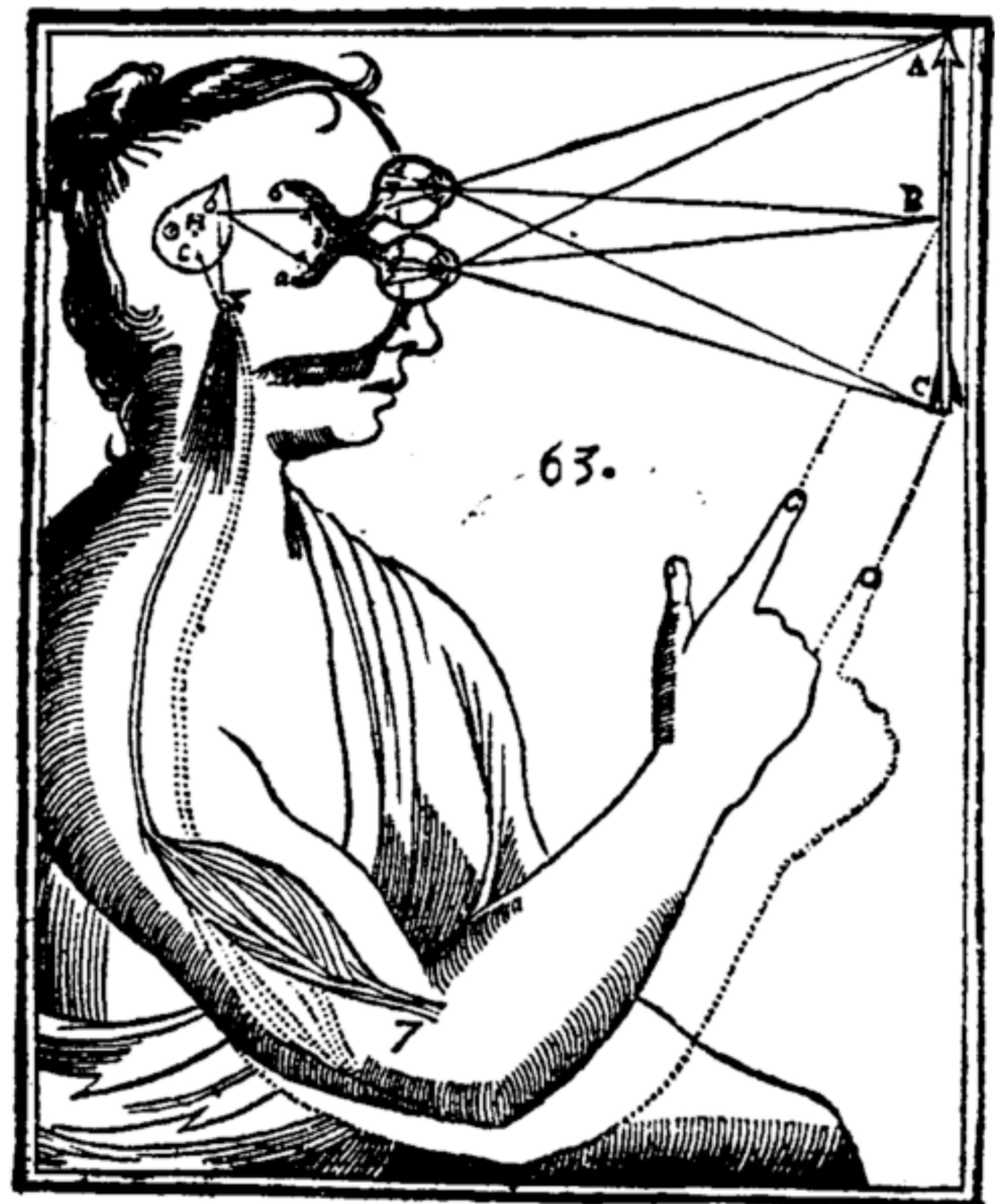


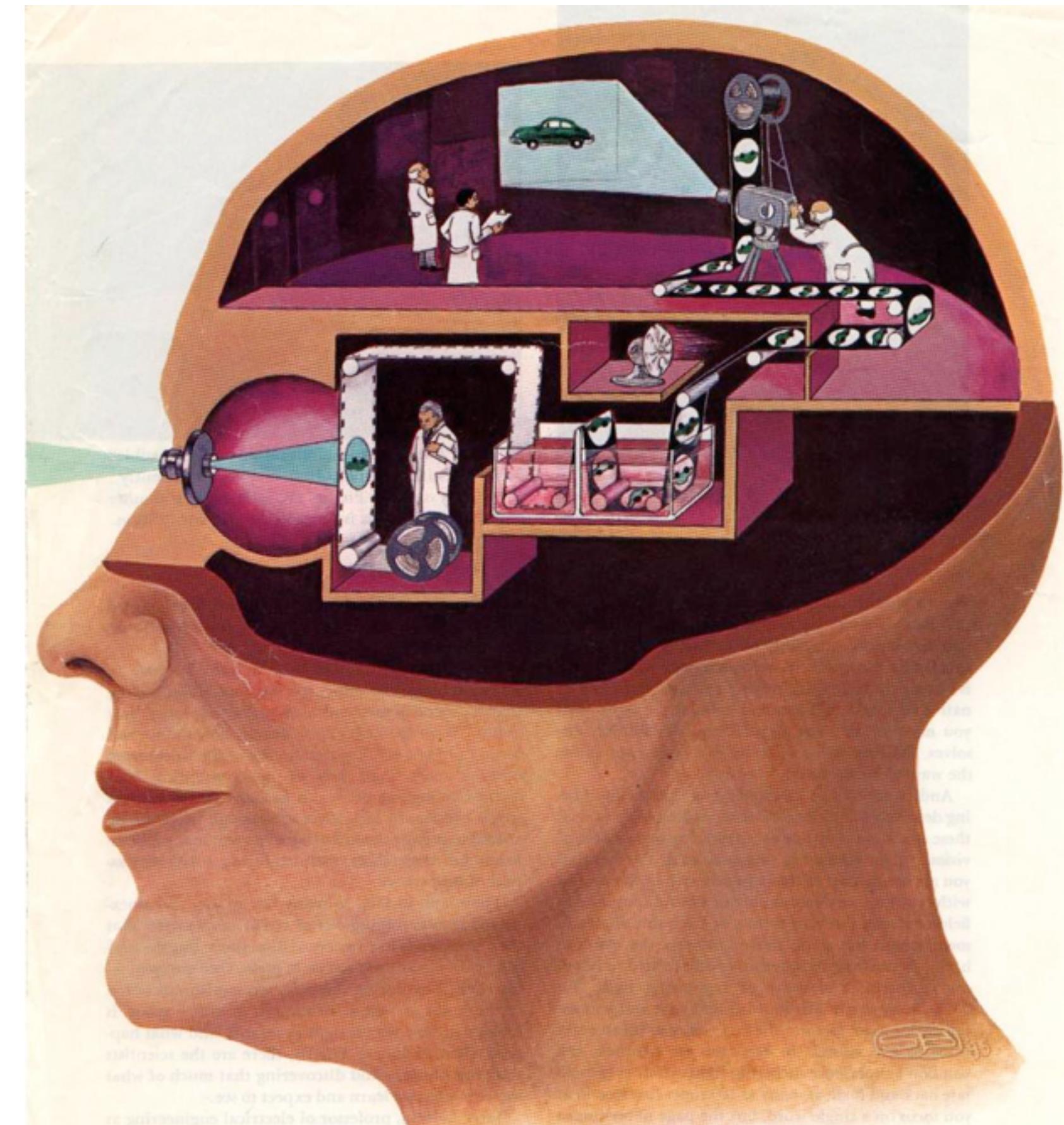
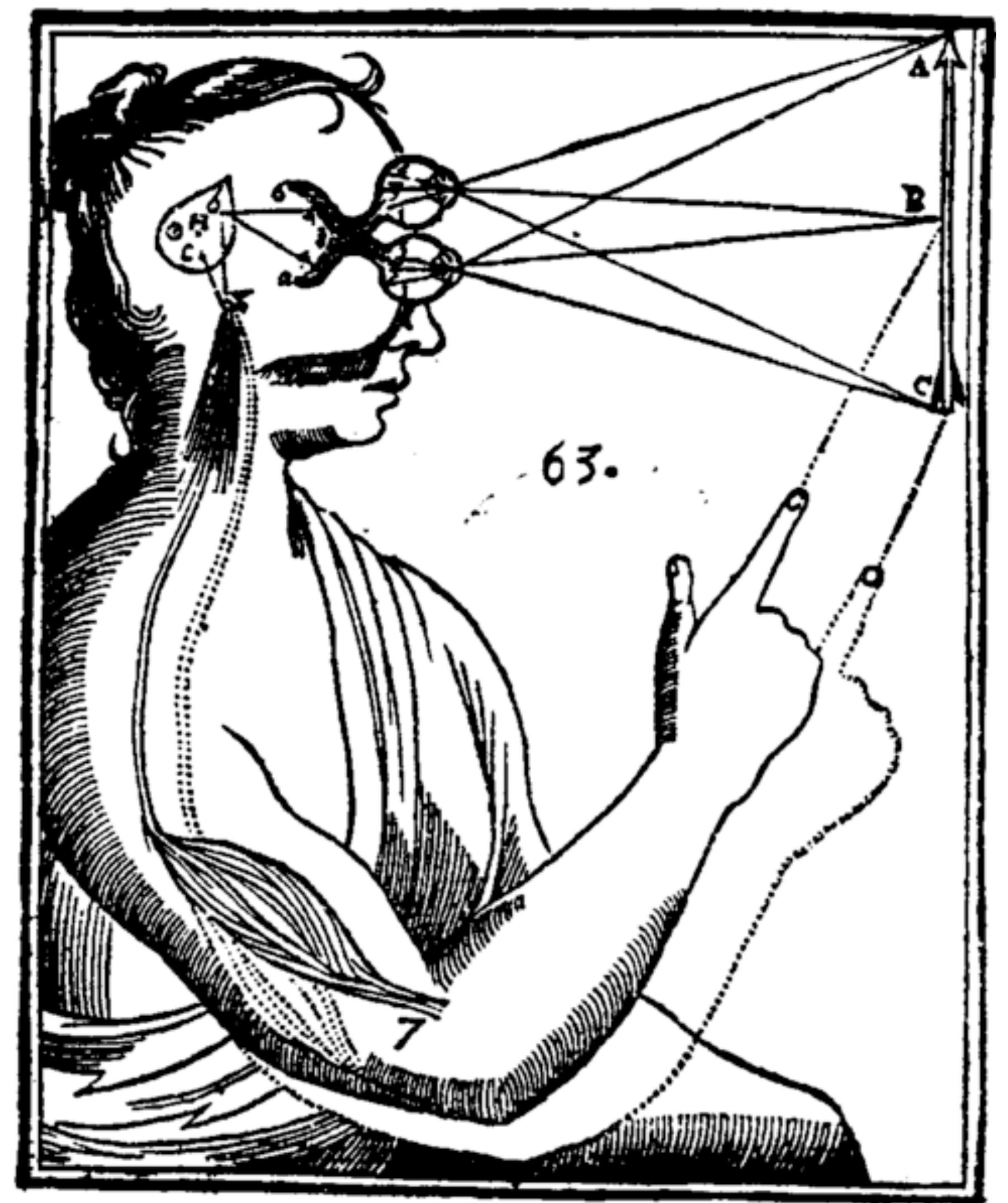
DESCARTES ON COGNITION

- Because Descartes was a mechanist, he thought perception was basically a mechanical process (up to a point)
- He came up with the theory that to see (or smell, or hear, or touch, or taste) is to have the body excited in some way by **material interaction** with things outside of it
- For example, when we look at a tree, light (in the form of corpuscles) bounces off the tree, impacts the eye, exciting the “animal spirits” Descartes’ term for nerves), ultimately terminating in the brain
- For us to actually **perceive**, there must be a transduction from this physical medium to a mental medium, producing an “idea” in the mind



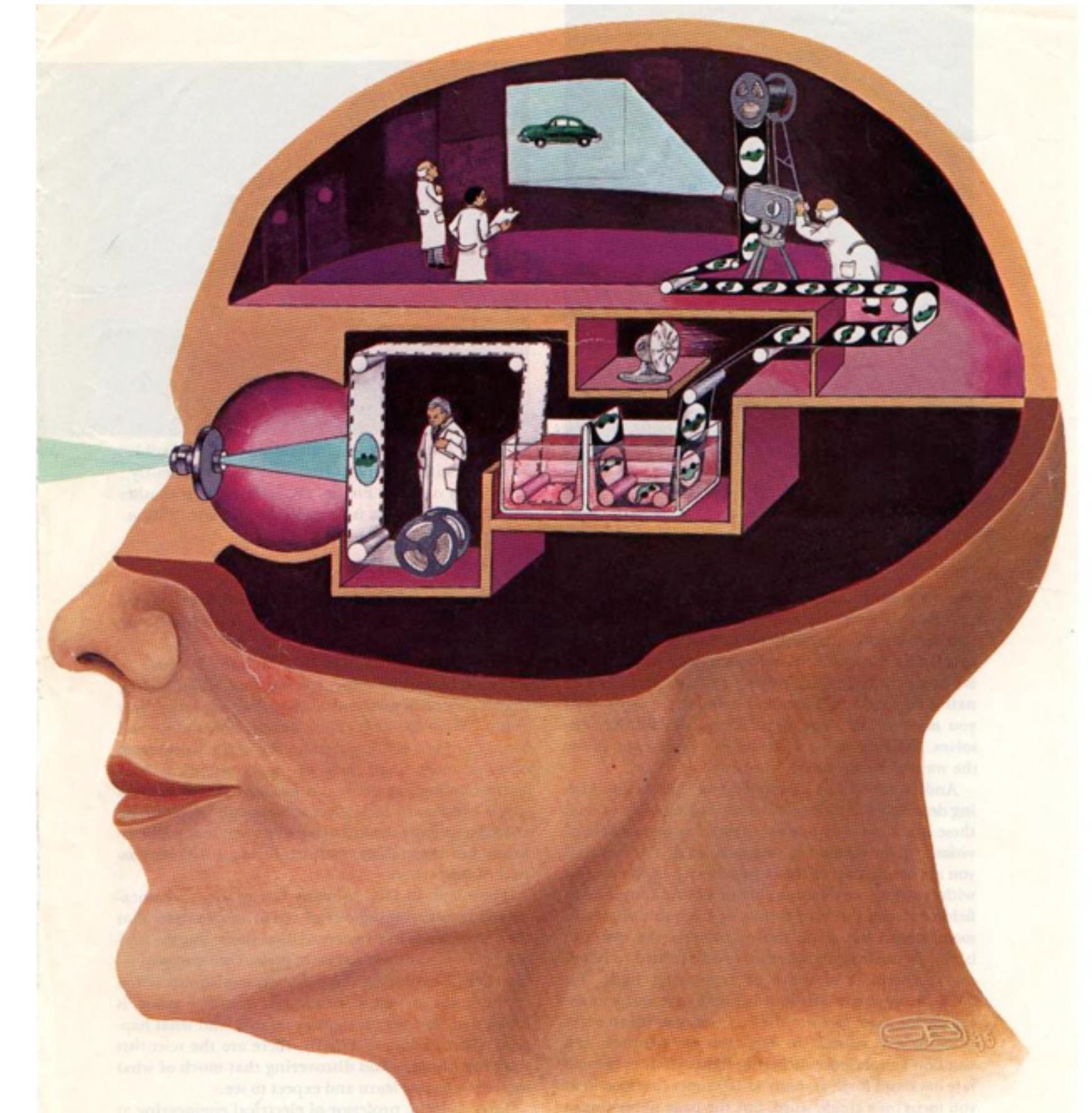






COGNITION

- So we have cognition when certain material processes undergo transduction into the mental arena (when the physiology terminates in some idea before the mind)
- Descartes thought these were two different “substances”: the mind and the material world (of bodies, including our own bodies, as extended geometrical things in space obeying mechanical laws)



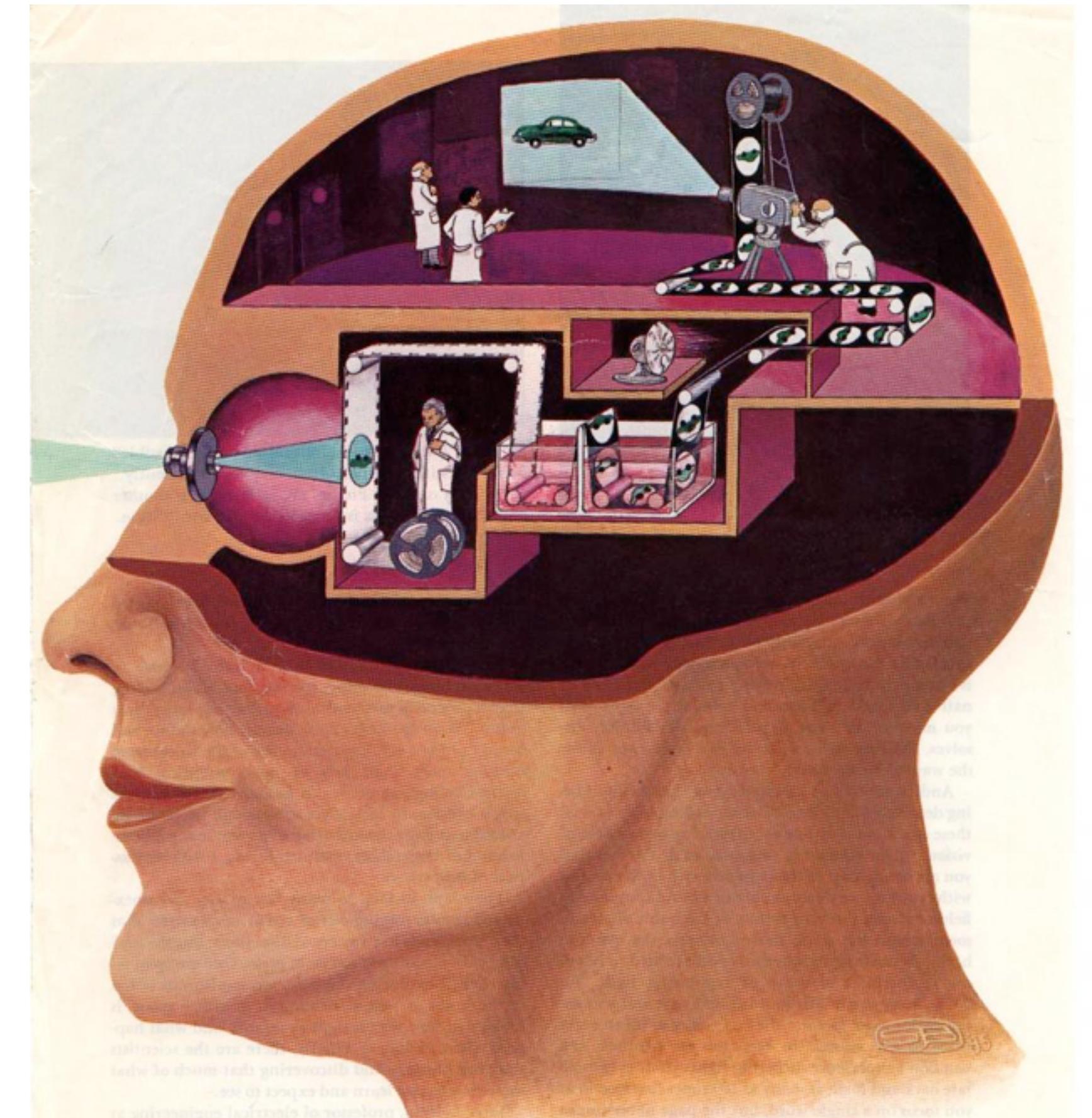
COGNITION

- Descartes never adequately described how this transduction was supposed to happen, given that material bodies and minds were different substances, and presumably not part of the same causal networks
- This point was voiced even during Descartes' life by thinkers like Thomas Hobbes, though perhaps most clearly and directly by Princess Elisabeth of Bohemia (1618-1680)
- She pointed out that difference in substance implies the inability for these substances to causally interact: that, say, damage to bodily tissue causes an idea of pain, or that a mental act like willing causes my body to move



LEGACY OF THE “CARTESIAN THEATRE”

- Still, the basic theory of mind that Descartes proposed still holds sway over us
- Many lay-people and cognitive scientists think of the mind as a kind of theatre in which the world is presented to us as images of reality
- Some call this the “Cartesian Theatre”
- It is one of Deacrtes’ legacies — the theory that the mind is a series of operations over representational content, and that this content need not be caused by some external source (though it may be)



SENSATION, IMAGINATION, UNDERSTANDING

- We also owe something like our modern taxonomy of cognitive processes to Descartes
- **Sensation** is the transfer of information through the 5 senses, along the nerves (tubes floating in the fine matter of animal spirits) — mechanical motion causing the widening or narrowing of these tubes, and holes in the brain
- Right now, I am experiencing (sensing) students writing notes — though this experience may turn out to be non-veridical
- **Imagination** is the mental faculty that allows us to produce ideas without there being an purported external cause, like when I think about what it would be like if all of you were 7 feet tall, and wearing purple shirts (though I could also imagine less fanciful sorts of things, too)
- **Understanding** is the mental faculty by which we grasp the nature of things (mental contents), not necessarily or paradigmatically through mental images

GRASPING USING THE UNDERSTANDING

- We can all grasp what a square is, and represent it to ourselves as a simple image
- But can we do this with other kinds of objects?
- Descartes uses an example of a chiliagon (a 1000-sided polygon) as an example
- While I can easily grasp with the understanding what such an object is, my limited imagination cannot produce a mental image that is different from a polygon with, say, 999 sides
- We can never the less grasp the idea **clearly** (we cannot help taking notice of it) and **distinctly** (we cannot confuse it with some other idea)



THE WAX ARGUMENT, MEDITATIONS II (NOT A READING YOU HAD TO DO)

- Descartes makes his point that even normal perception of simple objects requires the understanding — the grasp of concepts not given in experience itself
- Take a piece of wax, fresh from a hive
- It still smells and tastes of honey
- It is hard, and make a certain sound when tapped with my knuckle
- It has a certain shape and colour
- You seem to think about it through its sensible qualities, presented to the mind



THE WAX ARGUMENT, MEDITATIONS II (NOT A READING YOU HAD TO DO)

- BUT WAIT!!!
- You put the wax near fire
- It starts to melt
- Its smell changes; it is no longer hard, but softened and liquified; when I tap it, it makes no sound at all; etc.
- But if the wax was just all of those sensible qualities before the mind, and they all changed, how can we be thinking about the same piece of wax?



THE WAX ARGUMENT, MEDITATIONS II (NOT A READING YOU HAD TO DO)

- We must know what it is by some other, non-sensible means — we know it persists these transitions because we know its essence (definition) before the mind
- Cognition requires we possess some knowledge of the essence of things, or we cannot think of them as they persist through their changes
- Cognition requires, and utilizes, our conceptual faculty
- (Here, Descartes seems to be in at least partial agreement with Plato)



DAVID HUME (1711-1776)

- Hume was an empiricist
- He disagreed with Descartes
- Our cognition and our knowledge do not require any non-sensual sources of information
- All of the ideas we have before the mind are a product of sensation



HUME AND SENSE IMPRESSION

- Hume argued that everything we can possibly think about must come from the senses
- Hume tells us that all of our perceptions (any mental content whatsoever) is either **impression** or **idea**
- (Notice that Hume adopts Descartes theory of the mind as representational — as being presented with ideas)
- Impressions are vivid, and usually involuntary
- Ideas are faint copies (images) of these impressions, at least sometimes controlled by the will

HUME AND SENSE IMPRESSION AND IDEAS

- But even impressions come in two sorts: impressions of sensation (original impressions) and impressions of reflection (secondary impressions)
- **Impressions of Sensation:** the information that comes from the 5 senses, accompanied by feelings of pleasure and pain
- **Impressions of Reflection:** desires, emotions, passions — what accompanies ideas as we have them
- So I had a **sensation** of being drunk when I got tipsy at last year's Christmas party (**SENSE IMPRESSION**);
- I have a faint **memory** of those events (**IDEA**)
- I am a bit **ashamed** when recalling those memories, and I hope this sort of thing never happens again (**REFLECTION**)

PERCEPTIONS

- Any mental content, either sensual, reflective, or memory
- Perceptions (impressions or ideas) can be simple or complex
- Complex ideas can be psychologically decomposed
- For example, I can take the red ball, and I can decompose it into simple ideas: ball, and red
- Simple ideas do not admit of further psychological decomposition
- I cannot break down my idea of red into simpler (component) ideas
- Hume thinks all cognition is the operation of the mind over simple or complex impressions or ideas, including the combination or abstraction of simple impressions or ideas in ways not directly experienced

OPERATIONS OF THE MIND

- Hume thinks we need to only posit 4 operations of the mind — the mind is restricted in its imaginative capacity to what it can do with the contents it gets from sensation and reflection
1. Compounding: putting impressions or ideas together in interesting new ways, e.g. combining GOLD and MOUNTAIN ideas to get a new idea, THE GOLDEN MOUNTAIN
 2. Transposing/Transporting: taking one part of one idea, and putting it with another idea, e.g. UPPER BODY OF A HUMAN and LEGS OF A HORSE give you CENTAUR
 3. Augmenting: taking an idea, and making it larger or greater, e.g. ONE RAVEN becoming an UNKINDNESS OF RAVENS, or HUMAN becoming a GIANT
 4. Diminishing: the reverse of augmenting (making an idea smaller or lesser)

TWO KINDS OF COGNITIVELY SIGNIFICANT CLAIMS

- Hume thought that all of our knowledge was either “relations of ideas” or “matters of fact”
- Matters of fact are known after experience: we come to know something about the world from observing it
- For example, “All bachelors are messy”
- This claim is true or false, but we need experience to confirm or disconfirm the claim
- But there are claims that we can know are true (or false) prior to any experience
- “All bachelors are unmarried men”, for example

WHAT WE CANNOT KNOW

- Hume thinks that we cannot know any claim that is neither a matter of fact nor a relation amongst ideas
- In particular, we cannot know anything about causation (since we never see causation), whether our impressions and ideas are caused by an external source, or the nature of substance
- About these things, we remain skeptical
- We do believe in them, but we are not justified - we have no REASON to believe in them
- They are habits of the mind, based on the **association of ideas**