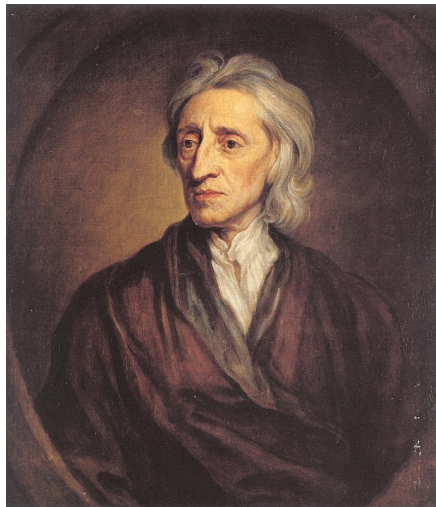


**Philosophy 203**  
***History of Modern Western Philosophy***

**Russell Marcus**  
**Hamilton College**  
**Spring 2015**



Class #15 - Locke  
Whatever It Takes  
And More (for after the break)

# Business

- Today: Everything we need on Locke for the Midterm
- Thursday: Midterm
  - You may write longhand.
  - You may bring a laptop to type your exam.
    - Honor code
  - Questions on line
  - 8 of 13 on Thursday
    - 0-8 pts each
    - Grades on Blackboard as a percentage
- Review session tonight, 7:30, [here](#).

# Clicker Question

The clicker questions this semester have been

- A. Fun and useful, keeping my head in the game.
- B. Sometimes helpful, but not essential to my class experience
- C. A little annoying, but not terrible.
- D. A waste of our time

# Clicker Question

Regarding uses of clickers, we should...

- A. Stop using them.
- B. Keep things as they are.
- C. More clicker questions!

# Four Central Topics in Locke's Work

- ⇒ **1. Arguments against innate ideas**
- 2. The primary/secondary distinction
- 3. An account of personal identity, including Locke's approach to the mind/body problem
- 4. Locke's philosophy of language, including the doctrine of abstract ideas

# Innate Ideas

- Locke ascribes a doctrine of universal assent to the rationalists.
  - ▶ UA1 Everyone agrees that p if and only if p is innate.
  - ▶ UA2 If everyone agrees that p, then p is innate.
  - ▶ UA3 If p is innate, then everyone agrees that p.
    - Examples of children and Goldbach's conjecture contravene UA3 and UA1.
  - ▶ Against UA2: Green is not red.
- More plausible nativist doctrine:
  - ▶ An idea is innate if it is not possible to learn it from experience.
- The opponent of innate ideas should show that experience is sufficient to account for our knowledge.
  - ▶ Ockhamist principles of simplicity

# Locke's Positive Project

- To show that we can account for all of our knowledge without appealing to innate ideas.
  - ▶ Start with the *tabula rasa*
  - ▶ Invoke sense experience and reflection

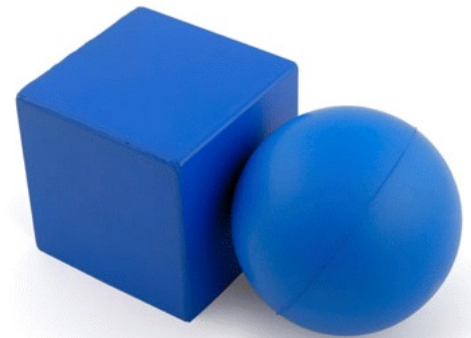
# Perceptions

- Individual perceptions are simple.
- Impressions of the same object under different sense modalities are independent.
  - The taste of the lemon is independent of its yellowness, and of its texture and odor.
- We'll see this *particularism* again going forward.
  - Berkeley and Hume
  - Wittgenstein and Russell
  - Logical empiricism
- Locke's claim that the sense modalities are independent explains his response to the Molyneux problem.



# The Molyneux Problem

- “Suppose a man born blind, and now adult, and taught by his touch to distinguish between a cube and a sphere of the same metal, and nearly of the same bigness, so as to tell, when he felt one and the other, which is the cube, which the sphere. Suppose then the cube and sphere placed on a table, and the blind man be made to see. Quaere, whether by his sight, before he touched them, he could now distinguish and tell which is the globe, which the cube?” (II.IX.8, AW 338b).



# Clicker Question

Could the blind person, given sight, discern the cube from the sphere?

A. Yes

B. No



# The Molyneux Problem

- “Suppose a man born blind, and now adult, and taught by his touch to distinguish between a cube and a sphere of the same metal, and nearly of the same bigness, so as to tell, when he felt one and the other, which is the cube, which the sphere. Suppose then the cube and sphere placed on a table, and the blind man be made to see. Quaere, whether by his sight, before he touched them, he could now distinguish and tell which is the globe, which the cube?” (II.IX.8, AW 338b).
- Locke denies that the blind person could tell which was the sphere and which was the cube without touching the objects.
  - Our sense of touch is independent of our vision.
- Some experimental research supports Locke’s solution.
- The question has not been resolved completely.



# Sensation and Reflection

- Simple ideas of sensation come from individual sense experiences of particular objects.
  - ▶ We can hold those ideas in memory, and recall them.
  - ▶ Language primarily consists of names of our simple ideas.
- Using our naturally developing ability to reflect, we can go beyond the limits of particular sense experience, and memory of such experience.
  - ▶ “The other fountain from which experience furnishes the understanding with ideas is the *perception of the operations of our own mind* within us, as it is employed about the *ideas* it has gotten - which operations, when the soul comes to reflect on and consider, do furnish the understanding with another set of *ideas*, which could not be had from things without. And such are *perception, thinking, doubting, believing, reasoning, knowing, willing*, and all the different actings of our own minds, which we, being conscious of and observing in ourselves, do from these receive into our understandings as distinct *ideas* as we do from bodies affecting our senses... I call this REFLECTION” (II.I.4, AW 323b).

# Varieties of Reflection

- Locke uses 'reflection' to cover a wide variety of psychological capacities.
  - ▶ contemplation
  - ▶ memory
  - ▶ discerning
  - ▶ comparison
    - Similarity and difference
    - Agreement or disagreement among ideas
    - “This is so absolutely necessary that without it there could be no knowledge, no reasoning, no imagination, no distinct thoughts, at all. But this the mind clearly and infallibly perceives each *idea* to agree with itself, and to be what it is, and all distinct *ideas* to disagree, i.e., the one not to be the other, And this it does **without pains, labor, or deduction, but at first view, by its natural power of perception and distinction**” (IV.I.4, AW 386b, emphasis added).
  - ▶ composition
    - Demonstrative knowledge (as in mathematical proofs)
    - “*Morality [is] among the sciences capable of demonstration*; in which I do not doubt but from self-evident propositions, by necessary consequences, as incontestable as those in mathematics, the measures of right and wrong might be made out to anyone who will apply himself with the same indifference and attention to the one as he does to the other of these sciences... “*Where there is no property, there is no injustice,*” is a proposition as certain as any demonstration in *Euclid*” (IV.III.18, AW 397b-398a.).
  - ▶ abstraction

# Abstraction

- Abstraction is the key to Locke's attempt to get at Descartes' eternal truths.
- We can generalize, or abstract, to find universals, like those of mathematics.
  - “The senses at first let in particular *ideas*, and furnish the yet empty cabinet, and the mind by degrees growing familiar with some of them, they are lodged in the memory, and names got to them. Afterwards the mind proceeding further abstracts them, and by degrees learns the use of general names” (I.II.15, AW 321a).
- Thus, Locke believes that we have some inborn, if developing, capacities to reflect on our own ideas.
  - An inborn capacity is not an innate contentful idea.

# God

- Locke argues that even our idea of God comes from experience, rather than from naturally imprinted first principles.
- “If we examine the *idea* we have of the incomprehensible supreme being, we shall find that...the complex *ideas* we have both of God and separate spirits are made of the simple *ideas* we receive from *reflection*: e.g. having, from what we experiment in ourselves, gotten the *ideas* of existence and duration; of knowledge and power; of pleasure and happiness; and of several other qualities and powers, which it is better to have than to be without. When we would frame an *idea* the most suitable we can to the Supreme Being, we enlarge every one of these with our *idea* of infinity; and so putting them together, make our complex *idea of God*” (II.XXIII.33, AW 366b).

# The Challenge for Locke

- We have seen that Locke criticizes innate ideas, and argues that we have psychological capacities for attaining reflective knowledge.
- Further, he criticized Descartes's demand for indubitable certainty.
- Still, if he is not to beg the question of whether knowledge is possible, he should explain, in greater detail, how sense experience leads to veridical beliefs.
- Can Locke account for the errors which motivated Descartes, the false beliefs that he had taken as true in his youth, and demonstrate ways to avoid such errors without relying on innate ideas?



## Clicker Question

Which is the more promising project?

- A. Descartes's dualism
- B. Spinoza's substance monism
- C. Leibniz's monadic idealism
- D. Locke's empiricism
- E. None of these look any good to me.

# Four Central Topics in Locke's Work

- ✓1. Arguments against innate ideas
- ⇒2. **The primary/secondary distinction**
- 3. An account of personal identity, including Locke's approach to the mind/body problem
- 4. Locke's philosophy of language, including the doctrine of abstract ideas

# Descartes Against the Senses

- Aristotle had taken sensory qualities to be properties of external objects.
  - ▶ The redness and sweetness of an apple are real properties of the apple itself.
  - ▶ Our senses are attuned to the external environment.
  - ▶ Color vision occurs when a person's eyes are changed to be like the color of an external object.
- Descartes presented (at least) three considerations which weighed against the veridicality of sense experience:
  1. The illusion and dream doubts;
  2. The wax argument; and
  3. The rejection of the Resemblance Hypothesis on the basis of the example of the sun.
- The moral of the illusion argument is merely to take care to use one's senses in the best way possible.
  - ▶ We need not dismiss all of our sense evidence on the basis of illusion.
  - ▶ The dream doubt encourages a mere skepticism.
  - ▶ Locke puts skepticism aside.

# Appearance, Reality, and the Wax

- Physical objects can have contradictory sense properties.
  - ▶ The wax (like all material objects) is an extended body which can take various manifestations.
  - ▶ The same object may have many different appearances.
  - ▶ We should identity objects with none of their particular sensory qualities.
- The appearance of an object is distinct from its real qualities.
- Which qualities are real, and which are mere appearances?
  - ▶ The primary/secondary distinction



# Primary Qualities Before Locke

- Descartes believed that the only real property of physical objects was their extension.
  - ▶ “The only principles which I accept, or require, in physics are those of geometry and pure mathematics; these principles explain all natural phenomena, and enable us to provide quite certain demonstrations regarding them” (Descartes, *Principles of Philosophy* II.64, AT VIII.A.78)
  - ▶ Imagination is not capable of representing true extension.
  - ▶ We use pure thought.
- Boyle and Galileo
  - ▶ “...that external bodies, to excite in us these tastes, these odours, and these sounds, demand other than size, figure, number, and slow or rapid motion, I do not believe, and I judge that, if the ears, the tongue, and the nostrils were taken away, the figure, the numbers, and the motions would indeed remain, but not the odours, nor the tastes, nor the sounds, which, without the living animal, I do not believe are anything else than names” (Galileo, *Opere* IV, 336).
  - ▶ size, shape, mass, motion, and number
  - ▶ Again, mathematically-describable properties
- The expansion of the list of real properties from Descartes’s extension to the other qualities does not indicate any difference in principle.
  - ▶ The primacy of mathematics

# Locke's Water Experiment

- The same object displays incompatible properties at the same time.
- The Heraclitean response to the wax example
  - ▶ “No one subject can have two smells or two colors at the same time. To this perhaps will be said, has not an opal, or the infusion of *lignum nephriticum*, two colors at the same time? To which I answer that these bodies, to eyes differently placed, it is different parts of the object that reflect the particles of light. And therefore it is not the same part of the object, and so not the very same subject, which at the same time appears both yellow and azure. For it is as impossible that the very same particle of any body should at the same time differently modify or reflect the rays of light, as that it should have two different figures and textures at the same time” (IV.III.15, AW 396b).
- The Heraclitean response is unavailable in the water case.
  - ▶ The exact same water displays the incompatible properties.
- Locke needs an account of the error that will not force us to abandon all sense experience to the poverty of the stimulus argument.



# Ideas of an Apple

- Red
- Round
- Cool to the touch
- Sweet, though a bit sour
- Shiny
- Smooth
- Sits still on the table
- Crunchy
- Weighs 4 oz.
- Has a mass of 120 grams
- Is one apple
- Is being considered by you
- Smells apple-like



# Locke's Destructive Principles

- Locke tacitly presumes two principles to distinguish veridical ideas from misrepresentative ones.
- LP1: If one perceives an object as having two (or more) incompatible ideas, then those ideas do not represent real properties of the object.
  - ▶ Besides hot and cold, other sense ideas are not veridical, according to LP1.
  - ▶ Color in porphyry (II.VIII.19)
  - ▶ Taste in almonds (II.VIII.20)
  - ▶ Descartes's wax example
- Corollary 1: Even if a change in us entails the change in the perceived quality, the ideas which vary can not be veridical.
  - ▶ Orange juice
- Corollary 2: Qualities that appear different to different observers are not veridical.
  - ▶ Color-blindness



# Locke's Constructive Principle

- LP2: If an idea of an object is the same under all conditions, that idea is veridical.
  - “We may understand how it is possible that the same water may, at the same time, produce the sensations of heat in one hand and cold in the other; which yet figure never does, that, never producing the *idea* of a square by one hand, which has produced the *idea* of a globe by another” (II.VIII.21, AW 335b).
- Corollary: If every observer receives the same idea from an object, then that idea is veridical.

# Apple, Redux

- Red ■ Misrepresentative
- Round ■ Real
- Cool to the touch ■ Misrepresentative
- Sweet, though a bit sour ■ Misrepresentative
- Shiny ■ Misrepresentative
- Smooth ■ Misrepresentative
- Sits still on the table ■ Real
- Crunchy ■ Misrepresentative (But consider its brittle texture)
- Weights 4 oz. ■ Misrepresentative
- Has a mass of 120 grams ■ Real
- Is one apple ■ Real
- Is being considered by you ■ Misrepresentative
- Smells apple-like ■ Misrepresentative



- Thus, we have arrived at the primary/secondary distinction via argument:
- “These I call *original* or *primary qualities* of body, which I think we may observe to produce simple *ideas* in us, namely, solidity, extension, figure, motion or rest, and number. *Secondly*, such *qualities* which in truth are nothing in the objects themselves but powers to produce various sensations in us by their *primary qualities*...these I call *secondary qualities*” (II.VIII.9-10, AW 333a-b).

# Primary Qualities and Secondary Qualities

- Primary
  - Solidity
  - Extension
  - Figure
  - Motion/ Rest
  - Number
- Secondary
  - Color
  - Odor
  - Hot/ Cold
  - Sound
  - Texture
  - Taste
- We can justify our beliefs on the basis of sense experience without worrying that we will be forced to accept errors as true because we are relying on our senses, rather than pure reason.

# A Worry

- “Qualities thus considered in bodies are, first, such as are utterly inseparable from the body in whatever state it is, such as in all the alterations and changes it suffers, all the force can be used upon it, it constantly keeps, and such as sense constantly finds in every particle of matter which has bulk enough to be perceived, and the mind finds inseparable from every particle of matter, though less than to make itself singly perceived by our senses - e.g., take a grain of wheat, divide it into two parts, each part has still *solidity*, *extension*, *figure*, and *mobility*; divide it again, and it retains still the same qualities; and so divide it on until the parts become insensible, they must retain still each of them all those qualities” (II.VIII.9, AW 333a).
- Why doesn't the change in extension of the wheat show that extension is a secondary quality?
- Do electrons have shape?

# The Primary/Secondary Distinction, the Resemblance Hypothesis, and Empiricism

- Locke accepts the Resemblance Hypothesis, for primary qualities only.
  - The *ideas of primary qualities* of bodies *are resemblances* of them and their patterns do really exist in the bodies themselves, but the *ideas produced* in us *by* these *secondary qualities have no resemblance* of them at all. There is nothing like our *ideas* existing in the bodies themselves (II.VIII.15, AW 334a).
- Our ideas of extension resemble extension in the world.
- My ideas of secondary qualities do not resemble anything in an object.
- On the basis of my ideas of primary qualities, then, I can justify significant conclusions about the world (i.e. the new science) without appealing to innate ideas.

# Descartes and Locke

- Both Descartes and Locke were writing in support of modern science.
- Descartes believes that the essential characteristic of physical objects is extension.
- Locke believes that extension is just one of several primary qualities.
- They disagree more strongly about how we know about those properties.
- Their disagreement is mainly epistemological, not metaphysical.

# Locke's Metaphysics

- God, finite intelligences, bodies
- The material world is nothing but particles in motion.
- Sense qualities of objects are not really in the world.
  - ▶ Lemons are not really yellow, or sour.
  - ▶ They are made of particles (atoms or corpuscles) that appear yellow or sour to normal human senses.
  - ▶ These minute particles unite in varying ways.
  - ▶ Depending on how they unite, they affect us in different ways.
- We might say that the lemon has a 'dispositional property' which makes us see it as yellow.
  - ▶ But the dispositional property is not yellowness, which is, properly speaking, a property only of my experience.

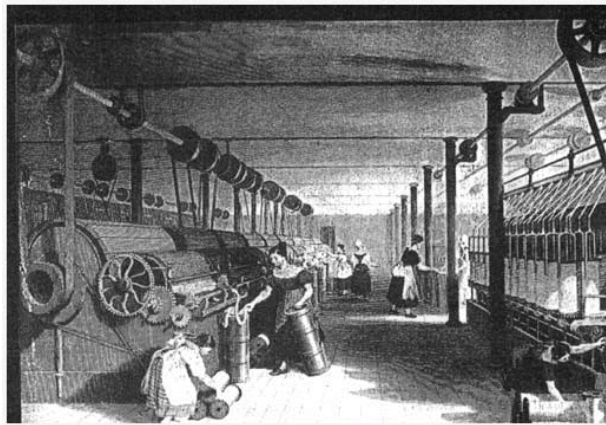
# Four Central Topics in Locke's Work

- ✓1. Arguments against innate ideas
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- 4. Locke's philosophy of language, including the doctrine of abstract ideas



# Locke and the Mind-Body Problem

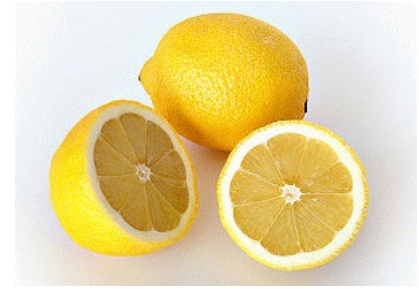
- Locke was suspected of Hobbesian materialism.
  - His account of mental causation is basically Galilean.
- But he also seems to be a dualist.
  - Much talk of souls and God
  - Saddled with a typical mind-body problem
- Locke's solution: maybe matter can think.
  - We observe lawful correspondences between physical events and some mental states.
  - If these lawful correspondences are possible, it seems possible for matter to think.
  - Against Leibniz



# Thinking Matter and Locke's Humility

- Leibniz and Descartes argued that the seat of thought is a soul (monad).
  - Matter is passive and unconscious.
- But it seems equally unlikely for a soul to be the seat of thought as for matter to be the seat of thought.
  - “We have the *ideas* of *matter* and *thinking*, but possibly shall never be able to know whether any mere material being thinks or not, it being impossible for us, by the contemplation of our own *ideas*, without revelation, to discover whether omnipotence has not given to some systems of matter fitly disposed a power to perceive and think, or else joined and fixed to matter so disposed a thinking immaterial substance - it being in respect of our notions not much more remote from our comprehension to conceive that God can, if he pleases, superadd to matter a faculty of thinking than that he should superadd to it another substance with a faculty of thinking, since we do not know in what thinking consists, nor to what sort of substances the Almighty has been pleased to give that power...” (IV.III.6, AW 393b).
  - “*The extent of our knowledge* comes not only short of the reality of things, but even of the extent of our own *ideas*”(IV.III.6, AW 393a).

# The Hard Problem



- So, why do lemons appear yellow?
- We lack an explanation of the connection between my quale and its cause.
  - Why is it that such and such motions in the air cause me to hear a symphony?
  - Why is it that certain wavelengths of light cause me to see blue?
- “That the size, figure, and motion of one body should cause a change in the size, figure, and motion of another body is not beyond our conception. The separation of the parts of one body upon the intrusion of another and the change from rest to motion upon impulse, these and the like seem to have some *connection* one with another. And if we knew these primary qualities of bodies, we might have reason to hope we might be able to know a great deal more of these operations of them one upon another. But our minds not being able to discover any *connection* between these primary qualities of bodies and the sensations that are produced in us by them, we can never be able to establish certain and undoubted rules of the consequence or *coexistence* of any secondary qualities, though we could discover the size, figure, or motion of those invisible parts which immediately produce them. We are so far from knowing what figure, size, or motion of parts produce a yellow color, a sweet taste, or a sharp sound that we can by no means conceive how any *size, figure, or motion* of any particles can possibly produce in us the *idea* of any *color, taste, or sound* whatsoever; there is no conceivable *connection* between the one and the other” (IV.III.13).

# Who Am I?

# The Ship of Theseus

- We can replace every plank on the ship, one at a time.
- It changes its material composition completely, but remains the same ship.
- We can make a new ship with the old wood, and find ourselves completely confused about what to say.
- Is the ship that Theseus uses, with all new materials, his ship?
- Or, is the new ship made of the old wood his ship?
- My dishwasher



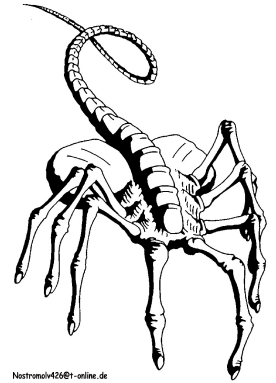
# The Self

- We might make a distinction between artifacts and natural kinds.
  - Maybe there are no facts about the ship of Theseus or the dishwasher.
  - Maybe the ship itself *is* constantly changing.
  - We have a merely practical problem of determining which ship belongs to Theseus.
- For our selves, and other natural kinds, we have a deeper problem.
  - We remain constant.
  - Our pets and our trees persist through time.
  - I have interests in the future of my self that I do not have for other people.
  - There seems to be an underlying haecceity.
- Descartes identified the self with the soul.
  - Reincarnation, Pre-existence, Eternality
- Hobbes identified the self with the body.
  - But ship of Theseus!
- Locke: the self is a moral (forensic) concept.
  - Used for practical purposes of ascribing responsibility

# Against Identifying with the Soul

- “Souls [are], as far as we know anything of them, in their nature, indifferent to any parcel of matter...” (§II.XXVII.14, AW 372a).
- Imagine that a soul had two successive incarnations.
- We wouldn’t say that there were only one person.
- “Suppose it to be the same soul that was in *Nestor* or *Thersites* at the siege of *Troy*...which it may have been, as well as it is now the soul of any other man. But he now having no consciousness of any of the actions of either of *Nestor* or *Thersites*, does or can he conceive himself the same person with either of them? Can he be concerned in either of their actions, attribute them to himself, or think them his own more than the actions of any other men that ever existed? Thus, this consciousness not reaching to any of the actions of either of those men, he is no more one self with either of them than if the soul or immaterial spirit that now informs him had been created and began to exist, when it began to inform his present body...” (II.XXVII.14, AW 372a).

# Against Biological Criteria



- Against the simple body theory
  - ▶ An animal is not merely its matter.
  - ▶ The matter remains after death while the animal does not.
  - ▶ Our bodies are constantly changing
  - ▶ Our selves underlie those changes.
- The refined body (or biological) theory
  - ▶ ‘Man’, or ‘human being’, is a type of animal whose identity is determined functionally.
  - ▶ “The identity of the same *man* consists...in nothing but a participation of the same continued life, by constantly fleeting particles of matter, in succession vitally united to the same organized body” (II.XXVII.6, AW 369a).
  - ▶ This sort, human being, can not serve as the sort of our selves.
  - ▶ A human is identified by the functional organization of the body; it is a biological thing.
- Still, a person is not a biological thing.
  - ▶ “[A person] is a thinking intelligent being that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places, which it does only by that consciousness which is inseparable from thinking, and, as it seems to me, essential to it...” (II.XXVII.9, AW 370a).
- Aliens and sentient machines could be persons without having our biology.



# Locke's Consciousness Theory of the Self

- “[A person] is a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places; which it does only by that consciousness which is inseparable from thinking, and, as it seems to me, essential to it...” (II.XXVII.9, AW 370a).
- Locke identifies the self with the thinking thing.
- Prince and cobbler
- The day and night case of divided consciousness
  - one biological human
  - two different persons
- For Locke, what makes the same person over time, is consciousness, and, especially, connection through memory, which Locke calls consciousness extending backwards.
- Note: Locke's solution is non-substantial.
  - The self is a conceptual construction.



# Four Central Topics in Locke's Work

- ✓1. Arguments against innate ideas
- ✓2. The primary/secondary distinction
- ✓3. An account of personal identity, including Locke's approach to the mind/body problem
- ⇒4. **Locke's philosophy of language, including the doctrine of abstract ideas**

# Empiricism and Mathematics

- The empiricist has difficulty explaining our knowledge of mathematics.
- It is difficult to see how experience can support universal claims about mathematical objects, which are not sensible.
- Locke's account of our knowledge of mathematics, like his account of our knowledge of God, does not rely on innate ideas.
- Instead, it relies on intuition and demonstration, starting with ideas of sensation, and then using reason to discover relations among them.
  - ▶ “I do not doubt but it will be easily granted tht the *knowledge* we have of *mathematical truths* is not only certain, but *real knowledge*, and not the bare empty vision of vain insignificant *chimeras* of the brain. And yet, if we will consider, we shall find that it is only of our own *ideas*” (IV.IV.6, AW 404b).
- We discussed the psychological capacities for reflection.
  - ▶ Among them, abstraction will provide an account of our knowledge of mathematics.
  - ▶ We start with an overview about how language works.

# Locke's Philosophy of Language

- Words stand for ideas in our minds.
  - Controversial claim
  - We ordinarily take many words to stand for objects outside of our minds.
  - We normally take 'this table' to refer to the table, not to my idea of the table.
- A representational theory of mind
  - Ideas are like pictures in the mind
  - Terms stand for ideas, which correspond to objects, like chairs, people, or even circles.

# Words Stand for Ideas

- Locke's argument:
  - LL1. Society depends on our ability to communicate our ideas, so words must be able to stand for ideas.
  - LL2. Since my ideas precede my communication, words must refer to my ideas before they could refer to anything else.
  - LL3. If words refer both to my ideas and to something else (e.g. your idea, or an external object), then they would be ambiguous.
  - LL4. But, words are not ordinarily ambiguous.
  - LL5. So, words ordinarily do not stand for something other than my ideas.
  - LLC. So, words stand for my ideas.
- “[It is] perverting the use of words, and bring[ing] unavoidable obscurity and confusion into their signification, whenever we make them stand for anything but those ideas we have in our own minds” (§III.II.5).

# Words Do Not Stand for External Objects

“A child having taken notice of nothing in the metal he hears called gold, but the bright shining yellow colour, he applies the word gold only to his own idea of that colour, and nothing else; and therefore calls the same colour in a peacock’s tail gold. Another that hath better observed, adds to shining yellow great weight: and then the sound gold, when he uses it, stands for a complex idea of a shining yellow and a very weighty substance. Another adds to those qualities fusibility: and then the word gold signifies to him a body, bright, yellow, fusible, and very heavy. Another adds malleability. Each of these uses equally the word gold, when they have occasion to express the idea which they have applied it to: but it is evident that each can apply it only to his own idea; nor can he make it stand as a sign of such a complex idea as he has not...” (Locke, *Essay* §III.II.3).

# General Terms

- Particular terms correspond to simple ideas.
- There are too many particular things for them all to have particular names.
- We have to use general names.
  - ▶ 1. Human capacity is limited (III.III.2, AW 377a).
  - ▶ 2. You don't have names for my ideas and I don't have names for yours (III.III.3, AW 377a-b).
  - ▶ 3. Science depends on generality (III.III.4, AW 377b).
- We use general names for communication and for science.

# Abstraction

- sense experiences
- backs, seats, legs
- chair
- table
- furniture
- house
- apartment building
- domicile
- animal
- person
- extension
- motion
- substance

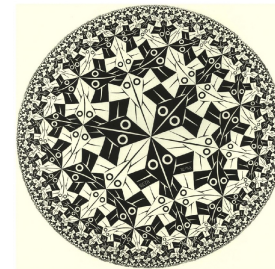


# Abstraction and Science

- Ideas of bodies and motion are the foundations of physical science.
  - $v = \Delta s / \Delta t$
- We can abstract to the term, 'physical object'.
- General terms, and the abstract ideas to which they refer, apply to particular objects, but only to certain aspects of those objects.
  - “[A general] *idea* [of man] is made, not by any new addition, but only...by leaving out the shape, and some other properties signified by the name *man*, and retaining only a body, with life, sense, and spontaneous motion, comprehended under the name *animal*” (III.III.8, AW 378a).
- A progression of abstraction leads us from terms for particular sensations to terms for bodies.
- So, the term 'bodies', which we have constructed to stand for an abstract idea, refers to bodies, which are physical objects.

# Abstraction and Mathematics

- General names are the foundation for formal sciences like mathematics and logic as well.
- We get knowledge of mathematical objects, which we do not experience, by a process of abstraction.
- Doughnuts and frisbees, and circles
- We leave out other properties, form an abstract idea, and coin a general term to stand for it.
  - We experience extended things, but not extension itself.



# General Terms and Proofs

- Both the use of general terms and our ability to remember the distinct parts of a proof are essential to mathematics.
- “If...the perception that the same *ideas* will eternally have the same habitudes and relations is not a sufficient ground of knowledge, there could be no knowledge of general propositions in mathematics, for no mathematical demonstration would be any other than particular” (IV.I.9, AW 388b).
- The abstract generality of mathematical claims supports their certainty.
- “[The mathematician] is certain all his knowledge concerning such *ideas* is real knowledge, because intending things no further than they agree with his *ideas*, he is sure what he knows concerning those figures, when they have barely an *ideal existence* in his mind, will hold true of them also when they have real existence in matter, his consideration being barely of those figures which are the same, wherever or however they exist” (IV.IV.6, AW 404b).

# Ethics, Too

For certainty being but the perception of the agreement or disagreement of our *ideas*; and demonstration nothing but the perception of such agreement, by the intervention of other *ideas* or mediums, our moral *ideas*, as well as mathematical, being archetypes themselves, and so adequate and complete *ideas*; all the agreement or disagreement which we shall find in them will produce real knowledge, as well as in mathematical figures (IV.IV.7, AW 404b).

# Nominalism

some words are merely names and do not denote real objects or properties

- We are all nominalists about fictional objects, like the Easter Bunny.
- Some people are nominalists about numbers.
- Locke is a nominalist about color, and other secondary properties.
- Locke is also a nominalist about the referents of abstract ideas.
  - “Universality does not belong to things themselves, which are all of them particular in their existence, even those words and *ideas* which in their signification are general. When therefore we quit particulars, the generals that rest are only creatures of our own making, their general nature being nothing but the capacity they are put into by the understanding of signifying or representing many particulars. For the signification they have is nothing but a relation that, by the mind of man, is added to them” (III.III.11, AW 379a).

# Essences

- Locke does not have much to say, positively, about essences.
- Since we do not have sense experience of the essence of an object, there is little to be said.
  - “The real internal, but generally, in substances, unknown constitution of things on which their discoverable qualities depend, may be called their *essence*” (III.III.15, AW 380a).
- To arrive at an idea of essence, we must generalize from particular sensation, and form an abstract idea.
- But, strictly speaking, essences, being abstract ideas, are not real, either.
  - “That which is *essential* belongs to it as a condition, by which it is of this or that sort; but take away the consideration of its being ranked under the name of some abstract *idea*, and then there is nothing necessary to it, nothing inseparable from it” (III.VI.6, AW 383b).
- Again, Locke is a nominalist about essences.

# Objectivity without Objects

- For all his nominalism, we are not supposed to think that Locke denigrates mathematical or moral knowledge.
  - ▶ “All the discourses of the mathematicians about the squaring of a circle, conic sections, or any other part of mathematics, *do not concern* the *existence* of any of those figures, but their demonstrations, which depend on their *ideas*, are the same, whether there is any square or circle existing in the world or not. In the same manner the truth and certainty of *moral* discourses abstract from the lives of men and the existence of those virtues in the world of which they treat” (IV.IV.8, AW 405a).
- Our knowledge of the external world, the causes of our sensations and the laws that govern physical interactions, contains deep mysteries, inexplicable absent something like a rationalist’s principle of sufficient reason.
  - ▶ “I think not only that it becomes the modesty of philosophy not to pronounce magisterially where we want that evidence that can produce knowledge, but also that it is of use to us to discern how far our knowledge does reach, for the state we are at present in, not being that of vision, we must in many things content ourselves with faith and probability” (IV.III.6, AW 394a).