

Locke UNLOCKED

A Look at John Locke's *An Essay Concerning Human Understanding*

TEACHER NOTES



These teacher notes provide an exploration of John Locke's *An Essay Concerning Human Understanding* through 6 key themes. Together with the **John Locke: Teaching Activities** they are designed to support understanding and provide a range of suggestions teachers can choose from or adapt.

These resources complement an exhibition of objects at the Bodleian Libraries in Spring 2022. The objects are at once things, models of things and models of ideas. Images of the objects are included in these resources.

Introduction to John Locke

It would be hard to overstate the importance of John Locke's writings. His published works have deeply influenced western political thought, the constitutions of countries, approaches to education, and centuries of philosophical thinking. Thomas Jefferson, Benjamin Franklin, Horace Walpole, and Charles Darwin all kept copies of Locke's works in their home libraries.

America's Declaration of Independence, written by Thomas Jefferson, owes a debt to Locke's political writing. Locke's views on a wide variety of philosophical topics continue to be taken seriously by philosophers today.

Locke also had a strong association with the town of Oxford and Oxford University. He was a student of Christ Church College. He practiced medicine in Oxford and for several years at Christ Church held the position of Lecturer.

Locke's seminal work, *An Essay Concerning Human Understanding* (1689), sparked an intellectual movement, now referred to as "British empiricism". British empiricists emphasized the importance of experience as a primary source of knowledge, in contrast to inherited ideas or intellectual reasoning. Locke employed a style of philosophical argument that made abundant use of real and ordinary examples and wildly unrealistic fictional stories or "thought experiments". This style of arguing remains in wide use among contemporary professional philosophers.

You may find the resources below helpful as a general introduction to philosophy and the ideas of John Locke.

Podcast by Peter Millican – Professor of Philosophy, Hertford College, University of Oxford

<https://podcasts.ox.ac.uk/24-john-locke>

BBC Radio 4 Series – A History of Ideas
<https://www.bbc.co.uk/programmes/articles/3vVjcY47k2p5Wsnj3ZFHV5W/a-history-of-ideas>

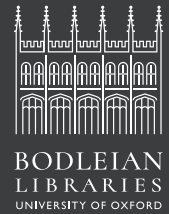
BBC News World Service A History of Political Thought – John Locke
<https://www.bbc.co.uk/programmes/p039712p>

Explore is a digital resource from the University of Oxford exploring Big Questions.
<https://explore.org/about>

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No Innate Ideas

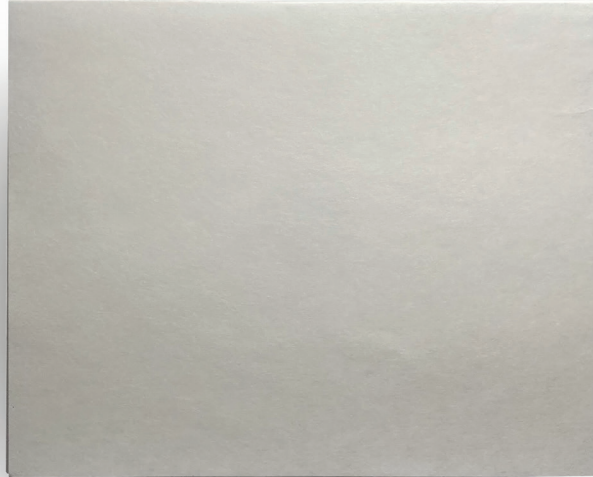


Photo: Cliff Landesman

We know things - many things, an incredible number and variety of facts. Once someone knows a few things, one can see how that person might add and keep adding to their store of knowledge. This is not trivial. It is an important area of psychological and educational research.

However, let's put aside how, from knowing a bit, we further extend the boundaries of what we know. Locke asks us to consider how we got started, how each of us started to learn about the world and ourselves. Assume a sheet of white paper. How is it first inscribed? His answer was simple: we learned from experience. Our first experiences provided us with our first achievements in knowing something. Experience introduces us to the world and all there is to know.

Today, it is hard to imagine how anyone could think otherwise. Is there anything you can claim you did NOT learn from experience? Of course, there are facts you learned from reading, from watching videos, from teachers talking, or from bloggers speaking, rather than from your direct observation. But how did those authors or teachers learn what they know? Most likely from other authoritative

sources. What about those sources? How did they learn what they know? At some point, it was not from another teacher, a writer, or someone making a video. At some point, what someone knows comes from what they saw or heard directly. At least, that was Locke's view.

Note that there are really two questions Locke could be asking. How did you, or any individual, come to know what you now know? That is a psychological and autobiographical question. Locke certainly thought about that question. There is another question one could ask as well.

How did we come to learn what we know, in so far as we rely on each other for what we know?

Most of us know that lions roar and that there are brightly coloured fish in the ocean. How do we know these things? Locke would have answered that question in the same way: from experience.

Is there anything you might claim is not known, ultimately, from experience? Here are three possible candidates. Our idea of God, principles of logic (such as "An apple is an apple."), and

the “fact” that some acts are wrong (such as killing a young child for the fun of it). Some have claimed that - in so far as we know these religious, logical, or moral truths - we do not know them from experience.

Locke’s white sheet is sometimes used as a metaphor for what is given to us at birth. Are our minds (our brains) actually white sheets at birth? Some linguists (for example, Noam Chomsky) have argued that humans who learn to speak a natural language, such as English or Chinese, are born with a head start. A new born baby’s brain doesn’t just have a general capacity to learn about the world. Babies are hardwired to be good at learning a language. They start out with some linguistic readiness. Other animals, even other smart primates, lack this innate preparation. That is Chomsky’s claim.

If we are born with capabilities, could we be born with the capacity to recover (or to “remember”) general principles or perhaps specific ideas? Locke’s philosophical predecessor, Rene Descartes, thought we, as imperfect creatures, could not conceive of the idea of a perfect being on our own,



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so that concept must have been planted in us by God. Plato, in his dialogue, Meno, has Socrates interrogate an uneducated Greek slave. Merely by asking questions and without making any declarative statements to the slave, Socrates demonstrates a process of uncovering knowledge. Socrates suggests that the slave’s answers reveal buried knowledge of the Pythagorean Theorem! Locke rejected both of these arguments.

The image of a white sheet and the topic of innate ideas is closely related to a continuing debate about nature vs nurture in human development. This question asks what makes us different? What is the comparative role of our endowment at birth and the experiences we have after birth (or perhaps during gestation) in making us the different people we are?

The white sheet is one of the most evocative images in the history of philosophy, with connections to theories of education, human development, political theory and social thought. It would be hard to overstate the influence of this simple model of human understanding.

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Molyneux's Problem

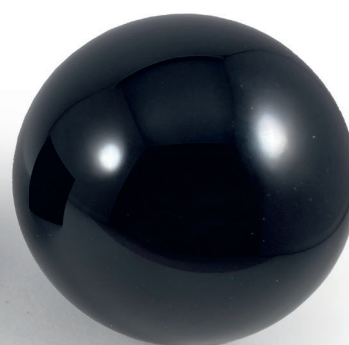


Photo: Cliff Landesman

In 1688, an Irish politician and scientist, William Molyneux, wrote a letter to Locke, posing a problem. This problem has been called, “one the most fruitful thought-experiments ever proposed in the history of philosophy”. The problem has the beauty of questions that are simple to ask but tricky to answer.

A person born blind learns to distinguish a sphere and a cube by touch. Then the person is granted vision. A cube and a sphere are placed on a table. Can the person, just by looking, say which is the sphere and which is the cube?

Here was a philosophical question that called for a yes or no answer. Amazing! Philosophers divided into two antagonistic camps. Locke, and other empiricists who believed that all knowledge was founded in experience, answered “no”. There is the **feel** of a cube and the **look** of a cube. A man born blind needs experience to pair the feel of a cube with the look of a cube.

Locke's contemporary, Gottfried Leibniz, and other rationalists who believed that reason helps us arrive at meaningful truths independently of experience, answered “yes”. Leibniz, a polymath who invented the

mathematical language of calculus around the same time as Newton, pointed out that spheres are uniform, while cubes are not. Cubes have edges and corners. A person born blind acquires these concepts by touch alone. If the blind person is given vision, the person will be able to apply these concepts in new ways. The person will see whether a shape is uniform or not, whether it has corners and edges or not. That will allow the person to pair the visual image of a cube with the tactile feel of a cube.

Not only did the question call for a yes or no answer, it seemed at first that one could actually perform this experiment. In fact, in 1728, not long after the publication of Locke's *Essay Concerning Human Understanding*, an English surgeon (William Cheselden) removed a pair of cataracts from the eyes of a man born blind. The man was not able to recognize shapes by sight. Many contemporaries concluded that Locke was vindicated and Leibniz refuted. The inquiry into some philosophical questions, such as the nature of justice, have lasted thousands of years. This philosophical debate looked settled a mere 14 years after the publications of Locke's complete works. As it turned out, doubts were raised

about the value of Cheselden's experiments and the debate continues today, after more than 300 years of discussion and related research.

Note however that not everyone who learns to identify objects with similar shapes and distinguish objects with different shapes will necessarily learn these more advanced concepts, such as uniformity, edge, and corner. To appreciate this, consider another sense: hearing. It is possible to hear shapes – that is, to learn to compare two objects and determine if they have the same or different shapes just by listening. If a small ball and a die are rolled on a board, they will sound different. On reflection, one could reasonably deduce from what is heard that the surface of a ball is uniform while the surface of a die is not. The sound of the ball rolling is smooth, while the sound of the die rolling is choppy. However, this reasoning involves additional steps of careful thinking. One could learn how to pick out similarly shaped objects by listening to them roll without this further reasoning.

While Molyneux's problem focuses on linkages across sensory systems, such as touch and sight, its appearance in Locke's Essay is part of a larger discussion of innate ideas. Since Locke's day, much research has been done on human development and sensory systems. Let's briefly mention three lines of inquiry.



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In the 1960s, using visual cliffs, developmental psychologists learned that human infants as young as six months old avoid crawling past seemingly dangerous edges, edges with steep drops. Newborn goats also immediately recognize cliff edges, suggesting an innate ability to perceive spatial depth.

A different set of psychologists in the 1960s studied the early development of vision in kittens.

They discovered “critical periods” of brain development. If, during an early critical period, a kitten is deprived of visual stimulation the brain of the kitten becomes impaired. It loses the ability to process visual information as would a normal kitten. Evidence suggests there are critical periods for the acquisition of other human abilities, such as hearing and language, and critical periods for the sensory development of other mammals.

More recently, new studies have looked at the effect of cataract removal surgery on a few young people in India aged 8 to 17. Some commentators have suggested that these modern studies provide evidence in support of Locke's views, with newly sighted subjects able to identify similarly shaped objects using only vision or touch, but not able to match objects across sensory systems. It remains puzzling how to reconcile these new studies with what is known about critical periods of development.

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Primary and Secondary Qualities



Photo: Cliff Landesman

Aristotle pointed out that we can detect some properties of an object using multiple senses. We detect other properties using only one sense. For example, we can notice the shape of a die (a cube) using both touch and sight. On the other hand, we notice that a traffic light is green only with our eyes. We hear the middle C note on a piano only with our ears. Aristotle called properties we can detect with more than one sense, the “common sensibles”.

Locke took this distinction much further. He believed that qualities such as shape, size, and number were intrinsic to an object. These qualities, Locke said, are inseparable from the object.

On the other hand, a property such as the colour red is different. A red t-shirt may have a pigment with a particular chemical composition such that it tends to reflect red wavelengths of light and absorb green wavelengths of light. Locke would say this property of the t-shirt is a power the shirt has to produce certain kinds of experience in us. It is not, according to Locke, intrinsic to the shirt itself.

Compare objects that cause pain or nausea. If a needle jabbed in the arm causes us pain, we may say the needle is painful. However, we don't attribute pain to the needle itself. Rather, the needle only has the power to cause pain in us. Likewise for foods that we

find nauseating. They have the power to cause the experience of nausea in us, but that is all we mean when we say that certain foods are nauseating. Colours, sounds, and tastes are like what is painful and nauseating. They are powers in objects. This is not true, Locke argued, for primary qualities.

This view is controversial. Many would argue that primary qualities are also just powers, just different ones. They are powers in an object that cause certain sensations in us. If an object is round, it has the power to cause a particular sensation of roundness in us, either by looking round or by feeling round. Many philosophers think “round” is on an equal footing with “red”.

One way to defend the Lockean distinction is to appeal to properties that are used in physics, that is, our best scientific account of how the physical world works. The physics of Locke’s time assumed that matter was made of small solid bits; these solid bits combined to form shapes of varying size and number. Collections of them moved around and sometimes collided.



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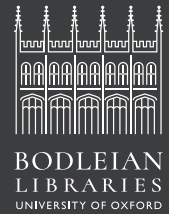


Today, we might draw up a different list of basic properties. We are now aware of the extent to which atomic particles are dynamic. Electrons move around a nucleus of protons and have only positional probabilities. The concept of solidity is no longer a primary one. Particles are held together by so-called weak and strong forces. However, the fundamental concepts of physics still include qualities such as shape, number, motion, and length. Solidity drops out, but most of the other primary qualities are retained. These are the qualities things have in the most basic sense. The other properties, such as colour and sound, are explained using these more fundamental properties. That is one way to defend Locke’s distinction between primary and secondary qualities.

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Abstract Ideas



Photo: Cliff Landesman

First, let's be clear about what counts as an abstract idea. You might think abstract ideas are concepts like justice or freedom. Justice, freedom, prime numbers, macroeconomic indicators, and being funny, are all abstract notions, as opposed to concrete ideas. When Locke talked about abstract ideas, he had in mind more than just these intangible concepts. He also had in mind such things as hands, apples, roads, chairs, water, colours, and human beings. Virtually all nouns point to abstract things for Locke. The scope of abstract ideas is vast. They are the building blocks of many, if not most, thoughts.

However, not everything is an abstract idea. Abstract ideas are best contrasted not with concrete things, but with individual things. We don't use proper nouns to talk about abstract ideas. Joe Biden is not an abstract idea, nor is your mother, or your best friend. The general concept of a mother, on the other hand, is an abstract idea. Abstract ideas are concepts – almost any concept, but not particular things.

Locke offered a theory of how abstract ideas are acquired. Concepts (or abstract ideas) are acquired by a process of abstraction. For Locke,

abstraction is subtraction. Take a collection of things, subtract what is particular to each thing, attach a name to what remains and you have an abstract idea. What remains after subtraction is what all those individual things have in common.

Locke offers us an example from the New Testament: the apostles Peter and Paul. Locke asks us to focus our attention on those qualities that both Peter and Paul have in common. One has a beard, the other does not. So having a beard is not a common property of these two men. Discard it! On the other hand, they both have bodies, walk on two legs and can reason. So we can use the term "human being" to refer to all those individuals that have bodies, walk on two legs, and can reason.

We may view Locke's theory as an answer to a number of different questions. First, there is the psychological or autobiographical question. How does human development actually work? How does a child first learn concepts; how did you learn your first concept? This is a question of language learning and of human cognitive development.

Second, there is the question, how did we, as human beings, manage to acquire abstract ideas? Adults teach children to use common nouns, but how did adults first acquire the meaning of nouns, even simple ones, like “ball” or “cup”?

Finally, we might ask how would one reconstruct an abstract idea if placed in an imaginary situation where they did not exist? Imagine you only have words for individuals, such as for Peter and Paul. How would you form the concept of a human being, if you were only familiar with particular humans, say Peter and Paul, and did not already have the concept of a human? Sometimes, these imaginary hypothetical situations can be illuminating.

Locke’s theory of abstraction by subtraction is one possible answer to all three of these questions, the question about an individual’s development, our social development, and an imaginary development.

Was Locke right? Philosophers started to raise objections to Locke’s account soon after he published his *Essay Concerning Human Understanding*. Another prominent philosopher of his era, Bishop Berkeley, pointed out that individual colours, say red and blue, do not seem to have anything in common with each other. There is no feature of red that is also a feature of blue. Imagine a pair of solid red socks and solid blue socks. We can ignore their shape and size.

However, once we take away the redness of the red socks and the blueness of the blue socks, there seems to be no colour that remains. There is no colour they have in common.

This objection is not conclusive. Locke allowed for complex concepts. Some concepts are formed by joining together other, simpler concepts, using connecting operations such as “and” and “or”. If we start with individual colours, such as red, blue, green and yellow, the general idea of colour could be those things

that have one or another specific colour, such as red or blue or green or yellow – whatever produces an experience of one or another colour in us.

Other philosophers have suggested an alternative model. Instead of attending to common features, we might learn concepts using paradigm examples. An apple is a leading example of a fruit. A goldfish is a typical example of a fish.

Another approach would be to suggest that concepts are simply sets of things to which we assign names. This may not explain how we know what individual things belong to a set, but it still offers a way of understanding what a concept is. When we say “Peter is human” and “All humans are mortal”, we are saying that Peter belongs to the set of all humans and the set of all humans belongs to the set of all creatures that are mortal. That is how logicians today understand concepts.

Why are abstract ideas important? Abstract ideas (that is, concepts) are fundamental to language and to thought. There is hardly a thought or a meaningful sentence without a concept of some sort. So if one wants to understand how language works or how thought works, one would do well to have some understanding of how concepts work. They are the basic building blocks for thinking and communicating.

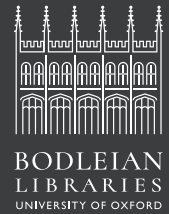
Abstract ideas have a close relationship to important debates in philosophy, especially to questions of what there is in the world, whether the world is ultimately just made up of particulars or if people, chairs, numbers, and other things are equally part of what there is.

Abstract ideas help us to ask questions regarding human development, both language development and cognitive development. In addition, if one seeks to create more intelligent computer programs and more capable robots, it helps to have an understanding of what concepts are.

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Substance and Substratum



Photo: Cliff Landesman

Gold jewelry is worth more than imitation gold jewelry. Even if the imitation were visually indistinguishable from gold, people would still prefer the real thing. Further, if people did not prefer real gold to a substance that looked and felt just like gold, there would still be a difference. How is it that something which looks like gold, feels like gold, tastes like gold, and behaves like gold, is not actually gold?

Locke pointed out that there are different ways we can use the word, “gold”. It can refer to a collection of things with a certain set of appearances, regardless of inner composition. He called this the “nominal essence” of gold. Anything with those properties we might call “gold”.

Alternatively, we might point to something that is gold (say gold leaf on a glass cylinder) and use “gold” to refer to whatever has the same substance – the same ingredient or inner makeup – as that thing to which we are pointing. Locke called this the “real essence” of gold.

Substances have observable properties. Two different substances can have similar or even the same observable properties. Take a chunk of rock recovered from a stream in Alaska. It has a certain look, a yellowish colour. When heated and extracted from the rock this substance is malleable, that is, one can shape it easily using a hammer. It won't crack or shatter. Take a rock from a different stream, one in California. Process this rock to extract a substance. It might look the same, also be malleable, have a similar weight per volume, and not be the same kind of thing, not the same kind of substance as the substance taken from the first rock. One could be gold and the other something that merely looks and acts like gold. The two rocks might have different real essences.

Some philosophers would argue that real essences are discoverable; they may be unknown at one time, but later discovered by scientific research. Locke (and the scientists of his day) did not know what was responsible for the perceived properties of gold. Today we

do. We now know that gold is a chemical element with a certain atomic structure. Gold has 79 protons. Other substances may look like gold. They may even have all the other properties of gold, be malleable, have a certain weight per volume, etc., and yet if the substance does not have 79 protons, most people, on reflection, would not call it “gold”.

One could argue that after Locke’s death, as scientists learned about atomic structures, they discovered a necessary property of gold. This is surprising because ordinarily we think of necessary truths as truths we figure out by reasoning, without (or “prior to”) experience. $2 + 2 = 4$ is a necessary truth, but not one we discover by observation the way we discover that lions roar. Yet it seems that having 79 protons is an essential property of gold. Perfect fakes of gold do not have 79 protons. If a material has 79 protons, it is gold, real gold.

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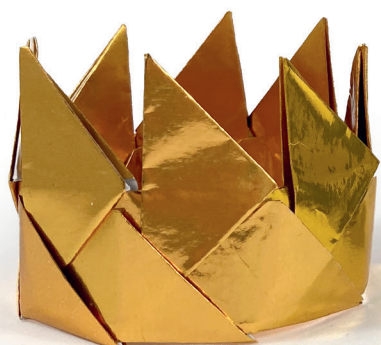
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Personal Identity

Photo: Cliff Landesman



Philosophers have long been puzzled by how objects (rivers, oak trees, ships) change yet persist over time. The ancient Greek ship of Theseus was puzzling for philosophers. As the ship's wooden boards age, the crew replaces them, one at a time. Eventually, all the boards are replaced. The old boards are saved and reassembled into a second ship. Which is the real ship of Theseus? The one with the new boards or the one with the old boards?

Locke's discussion of personal identity is remarkable in at least three ways. First, it introduced a new problem about persistence over time: what makes the you of yesterday or 20 years ago the same person as the you of today? Second, the theory Locke proposed around 1690 – over 300 years ago – is still hotly debated, and deftly defended, by contemporary philosophers. Third, Locke introduced a new method for conducting philosophical thinking.

Let's discuss this last point first. Locke asks us to consider several fictions, little stories that serve as hypothetical examples or thought experiments. He was not the first philosopher to do so.

Plato, in the *Republic*, explores the relationship between justice and self-interest with a fable about the Ring of Gyges. (This ring makes whoever wears it invisible. The invisibility allows someone to steal without risk of getting caught. Does wearing the ring make stealing ok?) So the method is not entirely new. However, Locke did not just discuss one far-fetched imaginary story, such as the one about a prince and a cobbler, to illustrate a point. He also told other outlandish stories, such this one:

While Castor sleeps (and sleeps without dreaming), Pollux is awake and vice versa. While Pollux sleeps (and sleeps without dreaming), Castor is awake. When Castor falls asleep, his soul leaves his body and enters the body of Pollux. When Pollux falls asleep, this same soul leaves Pollux's body and enters the body of Castor. The soul shuttles back and forth. Locke argues that in this situation two bodies – Castor and Pollux – share a single soul.

More recent philosophical discussion has carried on this tradition of making up strange and wild situations. Some have argued that

philosophers today have gone overboard introducing fantastic imaginary cases. Blame Locke! He introduced a style of writing in which wild stories are central to the unfolding of an argument.

Now to our second point. Locke marshals his hypothetical examples to advance a compelling theory of personal identity. A person is not a body, as one might at first think. What counts, for Locke, is having the same memories and what is now called “the continuity of consciousness”. Each of us, while awake, experiences various sensations, is aware of the immediate environment, of internal thoughts, remembers, anticipates the future, and engages in a variety of mental activities. There is a coherent flow of consciousness over time.

Of course, we sometimes fall asleep and unless we are dreaming, we are not conscious while asleep. How is it that we are the same person when we awake in the morning? Locke’s answer: our memories are the same as the person who fell asleep the night before.

To convince us that we are not our bodies, Locke offers a tale about a prince and a cobbler. A cobbler dies; his soul departs; then a prince’s soul enters the cobbler’s body. This renewed body cannot tell you anything about the past of the cobbler and everything about the past of the prince. It doesn’t know how to fix shoes, but does know who was visiting the queen yesterday.

The prince’s memories and the flow of his consciousness are preserved while his body has changed. Hence, we can’t be identical to our bodies.

Before Locke, the question of personal identity – what makes a person the same over time – was not recognized as especially problematic. After Locke, it was.

The word “identity” is widely used today to talk about a different set of issues than the one Locke addressed in his Essay. Today, we talk about social identities – how we identify and affiliate ourselves with different groups, different cultures, values, histories, or roles. There are interesting questions to ask about these identities as well. One philosopher (Amartya Sen) has challenged the assumption that a person can have only one identity in this alternative sense. Rather, he suggests, a person can have multiple identities. One may identify as a parent, a Hispanic, a musician, a union member, and a sports fan. While some identities may clash, they need not.

It might also be the case that discontinuities over time with respect to cultural affiliation or moral values are so dramatic that we find it natural to say that someone has become a different person. Perhaps “identity” is an ambiguous term that depends on the relevant context.

Note, finally, that Locke’s views about the importance of memory may help explain the sense of loss and feelings of grief some adult children experience when one of their parents experiences a severe memory impairment, one that results from a neurodegenerative disease, such as Alzheimer’s.

Locke’s stories may be fanciful, but for over four centuries, they have challenged us to reflect deeply on who we are and what makes us persist through changes and over time.