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## How Much a Quarter Cost: Allegory of a Coin and Other Stories

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## 1. Introduction

The early modern period of philosophical discourse was a time of growth and development for the western world and its thinkers: not only did it inject a dose of reality into the overtly theological philosophy of the medieval period, but also by the time it reached its precipice, had already begun to challenge itself. The period is typically considered to have begun with the work of Rene Descartes in the mid-1600s, which laid the foundation for rational thought. It is on this foundation of rationalism which Baruch Spinoza developed his *Ethics*. Through a series of axioms and proofs, Spinoza follows, but also refutes, many of Descartes' claims. Around the start of the 18<sup>th</sup> century, all of rational thought was uprooted by John Locke and replaced with empiricism. It is on this new foundation of empiricism which George Berkeley developed his *Principles of Human Knowledge*. In this work, Berkeley follows, but also refutes, many of Locke's claims. Spinoza and Berkeley espouse two of the more esoteric and unconventional metaphysical views not just of the period, but of all time. Through the application of reason and logic, they both make valiant efforts to defend concepts that seemingly run counter to common-sense. However, do their apparently illogical philosophies actually deserve a place in modern discourse, or have all of their arguments been proven invalid? Is there any useful or relevant information to be distilled from their works, or can they merely be written off as the pseudo-philosophical ramblings of madmen? Before these questions can be answered in full though, it would serve us well to compare and contrast the respective philosophical theories of Baruch Spinoza and George Berkeley.

## 2. A Presentation of Ideas

However, before even such a discussion of comparing and contrasting can be had, it seems proper to briefly present each thinker's views in turn. Also, I implore the reader to procure a coin of some sort (preferably the state quarter of Massachusetts), for it will be used to great effect in numerous demonstrations.

### 2.1 Spinoza's Substance

Baruch Spinoza begins his *Ethics* by rejecting Descartes' dualism: that is, the idea that there exist two substances, minds and bodies. Instead, Spinoza suggests there to be one singular metaphysical substance which constructs the whole of the universe and reality: this awards him the label of a monist. Within this single substance there are two qualities called modes and attributes. Modes are the

particular actualizations of the substance's essence. This is exemplified in our coin. As it sits in my palm the tiny portion of the one substance directly above my palm is in 'coin mode,' if you will. Attributes, on the other hand, are the perceptions of the substance by the intellect, these are what we perceive the coin to be, e.g. silvery, round, smooth. Spinoza makes a point of explaining that since the one substance encompasses all reality, which is ostensibly infinite, its essence must include this infiniteness. This also results in an infinite number of possible modes and attributes. If Spinoza's substance were finite, there would be negation, implying imperfection, which contradicts the substance's essence. Similarly, if the single substance did not exist, it would be lacking, which again contradicts its essence. In this way, Spinoza proves that the substance's essence includes existence. He calls the one substance God, or Nature.

Given that Spinoza's God is an infinite, eternal metaphysical substance that contains the entire universe, it seems easier to describe Him in terms of what He is not. First and foremost, Spinoza advises us to be wary of attributing humanlike characteristics to his God. This means that God is not a thinking thing with human intellect that acts with a specific purpose or plan. He also suggests that God is not an anthropomorphic being that exists outside the world. As opposed to the traditional view of God as the *going-across* cause of everything, Spinoza's view has God as the *in-dwelling* cause of itself, which is everything. Creation is its own creator. Despite being the cause of itself, this God does not possess free will to intervene in the universe. For Spinoza, nothing is contingent, everything is predetermined.

Yet, if all is simply a single, infinite, predetermined substance, where are humans left in Spinoza's world? Indeed, there is a place for us lowly creatures. We are left as modes, or states, of the one substance. We are finite, temporary actualization of the substance's essence, much like our coin just set to 'human mode'. Though Spinoza grants human beings little to no free will, he does allow us to be subject to the passions, such as pleasure, pain, and desire. In spite of lacking free will, all things, including humans and the passions, are affected by *conatus*, a sort of universal force which causes all things to strive to persist in existence. Constantly, this *conatus* is forcing us to continue existing, while at the same time negative emotions are also attempting to persist. Knowledge, however, is our weapon, helping to subdue these emotions, giving us clarity, and revealing the path of virtue.

## 2.2 Berkeley's Minds

George Berkeley follows from the tradition of British empiricism that was established by John Locke. Both Berkeley and Locke take the stance that all knowledge is gained through experience, which occurs either through sensation or reflection. However, it is from here that Berkeley diverges from Locke, taking issue with Locke's pre-supposition of abstract ideas. He explains that though it seems as if we are able to perform abstraction on certain ideas, say the idea of a coin, it is impossible to truly have the abstract idea of a coin. For Berkeley, ideas are always tied to particulars, in the case of a coin these could be its round shape, silver color or maybe George Washington's head. Likewise, he suggests that it is impossible to siphon out simple ideas, such as color and motion. Can we conceive of pure motion? Berkeley thinks not: rather, motion is perpetually tied to something moving, such as spinning our coin with the flick of a finger. For Berkeley, ideas are the contents of the mind, allowing him to state that, "the existence of an idea consists in its being perceived" (Berkeley 11) either by sensation or reflection. By this logic, Berkeley is able to contest that bodies exist solely as ideas in our minds, meaning that material substance does not necessarily exist.

Through his denial of materialism, Berkeley builds a view of the world known as *subjective idealism*. In this monist world the only substance is minds. However, he finds difficulty in preventing his world from constantly ceasing to exist whenever he closes his eyes. To solve this vexatious problem, Berkeley first claims that existence of reality relies not on the perceptions of a single mind, but on the perceptions of all minds. However, this fails to answer the clichéd philosophical question of a tree falling in the forest: what if no one perceives it? To address this, Berkeley resorts to the existence of an ultimate mind that is always perceiving everything. He calls this ultimate mind God.

It is Berkeley's God that makes the real world possible. While humans are nothing more than minds, it is God that causes real ideas in our minds. This differentiates real ideas from imaginary ones, which are created within our own minds. Armed only with a mind full of ideas, Berkeley believes that he has defeated many of the difficulties posed by the material world. Without material substance, skeptics no longer have anything of which to be uncertain, atheists can no longer chalk the world up to, "blind chance or fatal necessity," and idol worshipers "would never fall down and worship their own ideas" (Berkeley 37). He even goes so far

as to attack the sciences and mathematics for pursuing knowledge in search of some great abstract meaning to material phenomenon. Instead, Berkeley suggests that the purpose of knowledge is to bring us closer to God and help us understand His eternal goodness and infinite wisdom.

### **2.3 Spinoza v. Berkeley Part 1: the Highlights**

Now that each thinker has been given their due, Spinoza and Berkeley may be rightly squared. Let us begin with the more obvious, superficial route, that of their differences. From here we will build backwards, starting where we left off with knowledge (my reasoning for this should become clear once we come to the similarities).

For Spinoza, knowledge has the self-interested goal of persisting our existence. Berkeley insists that knowledge should be seen as bringing us closer to God. These apparently opposed ideals are due to the importance each thinker gives to particular concepts. While Spinoza considers the struggle between humans and emotions to be ever present within his one substance, Berkeley champions the certainty provided by a non-material world as the great victory of subjective idealism. In Spinoza's view, humans, minds, bodies, and emotions are inextricably tied, "[a]n extended thing and a thinking thing are either attributes of God or states of God's attributes" (Spinoza 7). In Berkeley's view, humans are nothing more than minds, and bodies and emotions exist only as ideas in those minds. Within Spinoza's singular substance, nothing is contingent, therefore modes do not possess free will, the only *free cause* being the substance causing itself. Within Berkeley's world of minds there is none of this *fatal necessity*, a mind possesses nearly complete free will as it can think of any idea and cause ideas in other minds, the sole limitation being the inability to produce real ideas. The real world, for Berkeley, is created and constantly perceived by God. Spinoza's world, on the other hand, has no such *going-across* creator. Rather, Spinoza's substance is also his God. Berkeley's God is also a mind.

Though Spinoza and Berkeley's differences do appear to be deep-rooted, it may be suggested that they are not irreconcilable. More or less, their issue stems from a difference in tradition. Spinoza followed the rationalist tradition of Descartes. Similarly, Berkeley followed the empirical tradition of Locke. These informed both thinkers on how to challenge their predecessors. Spinoza extended Descartes' proof of substance to contest the need for two substances while Berkeley

utilized Locke's concepts of sensation and reflection to question the need for any substance. Through these parallel paths they both arrive at the same conclusion, there is only one substance. Ultimately, it is surprising how perfectly their respective theories foil one another, as when observed closely, Spinoza and Berkeley are just two sides of the same monist coin.

### **3. A Critical Analysis**

With theories presented and positions opposed, the time now appears ripe for the picking. Alas, there are a few loose ends that require attention – though, I fear, the necessary attention may well delve into criticism or most probably postulation, hence the scene change.

#### **3.1 Spinoza v. Berkeley Part 2: the Wrap-Up**

Allow us to pick up the monist coin where we left it before the break; it seems proper to ask which side is which. The obvious answer would be that one side is rational and the other empirical; allow, however, something a bit cleverer to be proposed. Berkeley is heads, Spinoza is tails. Maybe this coin is not monist at all. Perhaps, in a way, the coin could be thought to represent Cartesian dualism, one side being the mind and the other, the body. This squares with the fact that both of our thinkers' theories are responses to this dualism, Spinoza siding with bodies and Berkeley with minds. Though Spinoza does leave room for minds, in his predetermined world, what does it mean to have a mind? Likewise, Berkeley does allow for a real world through real ideas, but isn't there still some uncertainty regarding these real ideas?

While Spinoza and Berkeley apparently contradict one another on a point-by-point basis, this is only due to the opposite paths taken from the same starting point, not because of actual contradiction. Further inspection shows us that the limit of their knowledge is essentially the same. This limitation is found in their proofs for God, which both amount to the ontological argument.<sup>1</sup> Though they arrive at God by different means, He essentially serves the same purpose for both thinkers, which is, making the real world possible.

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<sup>1</sup> Though Berkeley never explicitly states this, it seems implied since his argument is otherwise circular; God creates the real world, therefore the real world proves God's existence. This does not even bring up issues with knowing the real world.

All of this rambling on about a dualist coin with monist sides leads to a grander question. If two thinkers begin from the same point, and end at the same point, what is there to differentiate them from another?

### 3.2 Digital Systems 101

Before addressing this question, let us go on a slightly technical, albeit useful, tangent. In digital systems,<sup>2</sup> there are two main ways in which systems can be designed: truth tables (also a common tool in propositional logic) and Karnaugh maps (or K-maps, an abstract graphical method based on truth tables). Both of these methods work fine, and both create a design that will produce the same output given a certain input. However, the two systems will most likely look drastically different. While the use of a truth table will design the system in the most complex way, the proper use of a K-map can design a much simpler system.<sup>3</sup>

Back to our coin. Let us pretend for a moment that our thinkers are attempting to design a digital system to describe it. They are given the input, rejection of Cartesian dualism. They are given their *desired* output, an ontological, monist God.<sup>4</sup> Spinoza, being a mathematician, uses the more abstract K-map method, producing a simple system made up of, let's say, one gate. Berkeley, attempting to avoid the trappings of abstract language, uses the more straightforward truth table method, producing a complex system made up of many of the same gate, (so many that Berkeley does even want to count them all). Both of their designs describe the system perfectly. However, each thinker exalts their design as the only one that can fully describe the system.

Allow us to challenge both thinkers, then. Both are wrong – that is, wrong in thinking that there is only one correct answer. In fact, both of their answers are right, inasmuch as they are more correct combined than divided. Just how our coin is not defined only by its head, but by its tails as well; without both, there is no coin.

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<sup>2</sup> A discipline of engineering that concerns itself with the use of logic operations to accomplish some task.

<sup>3</sup> Complexity, in digital logic, depends on the number of logic expressions, or gates as they are called, that the system uses: the more logic gates the more complex a system.

<sup>4</sup> The idea that an ontological God is what these thinkers desired to find could be a point of some contention, as I'm sure our thinkers would like to believe that they reasoned their way to God simply to find Him to be self-evident.

By the same token, Spinoza and Berkeley's philosophies, when considered together, seem to paint a fuller picture of reality. Yet, is that reality all that it seems?<sup>5</sup>

### 3.3 A Multiplex Dream, a Solipsist Nightmare

Descartes tried, Locke attempted, but both failed to paint a complete picture of reality, or, if we may extend our metaphor, describe the coin system. Their mistake is directly rooted in their assent to the dualism of the two sides. In their dualistic world, immaterial minds are inexplicably connected to material bodies. Descartes attempts to explain this away with faulty science; Locke simply ignores the problem completely. Both Spinoza and Berkeley seek to rectify this by resorting to a single substance. However, all seem to miss the mark. Unable to pin down exactly what is going on, they all fall back on habit and tradition, on God, whose essence, they presume, is to exist.

This is not the main qualm with any of their theories, though. What is troubling is their lack of multiplex thinking. This sort of thinking requires a "multiplex mind, which can work simultaneously with several conflicting paradigms. It sees not just one interpretation of reality, but many, yet it sees them as a seamless whole" (Cohen 289). Even though Spinoza and Berkeley's theories seem to be in direct conflict, neither invalidates the other. It is necessary to see how they fit together to truly understand reality. As in the demonstration of the coin system, there is more than one way to answer the question, but the true answer is not just one of those possibilities, it is all of them. The coin is a multiplexual metaphor. The digital system is a multiplex<sup>6</sup> of logic. The complete picture of reality is a multiplex painting. "The real universe (inasmuch as there is one)... is multiplex. Order your perceptions multiplexually, and you will understand the universe on its own terms" (Cohen 289).

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<sup>5</sup> I accept that there may be some criticism of my relativistic approach that allows for a certain degree of contradictory reasoning. If you see the world otherwise, I take no issue with your opinion: rather, I'll accept it as a valid possibility and attempt to integrate into my metaphysical view of the world (unless it's absolutism!).

<sup>6</sup> Interestingly enough, there is device in digital systems, known as a multiplexer. Its purpose is to select between different signals, controlling which of them is output by the system.

However, to give credit where credit is due, both of our philosophers come close to this sort of thinking. Spinoza almost avoids contradiction with his beautifully sound logic and impersonal mathematical approach. His greatest error is the predetermined nature of his substance, which appears to give it the anthropomorphic intellect he insists it does not have. Berkeley does not get off quite so easily. His theory is wrought with circular arguments and contradictions.<sup>7</sup> Of these, the most glaring is his notion of other minds. It requires a great deal of effort not to fall into the realm of solipsism when considering other minds. Why do they necessarily exist if everything else is just an idea? Consider: “The only reality that I know is the one inside my own head. So it is entirely conceivable that I am the only real thing in the universe, and all the rest is just my imagination at work” (Cohen 196).<sup>8</sup>

#### **4. A Discussion of Relevance**

Through all of this high and mighty talk of a grander reality (or possibly a nonexistent reality, as multiplex thinking has taught us to consider both), it seems as though we have shown that both Spinoza and Berkeley are still relevant to modern philosophical discourse. However, allow us to try to demonstrate a practical application of these overarching, metaphysical theories.

##### **4.1 Monists, Dualists, and the Artificial Conscious**

More than 300 years after Rene Descartes published his *Meditations*, the mathematician Alan Turing wrote one of the groundbreaking works of computer science, *Computer Machinery and Intelligence*. Despite being separated by centuries, both ask the same fundamental question: what does it mean to be human?

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<sup>7</sup> Lest we forget the time he misnumbered his own objections, “[That completes Berkeley’s ‘eighth’ objection. There is no ninth.] 10.” (Berkeley 27).

<sup>8</sup> “We, of course – [the authors, Jack Cohen and Ian Stewart] – don’t really exist: you, the reader, made it all up yourself, for only you really exist. So here you are, cleverly giving yourself the impression that you have no idea which words are coming next, making it all up as you go along. There’s no point in us asking why you bothered to buy the book, because of course you just imagined yourself buying it. There’s no way we can convince you that you are not making everything up as you go – but it’s hard to see why you would take the trouble. For this reason we find the solipsist view to be philosophically incoherent and just plain silly. If you don’t like that conclusion, don’t blame us – you’re the one imagining it. (You can be as rude as you like to a solipsist.)” (Cohen 196).

Descartes' answer is that "I am, I exist" (Descartes 4), meaning that humans are *thinking things*. Turing, however, answers the question with a question: "Can machines think?" (Turing 443). If yes, then machines can also be *thinking things*. What then of Descartes certainty about his existence? And what of Berkeley's notion of minds? Turing proposes the Imitation Game as a way of proving artificial intelligence. In this game, a machine must be able to dupe a human interrogator into believing it to be human. However, intelligence is not all there is to humans, for as Descartes and others point out, we are conscious, there is an internal "I" doing the thinking. From this is where some criticism of Turing's Test stems, such as the critique that "the only way by which one could be sure that a machine thinks is to be the machine and to feel oneself thinking" (Turing 453). Turing quickly point outs that this view is prone to solipsism, a problem faced by Berkeley as well, and in a way, the Imitation Game could be seen as a more fleshed-out, commonsense version of Berkeley's notion of minds.

Yet, we are straying from the true question here: what makes human minds conscious? If we can create artificial consciousness, does it show that the mind is not as special as Descartes thought it to be? Does it show that Spinoza was right all along that we are nothing more than modes in a single substance? Does it show that Berkeley's notion of mind is not as lame-brained as it first appears? Or is artificial consciousness even possible?

#### **4.2 Emerging Technologies**

In 1950, Turing suggested that "we only permit digital computers to take part in our game" (Turing 3). It is well then that we brushed up on our digital systems, as they are still the basis for all computers today. The most effective computer simulations of brain activity to date are known as artificial neural networks (ANNs). These are software algorithms that mimic the way neurons pass signals through synapses: "[T]o develop self-awareness, [an ANN] must be at least as complex as the human brain" (Buttazzo 28).<sup>9</sup> However, ANNs are constantly being restricted by physical hardware limitations. If these limitations can be surpassed, there is no reason why artificial intelligence, or eventually artificial

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<sup>9</sup> Recall our definition of complexity when discussing digital systems, the same concept applies here, except instead of logic gates, we are counting the number of *neurons*, or *nodes* as they are called in ANNs.

consciousness, is not achievable. Yet, in a monist's world, what makes a computer's mind any more artificial than our intelligence and consciousness, or rather, what makes our minds any more real than theirs?

## **5. Conclusion**

The reality of the real world has been the concern of philosophers since the days of Aristotle. It was not until the early modern period that new life was breathed into stale theories of men in caves and gods on mountain tops. Cartesian dualism attempted, but ran aground, in its two-substance ship. The monist view may seem absurd upon first glance; however, it illustrates the important point that reality is both/neither simple and/nor complex. Either the world is a single, infinite substance of finite modes, or a finite mind among an infinite number of the same substance. Where the monists go wrong (somewhat ironically) is in their one-dimensional approach, their whole hearted belief in a single answer. If we ignore other answers, we limit our knowledge. Where would Spinoza be if it was not for Descartes, and Berkeley if not for Locke? All of these thinkers, not just the monist, possess important ideas concerning the nature of reality, the limit of knowledge, and the meaning of life. If we write off any of these philosophers as incoherent madmen, we are denying ourselves knowledge and ignoring the multiplex nature of the universe. Without this knowledge and understanding, scientists and engineers will fail to see the deeper meaning of their discoveries and technological innovations. If philosophical and technological discourse are not rectified, we may soon find ourselves floating about in metaphysical limbo, unsure about the reality of own minds. How soon, you ask? Allow me to phone a friend: "Ok, Google. . ."

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