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THEREFORE I AM

“Pig valves.” Rabbit tries to hide his revulsion. “Was it terrible? They split your chest open and run your blood through a machine?”

“Piece of cake. You’re knocked out cold. What’s wrong with running your blood through a machine? What else you think you are, champ?”

A god-made one-of-a-kind with an immortal soul breathed in. A vehicle of grace. A battlefield of good and evil. An apprentice angel.

—John Updike, *Rabbit at Rest*

Always go to other people’s funerals, otherwise they won’t come to yours.

—Yogi Berra

WHEN SOMEONE DIES, how do you keep the soul from reanimating the body? After all, the person is not going to be pleased to leave the world of friends, family, and possessions, and will naturally struggle to get his or her body back. As the archaeologist Timothy Taylor points out, this is the same impulse that would lead you to pick up a

valuable object that was knocked from your hands. But the reanimation of the body is bad news for those who remain, since the damaged and decaying corpse might try to take back its possessions, including its spouse. Many societies have developed ingenious methods so as to enchant the soul, frighten it off, or distract it from its mission.

This is only a temporary problem. As the body decomposes, the soul moves further toward the spirit world, and once enough time has passed (such as when the flesh is entirely gone from the bones), reanimation becomes increasingly unlikely—though there is often the need for secondary rites, sometimes weeks or months later, to make sure that the soul remains firmly in the realm of the ancestors. This is one reason for the “double funerals” that are common in many cultures; there is one set of rituals immediately after death, and then a second set so as to hasten the soul to a final resting place.

Most readers of this book have never worried about how to keep a soul from repossessing a corpse. Reanimation is the stuff of horror movies. But the worry is not entirely alien; it is an unusual variation on a common theme. More familiar versions include the notion that the soul might ascend to heaven, plummet to hell, or occupy the body of another animal or person. If you do not believe that you can communicate with the dead, or that you should pray for the soul's safekeeping, then I imagine you know someone who does.

When directly asked, most Americans say that they believe in Heaven (90 percent), hell (73 percent) and angels (72 percent). Most state that they look forward to meeting their friends and family members in heaven, and about one in six go further and claim that they already have been in contact with someone who has died.

To my knowledge, nobody has systematically asked people about the more general premise of a body/soul duality, about whether they agree with John Updike's character Rabbit. Do you believe that you are (A) a machine or (B) an immaterial soul? (B) is the aesthetically appealing choice. (Who would prefer the claim of Marvin Minsky, a

pioneer in the field of artificial intelligence, that we are nothing more than “meat machines”?) We do not feel as if we *are* bodies; we feel as if we *occupy* them. Some might wish to answer “all of the above,” self-identifying as both a body and as a soul. But only a small minority would choose just (A).

What can be said about this minority view, one subscribed to by many psychologists and neuroscientists? I do not doubt the sincerity of such an answer. But I would put those who reject dualism in the same category as those who, through scientific reasoning or philosophical deliberations, come to believe that there is no external world, just sensory impressions (as did Bishop Berkeley), or that thoughts and feelings do not exist (as some radical behaviorists assert), or that there is no such thing as morality, or truth, or pain. These scientists and philosophers might be perfectly sincere in these beliefs. But such views are held at an airy intellectual level, slapped on top of our foundational appreciation that the world contains objects, minds, morals, truth, and experience. At this gut level, souls exist.

The premise of this book is that we are dualists who have two ways of looking at the world: in terms of bodies and in terms of souls. A direct consequence of this dualism is the idea that bodies and souls are separate. And from this flow certain notions that we hold dear, including the concepts of self, identity, and life after death.

WHAT YOU KNOW FOR SURE

Try for a minute to be a philosophical skeptic. Normal skeptics doubt the existence of ESP, poltergeists, UFOs and the life-enhancing powers of green tea, but you put these skeptics to shame. You doubt just about everything. For instance, most people accept that they have lived for years. But you might wonder whether the universe had been created seconds ago, and all your memories are illusions. In science

fiction, robots and full-grown clones are created believing they have had parents, a childhood, a rich life—but they are mistaken; their memories are false. (Think *Blade Runner*.) How can you be sure that this is not true of you?

You can certainly doubt that you have a brain. Young children toddle on quite happily without knowing that they have one, and most humans have lived and died without ever knowing that such an organ existed. Even once the brain was discovered, it was a while before anyone knew what it was for—the ancient Greeks thought its main function was to cool the blood.

Although now even the most devout would agree that the brain is intimately related to mental and spiritual life—the seat of the soul, perhaps—this was not always so clear. In the fifteenth century, the Church struggled with the question of whether to baptize two-headed conjoined twins once or twice. Modern sensibilities say twice. The fact that there are two heads should make it plain that you are dealing with two people. But many felt that the soul resided in the heart, and the solution to the problem rested on the question of how many hearts there were. Ambroise Pare told of a baby brought to him after its death in 1546 that had two heads, two arms, and four legs. After dissecting the body Pare concluded, “I found but one heart by which one may know it was but one infant.”

Contemporary scientists see the brain as the organ of thought. But as a skeptic you might take to heart (so to speak) a *Science* article written by Roger Lewin in 1980, “Is Your Brain Really Necessary?” in which he reported a case study of a student who was referred to the neuroscientist John Lorber because he had an unusually large head. Lorber reported that the student was highly intelligent and socially adept, but was unusual in one interesting regard: he had “virtually no brain. . . . When we did a brain scan on him. . . we saw that instead of the normal 4.5 centimeter thickness of brain tissue between the ventricles and the cortical surface, there

was just a thin layer of mantle measuring a millimeter or so. His cranium is filled mainly with cerebrospinal fluid.”

Of course he did have *some* brain, but the point of the article is that we might need less brain than we once thought. Lorber’s report is controversial, and it is possible that the brain scan was done improperly. But it is certainly conceivable that Lorber was right. To the skeptic this would suggest that one day he might find an intelligent and social person with no brain at all!

You can doubt the existence of your entire body. There are cases of phantom limbs, in which someone feels pain in an amputated limb, and there are even cases in which there is the delusion that the limb really does still exist. How do you know that you do not have a phantom body? Or perhaps you are just a brain in a vat, and your so-called experiences are the results of electrical pulses engineered by a team of curious neuroscientists or sinister computers (think *The Matrix*). This is a modern version of a very old worry: hundreds of years ago, some of your skeptical counterparts worried that their experiences were induced by evil spirits.

In 1641, René Descartes set himself the project of philosophical skepticism, and subjected himself to the mental discipline of doubting everything he knew—from science, from experience, and even from the perception of his own body.

He observed that certain lunatics, “befogged by the black vapors of the bile,” believe that they are kings, or that their heads are made out of clay, or that their bodies are glass. Although Descartes refused to entertain the possibility that he himself might be a lunatic, he noted that when he slept, he dreamed the same things that lunatics imagine while they are awake. So how could he be certain that he was not now asleep?

But there is one thing that Descartes could not doubt:

I have just convinced myself that nothing whatsoever existed in the world, that there was no sky, no earth, no minds, and no bodies;

have I not thereby convinced myself that I did not exist? Not at all. . . . Even though there may be a deceiver of some sort, very powerful and very tricky, who bends all his efforts to keep me perpetually deceived, there can be no slightest doubt that I exist, since he deceives me; and let him deceive me as much as he will, he can never make me nothing as long as I think I am something.

The one thing that is intuitively clear to us is our own existence as thinking beings. Descartes' pithy formulation of this conclusion is the most famous sentence in philosophy: *Cogito ergo sum*. I think, therefore I am.

Descartes asks, "What am I?" and he answers that though he cannot be sure that he is rational, or that he has a body, he knows he is a "thinking being. What is a thinking being? It is a being which doubts, which understands, which conceives, which affirms, which denies, which wills, which rejects, which imagines also, and which perceives."

Taking the next step, he concludes that since you can doubt the body but cannot doubt the self—"the soul"—the body is not necessary for the soul to exist. Furthermore, it is clear that the mind and body have different properties. The body is extended in space; the mind is not. The body is divisible; the mind is not. There are two distinct "substances": a body, which Descartes was perfectly content to think of as a "well-made clock," and a soul, which is immaterial and intangible.

Many philosophers have pointed out that this is not actually a good argument for a real duality of body and soul. The fact that we can imagine two things as being separate does not mean that they actually are separable. Imagination can be a poor guide to reality. It was probably also clear to Descartes that water is continuous at every level, and not made of particles, and perhaps he could also imagine a vehicle flying faster than light, or a loud noise in a vacuum. It would be a poor physics that took these intuitions as proof

that such states of affairs are possible. Similarly, it would be a poor psychology that took the intuition that the body is not necessary for thought or that the mind is unextended and indivisible as proof that the body is, in fact, not necessary for thought and that the mind is, in fact, unextended and indivisible.

But the outcome of Descartes' exercise is a highly illuminating finding about common sense. He explores our basic intuitions about the proper answer to the question "Who am I?" And his answer is "I am not a body. I am a feeling, acting being that occupies a body."

This is how we see ourselves and others. Our bodies are described as our possessions. We talk about "my body," "my arm," "my heart," and, most revealingly, "my brain." The comedian Emo Phillips nicely captures the intuitive dichotomy between self and brain when he says, "I used to think the brain was the most fascinating part of the human body, but then I thought: 'Look what's telling me that!'"

Our intuitive dualism grounds our understanding of personal identity. We recognize that a person's body will age; it might grow or shrink, lose a limb, undergo plastic surgery—but in an important sense, the person remains the same. We will punish an old man for crimes he committed as a young man and will reward an 18-year-old with a fortune that was left to her as a baby. And we can understand fictional worlds in which a prince turns into a frog and then back into a prince again, or a vampire transforms to a bat. We can understand the passage in *The Odyssey* where the companions of Odysseus are magically transformed so that they "had the head, and voice, and bristles, and body of swine; but their mind remained unchanged as before. So they were penned there, weeping." We can make sense of Kafka's famous story that opens with the sentence, "As Gregor Samsa awoke one morning from uneasy dreams he found himself transformed in his bed into a gigantic insect."

Some people believe that more than one person can occupy a single body. In *The Exorcist* and other books and films of that genre, Satan struggles with the body's rightful owner. Most of us consider such stories fiction, but it is based on some people's sincere religious belief, and exorcisms are still being done. The secular equivalent of demonic possession is multiple-personality disorder (technically known as "dissociative identity disorder"), in which one body seems to be occupied by many "people" with different personalities, ages, and sexual proclivities.

Some artificial creatures are seen as possessing souls, often as a consequence of some transforming force, such as the bolt of lightning that animated Frankenstein's monster. Modern versions of such creations are robots and computers, some of whom, like the character Number 5 in the movie *Short Circuit*, are friendly child-like creatures, whereas others, like Proteus in the film *Demon Seed*, are sinister entities that want to impregnate women. These are to be distinguished from soulless creatures such as Haitian zombies and the Jewish golem. According to Jewish tradition, the golem was a lump of clay that was animated to serve as a guardian for the Jews of medieval Prague. In Hebrew, *golem* means "shapeless mass" and, according to the Talmud, refers to bodies without souls. Zombies and golems are shambling robots that engage in complex behavior only when instructed to do so by another force.

Debates about animal rights and the potential of computers and robots are often approached by asking: Does a chimpanzee have a soul? Can a computer ever have a soul? There is even debate over whether clones have souls. In 1977, the Pontifical Academy of Life, established by Pope John Paul II, said they do not—souls can only be produced through God, and hence clones, created by man, would not have souls. The suggestion that clones are nothing special—merely identical twins born at different times—is apparently not convincing to everyone; some see the soul as an extra

ingredient that must be added, and they worry that God might not bother.

The soul also has a part to play in the discussion of abortion. In a 1992 town meeting, President Clinton suggested that the abortion debate turns on when one thinks the soul enters the body. The position of the Roman Catholic church is that this occurs at the moment of conception, but other theologians have suggested that it enters at the moment of first movement—the “quickenings”—or even days or weeks after birth.

If the universe contains souls as distinct entities *and* if some things have souls and others do not *and* if possession of a soul is necessary and sufficient to guarantee an entity’s right to survive, there would be a simple way of thinking about certain significant moral problems. Debates over cloning, animal rights, and abortion would largely be reduced to determining whether the entity in question (clone, animal, fetus) has a soul. One of the many advantages of thinking about the world in terms of bodies and souls is the moral clarity that this provides.

Unfortunately this clarity is not justified. There is a sense in which souls exist, but they are not independent of bodies and brains. The qualities that we are most interested in from a moral standpoint—such as consciousness, experience of pain, and desire to thrive—are the result of brain processes, and such processes emerge gradually in both development and evolution. It is therefore unreasonable to seek an instant where they appear in development, or a sudden jump in the course of evolution.

An ironic consequence of a scientific perspective on mental life is that it takes the interesting moral questions away from the scientists. Researchers will be able to tell us with increasing precision about the mental and physical capacities of a zygote, fetus, embryo, and baby, as well as about the capacities of other species, information that is relevant when it comes to making certain moral decisions. But it

does not itself settle the issues. Science does not answer the hard question of what capacities an entity must have to be included in the moral circle; to the extent that there is a line to be drawn, science does not tell us where to draw it.

As Steven Pinker points out, the discovery of the material basis of the soul changes the moral question. Our task is not to “discover” the moment in which someone becomes a person; it is to determine which qualities are deemed sufficiently important for us to extend certain rights and privileges. It is possible for two people to agree totally about the mental and physical capacities of an embryo, and yet for one to see abortion as acceptable and the other to see it as immoral. This is because they might have different views as to how much these capacities should be valued, and how they should be weighed against other considerations, such as the rights of the mother.

Does this mean that anything goes, there is no morality? Consider a parallel case. We have age restrictions as to when one is permitted to have sex, marry, serve in the military, or purchase alcohol. Presumably everyone would agree both that the optimal ages here are not to be solely determined by scientists, and that the boundaries are inherently fuzzy. There is no precise moment that separates those who are ready to fornicate or buy beer from those who are not. Does this mean that it would make perfect sense to raise the drinking age to 70, or lower the marriage age to 5? Of course not. Similarly, the lack of an objectively sharp boundary for moral values does not mean that distinctions do not exist. They do not force us to doubt that, say, five-year-olds really are people, deserving of life and respect, and clumps of dirt are not.

THE CARTESIAN CHILD

Jean Piaget believed that an understanding of the mental world is a late accomplishment, asserting, “The child cannot distinguish a real

house, for example, from the concept or mental image or name of the house.” But we know this to be mistaken. The psychologist Henry Wellman sums up the modern developmental evidence by saying, “My own position is that young children are dualists: knowledgeable of mental states and entities as ontologically different from physical objects and real events.”

Wellman is not saying that young children know that they are dualists. Preschool children do not spontaneously mull over the mind/body problem. Even adults can live a full life without developing an explicit theory about the nature of experience and how it relates to the material world. Children are dualists in the same way that they are essentialists, realists, and moralists. They are dualists in the sense that they naturally see the world as containing two distinct domains, what Wellman calls “physical objects and real events” and “mental states and entities”—what I have described as bodies and souls.

Wellman’s conclusion is based on a series of influential experiments. In one of them, young children were told stories involving mental entities versus physical entities. For instance, one tale was about one boy who had a cookie and another boy who was *thinking* about a cookie. Even three-year-olds understand the difference between a real cookie, which can be seen and touched by another person, and an imagined cookie, which cannot be; conversely, an imagined cookie can be mentally transformed by the person who is thinking about it, but a real cookie cannot be.

What do children know about where these mental states and entities come from? In our society children are explicitly taught about the brain and its role in thinking, but this understanding does not come easily. Piaget found that up until the age of about eight, the children he studied had little understanding of what the brain was for. Modern American and European children are more precocious than this. Five-year-olds know where the brain is and what it is for, and they know that people and other animals cannot think without

a brain. But they do not usually understand that the brain is needed for physical action, such as hopping or brushing your teeth, and they do not think the brain is needed for an activity like pretending to be a kangaroo. And if you tell these children a story in which a child's brain is successfully transplanted into the head of a pig, children agree that the pig would now be as smart as a person, but they think that it would still keep the memories, personality, and identity of the pig.

I only really believed these findings when my six-year-old son, Max, expressed the same sentiments in the course of an argument. I was telling him that he had to go to bed, and he shouted at me that I could make him stay in his bed, but "you can't make me go to sleep—it's *my brain!*" I then sat down with him and asked him several questions about the brain (which he was delighted to talk about, given the alternative). On the basis of what he had learned in school, he was impressed with the brain. It does "millions of things" he told me, and a person could die if it were seriously damaged. The brain, he solemnly explained, is an extremely important part of your body.

I then asked Max to describe some of the things that the brain does, and he listed seeing, hearing, smelling, and, most of all, thinking. But there were many things that the brain does not do—you use your brain to help go to sleep, but dreaming is not a function of the brain, according to Max. Neither is feeling sad, nor loving his brother. Max said that this is what *he* does, though he admitted that the brain might help him out.

Max has been taught that the brain is important for thinking. But when children learn this, they take "thinking" in the narrow sense, in terms of conscious problem solving and reasoning. If you ask children of this age whether they can go for long periods without doing any thinking at all, they will say yes. The natural conception of the brain by children, even after science education, is that it

is a tool we use for certain mental operations. It is a cognitive prosthesis, added to the soul to increase its computing power.

I doubt that this understanding is much different from that of many adults. Much excitement has been generated by recent studies showing increased neural activity—part of the brain “lighting up” in a scanner—when subjects think about religion, or sex, or race. The details of these findings are plainly relevant for theories of the location and time-course of different mental activities, but people often seem fascinated by the mere fact that the brain is involved at all.

For some of us, important psychological traits are seen as related to parts of the body other than the brain. If you tell children about a heart transplant, they sometimes say that this would involve the transfer of traits such as kindness. Some adults would agree. As described in her book *Change of Heart*, after Claire Sylvia had a heart-lung transplant, she developed a craving for beer and chicken, grew aggressive and confident, and walked with a swagger. She attributed these traits to the properties of her donor, Tim. For what it is worth, her therapist agreed: “I am beginning to believe that some of Tim’s essence has transmigrated to Claire.”

How does everyday experience change the child’s initial belief about the immaterial basis of the soul? If a child’s father has a certain appearance on Monday, his appearance is likely to be more or less the same on Tuesday. The child herself will be stuck with the same body through her whole life, and while this body undergoes changes both gradual and abrupt, it will still seem to be the same object.

Furthermore, our relationship to our own body is . . . intimate. This observation troubled Descartes. He was fond of the analogy of soul as pilot and body as vessel. But he was aware that the analogy is imperfect in an important regard. A ship’s captain does not experience damage to his ship in anything like the same way that a person

experiences pain. Similarly, a ship's captain controls the ship, but our own relationship to the action of our bodies is quite different. It is *closer*. Consider the ruminations of a particularly introspective 13-year-old in Ian McEwan's novel *Atonement*:

She raised one hand and flexed its fingers and wondered, as she had sometimes before, how this thing, this machine for gripping, this fleshy spider on the end of her arm, came to be hers, entirely at her command. Or did it have some little life of its own? She bent her finger and straightened it. The mystery was in the instant before it moved, the dividing moment between not moving and moving, when her intention took effect. It was like a wave breaking. . . . She brought her forefinger closer to her face and stared at it, urging it to move. It remained still because she was pretending, she was not entirely serious, and because willing to move it, or being about to move it, was not the same as actually moving it. And when she did crook it finally, the action seemed to start in the finger itself, not in some part of her mind. When did it know to move, when did she know how to move it? . . . She knew that behind the smooth continuous fabric was the real self—was it her soul?—which took the decision to cease pretending, and gave the final command.

You do not command your finger to move, or will it to move, or tell it to move. *You just move it*. This is our everyday experience, and it is reasonable to wonder whether, over the course of years, this experience should make the assumption of body/soul duality go away. It should persuade the developing child that we do not *occupy* our bodies; we really *are* our bodies.

If our thoughts and actions were in perfect synchrony, then we might really see them as one and the same. But our bodies betray us. We stumble getting up because our foot falls asleep, we drop a plate, spill our drink, and so on. Theologians have not missed this failure

of thoughts and actions to fit perfectly. Consider Augustine's famous argument that involuntary sexual arousal and impotence are divine punishments after the Fall. Garry Wills states, "The chanciness of arousal shows the loss of the integrity, the unison, of body and soul." But the unfaithfulness of our bodies does not begin with sexual dysfunction. It is experienced by any baby who howls in frustration at the challenge of learning to crawl.

DEATH

The understanding that people can be the same even after radical transformations of their bodies is only weak evidence for the attribution of souls. After all, houses also retain their identities after centuries of renovations and rebuilding. But we do not think houses have souls.

What is unique to people is the assumption that personhood can survive the destruction of the body. It makes no sense to say that if a fork were destroyed, its "essence" might survive, perhaps showing up in a later existence as a spoon. Forks and spoons do not have essences in that sense and they do not have bodies; they are bodies. But many do believe that when a person dies, the soul leaves the body and goes somewhere: to heaven, to hell, to some unspecified nether world, or into the body of some other creature, human or animal. If I say that I am the reincarnation of the queen of France, you probably won't believe me, but you can understand what I am saying. If you hear about my near-death experience or how I was hypnotically regressed so as to remember my past life, you may be convinced, or unsure, or you might think it is total bunk—but you understand the claims. The existence of research into parapsychology more generally suggests that these claims, regardless of their truth, are understandable even to skeptics.

The relationship between a belief in life after death and our intuitive dualism is complex. One can be a dualist but believe that when

the body is gone, the soul goes too. Conversely, one can believe in life after death without being a dualist. You might put your faith in the idea that consciousness arises not from specific brain matter but from the information that the brain encodes. If so, immortality might not be so far away. Ray Kurzweil predicts that by 2040, the technology will be available to upload yourself onto a computer, so that if your body is destroyed, you can be downloaded into a robot or a cloned body. Or you might believe that God will resurrect you physically, including your brain. Indeed, Elaine Pagels notes the central importance the early Christians gave to the fact that when Jesus rose from the dead, it was Jesus' actual physical body. He said, "Handle me and see, for a spirit does not have flesh and bones, as you see that I have." To convince his disciples, he asked for some food and ate it. His body was resurrected, not merely his soul.

Even if one believes that the soul is distinct from the body and survives death, it does not follow that corpses are unimportant. On the contrary, every culture treats dead bodies with some degree of reverence and care. Sometimes they are buried, often with clothes, weapons, and other cherished or useful objects; sometimes they are burned, sometimes eaten. But there is always some proper procedure that must be carried out. Many are horrified at the thought that their bodies, or those of their family or friends, will not get the proper respect.

This anxiety shows up in wartime. People worry about death on the battlefield, but they worry as well about what happens after death. The 1949 Geneva Convention explicitly states that the victors of a battle must "search for the [enemy's] dead and prevent their being despoiled," and ensure that "the dead are honorably interred, if possible according to the rites of the religion to which they belonged." Contemporary military forces will go through great efforts to recover the bodies of fallen comrades, and the desecration of these bodies—as when dead American soldiers were paraded through the streets of Somalia—is met with anguish and rage.

The problem with souls is that they are invisible and intangible. As the philosopher Ludwig Wittgenstein put it, “The human body is the best picture of the human soul.” When we wish to commune with the dead, we often go to their grave sites. This is as close as we can get. And to the extent that a soul lives on, it is an act of respect and kindness to care for its most prized possession—and what would that be if not its body? Furthermore, under many religious views, the body must be treated with care in order for the soul to make it safely to its final destination.

WHAT CHILDREN KNOW ABOUT DEATH

We start off with the two distinct stances, which makes it conceivable to us both that a body can persist without a soul and, vice versa, that a soul can persist without a body. If we were intuitive materialists, believing that consciousness and intelligence are the products of physical processes, the idea of an afterlife would make no sense to us.

The first understanding of death is by means of an analogy with sleep or departure, perhaps because this is how it is explicitly described to children. Grandmother is asleep forever. She has gone to heaven. She has left and will never come back. Children also experience some confusion that probably arises from ambiguities of language. A child might hear that Grandmother is buried in the ground *and* that Grandmother is in heaven. An investigator in 1896 reported the following dialogue with his four-year-old son:

Son: It's only naughty people who are buried, isn't it?

Father: Why?

Son: Because Auntie said all the good people went to heaven.

The psychologist Susan Carey has argued that children are also puzzled as to what sorts of things can be dead. To be dead is not to

be alive, but all sorts of things are not alive, including ex-living-things (which corresponds to the adult notion of dead things), but also things that are inanimate, and not real. Not everything that is not dead is alive; not everything that is not alive is dead. Children have problems getting this straight. Carey reports a dialogue with her three-year-old daughter that was prompted by the question “Does your bear have blood and bones inside her?”

Daughter: No, because she is not a big real person. . . . She can never die—she'll always be alive!

Mother: Is she alive?

Daughter: No—she's dead. HOW CAN THAT BE?

Mother: Is she alive or dead?

Daughter: Dead.

Mother: Did she used to be alive?

Daughter: No, she's middle-sized—in between alive and dead.

Then there is flat-out confusion over the mechanics of what happens when one dies. Carey's daughter asked, “How do dead people go to the bathroom?” and observed, “Maybe they have bathrooms under the ground.” When Carey responded that dead people don't have to go to the bathroom because they don't eat or drink, her daughter triumphantly replied, “But they ate or drank before they died—they have to go to the bathroom from just before they died.” It is not until somewhere between about five and seven years of age that children show a clear adult understanding of what death is—that it is irreversible and inevitable and means a complete cessation of biological function.

Why do so many people believe in an afterlife? Some conception of life after death is common in every culture, and, to judge from burial artifacts, appears to have existed a very long time ago. There are several explanations for this. Ideas about the afterlife are explicitly taught to people, and socially maintained, in part because they serve

the interests of the powerful, who exert social control by means of the carrot of heaven and the stick of hell. Also, many are impressed with what they see as positive evidence for life after death, such as near-death experiences and communication with the departed (recall that about one in six Americans claim to have spoken to the dead).

Furthermore, the notion of oblivion, of a finite life followed by nothingness, is horrifying to many. I would much rather believe that my loved ones are rejoicing in heaven than that they are simply gone, and I have a similar preference with regard to my own fate. Wishful thinking is not in itself an explanation for the existence of a belief. I wish I could fly, but I don't believe that I can fly. But the inability to fly is obvious, while the state of the soul after death is not. For most of human history, there was no scientific reason to doubt that the soul can outlast the body. Because this view is fully conceivable (since we see the soul and the body as separate) and extremely tempting (since we do not want our souls to cease to exist), it is an easy belief to adopt.

Most of all, belief in an afterlife is a natural consequence of our intuitive Cartesian perspective. Consider again Descartes' own intuition that the experience of the body is different from the experience of the self, of the soul. I can imagine my body being destroyed, my brain ceasing to function, my bones turning to dust, but it is harder—some would say impossible—to imagine my self no longer existing. This implies that we should find it easier to understand the cessation of biological function (death of the body) than the cessation of mental function (death of the soul). And it implies that even young children should believe that the soul survives the destruction of the body.

To explore children's beliefs about this, the psychologists Jesse Bering and David Bjorklund told children a story about an alligator and a mouse that ended with the destruction of the mouse: "Uh-oh! Mr. Alligator sees Brown Mouse and is coming to get him!" Children are then shown a picture of the alligator eating the mouse.

“Well, it looks like Brown Mouse got eaten by Mr. Alligator. Brown Mouse is not alive anymore.”

Then they asked the children questions about the mouse's biological functioning: “Now that the mouse is no longer alive. . .”

Will he ever need to go to the bathroom?

Do his ears still work?

Does his brain still work?

And they asked about the mouse's mental functioning: “Now that the mouse is no longer alive. . .”

Is he still hungry?

Is he thinking about the alligator?

Does he still want to go home?

The results were striking. When asked about biological properties, four-to-six-year-olds appreciated the effects of death—no need for bathroom breaks, the ears don't work, and neither does the brain. The mouse's body is gone. But when asked about the psychological properties, over half of the children said that they would *continue*—the mouse can experience hunger, thoughts, and desires. The soul survives.

Freud proposed that the “doctrine of the soul” emerged as a solution to the problem of death: if souls exist, then conscious experience need not come to an end. In contrast, I propose that this doctrine exists from the very start. Young children do not know that they will one day die. But once they learn about the inevitable destruction of their body, the notion of an afterlife comes naturally. This is the most important consequence of seeing the world as Descartes did.