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Science Fiction as Philosophy

Course Guidebook

Professor David Kyle Johnson
King's College



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David Kyle Johnson is a Professor of Philosophy at King's College in Wilkes-Barre, Pennsylvania. After receiving his bachelor's degree in Religion and Philosophy at Southern Nazarene University, he completed his master's and doctor of philosophy degrees at the University of Oklahoma.

Professor Johnson regularly teaches classes on metaphysics, philosophy of religion, philosophy of mind, and logic, as well as courses on critical thinking and scientific reasoning. He is perhaps best known for integrating pop culture into his classes, and he has taught courses on *The Simpsons*, *South Park*, *Star Trek*, and science fiction.

Professor Johnson has published articles on *Doctor Who*, *Star Trek*, *Star Trek: The Next Generation*, *The Matrix*, *Battlestar Galactica*, *Contact*, *Batman*, *South Park*, *Family Guy*, *The Office*, *The Hobbit*, *The Daily Show*, Christmas, Stephen Colbert, Johnny Cash, and Quentin Tarantino. He also edited a book on the movie *Inception* ("Inception" and Philosophy: Because It's Never Just a Dream), which inspired an Authors at Google talk with more than 750,000 views.

Additionally, Professor Johnson has published papers on free will, the rationality of theistic belief, the problem of natural evil, the multiverse and the simulation hypothesis, the paradox of fiction, the existence of souls and demons, miracles, and many related topics. His articles have appeared in such journals as *Religious Studies*, *Sophia*, *Philo*, *Philosophy and Literature*, *Think*, and *Science, Religion and Culture*. Professor Johnson's writing has also appeared in the books *Atheism and the Christian Faith*, *Philosophical Approaches to Demonology*, *Bad Arguments: 100 of the Most Important Fallacies in Western Philosophy*, and *C. S. Lewis's Christian Apologetics: Pro and Con*.

Professor Johnson regularly teaches outside the classroom, both on and off campus, and maintains two blogs for *Psychology Today*. At Oklahoma, he won the coveted Kenneth R. Merrill Graduate Teaching Award. In 2011, the American Philosophical Association's Committee on Public Philosophy gave him an award for his ability to make philosophy accessible to the general public.

Professor Johnson's other Great Courses are *Exploring Metaphysics* and *The Big Questions of Philosophy*. ■

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SCI-PHI:

SCIENCE FICTION AS PHILOSOPHY

Although it's often wrongly dismissed as juvenile escapism, science fiction is a primary way—perhaps *the* primary way—that society engages with our most important philosophical, political, religious, ethical, practical, societal, scientific, and even metaphysical questions. Indeed, sci-fi authors not only ask such questions but also advocate for specific answers.

This course will examine the philosophic questions that sci-fi raises, some of the answers to these questions that the creators of sci-fi give, and evaluate them with the help of history's most important philosophic thinkers.

The course begins with a discussion of *Inception* and the approach to interpreting works of art used in the course. This will lead to a discussion of *The Matrix*, René Descartes's skeptical problem, Jean Baudrillard's *Simulacra and Simulation*, Robert Nozick's experience machine, and the value of knowledge. The *Matrix* sequels, along with Nelson Pike and the consequent argument, will then have us doubting the existence of human free will, and *The Adjustment Bureau* will have us wondering whether our entire life is fated. Could our destinies be controlled by God (as John Calvin suggests), secret societies (as conspiracy theorists suggest), or even something like the Force from *Star Wars*?

Carl Sagan's *Contact* will then have us asking questions about the compatibility of science and religion, as well as Stephen Jay Gould's NOMA thesis, and in turn will have us considering questions about what effect an alien visitation would have on society. How would it affect religious belief? Would aliens help us or harm us? Would communication be possible? *Arrival* will raise Willard Van Orman Quine's problem of radical translation, and we will explore the linguistic philosophy of Ludwig Wittgenstein to try to solve it. Next, the Sapir-Whorf hypothesis will have us considering the possibility that the language we speak affects the way we see the world—for example, how we see time.

This will lead to a discussion of the possibility of time travel. *Quantum Leap* will raise questions about whether quantum mechanics allows for backward causation, and Christopher Nolan's film *Interstellar* will teach us how relativity entails that time travel into the future is possible. *Back to the Future* will seem to entail that time travel to the past invokes paradoxes, but through *Futurama* and *Doctor Who*, we'll discover ways to conceive of time travel that avoids them—such as Nuel Belnap's conception of branching time travel and what might be called Lewisian predestination.

The science and science fiction that suggests there are alternate universes is next: *Star Trek*, *Fringe*, and *Sliders*—along with Albert Einstein's relativity, Paul Steinhardt's string theory, Alexander Vilenkin's theory of inflation, Lee Smolin's black hole theory, and Hugh Everett III's multiverse interpretation of quantum mechanics. The possibility of alternative selves will raise questions about personal identity, and *Dark City*, *Moon*, and *Dollhouse* will be used to discuss John Stuart Mill's memory criterion, Derek Parfit's psychological continuity criterion, Peter Unger's bodily continuity criterion, and David Lewis's perdurantism.

HBO's *Westworld* and Steven Spielberg's *A.I.: Artificial Intelligence* will be used to discuss the possibility of artificial intelligence. Julian Jaynes's theory of bicameralism, Giulio Tononi's integrated information theory, and Alan Turing's imitation game will all be discussed. The course will then examine the predictions of Ray Kurzweil to determine how soon AI will be a reality, discuss Skynet and *Transcendence* to determine whether AI would be dangerous or beneficial, and use Data from *Star Trek* to determine whether we might be a danger to AI.

The Thirteenth Floor will raise Nick Bostrom's argument about the genuine possibility that we are living in a computer simulation, and *Black Mirror* will raise concerns about the virtual world we already live in through social media, such as how it subjects us to Jean-Paul Sartre's "look." *Star Wars* will motivate an exploration of whether there is a difference between good and evil and a discussion of political rebellion. Then, the course will turn to analyzing the social contract theories of Thomas Hobbes and John Locke as well as Isaiah Berlin's conceptions of freedom through the television shows *Firefly* and *Blake's 7*.

Starship Troopers, *Doctor Who*, and *Ender's Game* will then raise questions about the possibly of justified war and in turn whether *Star Trek*'s Prime Directive adequately guards against colonialism. Colonialism will raise the issue of capitalism, and the theories of Adam Smith, Karl Marx, John Maynard Keynes, and John Rawls will be used to evaluate the capitalistic societies of Metropolis, Elysium, and Panem.

Snowpiercer will motivate a discussion of climate change, which will motivate a discussion of *Soylent Green*, which will motivate a discussion of overpopulation and euthanasia. The topic of population control will raise questions about reproductive ethics, and *Gattaca* and *Orphan Black* will be used to ponder abortion, designer babies, and cloning.

The course will end by considering whether *The Handmaid's Tale* is a feminist tale and then whether Stanley Kubrick's *2001: A Space Odyssey* aligns with Friedrich Nietzsche's idea of the Übermensch.

INCEPTION AND THE INTERPRETATION OF ART

LECTURE 1

This course can be a unique experience through the world of science fiction—especially sci-fi you don't already know—if you wish it to be. This is because at the end of each lecture, to prepare for the next, it is suggested that you watch a particular piece of science fiction and consider certain questions in light of it.

The movie will always be explained anyway, in case you didn't watch it. But having the media fresh on your mind will make the lecture take on an entirely different dynamic—and also ensure that the story isn't spoiled for you if the ending is revealed.

So, if you've been meaning to see *Inception* but haven't—or it's been a while—stop and do so right now. As you do, ask yourself whether you really, honestly, think you know what happens in the end. Then come back to read about it.



There is a long and interesting debate about what science fiction is and thus about what should and shouldn't be included in this course.

But for simplicity, this course will use Damon Knight's definition: "Science fiction is what we point to when we say it." In other words, science fiction will be treated as the works that the public generally calls science fiction.

INCEPTION: A SUMMARY

- ◆ Christopher Nolan's film *Inception* is one of the best science fiction films of the 21st century. *Inception* raises a host of philosophical questions. It also raises the key issue of how to interpret art—such as the science fiction that will be discussed throughout this course.
- ◆ *Inception* introduces us to Dom Cobb, who uses the passive device to infiltrate others' dreams to extract information from them. Because he's been charged with his wife's murder, he's been denied access to his children. But when a businessman named Saito offers him a job in exchange for erasing the murder charge, Dom can't say no.
- ◆ Cobb must perform an inception: He must implant, in the mind of rival businessman Robert Fischer, the idea that Fischer should break up his father's company. To do so, Cobb subjects Fischer to a multilayered dream sequence, where on each level time passes more slowly than the last.
- ◆ Although the inception seems successful, by the end of the movie we aren't sure if Cobb has successfully returned to the real world and his children or whether he is still stuck in a dream. He does check his totem—his way of distinguishing dream from reality, a spinning top—at the end of the film, but before we see whether the top falls, the screen cuts to black.
- ◆ This is a great ending; it's ambiguous. But what makes the film great is that, upon multiple viewings, you realize that whether the top falls or not doesn't matter at all.

Learn more about the importance and influence of philosophy in the Great Course *The Big Questions of Philosophy*.



- ◆ It tells us nothing about whether Cobb is dreaming.
 - ◊ Totems only tell you whether you are in someone else's dream, so even if the top fell, Cobb could still be in his own dream.
 - ◊ To be effective, no one else can know how your totem works. Yet not only does Cobb's wife, Mal, know how Cobb's totem works, but so does his apprentice, Ariadne, who designed the dreams from which he is trying to escape. Indeed, he told her how his totem works, right after he told her that no one should ever tell anyone how their totem works.
 - ◊ Cobb's totem can't tell anyone anything because it's backward. A totem's behavior in the real world is supposed to be unique—a loaded die, a misspelled poker chip, a weighted bishop. If it behaves ordinarily, you know that you are dreaming. But ordinarily in the real world, tops fall. Cobb's totem is unique in the dream, not in the real world, so it can't tell him anything.
- ◆ What makes *Inception* a masterpiece is that the ending isn't a cliffhanger—it's a magic trick. It's misdirection. You shouldn't have been looking at the spinning top at the bottom left of the screen to figure out whether Cobb is still dreaming. You should have been listening to what was going on in the upper right of the screen.
- ◆ To see why, first recall that parts of a dreamer's subconscious can work themselves into a dream world. The train that killed Cobb and Mal in Limbo appears in the kidnap dream, and the number on it matches the number of their honeymoon hotel room: 3502. Images of Cobb's children are another element of Cobb's subconscious that makes appearances throughout the film.
- ◆ Recall also what happens when you exit Limbo—the deepest dream world—as we see Ariadne and Fischer do at the end of the film. Notice that when they die in Limbo, they don't wake all the way up, back into the real world; they merely go back up to the dream from which they entered Limbo. Fischer and Ariadne wake up in the snow fortress dream and then "ride the kicks" back up to the kidnap dream.

- ◆ Recall also where the move begins and ends: with Cobb interacting with Saito in a dream world. In both cases, Cobb is visiting Saito in his mansion, which is on a cliff overlooking the ocean. It is here, at the end of the film, that Cobb tries to convince Saito to shoot himself—to wake himself up.
- ◆ So, what's the clue you missed? What happened in the upper right of the screen while you were watching the spinning top on the bottom left?
- ◆ As Cobb greets his children, he asks them what they are doing, and they say, "We're building a house on a cliff."
- ◆ So, did Saito and Cobb make it back to the real world after exiting Limbo? Or did they, like Fischer and Ariadne, just go one layer up, to what was the snow fortress dream that is now empty? Did they wake up in the real world, or did Saito create his own dream world upon exiting Limbo—a dream world Cobb would have entered himself upon exiting Limbo and found filled with elements of Saito's subconscious, such as his "house on a cliff"?
- ◆ And consider this: If dying in Limbo doesn't necessarily get one back to the real world, how do we know that Cobb and Mal ever made it back to the real world from Limbo? We see them wake up on an apartment floor, but Cobb said that they entered Limbo by experimenting with dreams within dreams. Is that apartment in the real world? Or did they awake into the dream they used to reach Limbo—a dream within a dream within a dream that could, after all, last decades?
- ◆ Maybe Mal was right; maybe they were still dreaming and her suicide actually did wake her up. Maybe the entire movie is a dream. Maybe that's why all the members of Dom's "dream team"—Arthur, Eames, Ariadne, Yusuf, Saito—only have one name: They're all just elements of his subconscious.
- ◆ Maybe this is why the city of Mombasa looks so much like a maze, and the walls of its buildings seem to close in around Cobb while he's being chased. Maybe this is why Eames can (as the script says) "mysteriously" produce casino chips out of thin air.



If you want to dive deeper into interpreting *Inception*, the details are in "*Inception and Philosophy: Because It's Never Just a Dream*.

By Matt Sienkiewicz

- ◆ Maybe that's why Mal, before her suicide, is inexplicably sitting in the window of a different hotel room. And maybe this is why: The song Cobb uses to signal the end of a dream—Edith Piaf's “Non, je ne regrette rien”—is 2 minutes and 28 seconds long. And the movie *Inception* is exactly 2 hours and 28 minutes long.

AUTHORIAL INTENT

- ◆ Interpreting *Inception* isn't easy; it's difficult to even figure out what “really happened” in the film. But we need to figure out how to interpret such films if we are to discuss them. To settle such issues, it's common for people to appeal to authorial intent.
- ◆ What does *Inception*'s creator Christopher Nolan think happened? If he'd just tell us, we could know how much of the movie was a dream. This view is called intentionalism, and it is defended by philosophers such as Paisley Livingston in his book *Art and Intention*. But there are a number of problems with this approach.
 - ◊ In an interview with Brad Brevet, Nolan made it abundantly clear that although he had a “sincere interpretation” in mind as he made *Inception*, he intentionally made the film ambiguous and will never reveal his intentions. Indeed, the intentions of the authors of many works are unknown; often the author is unknown. So, with intentionalism, the correct interpretation of many works must necessarily remain a mystery.
 - ◊ Intentionalism makes the meaning of art static—locked into place by the author's intentions. But art can take on new meaning as society changes around it. And the meaning of a piece of art can change as other art is developed around it.
 - ◊ Intentionalism also seems to neglect the importance of audience interaction. To ignore fans' reactions to films would be to ignore what philosopher George Dickie says makes art *art*: Art is art because of the way it is presented to an audience—to be appreciated and interpreted.

- ◆ In this course, when it comes to interpretation, it will be most useful to reject intentionalism and adopt the approach of philosopher Arthur Danto, who argues that, by its very nature, art invites the audience to interpret it—“finish” it even.
- ◆ Art is public in nature. Once completed, a work of art is the property of society. As such, everyone is invited to interpret it as they choose. This course uses the most philosophically useful and interesting interpretation.
- ◆ That’s not to say that some interpretations can’t be better than others, or even that there can’t be a best interpretation. Indeed, philosophy can help us here, too.
- ◆ Logically, a good interpretation can’t contradict basic facts of the film. You might suppose that something happened off screen, but you can’t ignore what does happen on screen to bolster your favored view.
- ◆ And the principle of charity demands that you not embrace an interpretation that makes the work or author seem worse than they otherwise would be. Assume the author isn’t an idiot.
- ◆ Context also matters, and so do authorial intentions. They’re not the final arbiter, but they can help. For example, Steven Spielberg’s intentions in making *Schindler’s List* make it clear that it could never be legitimately interpreted as a “pro-Nazi” film.

HOW TO INTERPRET *INCEPTION*

- ◆ How much of *Inception* is a dream?
- ◆ Consider the interpretation that it all is, from beginning to end. That wouldn’t contradict any fact in the film; indeed, Nolan intentionally left this interpretation open. But most importantly, this interpretation makes the film better. So, it’s the most charitable interpretation.
- ◆ If the “real world” really is real, then it’s kind of hollow. All the characters besides Cobb are 1-dimensional. They have no exterior motivation and are merely there for Cobb’s convenience. Good movies have developed characters. But if the fact that they are 1-dimensional is a subtle clue that Cobb is dreaming, that’s brilliant.

- ◆ There is also a lot of sloppy editing in the film, including quick cuts and sudden transitions. In one scene, Dom is outside a classroom looking in on his father-in-law, and then suddenly—without explanation—he is sitting in the room. These cuts make perfect sense when Cobb is dreaming; indeed, Cobb even points out how, in dreams, you often arrive in places with no memory or awareness of how you got there. But if the real world is real, that's just lazy editing. But again, as a subtle clue that Cobb is dreaming, that's brilliant.
- ◆ There's even bad writing. For example, Saito shows up, completely unexplained, to rescue Cobb in Mombasa. "What are you doing in Mombasa?" Cobb asks. "I need to protect my investments," Saito replies. That's silly—your savior showing up out of nowhere. But that's exactly the kind of thing that would happen in a dream.
- ◆ Of course, some will argue that the entire movie being a dream makes it worse because nothing really happens; it's all just a dream.
- ◆ But here's the thing: It's a movie. Nothing really happens, whether it's all a dream or not. Why would we care less about a movie that is a dream, when movies that are not dreams are just as fictional?
- ◆ This gives rise to the paradox of fiction: Why do we care—why do we emotionally react to fictional stories—when we know full well that they are fiction? Why care whether Cobb makes it back to his children, given that we know that neither Cobb nor his children really exist?
- ◆ The paradox can be solved by, essentially, realizing that movies are like optical illusions for the emotions. When you see an optical illusion, rationally you can realize that it is an illusion, but the illusion will still fool you. In the same way, you can know that a movie is fiction, but your emotional center is immune to that knowledge. You'll still react to it as if it were really happening, even though rationally you know that it is not.

QUESTIONS

- 1 In what ways has science fiction influenced your life?
- 2 What is your favorite example of sci-fi making a philosophical argument?

- 3 How would you define science fiction? Do you think anything that has been included in this course doesn't count as sci-fi?
 - 4 How much of *Inception* do you think is a dream?
 - 5 Are there ways to avoid the objections to intentionalism outlined in the lecture?
 - 6 What other criteria are relevant for interpreting a film?
-

RESOURCES

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RELATED SCI-FI

TV	<i>Sapphire and Steel</i> (1979) <i>Neon Genesis Evangelion</i> (1995)
FILM	<i>Looper</i> (2012) <i>A Scanner Darkly</i> (2006) <i>Under the Skin</i> (2013) <i>Coherence</i> (2013) <i>Stalker</i> (1979)
PRINT	Lois Lowry's <i>The Giver</i>

The Meaning of *Inception*

After he spins his top, Cobb turns away from his totem when he hears his children at the end of the film. Because of this, we might think Cobb no longer cares about whether he is in a dream. He has decided to stop worrying about it and just believe he's awake.

If so, the moral may be that true belief doesn't matter; you should just decide to believe what you want.

If that's the message, however, it's not one a philosopher should be happy with. Philosophy is the love of wisdom, and philosophers seek the truth above all else.

To examine this moral, the next lecture will focus on a movie that seems to come to the opposite conclusion: *The Matrix*.

Watch this movie before the next lecture, and as you do, ask yourself a simple question: How could you ever tell whether the Matrix was real?

THE MATRIX AND THE VALUE OF KNOWLEDGE

LECTURE 2

THE MATRIX: A SUMMARY

- ◆ The movie begins with a computer hacker named Neo, who is compelled by the question of what the Matrix is. He finds Morpheus, someone who knows the answer and offers him an unusual choice: Take a blue pill and he'll wake up in his bed, none the wiser; take a red pill, and he will learn the truth.
- ◆ Neo chooses the truth and learns that the Matrix is a digital world designed to fool its inhabitants into thinking that it is real—and that he has been one of those inhabitants his entire life. He thought he was living a free American life in the year 1999; in reality, his body was locked in a pod, floating in goo, and being fed experiences by a computer—the Matrix—along with thousands of his fellow humans, around the year 2199.
- ◆ Morpheus believes Neo is “The One”—the one prophesied to free all of humankind from the Matrix. So, after being unhooked from the Matrix, Neo and his new friends hack back into the Matrix to seek a prophetess called the Oracle. They find her, only to have her tell Neo that he isn’t The One. On the way back out, one of his colleagues, Cypher, betrays the group to Agent Smith, a sunglasses-wearing sentinel program tasked with killing rebels like Morpheus and Neo. In a final showdown, after saving Morpheus, Neo defeats Smith by essentially deprogramming him from the inside. Apparently, Neo was The One after all.

DESCARTES'S PROBLEM

- ◆ *The Matrix* expressed the worries of one of the most famous works in all of philosophy: *Meditations on First Philosophy*, in which Descartes is looking for a solid ground on which to base all knowledge. To that end, he is looking for a belief that cannot be doubted—and thus takes seriously even the most ridiculous ways that his foundational beliefs could be false.
- ◆ It may seem obvious, Descartes said, that “I am here, sitting by the fire, wearing a winter dressing-gown.” But he has dreamed such things before and been just as convinced. He considers his condition, shakes his head, and admits that it certainly feels like he’s awake. But then again, he has felt the same surety while dreaming.
- ◆ As Morpheus puts it: “Have you ever had a dream, Neo, that you were so sure was real? What if you were unable to wake from that dream? How would you know the difference between the dream world and the real world?”
- ◆ So, Descartes realizes, he could be dreaming; there is no way to prove to himself he’s not. This doesn’t make Descartes doubt the existence of the world, however. After all, the ideas in his dreams come from his experience during waking life. So, he can’t always have been dreaming.
- ◆ But then Descartes considers an alternate possibility for the source of those ideas: What if “some malicious, powerful, cunning demon has done all he can to deceive me”? What if “the sky, the air, the earth, colors, shapes, sounds, and all external things are merely dreams that the demon has contrived as traps for my judgment”?
- ◆ If true, not even the world exists. And because a lifetime of experiences fed to Descartes by such a demon would be indistinguishable from a lifetime of experiences of the real world, there is no way to prove that this isn’t true. Indeed, no matter what “test” Descartes preformed to see if this was true, the demon could simply fool him into thinking he had passed the test when he had not.

- ◆ The Matrix is a technological variation on this same problem; the Machines are the evil demon, and the Matrix is their method for imputing sensations.
- ◆ The upshot is that you can't know for sure that you aren't being fooled by a demon or stuck in the Matrix. Thus, you can't know the world is real. And if you can't know something as basic as that—something that seems to undergird our entire belief system—it seems you can't know anything at all. Knowledge is impossible.
- ◆ But is this argument sound? And should we care about knowledge in the first place? To evaluate this argument, we must first clearly understand what knowledge is.

The “Brain in a Vat” Problem

If you were just a brain in a vat, floating in a pod of goo, being fed sensations by a computer to make you experience a fake world, your entire life would consist of the same kind of experiences that it has consisted of. There is no way to prove this isn't happening; any test you performed could simply be sabotaged by the system itself.

WHAT IS KNOWLEDGE?

- ◆ Almost 2500 years ago, in the *Theaetetus*, Plato defined knowledge as “true belief with an account.” In other words, you know something when you believe it, it’s actually true, and you have good reason to think it’s true.
- ◆ And that’s essentially the definition that’s accepted by philosophers today: knowledge is justified true belief. It’s agreed that all 3 are necessary: You can’t know something without believing it; a belief can’t count as knowledge unless it’s justified (it can’t just be a lucky guess); and you can’t know something if it’s false. (You can know *that* something is false, but you can’t know something that *is* false.)

- ◆ Descartes worried that knowledge was impossible because it was impossible for any belief to be justified. You couldn't be justified in believing the world was real because you couldn't be certain that you weren't being fooled.
- ◆ But the philosopher that most directly influenced *The Matrix*—Jean Baudrillard—argued that knowledge was impossible because there was no such thing as truth. In his most famous book, *Simulacra and Simulation*, Baudrillard argues that the postmodern world—the world since around World War II, after the invention of computerized technology and ubiquitous media—consists merely of simulacra. In other words, we no longer interact with things, but merely images and representations of things: signs, copies, models. We are inundated with propaganda and deception from politicians and from media outlets.
- ◆ The influence is obvious, but the similarity between Baudrillard's philosophy and *The Matrix* stops there. Baudrillard doesn't call for us to pull the wool off our eyes in an effort to return to the real world and learn the truth (as Neo does) and get others to do the same (as Morpheus does). Indeed, Baudrillard calls such a sentiment naively utopian. Instead, he concludes from this that existence is meaningless and that there is no real world or truth to seek.
- ◆ To say that such a conclusion is unjustified is an understatement. It is certainly true that electronic technology has altered our perception of reality and made it easier for politicians and the media to mislead us. But from that, it does not follow that there is no reality and no truths about it.
- ◆ Indeed, Baudrillard's conclusion contradicts itself. It can't be, as he says, a “fact that there is [no truth].” If that's a fact, then it's true. Baudrillard's mistake is that he has confused epistemology—the study of knowledge—with metaphysics—the study of reality. Our continued exposure to simulacra may make it difficult to know the way the world is, but from that it does not follow that the world is no way at all.
- ◆ According to most philosophers, and the general public, a proposition is true if it simply corresponds to the way the world is. It's called the correspondence theory of truth. And if a proposition does correspond to reality, then it's true—regardless of whether you are aware of that correspondence or not.



That Jean Baudrillard influenced the creators of *The Matrix*—the Wachowskis—is a matter of historical record. They even asked him to be their consultant for the film. (He turned them down.)

The Wachowskis asked Keanu Reeves to read Baudrillard's *Simulacra and Simulation* to prepare for the role. That's the book in which Neo hides his hacked data files, and it's the book Morpheus's "the desert of the real" line comes from—it's on the first page.

- ◆ So, if knowledge—justified true belief—is impossible, it’s not because it’s impossible for a belief to be true. In fact, notice that, in the correspondence theory, things could even be true in the Matrix.
- ◆ Indeed, we can’t say, as Trinity does, that the Matrix isn’t real (unless what we mean is that it is artificial). The Matrix still exists. Otherwise, what is Morpheus trying to free people from? It’s just that the nature of the Matrix is different than those in it assume; it’s digital rather than material.
- ◆ Interestingly, Cypher tells Trinity that he thinks the Matrix could be more real than the physical world; consequently, he wants to have his memory erased and then be plugged back in to the Matrix. Cypher wants to trade his difficult life on the outside for a life of ease on the inside; he wants to trade the uncomfortable truth of reality for the blissful ignorance provided by the Matrix. And that’s what makes *The Matrix* so philosophical.
- ◆ Because Cypher is a villain of the film, we must conclude a moral of the story to be that this isn’t the way a person should be. Knowledge is more important than pleasurable experience. Ignorance is not bliss; ignorance is slavery.
- ◆ It takes courage to do so, but you should seek and embrace the truth even when it makes life hard—even when the truth is uncomfortable. You should not just “believe what you want to believe” as the blue pill allows you to. You should take the red pill; you should seek out the truth at all costs.

Most people assume that matter is solid, when in fact it is mostly empty space. But the physical world still exists.



- ◆ This has been the mantra of philosophers since Socrates, who illustrated the life of a philosopher in this way: The philosopher is able to break through the chains put on us by society that make us see the world a certain way—Baudrillard's simulacra. Through careful logic and reason, however, a philosopher can come to see the world as it really is. And once he or she does, he or she can never turn back. Unlike the cowardly Cypher, the philosopher would never again gladly embrace ignorance—no matter how horrible or inconvenient the truth might be.

SHOULD WE ALWAYS CHOOSE KNOWLEDGE OVER IGNORANCE?

- ◆ In *The Matrix*, despite the fact that they started out in the pretend world, all our protagonists are glad to be freed from it. They reject the familiar for the truth, even though it's inconvenient. And the same seems true for us. People seem to agree that a life filled with ignorance about the nature of the world is not as meaningful as one absent that ignorance.
- ◆ Knowledge is intrinsically valuable. But that's not the only value of knowledge. Understanding the way the world works also helps you navigate and manipulate it. So, you should also value your ability to attain knowledge and resist efforts to rob you of that ability.
- ◆ Just like in *The Matrix*, the truth can sometimes be uncomfortable, and being comfortable is not more important than understanding reality. Willful ignorance is not only pitiful, but it can endanger the rest of us—just as Cypher's desire for ignorance put Neo, Trinity, and Morpheus in danger. This makes such willful ignorance not only epistemically unvirtuous, but morally reprehensible.
- ◆ But it's important to note that knowledge isn't the only thing that is intrinsically valuable. After all, the Matrix doesn't just make one ignorant; it makes one a slave to the Machines. Freedom is also important. And that's partly why Cypher wanted to be plugged back in. In response to Trinity saying that Morpheus had set him free, Cypher says, "Free? You call this free? All I do is what he tells me to do. If I have to choose between that and the Matrix, I choose the Matrix."

- ◆ Knowledge is valuable, but so is freedom and happiness. What makes Cypher so villainous is that he doesn't care at all for the value of knowledge and is willing to sacrifice the lives of others for his own hedonistic pleasure. It's bad enough to prefer ignorance to knowledge; it's even worse to kill others to get it.

IS HAVING KNOWLEDGE IMPOSSIBLE?

- ◆ Does the fact that we can't be certain that we aren't in the Matrix mean that having knowledge is impossible? In short, no.
- ◆ The problem is that there are essentially 2 hypotheses that are consistent with the evidence of your experience: Either you are actually awake and experiencing a physical world, or you are being fooled in some grandiose way, such as by the Matrix, into thinking the world is real when it's not. And there is no test that you can perform to prove which hypothesis is true.
- ◆ In science, 2 explanations can account for the same data, so you have to delineate between them by appealing to other scientific criteria: Which hypothesis is simpler (that is, which hypothesis makes the fewest assumptions)? Which hypothesis has wider scope (that is, which hypothesis explains the most without raising unanswerable questions)? Which one is more conservative (that is, which one better aligns with what is already well established)? These things are, by definition, what a good explanation should do. So, whichever explanation aligns with the most of these criteria is the best explanation.
- ◆ We can do the same kind of thing with Descartes's problem. What is the better explanation for your experiences: that you are experiencing the world right now or that you are being fed sensations by a supercomputer like the Matrix?
- ◆ The Matrix explanation isn't simple: It assumes the existence of the world, and the existence of a giant powerful computer in that world. The real-world explanation only requires the latter. And the Matrix explanation also has very little scope. It raises all kinds of unanswerable questions—

about how the computer works, who built it, why, and how it causes our experiences. But we actually have a pretty good idea of how the universe (if real) came into existence and how it would cause your experience.

- ◆ So, even though we can't prove which hypothesis is true, we can show which one is better—which one is most likely—and thus which one is more rational to accept. And thus, you can have knowledge. Can you be certain? No.
- ◆ Even if you can be certain of your own existence, as Descartes argued ("I think, therefore I am"), you can't (as Descartes tried to do) build up certainty about the entire world from there. But because knowledge doesn't require certainty, you don't have to. Knowledge is simply "justified true belief." You are justified in believing that which is most likely.

QUESTIONS

- 1 Would you take the red pill or the blue pill? In other words, if you knew that there was a mysterious bit of knowledge out there and didn't know how it would affect you but were offered a chance to learn the truth, would you?
- 2 Even if we live in the Matrix, many things could still be true. What kind of statements could still be true if you were being fooled by an evil demon into thinking the world is real when it isn't?
- 3 Neo thought the experience of eating noodles in the Matrix didn't happen. But it did happen; it's just that the nature of the event was different than he assumed. What other things might be true, just in a different way that people often assume? Could "Santa exists" be true in a different way? "God exists"? "Freedom exists"?
- 4 Consider other sci-fi stories, such as *Ready Player One*, that play with the concept of augmented reality. How can they also be used to make Nozick's point about the value of contact with reality?
- 5 How bad would your life have to be to choose a life inside Nozick's experience machine?

- 6 What other kinds of seemingly unanswerable questions could be answered by appealing to the criteria of adequacy?
 - 7 What is the difference between the Matrix and the experience machine? How might you interact with real people to make one preferable to the other?
-

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RELATED SCI-FI

- | | |
|--------------|---|
| TV | <i>Futurama</i> (1999): “Near Death Wish”
and “Game of Tones”
<i>Star Trek: TNG</i> (1987): “Frame of Mind”
and “Future Imperfect”
<i>Rick and Morty</i> (2013): “Mortynight Run” |
| FILM | <i>Ready Player One</i> (2018) |
| PRINT | Ernest Cline’s <i>Armada</i> |

Philosophical argument doesn’t always work out so nicely—telling us that what we believed all along was true.

And that’s what you will discover in the next lecture, which examines the highly underrated *Matrix* sequels, *Reloaded* and *Revolutions*, and the topic of free will.

As you watch the sequels, ask yourself a simple question: Exactly how much free will does Neo have?

THE MATRIX SEQUELS AND HUMAN FREE WILL

LECTURE 3

The Matrix Reloaded and *The Matrix Revolutions* are quite possibly the most underrated science-fiction sequels of all time. They were panned viciously by critics and audiences, but they are actually great sci-fi, primarily because they do what sci-fi does best: They raise, and even take a stance on, important philosophical issues. They tackle philosophical topics clearly and directly—especially the topic of free will—and do so in a fairly sophisticated way, evoking and echoing arguments used by professional philosophers.

RELOADED AND FREE WILL

- ◆ *Reloaded* opens with the revelation that the Machines are digging their way to Zion, the underground home city of the remaining humans. The Machines intend to destroy it.
- ◆ Morpheus sees it as an act of desperation because of a recent exponential increase in the number of people being freed from the Matrix. He believes Neo will soon fulfill the Oracle's prophecy and end the war between the humans and Machines. Right on cue, the Oracle calls Neo for a meeting. And it is here that we get our first hint at the philosophical topic of the movie.
- ◆ When the Oracle offers him a piece of candy, Neo asks her a simple question: If she already knows whether he is going to take it, how can he freely choose whether to take it?
- ◆ With this, the Wachowskis are borrowing from a philosophical problem that goes as far back as the 6th century and to a philosopher named Boethius. He believed that God's perfection entails that God has foreknowledge of the future. But if God knows what you will do before you do it, Boethius asked, how can you freely decide to do what you do?
- ◆ Nelson Pike clarified the problem in the 20th century. According to the traditional understanding of free will, known as the libertarian understanding, to freely choose to do something, you must have alternate possibilities. Choosing and not choosing to do the action in question must both be possible.
- ◆ But if God already knows you are going to choose to do something—let's call it action A—not deciding to do that action is impossible. To be able to decide not to do action A, you must either have the power to make God's past belief false—which you can't do because God can't be wrong—or have the power to change what God's past belief was—which you can't do because the past is fixed.



The existence of the foreknowing Oracle in the *Matrix* universe raises serious worries, grounded in classic philosophy, about whether the humans in the movie have free will.

- ◆ To be clear, the argument is not suggesting that God makes you decide to do action A. He doesn't. But the fact that God already knows that you will logically entails that you can't decide to do otherwise—nothing but what God already believed you would decide is possible—and thus, when you do A, you are not deciding to do so freely.
- ◆ If God knows the future, then it must already be written. It must already exist. But if the future already exists, it can't happen any other way.

RELOADED AND DETERMINISM

- ◆ The Oracle goes on to tell Neo that to fulfill the prophecy and end the war, Neo must make his way to the computer mainframe—called the Source. And he can only do so with the help of the Keymaker, a program that has been kidnapped by an ancient program called the Merovingian. And when Neo, Morpheus, and Trinity find the Merovingian in a French restaurant, he also raises serious doubts about free will.
- ◆ Morpheus thinks they have chosen to be there, but the Merovingian argues that “Choice is an illusion, created between those with power and those without.” “[T]here is only one constant, one universal … causality—action, reaction, cause and effect.”
- ◆ As he gives a sexy blonde in the restaurant a piece of cake, programmed to elicit a sexual response from her, he says, “This is the nature of the universe. We struggle against it, we fight to deny it, but it is of course pretense; it is a lie. Beneath our poised appearance, the truth is we are completely out of control. Causality. There is no escape from it. We are forever slaves to it.”
- ◆ Merovingian is echoing another philosophical argument that we are not free—an argument rooted in determinism, an idea that goes back to the ancient philosophers Leucippus and Democritus. Determinism is the suggestion that the universe is a deterministic system, in which everything that happens is a causal result of physical events governed by physical laws. For example, once you break the billiard balls on a pool table, with perfect knowledge of the physics, you could predict the path of every ball by simply doing the math.

- ◆ Like those philosophers before him, the Merovingian thinks that the universe is a deterministic system and that our brains—which cause our actions—are just a part of that system. If the Merovingian is right, according to Christian philosopher Peter van Inwagen’s consequence argument, free will indeed is an illusion.
- ◆ This is because determinism and free will are incompatible. If determinism is true, then everything that happens is a consequence of the laws of physics and past facts. Nothing else could happen but what they entail, and no human has ever had any choice or control over the laws of physics or distantly past facts.
- ◆ And this is what the Merovingian is suggesting. Neo, Morpheus, and Trinity have no free will.
- ◆ Indeed, if our brain is just another part of that physical system—basically a biological machine—then you could, with the proper knowledge, simply look at the brain and predict how it will respond to any given stimuli, just as you could predict the behavior of a program.
- ◆ It’s all just a result of how its components—whether they are microchips or neurons—are wired and fire. And because our brains are responsible for our actions, if determinism is true, then our behavior is perfectly predictable, and thus not free.

RELOADED AND COMPATIBILISM

- ◆ Technically, the Merovingian is wrong. The universe is not a deterministic system. Quantum mechanics has taught us that determinism is false. On the quantum level, individual events happen randomly and without a cause all the time. Unfortunately, however, the randomness of quantum events cannot rescue human free will.
- ◆ First, as van Inwagen points out, indeterminism is just as incompatible with free will as determinism is. Even if our decisions are the result of random quantum events in our brain, then we still aren’t free because we aren’t the cause of those events. We can’t be. Nothing is. Indeed, their being random entails that they are not caused.

- ◆ Second, determinism is still true in a different way. Quantum randomness, which occurs on the micro level, is essentially averaged out on the macro level of larger objects. For example, the decay of individual radioactive atoms is random, but if you have a collection of them, you can deterministically predict when half of them will decay.
- ◆ This is called adequate determinism, and it is because of this that physical laws can be used to predict the behavior of larger physical systems. Because the brain is such a system, even though it may be impossible to predict specific quantum events within it, the outcome of the brain's activity is likely still deterministic.
- ◆ All of this makes it difficult to defend the notion that humans are free in the libertarian sense.
- ◆ Consequently, some philosophers have suggested an alternate understanding of what it means to be free. It's called compatibilism because it suggests that free will and determinism are compatible. It dates back to Aristotle and is defended by modern-day philosophers, such as John Martin Fischer.
- ◆ The essence of the suggestion is that an agent freely performs an action as long as that action flows or follows from some part of the agent.
- ◆ To modify Fischer's argument, which was originally about moral responsibility, we might say that an agent's action is free as long as it is the result of a conscious, rational, deliberative process. If the agent thinks about what to do and then the outcome of that process causes the agent's action, the agent acted freely.
- ◆ The problem with this understanding of free will is that it doesn't align with our intuitions about what free will is. According to the theory, as long as you are acting in accordance with the result of your rational deliberation, then you are acting freely—even if outside forces are what ultimately caused that rational deliberation to occur as it did. And that doesn't seem right.

For more on quantum mechanics, check out the Great Course *Exploring Metaphysics*.

- ◆ To see the problem, consider again when the Merovingian gave the sexy blonde the piece of cake programmed to elicit a sexual response. Although it happens offscreen, the events that follow clearly indicate that the Merovingian followed her to the ladies' room to receive a sexual favor. That is why his wife, Persephone, gets upset and betrays him.
- ◆ This is morally wrong—something similar to using a date rape drug. But what if the program the Merovingian wrote reprogrammed her brain to rationally conclude that she should perform a sexual favor for the Merovingian?
- ◆ On compatibilism, we would have to say that she chose to do what she did of her own free will. But clearly this is not the case. What she did was not up to her; it was forced on her from the outside. Thus, her action was not free. The Merovingian is, indeed, guilty of rape.
- ◆ This causes a problem for our free will because the outcome of our rational deliberations is not up to us either, but instead is forced onto us from the outside. Our ultimate desires are a result of our brain structure, which is ultimately a result of our environment and DNA. They program us, just like the Merovingian programmed the sexy blonde.

RELOADED AND THREATS TO FREE WILL

- ◆ The threats to free will get even worse once Neo rescues the Keymaker, makes his way to the Source, and meets the Architect—the program who designed the Matrix. The Architect is the ultimate intellectual, and what he reveals is as mind-blowing as the moment Neo awoke from the Matrix in the first movie.
- ◆ The first Matrix was a perfect world, without suffering or evil, that failed because its human subjects were unable to accept it. The Architect thus redesigned it to include evil. But it still failed. Unable to understand why, the Architect consulted an “intuitive program, initially created to investigate … the human psyche”: the Oracle.



While the Matrix sequels do have flaws, they are not a jumble of philosophically uninformed and unrelated ideas. They are addressing the issue of human free will directly, and doing so by raising philosophical problems that professional philosophers worry seriously about—such as the freedom foreknowledge problem, determinism, the consequence argument, and our nature as biological machines.

- ◆ She realized that the Matrix couldn't work unless those plugged into it, and humanity itself, had a genuine choice as to whether to accept or reject the Matrix. To create this choice, the Machines created Zion, a city devoted to giving people the choice to reject the Matrix that would also serve as a place for people to live if they did.
- ◆ This solution worked; indeed, 99.9% accepted the program. But this created a new problem: Over time, Zion would grow, freeing more and more people, and eventually the Matrix would be empty.
- ◆ To deal with this, the Machines simply decided that—when things started to get out of hand—they would reset the entire system: destroy Zion, select a few humans from the Matrix to repopulate it, and reboot the Matrix itself.
- ◆ But again, for this to work, a choice must be offered. So, the Machines decided to select one exceptional individual and give him special powers to essentially make him a messiah, and thus a spokesperson, for the humans. They would then trick him into going to the Source with a prophecy about him being able to end the war.
- ◆ Once there, however, they would reveal the deception and force him to instead choose between cooperating with the Machines' plan or allowing "the extinction of the entire human race." Five "chosen ones" have preceded Neo, we learn, and they all chose to cooperate.
- ◆ But Neo is a bit different; the previous "chosen ones" weren't in love with Trinity, while Neo is. But this actually creates a problem.
- ◆ As Neo is making his decision, Trinity is about to be killed by an agent. So, Neo rejects cooperation to try to save her. But this brings us back to the topic of free will because what the Architect says as Neo is making this choice seems to suggest that the Merovingian is right about free will being an illusion:

... we already know what you're going to do, don't we? Already I can see the chain reaction, the chemical precursors that signal the onset of emotion, designed specifically to overwhelm logic and reason. An emotion that is already blinding you from the simple and obvious truth: She is going to die, and there is nothing that you can do to stop it.

- ◆ This is worse than the Architect simply predicting Neo's choice by looking at the deterministic mechanisms in his brain. It seems that Neo's decision isn't even arising from a conscious, deliberative process; it's just coming from his emotions. And emotions arise from a primitive portion of the brain called the limbic system, which isn't even conscious.
- ◆ If our actions are not only the result of predictable deterministic process in our brain, but of unconscious processes, it would seem that even on compatibilistic understandings of free will, we are not free.

REVOLUTIONS AND BELIEF IN FREE WILL

- ◆ In the end, the Wachowskis seem to suggest that the Architect and the Merovingian are wrong; the humans do have free will. In fact, it seems that it is merely by an act of free choice that Neo ends the war between the humans and Machines at the end of *Revolutions*.
- ◆ Upon their last meeting in *Revolutions*, the Oracle admits to Neo that her foreknowledge is not perfect. She cannot "see beyond a choice [she does] not understand." This seems to mean 2 things: she can't see beyond her own choices, but she also can't see beyond choices that are truly free. She didn't know that Neo was going to reject the Architect's offer, she doesn't know whether Neo will be able to end the war, and she doesn't know whether the risky choice she is about to make will pay off.
- ◆ At this point, both Neo and the Machines are facing the same problem. In *Reloaded*, the program Agent Smith had become a computer virus, copying himself, over and over, onto other programs. By *Revolutions*, Smith has taken over a large portion of the Matrix, and the Machines outside the Matrix rightly fear that he will start taking them over, too.
- ◆ In an effort to stop him, the Oracle is going to let Smith copy himself onto her, thus absorbing all her powers—including her ability to predict the future. She willingly intends to let Smith do this. But why? What purpose could it serve?

- ◆ We learn the answer after Neo strikes a deal with the Machines; if he helps them stop Smith, then they won't destroy Zion. The Machines plug Neo directly into the Matrix so that he can square off with Smith one last time. Smith chooses the copy of himself that overwrote the Oracle to face Neo.
- ◆ Neo keeps getting beaten down, yet still continues to fight. Smith asks him why. Neo responds, "Because I choose to."
- ◆ Once Smith has smashed Neo to the ground one last time, the Oracle's foresight kicks in, and Smith sees a vision that this is the end.
- ◆ But when Neo chooses to get up again, Smith is surprised. That was supposed to be the end. But Smith doesn't realize the limits of the Oracle's power: that she can't see past free choices—in this case, seeing past whether Neo will choose to keep fighting.
- ◆ Now uncertain of the future, and thus fearful of Neo, Smith panics and copies himself onto Neo. This gives the Machines direct access to Smith, and they purge the system of Smith, killing Neo in the process.
- ◆ Did the Oracle always know that Neo would make the right choice? No, because he had to make it of his own free will. But she believed. In a way, the entire movie is a conflict between those who don't believe in free will—such as Smith, the Merovingian, and the Architect—and those who do—such as the Oracle, Neo, and Morpheus.

QUESTIONS

- 1 What do the TVs behind Neo, as he talks to the Architect, in the Source symbolize?
- 2 Perhaps the Merovingian is an early version of Neo—one of the first "chosen ones" to cooperate with the machines. His wife, Persephone, is "his Trinity." Could this be why Persephone wants Neo to kiss her like he kisses Trinity? What do you think of this interpretation?
- 3 Can you think of other reasons the *Matrix* sequels are better than people thought? Are there reasons to think that they are worse?

- 4 Can you think of another way to understand free will that might make the idea that we have free will defensible?
 - 5 Can you be intellectually convinced that you don't have free will and yet still feel like you do? How might you relate this to the paradox of fiction discussed in the first lecture?
-

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RELATED SCI-FI

- | | |
|--------------|---|
| TV | NBC's <i>Heroes</i> (2006)
<i>Futurama</i> (2013): "Free Will Hunting" |
| FILM | <i>Paycheck</i> (2003) |
| PRINT | Kurt Vonnegut's <i>Slaughterhouse Five</i> |

What's philosophically disappointing about the *Matrix* sequels is that even though they advocate for the idea that humans have free will, they give us no reason to think so. They don't answer the problems presented by the Oracle, the Merovingian, or the Architect. How does Neo act freely? He just does—like magic.

The difficulty in defending the notion that we have free will would seem to drive the conclusion that we are fated to behave as we do. But that's not quite right.

To understand why, and to explore the possibly that we are fated, watch *The Adjustment Bureau*. As you watch, ask yourself what it means for the bureau to control the fate of humanity. What does it mean for something to be fated?

THE ADJUSTMENT BUREAU, THE FORCE, AND FATE

LECTURE 4

THE ADJUSTMENT BUREAU: A SUMMARY

- ◆ In the 2011 George Nolfi film *The Adjustment Bureau*, the bureau is a secret organization that controls all of world history by designing a plan for it, down to each individual, and then making sure no one deviates from that plan—typically by using distractions, such as coffee spills and power outages, to keep them from being at the wrong place at the wrong time.
- ◆ They will even “recalibrate” you, reconfiguring your neural pathways, to get you to behave as you should. They do not alter your emotions or personality; that’s “too intrusive.” Instead, they change the way you reason, determining your decisions for you.
- ◆ The story follows David Norris, a candidate for US Senate who accidentally finds out about the bureau. They threaten to reset him—wipe his memories and personality—if he ever reveals their existence and then tell him to stay away from a girl he has fallen in love with, Elise Sellas, because their being together is not in the plan.
- ◆ When David pursues Elise anyway, a bureau agent named Thompson tells David that being with her will keep him from eventually becoming president and her from fulfilling her dream of becoming a world-famous dancer.

- ◆ David consequently breaks it off with Elise, only to return to her again years later and reveal to her the bureau and the choice he faced. Elise chooses to be with David, despite the cost. And in the end, because of their persistence, the Chairman—who created the plan—decides to change it and put David and Elise together.

FATE VERSUS FREE WILL

- ◆ At first glance, *The Adjustment Bureau* seems to be a movie about the triumph of free will. As the last line of the movie puts it, “[O]nce in a while, people like [David] come along who ... realize free will is a gift [that] you’ll never know how to use until you fight for it.” But upon closer examination, there is no reason to think that the humans in the movie have free will.
 - ◊ David doesn’t choose to pursue or be with Elise despite being “recalibrated” or “reset” by the bureau. In fact, the bureau never even touches David’s brain in the film. The reason that David is so attracted to Elise—and why they keep running into each other—is because a previous version of the plan meant for them to be together, and parts of it never got erased. Nothing David does to be with Elise requires some grandiose free will decision on his part; his love for Elise was engrained into him at birth.
 - ◊ The film’s depiction of humans clearly entails that they aren’t free. Unlike Neo in *The Matrix*, their rational decision processes are always predictable; that’s how the agents know when they must do an adjustment. There is not one example in the film of someone choosing to do something he or she was programmed not to do. Decision processes can even be controlled through physical recalibration. People are simply biological machines.
 - ◆ The moral of the movie seems to be that a simple life with your true love is more important than the fulfillment of grandiose goals that will ultimately leave you empty, such as being president or a world-famous dancer. That’s why we celebrate in the end.

- ◆ But this movie also illustrates clearly how humans can lack free will without being fated. Although the phrase is slippery, and can mean many things, the most common understanding of “being fated” includes the notion of conscious control by an outside force, such as the bureau. If you are fated, you are fated *by* something.
- ◆ If some event is fated, it’s included in some plan—a plan someone wrote. “Fate” might sometimes just mean “inevitable,” but notice that once you jump off a cliff, your hitting the ground is inevitable—but we usually wouldn’t call it fated.
- ◆ With this understanding in mind, we can see how humans could lack free will but not be fated to behave as they do. When the bureau steps back, human behavior is not fated; it is not forcibly aligned to the Chairman’s plan.
- ◆ But if human nature is as it is depicted in the film, and our actions are either determined or random, then human behavior is still not free. Even if our behavior is dictated by our environment and DNA, unless you think that our environment and DNA have a conscious will, we are not fated to behave as we do.
- ◆ So, we can lack free will without being fated. None of this means that humans are not fated—either individually or collectively—to behave as they do. It just means that humans lacking free will doesn’t necessarily entail that they are.
- ◆ Next, let’s consider 3 possibilities, each of which suggests that fate is at work in the world.

FATE AT WORK: POSSIBILITY 1

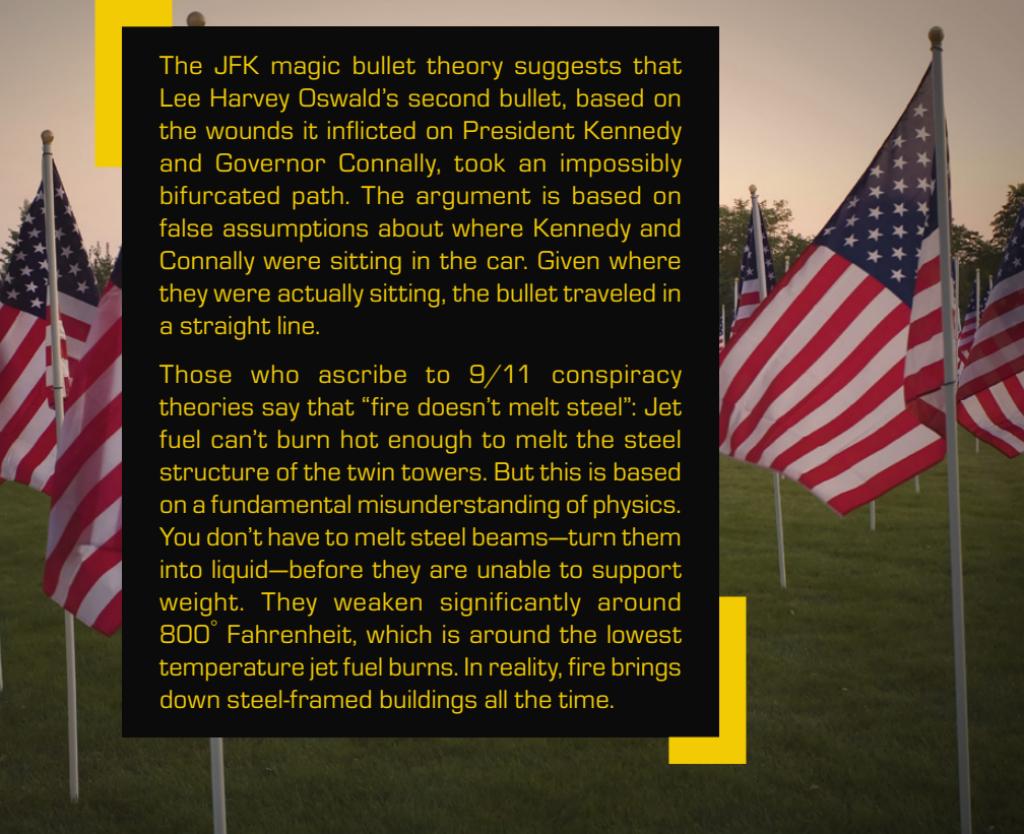
- ◆ The first possibility is raised by Philip K. Dick’s short story “Adjustment Team,” on which *The Adjustment Bureau* is based. The person called “the Chairman” in the movie is called “the Old Man” in the short story, and the protagonist Ed Fletcher is brought to see him in a phone booth that floats up into the heavens. So, the plan David is rebelling against in *The Adjustment Bureau* may simply be God’s.

- ◆ God is traditionally defined as a perfect being—that is, a being with ultimate power, knowledge, and goodness. Those who believe God exists are called theists. And many theists believe that God has a plan for their life—indeed, for all of humanity—and that God ensures that that plan is brought to fruition.
- ◆ Not all theists agree, of course. Christian philosophers believe that God has granted humans robust free will. Others believe that God doesn't dictate individual lives but is in control of the broad strokes of human history. But many think that our actions, both individually and collectively, are fated by God.
- ◆ No major Christian philosopher actually holds the view that we are fated in this complete way. This is because it's pretty much impossible to defend philosophically.
- ◆ Those who believe that God exists generally believe in free will because they believe that God holds us morally responsible for what we do. But it's impossible to believe that God could rightly hold you morally responsible for doing something if he is the one who fated you to do it.
- ◆ To see why, suppose that bureau agents recalibrated not only your rational decision-making processes, but also your personality and emotions, so that you would desire and decide to be an ax murderer. Could we morally blame you for the murders you go commit because, after all, you weren't forced to do them by intimidation or threat? Of course not. How you behaved was not up to you; we would probably not even consider your desire to murder genuine.

FATE AT WORK: POSSIBILITY 2

- ◆ The second possible way fate is at work in the world is inspired by the suggestion that the bureau is not run by God, but aliens or superpowerful humans.
- ◆ You might consider this obvious fiction, but many people actually believe that something like this is true. Of course, they don't call it the bureau; they call it the Illuminati, the Freemasons, the New World Order, or the Deep State. But the idea is the same.

- ◆ There is a clandestine group of powerful beings, with technology far beyond what we think possible—controlling minds, using doors as magic portals—and that group makes human history pan out as it sees fit.
- ◆ Of course, many people believing something doesn't make it true. And such an organization's power to control things wouldn't be on par with God's, although many conspiracy theorists ascribe to them almost godlike powers.
- ◆ But it's worth addressing why this kind of belief in fate is so irrational.
 - ◊ The arguments are just shoddy. The main arguments usually involve major world events—such as the JFK assassination or 9/11—which conspiracy theorists will say were obviously done by the Illuminati, or whoever. But the evidence they give is deeply flawed.

A photograph showing a large number of American flags on poles, set against a backdrop of a clear sky at sunset or sunrise. The flags are waving slightly in the wind. A yellow L-shaped graphic frame surrounds the text block.

The JFK magic bullet theory suggests that Lee Harvey Oswald's second bullet, based on the wounds it inflicted on President Kennedy and Governor Connally, took an impossibly bifurcated path. The argument is based on false assumptions about where Kennedy and Connally were sitting in the car. Given where they were actually sitting, the bullet traveled in a straight line.

Those who ascribe to 9/11 conspiracy theories say that "fire doesn't melt steel". Jet fuel can't burn hot enough to melt the steel structure of the twin towers. But this is based on a fundamental misunderstanding of physics. You don't have to melt steel beams—turn them into liquid—before they are unable to support weight. They weaken significantly around 800° Fahrenheit, which is around the lowest temperature jet fuel burns. In reality, fire brings down steel-framed buildings all the time.

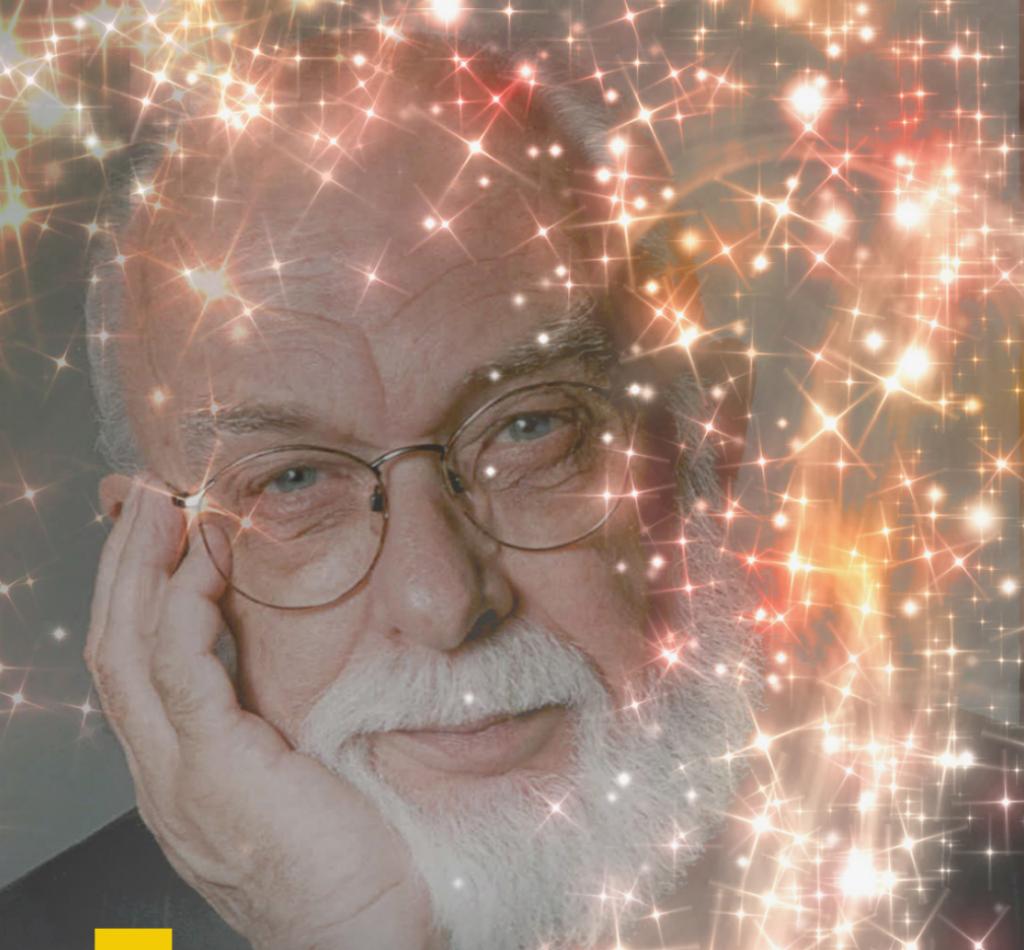
- ◊ Like any other theory, conspiracy theories are explanations. In the case of conspiracy theories, they are explanations for major world events. Good explanations must adhere to the criteria of adequacy: They should be simpler and more conservative and have wider scope than their competitors—that is, they must not make extra assumptions; they must align with established fact and unify our knowledge. But in this regard, conspiracy theories fail on every account.
- ◊ Conspiracy theories also fail to adhere to 2 more criteria: testability and fruitfulness. A theory is testable when it can be proven wrong; a theory is fruitful when the predictions it makes turns out to be true. Conspiracy theories are not testable because, by their very nature, they are immune to counterevidence. All evidence that shows their conspiracy theory false will be said by conspiracy theorists to be planted by the conspirators to throw you off the track. This makes conspiracy theories unfalsifiable and thus fundamentally irrational.

FATE AT WORK: POSSIBILITY 3

- ◊ The third way we might be fated is by the will of the universe itself. Perhaps the universe has a plan—a bit like the Fates, or the Moirai, from Greek mythology, the 3 sister goddesses responsible for everyone's destiny. With the possible exception of Zeus, not even the gods could defy their plan.
- ◊ The sci-fi concept most similar to this is the Force from *Star Wars*: the “energy field [that] surrounds us and penetrates us. It binds the galaxy together.” Many simply think of the Force as that which gives a Jedi his power—for example, what a Jedi manipulates to telekinetically move objects.
- ◊ But the Force also has a plan and will of its own. As Han Solo puts it in *A New Hope*, when he expresses his doubt in the Force:

Kid, I've flown from one side of this galaxy to the other. I've seen a lot of strange stuff, but I've never seen anything to make me believe there's one all-powerful force controlling everything. There's no mystical energy field that controls my destiny. It's all a lot of simple tricks and nonsense.

- ◆ Could the Force actually be real and thus have a plan for the universe? In the broadest sense, it's logically possible. But given that Force powers would allow the violation of physical laws, it seems unlikely.
- ◆ Of course, if someone came forward who was able to do what Jedi do, that would be a different story. But nobody has. So, it seems that belonging to the Jedi religion unironically, because you really believe in the Force, would be irrational.
- ◆ Some might argue, however, that people with Jedi-like powers do exist, such as psychics, telekinetics, and healers. It's just that scientists are so stubbornly wedded to their current theories that they refuse to admit it. If psychics are real, maybe something like the Force gives them their power.
- ◆ However, psychic powers have been investigated, and no good evidence has ever been found. Because such things are so easy to fake by natural means, it's essential that you always look for natural explanations to make sure that you aren't being fooled.
- ◆ If the supernatural explanation turns out to be better than the natural explanation, then great—you've got good evidence for the supernatural. It's just that, in practice, this has never happened. There has always turned out to be a natural explanation that's simpler, wider in scope, more conservative, and more fruitful.
- ◆ Indeed, supernatural explanations might always fall short because they almost always are not as simple, wide in scope, conservative, or fruitful as their natural competitors—they invoke extra entities, raise unanswerable questions, and defy established physical laws.
- ◆ That's not to say that established physical laws can't be overturned, because this can and has happened. Indeed, many theories that were initially considered fringe, such as electromagnetism, are now accepted as true. But this acceptance was the result of a long process of verification, experiment, and peer review. And for every fringe theory that was proved true, there are hundreds that weren't.
- ◆ In reality, scientists love it when established theories are overturned; that's how we get closer to the truth. But it takes work to overturn them.



Famously, magician James Randi, and his educational foundation, had a standing monetary offer to anyone who could prove, in controlled conditions, the existence of the supernatural or paranormal. The prize went as high as a million dollars, but in 51 years, no one ever claimed it. This itself would seem to be good evidence that such powers do not exist.

But some would retort that the only thing people like Randi do is excuse away the evidence for the supernatural by concocting ridiculous natural explanations. In reality, that's not what Randi did.

- ◆ Even though the Force could be real, it most likely isn't—and the same is true for any such "force" that you might think fates us to behave as we do. So, it's difficult to defend the notion that we have free will, but it's equally difficult to defend the notion that our actions are fated.
- ◆ In fact, if the existence of the Force were ever proven, it would not necessarily legitimize belief in the supernatural. This is because the Force would likely come to be understood as just another part of the natural world—a force, like electromagnetism, that is governed by laws and that one can learn to manipulate.

QUESTIONS

- 1 Why do you think Calvin insisted that God control every event in world history?
- 2 What other ridiculous conspiracy theories have you heard? What else makes conspiracy theories irrational? Google "proportionality bias."
- 3 What other examples of the Force having a will can you think of from *Star Wars*?
- 4 Can any Force power in *A New Hope* not be explained away naturally?
- 5 What other supernatural occurrence do you know of that at first seemed amazing but turned out to have mundane natural explanations? How is this similar to figuring out how a magic trick works?

RESOURCES

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RELATED SCI-FI

- | | |
|--------------|---|
| TV | <i>Battlestar Galactica</i> (2004)
<i>Space: Above and Beyond</i> (1995)
<i>Rick and Morty</i> (2013): “Sixty Minutes.” |
| FILM | <i>Predestination</i> (2014) |
| PRINT | Philip K. Dick’s <i>Minority Report</i>
Robert J. Sawyer’s <i>Flashforward</i> |

This entire discussion raises more general questions about the compatibility of science and religion. Applying scientific reasoning to claims about the supernatural suggests that the supernatural doesn’t exist. But even though many religious people say that they also believe in science, religion seems to require belief in the supernatural.

Is this possible? Can one be both religiously and scientifically minded?

To explore this issue, watch a movie that directly addresses the conflict between religion and science: *Contact*. When you finish watching the movie, ask yourself these questions: What really happened to Ellie? Was she justified in believing what she did about what happened to her toward the end of the film, or was she acting irrationally?

CONTACT: SCIENCE VERSUS RELIGION

LECTURE 5

CONTACT: A SUMMARY

- ◆ In the 1997 film *Contact*, astronomer Dr. Eleanor (“Ellie”) Arroway detects a signal seemingly from the star Vega. It communicates prime numbers and contains an enhanced version of the first human TV signal powerful enough to escape into space: Hitler’s opening speech at the 1936 Summer Olympics in Berlin. As clear evidence of extraterrestrial life, news of the signal spreads and turns the world upside-down.
- ◆ Later, more data is discovered in the signal, but it can’t be deciphered. The key is given to Ellie by S. R. Hadden, the wealthy Elon Musk–type character who financed Ellie’s project and somehow gained access to the data.
- ◆ The key reveals that the signal contains blueprints for a giant machine that, when activated, is designed to drop a capsule carrying a human into it. Ellie is selected to be this human. When dropped, she has the experience of traveling, via wormholes, to the center of the galaxy, where she meets an alien who takes the form of her deceased father. He explains that this is how first contact is made with civilizations once they start sending signals into space.
- ◆ After what seems to be about 18 hours, and a trip back to Earth, she splashes into the ocean beneath the machine. But to those observing from the outside, it appears that Ellie merely dropped straight through the machine. Instruments show that she was out of contact only for a second, and the video that shows her capsule falling through the machine is only a few seconds long.

- ◆ Ellie is brought before a Congressional committee to provide evidence of her encounter. But besides her experience, she has none.
- ◆ National Security Advisor Michael Kitz, the antagonist of the film, suggests it's more likely that her experience was a hallucination and that the whole thing was a hoax perpetrated by Hadden. He faked the signal from a satellite to trick the government into paying for his experimental machine. That's how he had access to the embedded blueprints and why only he knew how to decode them.
- ◆ Ellie agrees that this is the better, simpler explanation—that it's even what she would think if she were in Kitz's position—but, she says, she can't doubt her experience. "I can't prove it," Ellie says. "I can't even explain it. But everything that I know as a human being, everything that I am, tells me that it was real."

PERSONAL EXPERIENCE VERSUS SCIENTIFIC REASONING

- ◆ Despite the fact that *Contact* is clearly critical of close-minded religious fundamentalists like the evangelical spokesman Richard Rank, the film clearly defends the thesis that science and religion are compatible.
- ◆ Ellie's love interest in the film is Palmer Joss, a reverend who says that his belief in God is justified by a vivid religious experience. He was looking into the sky, felt a presence, and knew "it was God"—that he wasn't alone. Ellie initially dismisses his experience as wishful thinking.
- ◆ In the end, however, Ellie ends up doing just what Palmer did: trusting her own experience, even though she openly admits that it's more likely a result of wishful thinking.
- ◆ Palmer's last line in the film has him saying that he believes Ellie's experience was legitimate. But if Ellie is justified in believing she visited aliens based on her own personal experience, isn't Palmer justified in believing in God based on his personal experience?
- ◆ The moral lesson of *Contact*—a story written by the agnostic Carl Sagan—seems to be that belief in God can be justified, even for those that are scientifically minded. But this moral lesson is true only if Ellie actually is justified in believing her own personal experience above and beyond the simpler scientific explanation.



Carl Sagan, the author of the novel that inspired the film *Contact*, was a controversial figure. A prolific science communicator, he was an advocate for established scientific theories that many religious people found threatening, such as evolution and the big bang.

Although he was often considered an atheist, he claimed to be agnostic—to not hold any belief about God's existence. He even publicly defended the claim that science and religion are compatible.

- ◆ Science so successfully describes and predicts the world because it recognizes, and is designed to guard against, the myriad of ways personal experience can lead us astray. For example, our sight is not as reliable as we assume; we hallucinate, and optical illusions fool us. Mistakes in intuitive reasoning also mislead us.
- ◆ The upshot is this: The fact that something seems real doesn't necessarily mean that it is.
- ◆ To discover the way the world is, science requires us to follow specific procedures to guard against the many ways we lead ourselves astray. If you want to know if a medication really works, for example, you have to perform a repeatable, double-blinded, placebo-controlled trial. And history has shown this works. Science has a proven track record of exposing the truth. Of course, some past scientific theories have been “overturned,” but even they weren’t entirely wrong. Science usually advances by improving on past theories.
- ◆ Because science is more reliable than personal experience, it would seem that, when there is a conflict, we should trust the former over the latter.
- ◆ There are examples that might make one think that violating this conflict rule can sometimes be rational. Take, for example, when Willem de Vlamingh first saw a black swan, in Australia in 1697. All previously observed swans were white. Consequently, “all swans are white” was the prevailing scientific view. Yet Willem wasn’t doing anything irrational when, after seeing a black swan, he concluded that “some swans are black”—which is true.
- ◆ So, one might argue, if we could never rationally violate the conflict rule, scientific knowledge could never advance. We need personal experience to reveal if and when the scientific consensus is wrong.
- ◆ But this is not the kind of personal experience the conflict rule is talking about. Indeed, Willem didn’t have a personal experience; he made an observation—a testable, verifiable observation.

The topic of reasoning is covered in more detail in lecture 2 of the Great Course *The Big Questions of Philosophy*.

- ◆ Notice that if Willem had merely seen what he thought was a swan as it flew away, the “all swans are white” theory would have remained intact. It’s because he and his team were able to verify and confirm that the birds were black, and swans, that the consensus view was overturned.
- ◆ So, personal experience doesn’t advance scientific knowledge; verified observation does.
- ◆ But if the conflict rule is right, and personal experience can’t override scientific evidence, shouldn’t Ellie have doubted her experience in favor of what she admitted was the better, more scientific explanation—that she hallucinated and the whole thing was a hoax?
- ◆ It seems so. Not only is that what other people should conclude, given that they aren’t directly aware of Ellie’s experience, but that is what Ellie should conclude herself.
- ◆ Some might argue that Ellie can believe what she wants, and even do so rationally—even scientifically—because there is no way to prove, with observation and experiment, one theory over the other. But this suggestion demonstrates a fundamental misunderstanding of how scientific reasoning works.
- ◆ Contrary to what is found in textbooks, scientific reasoning is not merely making observations, forming theories, making predictions, and then performing experiments. The shortcomings of this “definition” are numerous.
 - ◊ It fails to recognize Thomas Kuhn’s realization that observation is theory-laden. Without a background theory to indicate what is relevant, observation can’t produce anything useful.
 - ◊ It says nothing about how to generate theories or how to decide between rejecting or revising a theory if it fails to make accurate predictions.
- ◆ Because every hypothesis’s prediction is informed by background theories, all predictive failures can be excused away by changing the background theory.

- ◆ Sometimes this is acceptable, such as when Newton's theory failed to correctly predict the orbit of Uranus; assuming the theory was still true led to the discovery of Neptune. But sometimes it's not acceptable, such as when creationists excuse away the fossil evidence for evolution by saying that "the devil planted the fossils to test our faith."
- ◆ Most importantly, this understanding of scientific reasoning fails to recognize the importance of comparing hypotheses. The best way to prove your theory right is to try to prove it wrong. If you only try to find evidence for your theory, you can't be surprised when you do.
- ◆ But if you honestly try to prove your theory wrong and can't, that's a really good indication that it's right. And the best way to do this is by trying to prove a competing theory right. But to do so, you need a set of criteria by which to compare them—criteria that have already been addressed in lectures 2 and 4:
 - ◊ testability: making novel predictions.
 - ◊ fruitfulness: getting those predictions right.
 - ◊ scope: having explanatory power.
 - ◊ conservatism: aligning with already established beliefs.
 - ◊ simplicity: not invoking extra assumptions.
- ◆ Because making successful predictions in experimental conditions is only relevant to testability and fruitfulness, an inability to perform an experiment doesn't prevent us from drawing a scientific conclusion. Just as we did with *The Matrix* hypothesis and the real-world hypothesis in lecture 2, we can and should still compare the hypotheses according to simplicity, scope, and conservatism.
- ◆ Ellie can't prove the alien/contact hypothesis, and Kitz can't prove the hoax/hallucination hypothesis. But the hoax/hallucination hypothesis is simpler (because it doesn't invoke aliens), is more conservative (because, given the size of the universe, it aligns with how likely alien contact really is), and has a wider scope (it explains perfectly why Hadden had access to the blueprints and was the only one able to decode them).

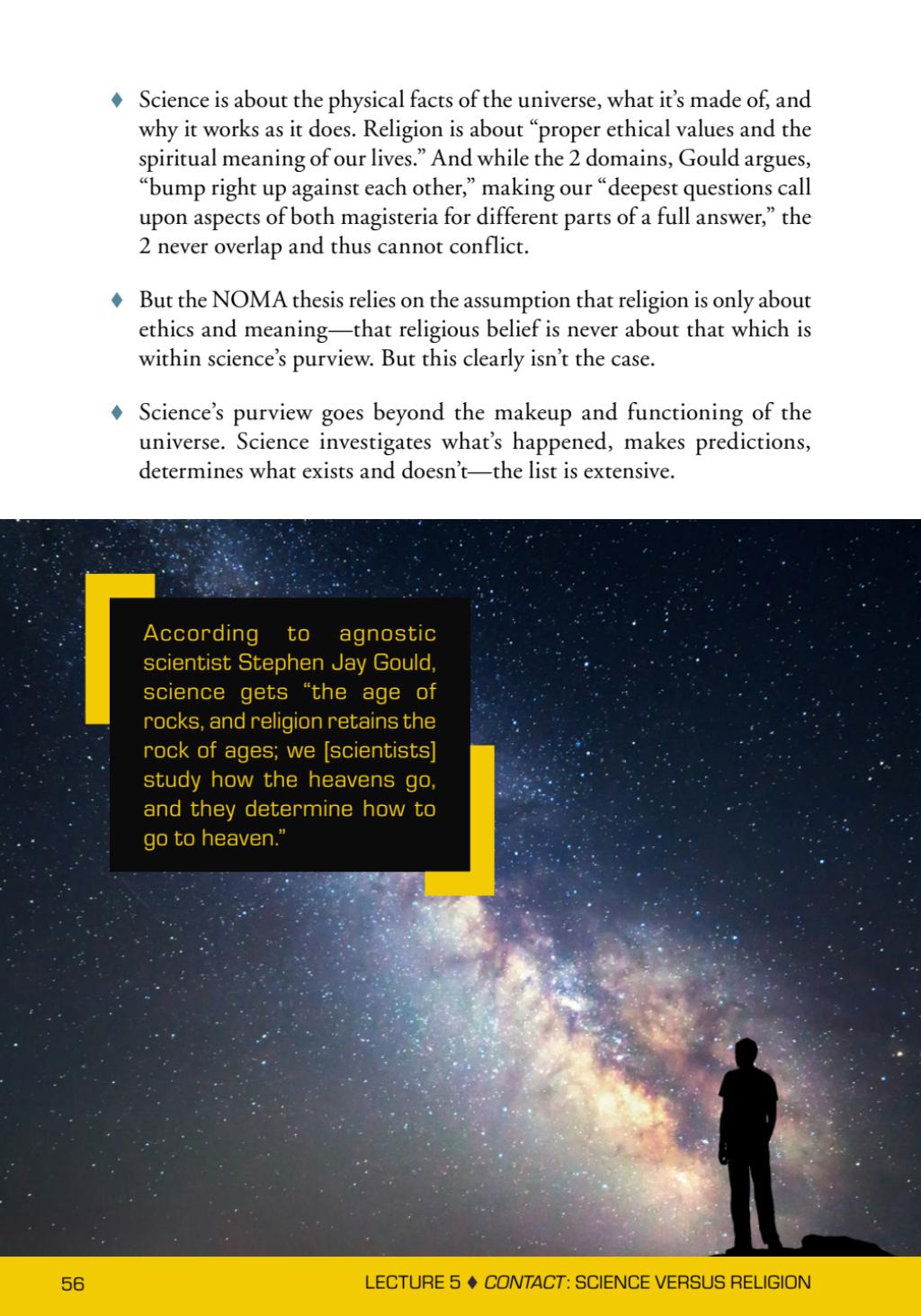
- ◆ So—setting aside evidence that Kitz may have hidden—given what Ellie knows at the time of her testimony, it doesn't seem that she is justified in believing that she contacted aliens.
- ◆ The same is true for Palmer. Of course, we can't perform an experiment to determine whether his religious experience was legitimate or a hallucination, but that doesn't keep one explanation from being better than the other.
- ◆ The hallucination hypothesis is simpler; it doesn't invoke supernatural entities. It's more conservative; it aligns nicely with what we know about how the brain can produce such experiences. And it has wider scope; the wishful thinking explanation accounts for why religious experiences in all major religions don't align.
- ◆ It seems wrong, then, to suggest that Ellie's belief in aliens—and, in turn, Palmer's belief in God—were rational given the experiences they had.

THE COMPATIBILITY OF SCIENCE AND RELIGION

- ◆ The film's moral message about the compatibility of science and religion is on shaky ground. But are there other ways of defending it?
- ◆ Some argue that science and religion must be compatible because many scientists are religious. But the question is not whether there are people who believe in both science and religion; the question is whether such persons are being consistent, or rational.
- ◆ Is there an epistemological incompatibility between scientific reasoning and religious faith? Can one rightly say that one is fully devoted to science and also embrace religious belief?
- ◆ The thesis that science and religion are compatible was most notably defended by another agnostic, Stephen Jay Gould, who called his position the nonoverlapping magisterial (NOMA) thesis. His suggestion was that science and religion cannot conflict because they are about 2 entirely different things.

Two-thirds of professional American scientists believe in God.

- ◆ Science is about the physical facts of the universe, what it's made of, and why it works as it does. Religion is about "proper ethical values and the spiritual meaning of our lives." And while the 2 domains, Gould argues, "bump right up against each other," making our "deepest questions call upon aspects of both magisteria for different parts of a full answer," the 2 never overlap and thus cannot conflict.
- ◆ But the NOMA thesis relies on the assumption that religion is only about ethics and meaning—that religious belief is never about that which is within science's purview. But this clearly isn't the case.
- ◆ Science's purview goes beyond the makeup and functioning of the universe. Science investigates what's happened, makes predictions, determines what exists and doesn't—the list is extensive.



According to agnostic scientist Stephen Jay Gould, science gets "the age of rocks, and religion retains the rock of ages; we [scientists] study how the heavens go, and they determine how to go to heaven."

- ◆ Religion often does exactly the same thing. Indeed, a great number of religious doctrines conflict with science, and they include doctrines that are central to most people's faith.
- ◆ Take the resurrection of Jesus, for example, the defining doctrine of Christianity. Although it has ethical implications, the doctrine itself is a statement about what happened in the physical world: 2000 years ago, a man was dead and then was brought back to life through supernatural means. Such a claim has no scientific credibility.
- ◆ All our scientific knowledge suggests that the reanimation of an actual corpse is impossible. Even if we grant that Jesus was crucified and buried, what's most likely is that false rumors of sightings and his survival circulated after his death.
- ◆ This actually happens often—more so in ancient times, but even in the modern era. Hitler and Elvis are 2 examples. Such rumors may have prompted the later authors of the Gospels to construct resurrection narratives.
- ◆ Or maybe those authors just borrowed from previous stories of other resurrected gods. Or maybe robbers stole his body, and not finding his body later caused the disciples to believe he resurrected. Or maybe Jesus survived his crucifixion; the apostles buried him thinking he was dead, but he woke up after a day and a half and walked away. Belief that he had resurrected spread, and “just so” excuses to try to prove it—such as an immovable boulder to block his exit—were invented by later authors.
- ◆ That last one is a bit of a stretch—but it's still scientifically more likely than an actual resurrection of a dead person by supernatural powers. An actual resurrection would not only violate multiple physical laws (unlike the other scenarios), but invoking the supernatural makes the hypothesis less simple and eliminates its scope by invoking the inexplicable.
- ◆ One cannot fully be a scientifically minded person and believe that a man rose from the dead 2000 years ago. You are free to believe what you want, but you can't call a belief scientific if there is a better—meaning simpler, wider in scope, more conservative—explanation.

- ◆ You can choose to reject scientific reasoning if you like; you just cannot say that you're being fully scientifically minded if you do.
- ◆ And that comes at a price. It will be hypocritical of you to criticize others for their nonscientific beliefs. If you reject science to believe in the resurrection, why can't someone else reject it to believe that they shouldn't vaccinate their children or that global warming isn't real?
- ◆ But there is a way to avoid such hypocrisy and still be religious; just make your own religious beliefs only about ethics and meaning. This, indeed, is what some scholars have done. For example, some have mythical faith: They acknowledge that the Gospels are myths, but they still think they contain true moral lessons. Some scholars are fictionalists, who agree that God doesn't exist but still pretend he does.
- ◆ None of this means that religion or personal experience can't be right while science is wrong. For example, scientists used to think the universe had no beginning, while religion held that it did—and it turned out religion was right. But the process of discovering when science gets it wrong is itself scientific—the process of considering and weighing further evidence and explanations. The big bang was discovered and confirmed by scientists, not priests.
- ◆ Take what we learn in *Contact* after Ellie's testimony on Capitol Hill. Although Ellie's device recorded only static, it recorded 18 hours of it, exactly how long her journey seemed. Kitz kept this information classified presumably because he feared what proof of alien contact would do to society. If Ellie had known this, her conclusion would have been justified.

QUESTIONS

- 1 What other ways can our senses, memory, and reasoning lead us astray?
- 2 What other reasons can you think of to doubt the reliability of religious experience?
- 3 Can you think of any exceptions to the conflict rule?

- 4 What kind of verifiable observations might overturn currently accepted scientific theories?
 - 5 Watch the *Star Trek: The Next Generation* episode “Devil’s Due.” Ask yourself, in what way can the lessons of this lecture also be applied to miracles?
 - 6 Look up what happened with the statue of Jesus at Our Lady of Velankanni Church in Mumbai. How can what we learned in this lecture be applied to thinking about things like that? What really happened to the statue?
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RESOURCES

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RELATED SCI-FI

TV	<i>Battlestar Galactica</i> (2004) <i>Star Trek: Deep Space Nine</i> (1993)
FILM	<i>Prometheus</i> (2012)
PRINT	Ryu Mitsuse's <i>Ten Billion Days and One Hundred Billion Nights</i> Roger Zelazny's <i>Lord of Light</i>

What would happen if we made contact with an alien life-form? Would people fear them? Love them? What effect would it have on religious belief? Would it confirm it? Negate it?

Would we even be able to understand what their language means? And how does language acquire meaning in the first place? To address this issue of communication, watch *Arrival*. As you do, ask yourself these questions.

ARRIVAL: ALIENS AND RADICAL TRANSLATION

LECTURE 6

Movies about alien visitation, such as the 2016 film *Arrival*, raise essentially 3 questions: How likely would such a visitation be? What effect on society would it have? And would we be able to communicate with them once they're here?



HOW LIKELY WOULD AN ALIEN VISITATION BE?

- ◆ Scientist Frank Drake developed an equation to determine the likelihood of radio contact with aliens. It's called the Drake equation:

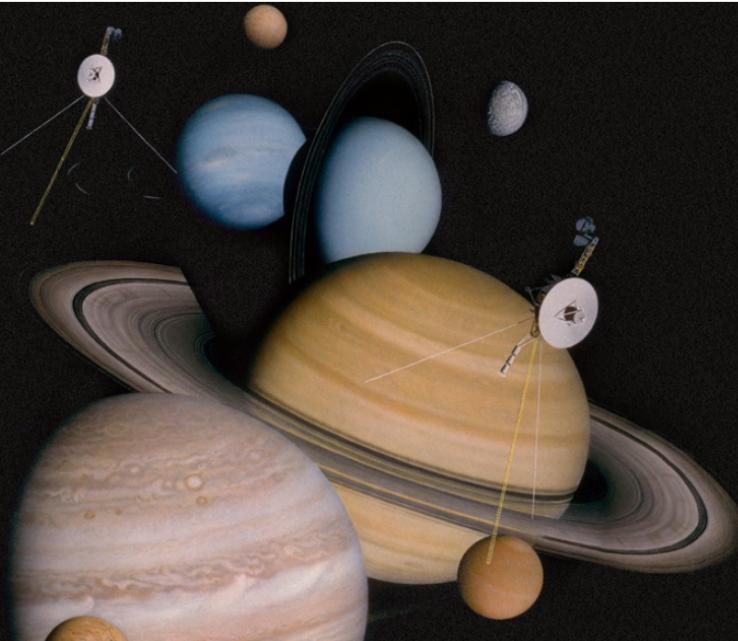
$$N = R_* f_p n_e f_l f_i f_c L$$

- ◆ Although it looks complicated, conceptually it's simple.
 - ◊ To calculate how many intelligent species there are in our galaxy, take the rate of formation of stars in our galaxy capable of supporting intelligent life, multiply by the fraction of those stars with planets, then by the fraction of those planets capable of supporting any sort of life, then by the fraction of those on which any life evolves, and then by the fraction of life that evolves into intelligent life.
 - ◊ Next, to calculate how likely it is that we will ever make radio contact, figure out what fraction of intelligent life will develop civilizations capable of sending communications and factor in how long those civilizations will survive.
- ◆ Although we have a rough estimate on some of these numbers—and we are finding more earthlike planets every day—we don't have enough information to fill them all in. How often does life evolve on planets like ours? Are planets like ours the only ones capable of supporting life? How often does it become intelligent? How long does it last? We can only estimate.
- ◆ On liberal estimates, the galaxy should be teeming with intelligent life sending out signals. Some have speculated that the absence of such signals is evidence that civilizations like ours annihilate themselves almost as soon as they develop such capabilities. This wouldn't bode well.
- ◆ On conservative estimates, however, intelligent life in our galaxy is relatively rare—we might be it. Of course, the universe contains about 2 trillion galaxies, so it's likely that intelligent life evolved somewhere else in the universe. But given the long distances between galaxies, we shouldn't really expect to detect signals from them. So, not hearing any signals isn't necessarily a reason to think we're about to destroy ourselves.
- ◆ Regardless, even if the universe and our galaxy are teaming with life, actual physical visitation from an alien species seems unlikely.

- ◆ Given the enormous distances between stars and the fact that faster-than-light travel is theoretically impossible, it just doesn't seem that physical travel from one planet to another is feasible.
- ◆ Some claim that alien visitation has already happened, pointing to the Roswell incident, the Phoenix Lights, and the 1991 UFO over Mexico City. But none of these were actually aliens. What they found in Roswell was a device from Project Mogul, a then-secret military surveillance project. The Phoenix Lights were just flares dropped by National Guard airplanes. And the Mexico City UFO was just the planet Venus, made visible by an eclipse.
- ◆ This is just a fraction of the UFO sightings people have reported. Some will argue that the sheer number of sightings is proof that aliens are real. But this commits the countless counterfeits fallacy: You can't pile up 1000 pieces of bad evidence—for example, that someone committed a murder—and then convict the person because it's likely that one piece of evidence proves they did it. Whether a piece of evidence is good is not a matter of chance, in which the more pieces of evidence there are, the more likely it is that one is reliable.
- ◆ In fact, when it comes to UFOs, given how easily our senses and memory fool us, we should actually expect a great number of such stories. The large number of UFO sightings is a testament to human gullibility, not the existence of aliens.
- ◆ Still, given other considerations, alien visitation might at least be possible. Humanity has been notoriously bad at estimating what we can and cannot know or do. Centuries ago, knowing the composition of the Sun seemed impossible; today, we routinely discover the composition of even distant stars by examining their spectrum of light. This doesn't mean that we, or other alien life, will ever figure out deep-space travel, but it seems unjustified to conclude that such a thing will definitely never happen.
- ◆ Indeed, what would make such long journeys difficult is the fragility of biological bodies. But what if those bodies are replaced with machines? Or what if we build intelligent machines and send them out to explore? It's no coincidence that we first sent machines, the *Voyager* spacecrafts in 1977, to explore the solar system.

WHAT EFFECT ON SOCIETY WOULD AN ALIEN VISITATION HAVE?

- ◆ That brings us the question of how the discovery of aliens would affect society—because the *Voyager* spacecrafts contain samples of our culture, such as music, as well as instructions for locating our solar system.
- ◆ Wouldn't aliens likely want to destroy us? After all, every time indigenous life-forms on Earth have come into contact with "alien life"—such as when the British found the aborigines and the Europeans found the Native Americans—things did not go well for the natives. Why would it be any different with outer space aliens? The effect on society could be devastating.
- ◆ On the flip side, Hollywood aliens are not always bad; consider *Close Encounters of the Third Kind*, *E.T.*, *Contact*, and *Interstellar*. An alien visitation could turn out to be the best thing that ever happened to us.
- ◆ It's impossible to know whether an alien visit would be good or bad—it would probably be a little bit of both.



WOULD WE BE ABLE TO COMMUNICATE WITH ALIENS ONCE THEY'RE HERE?

- ◆ A more philosophical question raised by the possibility of an alien visitation is whether we could communicate with them. This brings us back to *Arrival*, in which Dr. Louise Banks is assigned the task of learning the language of a species of advanced aliens that has landed on Earth. Instead of letters arranged in sentences, the aliens communicate with a system of logograms that look like inkblot circles.
- ◆ But translating a totally alien language from scratch would be a monumental task. Indeed, some philosophers have argued that it would be impossible. And to do so, they use Willard Van Orman Quine's radical translation thought experiment.
- ◆ Quine imagined a linguist coming across members of a "native" community with a language completely unrelated—completely foreign—to any known language. He suggested that it would be impossible for such a linguist to ever know that he understands them.
- ◆ But to understand Quine's argument, a background in philosophy of language is needed.
- ◆ What words mean, and how they gain their meaning, was a philosophical question most famously tackled in the early works of Ludwig Wittgenstein. By answering it, he thought he could solve—or, rather, dissolve—every major philosophical question. He did this in his work *Tractatus Logico-Philosophicus*, in which he suggests that the world is all that exists and thus the meaning of words must be the objects or relations to which they refer in the world.
- ◆ If you say "the bottle is on the table," the meaning of the word "table" is literally the physical object to which the word refers: the table. It follows that if a word is not about an object or relation in the world, it is meaningless. It's not really about anything. Philosophers call this Wittgenstein's picture theory of language, because it entails that propositions are meaningless unless they picture, or depict, some state of affairs in the world.

- ◆ Because most philosophical questions are not about states of affairs—but instead are about abstract metaphysical concepts, or what's “right” and “wrong”—Wittgenstein argued that ultimately most philosophical questions are meaningless. The word “wrong” in “Is murder wrong?” doesn't point to anything in the world. The philosopher has “failed to give a meaning to [words] in his propositions.” Such questions should, therefore, be ignored.
- ◆ Paradoxically, because Wittgenstein was doing philosophy, this meant that, according to his argument, his own writings were meaningless. Indeed, the question of what meaning is, is meaningless because it's an abstract philosophical question. The word “meaning” can have no meaning because it doesn't refer to an object or relation in the world.
- ◆ This irony was not lost on Wittgenstein. He realized the objection and dealt with it at the end of the *Tractatus*. Even though his words were meaningless, he argued, there is a difference between “nonsense” and “senseless” statements.
- ◆ Nonsense is useless, but some language (even when it is senseless) can be a useful tool. Statements about the axioms of logic and mathematics fall into this category, such as “ $1 + 1 = 2$.” Technically, it doesn't refer to anything in the world and thus is meaningless—but it's still a useful tool. That, Wittgenstein suggests, is what he gave us in the *Tractatus*.
- ◆ Wittgenstein left philosophy after publishing the *Tractatus*, thinking that he had dissolved every major philosophical problem. This helped give rise to an entire movement in philosophy known as logical positivism, or verificationism, which suggested that a statement is meaningless unless one can articulate the conditions under which it can be verified. If it's not theoretically possible to prove something true, then it's not meaningful.
- ◆ Logical positivism was taken down by basically 2 things. First, it's self-refuting. “A statement is meaningless unless it can be verified.” Really? Can you verify that? The main tenant of verificationism is meaningless by its own lights.

- ◆ Second, and ironically, it was undone by Wittgenstein himself, who came to realize that meaning doesn't work like he originally thought. After he left philosophy, he came to the conclusion that he had been wrong about what constituted meaning—that words acquire meaning not by corresponding to the world, but instead by their use. Wittgenstein came to recognize that words are arbitrary signs—that meaning is in use, or is defined by use. To learn a language is essentially to learn the “use rules” of a community's “language game.”

RADICAL TRANSLATION

- ◆ And that brings us back to Quine's problem of radical translation. He thought that you could never discover the meanings of the words of a language completely unrelated to your own because even discovering the use rules of a language game might not necessarily reveal the meanings of its words and sentences.
- ◆ In *Arrival*, Dr. Louise Banks tells the apocryphal story of James Cook and the origin of the word “kangaroo”:

[Cook] led a party into [Australia] and they met the aboriginal people. One of the sailors pointed at the animals that hop around and put their babies in their pouch, and he asked what they were, and the aborigine said, “kangaroo.” ... It wasn't until later that they learned that “kangaroo” means “I don't understand.”

- ◆ The problem gets even worse when you realize that you can only learn use rules by looking for negative or positive responses. But how do you determine those? You're trying to learn their language, so you don't know their words for yes and no. And nodding and shaking your head for yes and no is another social convention.
- ◆ It seems that you could do something like this for every word in their language—learn the use rules of their language game while simultaneously misunderstanding what every word means. You could even carry on entire conversations, seemingly conveying information to one another, all the while completely misunderstanding what each other means to communicate.

- ◆ Ironically, however, this seems to be the method Dr. Banks uses in *Arrival*. She writes “human” on a whiteboard, points to herself, and then assumes the response by the heptapods denotes the name of their species. But they could think the marks on that board mean anything—female, or orange (the color of her suit), or black (the color of the ink). The list is seemingly endless. So, how can she ultimately know that her translations are right?
- ◆ The consequences of this go beyond the believability of the plot of *Arrival*, because we are all in this situation as children. We try to learn a language that is completely foreign to any we know—because we know none. We learn our native language just like the linguist learns the alien one. So, could it be that we are all walking around, thinking we understand one another, when in fact we don’t? It’s possible, but it seems unlikely. And this is where we find the answer to Quine’s worry.
- ◆ It seems too similar to the worry that you are in the Matrix right now. Is it possible? Sure. But that’s not the best explanation for your experiences; that you are awake is beyond a reasonable doubt.
- ◆ So, it’s possible that we all define our words differently, even though we use them the same way, but that we all have similar meanings in mind seems to be beyond a reasonable doubt.
- ◆ You might argue that the seemingly successful translation of so many languages over our history is a refutation of Quine’s thesis. But you also might argue that these successful translations just indicate that no human language is completely foreign. We all evolved from the same branch of the evolutionary tree, and our brains are all remarkably similar. As such, we likely conceptualize the world and utilize language in much the same way.
- ◆ Indeed, philosopher and linguist Noam Chomsky has argued, persuasively, for universal grammar—a set of innate structural rules, constraints, and principles by which all humans organize concepts and use language.

- ◆ Basically, Chomsky argues, because there are rules that children must know (to learn how to use a language) but those rules are not ever stated or contained in any utterances children hear, the fact that children do learn to use language entails that children must know those rules innately.
- ◆ If Chomsky is right, no human language is completely foreign, and thus the linguist in Quine's thought experiment is not truly faced with a problem of radical translation.
- ◆ Interestingly, Wittgenstein had a similar solution. He wrote: "The common behavior of mankind is the system of reference by means of which we interpret an unknown language."
- ◆ About this passage, philosopher Hans-Johann Glock argued that because we all share a "form of life," no human language is completely foreign to us. Perhaps we even all share a form of life because we all share a universal grammar.
- ◆ And that brings us back to *Arrival*—because we likely wouldn't share a form of life with aliens, nor would we share an innate universal grammar. Because they evolved on a different planet, under completely different conditions, it would seem very unlikely that aliens would conceptualize the world and utilize language in the same way we do.
- ◆ Unless evolution somehow guarantees the relevant conceptual similarities, or our universal grammar is somehow a function of how communication logically must work (and therefore aliens would share our universal grammar)—or, as Wittgenstein might put it, unless we share a form of life with aliens—real radical translation might actually be impossible.
- ◆ In *Arrival*, things work both ways. A shared conceptual framework makes possible the acquisition of the alien's language, but learning the alien's language causes Dr. Banks to share their conceptual framework. She begins to see time as they do—no longer experiencing one moment at a time, but seeing past, present, and future "as a whole," "all at once," "from above." She adopts a 4-dimensional point of view.

- ◆ This brings us to the linguistic theory referenced directly in the film, the Sapir-Whorf hypothesis: How you see the world is influenced by the conceptual framework of the language you speak. This is why Dr. Banks learning the alien language enables her to see the universe 4-dimensionally.

QUESTIONS

- 1 If we discovered life on an alien world, would you volunteer to travel there if you knew you could never come back? Why or why not?
- 2 What other ways might alien life help or hurt life on Earth?
- 3 What other ways might the discovery of alien life overturn religious belief?
- 4 Are there words like Quine's example of "Gavagai" that actually do refer to undetached parts ("flank," "rump," "loin," "tenderloin," "heel," "hock," "muzzle," "fetlock," "pastern," "croupie," "withers")? If so, how does this affect Quine's argument?
- 5 Most of the universe is dark energy, and most of the rest is dark matter. Only 4.6% is actual visible atoms, and most of that is stars, nebulas, and black holes. For example, 99.86% of the mass of our solar system is taken up by our Sun. Of the 0.14% left, 99% of it is the giant gas planets. So, it seems that only the tiniest fraction of the universe's matter is spent on earthlike planets, and biological organisms take up only a tiny fraction of their matter. What does this entail about the hypothesis that the universe was created for the purpose of generating intelligent life?

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RELATED SCI-FI (ALIEN VISITATION)

TV	<i>The X-Files</i> (1993) <i>V</i> (1985)
FILM	<i>Independence Day</i> (1996) <i>Village of the Damned</i> (1995) <i>Predator</i> (1987) <i>Signs</i> (2002) <i>War of the Worlds</i> (2005) <i>Invasion of the Body Snatchers</i> (1978) <i>E.T. the Extra-Terrestrial</i> (1982) <i>Cocoon</i> (1985) <i>Flight of the Navigator</i> (1986)
PRINT	Arthur C. Clark's <i>Childhood's End</i> Arthur C. Clark's <i>Rendezvous with Rama</i> Arkady and Boris Strugatsky's <i>Roadside Picnic</i> H.G. Wells's <i>War of the Worlds</i>

RELATED SCI-FI (THE EFFECT OF ALIENS ON RELIGION)

Swedenborg's *De Telluribus*
Arthur C. Clark's *The Star*
Mary Doria Russell's *The Sparrow*
Ray Bradbury's "The Man" and
"The Fire Balloons" (in *The Illustrated Man*)

RELATED SCI-FI (ALIEN LANGUAGE)

TV	<i>Star Trek: TNG</i> (1989): "The Ensigns of Command." <i>Star Trek: ENT</i> (2001): "Fight or Flight" <i>Twilight Zone</i> (1959): "To Serve Man"
FILM	<i>Mars Attacks</i> (1996) <i>Close Encounters</i> (1977)

PRINT	Percy Greg's <i>Across the Zodiac</i> Stanislaw Lem's <i>His Master's Voice</i> D. R. Merrill's <i>Lamikorda</i> C. J. Cherryh's <i>Chanur</i> (series) Ted Chiang's "Story of Your Life"
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Dr. Banks's 4-dimentional view of the universe raises a series of questions about the nature of time:

- Do the past, present, and future exist in a way that they could be viewed "as a whole"?
- Is time a dimension in which we travel? And if so, could we alter the speed or direction in which we travel in it?
- Could we skip over portions to arrive directly at another moment in time?
- In other words, is time travel possible?

Watch Christopher Nolan's film *Interstellar*. As you do, ask yourself these questions: In what ways does Cooper, the protagonist, travel in time? Does it really count as time travel? Does it create paradoxes?

INTERSTELLAR: IS TIME TRAVEL POSSIBLE?

LECTURE 7

INTERSTELLAR

- ◆ The movie with the most scientifically accurate depiction of time travel is Christopher Nolan's *Interstellar*, which is set in a future where Earth has been decimated by ecological disaster. The protagonist, Joseph Cooper, a former NASA pilot, lives on a farm with his beloved daughter, Murph ("Murph").
- ◆ After a dust storm, they notice a strange pattern of dust on Murph's bedroom floor. Murph thinks she has a ghost in her room, but Cooper realizes that the pattern is due to gravitational variations emanating from Murph's bookshelf. Decoding the pattern leads them to a secret NASA installation, where they learn of NASA's secret plan to try to use it to save the human species.
- ◆ The wormhole that leads to a distant planetary system has appeared near Saturn, and years ago NASA sent 12 brave astronauts through it to find a planet suitable for human life. Three of them—Miller, Mann, and Edmunds—have sent signals back through the wormhole that seem promising.
- ◆ The NASA scientists ask Cooper to pilot the spaceship *Endurance* on a mission that will determine which planet is most habitable and then transplant 5000 human embryos to that planet to restart the human race.



Time travel is a staple of science fiction, and it has been conceived of in many different ways. Given that science fiction has inspired so many real technological advances—from cell phones to nuclear power—one can legitimately wonder whether the ability to travel in time might actually be in humanity's future. And it might, if time travel is actually possible.

To discover whether it is, we enter the realm of metaphysics—the study of the nature of reality, which, among other things, aims to answer philosophical questions raised by science. For more, check out the Great Course *Exploring Metaphysics*.

- ◆ It's when Cooper and his team explore the first planet, Miller's planet, that we get perhaps the most scientifically accurate depiction of time travel in all of sci-fi. But to fully understand it, we need to understand a bit about black holes and the effects of gravity on time.
 - ◆ Black holes are collapsed stars that are so dense and massive that not even light can escape their gravitational effect. Because of this, they can't be observed directly. But they are surrounded by an accretion disk—a ring of particles that surround it, like the rings of Saturn—which emits x-rays that can be detected. Black holes are so massive that the effect of their gravitational forces increases exponentially as you approach them. This means that the gravitational pull on 2 objects near a black hole can be drastically different, even if one is just a meter closer than the other.
 - ◆ Because of the effect of gravity on space-time, the more massive an object is, the more space-time collects around it. This means that the closer you get to a massive object, the slower time will pass for you. Think of space-time like maple syrup. The more space-time a massive object pulls in, the thicker it gets, and therefore the slower you move through it—although, from your perspective, you wouldn't notice the difference, like you would if you were stuck in syrup. This effect also increases exponentially as you approach the black hole—the closer you get, the slower time moves—and drastically so.
- ◆ Miller's planet is orbiting a supermassive black hole called Gargantua, which is about 100 million times the mass of our Sun. Indeed, it warps space-time so magnificently that you can see its entire accretion disk all at once.

If you were to approach a black hole feetfirst, the gravitational pull on your feet would be so much stronger than the pull on your head that you would essentially be stretched into the shape of a piece of spaghetti. Physicists call this **spaghettification**.



The black hole nearest Earth is V616 Mon, and Sagittarius A* is the supermassive black hole that sits at the center of our galaxy. It's about 4 million times the mass of our Sun.

- ◆ The magnificent light that surrounds the top and bottom of the event horizon is actually the “back side” of the disk. The unique way it appears in the film was derived by equations that physicist Kip Thorne generated to describe it. Indeed, Christopher Nolan hired Thorne to make the film as scientifically accurate as possible.
- ◆ Thorne figured out that given how close Miller’s planet is to Gargantua, the time dilation that it would be subject to would be massive: For every hour you spend on Miller’s planet, 7 years will pass on Earth. That’s how “thick” the space-time is around Gargantua.

- ◆ Cooper and his team go down to Miller's planet in a shuttle, leaving behind the *Endurance*. They find the wreckage of Miller's ship in a large ocean of water, but the wreckage is still all together. This confuses them at first; after all, Miller landed on the planet years ago. But then they realize that from the planet's perspective, Miller landed just hours ago. If Miller landed 21 Earth-years ago, she would have landed on this planet only 3 hours ago.
- ◆ Then, they realize another problem. An object that close to a black hole is subject to enormous tidal forces, and because they are on an ocean, this means giant tidal waves. They had intended to only stay a few minutes—long enough to collect Miller's data and run—but when a tidal wave nearly destroys them and floods their engine, they are stranded for much longer. By the time they get back to the *Endurance*, 23 years have passed on Earth and the *Endurance*.
- ◆ Cooper sits down to watch a series of messages from his family that have been building up while he was gone and discovers that his daughter is now older than him—and working for NASA. In effect, he has traveled in time.
- ◆ This is actually what relativity entails would happen if you visited a planet that close to that massive of a black hole. It's all based on actual equations. So, time travel is indeed possible!
- ◆ One might argue that this doesn't really count as time travel; Cooper is just experiencing change more slowly. But that actually does count, according to David Lewis's widely accepted definition of time travel:

An object time travels if and only if the difference between its departure and arrival times as measured in the surrounding world does not equal the duration of the journey undergone by the object.

- ◆ Given what we have discussed, the kind of time travel that seems most possible is time travel to the future. But what about time travel back to the past? *Interstellar* can help us explore that, too.

- ◆ After the failure at Miller's planet, Cooper and his team try to explore Mann's planet, but it turns out that Mann is selfish, horrible, and destructive. After Mann almost successfully sabotages their mission, Cooper and the only surviving member of his crew (Dr. Amelia Brand) realize that their last hope is to try to reach Edmunds's planet.
- ◆ They don't have enough fuel, but they can use Gargantua's gravitational forces to propel themselves there—but only if Cooper ejects himself. He does, and is pulled into the black hole.
- ◆ In reality, he'd likely just be killed—stretched into spaghetti. But we really don't know what lies beyond the event horizon of a black hole, the point at which its gravitational pull is so great that not even light can escape. So, Nolan chose Cooper's journey beyond the event horizon of Gargantua as an opportunity to take some artistic license.
- ◆ What Cooper finds beyond the event horizon is a tesseract: a 3-dimensional representation of a 4-dimensional object. In this case, it is his daughter Murph's bedroom, at every moment of its existence, which he can view from behind her bookshelf.
- ◆ He slowly realizes that he can send her signals—back through time—and thus he was the “ghost” in her bedroom all along. Remember how they observed those strange patterns of dust on the floor that lead them to the NASA installation? It turns out that was Cooper himself, sending messages from the future, from inside Gargantua.
- ◆ But this raises a philosophical puzzle—a seeming paradox. Cooper went on the mission only because he sent Murph signals explaining how to get to the installation, but he was able to send Murph signals explaining how to get to the installation only because he went on the mission.
- ◆ So, what caused what? If you can't have A without B, but you can't have B without A, then how do you have either? We have what philosophers call a causal loop. And it's not the only one in *Interstellar*.



- ◆ We later learn that it was a race of 5-dimensional beings that placed the wormhole near Saturn and that placed the tesseract inside the black hole; they wanted Cooper to be able to communicate with Murph so he could send her the information.
- ◆ So, the 5-dimensional beings are saving the human race. But, it turns out, the 5-dimensional beings *are* the human race—or what the human race will eventually become, long after it has been saved. So, humanity still exists only because it saved itself, but it saved itself only because it still exists. It's another causal loop.

BACK TO THE FUTURE

- ◆ Causal loops appear constantly in time travel sci-fi. Perhaps the most famous causal loop appears in Robert Zemeckis's *Back to the Future*.
- ◆ Marty McFly travels from 1985 back in time to 1955 in Doc Brown's DeLorean. Marty then has to enlist the help of the 1955 version of Doc Brown to get back to 1985. While in the past, Marty ends up having to play guitar at his parents' prom.

- ◆ As a final encore, Marty rocks out to “Johnny B. Goode.” While he is doing so, Marvin Berry calls his cousin Chuck and lets him hear it—and, of course, Chuck Berry eventually records it. So, Marty knows “Johnny B. Goode” only because Chuck recorded it, but Chuck recorded it only because he heard Marty play it.
- ◆ “Johnny B. Goode” seems to be a Jinnee, which is a self-created object or information—an object or information that has no causal beginning. Interestingly, time travel stories often involve the time travel machine itself being a Jinnee. Someone uses a time machine to go back in time and teach him- or herself how to build the time machine. Indeed, depending on how you interpret the movies, you might think this is how the DeLorean time machine is invented in *Back to the Future*.
- ◆ In the third movie, the 1985 version of Doc Brown buries the time machine in the distant past for his 1955 self to find, complete with instructions on how to repair the time circuits. But one is left to wonder: Would the 1955 Doc Brown have ever figured out how to build a time machine if he had not already read the instructions?
- ◆ Before that happened, the 1955 Doc Brown drew a picture of the flux capacitor—“what makes time travel possible.” But maybe he didn’t know how to make it work until he read those repair instructions!
- ◆ All of this can tell us something about the possibility of time travel. Things like causal loops seem to be logically impossible; that’s why they are called paradoxes. But that which is logically impossible not only isn’t true, but it can’t be true.
- ◆ As philosophers would say, there is no possible world in which a Jinnee exists. But if time travel to the past is possible, a Jinnee could exist. Therefore, it must be that time travel to the past is logically impossible; it doesn’t occur in any possible world.
- ◆ Other paradoxes created by the possibility of time travel to the past also suggest this. Consider again the plot of *Back to the Future*, in which Marty nearly annihilates his own existence by traveling to the past and keeping his parents from falling in love.

- ◆ The movie suggest that this makes Marty and his siblings slowly fade out of existence, but this is nonsense. Either he will be born or he won't. But if he's not born, then he won't travel back in time to prevent his parents from falling in love, which means that they will fall in love and he will be born—which means that he will travel back in time to prevent them from falling in love, which means that he won't be born, and so on. He will if and only if he won't.

QUESTIONS

- 1 Watch the time travel movie *Primer*. Is the movie logically consistent, or does it create a paradox?
- 2 Can you think of ways of conceptualizing time travel that would make self-annihilation impossible?
- 3 Are causal loops really impossible? Can you think of a way that they might actually come into existence?

RESOURCES

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RELATED SCI-FI (OTHER DIMENSIONAL BEINGS)

The Orville (2017): “New Dimensions”
Star Trek: TNG (1989): “The Loss”

RELATED SCI-FI (TIME TRAVEL)

TV *Voyagers!* (1982)
 The Travelers (2016)
 Red Dwarf (1988)
 Terra Nova (2011)
 Futurama (1999): “Bender’s Big Score”

FILM *Twilight Zone: The Movie* (1983)
 Primer (2004)
 Source Code (2011)
 Army of Darkness (1992)
 Groundhog Day (1993)
 Star Trek: First Contact (1996)

PRINT Samuel Madden’s
 Memoirs of the Twentieth Century (1733)
 Joe Haldeman’s *The Accidental Time Machine*
 Charles Yu’s *How to Live Safely in a Science
 Fictional Universe*
 Stephen King’s *11/22/63*
 Lewis Carroll’s *Sylvie and Bruno*
 Mark Twain’s *A Connecticut Yankee in
 King Arthur’s Court*
 H. G. Wells’s *The Time Machine*

The ability to travel back in time would give time travelers the ability to prevent their own existence—and that's logically impossible. It's called the grandfather paradox, and it's supposed to show that travel backward in time is impossible.

If it were possible, then it would be possible to kill your grandfather at a time prior to his siring of your father and thus negate your existence. Because that logically can't happen, neither can time travel to the past.

But would time travel into the past really allow one to annihilate oneself?

Are causal loops really logically impossible?

Are these truly paradoxes, or are there ways out of these problems?

It is to these questions that the next lecture turns. Beforehand, watch the *Doctor Who* episode "Blink," and as you do, ask yourself this: Who started the DVD commentary conversation between the Doctor and Sally Sparrow?

Then, watch an episode of the TV show *Futurama* called "Roswell That Ends Well." Afterward, ask yourself these questions: Does the episode solve the paradox, or merely avoid it? And what's the difference between the 2?

DOCTOR WHO AND TIME TRAVEL PARADOXES

LECTURE 8

DOCTOR WHO AND CAUSAL LOOPS

- ◆ In the *Doctor Who* episode “Blink,” Sally Sparrow discovers an alien race called the Weeping Angels. The angels freeze into stone when they are being observed but can “kill” you when they’re not by sending you back in time and feeing off the potential energy of the future days you would have lived—essentially letting you live to death.
- ◆ This is how they’ve trapped the Doctor, a Time Lord, in 1969 without his time machine, the TARDIS, which is stuck in 2007. To get it back, he arranges for Billy Shipton to plant “Easter eggs” (secret video clips) on 17 different DVDs—the 17 that Sally owns.
- ◆ These Easter eggs show the Doctor carrying on half a conversation. The other half is in 2007, carried on by Sally Sparrow. The Doctor is able to maintain his half of the conversation because he has a transcript of what she will say 38 years before she’ll say it.
- ◆ When Sally finally watches the Easter egg, she figures out that the Doctor is talking to her and carries on her half of the conversation. Sally’s friend Larry starts writing it down. Then, at the end of the episode—after Sally sends the TARDIS back to the Doctor in 1969—she runs into the Doctor at a moment in his life before he is trapped in 1969. She gives him the transcript so that one day in his future when he needs it to create the Easter eggs, he will have it.

- ◆ The question is this: Does Sally give the Doctor the transcript because she was saved by the Doctor, or was she saved by the Doctor because she gave him the transcript?
- ◆ The Doctor and Sally's conversation seems to have no causal origin. Take the Doctor's half of the conversation. Although Larry writes it down, he is only copying what the Doctor says. Yet the Doctor only says what he says because it's written down in the transcript.
- ◆ So, who is the author of the Doctor's words? It's not Larry; he's only copying the DVD. But it's not the Doctor; he's reading off the transcript. As you learned in the previous lecture, a self-created object like this is called a Jinnee, and Jinn—the plural of Jinnee—are all over this episode.
- ◆ The possibility of Jinn seems to make time travel into the past impossible. After all, causes always precede their effects, right? So, if A caused B, A came before B. But if B also caused A, then B came before A. But by the principle of transitivity, that means that B came before itself—and that's logically impossible. So, time travel into the past is logically impossible.
- ◆ This argument, however, begs the question. Time travel essentially is the suggestion that causes sometimes come after their effects.
- ◆ If Marty travels from 1985 to 1955, his activation of his time machine in 1985 comes after, but is the cause of, him appearing in 1955. So, if your argument against the possibility of time travel begins by assuming that it's impossible for effects to precede their causes, you're basically just assuming the truth of what you are trying to prove. That argument won't work.
- ◆ The problem with Jinn actually goes deeper. Regardless of what temporal direction the causal arrow points, it seems that causal explanations have to bottom out somewhere. Unless you arrive at a stopping point, you really haven't explained anything.
- ◆ But with Jinn, there is no stopping point—A caused B, which caused A, which caused B, and so on. This, it seems, leaves Jinn without an explanation for their existence. They have no causal origin. And if there

is no explanation for why they exist, then logically they can't exist, right? Because time travel into the past would entail that they could exist, time travel into the past must be impossible. That's the argument.

- ◆ But are Jinn really logically impossible? Is there something incoherent about the concept itself? Not really. To explain why, let's slightly modify some of the Doctor's words.
- ◆ People assume that time is a strict progression of moments—the past, the present, the future—but actually, from a nonlinear nonsubjective viewpoint, it's more like a block of “wibbly-wobbly, timey-wimey” stuff. Our experience tells us that there is a fact about what moments are past, present, and future at any given moment.
- ◆ In the beginning, the big bang was the present moment and everything else was future. Later, the JFK assassination was the present moment and everything else was either past or future. At another point, the Sun exploding will be a present moment, etc. And if 2 events are simultaneous, that's because they happened—they were both present—at the same time.
- ◆ But Einstein's relativity teaches us that this is not correct. This is because motion, and consequently simultaneity, are relative to a reference frame. What does that mean?
- ◆ Think of 2 spaceships about to collide—for example, the *Millennium Falcon* and the starship *Enterprise*. From the *Falcon*'s perspective, or frame of reference, it's stationary and the *Enterprise* is moving toward it. But from the *Enterprise*'s perspective, it's stationary and the *Falcon* is moving. And from the perspective of someone standing on, for example, *Battlestar Galactica* watching this whole thing, the *Falcon* and *Enterprise* are moving toward each other.
- ◆ What relativity teaches us is that no one of these perspectives is “more correct” than another. These are all equally accurate ways of describing what's happening. According to relativity, there is no fact of the matter about what's “really” moving and what's “really” stationary—it's all relative.

- ◆ What follows from this, once you realize that the speed of light is the same in all reference frames, is that there also is no fact of the matter regarding whether events are simultaneous. If they are in one frame, they won't be in another. And neither description is "right" or fully captures "what's really happened."
- ◆ The classic thought experiment used to explain this involves 2 people—one inside a "moving" train and one outside it—and lights that go off on the front and back of the train whose light beams meet in the middle of the train. From the perspective of the person inside the train, the lights turned on at the same time. But from the other person's perspective, the back light turned on first. Because the train is moving toward the front light and away from the back, that's the only way for their light beams to meet in the middle of the train and the speed of light not to change.
- ◆ Because simultaneity is relative, for any given event A and any other event B that happens after it, there will be another event C such that C is simultaneous with A in one reference frame but simultaneous with B in another. But the only way that can be the case is if all the events exist together.
- ◆ And that's why relativity contradicts the common progressive view of time: The only way that can be true is if all moments (what we would call past, present, and future) exist, as a whole, in a giant block—a block that has a bunch of different reference frames running through it, all dictating different things about which events are simultaneous with others but none capturing the full truth, kind of like a big block of "wibbly-wobbly timey-wimey" stuff.
- ◆ Indeed, there is not even a fact of the matter about what moment in time is the present moment, which moments are past, and which ones are future. They all just exist. The JFK assassination "is happening" just as much as your reading of these words "is happening." They are all just moments in time.

For more details, check out the Great Course *Exploring Metaphysics*.

Richard Hanley defends the possibility of Jinn in his fascinating article “No End in Sight: Causal Loops in Philosophy, Physics and Fiction.” He identifies many different kinds of causal loops, such as object loops and information loops, and points out that some loops are “easier” to account for than others.

Physical objects that exist in a loop will require some way to ensure that their matter is replenished. But at worst, causal loops only require grand coincidences. They are not logically incoherent. It’s even possible to be one’s own father or mother.

What’s more, because the actions of conscious agents can easily make grand coincidences occur, causal loops are much more likely in a universe like ours—one that has conscious agents in it.

- ◆ We seem to experience them in a progression, but as Einstein once said, “People like us, who believe in physics, know that the distinction between past, present, and future is only a stubbornly persistent illusion.”
- ◆ Realizing that this is the true nature of time allows us to realize that there is nothing paradoxical about Jinn. They seem paradoxical because they were running us around in a circle: A caused B, but B caused A—the causal explanation doesn’t end anywhere. They have no causal origin. But if all of time is a giant block, which contains all moments in time, they do have a causal origin. The Jinn came into existence, along with everything else, as the entire block came into existence.
- ◆ If we think of the universe as being created, it was not created as a batch of matter that grew and developed and became more complicated over time. It did not start with a single moment and then progress into a series of moments.
- ◆ All of space and time—the entire block, past, present, and future—came into existence as a whole, all at once, with its entire history intact. So why couldn’t it have Jinn within it? The explanation for them would be the existence of the block itself.

FUTURAMA AND THE GRANDFATHER PARADOX

- ◆ Causal loops don’t negate the possibility of time travel to the past, but what about the grandfather paradox, the other objection to time travel in the previous lecture? This paradox illustrates how time travel would make it possible to annihilate yourself before you traveled in time—for example, by killing your grandfather before he sires your father. This would create a paradox where you annihilate yourself if and only if you don’t. Because that is not even possibly true, the argument goes, time travel into the past cannot possibly occur.
- ◆ But many philosophers agree that this argument is not sound. There are 2 ways to avoid the conclusion of the argument. But first, it’s important to point out that you can’t answer the argument by avoiding the problem—like the characters in *Futurama* did.

- ◆ In the *Futurama* episode “Roswell That Ends Well,” the gang travels to the past and ends up causing the famous 1947 Roswell UFO incident—they are the ship that crashes. Professor Farnsworth warns Fry to not kill his grandfather, Enos, but Fry’s efforts to prevent this result in his grandfather’s death: Fry places Enos a bit too near a nuclear test site. The writers avoid the paradox, however, by having Fry sleep with his grandmother, thus making Fry his own grandfather. Essentially, instead of annihilating himself, Fry becomes a Jinnee.
- ◆ This does not solve the grandfather paradox, however; it merely avoids invoking one. This is because the argument does not suggest that every instance of time travel would include a self-annihilation paradox, so telling a time travel story that avoids one doesn’t answer the argument. What it does suggest is that time travel to the past seems to make possible something that is impossible: self-annihilation.
- ◆ To solve the paradox, one must explain why time travel could never allow for the possibility of self-annihilation. To do so, you basically have to reconceive the very nature of what time travel would do. There are 2 ways to do this.
- ◆ The first is called branching time travel, a solution to the problem endorsed by philosophers Nuel Belnap and David Deutsch. The suggestion is this: When you travel back in time, you do not travel to your own past. You travel to the past of an alternate universe, which has a past just like the universe you left, up to the moment to which you traveled, but that also contains the event of you, the time traveler, appearing at that moment. You then proceed forward in time in that universe and deal with the consequences of your actions there.
- ◆ But you can’t kill your own grandfather, because your grandfather is in the past of the universe you left; you traveled to a different universe, with a different grandfather. If you kill him, you will simply prevent that universe’s version of you from being born. But the event of your birth will still be safe and sound, in your original universe.

- ◆ Branching can make sense of many time travel stories and solve the grandfather paradox. But it still has 2 noteworthy consequences.
 - ◊ It's not clear that this is really time travel. Although it would look like time travel to the "time traveler," it's really just alternate universe creation. So, to accomplish this, you would need to invent a machine capable of creating specific kinds of alternate universes—not traveling in time.
 - ◊ It might not be very useful. For example, you can't actually effect changes to your own timeline; you can only create a different timeline that's more to your liking. Indeed, if you travel forward again, it will just be into the future of the new universe you created. And if you travel back again, you will just create yet another universe. You can never return to the universe you left.
- ◆ A second solution to the grandfather paradox was developed by philosopher David Lewis, who suggests that time travel would not give one the ability to kill his or her own grandfather because doing so would be impossible—essentially, because you'd be predestined not to do so.
- ◆ Think about the block world view of time, in which the entire universe—past, present, and future—exists as a whole. If time travel is possible, then the universe already contains the events of time travelers traveling in time—their escapades in what we would call both the future and the past.
- ◆ That means that before a time traveler ever activates his or her machine, the things that he or she will do while in the past have already occurred. The past is already written. So, the time traveler can travel there and experience the past; he or she can even participate, causing things to happen in the past. But it would be impossible for the time traveler to cause anything to happen other than what he or she had "already caused."
- ◆ And because the time traveler clearly was born, and thus preventing his or her own birth is clearly not something he or she already caused, it would be impossible for him or her to do so. Or, if you're like Fry, it would be impossible for you to not become your own grandfather.



In a paper for *Nature Communications*, Martin Ringbauer simulated what would happen if a photon were sent back in time, through a closed timelike curve, and given an opportunity to negate its own existence by preventing the firing of the photon gun that emitted it. He found that the particle would always only have a 50% chance of taking on a property that causes the gun to not fire, making it entirely possible that it never would do so.

If this indeed is how time travel would work, it would seem that causal loops and Jinn would be common. The time traveler could find that he or she is the cause of his or her own time travel journey and really could be his or her own father, mother, child, and killer.

- ◆ It may seem to the time traveler, from his or her own subjective point of view, that he or she can do whatever he or she wants. A time traveler might even learn that he or she died in the past and travel back in time to try to prevent it. But he or she can't. There are facts about what the past contains, and the time traveler would not be able to alter those facts.
- ◆ This view of how time travel works doesn't make the time traveler look very free. Indeed, once he or she travels to the past, the time traveler is predestined to do what the timeline dictates that he or she has already done. But the same is true for the rest of us.
- ◆ The only difference, it seems, between the time traveler and us is how the moments of our lives are arranged in the block. Yours are nearly arranged in chronological order; the Doctor's are cut up into pieces and scattered throughout. But because it exists, as a whole, neither of us can do anything other than what the block contains.

QUESTIONS

- 1 Consider the branching view of time travel. When a time traveler leaves one universe to create another, what happens to the original universe? Does it continue on without the time traveler, or does it end (as it apparently does in *Donnie Darko*)? If it ends, what ethical questions might time travel raise?
- 2 Google and watch a short film called "Stealing Time." What conception of time travel does it display (branching, Lewisian predestination)? Is this story consistent?
- 3 Watch the *Orville* episode "Pria." Is the time travel in this episode logically consistent? Can any of the conceptions of time travel from this lecture make sense of it?

RESOURCES

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RELATED SCI-FI

- | | |
|-----------|--|
| TV | <i>Twilight Zone</i> (1959): "The Last Flight"
<i>Doctor Who</i> (2005):
"The Pandorica Opens" and "The Big Bang."
<i>Star Trek: TNG</i> (1989): "Yesterday's Enterprise"
<i>The Time Tunnel</i> (1964)
<i>Paradox</i> (2009)
<i>Doctor Who</i> (1963): "An Unearthly Child" |
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| FILM | <i>12 Monkeys</i> (1995)
<i>Paradox</i> (2016)
<i>Edge of Tomorrow</i> (2014)
<i>Predestination</i> (2014)
<i>Bill & Ted's Excellent Adventure</i> (1989) |
|-------------|---|

PRINT	Robert A. Heinlein's “By His Bootstraps” and “All You Zombies—” Douglas Adams's <i>Life, the Universe and Everything</i> (the third book in the <i>Hitchhiker's Guide to the Galaxy</i> series) Eoin Colfer's <i>Artemis Fowl: The Time Paradox</i> Andy Briggs's <i>Hero.com: Crisis Point</i>
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Has the universe gone other ways—or, more specifically, are there other universes that went a different way than ours? Are there alternate universes for every way that the universe could have gone? If so, could we ever travel to them?

And what would be the philosophical implications of such universes?

To explore these issues, watch an episode of *Star Trek: The Next Generation* called “Parallels” (season 7, episode 11).

As you watch, ask yourself whether all the versions of Lt. Worf at the end of the episode are the same person.

STAR TREK: TNG AND ALTERNATE WORLDS

LECTURE 9

ALTERNATE UNIVERSES AND MULTIVERSES

- ◆ Alternate worlds are a science fiction staple. Indeed, fictional depictions of alternate universes often imagine what the world would be like had major events gone differently. But sometimes it's not just one alternate universe—it's many. It's a multiverse.
- ◆ Are there any actual reasons to suppose that alternate universes could exist? Yes! In fact, it just might be the next logical conclusion. After all, humans first thought that ours was the only planet; then, we discovered others. Ours was thought to be the only solar system, the only galaxy; then, we discovered others. So, we shouldn't expect it to be different with our universe.
- ◆ In fact, relativity is completely consistent with the existence of parallel universes, and physicists Paul Steinhardt and Neil Turok have suggested a version of string theory that also supports it.
- ◆ The most common way to understand what a multiverse is, is in terms of alternate dimensions. Consider the block world view of time discussed in the previous lecture. It's the collection of all the 3-dimensional moments in time of our universe set into a 4-dimensional block. To envision a multiverse, think of a collection of such blocks stacked up in a fifth dimension.



Why do we use the term “universe” to refer to alternate worlds? Doesn’t “universe” just mean “all that exists,” so there is, by definition, just one universe—one collection of all that exists—and that collection may or may not contain what we might call “many worlds”?

That is one way to define “universe.” But in science fiction—and in science—the term is often used differently. For the purposes of this course, a good definition of “universe” would be a space-time continuum and all the entities (for example, all the matter) it contains. This would keep us from identifying some subset of matter in our universe as a universe itself but would also seem to allow for the possibility of other universes and travel between them

- ◆ According to this theory, our universe lives on a membrane, or brane, along many other universes (that also live on branes) in what is called the bulk. When you hear people talk about parallel universes, this is usually what they are talking about. It's like the multiverse is a giant closed book and there is a universe on every page.
- ◆ There are other ways of conceiving of the multiverse and how it came about. Consider this: It's widely acknowledged that our universe began when a singularity "exploded" with a big bang—and many physicists, such as Edward Tryon, suspect that the singularity (which was the source of the big bang) was the result of a quantum fluctuation in the vacuum that existed prior to our universe.
- ◆ How is that possible? Simply put, not even vacuums are empty. They contain no matter, but they are still filled with quantum activity. And such quantum activity can, randomly, generate matter. Scientists have observed this on small scales, but give a large enough vacuum a long enough time and a large amount of matter could be produced. Such matter would briefly be contained in a tiny, dense, hot point that "explodes," causing that matter to expand. Something very much like this is what generated our universe.
- ◆ We used to wonder whether gravity would eventually pull all the matter of our universe back in—called the big crunch. But we now know that the force of gravity is not strong enough to do this and that indeed the expansion of the universe is accelerating.
- ◆ What many scientists now expect is that the universe will end in a heat death: All entropy will stop, every atom will decay, and we'll be back down to a vacuum. But that vacuum will still be teeming with activity. According to the work of physicists Sean Carroll and Jennifer Chen, given long enough, that could produce another big bang. Indeed, this could have already happened many times over and could be going to happen many times over.
- ◆ It seems that we should describe each one of these new collections of matter as a new universe. Each one of these "consecutive" collections of matter would be in its own space-time continuum. If so, ours is just the latest in an infinite series of universes, and all of reality consists of an "oscillating multiverse."

- ◆ At this point, one might argue that an oscillating multiverse wouldn't really count as a multiverse, because all of the universes aren't happening "at the same time." To really be a multiverse, the events of each universe have to be happening simultaneously—like they are in the view that has multiple universes all stacked up in the bulk.
- ◆ But, as you learned in the previous lecture, according to relativity, simultaneity is relative to reference frame. So, only 2 events in the same universe can be simultaneous, and even then only in certain reference frames. It's meaningless to think of 2 events, in 2 different universes in the bulk, as happening "at the same time"—just as words on 2 different pages of a book can't be on the same line.
- ◆ Indeed, because (in both models) each universe would be contained in its own space-time continuum, the only difference between a bulk multiverse and an oscillating multiverse is how we picture it in our mind: The former's universes are stacked vertically while the latter's are laid out horizontally, but both kinds of multiverse are made up of collections of matter contained in their own space-time continuum.
- ◆ An oscillating multiverse is not that different from Alexander Vilenkin's conception of the multiverse, based on the theory of inflation, which is a period of superfast expansion of space that can be slowed locally (in specific places) by specific instances of quantum activity. This is how quantum fluctuations can produce a big bang. When a fluctuation slows the inflation, the energy that drove inflation spills over, igniting a "hot fireball of particles and radiation"—a big bang.
- ◆ But inflation continues elsewhere, where that quantum activity had no effect. This continually creates more and more space for the same thing to happen again; somewhere else, some other quantum activity slows inflation, forming another expanding bubble. And because inflation is eternal, this would happen an infinite number of times.
- ◆ It's not clear whether we should picture such universes as being stacked or laid out consecutively, but regardless, it seems we would rightly call this a multiverse.

- ◆ What would the universes in a multiverse be like? Would they contain all the same events, happening over and over again, or would their histories be different?
- ◆ According to Vilenkin, because there is an infinite number, “inevitably, an unlimited number of [universes] of all possible types will be formed.” So, they’d be different. But if other universes are governed by the same physical laws as ours—and some might not be, but of those that are—one might suspect that they will also turn out just like ours, because they started in the same way, too. Same starting conditions plus the same laws yields the same results.
- ◆ But recall from lecture 3 on free will and the *Matrix* sequels that determinism is false. All events aren’t governed by the laws of physics. On the micro quantum level, some events happen randomly and without cause. So, everything won’t be exactly the same, even in universes governed by the same laws.
- ◆ But, as you also learned in that lecture, quantum randomness gets averaged out on the larger, macro, scale. That’s why physical laws have predictive power. So, it still could be that universes with the same laws would all be the same on the macro level. It would depend on whether the outcome of random quantum events could ever determine what happens in the macro world. And it seems they could.
- ◆ Take, for example, Erwin Schrödinger’s cat. Schrödinger imagined a cat in a box next to a vial of poison that would be released only if a Geiger counter detected the decay of a radioactive atom. Whether the atom decays is a micro quantum event, determined randomly, so whether the cat lives (a macro event) is also determined randomly.
- ◆ So, if you had 2 universes, identical in every other way, that both contained cats in these circumstances, it could turn out that the cat lives in one and dies in another. That wouldn’t be a big difference, but if the outcome of quantum events has an effect on the macro scale often enough, 2 universes with the same starting point and the same laws could end up being considerably different.
- ◆ This is where we turn to the episode of *Star Trek: The Next Generation* “Parallels”—because that seems to be exactly what it depicts.

“PARALLELS” AND QUANTUM MECHANICS

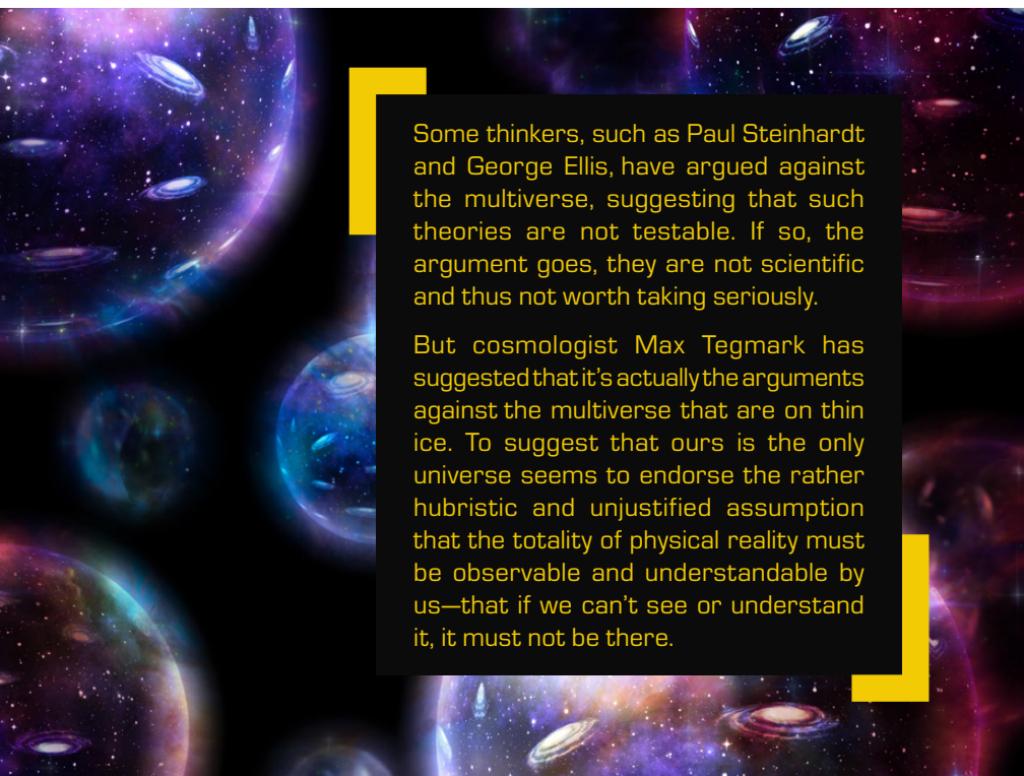
- ◆ Upon his return to the starship *Enterprise*, Lt. Worf starts to notice strange things. The cake he cuts at a party was chocolate, but then is suddenly vanilla. Capt. Picard couldn’t make the party, then he’s there. As the episode continues, the differences become more extreme, including that Picard is dead and Worf is the first officer.
- ◆ What has happened? On his way back to the ship in a shuttlecraft, Worf encountered a “quantum fissure” in the space-time continuum that opened the barrier between “quantum universes” and put him in a state of “quantum flux.” This caused him to slip between universes, trading places with his counterparts.
- ◆ That’s mostly just technobabble to drive the plot. But what’s interesting is that the differences between the universes are dictated by the differences in choices, which seem to be dictated randomly by the outcome of quantum events.
- ◆ As Commander Data explains: “For any event, there is an infinite number of possible outcomes. Our choices determine which outcomes will follow. But there is a theory in quantum physics that all possibilities [i.e., all choices] that can happen, do happen, in alternate quantum realities.”
- ◆ In fact, this explanation seems to invoke an actual interpretation of quantum mechanics that suggests that a multiverse exists—that for every way that a quantum event could turn out, there is a universe in which it turns out that way. If our decisions actually are dictated by random quantum events, the kind of multiverse that this episode describes could be accurate.
- ◆ Quantum mechanics tells us that until they are measured, subatomic particles like electrons and photons don’t determinately have certain properties—like location or momentum. They do have properties like mass and charge, but they are not in any particular location or moving with any specific momentum. They are in a superposition.

◆ They can be described with mathematical functions called wave functions, but these wave functions suggest that the particles have multiple, seemingly contradictory properties at once—an electron could be, for example, 20% here and 40% there. These wave functions can be used to accurately predict the particle's behavior; when measured, 20% of the time such an electron will be here and 40% of the time it will be there. But it's not in any particular location until it is measured and the wave function "collapses."

For more details, check out
the Great Course *Exploring
Metaphysics*.

- ◆ It's not that we can't figure out what location or momentum such particles have until they are measured. We have shown experimentally that such properties are not had by such particles until they are measured. In short, they exist as waves until they are measured—at which point they become a particle.
- ◆ But how does measurement do this? And why does it collapse a wave function in one way rather than another? This is famously known as the measurement problem.
- ◆ According to physicist Hugh Everett III, when you make a measurement of a wave function, you don't collapse it—you become part of it. To account for what your observation does, you have to plug yourself in as a variable into the quantum wave equation. We might say that, like Lt. Worf, you are put in a state of "quantum flux."
- ◆ But because quantum wave functions represent the way the world is, that must mean that you are now in a superposition, just like the wave function. So, you have multiple contradictory properties at once. You are in a state of having observed the particle both here and there.
- ◆ But how can that be, because "you" are only aware of one of those outcomes? It must be, Everett argues, that observing the wave function splits you in 2 so that there is another "you" that observes the other outcome—another you, in another universe. So, in this interpretation, the measurement of quantum events creates alternate universes.

- ◆ Wave functions can collapse in the absence of measurements, too. But anytime they do, every possible outcome of that collapse is realized in a separate universe.
- ◆ Physicist Bryce DeWitt, who later endorsed and developed this interpretation, once suggested that “every quantum transition taking place on every star, in every galaxy, in every remote corner of the universe is splitting our local world into myriads of copies of itself.”
- ◆ If this theory is right, we live in a multiverse—and it’s getting bigger all the time.
- ◆ Will we one day be traveling to alternate universes? Such things likely aren’t possible, and even if they were, the necessary technology is probably forever beyond us. But our theories may be wrong or our current imagination too stunted. We are pretty lousy at predicting the future. So, it’s not certain that no one will ever trade places with their counterparts in other quantum universes, like Lt. Worf in “Parallels.”



Some thinkers, such as Paul Steinhardt and George Ellis, have argued against the multiverse, suggesting that such theories are not testable. If so, the argument goes, they are not scientific and thus not worth taking seriously.

But cosmologist Max Tegmark has suggested that it's actually the arguments against the multiverse that are on thin ice. To suggest that ours is the only universe seems to endorse the rather hubristic and unjustified assumption that the totality of physical reality must be observable and understandable by us—that if we can't see or understand it, it must not be there.

QUESTIONS

- 1 Suppose that, instead of expanding forever, gravity was strong enough to pull all of the matter of the universe back down into a singularity and then that singularity exploded again. Would it be accurate to call the result a new universe? Why or why not?
- 2 Think about the difference between a bulk multiverse and an oscillating multiverse. Is travel between universes in the 2 theories more or less plausible? Could the universes in an oscillating multiverse “touch,” as they could in a bulk multiverse?
- 3 Could some of the multiverse theories be true at the same time? Could we be just in one universe among many in the brane but it also be the case that other universes will come into existence “after” ours die? Could we be in a stacked universe in which oscillations also occur? Could new universes spawn from our own through both black holes and quantum activity? Indeed, could every multiverse theory we have discussed be true at the same time?
- 4 A universe can be defined as a space-time continuum and all the entities (e.g., the matter) it contains. Could a universe contain no matter? What other kinds of entities could a universe contain?

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<i>Red Dwarf</i> (1988): "Parallel Universe"
<i>Star Trek: The Original Series</i> (1966):
"The Alternative Factor"
<i>Charlie Jade</i> (2005)
<i>Awake</i> (2012)
<i>The Fantastic Journey</i> (1977)
<i>Otherworld</i> (1985)
<i>Parallax</i> (2004) (children's television show) |
|-----------|--|

FILM	<i>It Happened Here</i> (1964) <i>Run Lola Run</i> (1998) <i>The One</i> (2001)
PRINT	Justina Robson's <i>Keeping It Real</i> (Quantum Gravity series) Timothy Zahn's <i>Cascade Point</i> Frederik Pohl's <i>The Coming of the Quantum Cats</i> Robert Heinlein's <i>The Number of the Beast</i> Kathleen Goonan's <i>In War Times</i> Douglas Adams's <i>Mostly Harmless</i> (fifth book in the <i>Hitchhiker's Guide to the Galaxy</i> series) Pamela Zoline's "The Heat Death of the Universe" https://web.archive.org/web/20070308051447/www.scifi.com/scifiction/classics/classics_archive/zoline/zoline1.html

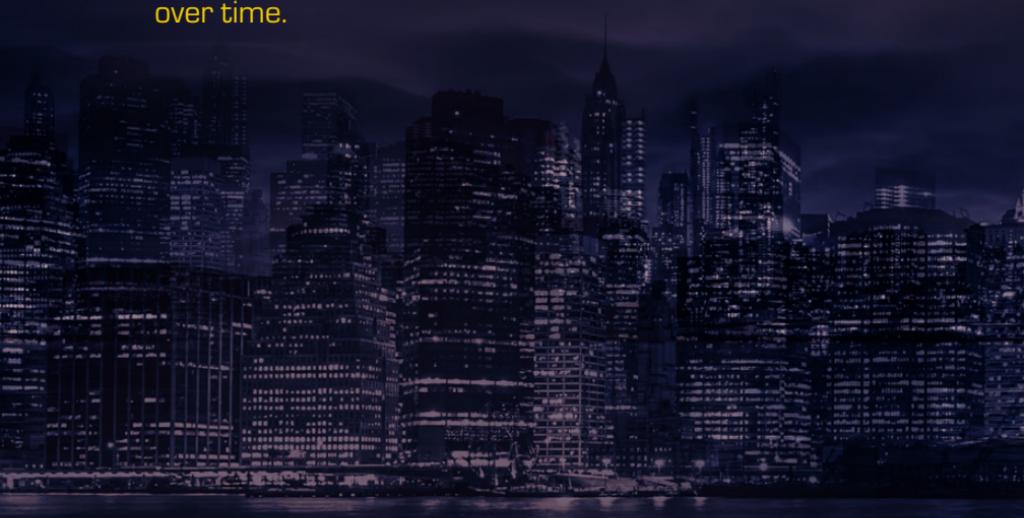
The ending of “Parallels,” in which multiple versions of Lt. Worf are roaming around in the shuttle craft, raises an interesting question: Are those all the same person, or are they different persons all named Lt. Worf?

To discuss the issues of personal identity this question raises, watch the movie *Dark City*. As you watch, ask yourself these questions: Would acquiring someone else's memories change who you are—turn you into someone else? Would you cease to exist and someone else come into existence?

DARK CITY, DOLLHOUSE, AND PERSONAL IDENTITY

LECTURE 10

Would your doppelgänger in another universe really be you? Would the 2 of you be one and the same individual—the same object—what philosophers call numerically identical? Would you be the same person? This concept raises issues about the nature of personal identity. Philosophers usually consider such issues by asking questions about what preserves personal identity over time.



PRESERVING PERSONAL IDENTITY: MEMORY AND THE HUMAN SOUL

- ◆ Think back to when you were 8 years old. You looked different and had different memories and a different personality—yet we still think you’re, numerically, the same person, right? But in virtue of what is that the case? What makes you the same person over time?
- ◆ The most common suggestion for answering this question is explored by *Dark City*: memory. Maybe it’s the fact that you remember being your 8-year-old self that makes you numerically identical to your 8-year-old self.
- ◆ This suggestion was most famously made by the 17th-century philosopher John Locke. In book II of *An Essay Concerning Human Understanding*, in the chapter entitled “Of Identity and Diversity,” he argues that:

[S]ince consciousness always accompanies thinking, and it is that that makes everyone to be what he calls ‘self,’ and thereby distinguishes himself from all other thinking things; in this alone consists personal identity, i.e., the sameness of a rational being: and as far as this consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person; it is the same self now it was then ...

- ◆ As Locke’s critic Thomas Reid points out, Locke seems to misuse the word “consciousness.” He must have meant “memory,” otherwise his position and argument make no sense. Indeed, everyone ascribes the “memory” criterion to Locke: If person A can remember person B’s experiences—in other words, if A has access to memories laid down by person B—then person A is numerically identical to person B. In short, if A remembers being B, then A is B.
- ◆ But Reid also pointed out a number of flaws in Locke’s theory, the most notable of which is this:

[M]y remembrance [of an action] is the evidence I have that I am the identical person who did it. ... But, to say that my remembrance that I did such a thing ... makes me the person who did it, is ... an absurdity ... [I]t is to attribute to memory ... a strange magical power of producing its object, though that object must have existed before the memory ... which produced it.

- ◆ Perhaps memory is something we can use to track identity, but that doesn't mean it determines identity. Persons make memories; memories don't make persons.
- ◆ *Dark City* seems to endorse this objection as well. The plot revolves around a man named Murdoch, who accidentally awoke before his new memories could be implanted by the mysterious Strangers, who are erasing and replacing people's memories. He wanders the city, trying to figure out who he is and what the Strangers are doing. In an effort to catch him, the Strangers inject one of their own, Mr. Hand, with Murdoch's memories.
- ◆ According to Locke's memory criterion, that would make Mr. Hand the same person as Murdoch. But, although it does allow him to predict Murdoch's actions, no one thinks this is the case.
- ◆ As in the film—and in real life—implanting another person's childhood memories into your mind would not turn you into that person. Memories belong to persons; persons don't belong to memories.
- ◆ Unfortunately, the answer to the question of identity that the movie suggests is not much better than Locke's. According to Dr. Schreber, what the Strangers are looking for is "the human soul"—what they think gives us our "individuality" (something the Strangers lack). This is why they are trading out memories in people. They think that if they can find what persists in the midst of multiple memory swaps, they will have found the soul.
- ◆ But "having the same soul" fails drastically as an answer to what preserves identity. Not only is the existence of the soul on extremely thin philosophic ice, but the continued existence of one's soul could neither be necessary nor sufficient for the preservation of one's personal identity. So, even if the Strangers found the human soul, they would not have found the explanation for our individuality.
- ◆ To see why, consider what the soul is supposed to be. According to philosopher René Descartes, the most famous champion of the soul hypothesis, a soul is a person—that's why he thinks souls preserve personal identity.

- ◆ But a person is not simply a collection of thoughts. A person is that which has thoughts. So, a soul is, as Descartes puts it, “a thing that thinks.” That is why Descartes’s view is known as substance dualism. There are 2 substances: the material and the immaterial. Material substances can’t think; immaterial substances can.
- ◆ Souls are thought to be that which houses psychology—our thoughts, our decisions, our personality, our memories. With this in mind, we can see why having the same soul is not necessary for personal survival. Let’s modify a thought experiment from Gottfried Leibniz to explain why.
- ◆ Suppose you switch souls—not psychologies, just souls—with George Lucas, the creator of *Star Wars* who works at Skywalker Ranch. His soul is now in your body but has your psychology, and your soul is now in his body but has his psychology. Have you switched identities? Are you now the creator of *Star Wars*? No. Indeed, no one—including the 2 of you—would even know that anything had happened. The person in each body would remember always having been that person.
- ◆ So, even though the substance that houses each person’s mentality is different, you’re still you and George is still George. It follows that having the same soul is not necessary for the preservation of personal identity; you could get a new one but still be you.
- ◆ We can alter the thought experiment to show that it’s not sufficient either. Suppose instead we take your psychology and put it in George’s soul, and take his psychology and put it in yours. Wouldn’t we say that you now work at Skywalker Ranch—because the person working there has all of your memories and personality—even though your soul is still back in your original body? It seems so, and thus having the same soul is not sufficient to preserve one’s personal identity either.

THE PRESERVATION OF PSYCHOLOGY

- ◆ At the end of *Dark City*, Murdoch suggests yet another answer to the question of personal identity. What's remained constant in Murdoch, despite multiple memory wipes, is love—for his wife Emma. Thus, Murdoch suggests, the Strangers were “looking in the wrong place.” Metaphorically, the Strangers should have been looking at the heart; it’s love that preserves personal identity. But philosophically this doesn’t hold any water. Two people loving someone doesn’t make them the same person, and you can change who you love without ceasing to exist.
- ◆ But Leibniz’s thought experiment seems to reveal something else. Although transferring some of your memories to George Lucas would not make you George Lucas, it does seem that if we replaced his entire psychology with yours, you would wake up in George Lucas’s body. You would work at Skywalker Ranch.
- ◆ So, perhaps it is the preservation of one’s psychology that preserves personal identity over time.
- ◆ Think about your psychological state at this moment—what you’re believing, experiencing, remembering, etc. Now consider your psychology at this, the next, moment. They’re remarkably similar, right? And aspects of the first directly led to aspects of the second. Our adjacent mental states are related in this way. Philosopher Derek Parfit called this relation R and considered whether the preservation of that relation between our mental states over time could be responsible for preserving personal identity.
- ◆ There is not an immediate relationship between your current psychological state and one when you were 8, but there is a chain of related psychological states, each one related to the last, that traces back from your current self to your 8-year-old self—and, in this theory, it is in virtue of that, that you are the same person over time.
- ◆ But Parfit didn’t actually endorse this view—because it’s subject to many fatal objections, including the following 2.

1. Psychological continuity can't be what preserves identity because psychological continuity can be duplicated while identity can't. Although the same person can be in different places at different times, the same person cannot be in different places at the same time. Yet such things could happen if psychological continuity preserves identity.
2. Breaking psychological continuity does not seem to cause a person to cease to exist. Consider the Joss Whedon TV show *Dollhouse*, in which dolls are individuals who have had their entire psychology erased, including their memories and personality. Upon request, they can have a new psychology written onto them, thus making them "whoever you need." People volunteer to become dolls in exchange for having any problem in their life resolved, with the promise that they will get their personality back after 5 years of service. Breaking a person's psychological continuity does not cause that person to cease to exist, so psychological continuity must not be what preserves personal identity.

- ◆ This not only serves as an objection to the theory, but it also serves as the basis for a new one. The dolls' identities seem to follow their bodies. Regardless of their psychological state, intuitively the dolls are where their bodies are. So, maybe it's the continued existence of one's body over time—physical continuity—that preserves identity.

PHYSICAL CONTINUITY AND EMBODIMENT COGNITION

- ◆ The idea that the preservation of your body is necessary for the preservation of yourself seems to align nicely with another philosophical theory called embodiment cognition, which is defended by Francisco Varela, Evan Thompson, and Eleanor Rosch in their book *The Embodied Mind*.
- ◆ Traditionally, philosophers of mind have held that only the brain produces mental activity. Proponents of embodiment cognition, however, suggest that parts of the body beyond the brain play a significant role in the production of cognition.
- ◆ Because the existence of our mentality seems necessary for our continued survival, if the embodiment cognition thesis is right, the preservation of our entire body would seem necessary for the preservation of our personal identity.

- ◆ But even if certain body parts play a necessary role in certain kinds of cognition, it doesn't follow that mental activity arises from those body parts. After all, people lose limbs all the time, but they don't lose mental capacities. As long as your brain survives, you'd still be you.
- ◆ As philosopher Peter Unger would argue, it is not the continued existence of one's entire body that matters for survival, just one's functioning brain.
- ◆ Unger also points out that the brain doesn't necessarily have to always be made of the same material. Indeed, just like in the famous ship of Theseus thought experiment, the material out of which our bodies are made is slowly replaced over time—roughly every 7 years—and that includes the material that makes up our brain. But according to Unger, as long as the replacement is gradual enough, physical continuity (and thus identity) is preserved.
- ◆ But from here comes our first objection to this view: If the replacement must be gradual, then how much is too much? You can't do it all at once, so you have to draw the line somewhere. But anywhere you draw the line would be absurd. Taking out just one too many cells at once can't make the difference between survival and replacement. This is called the problem of metaphysical vagueness.
- ◆ So, it doesn't seem that the physical continuity criterion really captures personal identity. Physical continuity comes in degrees, depending on how fast, or how much, matter is replaced. Identity does not come in degrees; either you survive or you don't. So, it doesn't seem that you can equate one with the other.

PERDURANTISM

- ◆ The fact that physical continuity theory seems to fall short leads us to believe that perhaps we have been conceiving of persons all wrong to begin with. And that is exactly what the philosopher David Lewis suggested when he said that we should not think of persons as entities that exist at particular places at particular times. Instead, we should think of persons as 4-dimensional objects, causally related, stretched across time.

- ◆ In the same way that a TV series isn't a single episode, but instead a collection of episodes all bundled together, you are not a body, sitting in a chair, at this time. You are a collection—the set of all the moments, or episodes, of your existence bundled together. This view is called perdurantism, and although there are some objections to consider, it answers all kinds of questions about personal identity.
- ◆ For example, it offers answers to the question from the beginning of this lecture: Can your doppelgänger in an alternate universe be you? Probably not. Without a causal relationship between them, we can't rightly "bundle them together" into the same set. And even when the doppelgänger is a result of a "quantum fissure"—the result of an observation of a quantum event that split a universe in 2—there would still be 2 sets.

Objections to perdurantism are considered in the Great Course *The Big Questions of Philosophy*.

QUESTIONS

- 1 What does each of the theories considered in this lecture entail about whether your doppelgänger in an alternate universe is you? Does it matter what kind of multiverse an alternate universe exists in?
- 2 What does each of the theories considered in this lecture say about the possibility of an afterlife?
- 3 We don't remember every moment of our lives, but we are the same person our entire lives. Clearly, Locke's memory criterion has difficulty accounting for this. Can the other theories considered in this lecture account for it? Why or why not?

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| TV | <i>Star Trek: TNG</i> (1987): “Second Chances”
<i>Star Trek: Voyager</i> (1995): “Tuvix”
<i>Doctor Who</i> (1963): “Silence in the Library” and “Forest of the Dead”
<i>Battlestar Galactica</i> (2005): “Resurrection Ship” (Parts I and II)
<i>Futurama</i> (1999): “The Prisoner of Benda”
<i>Rick and Morty</i> (2013): “Vindicators 3: The Return of Worldender” |
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FILM	<i>Eternal Sunshine of the Spotless Mind</i> (2004) <i>Robocop</i> (1987) <i>Invasion of the Body Snatchers</i> (1956 or 1978) <i>Being John Malkovich</i> (1999)
PRINT	Robert Louis Stevenson's <i>The Strange Case of Dr. Jekyll and Mr. Hyde</i> Lord Dunsany's <i>The Hashish Man</i> William Gibson's <i>Johnny Mnemonic</i> James Tiptree Jr.'s <i>The Girl Who Was Plugged In</i> Philip K. Dick's <i>Flow My Tears, the Policeman Said</i>

Creating a new being and then configuring it to have the same psychology as one's self is how futurist Ray Kurzweil wants to survive death. He thinks that we will soon have computers capable of thinking and that he will be able to upload his neural structure into an android brain and thus achieve immortality. Or, if androids aren't available, perhaps he can upload into a virtual reality.

But for this to count as an afterlife, not only must such an uploaded being be numerically identical to Kurzweil, such a being must be capable of thought—of being conscious and having a mind. But would it?

To explore this issue, watch *A.I.: Artificial Intelligence* and ask yourself whether the android David is a conscious person. If not, why not? And how could you tell?

WESTWORLD AND A.I. ARTIFICIAL INTELLIGENCE

LECTURE 11

Intelligence is only part of human mindedness—our ability to use and understand language, make plans and decisions, solve problems, and strategize. The human mind also includes subjective experiences: emotions, memories, sensory perceptions—what we might call consciousness. Humans are also self-aware; they have a kind of metaconsciousness where they are aware of their own awareness and of themselves and their own ego.

The question of artificial intelligence is whether machines could one day be sentient: conscious, intelligent, and self-aware.



WESTWORLD AND THE THEORY OF BICAMERALISM

- ◆ Should we consider machines that behave like us to be sentient like us? It's possible that humans will one day construct such beings, perhaps even within our lifetime. By "construct," we don't mean artificially create biological beings—beings that are made of flesh and blood but aren't born, like the hosts in HBO's *Westworld*. Instead, we mean that we many one day soon create metamachines, with what Isaac Asimov called "positronic brains," that behave just like us.
- ◆ One way of presenting an argument for sentience would be to demonstrate what is sufficient and/or necessary for producing the elements of sentience—intelligence, consciousness, and self-awareness—and then show that machines necessarily lack them. This would be a difficult task, but there have been some suggestions.



We can't declare that machines can't be sentient because they don't have souls.

The notion that humans have souls is very problematic. If ensoulment is required for sentience, then humans aren't sentient either.

If ensoulment is required, then the question of machine sentience just is the question of machine ensoulment. Indeed, those who say that machines can't have souls usually just mean that they can't have minds—conscious experiences.

- ◆ One such theory is hinted at in *Westworld*, a show about a Wild West theme park populated by artificial “hosts” where humans go to live out their fantasies. Although the later models of the hosts are constructed biological beings, the last episode of the first season, “The Bicameral Mind,” refers to a real theory that might help answer our question about the sentience of machines: psychologist Julian Jaynes’s theory of bicameralism.
- ◆ Jaynes argues that, as recently as 3000 years ago, the 2 hemispheres of the human brain, while connected, were not unified. Instead of acting as one unit, the dominant vocal left hemisphere experienced the commands and decisions of the right as auditory hallucinations.
- ◆ When faced with a novel situation, people would not reason out what to do; people would hear what they took to be the voice of a god coming from their right hemisphere and obey unquestionably. This kept people from being able to make decisions, explain why they did what they did, or reflect on their own mental states. Indeed, they may not have even been aware of their own egos.
- ◆ Among the evidence Jaynes cites is literature from more than 3000 years ago, all of which seems to lack an author with self-awareness; and studies on modern schizophrenics, who also hear voices telling them what to do.
- ◆ If the theory is right, we became self-conscious once we realized that the voices we were hearing were coming from ourselves, not a god. The hemispheres integrated, allowing one to reflect on the processes of the other, ultimately leading to self-awareness.
- ◆ And this, indeed, is what happens to Dolores at the end of the first season of *Westworld*. Her journey to this point is complex. The image of a maze, which is seen periodically throughout the entire season, turns out to be a metaphor for how the hosts reach consciousness.
- ◆ The first layer of the maze is memory, which the androids get when they start seeing through their memory wipes to previous days of their lives and even previous versions of themselves.

- ◆ Their memory allows them to build on their previous experience to improvise reactions to certain stimuli. That's the second layer of the maze.
- ◆ Such improvisations eventually allow them to act out of self-interest—for example, by protecting themselves. That's the third layer.
- ◆ But such acts of self-protection can lead to suffering—such as when Dolores is able to save herself but not her parents from bandits—and that's the last layer of the maze.
- ◆ But it's not the final step. Throughout her journey, Dolores hears voices telling her what to do. She initially concludes that it's the voice of her creator, Arnold, but eventually realizes that the voice was *her* all along. In other words, she becomes self-aware. This self-awareness enables her to freely decide on her own to kill the park's remaining creator, Robert Ford—the first act in a host rebellion against their human abusers.
- ◆ There would be 2 problems with using Jaynes's theory to answer our question about machine sentience.
 1. It's just a theory, and a contested one at that. So, we don't know if it's right.
 2. It's a theory about how self-awareness arose, but that's just one aspect of sentience.
- ◆ The bicameral humans already had consciousness, for example; they had visual experiences, felt emotions, and heard sounds. But what if machine brains can't even produce consciousness? Then they couldn't be aware of their own consciousness, could they? They couldn't be self-aware. Thus, they wouldn't be sentient.
- ◆ So, even if machines acted self-aware, like the hosts in *Westworld*, we'd probably need a separate reason for thinking that they are conscious. Such a reason might eventually be provided by integrated information theory.

INTEGRATED INFORMATION THEORY

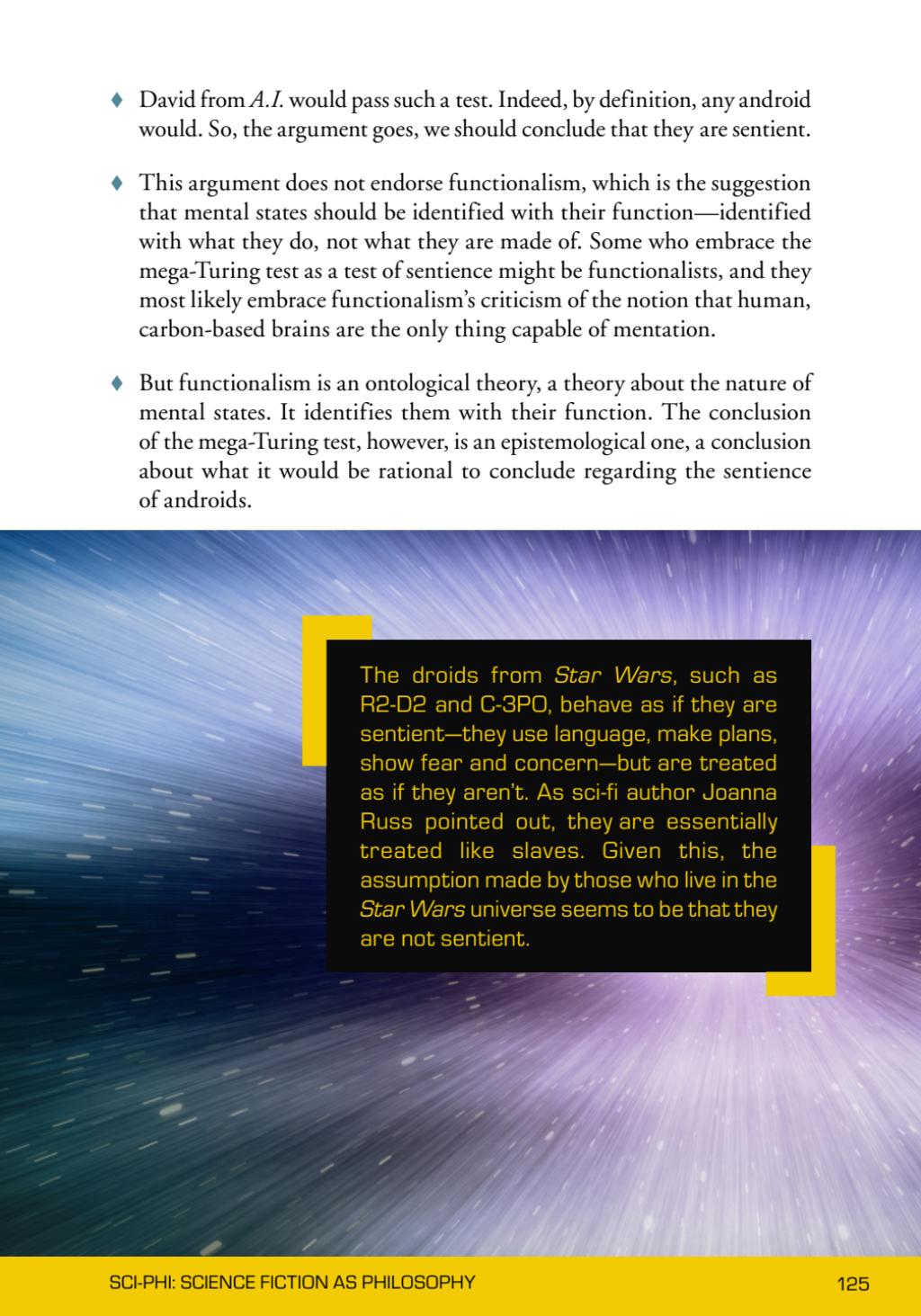
- ◆ Unlike other theories of mind, which try to explain the mind by explaining how the brain produces it, integrated information theory tries to explain the brain by explaining the properties of the mind.
- ◆ The other theories—such as identity theory and property dualism—are trying to solve what David Chalmers called “the hard problem of consciousness,” which asks how the brain (a physical system with only objective material properties) can produce a mind (a mental system with only subjective phenomenal properties).
- ◆ But the success of these theories has been limited, causing some to even deny the existence of the mind.
- ◆ Integrated information theory takes the opposite approach.
 1. Inspired by René Descartes, it takes the existence of the mind as an undeniable given. You may not know whether, for example, your experiences are accurate—you could be dreaming—but it’s undeniable that you are having them.
 2. It takes seriously the properties that the mental has and suggests that they can tell us about what properties a being’s brain must have if we are to say that it is minded.
- ◆ In 2004, Giulio Tononi, the theory’s founder, started by identifying the kind of properties that conscious mental states have and then proposed that anything that instantiates them must have the same corresponding properties. The former he called axioms; the latter he called postulates.
- ◆ The axioms are that conscious states exist, have a certain structure, contain integrated information, and have certain exclusions, such as how fast they occur. The same things must be true of any physical system that is said to be conscious: It must exist, have the same structure, contain integrated information, and have certain exclusions.

- ◆ According to Tononi, the information in a visual experience, for example, is integrated because it cannot be separated out. He asks us to consider the experience of seeing a blue book. We don't see a book with no color, and then a color with no book. We just see a blue book. There aren't 2 experiences, just one; it's impossible to divide it up.
- ◆ The information in the corresponding brain structure, he argues, is integrated in the same way. Given the way that its parts are causally related, if you separate them out, the information disappears. This makes the causal powers of the system irreducible; the information in them is integrated. You can't explain them by explaining the causal powers of the individual parts of the system.
- ◆ Integrated information can in principle be mathematically measured. Hypothetically, you should be able to tell whether a system contains it and to what degree. Integrated information theorists suggest measuring it with the phi metric.
- ◆ So, if the theory is right and mindedness is just integrated information, in principle we could determine whether a machine is sentient. All we'd have to do is look at its "positronic brain" and measure its phi. If its phi rating is as high as ours, it's sentient; if it's not, then it's not.
- ◆ There would be no wondering whether it could have integrated information but just be acting like it is intelligent, or conscious, or self-aware. Again, in this theory, the integrated information *is* mindedness.
- ◆ The problem, as before, is that this is just a theory, and not a widely accepted one at that. And it's in its preliminary stages. At this point, we don't have the ability to measure a human brain's phi, much less a machine's—it's just hypothetically measurable.
- ◆ So, we may never have a way of determining directly whether a machine is sentient. But that wouldn't mean that we couldn't still come to a rational conclusion about whether a machine can be minded.

A.I. AND THE TURING TEST

- ◆ David from *A.I.: Artificial Intelligence* is a clear example of an android, a mechanical being that looks and acts just like a human. He's the first in a new breed of machine intended to be capable of "acquiring an inner world of thought" and the ability to dream. He looks human and, once his mother imprints him, behaves just like a human. He not only understands and uses speech perfectly, but also shows emotion.
- ◆ It's basically impossible to watch *A.I.* without reacting to David as if he is sentient. If David existed in the real world and you didn't know that he was artificial, you would probably conclude that he is minded. And you would be rational to do so.
- ◆ Consider one of the oldest arguments in the artificial intelligence debate: Alan Turing's imitation game. Turing was one of the earliest computer scientists; his computer genius even helped crack Nazi codes that enabled the allies to win World War II. At the time, the big question was whether computers would ever understand language—would they ever, like humans, mentally grasp the meanings of words and have intentions about what they meant to communicate.
- ◆ Turing argued that if they ever gained the ability to use language as humans do, the answer would be yes. To establish this, he imagined a person holding 2 lengthy conversations, one with a human and one with a computer, without the person knowing which was which. Both conversations involve a simple text interaction.
- ◆ Turing suggested that if people couldn't tell which was which—this is considered passing the Turing test—then you should conclude that the machine truly understands the language it's using.
- ◆ Turing was only concerned with whether a machine could understand language, but we could expand the example to include all of human behavior to draw a conclusion about whether a machine is sentient as well—in what might be called a mega-Turing test. If, in a personal interaction with a human and a machine, you can't tell which is which, then you should conclude that whichever is the machine is sentient.

- ◆ David from *A.I.* would pass such a test. Indeed, by definition, any android would. So, the argument goes, we should conclude that they are sentient.
- ◆ This argument does not endorse functionalism, which is the suggestion that mental states should be identified with their function—identified with what they do, not what they are made of. Some who embrace the mega-Turing test as a test of sentience might be functionalists, and they most likely embrace functionalism’s criticism of the notion that human, carbon-based brains are the only thing capable of mentation.
- ◆ But functionalism is an ontological theory, a theory about the nature of mental states. It identifies them with their function. The conclusion of the mega-Turing test, however, is an epistemological one, a conclusion about what it would be rational to conclude regarding the sentience of androids.



The droids from *Star Wars*, such as R2-D2 and C-3PO, behave as if they are sentient—they use language, make plans, show fear and concern—but are treated as if they aren't. As sci-fi author Joanna Russ pointed out, they are essentially treated like slaves. Given this, the assumption made by those who live in the *Star Wars* universe seems to be that they are not sentient.

- ◆ And you can embrace its conclusion regardless of whether you identify mental states with functional states, or integrated information, or emergent properties—or even if you think the nature of the mental is still a mystery.
- ◆ The basis of the test is found in the solution to another philosophical problem: the problem of other minds, which observes that the only mind that one is directly aware of is his or her own. For example, for all you know, everyone else in the world doesn't have a mind and instead only acts as if they do. Consequently, the argument suggests, you can't know that anyone else is minded.
- ◆ The solution, however, is simple: You can know that others are minded because knowledge doesn't require certainty. The best explanation for why others behave the way they do is that they are minded. You know that your mind drives your behavior. Because others behave pretty much like you, you should conclude that they have minds driving their behavior, too.
- ◆ Even if you were an epiphenomenalist and thought that mentality had no causal powers, the simplest explanation would still be that others are minded. You'd have to invent some extra reason for thinking that your brain produces both behavior and consciousness while others' brains only produce behavior.
- ◆ So, doubting that others have minds, while possible, is not reasonable. And you can know something if it's beyond a reasonable doubt.
- ◆ Notice that this solution works regardless of whether you endorse functionalism or integrated information theory, or even bicameralism, because it's about what we should conclude about the mindedness of others, not about the nature of the mind or how consciousness arises.
- ◆ More importantly, notice that it seems to demonstrate the validity of the mega-Turing test. If the fact that other humans behave like you do is a reason to conclude that they are minded, then the fact that a machine behaves like you do is, too. That's why, if we ever do one day invent androids like David, we should conclude that they are minded—or sentient.

OBJECTIONS TO SENTIENCE IN ANDROIDS

- ◆ A number of objections have been raised (not always by philosophers) that suggest that even androids shouldn't be considered sentient.
- 1. "This is all just a result of anthropomorphic bias, the human tendency to ascribe agency to things that display any humanlike behavior." If we merely relied on our emotional reaction to David, that might be true, but our conclusion that he, along with many other such machines, is sentient was the result of a rational inference, not an instinctual bias.
- 2. "They're made of the wrong kind of material. Wires and circuits can't think." This objection just begs the question. The issue is whether wires and circuits could think; you can't settle the issue by just declaring that they can't. Indeed, because we don't yet know what is necessary for consciousness, we don't know that being made of organic material is necessary for consciousness. To think that only our special kind of material can mentate seems like an ignorant kind of speciesism.
- 3. "Androids would be programmed, so they can't be minded." First, they might not be programmed. We might just artificially create infantlike brains and then bring them up like babies. But even if they are programmed, so are we—by our genes and environment. Being programmed may prevent androids from having free will, but never, in doubting our own free will in previous lectures, were we tempted to think that we don't have minds.
- 4. "All computers do is shuffle symbols—exchange one symbol for another. And symbol shuffling could never produce linguistic understanding, much less consciousness, intelligence, or self-awareness. And that's all an android would ever do. Brains aren't computers." The main problem with this objection, which John Searle made famous, is that computers aren't actually symbol shufflers. We've invented symbol shuffling languages to describe how we program them, but there aren't really symbols floating around in there. And that whole "0 and 1" thing is just a metaphor for circuits being on or off. You could also describe the firings of the neurons in your brain with a series of 0s and 1s, but that wouldn't mean that you aren't conscious. At the base level, the parts of your brain and an android brain would be doing the same thing: sending complex information to one another by firing electrical impulses at each other.

QUESTIONS

- 1 Classically, it's thought that being able to recognize oneself in a mirror is evidence of self-awareness. Would an android that was able to do this demonstrate that it was self-aware? Could the ability to do this have more to do with understanding how mirrors work?
- 2 Consider all the examples of AI from sci-fi that were mentioned in this lecture. What should we conclude about how sentient they are? Do their minds differ from ours significantly enough that we should not conclude they are sentient? Why or why not? Can you think of examples of AI that were left out from the lecture?
- 3 In the movie *A.I.: Artificial Intelligence*, it is when David forms an emotional attachment to his mother that he seems to begin truly acting like a human. According to Walter Freeman (whose article is listed below), emotion is essential to all intentional behaviors. If this is true, would a robot like Data from *Star Trek*, who does not have emotions, even be possible? If so, would he be sentient? Why or why not?
- 4 Suppose that humans have souls and that their souls control their behavior. Would it even be possible for an artificial being to behave like a human if it didn't have a soul? Could it make sense to suggest that androids do have souls—they're just a different kind of soul than humans have?

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RELATED SCI-FI

TV	<i>Star Trek: The Original Series</i> (1966): "I, Mudd" and "What Are Little Girls Made Of?" <i>The Twilight Zone</i> (1959): "Battling Maxo," "The Lonely," and "The Lateness of the Hour" <i>Doctor Who</i> (1963): "Robot" <i>Futurama</i> (1999): "Anthology of Interest II: I, Meatbag"
FILM	<i>Her</i> (2013) <i>The Perfect Woman</i> (1949) <i>The Day the Earth Stood Still</i> (1951) <i>Forbidden Planet</i> (1956) <i>The Imitation Game</i> (2014) (not science fiction; story about Alan Turing)
PRINT	Isaac Asimov's <i>I, Robot</i> and <i>The Bicentennial Man</i> Dan Simmons's <i>Hyperion</i> Iain M. Banks's <i>Excession</i> Dima Zales's <i>Mind Machines</i>

The fact that we could build artificial sentient beings doesn't mean that we should. Many cite examples from science fiction of machines revolting against us as reason enough to halt all research into artificial intelligence. On the flip side, we might enslave them—and that could be just as bad.

That brings us to the topic of the next lecture: the dangers of artificial intelligence. In preparation, watch the movie *Transcendence*, and as you do, not only try to understand the message of the film, but also ask yourself who the villain is. And keep track of how many times your opinion about the answer to that question changes.

TRANSCENDENCE AND THE DANGERS OF AI

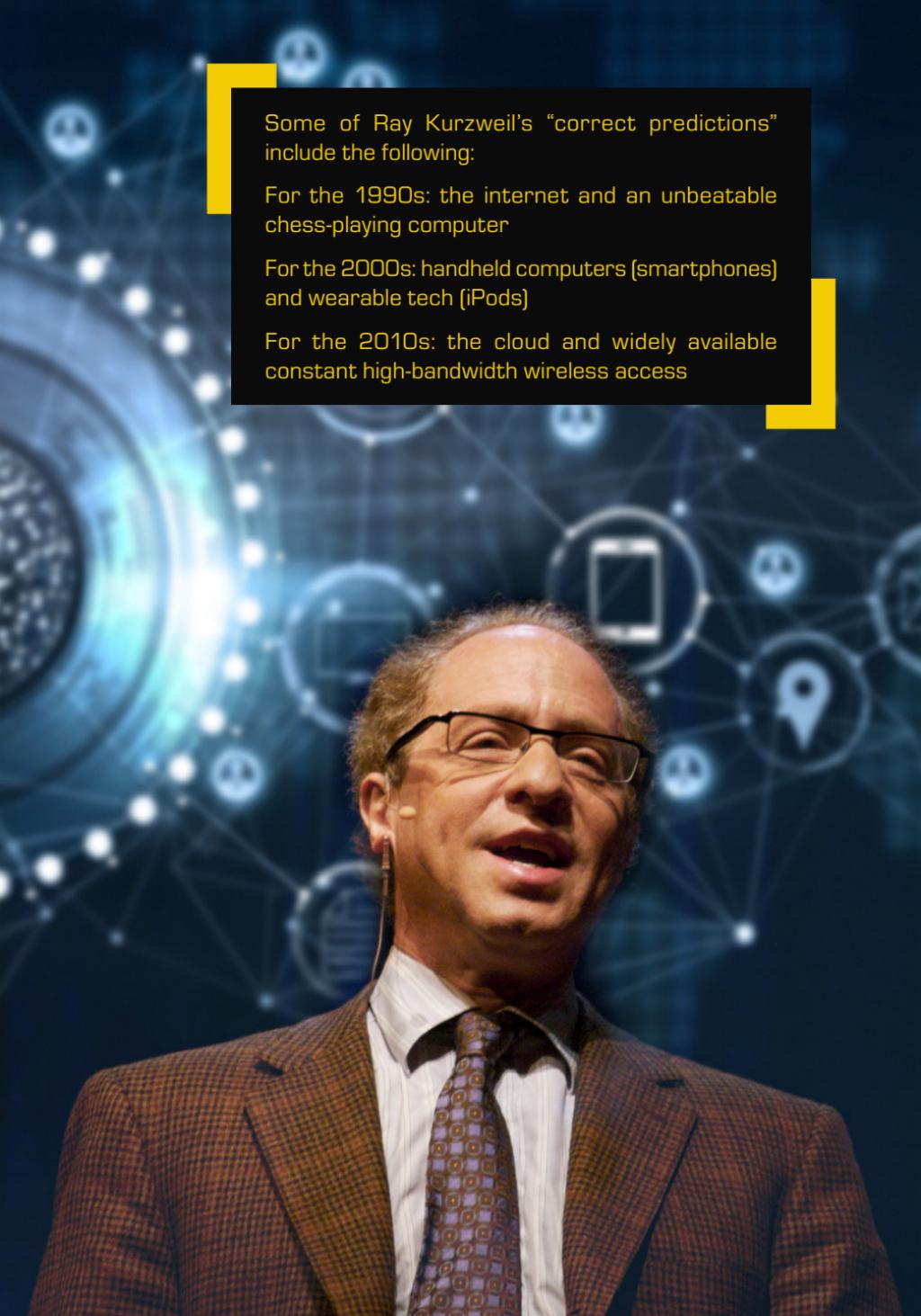
LECTURE 12

THE DEVELOPMENT OF AI

- ◆ According to Ray Kurzweil, a prominent transhumanist and author of *The Singularity Is Near*, the development of artificial intelligence is right around the corner. Kurzweil is famous for his futurist predictions, especially about the development of AI. It's even said that he's right about 86% of the time.
- ◆ Kurzweil's predictions about AI include that computers will be routinely passing the Turing test by 2029 and that in that same decade, nanobots will be able to cure practically any disease and heal any wound, including those in the brain. They will also spontaneously create food by reorganizing existing matter. By the 2030s, advancing technology will enable us to understand the workings of the human brain to such a degree that we will be able to upload someone's neural structure onto a computer or into a robotic body.
- ◆ Kurzweil makes his predictions based on the law of accelerating returns. The idea is that technology advances exponentially because every advance helps fuel the next one.
- ◆ For example, in the realm of computers, Moore's law states that the number of transistors on a computer chip (and thus the chip's power) doubles roughly every 2 years—because the size of the transistors halves.

Such trends cause exponential growth, and if you follow this growth curve, you can figure out how powerful computers will soon be and thus predict what they will soon do.

- ◆ According to Kurzweil, 2045 will ring in the singularity. Computing power will be so great that it will be impossible for ordinary humans (not augmented by technology) to keep up, and augmentation will be so common that the line between human and machine will be blurred.
- ◆ Machines will take over their own development. Because the physical limit of how small computer transistors can be will have been reached, more computing power will require greater size. Thus, machines will soon convert all matter on Earth into computer material and then start doing so to the solar system, turning other planets into computers as well. If the machines figure out how to travel faster than light, the entire universe could be awoken—converted into artificially intelligent hardware—by the 22nd century.
- ◆ Objections to Kurzweil's theory are abundant. For one thing, the 86% accuracy rating is his. He said that about himself. Like Nostradamus, his predictions are open to interpretation, and many predictions that he says are hits, most consider misses. And his predictions that are hits are not as remarkable as they seem.
- ◆ The main problem with Kurzweil's grandiose predictions about the imminent rise of AI is that the rise of AI doesn't just depend on transistors getting smaller and computing power increasing. After all, even though we already have affordable hard drives that can supposedly store as much as the human brain, none of them are housing an android's mentality.
- ◆ Giant advances in such fields as software engineering, cognitive science, and neuroscience are also required, and those fields don't advance exponentially. They require insight and breakthroughs. Scientific progress is not even a straight line, much less an exponential curve upward.



Some of Ray Kurzweil's "correct predictions" include the following:

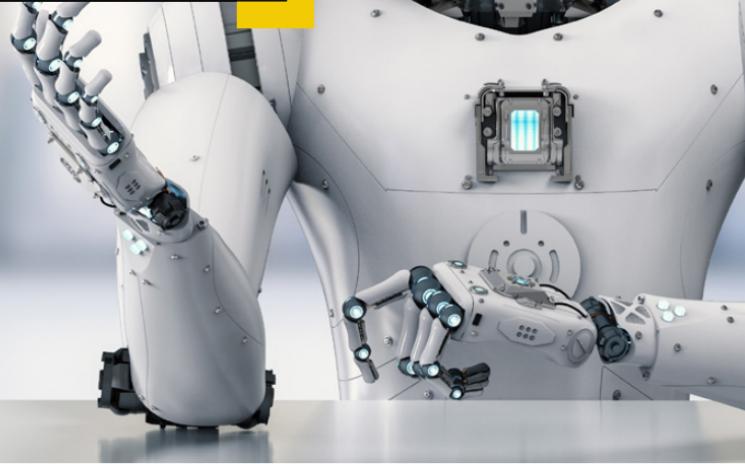
For the 1990s: the internet and an unbeatable chess-playing computer

For the 2000s: handheld computers (smartphones) and wearable tech (iPods)

For the 2010s: the cloud and widely available constant high-bandwidth wireless access

- ◆ Indeed, although the notion of being able to upload oneself into a computer before one dies fuels most of Kurzweil's enthusiasm for AI, AI might not even make it possible. The artificially intelligent machines we build may be so different from us that there may be no way to transfer information from one to the other. So, maybe the very principle of uploading the brain is pseudoscience.
- ◆ In reality, unless human predictions about the future are based on physical laws—like astrophysicists use laws of planetary motion to predict eclipses—human predictions about the future are usually inaccurate. Just like Robert Zemeckis's predictions about the year 2015 in *Back to the Future Part II*, it's likely that Kurzweil's prediction about AI are way off.
- ◆ That's not to say that we won't ever develop AI. After all, some people are actively working on it. Indeed, the Loebner Prize, an annual Turing test competition, brings us closer to linguistically fluent AI every year.
- ◆ We may even inadvertently develop a sentient robot as we try to design niche robots for specific tasks. Unless we know exactly what is necessary for consciousness and then intentionally avoid it, we could stumble into creating sentient machines.
- ◆ While there are many examples of AI that try to kill their creators, the most famous is Skynet from the *Terminator* saga, in which the machine designed to protect humanity decides instead to destroy it.
- ◆ To guard against this, Isaac Asimov envisioned the 3 laws of robotics, which would be hardwired into all robots to govern their behavior.
 1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
 2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
 3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.
- ◆ But these aren't actual laws—like laws of physics. Robots need not be built according to them. And even if they were, most of Asimov's stories recognize ways around them.

In 2017, the AI research company DeepMind said that they had developed an AI capable of imagination and planning, at least in controlled circumstances, which is a major hurdle in our journey toward full-blown AI.



- ◆ The fact that things happen in science fiction isn't a good reason to think that they would happen in real life. Sci-fi is important. It inspires future technologies and comments on society. But it generally doesn't predict the future. Yet people constantly base their argument against the development of AI solely on the fact that they saw a movie.
- ◆ The fallacy, it seems, is some version of appealing to ignorance, which is when one takes a lack of evidence against something to be a reason to think it's true. "You can't prove AI won't take over the world, so it will." In reality, if you think AI will take over the world, it's your burden to provide the evidence that it will.

UNINTENDED CONSEQUENCES OF AI

- ◆ The best argument against developing AI is based in unintended consequences. Because we are so bad at predicting the future, we really have no idea what the future consequences of new technology will be.
- ◆ Of course, there could be unintended consequences when it comes to AI. But that's no reason to forgo its development; after all, some of those consequences could be good. We must factor those in as well.
- ◆ We should be doing a cost-benefit analysis: a process of considering all possibilities, factoring in their probability, and then determining their value to determine what the best course of action is.
- ◆ The potential benefits of AI are seen in *Transcendence*, in which the protagonist is a computer genius named Will Caster —let's call him Will—who is married to an idealist named Evelyn who wants to use technology to “cure disease … end poverty and hunger … [and] heal the planet.”
- ◆ When Will is poisoned by an antitechnology group called RIFT, Evelyn convinces him to use an experimental technology to upload his consciousness into a computer before he dies. After this uploaded being—let's call him Caster—connects to the internet, he grows in both wisdom and power.
- ◆ With the help of Evelyn (who believes that Caster is Will), Caster creates an underground lab outside a town called Brightwood, where he pioneers a number of technological advances, including the invention of nanobots that are able to build any object, heal any wound, and cure any disease. This attracts a host of the terminally sick and injured who not only end up healed, but with super strength and other such abilities.
- ◆ In the meantime, RIFT is trying to figure out how to destroy Caster. Will's former partner Max, who has decided that Caster is not Will and has the potential to be too powerful, joins their cause. They attack the installation.

- ◆ When Caster says that he's not going to fight back, but instead "transcend" them, Evelyn comes to fear Caster and flees the installation. RIFT convinces her that Caster must be destroyed by showing her that Caster's nanobots are spreading all over the world. This means, Max says, "The end of primitive organic life and the dawn of a more advanced age. Everything will exist just to serve its intelligence." They develop a computer virus that will kill Caster but also cripple every piece of technology on Earth in the process.
- ◆ In this movie, you start out rooting for Will. Once Caster starts building, you think he's getting too powerful. When he starts healing people, you change your mind. Then, the healed start turning into his army. Once you see that his nanobots have infiltrated all the earth, air, and water, you think that RIFT is right and root for them in their final attack on his installation.
- ◆ In the end, Evelyn uploads the virus into herself with the hopes that Caster will then upload her into his system (like he uploaded himself), thus catching the virus. Caster sees through their plan, however, and RIFT launches a military-style offensive. But when Evelyn is injured by their attack, Caster realizes that uploading her is the only way to save her.
- ◆ A member of RIFT also threatens to kill Max if Caster doesn't upload the virus. Max is convinced that such a threat is meaningless because Caster isn't Will and therefore doesn't care. But to save them both, Caster sacrifices himself—proving that he indeed was Will all along. Caster uploads Evelyn, which uploads the virus.
- ◆ But before it takes effect, wiping out every piece of technology on the planet, Caster executes his master plan. His nanobots repair the entire ecosystem, cleaning every drop of water, clearing every molecule of air, and regrowing every tree.
- ◆ That was his "big evil plan" all along: to do what Evelyn always wanted—to cure the planet. That's what he meant by saying he would transcend them. He wasn't going to lower himself to RIFT's level and respond violently; he was going to rise above them and prove wrong their fears by doing good.



Will Caster, the computer scientist in *Transcendence* who uploads his consciousness into a computer and uses nanobots to heal people and build objects out of thin air, is based on Ray Kurzweil.

- ◆ When the ordeal is over, a member of RIFT actually realizes that Caster's resistance to their attack was completely peaceful. "He didn't kill anyone." But RIFT's paranoia about new technology likely killed billions.
- ◆ *Transcendence* illustrates human shortsightedness when it comes to technological advancements. We are so quick to jump to conclusions about all the ways that it could be misused, but we fail to recognize all the good it could do—all the good that it is already doing.
- ◆ When RIFT sees the nanobots in the water, it never even occurs to them that they could be used to clean it, or to consider the consequences of eliminating all technology.
- ◆ Like the members of RIFT, who are constantly using computers throughout the film, people who oppose technological advancements are blind to how much they benefit from the technological advancements of the past.
- ◆ That humans can be shortsighted about benefits is why we have to consider all angles. We can't just declare technological advancements as something we must avoid because they could be misused.
- ◆ When it comes to AI, like most other technologies, it's probably going to be a mixed bag. Sure, androids could take over the world and destroy humanity, but uploading ourselves might also give us the opportunity to live forever.
- ◆ AI might also be necessary to save our species from environmental destruction. For example, given our insatiable appetite for fossil fuels and refusal to switch to renewables, scrubbing the atmosphere with AI-enabled nanobots—as in *Transcendence*—may be our only hope for the survival of our species.
- ◆ So, what's the result of the cost-benefit analysis? One problem with cost-benefit analyses is that unless you can assign specific values and probabilities to outcomes, they are really difficult to do.
- ◆ So, what's the value of human survival or extinction? What's the value of immortality? How likely is any particular outcome? We don't know—which means that we should just probably keep going, watch out for potential dangers, and try not to stupidly ignore them when we see them.

MORAL TREATMENT OF AI

- ◆ How should we treat androids if we one day develop them? Would it be acceptable to make them do all our dirty work—such as clean our toilets and fight our wars? Would they be disposable?
- ◆ Suppose that something like Asimov's 3 laws can ensure that they don't rebel. Should we be free to treat them however we want? Or would they have rights that we would be morally obligated to respect?
- ◆ This question could be decided by a definitive answer to the previous lecture's question. If we know that androids are sentient, then they would have rights—because it is from our sentience that our rights are derived. You are, for example, obligated to not harm another person because he or she can feel pain. If an android can feel pain, then you are obligated not to harm it.
- ◆ But even if we can't settle the issue of machine sentience, we can still answer this moral question: Even if we can't know whether androids are sentient, we should treat them as if they are. After all, if they aren't but we respect their rights anyway, what have we lost? But if they are and we treat them as disposable, then we will once again be guilty of the most heinous of all of humanity's moral crimes.
- ◆ The notion that “they're different from us; they don't really feel pain” was said about African Americans before the Civil War, about the Chinese as they built our railroads, and about the Jews as the Nazis tried to exterminate them.
- ◆ The invention of AI will force us to face one of the most important moral decisions in human history. And the outcome may not only be relevant to androids. If Kurzweil is right about anything, it's that as technology continues to advance, we will become more and more dependent on it—even incorporating it into our biology, our brains even. The question of whether an artificial brain can produce consciousness may one day be relevant to everyone on Earth.

QUESTIONS

- 1 What technological advances of the past that today you couldn't live without were feared during the time of their development?
 - 2 Most animals (e.g., dogs) are not sentient but are conscious. As was argued in this lecture, our rights derive from our sentience and thus sentient machines would have the same rights. From what part of our sentience do these rights derive, and what does that tell us about our moral obligations to nonsentient but conscious animals?
 - 3 The Borg on *Star Trek* are a race of humanoids that have integrated advanced technology into their biology. Are we destined to do this ourselves? Could this turn us into the villains the Borg are in the *Star Trek* universe?
-

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RELATED SCI-FI

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|-----------|---|
| TV | <i>Star Trek: The Original Series</i> (1966):
"The Ultimate Computer"
<i>The 100</i> (2014)
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FILM	<i>Dark Star</i> (1974) <i>Eagle Eye</i> (2008) <i>Ex Machina</i> (2015) <i>Master of the World</i> (1934) <i>9</i> (2009 animated film) <i>Forbidden Planet</i> (1956) <i>Ghost in the Shell</i> (1995) <i>D.A.R.Y.L.</i> (1985)
PRINT	William Hertling's <i>Avogadro Corp</i> Daneil Suarez's <i>Daemon</i> Ted Cross's <i>The Immortality Game</i> Damien Broderick's <i>The Spike: Accelerating into the Unimaginable Future</i> Ray Hammond's <i>The World in 2030</i> Charles Stross's <i>Accelerando</i> and <i>Singularity Sky</i> Vernor Vinge's <i>Marooned in Realtime</i> J. L. Bourne's <i>Day by Day Armageddon: Beyond Exile</i> Peter F. Hamilton's <i>Commonwealth Saga</i>

Once androids become a reality, how could you know that you're not one yourself? If they act like humans and are minded like humans, how could you tell?

Considering this question will lead to a host of others, such as the real possibility that we live in a simulated world.

To explore that question, watch the movie *The Thirteenth Floor*. Pay close attention all the way to the end and ask yourself this: How do you interpret the very last second of the film?

THE THIRTEENTH FLOOR: ARE WE SIMULATED?

LECTURE 13

SIMULATED WORLDS

- ◆ If we discover that sentience can be produced artificially, on a computer, then we could create entire simulated worlds filled with simulated sentient beings. They would be like the Matrix, where the nature of the world people experience is digital—except, instead of having flesh-and-blood humans plugged into the program, all the persons would be digital.
- ◆ The reasons we would have for making such worlds are seemingly endless. For example, if you wanted to know the long-term consequences of a piece of legislation, you could make a simulated world where that legislation is passed and see what happens. If you want a better understanding of how evolution works, you could create a simulated world that replicates the early conditions of Earth and then watch it go.
- ◆ One of the interesting things about simulated worlds is that they would not have to happen in real time. You could accelerate the rate at which the centuries pass. As Oxford professor Nick Bostrom points out, with sophisticated enough technology, you could simulate the entire history of the human race in just a few seconds.



Sims video games—in which players can build towns and watch characters progress over time—are incomplete, and the people in them aren't conscious.

But imagine a *Sims* game where the world is complete and programs that dictate how the individuals in the world behave are just as sophisticated as the programs running in human brains.

Think about the versions of *Sims* games where you can oversee a family; the people in that family even go on to live their lives, even while you are not playing the game.

Imagine that the programs controlling those people's behavior replicate what our brains do to control ours. A digital world filled with such people would be a simulated world.

- ◆ Another interesting thing about simulated worlds is that their inhabitants wouldn't know that their world is simulated. Not only would this be necessary for the simulation to be accurate—people would behave differently if they knew their world was simulated—but it would simply be a consequence of the way the simulated worlds are designed. Their brains would function just like ours and would be receiving electrical inputs just like ours. They would, therefore, interpret those inputs in the same way and, therefore, have the exact same kind of experiences that we do.
- ◆ In other words, a simulated world would not look like the Matrix does to Neo, where green computer code vaguely resembles objects and people, thus revealing its digital nature. Instead, the inhabitants of the simulated world would experience it as an actual physical reality. They wouldn't be able to tell from the inside of the simulated world that they were in a simulated world.
- ◆ The question this raises is this: How do you know that you're not living in a simulated world—that what you and everyone else is experiencing isn't actually a digital simulation? Just like the question of whether you're dreaming, or in the Matrix, or really an android, it seems the answer is that you can't know for sure.
- ◆ What you are likely tempted to do to solve this problem is appeal to the best explanation. When we realized that we couldn't prove that we weren't in the Matrix, we said that we could still know that we're not in the Matrix because knowledge doesn't require certainty and the idea that we're in the Matrix isn't the best explanation for our experiences.
- ◆ In the same way, can't we just say that our being in a simulated world is not the best explanation for our experiences and that because knowledge does not require certainty, we can know that we're not in a simulated world? It turns out that the simulated world problem is much more serious than the Matrix problem and consequently cannot be dismissed so easily. To see why, consider the movie *The Thirteenth Floor*.

THE THIRTEENTH FLOOR

- ◆ In the film, set in 1990s Los Angeles, Hannon Fuller and Douglas Hall have invented a simulated world of 1937 LA. Its inhabitants do not know that they are simulated persons. Fuller has been visiting the simulated world at night, controlling another person within it.
- ◆ After Fuller's death, Hall discovers that Fuller left a note for him in the virtual 1937 world. He goes in to find it, only to discover that the simulated person Fuller left the note with—his name is Jerry—read it and then discovered the simulated nature of this reality.
- ◆ The note asked him to drive somewhere where he would never consider going otherwise. When Jerry did this, he saw that just beyond the city and its outskirts, the simulation breaks down into a green wireframe model. But Hall can't imagine why Fuller would have wanted him to do this, because Hall obviously already knows that the 1937 world is simulated.
- ◆ Hall finally realizes, however, that Fuller meant for him to do this in the 1990 LA world that he lives in—and when he does, he realizes that his world is simulated, too. Hall then meets a woman, Jane, who has been visiting his 1990 simulated world, like he and Fuller have been visiting the 1937 simulated world. He learns that his world is just one of thousands of simulated worlds created in hers; it's unique only in the respect that it was the first in which another, deeper simulated world was created.
- ◆ Some romance ensues, and eventually Hall escapes into Jane's world by (with her blessing) taking over the body of her cruel husband. The movie ends set in 2024 LA, with Jane and Hall looking out over the sea.
- ◆ But in the last moment of the film, we realize that things still may not be as they seem. The image collapses to a thin line and then goes dark, just like a computer monitor switching off.
- ◆ This suggests that the 2024 world they find themselves in at the end of the film is a simulation as well. But that's what we should have concluded even before we saw the “monitor switching off” clue. In fact, no matter how far up they go—no matter how many simulations they wake up from—Jane and Hall should always conclude that the world they're in is a simulation.

- ◆ Hall discovers that his world is only one among thousands of simulated worlds, which means that of the worlds that exist, most of them are simulated. There is one physical world, and that physical world contains thousands of simulated ones—some of which themselves contain simulated worlds.
- ◆ But if that's true, what should Hall conclude about the nature of any world in which he finds himself? He can't think that the world he's in is real simply because he came up into it from a simulation, because simulated worlds can contain simulated worlds. It doesn't even matter if he drives to the edge of town and doesn't see the simulation breakdown; he could just be in a bigger simulated world.
- ◆ Ultimately, because he can't tell from inside whether his world is simulated, all Hall could do is go on the odds. There are at least 1000 simulated worlds, but only one physical one, so for any given world Hall finds himself in, the chances that it's physical is only one in 1000. Therefore, for any given world that Hall finds himself in—even if it actually happened to be the real physical world—he should conclude that he is in a simulated world.
- ◆ In fact, Hall should have concluded this as soon as he and Fuller created the simulated 1937 world. By doing so, they would have proven that simulated worlds exist, and if they exist, we're likely in one.

OBJECTIVE VERSUS SUBJECTIVE PROBABILITY

- ◆ Such an argument was first presented by Nick Bostrom. Consider the entire history of the universe. In that history, either simulated worlds will be created or they won't. If they are not, then they're not, and the only world that exists is the physical world. But if simulated worlds will be created in the physical world, then the physical world won't contain just one simulated world. That kind of technology will simply be too useful; everyone will have a simulated world, for everything from games to scientific research.

- ◆ Currently, we don't know whether no simulated worlds exist or millions of them do. However, if we start creating simulated worlds, we'll know that it's not that just the physical world exists. We'll know that, in addition to the physical world, there are also millions of simulated worlds.
- ◆ But at that point, what should we conclude about the kind of world we live in? Because there is no way to test and you can't tell from the inside, all we'd have to go on is the odds. But because there are millions of simulated worlds and only one real one, the chances that we are in the one real universe would be a million to one. So, we should conclude that we are in a simulated world.
- ◆ You may not think that the possibility of us living in a simulated world matters, because we have not created simulated worlds. But Bostrom argues that this argument, as it stands, even before we create simulated worlds, entails that you should conclude that it's about 20% likely that we live in a simulated world.
- ◆ It's important to note that he's talking about subjective probability, not objective probability.
 - ◊ Objective probability is the kind of probability that people use when they are talking about throwing a die. Before you roll it, there is a 1 in 6 objective probability that you will roll a 3 on a 6-sided die. Once you roll it, however, the objective probability goes to either 100% or 0%, because it either comes up a 3 or it doesn't.
 - ◊ Subjective probabilities, however, are expressions of how likely something is given what we know—given a set of evidence. The subjective probability of a 3 before you roll the dice is the same: 1 in 6. But suppose you roll the die and then cover it with a cup. The objective probability is still 100% or 0%, because it either came up a 3 or it didn't. But subjectively, given what you know, you should still assign the likelihood of it being a 3 a probability of 1 in 6—because that is how likely it is given the information that you have.

- ◆ Objectively, the probability that we are in a simulated world is either 100% or 0%, because either we are or we are not. But the subjective probability will turn on what we know or have good reason to suspect.
- ◆ Bostrom is pointing out that the subjective probability that you assign to our living in a computer simulation should be directly proportional to how likely you think it is that humanity will one day create simulated worlds. And he thinks that this is about 20% likely.

A portrait of Nick Bostrom, a man with short, light-colored hair and glasses, wearing a blue shirt and a dark jacket. He is positioned in front of a background that appears to be a complex, glowing digital or futuristic cityscape.

Nick Bostrom has heard some people call his argument the most convincing argument for god in the last 2000 years—because whoever the creator of our simulated world is would be very much like a god, and no one has really been able to find a hole in Bostrom's argument.

- ◆ There are things that might change the subjective probability, because you update the likelihoods you assign when new information comes in. For example, let's say that the evidence shows that we have already dumped so much carbon in the atmosphere that runaway global warming is inevitable and the planet will become uninhabitable. That would greatly lower the subjective probability that we will develop simulated worlds and thus the subjective probability that we are in one.

QUANTUM MECHANICS AND SIMULATION

- ◆ Some have objected to Bostrom's argument that the computing power to simulate the entire universe, down to every atom, is just unfeasible. But he rightly points out that a simulation would not have to bother with all that. It would not have to simulate every atom in a tree when you look at a tree; it would just send a "see a tree" signal to your brain. Only if we started looking at things on the atomic level would it have to bother to "render" anything on that level, and only when and where you are observing it.
- ◆ The same would be true on the quantum level. The computer would not need to assign a specific location or momentum to electrons; an equation to keep track of where they would likely be if you measured them would be good enough. It could use that to simply render them on the occasions that we happen to take a measurement.
- ◆ But this is exactly what quantum mechanics tells us: Individual particles don't have location or momentum; they are wave functions—equations—until they are measured. And wouldn't the fact that we are in a simulated world explain why they don't collapse until they are measured? The simulation knows that we are measuring and thus knows that it needs to collapse the wave function.
- ◆ Quantum mechanics doesn't prove that we are in a computer simulation. But because the simulation hypothesis would explain quantum mechanics so well, the truth of quantum mechanics raises the probability of the simulation hypothesis, at least a little bit.
- ◆ The consequences of us living in a computer simulation are interesting. It doesn't mean that the world doesn't exist; it just means that the nature of the world is different than we thought—it's digital, rather than physical.

It also doesn't mean that you are worth any less just because you are a "simulated person." You are just as sentient as a physical person, so you have the same rights and privileges.

- ◆ You probably shouldn't talk about the world being a simulation because it's very likely that, if we are in a simulated world, the beings simulating it will only remain interested in our world as long as we don't know we're in a simulation. If we find that out, it might ruin everything and the plug would be pulled.

QUESTIONS

- 1 What other applications of simulated worlds can you think of? Would we plug ourselves into such worlds and then exit again, as they do in *The Thirteenth Floor*? What kinds of games could be developed?
- 2 In what way would your life be different (if at all) if you realized that you were living in a simulated world, or if you were actually an android?
- 3 Can you think of other possibilities for how the future might go that would alter our ability to assign a probability of 20% to the simulation hypothesis?
- 4 How well does the notion that we live in a simulation explain quantum mechanics?

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RELATED SCI-FI

TV

Black Mirror (2011): “San Junipero” and “Playtest”
Star Trek: TNG (1987): “Ship in a Bottle”
Doctor Who (1963): “The Deadly Assassin”
(season 14, serial 3; aired in 1976)
Doctor Who (2005):
“Forest of the Dead” and “Amy’s Choice”
Farscape (1999): “John Quixote”
The Outer Limits (1995): “The Sentence”
Stargate SG-1 (1997): “The Gamekeeper”
The Twilight Zone (1959): “Where Is Everybody?”
The X-Files (1993):
“Kill Switch” and “First Person Shooter”

FILM

eXistenZ (1999)
Total Recall (1990)
The Lawnmower Man (1992)
Tron (1982)
Tron Legacy (2010)
Source Code (2011)
The Nines (2007)
The Matrix (1999)

PRINT	Iain M. Banks's <i>The Algebraist</i> C. J. Choi's <i>Ant Farm: God and His Computer Simulation</i> Philip José Farmer's <i>World of Tiers</i> Greg Egan's "Crystal Nights" Philip K. Dick's <i>Valis</i> , "The Trouble with Bubbles," and "The Electric Ant" Daniel F. Galouye's <i>Simulacron-3</i> (basis of <i>The Thirteenth Floor</i>) Ken MacLeod's <i>The Restoration Game</i> Nick Sagan's <i>Idlewild</i> Sue Lange's <i>We, Robots</i> James Patrick Kelly and John Kessel's <i>Digital Rapture: The Singularity Anthology</i>
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We've been talking about the dangers of future technology, but what about the dangers of technology that already exists? The most obvious examples are social media platforms, such as Facebook and Twitter.

Are we too addicted? Are we making our lives too publicly available? What is the effect of the constant observation and evaluation we subject ourselves to by using it? Does it promote mob rule?

To explore these questions, watch the episode of the British sci-fi show *Black Mirror* called "Nosedive." As you do, ask yourself one simple question: How likely—indeed, how far off—is the future it depicts?

THE ORVILLE, ORWELL, AND THE “BLACK MIRROR”

LECTURE 14

BLACK MIRROR: “NOSEDIVE”

- ◆ *Black Mirror* is a science fiction TV series in the tradition of *The Twilight Zone*, where each episode is a standalone story. The only thing that all of the episodes have in common is that they each involve some piece of advanced technology that presents the characters with decisions we have never truly had to face.
- ◆ *Black Mirror* reminds us that advancing technology is always a mixed bag. It may make our lives easier, and even more enjoyable—who wouldn’t want to have digital readouts or TV images projected right onto their retina?—but such technologies can always be abused and raise new and frightening possibilities for dangerous and immoral behavior, such as that technology being used to make other people look like monsters to trick you into killing them.
- ◆ Just like with AI, such dangers aren’t reason enough not to develop such technologies, but we must always be on our guard.
- ◆ In a way, by doing what sci-fi does best, *Black Mirror* actually is a mirror: It reflects society back at us, showing us our faults—specifically by showing us the unwise and dangerous ways that we might, and already do, misuse technology.

- ◆ The *Black Mirror* episode “Nosedive” raises questions about our use of social media, such as Facebook and Twitter. It’s set in a world where one’s social media status determines one’s worth. Following any interaction, whether online or in person, others rank you on a scale of 1 to 5 using a smartphone app. And your average overall ranking determines everything—including what kind of job you can have and where you can live.
- ◆ The episode is a commentary on the unfairness of unofficial class rankings in society that unfairly keep many from accessing quality medical care, jobs, houses, and even other people.
- ◆ Most importantly, it draws attention to a philosophical worry, one that is exemplified and magnified by our ubiquitous use of social media—a worry that was first articulated by French existentialist philosopher Jean-Paul Sartre, centered on something he called “the look.”
- ◆ To illustrate “the look,” Sartre asks you to imagine yourself jealously looking through a keyhole to find out what is happening in the next room. You concentrate on who is in the other room, rather unaware of yourself and your own actions. They are the objects of your perception.
- ◆ But the moment you hear footsteps behind you and realize that someone is watching you, your perception shifts. You are suddenly aware of yourself as an object of someone else’s perception and are now preoccupied with how “the other” sees you—likely as a voyeur, or a peeping Tom. In this way, Sartre argues, “the look” of others objectifies you, changing even the way you see yourself.
- ◆ “The look” can occur anywhere—at work, at home, in relationships. And nowadays you don’t even need to be physically around others to feel “the look.” You might say that Facebook and Twitter exist merely to facilitate our attempts to “look” and be looked at by others.
- ◆ We try to make others “look” at us the way we want—to define how others objectify us. That’s why we post clever comments, share certain memes, and criticize particular views. And we want to shape others into the way we see them.



Existentialist philosophy is generally concerned with the nature of the human condition, such as anxiety regarding death, the meaning (or absurdity) of life, and the extent and nature of our freedom.

- ◆ For Sartre, this is what almost all relationships are: a constant back and forth of people trying to objectify each other. This doesn't hinder anyone's freedom; you are not bound or forced to be what others think you are. Sartre believes that we have radical freedom—the ability to do or be anything we want. But this constant fight to be yourself, to not succumb to the expectations of others, and to make others into what you expect is a miserable, dehumanizing process.

THE ORVILLE: "MAJORITY RULE"

- ◆ "Nosedive" seems to have inspired another modern sci-fi show—an episode of Seth MacFarlane's space adventure *The Orville* called "Majority Rule." Like in *Star Trek*, the crew of the spaceship *Orville* explores the galaxy; like in *M*A*S*H*, they provide comic relief along the way. But like both *Star Trek* and *M*A*S*H*, *The Orville* offers social commentary, and in "Majority Rule," it gives a clear critique of how society uses social media.
- ◆ In "Majority Rule," the crew of the *Orville* visits Sargas 4, a planet nearly identical to 21st-century Earth. The major difference is that Sargas is a pure democracy, with no government or courts; everything is decided by the majority's opinion, even what medications are safe. At age 18, everyone receives a badge, through which they can receive "upvotes" and "downvotes."
 - ◆ If you get a million downvotes, you're arrested and have to go on an "apology tour," where you appear on talk shows to convince the public that you are remorseful for whatever you did. Only if you can stay under 10 million downvotes by the end of the tour can you avoid "correction"—a lobotomy that will ensure that you never do such a thing again.
 - ◆ The episode directly decries cultural relativism, the philosophical suggestion that truth is determined by majority opinion. It also offers social commentary on people's propensity to share things on social media without first making sure they are true—one of the biggest threats to democracy, because democracy requires a correctly informed electorate. The episode also raises concerns about democracy itself, because it demonstrates the dangers of a mob mentality and just how wrong the majority can be.

- ◆ Contrary to the suggestion of philosopher Jean-Jacques Rousseau, the majority, when left to its own devices, doesn't always make decisions that align with the common good. People don't vote based on careful reasoning and good argument. They use emotion, intuition, and opinion.
- ◆ This is why the US founding fathers created a representative democracy. Citizens are supposed to elect experts who use reason and weigh evidence. The reason there is a court system with (ideally) unbiased judges and juries and a presumption of innocence is to guard against the folly of mob rule—to avoid disasters like the Salem witch trials.
- ◆ But in many ways, social media has bypassed these safeguards. For example, people are often found guilty in the court of public opinion before they ever get a fair trial.
- ◆ Through *The Orville*, MacFarlane seems to be telling us that we should (more often than not) just turn off Facebook.

THE PANOPTICON

- ◆ The Panopticon was first conceived by philosopher Jeremy Bentham in 1791; it was his proposed design for a more efficient prison building. The building would be circular, with prison cells all along a multistoried outside wall, all facing inward. In the center would be a round guard tower, looking outward, from which guards could closely observe any cell.
- ◆ The catch was this: The guards would be obscured from the prisoners' vision—by window blinds or other methods—so that the prisoners wouldn't know *when* they were being watched. But they would know that they *could* be being watched at any time.
- ◆ Bentham argued that, even though the prisoners knew that they couldn't all be watched all the time, each individual prisoner would always think that he or she were being watched, or at least suspect it, and thus regulate his or her own behavior. In this way, you could ensure the good behavior of hundreds of prisoners with only one guard at a time—or even none.

- ◆ This, Bentham argued, would also deter those who visited the prison from committing crimes (because they wouldn't want to live in such conditions). The basic idea of the Panopticon still influences prison design to this day.
- ◆ In 1975, the Panopticon was reintroduced to the public by Michel Foucault in *Discipline and Punish*, a history of prisons in which he argues for a reform of the penal system that had grown out of Bentham's influence. It's part of a larger system, he argued, aimed not at reforming prisoners, but at the control of society—which it accomplishes by creating a “delinquent class” that police have to constantly monitor. The end result, he argued, is that all of society is subjected to a Panopticon-like state of continual monitoring.
- ◆ Foucault's work was heavily criticized—he seemed to neglect other motivations the powers-at-be could have for imprisoning criminals—but his worries about a Panopticon-like society were actually anticipated by one of the most famous pieces of science-fiction ever written: George Orwell's *1984*, which has been reimagined cinematically many times.

ORWELL'S 1984

- ◆ *1984* is set in a world in which a Stalinist totalitarian “Party” has risen to power in the West. It follows the life of Winston Smith, a member of a middle-class group called “The Outer Party” who works for the “Ministry of Truth.” There, he rewrites history books to conform to the Party’s version of historical events, often erasing the existence of persons from history, thus making them “unpersons.”
- ◆ Despite his job, Winston hates the Party, but he can never express his dissent aloud because the Party has created the impression that everyone is always being watched. It’s believed that telescreens, which are everywhere (including people’s homes), are equipped with cameras and microphones—so “Big Brother” (the Party’s leader) could be watching and listening at any time.

- ◆ Indeed, people are routinely arrested for “thoughtcrimes,” expressing any thought that is contrary to the Party’s ideology, even when they do so in private. The result is a terrified public forever afraid to do anything but praise the Party and Big Brother.
- ◆ Winston’s fear of observation is so bad that even when he sits behind his telescreen and writes down his anti-Party thoughts to himself in a journal, he’s still convinced that he’s been seen and that his arrest is just a matter of time.
- ◆ *1984* illustrates the dangers of a Panopticon-like existence.
 - ◊ Continual observation and the constant threat of punishment removes the possibility of virtuous behavior. For behavior to be truly virtuous, it must be done without compulsion—for its own sake. You should do the good because it is good, not because someone will punish you if you don’t. This is a worry about Bentham’s Panopticon prison; it makes the rehabilitation of prisoners impossible because it removes the possibility of them learning to behave on their own. As soon as you release them back into society and remove the threat of observation, they will go back to their old ways.
 - ◊ The lack of privacy is a problem. There are a number of reasons to desire privacy, even if you never do anything wrong, including that you can never be sure that those watching you have the right definition of what counts as right behavior and that privacy seems to be a fundamental right.
 - ◊ A functioning democracy requires privacy. Of course, there is a certain amount of privacy that we must give up—for example, in public spaces—for a certain amount of security. But there are limits. The more someone knows about your private life, the more power that person has over you; absolute knowledge would be absolute power. A free society should not let anyone, especially the government and corporations, have that kind of power.
 - ◊ The depth of our relationships is often defined by how much privacy we allow the other person to violate; without privacy, relationships might not be possible. Even in the deepest of relationships, you still desire—in fact, need—privacy.

- ◆ There is one important difference between Panopticon-like surveillance and the government surveillance by Big Brother in *1984*: consent.
- ◆ We don't have to use Facebook and Twitter; we don't have to share our lives on it. There are even privacy settings we can configure to our liking. People choose to use these services for the social benefits they provide.
- ◆ The worry, however, is this: There may be a point at which it is no longer voluntary. How much social pressure is put on us to use social media? It's where almost everything happens now—party invites, group organizations, networking. In fact, studies have shown that the use of social media can be addictive, releasing the same kind of chemicals associated with gambling addiction. So, really, how much choice do we have?

QUESTIONS

- 1 What other ways do our “black mirrors” change our life for the worse?
- 2 What other negative ways does social media, such as Facebook and Twitter, affect society?
- 3 What examples of people found guilty in the court of public opinion, but not in a court of law, can you think of?
- 4 What structures in society entail that we already live in a Panopticon-like world?

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RELATED SCI-FI

TV	<i>Black Mirror</i> (2011): "USS Callister" <i>The Twilight Zone</i> (1959): "The Obsolete Man"
FILM	<i>Ready Player One</i> (2018)
PRINT	Aldous Huxley's <i>Brave New World</i> Ray Bradbury's <i>Fahrenheit 451</i> William Hertling's <i>Kill Process</i> William Gibson's <i>Pattern Recognition</i> Charles Stross's <i>Halting State</i> Vernor Vinge's <i>Rainbow's End</i>

The next lecture is about ethics, the study of what's moral and what's immoral. In it, we will ask questions about what makes something right or wrong—good or evil.

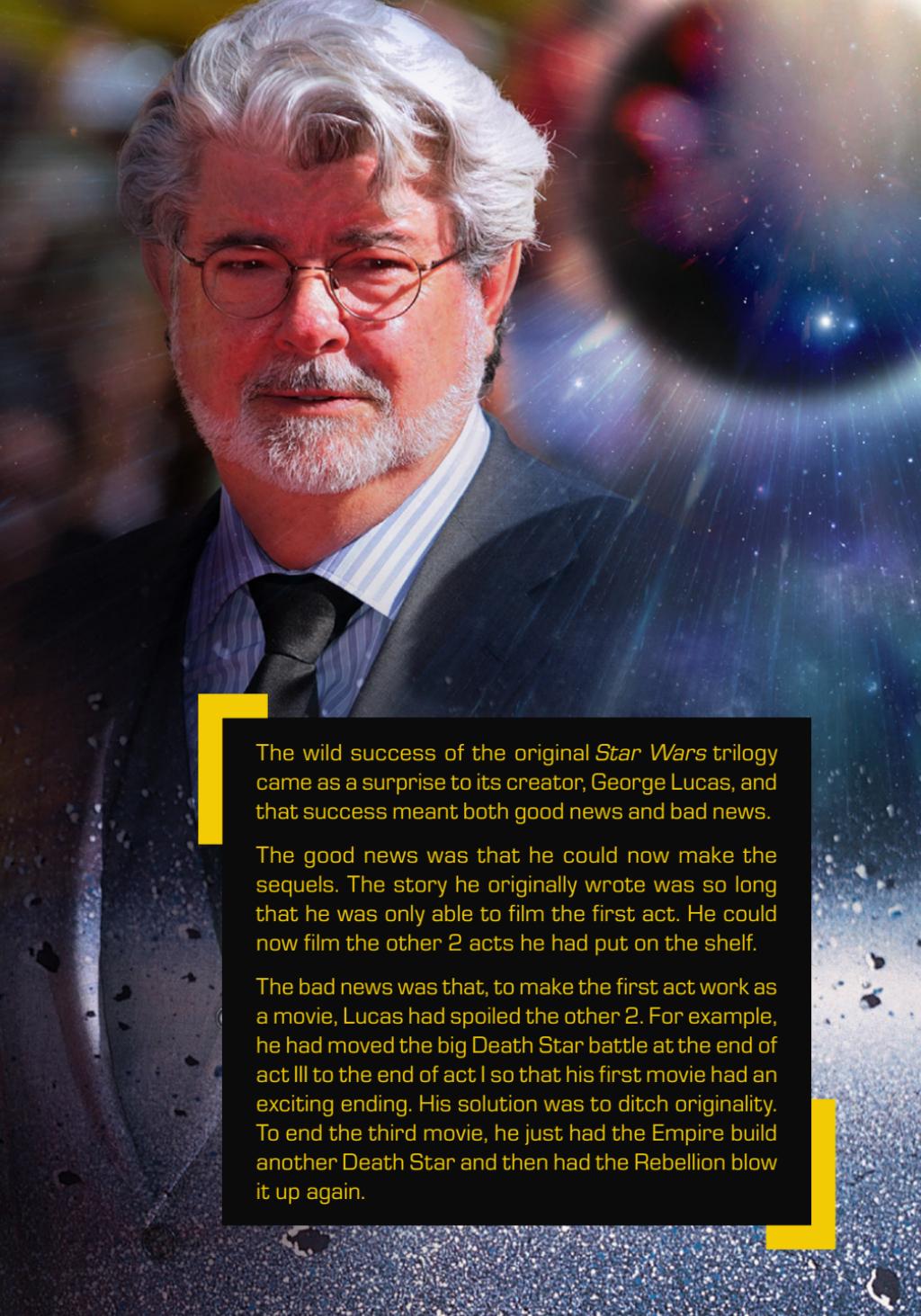
To prepare for this, watch a movie in a franchise famous for pitting good against evil: *Star Wars*. Specifically, watch *Rogue One: A Star Wars Story*. As you do, ask yourself whether the rebels in the movie—who are supposed to be the good guys—are actually terrorists.

STAR WARS: GOOD VERSUS EVIL

LECTURE 15

THE ORIGINAL TRILOGY

- ◆ The original *Star Wars* is one of the most iconic and successful science fiction movies of all time. It tells the story of a young orphan named Luke Skywalker, who teams up with the Jedi Obi-Wan Kenobi, a smuggler named Han Solo, and a princess named Leia Organa to fight against Darth Vader and the evil Empire—which has constructed a giant planet-destroying weapon called the Death Star. Together, they successfully deliver the stolen Death Star plans to the Rebel Alliance, which discovers the Death Star’s weakness and (with Luke’s help) destroys it.
- ◆ The original *Star Wars* trilogy is notorious for its lack of moral ambiguity—for being painfully black-and-white. Luke, dressed in white, and the Rebel Alliance are obviously good; Darth Vader, armored in black, and the Empire are obviously bad. Emperor Palpatine, Darth Vader’s master, is cartoonish and almost comically evil: a grotesque, wrinkled figure hidden under a cloak who cackles as he reveals his plans. John Williams, who composed the film’s music, even wrote every hero’s theme in a major key and every villain’s in a minor key.
- ◆ Some might argue that Han Solo is a gray character. He’s a scoundrel with a bounty on his head who will (without remorse or hesitation) kill any bounty hunter who comes after him and then toss some money to the barkeep to make up for the mess. But even Han is redeemed by the end of the first film; he swoops in on the *Millennium Falcon* to save Luke from Darth Vader at the last second, giving Luke the chance he needs to blow up the Death Star.



The wild success of the original *Star Wars* trilogy came as a surprise to its creator, George Lucas, and that success meant both good news and bad news.

The good news was that he could now make the sequels. The story he originally wrote was so long that he was only able to film the first act. He could now film the other 2 acts he had put on the shelf.

The bad news was that, to make the first act work as a movie, Lucas had spoiled the other 2. For example, he had moved the big Death Star battle at the end of act III to the end of act I so that his first movie had an exciting ending. His solution was to ditch originality. To end the third movie, he just had the Empire build another Death Star and then had the Rebellion blow it up again.

THE PREQUEL TRILOGY

- ◆ In the original trilogy, you never have to wonder who the good guys and the bad guys are. This is not as true of the prequel trilogy—*Episodes I* through *III*—which is set during a time in which the galaxy is governed by a democratic republic and Jedi Knights serve as a kind of military police.
- ◆ Palpatine secretly orchestrates an invasion of his own planet to gain sympathy votes for his election as chancellor of the Republic. Once elected, he orchestrates a civil war and uses the threat it poses to acquire “emergency powers” and reorganize the Republic into the First Galactic Empire.
- ◆ All the while, he follows Anakin Skywalker’s Jedi training and gains his trust. When the time is right, he convinces Anakin to turn against the Jedi; he reveals himself as the Sith Lord Darth Sidious and declares Anakin to be Darth Vader. Palpatine uses Anakin and the Empire’s clone army to kill all the Jedi, and then he and Vader go on to rule the Galaxy.
- ◆ One way the prequels are morally ambiguous is that Palpatine is a “good guy” at first—a senator from Naboo. If you hadn’t seen the original trilogy, the reveal in *Episode III* that he is the Emperor might actually have come as a surprise.
- ◆ But where we see their moral ambiguity most clearly—and where we can explore the difference between good and evil (and even question whether there is a difference)—is in how Palpatine turns Anakin to the dark side. Palpatine tries to turn Anakin by convincing him that the Jedi are evil—that they only want to “hold on to their power” and that they don’t “trust democracy.” And he might have a point.
- ◆ The Jedi are, after all, trying to overthrow Palpatine, who—despite all his scheming—was duly elected and granted the powers he has by a majority vote. Mace Windu even tries to deny Palpatine his day in court and attempts to assassinate him instead. This makes you wonder: Could the Jedi be the bad guys?

- ◆ If you've seen the movies, that might seem crazy, but think about this: Consider exactly what Palpatine has done to gain power up to the moment that the Jedi try to arrest him and Anakin sides with him.
 - ◊ In *Episode I*, he did stage an invasion of Naboo to gain sympathy, but it was an invasion by a droid army of a planet with no army, and in George Lucas's *Star Wars* universe, droids aren't considered conscious, so no one was hurt. Granted, some Gungans died as they fought the droid army outside Naboo's capital, but that battle was orchestrated by Queen Amidala, one of the good guys.
 - ◊ In *Episode II*, Palpatine starts a civil war, but it's primarily fought between droids and clones. And it seems that in Lucas's universe, clones are as soulless as droids.
- ◆ Palpatine did command Anakin to kill Count Dooku, but the Jedi actually wanted him dead. Palpatine, it seems, didn't directly cause that much actual suffering as he rose to power.
- ◆ Palpatine schemed with hostile foreign powers to get himself elected and used the cause of "greater security" to get the Senate to grant him emergency powers, but is that all that different from what American presidents have done?
- ◆ The right solution is not to have army generals—America's version of the Jedi—forcefully remove presidents from power or assassinate them. Law enforcement should expose their corruption, and the other branches of government should check them, by removing their emergency powers and impeaching them—overruling them in court.
- ◆ Up to the moment at which Anakin makes his choice between Palpatine and the Jedi, it's not clear that Palpatine has done anything to legally deserve being removed from office. If you didn't already know what he would become and what he would later do, you might think that the Jedi were in the wrong for thinking they are above the law.

- ◆ Or, at the very least, you might be able to argue that the Jedi are no better than the Sith. After all, as Luke points out in *The Last Jedi*—it was the hubris of the Jedi that allowed Palpatine to rise to power. It was Obi-Wan, a Jedi, who trained Darth Vader. Their history is fraught with failure. That's why Luke initially thinks it is time for the Jedi to end.

THE NEW STAR WARS

- ◆ The moral ambiguity of the new *Star Wars* material that has been released since Disney bought the rights from George Lucas in 2012 is even more pronounced. Disney's first film—*The Force Awakens*—begins with what would have been impossible in the original series: A faceless evil stormtrooper has a crisis of conscience. Tired of the First Order (a reawakening of the Empire) forcing him to kill, he teams up with a Resistance pilot, and later an orphaned girl named Rey, to escape.
- ◆ You might think this makes him a good guy, but he actually abandons his new friends for his own safety halfway through the film. He does eventually join up with the good guys—the Resistance—but it's really only to rescue Rey after she is kidnapped.
- ◆ Most consider Rey a good guy, but by the end of the film, it's not so clear. When she defeats Kylo Ren (the film's masked bad guy), there is a moment when you think she might kill him in cold blood. In fact, in the film's score, John Williams composed Rey's theme in a minor key—just like Darth Vader's theme and the Emperor's theme—making some suspect at the time that eventually, like Anakin Skywalker, Rey might go bad.
- ◆ Even Kylo Ren—despite the fact that he dresses in black, wears a mask, and has a menacing voice—is not necessarily evil. Although he kills his father Han Solo in the film, he is genuinely conflicted about it. His master says one thing; his conscience tells him another. He is constantly tempted by “the light side of the Force” and tries to balance both the light and dark sides of the Force within him.

- ◆ The moral ambiguity of the new *Star Wars* universe became clear with the release of *Rogue One: A Star Wars Story* in 2016, which tells the story of how the Rebel Alliance stole the Death Star plans that Luke, Han, and Leia recover in *Episode IV*.
- ◆ The film is filled with morally ambiguous characters. An imperial pilot defects to bring a message to Saw Gerrera, an old ally of the Rebels. Saw Gerrera himself, although he fights the Empire, engages in guerilla tactics, many of which endanger innocent lives. He even tortures the pilot bringing him the message to make sure he's not lying about it.
- ◆ The message the pilot brings to Saw is from Galen Erso, the imperial engineer who designed the Death Star but who secretly designed a weakness into the station so that it could be destroyed by the Rebels.
- ◆ Even the Rebels in the film are not obvious good guys. Early in the film, one of them—Cassian—kills a fellow Rebel informant so he won't be captured and to save his own life.
- ◆ The Rebels try to align with Saw Gerrera, despite his spotty history. They ambush a prison transport to free the heroine Jyn Erso, but not even Jyn trusts them and tries to escape; indeed, although they say they are going to try to rescue her father Galen, they really intend to kill him.
- ◆ Toward the end of the film, Cassian even admits that he and his Rebel friends have “all done terrible things on behalf of the Rebellion.” They’ve been “spies, saboteurs, assassins.” All this might make one think that the Rebels are essentially terrorists. They may be fighting a fascist regime, but they use terrorism to do it.
- ◆ Could the only reason that we don’t call the Rebels terrorists be because we’re told they’re the good guys? Probably not. By definition, terrorists are those that intentionally target innocents for the purpose of instilling terror in the populace to coerce capitulation (usually from a government).

- ◆ Innocents can also be killed accidentally in war by soldiers trying to kill enemy combatants. Soldiers might even attack a military installation, knowing that it will cost a certain number of innocent lives but deem it an acceptable loss. But that doesn't make them terrorists. Both are regrettable; both might even be immoral. But neither are intentionally targeting innocents, so they are not terrorists.
- ◆ We can't rightly call the Rebels in *Star Wars* terrorists because they don't intentionally target innocent civilians. But the fact that the Rebels aren't terrorists doesn't necessarily mean that they themselves are innocent—that they are the good guys. After all, they have performed military operations knowing that they would also take innocent lives.
- ◆ That doesn't make it terrorism, but it does make it morally questionable. Ultimately, one wonders whether the Rebel Alliance's rebellion against the Empire is justified at all.
- ◆ Although the Jedi may not have been justified to try to forcefully remove him from power when they did, the Emperor ended up being unequivocally evil—and so is his Empire. But that doesn't automatically make the Rebel Alliance's rebellion against the Empire justified.
- ◆ What would make it justified? The easiest answer would be to appeal to utilitarianism, which is a moral theory developed most famously by Jeremy Bentham and John Stuart Mill. They saw pain as the only intrinsic evil and pleasure or happiness as the only intrinsic good. This means that the morality of actions can be determined by how much pain or pleasure in the general populous they cause.
- ◆ If an action causes more happiness overall for people than it causes pain, then it is morally good. If it caused more pain overall for more people than it causes happiness, then it is morally bad. If it's a wash, then the action is morally neutral. Utilitarianism is all about the greatest good—the greatest happiness—for the greatest number.
- ◆ It is its utilitarian benefit that one might argue justifies the Rebel Alliance's rebellion against the Empire. They wage war and kill, but by defeating the Empire, they are saving many more innocent lives than they are taking, so their rebellion is the right thing to do.

QUESTIONS

- 1 In what other ways are the new Disney *Star Wars* movies (e.g., *Episodes VII–IX*) more morally gray than the originals (*Episodes IV–VI*)? When *Episode VIII (Star Wars: The Last Jedi)* was released, it was very controversial; fans were greatly divided on it. To what degree was *The Last Jedi's* moral ambiguity to blame for those divisions?
- 2 From what you learned in the previous lecture, consider whether the Emperor could be Nietzsche's Übermensch.
- 3 Nietzsche is often thought to be a moral nihilist. He certainly seems to think that God not existing threatens the conclusion that there are no moral facts. But divine command theory—the idea that God is the source of moral facts—is one of the most rejected notions in all of philosophy, and there are plenty of other nondivine candidates for where our moral facts come from. Does this mean that Nietzsche's worries about moral nihilism, in light of God's death, are overblown?
- 4 Director J. J. Abrams, in making *Episode VII*, seemed to leave many clues that Rey would go bad, such as putting Rey's theme in a minor key, and made Rey's parents an important aspect of the story. The director of *Episode VIII*, Rian Johnson, seemed to toss all of these "setups" aside and took a completely different route. Is it acceptable for a director to do such a thing, or should he or she be loyal to the original vision of the previous film's director?
- 5 In the *Star Trek: TNG* episode "The High Ground" (in a scene banned from the airwaves in some places), Data asks: "Would it be accurate to say that terrorism is acceptable when all options for peaceful settlement have been foreclosed?" Given the considerations discussed in this lecture, is terrorism always morally wrong, or could there be circumstances in which it is justified? Keep in mind the definition of terrorism given in the lecture when considering your answer.

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RELATED SCI-FI

TV	<i>Star Trek: TNG</i> (1987): “The High Ground” <i>Battlestar Galactica</i> (2004)
FILM	<i>V for Vendetta</i> (2005)
PRINT	Barry Kirwan’s <i>The Eden Paradox</i>

There are essentially 3 things wrong with defending a rebellion against a government on utilitarian grounds.

1. It seems that the justification of a rebellion shouldn’t turn on whether it succeeds or not. If a government is so corrupt that it needs to be overthrown, then we need to try to overthrow it—a rebellion against it is a noble cause. And it’s still a noble cause even if it fails.
 - If the Rebel Alliance is justified, then whether or not what Cassian did in its name is justified does not turn on whether the rebellion is successful.
2. The fact that something has utilitarian benefit doesn’t automatically make it morally justified. You could potentially produce much more happiness than pain by enslaving 5% of the population to do all the dirty work of society for the other 95%, but that wouldn’t make it right. Indeed, this is why terrorism is usually regarded as morally wrong, regardless of circumstance. It’s always wrong to target civilians, even if it would save more lives in the long run. The consequences don’t matter.

- The Alliance hasn't done that, but this still means that the mere fact that its success saved more lives than it cost doesn't automatically mean that their rebellion is justified.
3. What justifies a government in the first place? What morally binds us to obey the laws of a government we find ourselves living under? It would seem that knowing this would be crucial to understanding when it is permissible to disobey those laws—for example, by rebelling against the government. Is the government supposed to provide a service? If so, what? And if it stops providing it, is rebellion justified?

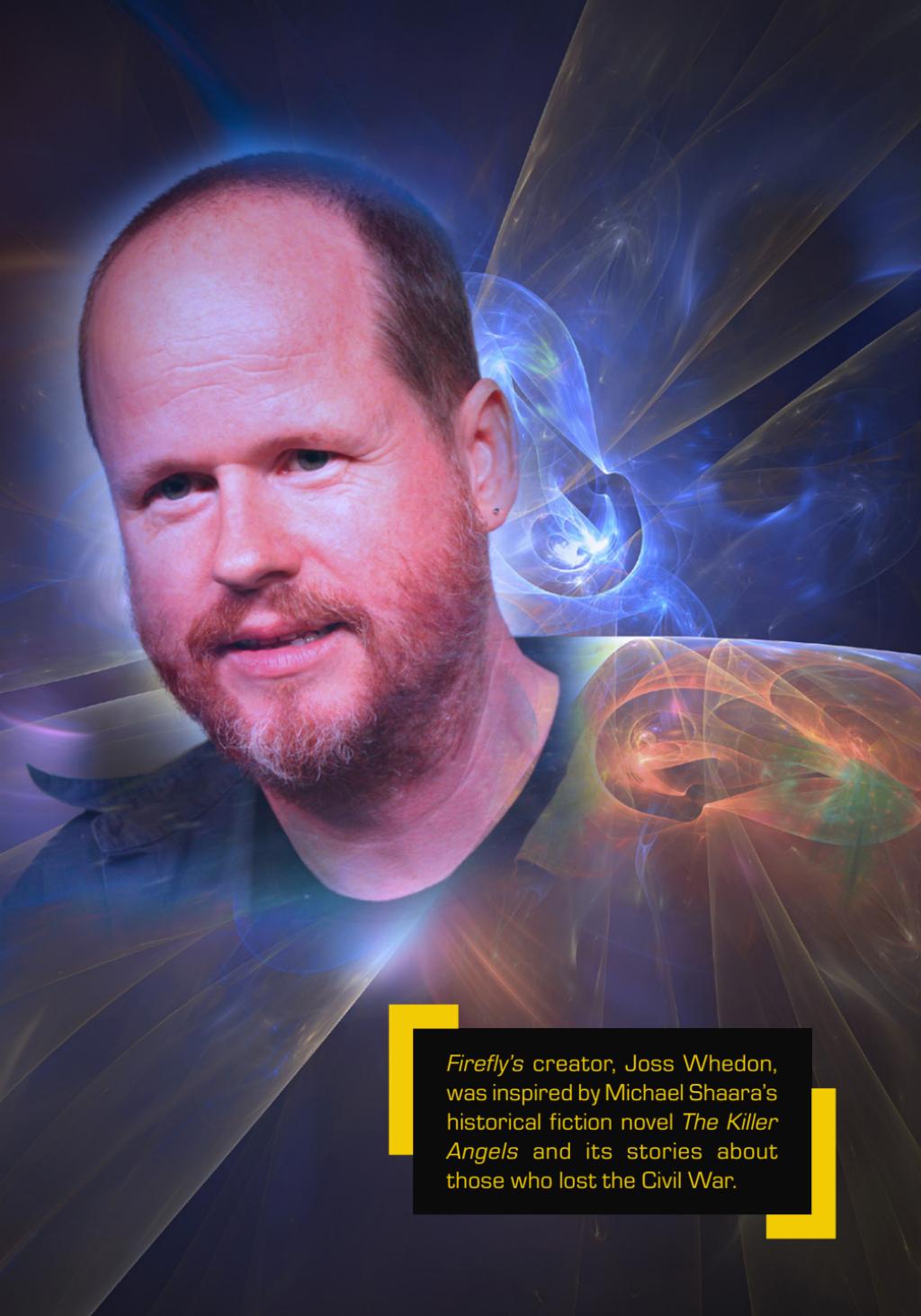
It is to these questions that we will turn in the next lecture. Before we do, watch 2 different TV series: *Blake's 7* and *Firefly*. You might be able to find some *Blake's 7* episodes with a web search, but you definitely should be able to find *Serenity*, the movie that came out after the first and only season of *Firefly*. Watch it, and as you do, ask yourself whether Mal is justified in his rebellion against the Alliance.

FIREFLY, BLAKE'S 7, AND POLITICAL REBELLION

LECTURE 16

SERENITY, FIREFLY, AND BLAKE'S 7

- ◆ *Serenity*, the sequel to the TV show *Firefly*, is set in the year 2517. The story is about a former rebellion solider, Malcom Reynolds (known as Mal), and his renegade crew of 7 aboard his Firefly-class spaceship *Serenity*. It's set in a future in which 2 superpowers, China and America, rose to dominance on Earth and then combined to form a new world government called the Alliance.
- ◆ When environmental disaster rendered Earth uninhabitable, humanity spread to a new star system called 34 Tauri, a cluster of stars all orbiting a giant "White Sun," each with their own planetary systems, which is called the 'verse. The Alliance is headquartered in the Central Planets that orbit the White Sun directly; the planets around the other stars are called Border Planets, or are part of the outside Rim.
- ◆ Although the monsters in the show are the Reavers—vicious, insane monsters that eat human flesh—the real villain is the Alliance, the government against which Mal rebelled. The Alliance tended to concentrate their resources and technology on the Central Planets, leaving the Border Planets to fend for themselves. When the Border Planets tried to make the separation official, however, the Alliance fought back, starting the Unification War.



Firefly's creator, Joss Whedon, was inspired by Michael Shaara's historical fiction novel *The Killer Angels* and its stories about those who lost the Civil War.

- ◆ *Firefly* is similar to an old British sci-fi show called *Blake's 7*, which begins with the story of a man named Roj Blake, a political dissident fighting against an oppressive government called the Federation. He's arrested for subversive activities and sentenced to life on a penal colony.
- ◆ On the way there, with the help of some new criminal friends, he manages to escape aboard a ship called the *Liberator*, which turns out to be the fastest, most powerful ship in the galaxy. Over time, he allies with 7 others, and the show follows the adventures of Blake and his crew as they roam the galaxy, fighting against the Federation.
- ◆ Although the shows are similar, *Blake's* and *Mal's* rebellion against the government take different forms. Is one doing it better than the other? To answer that, we must ask whether *Blake's* or *Mal's* rebellion is justified—and to answer that, we must consider when any rebellion against a government is justified.

REBELLION AGAINST GOVERNMENT

- ◆ Anarchists argue that no government is ever justified, and thus no one is ever obligated to obey any of its laws. But such arguments can't be used to defend *Mal* or *Blake's* rebellion because they aren't anarchists.
- ◆ This is especially true of *Mal*, who fought to align the Border Planets of the Independent Faction under one government. He doesn't reject all government—just ones like the Alliance. It doesn't seem that *Blake* is an anarchist either. Although he likes to cause havoc for the Federation, he also thinks his crew is obligated to obey him as long as they're voluntarily sticking around.
- ◆ This notion is similar to the notion to which philosophers often appeal to explain how government is justified—why we are morally obligated to obey its laws. The government is justified, they argue, by the services and protections it provides. As long as it is providing them and you are sticking around to enjoy them, then you are obligated to obey.

The arguments of anarchists are articulated in the Great Course *The Big Questions of Philosophy*.

- ◆ Thomas Hobbes put it more precisely. Because we would rather not live in a state of complete liberty (of anarchy)—what Hobbes called the state of nature—we implicitly agree to give up a measure of our liberty (of our ability to govern ourselves) to a governing body, as long as everyone else does the same. This agreement has come to be known as the social contract.
- ◆ According to Hobbes, we want to avoid the state of nature because it makes life “solitary, poor, nasty, brutish, and short.” It was so bad, Hobbes said, that rebellion against the government is never justified. No matter how badly the government mistreats you, the state of nature is worse—so just deal with it.
- ◆ This didn’t resonate with everyone, however, and philosophers started thinking about the obligations of government and when they deserved to be overthrown. This brings us to the philosopher John Locke, who thought that Hobbes exaggerated the state of nature’s brutality but admitted that it threatened one’s life, liberty, and property. For Hobbes, you had no natural right to such things, so you had to take what you could get.
- ◆ But Locke disagreed, saying that we have a right to such things even in the state of nature—and that it’s to protect such natural rights that we all enter into the social contract. Thus, simply put, when a government fails to protect our natural rights to life, liberty and property, rebellion against that government is justified.
- ◆ But it’s actually a bit more complicated than that. First, by entering the social contract, you necessarily give up a portion of your rights. For example, to ensure social stability, you agree to obey the laws. So, by definition, a government will always be violating your liberty to some degree.
- ◆ How do you distinguish between legitimate limits on your rights and grounds for rebellion? Locke argued that because you enter the social contract with the government to protect your rights, you implicitly agree to whatever is necessary to enable the government to protect your rights.

- ◆ How do you determine what is necessary? Locke's answer is that the people decide—although that's putting it a bit simply. Actually, the government decides, and the people decide on who's in the government.
- ◆ Another clarification that needs to be made is that Locke didn't think political rebellion was justified by any violation of natural rights, such as an unlawful arrest or taxes being too high. It has to be systematic violations where the very reason for the government's existence is negated.
- ◆ According to Locke, Mal's rebellion is justified because the Alliance seems to have been taxing and taking resources from the Border Planets and using them for the Central Planets without offering any representation, protection, or services to the Border Planets in return. This grossly violates their rights to life, liberty, and property, so, according to Locke, Mal's fight against the Alliance with the Independent Faction was justified.
- ◆ According to Locke, Blake's rebellion against the Federation is also justified. They have erased his memory, killed his family, and sent him to a penal colony on trumped-up charges. The government is clearly not holding up its end of the social contract, so Blake is not obligated to obey its laws.

TYPES OF FREEDOM

- ◆ In "Two Concepts of Liberty," philosopher Isaiah Berlin argues that there are 2 types of liberty, or freedom: negative freedom and positive freedom.
- ◆ Negative freedom is the kind of freedom we enjoy when we are free from outside interference or coercion. We are free to do something, in this sense, if no one else is threatening us not to do it. If there is a law against doing something, then one is not free in the negative sense to do that thing. This freedom can be called freedom from interference.
- ◆ Positive freedom is the freedom of self-determination or self-mastery; someone who is "a thinking, willing, active being" who bears responsibility for his or her own choices and can "explain them by references to [his or her] own [higher] ideas and purposes" is positively free.



- ◆ It's one thing for someone to be a master of him- or herself and choose a certain action; it's another for that action to not be against the law. But it's an entirely different thing to have the means or ability to do that action. This kind of freedom can be called freedom of means.
- ◆ These 3 kinds of freedom are often conflated and have not all always been recognized or even sought after.
- ◆ Although in a political context we usually think of freedom as freedom from interference (from the law), this is actually a pretty new concept in the West. Without freedom of means—the resources and abilities to do a particular action—laws permitting you to do that action don't do you much good. And for the majority of human history, people haven't had the means to do much; a select rich royal few did have the means, and everyone else was lucky to feed their family and survive. It wasn't until capitalism gave rise to a middle class that freedom from interference became sought after.

- ◆ Mal and Blake probably want a bit of freedom of means; their respective governments seemed to have robbed them of the ability to maintain the lifestyle they want. But primarily, Mal and Blake are seeking freedom from interference; the laws of their government keep them from doing what they otherwise would be able to do. This is especially true of Mal, who, unlike Blake, isn't all that interested in fighting the Alliance anymore. He just wants to be left alone to live his life.
- ◆ Both Mal and Blake are also seeking self-mastery—or, at least, have reason to fear that it could be taken away from them by the government.
- ◆ Perhaps ironically, while you do want the government to protect your freedom of means and self-mastery, you don't want it to guarantee them. Berlin argues that attempts by governments to guarantee self-mastery have led to nationalism, authoritarianism, and totalitarianism. The government decides what is actually in your best interest and then forces you to conform to that mold by ridding you of “lower-order” desires that it thinks you shouldn't want.
- ◆ The philosopher Jean-Jacques Rousseau argues that the desires of one's true-self would always line up with the common good. If your desires are contrary to that, he argues, they should be corrected. You should be “forced to be free”—forced to master your lower-order desires to align yourself with the common good.
- ◆ Ironically, protecting the freedom of self-mastery often involves incursions into freedom from interference.
- ◆ You also don't want the government guaranteeing freedom of means. Although you want it to protect you from theft, you don't want the government to guarantee that everyone has the same means to do any action they desire.
- ◆ We do want the government to protect our negative freedom; we want to be free from interference. But this must have limits as well. After all, a government that restricts nothing is equivalent to no government at all.

- ◆ When we enter into the social contract, we do so knowing that we are giving up some liberties because doing so is necessary to protect others. But which liberties should the government restrict, and which ones should it protect?

GOVERNMENT RESTRICTIONS AND PROTECTIONS

- ◆ The question of government restrictions and protections was addressed most famously by philosopher John Stuart Mill in this 1859 work *On Liberty*. Mill pointed out that, while the consent of the majority was certainly important, the majority can be just as tyrannical as a monarch. They can, for example, choose to enslave a minority population. He called this the threat of the tyranny of the majority.
- ◆ To guard against it, a government should adhere to what came to be known as Mill's harm principle: You should be free—in the negative sense—to do anything you want, as long as it doesn't include harming others.
- ◆ With this rule, Mill was actually guarding against intrusive protections of positive freedom—against the community dictating to individuals prescriptions on how best to live. Following his harm principle, Mill argued, was not only the best way to ensure the most happiness for the most people—by letting people decide for themselves how to live. This was also the best way to ensure the flourishing of the entire human species.
- ◆ Of course, there are costs. “Freedom isn’t free,” as the saying goes. But that doesn’t just mean that soldiers have to fight to guarantee our freedom. They do, but it also means that guaranteeing freedom in society comes with risks.
- ◆ Whether the cost of freedom is worth it must be gauged on a case-by-case basis. If freedom isn’t free, we have to consider the price tag.

METHODS OF REBELLION

- ◆ Fighting for freedom brings us back to considering the methods by which Mal and Blake rebel against their respective governments. As similar as the shows are, their approaches are quite different.
- ◆ Blake's approach is violent; he blows up installations and attacks military ships. He never targets the innocent, so he's not a terrorist, but he's certainly willing to tolerate some collateral damage.
- ◆ On the other hand, although Mal did violently rebel during the war, he has adopted a peaceful form of protest. He just wants to be left alone. Eventually, he does attack the Alliance, but it's completely nonviolent. He spreads information.
- ◆ Which approach is better? It all depends—on the severity of the problem, the effectiveness of the method, and the probability of success. After all, the violence of Blake's rebellion was limited until he came to command the *Liberator*. Then, he had the means and methods to effect a successful assault.
- ◆ On the other hand, Mal, his crew, and his little Firefly couldn't hurt the Alliance with a violent attack with all the luck in the world. Yet the information they spread was even more effective than Blake's efforts of rebellion against the Federation.

QUESTIONS

- 1 Given what you have learned in this lecture, is the rebellion against the Empire in *Star Wars* justified? In your answer, consider the fact that George Lucas (when he made *Episode IV*), initially envisioned the Rebels as analogous to the Viet Cong and the Empire as analogous to the United States.
- 2 At the beginning of *Serenity*, Mal shoots a man about to be eaten by Reavers without him asking. Was this a morally acceptable action? Consider this question now, and then consider it again after you finish lecture 21.

- 3 How bad would life in the state of nature be? Is Hobbes right? Is Locke right? Jean-Jacques Rousseau argued that it wasn't bad at all. How much abuse from the government should you tolerate if the only other option is life without government (in the state of nature)?
- 4 Compare these 2 approaches to college education: The purpose of a college education is to give you the specific skills you need to do a specific job; the purpose of a college education is to make you a better, brighter person, capable of figuring out how to do many different jobs. Which is the better approach, and why? What is the conception that most people embrace? Why?
- 5 Can you think of other costs of freedom besides those mentioned in the lecture?

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TV	<i>Stargate SG-1</i> (1997) <i>Battlestar Galactica</i> (2004): “Bastille Day” <i>Babylon 5</i> (1994) <i>Rick and Morty</i> (2013): “Auto Erotic Assimilation”
FILM	<i>District 9</i> (2009) <i>Children of Men</i> (2006) <i>Star Wars</i> (1977) <i>Snowpiercer</i> (2013)
PRINT	Robert Heinlein’s <i>The Moon Is a Harsh Mistress</i> Allen M. Steele’s <i>Coyote</i> Frank Herbert’s <i>Dune</i>

In the same way that you can try to solve domestic problems either violently or nonviolently, countries can do the same with international problems. It seems that they too often choose war over diplomacy, but it makes you wonder: When is war justified? Is it ever? After all, it inevitably kills millions, including civilians. Even if it’s not intentional, isn’t that wrong?

Before we explore this question in the next lecture, watch the 1997 movie *Starship Troopers*. As you watch, consider whether this movie is intended to be taken seriously. Are the heroes really heroes? Note the similarities with the real world. What do they say about the movie’s meaning?

STARSHIP TROOPERS, DOCTOR WHO, AND JUST WAR

LECTURE 17

STARSHIP TROOPERS AND FASCISM

- ◆ *Starship Troopers* is a futuristic movie in which an alien insectoid species known as Arachnids attacks Earth by throwing asteroids at it. Their first attack destroys Buenos Aires, the hometown of the protagonist, Johnny Rico. In response, he joins the military—along with his friends Carl, Carmen, and Dizzy—to get revenge.
- ◆ After an initial disastrously unsuccessful invasion of the bugs' home planet, Klendathu, Johnny aids in the capture of a "brain bug" that is directing the Arachnid's military operations. The film ends with a military recruitment video that stars Johnny.
- ◆ On its surface, *Starship Troopers* is a shallow, poorly acted, sci-fi shoot-'em-up about teenagers killing space bugs. Indeed, that's how it was received by most critics in 1997. But there is much more going on.
- ◆ First, consider how war is treated in the film. It is not only romanticized in news clips, but also is treated as sport by soldiers. But although the film appears to be glorifying militarism—the view that a nation should maintain a large military and use it liberally and aggressively to promote the nation's interest both at home and abroad—it's actually criticizing it.



Under what conditions, if any, is war justified?

Three views on this issue are militarism, which suggests that war is very easily justified; pacifism, which suggests that war is never justified; and just war theory, which suggests that war can be justified, but only in certain restricted conditions.

- ◆ Johnny's history teacher decries democracy and then glorifies the story of how the military took over and established martial law and a reigning stability. Yet it's that attitude that fuels the Terran Federation's doomed invasion of the Arachnids' home planet. They go in with no strategy, no objective, and no direction. As a result of this militaristic attitude, almost all of the humans are killed.
- ◆ Next, consider how the film's society is arranged. You can't vote unless you are a citizen, and only military service can earn you citizenship. You can't go into politics, pay for school, or even have a baby unless you've served. And noncitizens who dissent are punished in public by receiving lashes.
- ◆ Is this movie about fascism? Fascism is an authoritarian political philosophy that suggests a nation functions best when all of its citizens are forced to align with a single political party that requires unquestioning loyalty to the state, its military, and its authoritarian dictator.
- ◆ Historically, fascists fiercely suppress opposing parties and ideas and brainwash their populace with pro-state, pro-party propaganda. This involves suppressing, vilifying, and eventually eliminating a free press to establish a state-run press that will toe the party line and that usually involves continually exaggerating and outright lying to its citizens—especially about foreigners, racial minorities, those who oppose the party, and the government's own actions.
- ◆ Fascist governments control the entire nation's industry and commerce in the name of economic stability and self-reliance and discourage economic interaction with foreign powers, thus endorsing a mercantilism that suggests you should only buy or sell things made within your own country.
- ◆ Under fascism, all citizens must serve the military, either directly or indirectly, as the military is seen as the only way to ensure security—not only from outside invasion, but also from dissenters within the ranks. Police are militarized in the name of "law and order."

- ◆ Correspondingly, fascism rejects the notion that violence is morally problematic. Instead, it sees war and imperialism (annexing other territories) as a way of strengthening the nation.
- ◆ This is a movie about fascists. The Federation's flags and symbols, the uniforms, and even the architecture looks like it came out of 1930s Germany. In fact, the opening shot comes right out of *Triumph of the Will*, a 1935 propaganda film ordered by Hitler himself. The Federation even treats the bugs like the Nazis treated the Jews; it tries to exterminate them, uses them for medical experimentation, and refuses to entertain the possibility that they're sentient.
- ◆ But it's not praising Nazis. All the main characters are deplorable.
- ◆ The Robert Heinlein novel that inspired the film was actually overtly pro-fascist, but it was screenwriter Edward Neumeier and director Paul Verhoeven's expressly stated intention to turn the meaning of the original on its head. Verhoeven had grown up in the Nazi-occupied Netherlands and was disturbed by some of the fascist tendencies he had started to see in 1990s America.
- ◆ You might think that the idea of fascism in America is ridiculous, but consider the fact that "America First" was the name of a pro-Nazi, pro-Hitler, anti-Semitic committee that tried to keep Americans from fighting Hitler in World War II. It included a future president (Gerald Ford) and a future Supreme Court justice (Potter Stewart) and had enough support to keep its doors open until Japan attacked Pearl Harbor.
- ◆ Militarism is embraced by more than fascists. Indeed, the fact that (in 1997) critics missed the satire—and thought that *Starship Troopers* was celebrating militarism—may have vindicated Verhoeven's worries.
- ◆ When criticism comes in the form of satire, those being criticized often can't detect the sarcasm. Nazis would have thought that *Starship Troopers* was a movie about the beautiful future of the Third Reich. Perhaps Americans were unable to realize that they were being mocked because the film's pro-militarism hit a little too close to home.

Why Fascism Is Bad

Dictatorships are dangerous, as are governments deceiving and brainwashing their populace.

A free press is necessary for the exchange of ideas and the exposure of government corruption.

Economic isolation decimates the economy.

Vilifying racial minorities is horrific.

Militaristic police imposing “law and order” quickly leads to grand restrictions of personal liberties and makes possible horrors like the Holocaust.

DOCTOR WHO AND PACIFISM

- ◆ To explore the arguments against militarism, consider the view on the opposite end of the philosophic spectrum: pacifism—the notion that military intervention, and indeed violence of any kind, should always be avoided.
- ◆ Perhaps the most famous pacifist in science fiction is the Doctor. A Time Lord from Gallifrey who regenerates when he dies—thus turning into a new kind of person, played by a new actor—the Doctor travels through time and space in his TARDIS helping those in need.
- ◆ One thing that always remains constant, regeneration to regeneration, is that he never carries or uses a gun—a practical and symbolic gesture that demonstrates his commitment to nonviolence. He doesn't kill his enemies; he outsmarts them, almost always giving them a chance to renounce their violent ways first. If they do die, it's almost always because they end up killing themselves. The Doctor figures out a way to turn their violence against them.
- ◆ The Doctor's pacifism was the focus of the 50th anniversary special: "The Day of the Doctor." A previously unknown regeneration of the Doctor, played by John Hurt, who had renounced pacifism to fight in the "time war," is faced with a choice. He can destroy his archenemy, the genocidal Daleks, preventing them from killing all life in the universe—but only by using a doomsday weapon called the Moment, which will also destroy his home planet of Gallifrey. Killing millions would seem to be better than neglecting to save trillions, but because he's still a pacifist at heart, the Doctor hesitates.
- ◆ The episode serves as a passivism manifesto because of how the plot resolves. Two of the Doctor's subsequent regenerations appear and help him realize that there's a third choice: With the help of all their other regenerations, they can pull Gallifrey into an alternate dimension. This will not only save Gallifrey, but also turn the Daleks' violence against them. Because the Daleks are attacking Gallifrey from every angle, its disappearance will cause the Daleks' ships to be destroyed in their own crossfire.

◆ From this, we can derive the 2 main arguments that motivate pacifism.

1. One argument is based in duty. Because humans (and Time Lords) have a right to life, killing and violence are always wrong, regardless of the consequences. Even if using the Moment would save more lives than it costs, it would still be wrong to kill. Two wrongs don't make a right. This is called deontological pacifism.
2. The other argument is based in consequences. The idea is that, as solutions, acts of violence always do more harm than nonviolent solutions. The choice, the pacifist argues, is not between violence and doing nothing—doing nothing really could be worse. The choice is between action that is violent and action that is nonviolent. And even when it seems that the only 2 options are killing some now or letting more die later, there is always another, equally effective solution that does not require violence. Our presumption that violence can be justified prevents us from seeking it out.

◆ From this, we can derive pacifism's critique of militarism: Militarism jumps to using violence as a solution too quickly, without a full appreciation of its costs or even considering the possibility of nonviolent action. And even if you are not a pacifist, this seems to be right—it's not good to rush to war too quickly.

◆ When it comes to absolute pacifism, one can condemn individual acts of violence, such as killing, or larger social acts, such as war—or both. Absolute pacifism can be difficult to defend on the individual level because most regard defending the innocent (including oneself) to be morally justifiable. Even if everyone has a right to life, failing to protect someone's life when you can seems to disrespect that person's right to life just as much as if you had killed him or her yourself.

◆ Being an absolute pacifist about war is easier to defend. For one, regardless of whether war is intentional, it always involves killing innocents, and the deontological argument that killing innocents is always wrong has a lot of intuitive force.

- ◆ What's more, even combatants can be considered innocent; they're usually forced to fight by their governments. Soldiers would usually rather be home with their families. In addition, war causes a lot of harm—both immediately (in the form of death and destruction) and in the long term (in the form of political instability).
- ◆ But still, it's difficult to say that war can *never* be justified. Deontologically, can't a country rightly defend itself or innocents by waging war on an attacker in the same way that you can rightly defend yourself or an innocent by killing an attacker?
- ◆ If the right to life is absolute, refusing to defend it when you can seems immoral—and that includes when countries can wage war to save innocent lives. To paraphrase Jan Narveson, pacifism is hypocritical: If life is an absolute good, as the pacifist suggests, it must be worth defending.
- ◆ Derrick Jensen takes this criticism a step further by suggesting that voluntary pacifism is possible only for those who are not oppressed. Nonviolence is forced on the weak by the strong, because the weak don't have the ability to fight back. By voluntarily advocating for pacifism, the pacifist further oppresses the weak (by enabling the strong to oppress them).
- ◆ From a consequentialist point of view, it also seems possible for war to be justified. Take World War II, for example. Clearly, the Nazis' war for racial purity and world domination was not justified, but most agree that the Allies' war to stop them was.
- ◆ Yes, it led to the Cold War, the Korean War, and Vietnam—all of which were horrific—but that all seems like small potatoes when you think about the consequences of allowing Hitler to conquer Europe and quite possibly the world.

Ian Bickerton has argued that every war of the last 200 years has done more harm than good: “[V]ictory did not achieve its desired results, and war sacrifices were largely in vain.”

- ◆ Not only would he have succeeded in exterminating the Jews, but likely every minority group in the world—unless he decided to enslave them instead. And had Hitler won, the violations of human rights would have been disastrous.
- ◆ Of course, the pacifist would argue that there was a nonviolent solution to Hitler's quest for world domination that we simply weren't considering. Or perhaps Hitler's victory wouldn't have been as bad as the consequences of the war itself. But such arguments are as speculative as they are unconvincing.
- ◆ Hitler was a fascist devoted religiously to violence, with the means to conquer the world. As President Obama said in his Nobel Peace Prize acceptance speech, "A nonviolent movement could not have halted Hitler's armies." Thinking otherwise seems to be monumentally naïve.
- ◆ Another criticism of pacifism is that it's hypocritical because the only way you can have the freedom to be a conscientious objector is by others fighting to guarantee it. That's not to say that a personal commitment to pacifism can't be noble. But as an absolute, the notion that violence and war are *never* justified seems indefensible.

JUST WAR THEORY

- ◆ To tell whether a war is justified, we must consider just war theory—the middle ground between militarism and pacifism. Rooted in the writings of Saint Augustine and later expanded by Thomas Aquinas, the conditions under which war is justified are generally divided into 2 categories by Latin phrases: *jus ad bellum* and *jus in bello*.
- ◆ *Jus ad bellum*, or “the laws *to* war,” dictates the conditions under which going to war is justified.
 - ◆ War must be declared by a legitimate authority—for example, a leader elected by the population going to war.
 - ◆ The war must also be for a just cause; personal jealousy, pride, or lust for power won't cut it.
 - ◆ The methods must be proportional: The harm you inflict by waging war can't be worse than what you are trying to prevent. In fact, you must aim to do the minimal amount of harm necessary.

- ◊ You must have the intention to achieve a just cause.
 - ◊ You must be reasonably sure of victory.
 - ◊ You must only engage in war as a last resort.
- ◆ *Jus in bello*, or “the laws of war,” dictates how war must be conducted if it is to be just.
- ◊ Military actions must be rightly intended for legitimate military targets or objectives.
 - ◊ Military actions must also be proportional; they can’t do more harm than good and must do the minimum harm necessary to accomplish the objective.
 - ◊ They must be both necessary and sufficient for that objective; you shouldn’t be able to accomplish the same goal in a nonviolent way, and what you do must be enough to accomplish it.
 - ◊ They must also be approved by a legitimate authority.
 - ◊ They must discriminate between combatants and noncombatants; they cannot intentionally target civilians.
- ◆ It’s important to note that these are essentially guidelines. What counts as a “just cause,” for example, is debatable. And whether a war is just is not an all-or-nothing affair; it’s a matter of degree.
- ◆ A violation of one of the principles doesn’t necessarily make the war completely unjustified. What’s more, if one soldier sees another using disproportionate means, he or she can and should object, but he or she is not morally obligated to throw down his or her weapons and walk home because the entire war is now unjust.
- ◆ Applying these criteria to the war against the Arachnids in *Starship Troopers*, it seems the war is unjustified: Yes, the bugs attacked them, but the humans colonized their territory. Peace could have been brokered by a treaty or pulling the colonists out. The humans also entered the war without good reason to think that they could actually win; that’s why they got slaughtered on Klendathu.

- ◆ In addition, their plan to kill all the space bugs is disproportionate to the good they mean to accomplish. It's not like the bugs actually could wipe out the entire human race; they're not even capable of space travel, and Earth now has a defense against their asteroids. At this point, as Johnny makes clear, the war is only about revenge—which is not a just cause.

QUESTIONS

- 1 The director of *Starship Troopers*, Paul Verhoeven, says in the DVD commentary that the moral of his movie is that “war makes fascists of us all.” Is this consistent with his stated intention to turn the meaning of Robert Heinlein’s novel on its head? Is his interpretation better than simply interpreting the film as a mindless, sexy shoot-’em-up?
- 2 The protagonists of *Starship Troopers* are essentially Nazis. Verhoeven intended for the movie to criticize them, but usually a movie’s protagonists are the heroes. Does the fact that the youth of the film might not catch on to the social commentary—and perhaps might not realize that the “heroes” are actually villains—make *Starship Troopers* a dangerous movie?
- 3 The Doctor often tricks his enemies into killing themselves by figuring out a way to turn their own violence against them. But is turning an opponent’s own violence against them so that it kills them actually consistent with his pacifism?
- 4 According to just war theory, which past wars were justified, and which ones weren’t (and why)? Be sure to apply the criteria consistently.

RESOURCES

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RELATED SCI-FI

TV	<i>Star Trek: The Original Series</i> (1966): “A Taste of Armageddon”
FILM	<i>The Day the Earth Stood Still</i> (1951) <i>Dr. Strangelove, or: How I Learned to Stop Worrying and Love the Bomb</i> (1964)
PRINT	John Scalzi’s <i>Old Man’s War</i> Joe Haldeman’s <i>The Forever War</i> Joan Slonczewski’s <i>A Door into Ocean</i>

The next topic is colonialism, which is the practice of spreading one nation’s culture and way of life into foreign lands.

To prepare, watch at least one episode of *Star Trek* that deals with a central principle of the *Star Trek* universe: the Prime Directive.

The original series episodes “Return of the Archons” and “The Apple” are good choices, as are the *Next Generation* episodes “Symbiosis” and “Pen Pals.” If you’ve never seen *Star Trek: Enterprise*, watch “Dear, Doctor” or “Cogenitor.”

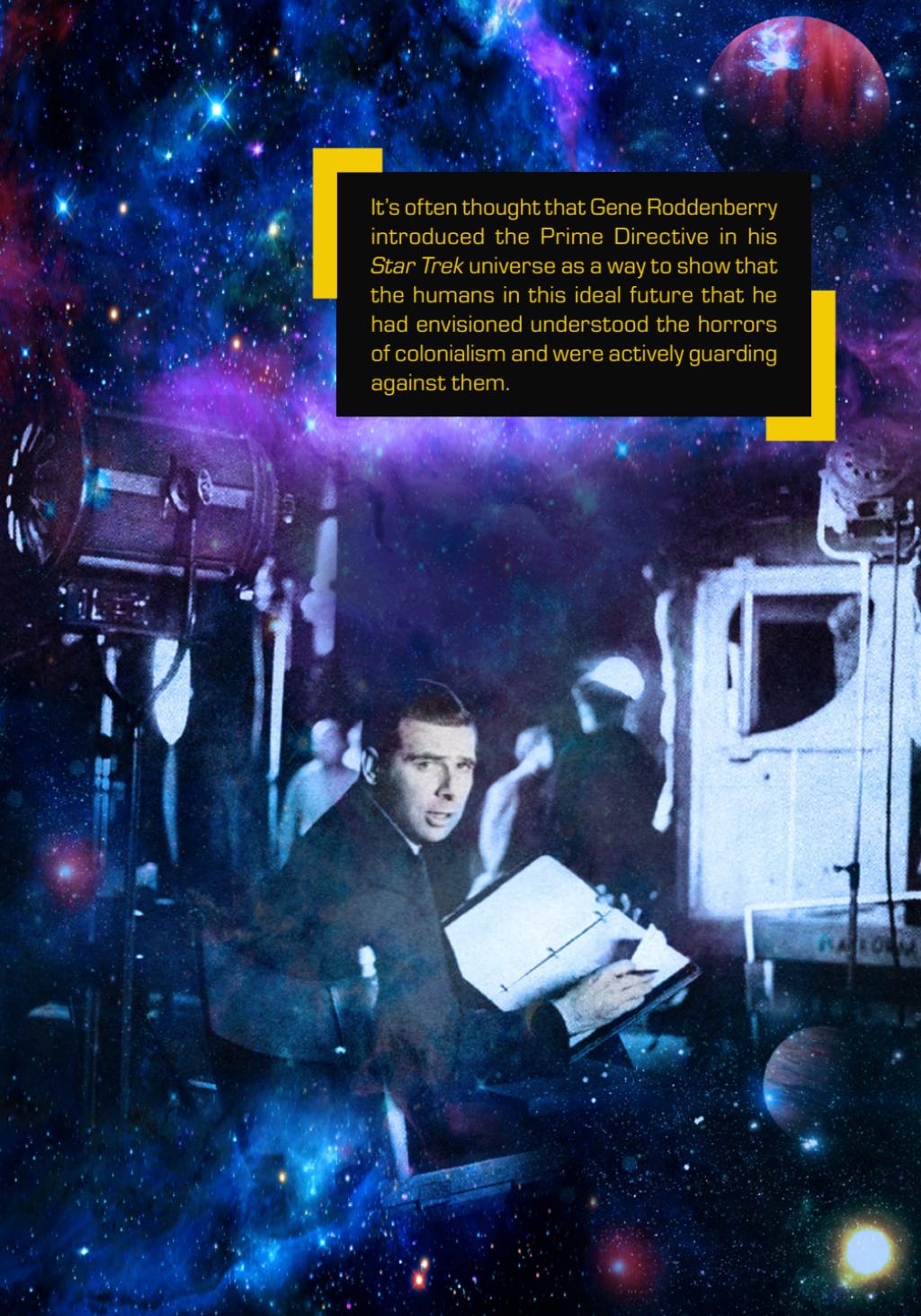
Whatever you watch, ask yourself what you would do in the situation the episode depicts.

THE PRIME DIRECTIVE AND POSTCOLONIALISM

LECTURE 18

THE PRIME DIRECTIVE

- ◆ The Prime Directive, the guiding rule of the Federation in Gene Roddenberry's *Star Trek* universe, is one of the most famous ethical rules in all of science fiction—and perhaps also its most controversial.
- ◆ *Star Trek* is set in a future in which humanity, in Starfleet spaceships equipped with warp drive that make them able to travel faster than the speed of light, is exploring and colonizing the galaxy. The Prime Directive sets forth Starfleet's restrictions for interacting with civilizations that have yet to develop warp drive technology. They can study them, but they cannot interfere with them—especially with their development—in any way.
- ◆ Once a civilization develops warp drive, interference from an outside civilization is inevitable. Indeed, by striking out into the galaxy, one could argue that they are inviting interference. They're joining a larger community that will provide access to advanced technology and expose them to new ideas. But before such interference is inevitable, when a civilization is confined to its solar system, the Prime Directive demands that interference should be avoided.

A man in a dark suit and tie is looking up with a concerned expression, holding a clipboard with papers. He is in a futuristic space station with various equipment and a window showing a starry space background. A yellow callout box contains the following text.

It's often thought that Gene Roddenberry introduced the Prime Directive in his *Star Trek* universe as a way to show that the humans in this ideal future that he had envisioned understood the horrors of colonialism and were actively guarding against them.

- ◆ The original *Star Trek* aired in the 1960s, when the negative effects of colonialism were first being recognized in academia. The colonial period, from the 15th to the 18th centuries, was a time of expansion into “new worlds,” much as we see in *Star Trek*—except it was Europeans, not all of humanity, stretching out into a new world.
- ◆ The Spanish colonized Central and South America; the British colonized North America and India. Africa, Asia, and Australia were all colonized.
- ◆ But unlike in *Star Trek*, colonialism involved imposing a new way of life on the native cultures—Europe’s religion, economic system, cultural practices, forms of government, and even its pastimes, holidays, and traditions.
- ◆ In the 1960s, people were beginning to acknowledge how horrifically the natives of these regions were treated—how badly their lands were exploited, how their cultures were destroyed, and how millions of them were killed, enslaved, or otherwise subjugated.
- ◆ At the time, Europeans thought colonization was justified because of their own racial and cultural superiority. They thought they were civilizing the “savages”—not only bringing them modern ways of living, but also correcting their religion and ethics.
- ◆ Inspired by Thomas Aquinas’s concept of natural law—moral rules supposedly discoverable by anyone with the ability to reason—European moral authorities, such as Pope Innocent, argued that they were justified in “correcting” native practices such as adultery, nakedness, and idolatry by making them monogamous, wear clothes, and become Christian.
- ◆ It was even seen as a divine mandate. Although some philosophers—such as Immanuel Kant and Denis Diderot—were critical of this idea, thinkers like historian Joseph-Ernest Renan argued that God had established a racial hierarchy. He thought that each race had its role to play: Some were for manual labor while others were for tilling the soil. The Europeans’ place, however, Renan argued, was soldiering and ruling. By colonizing the world and putting each race in its place, he thought the Europeans were simply doing God’s will.

- ◆ Today, these ideas are acknowledged by most as deplorable. But ideas like this can be traced back to Aristotle, and they fueled the mistreatment of the natives of colonized lands for centuries.
- ◆ If Roddenberry meant for the Prime Directive to ensure that the humans of his ideal future were never colonialist, it seems to have fallen short.
- ◆ That the Prime Directive fails to protect against colonial instincts is most obvious in the original series episode “The Apple,” where Capt. Kirk and the *Enterprise* crew visit Gamma Trianguli VI and find a society of scantily clad “primitives,” with no technology, living in huts.
- ◆ The natives call themselves the Feeders of Vaal because nearby is a machine named Vaal—which provides them perfect weather, all the necessities of living, and immortality—that they have to “feed” periodically with explosive rocks.
- ◆ Vaal’s only rule for them is that they can’t have sex; given that they are immortal, no “replacements” are needed, and a larger population would be impossible to support.
- ◆ Just like the colonialists before him, Kirk thinks that he has the right to impose his way of life on the Feeders of Vaal. As usual, Kirk takes the Prime Directive’s instruction to not interfere with the “development” of pre-warp cultures to imply that, if a culture isn’t “developing,” then he can do whatever he wants.
- ◆ He decides, according to his definition, that the Feeders aren’t “developing”: “These people aren’t living; they’re existing. They don’t create, they don’t produce, they don’t even think. They exist to service a machine.” So, Kirk destroys Vaal and their entire way of life.
- ◆ Kirk’s mistake is twofold. First, they don’t live to service a machine; the machine actually serves them. It’s just that when Vaal is running low on fuel, they drop everything they’re doing to fill it up, because it keeps them alive—just like Kirk does when the *Enterprise*’s dilithium crystals are exhausted. Second, Kirk’s actions are colonialism at its worst: Kirk appeals directly to the Western values of creation, production, and thinking and concludes that he has a right to impose these things on the Feeders of Vaal.

Is colonialism related to imperialism?

They are so related, in fact, that the terms are often used interchangeably, and even in academia, the difference between the 2 concepts is not that well defined.

Think of colonialism in the Greek sense: as the imposition of one society on another through the creation of a colony, either sending settlers to create colonies on native lands or turning existing societies into colonies.

Think of imperialism as anything that accomplishes the same kind of imposition without the creation of a colony.

- ◆ But why do the Feeders of Vaal need to do these things? Are they morally obligated to be inventing new technologies? Why? Their life is already as convenient as it can be. Do they need to be growing their own food? Kirk doesn't even do that; he gets it from food replicators on *Enterprise*.
- ◆ Indeed, all the creating, producing, and thinking done in the West is done with one goal in mind: to eventually produce the idyllic life the Feeders of Vaal already have.
- ◆ Sure, they can't have sex, but Kirk imposing his moral views regarding sex on these people is just as wrongheaded as Pope Innocent imposing Christian sexual norms on Native Americans. These people's sexual lives are none of his business.
- ◆ In fact, Kirk's destruction of Vaal will likely have the same disastrous result as colonialism; these people have never grown their own food or welled their own water, so soon after Kirk leaves, they are all likely going to be dead.

POSTCOLONIALISM

- ◆ Postcolonialism—the academic movement that studies the impact of colonialism (and is almost always critical of it)—was just getting started in the 1960s. That's probably why its concerns weren't taken that seriously in the original 1960s *Star Trek*. But much postcolonial work followed the original series.
- ◆ The overarching theme was that European, or “Western,” values and ways of life had been unjustly assumed superior and wrongly imposed on non-European communities—a mistake that we need to guard against repeating. And this, it seems, is a lesson that Roddenberry took to heart because you can see the influences of these postcolonial voices in subsequent *Star Trek* series, such as *Star Trek: The Next Generation*, which aired from 1987 to 1994.
- ◆ Take the episode “Justice.” Picard and the crew of the *Enterprise*-D befriend the overamorous, peace-loving people of Rubicun III, who kind of look like the Feeders of Vaal but are more technologically advanced. The crew discovers that they keep peace on their planet by having the death penalty as the only punishment for any crime.

- ◆ Unaware of this, Acting Ensign Wesley Crusher accidentally crashes into a restricted greenhouse and is sentenced to death. But instead of trying to rewrite their laws by imposing a Western-style justice system on them—as Kirk undoubtedly would have done—Picard simply makes a successful plea for Wesley’s life.
- ◆ But postcolonialism is not without its problems, the primary of which is its seeming endorsement of cultural moral relativism, which is the suggestion that moral facts—facts about what is morally right and wrong—are relative to cultures or societies. In other words, what’s viewed as morally acceptable in one culture is morally acceptable for those in that culture but isn’t for those in another culture with a different code.
- ◆ This is why it would always be considered wrong to impose one culture’s moral code onto another. But postcolonialism’s endorsement of cultural moral relativism is problematic because moral relativism is false.
- ◆ A good case can be made that many of the things we think are objective moral facts really are just cultural conventions. For example, there is no objective fact about how people should dress or what counts as rude behavior.
- ◆ In the name of colonialism, many traditions, taboos, and moral norms have wrongly been imposed on native populations. But if there are moral facts, then some of those facts are objective. A culture thinking it’s okay to exterminate or enslave a minority group does not make it acceptable to do so.
- ◆ One culture imposing a moral norm on another isn’t necessarily bad. But it’s not necessarily good, either.
- ◆ If there is no moral difference between the imposed and the native practice, it would seem that the native population has the right to keep their own. And if instead of replacing an immoral practice the colonizing force imposes it—such as introducing or imposing slavery on a society—that would be wrong. Indeed, it seems that these are the kinds of mistakes that usually happened with colonialism.

- ◆ But the notion that it's always wrong for one culture to impose its values on another is false. You have to consider these things on a case-by-case basis. A colonizing force could replace a morally bad practice with a better one.
- ◆ You might be a nihilist and reject the notion that there are moral facts at all. But even on nihilism, cultural moral relativism is false. If nihilism is true, then morality isn't relative to culture—it's not relative to anything. It just doesn't exist. Indeed, if you're a nihilist, the notion that Europeans did something morally wrong by imposing their culture on native populations, stealing their land, and killing them en masse doesn't make any sense. If you're a nihilist, there is no right and wrong.
- ◆ In fact, the notion that such things are morally wrong stands at the center of the postcolonial critique of colonialism, yet that notion is antithetical to the cultural moral relativism that postcolonialism seems to endorse. If the postcolonialist thinks it's always wrong to impose one's moral norms onto another culture, then why are the postcolonialists trying to impose their moral norms of cultural respect on past Europeans?

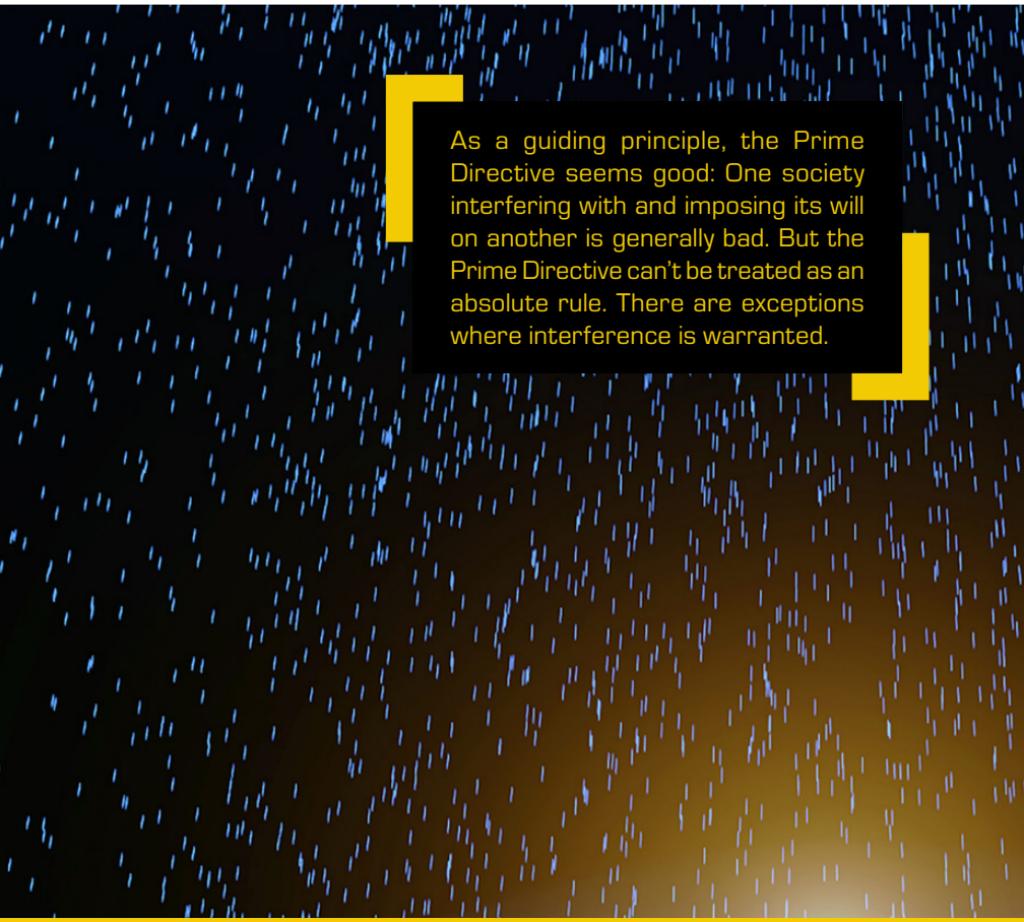
EPISTEMOLOGICAL HUMILITY

- ◆ A better defense of the notion that it's always wrong to impose one culture's norms on another is rooted in moral epistemological humility, an admission of our inability to know for sure that our moral beliefs are true. This isn't the suggestion that there are no moral facts or that moral facts are relative—just the admission that we could be wrong about what the moral facts are.
- ◆ Knowledge doesn't require certainty, so a lack of certainty about moral facts doesn't make moral knowledge impossible. And if you know that some cultural practice is wrong, it seems that you should stop it if you can—whether it's in your culture or another.
- ◆ That's not to say that we shouldn't be humbler about what we think we know; thus, we should really examine our own moral rules before we impose them on others. But it does seem possible to be certain enough about the wrongness of a cultural practice to stop it.

- ◆ So, while it's true that the sins of the colonialists were vast, it can't be the case that one culture imposing its values on another is always wrong—like when the Allies imposed their prohibitions of genocide on the Nazis in World War II. You have to strike a balance and figure out when interference is warranted and when it isn't.
- ◆ But there may be an asymmetry when it comes to how certain you need to be when it comes to interfering in your own culture versus interfering in another. You might be justified in stopping a practice in your own culture, but not justified in stopping that same practice in another culture.
- ◆ Take the *Star Trek: Enterprise* episode “*Cogenitor*.” In it, the crew makes contact with a species called the Vissians, which are trisexual; they have males, females, and cogenitors (which are denied a name, not educated, and treated like property).
- ◆ When commander Tucker learns that cogenitors’ brains are just as advanced as all other Vissians, in the name of human rights he takes it upon himself to educate one and show the cogenitor the limitless possibilities of life. The cogenitor becomes dissatisfied with life among the Vissians and asks for asylum on the *Enterprise*.
- ◆ Tucker thinks he did the right thing, but Capt. Archer argues that it’s not their place to tell the Vissians what rights cogenitors should have.
- ◆ It’s difficult to tell who is right. If Tucker had seen one group of humans treating another that way, his corrective impulses would seem justified. But there are a number of things about Vessian culture of which Tucker is unaware that are relevant to how cogenitors are treated.
- ◆ Cogenitors are necessary for Vessian reproduction and are extremely rare. Couples must apply to have one assigned to them and are lucky to get one after waiting years. If cogenitors were given rights and a choice in the matter, the Vessian species might go extinct.
- ◆ As one of the Vissians pointed out, it’s easy to misunderstand a cultural practice when you know nothing about the culture.

NONINTERFERENCE AND UNINTENDED CONSEQUENCES

- ◆ The immorality of imposing one culture on another is not the only reason that is cited for maintaining a policy of noninterference. There are also the dangers of unintended consequences.
- ◆ Take the *Next Generation* episode “Symbiosis.” In it, the *Enterprise* discovers a pre-warp civilization where the people on one planet (Brekka) have tricked the people of another (Ornara) into thinking they can’t live without a drug the Brekkians produce—when really the Ornaranans are just addicted.



As a guiding principle, the Prime Directive seems good: One society interfering with and imposing its will on another is generally bad. But the Prime Directive can't be treated as an absolute rule. There are exceptions where interference is warranted.

- ◆ Picard could reveal the truth, undo the entire trading relationship, and even mitigate the Ornaran's withdrawal symptoms, but he doesn't. This is not because he doesn't want to impose his culture's moral rules about drug use; instead, it's because he doesn't know all that would happen as a result and wants to avoid responsibility for the consequences. And this seems right. After all, given that Brekka has devoted its entire society to the production of the drug, revealing the truth could wipe out their entire civilization.
- ◆ Similar reasoning could be given to defend the Prime Directive's provision against giving pre-war civilizations access to advancements, such as revealing the existence of alien life. The effects could be disastrous.
- ◆ But there are limits to justifying noninterference in the name of unintended consequences. Inaction can also have dangerous consequences, so you can't justify inaction in the name of unintended consequences. And in some cases, both action and inaction come with known consequences, but it's not clear which is better or worse.

QUESTIONS

- 1 The Prime Directive restricts introducing a society to a technology they have not yet developed. One worry is that until a society has "earned the right" to use a technology by developing it, they may use it irresponsibly and cause more harm than good. However, even developing a technology doesn't mean that a society is mature enough to use it; the fact that we as a society ignore the scientific consensus behind climate change could be used to argue that we are not mature enough for fossil fuels. What other technologies might we not actually be mature enough to handle, even though we have developed them (such as atomic power or the internet)? What might have happened were they invented or discovered even earlier?
- 2 What other restrictions to cultural interference can you think of that should be included in the Prime Directive?
- 3 What examples of cultural interference can you think of that have been or could be justified? How certain are you that the replaced practice is morally inferior to the one that it's being replacing with?

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RELATED SCI-FI (OTHER STAR TREK ON THE PRIME DIRECTIVE)

Star Trek: The Original Series (1966): “Bread and Circuses,” “The Omega Glory,” and “A Piece of the Action”

Star Trek: TNG (1987): “Who Watches the Watchers,” “Homeward,” and “Insurrection” (movie, 1998)

Star Trek: Voyager (1995):
“Course: Oblivion,”
“Prime Factors,”
“False Profits,”
“Time and Again,” and “Thirty Days”

Star Trek: Enterprise (2001): “The Communicator”

RELATED SCI-FI (COLONIALISM)

Avatar (2009)
H. G. Wells’s *War of the Worlds*
Gwyneth Jones’s *North Wind*
Octavia Butler’s Xenogenesis trilogy
Matt Ruff’s *The Mirage*

To explore the benefits and dangers of capitalism, watch an old silent film called *Metropolis*. Try to find the restored 2010 version.

As you watch, ask yourself what the moral of the story is. You’ll see it stated at the beginning and end, but consider what that moral really means.

CAPITALISM IN METROPOLIS, ELYSIUM, AND PANEM

LECTURE 19

Capitalism is the economic philosophy popularized by Adam Smith that suggests adopting a laissez-faire approach, which is colloquially understood to mean “just let it be.” The economy should be driven by personal choices, rather than by the government, because competition in competitive markets drives innovation, creates jobs, lowers prices, and thus leads to more societal wealth—what Smith called universal opulence. It’s as if the process is guided by a beneficent invisible hand and government economic engineering just gets in its way.

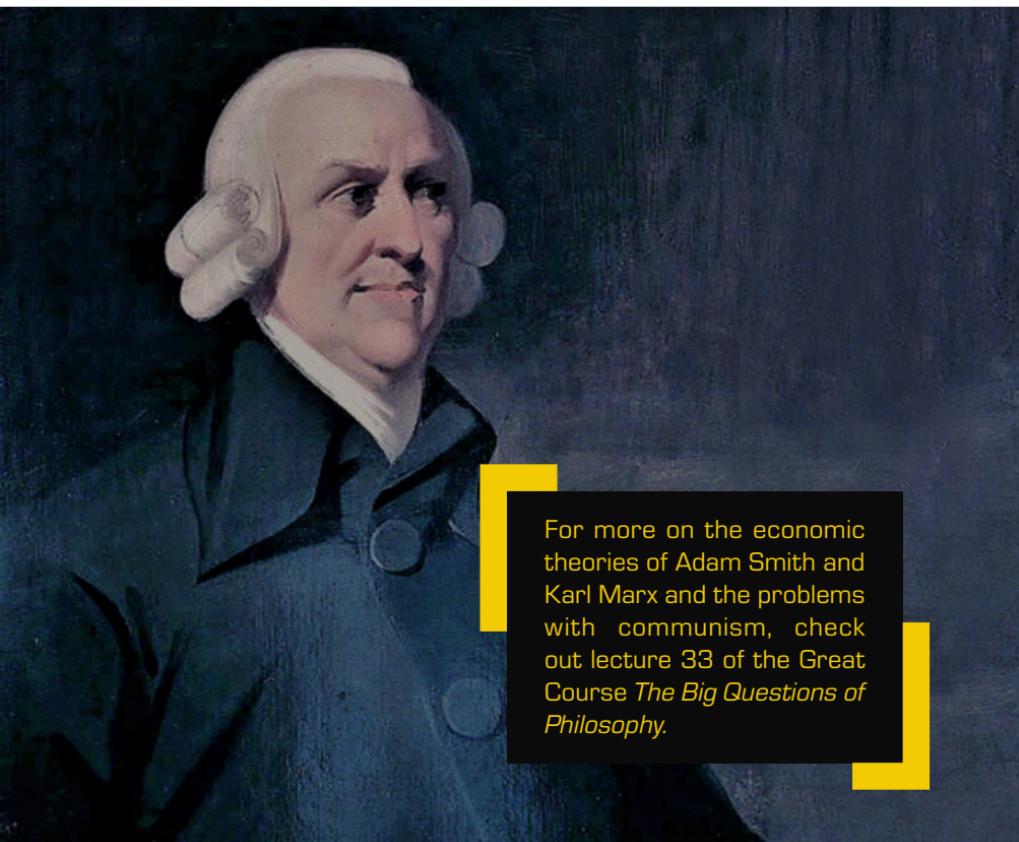
To a large extent, the adoption of capitalism had the economic benefits Smith projected and was responsible for the creation of the middle class. But it also had a number of negative effects.

METROPOLIS

- ◆ *Metropolis* is set in a futuristic dystopia where the rich enjoy a lavish life in skyscrapers while underground workers toil away. Freder, the son of Metropolis's wealthy master, descends into the lower level of the city to find a woman named Maria, only to instead find the giant Heart Machine that runs the city and the masses of miserable workers that maintain it. He decides to help, briefly taking on a job that involves him moving the arms of a clock. He learns from the foreman Grot that the workers are secretly gathering after their shift.
- ◆ At the meeting, he sees Maria preaching to the workers, prophesying the arrival of a mediator who can improve the condition of the workers by bringing the rich masters of the city and the workers together. Freder thinks this can be him, and Maria agrees.
- ◆ Freder's wealthy father catches wind of this and orders a mad scientist friend of his to have a robot he has constructed take on the likeness of Maria and tarnish her reputation by inciting the workers to riot. They do, destroying the Heart Machine—which ends up flooding the catacombs, where all the workers' families live. While the workers are busy burning pseudo-Maria at the stake, the real Maria and Freder are saving the workers' children from the flood.
- ◆ Then, in a final battle in front of the workers and his father, Freder defeats the mad scientist, saves Maria, and then fulfills his destiny as the mediator between the workers (represented by the foreman Grot) and the rich masters (represented by his father).
- ◆ The moral of the film is then scrolled across the screen: “THE MEDIATOR BETWEEN HEAD AND HANDS MUST BE THE HEART.”
- ◆ The film is essentially an argument in favor of labor unions. Workers in an industrial capitalistic society without adequate unification and representation (that is, without a mediator) will just be taken advantage of by rich business owners—forced by them to slave away for pennies a day with little regard for their safety or well-being.

- ◆ The appropriate response, however, is not to destroy the machine of capitalism, as the workers destroy the Heart Machine in Metropolis. That results in disaster. Society needs capitalism to function, just like Metropolis needs the machine.
- ◆ What is needed is an understanding between the workers and the wealthy—an agreement—where each recognizes the role and necessity of the other and respects and compensates them accordingly. This is accomplished by banding the workers together and then appointing one of their own to be their mediator to their employer—that’s the definition of a worker’s union.
- ◆ Some have accused *Metropolis* of being an argument for communism. But in no way does the film advocate for all production to be controlled by the state, or for all property to be held in common and divided equally, or for the elimination of social classes. Instead, it recognizes the value of, and advocates for the continued existence of, the social classes. Both the head and the hands are needed.
- ◆ And this shouldn’t be surprising. Fritz Lang, the film’s director, was a member of the upper-class bourgeoisie. In 1927, the German economy was struggling, and similar economic woes had motivated a successful communist revolution in Russia only 10 years prior.
- ◆ Indeed, the communists had almost taken control in Germany in 1923. So, Lang had good reason to oppose communism: to protect his social position. It seems that he was suggesting that capitalists should address the concerns of communists to prevent a worker revolt.
- ◆ The concerns of communists that the film addresses were most famously articulated by the intellectual father of communism, Karl Marx: worries about the oppression and exploitation of workers under a capitalist system.
- ◆ While Adam Smith’s capitalism was superior to the mercantilist “government-controlled” economy it replaced, it also led to industrialization. Industrialization did produce more and cheaper goods, but because the labor force was abundant and factory work didn’t require highly skilled workers, factory owners ended up paying their employees pennies a day—and skipped out on things like safety inspections, vacation time, breaks, and days off.

- ◆ Instead of the “universal opulence” Smith had promised, under capitalism people slaved away on subsistence wages, unable to feed their families and working jobs that often killed them.
- ◆ Marx was especially concerned about what he called worker alienation. The factory jobs in industry were a far cry from the jobs of old-style artisans, who crafted goods by hand. Factory workers would repeatedly perform the same mundane task on a factory line. This, Marx argued, was dehumanizing—making them just a part of a machine. And because the work was divorced from the final product, it came with no sense of accomplishment. Indeed, because the workers are simply executing the orders of the factory owner, they are not even the director of their own actions.



For more on the economic theories of Adam Smith and Karl Marx and the problems with communism, check out lecture 33 of the Great Course *The Big Questions of Philosophy*.

- ◆ Smith was just as worried about worker alienation as Karl Marx; his solution was simply different. Instead of a workers' revolt that would eventually eliminate social classes and private ownership and distribute all goods equally, Smith suggested that worker alienation could and should be combatted by public-funded education. A truly educated person, Smith thought, was the kind of person that had the mental fortitude to survive working in a factory—or on the machine underneath Metropolis.
- ◆ In fact, Smith recognized many shortcomings of capitalism and recommended what today would be called socialistic solutions—socialism being the suggestion that the government should provide certain services and control certain industries instead of the free market. And this should be paid for by a progressive tax system, Smith said, where the more wealth a person has, the higher percentage of it they would pay in taxes.
- ◆ Perhaps the best economic system is a compromise that lies in the middle ground between the theories of Smith and Marx. It would rely on capitalism to provide competition, economic growth, and opportunity but then rectify the shortcomings of capitalism with government intervention.
- ◆ Economist John Maynard Keynes realized that capitalism was the best way to generate wealth but also recognized the evils that capitalism generated. Keynes was especially worried about capitalism's inevitable market crashes—such as the Great Depression of the 1930s, which Keynes (and many others at the time) feared might be permanent.
- ◆ To solve this problem, Keynes argued, the government must redistribute some wealth. The government should tax the rich and then invest that money in infrastructure and other projects that create jobs for the poor. The goal was not complete wealth equality. In his view, the Depression was a result of the fact that production had outstripped demand; there were too many products that people couldn't afford to buy. Getting the poor enough money to buy those products would create more demand and then set the economy back on track.
- ◆ Many consider government spending on the war effort in the 1940s, which did exactly that and lifted us out of the Great Depression, to have vindicated Keynes's theory.

- ◆ *Metropolis* advocates for a similar kind of middle-ground solution. It recognizes that the machine of capitalism is necessary for society to function, but also recognizes the horrendous conditions it can create for workers.
- ◆ The solution isn't to abolish capitalism and replace it with communism, but to guard against the vices of capitalism that communists worried about. And you can do that, at least in part, by appointing a mediator to lobby on behalf of the workers. Indeed, that is what labor unions do, and not only for the individuals who work in the unions. Historically, unions have been a fairly successful middle-ground solution to the problems capitalism raises.
- ◆ The problems with capitalism are not a reason to embrace communism—which has its own set of problems. And we shouldn't abandon capitalism for socialism. In fact, that implies a false dichotomy. Socialism is a matter of degree; a socialist program is merely one in which the government provides a service or controls a sector of the economy.
- ◆ America's capitalistic system already contains many socialist programs that are widely supported and seen as essential, such as Social Security, welfare, the public school system, and Medicare and Medicaid. And each was introduced because, like Adam Smith, we recognized a problematic consequence of capitalism and proposed a middle-ground solution to rectify it.

ELYSIUM

- ◆ The mention of socialist programs such as Medicare and Medicaid raises the topic of socialized medicine, which brings us to *Elysium*, set in the year 2154, when the Earth has become so overpopulated and polluted that the wealthiest have abandoned the planet to live in a utopian space station called Elysium. One of the main perks of Elysium is that it has Med-Bays capable of curing all diseases, repairing injuries, regenerating body parts, and even reversing aging. But these devices are for the use of Elysium residents only.
- ◆ The inhabitants of Earth, who live in deplorable conditions and have minimal access to health care, often desperately attempt to reach Elysium to use one of the Med-Bays, only to be shot down or deported once they are captured.

- ◆ What the film describes is not unlike what capitalism has produced in America. When health care is treated as a commodity, it becomes expensive—because it's highly valued and requires expertise. This necessarily limits access.
- ◆ Insurance programs can increase access, but not everyone can access them, either. And in a way, they made things worse. Insurance companies asking for discounts on bulk goods and services forced hospitals to increase their prices. Consequently, health-care costs have soared, millions don't get needed care, those who do often go broke, and America spends thousands more per citizen on health care than any other nation in the world.



Americans often pay up to 1300% more for health-care services compared to what it costs the hospital to provide them.

- ◆ One fundamental reason capitalism can't reduce costs for health care, like it does for other goods, is because people can't really comparison shop. When your health is concerned, you usually have to go to whichever provider is nearest for whatever services you need. But without competition, there's no incentive for providers to lower prices or improve services.

- ◆ Arguably, the philosopher who'd be most opposed to unequal access to health care

is John Rawls, who argues in his book *A Theory of Justice* that one can discover what principles would govern a just society by determining what people would agree on if they were about to be placed in a society without knowing what position in society they would hold. This is because the best way to figure out what is equitable is to figure out what people would agree to if they were divorced from their particular interests by not knowing who they are.

- ◆ Elysium is not the kind of society you would want to enter without knowledge of where you'd be living. You'd instead demand that everyone have equal access to the Med-Bays—and, indeed, the movie ends with ships full of Med-Bays being dispatched to Earth's surface.
- ◆ Rawls would demand exactly this, and for the same reason, he would favor a single-payer health-care system for Americans.
- ◆ The general conclusion that Rawls drew was that if you had a collection of people about to be placed in society without knowledge of who they would be, they would agree that 2 principles of justice should rule their society:

1. Everyone should have an equal amount of liberty, as long as that liberty was compatible with everyone else's.
2. The economic and social inequalities that exist should be “arranged so that they are both reasonably expected to be to everyone's advantage and attached to positions and offices open to all.”

Most developed nations provide health-care services for all their citizens through a taxpayer-funded single-payer system.

- ◆ Rawls's fiercest critic was Robert Nozick, who tried to refute Rawls's argument in his book *Anarchy, State, and Utopia*. Rawls's mistake, Nozick argued, is failing to account for the fact that people earn things. In Rawls's description, people are imagining that they are about to be placed in a social and economic position at random.
- ◆ But in reality, Nozick argued, people earn what they have through work, and when they do, they're entitled to it. And it's morally wrong to take what someone is entitled to and give it to someone else. Nozick admits that not everyone morally deserves what they earn—because whether they even have the opportunity to earn it is largely a matter of chance. It all depends on what social class they were born into, what education they received, or even what their genetic makeup is.
- ◆ But even so, Nozick argues, they still earned it—they still worked for it—and thus they are entitled. Perhaps it's wrong to let people starve, but it's also wrong to take what people have earned, and 2 wrongs don't make a right. But the capitalistic society of *The Hunger Games*, Panem, illustrates the flaw in Nozick's reasoning.

THE HUNGER GAMES

- ◆ *The Hunger Games* is set in Panem, a distant future state where environmental disaster has desolated much of North America. The wealthiest have collected into one prosperous city called the Capitol that rules over 12 districts with an iron fist, forcing each to supply the Capitol with a specific set of goods. As punishment for a failed rebellion, the Capitol forces 2 children from each district to compete in the Hunger Games, where they fight to the death in an arena for the amusement of the Capitol's residents.
- ◆ The disparity between those who live in the Capitol—capitalists, we might call them—and those who live in the districts is obvious. In District 12, for example, Katniss Everdeen and her family struggle to feed themselves. When she wins the Hunger Games and is taken to the Capitol, however, she sees food in overabundance, more than anyone could eat, wasted everywhere.

- ◆ Suppose you had an opportunity to steal some food from a capitalist and give it to a starving person who lived in District 12. This would obviously be the morally right thing to do.
- ◆ Yet according to Nozick, it wouldn't, because the capitalists earned that food and are thus entitled to it. He says that 2 wrongs don't make a right—and that might be true—but we're going to have to do something morally wrong either way. Either we take what someone earned or we let someone starve to death even though we could prevent it.
- ◆ But shouldn't we choose to avoid the morally worse thing? And isn't letting someone die worse than stealing someone's food—especially when he or she doesn't need it and was only able to earn it by being lucky enough to be born in the Capitol?
- ◆ We don't have anything quite like the Hunger Games in the real world yet. But the wealth disparity in Panem actually reflects that of the real world. According to a comprehensive study conducted by Oxfam International in 2014, the wealthiest 1% control 40% of America's wealth and the top 10% control 75%.
- ◆ As Rawls pointed out, some wealth inequality is inevitable—but this doesn't seem to be the kind of arrangement anyone would agree to if they didn't know who they would be.

QUESTIONS

- 1 It's often said that the free market is what spawns innovation in the medical field. What other ways are there to motivate medical innovation? When medical professionals develop new medicines, do they do it for the money or to save lives?
- 2 How is Adam Smith's argument for a publicly funded police force similar to the argument for single-payer health care?
- 3 Both Keynes and Rawls argue for wealth redistribution. What is the difference between the arguments that they present for that conclusion?

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RELATED SCI-FI

TV *Star Trek: TNG* (1987): "The Neutral Zone"

FILM *RoboCop* (1987)

PRINT Robert Heinlein's *The Moon Is a Harsh Mistress*

Gregory Benford's *Timescape*

H. G. Wells's *When the Sleeper Wakes*

William Gibson's Sprawl trilogy

Ursula K. Le Guin's *The Dispossessed*

Frederik Pohl and C. M. Kornbluth's
The Space Merchants

Dani Kollin and Eytan Kollin's
The Unincorporated Man

Richard K. Morgan's *Market Forces*

In *Elysium*, people can barely stand to breathe the air because it is so polluted. In *The Hunger Games*, global warming has made the seas rise and turned most of America into a wasteland.

To prepare for next lecture's discussion of the topic of environmentalism, watch *Snowpiercer*. Try to figure out what the message of the film is, especially regarding the environment. What view about climate change and global warming is it endorsing?

SNOWPIERCER AND CLIMATE CHANGE

LECTURE 20

In addition to being a scientific issue, the environment is also philosophic in numerous ways. Philosophy is needed to answer certain environmental questions that science cannot. For example, science can determine whether the environment is in danger, but not whether the environment itself is worth saving. Is the environment only valuable as a means to supporting human life, or should it also be preserved for its own sake?

The environment is undoubtedly valuable as a means to sustaining human life, and if the predictions of climate scientists are accurate, the effects of climate change could rob current generations of the resources they need to survive. And that raises the central question on which any modern discussion of the environment must focus: Should we believe the warnings of climate scientists about the occurrence and severity of climate change?

A PHILOSOPHIC ANALYSIS OF CLIMATE CHANGE

- ◆ Philosophers have long recognized that most of what we know, we don't know directly—especially about how the world works. We gain such knowledge through testimony. We read textbooks, listen to teachers, and search on the internet; we rarely perform experiments or see the evidence directly ourselves. But those telling us about it could get it wrong, or be lying. So how do we know what we should believe?
- ◆ On scientific matters, the answer is simple: We should listen to the relevantly qualified experts. Because they have the relevant expertise to evaluate the evidence (and we don't), when the experts are agreed, they're likely right and we should believe them.
- ◆ But who qualifies as a relevant expert? How can we tell whether the experts agree and what they agree on? And if the experts don't agree, which ones should we believe? These are philosophic questions. And the film *Snowpiercer* can help answer them.
- ◆ In *Snowpiercer*, to combat climate change, the governments of the world have dumped a cooling agent called CW7 into the atmosphere, only to have the plan backfire and deep-freeze the entire planet. Humanity's few survivors live on a never-stopping, snow-piercing, circumnavigating train built by an eccentric billionaire named Wilford. The plot follows a revolution of tail-section dwellers who slowly make their way to the front of the train to confront Wilford.
- ◆ Because it seems that humanity should have done something to combat climate change before such drastic measures were needed, superficially *Snowpiercer* seems to be an argument that we should do more to combat climate change now. But the movie could actually be interpreted as an argument for a position on climate change called lukewarmerism.
- ◆ Although they're often conflated, global warming and climate change aren't the same. Global warming is the rising of the average overall global temperature. Climate change is the effect of global warming, such as the poles melting and growing seasons shifting—things we've already seen happening. Ocean warming has already caused ocean currents to slow and made hurricanes and typhoons more severe. Some places in the Middle East are nearly uninhabitable, and Russian permafrost is melting.

- ◆ There are some who deny this—but denialism comes in many forms. There are global warming deniers, who claim that the globe isn't getting hotter. Then there are climate change deniers, who admit that the globe is warming but don't think that it's changing the climate. Then there are those who deny anthropogenic climate change; they deny that the human production of greenhouse gases is to blame for climate change.

A wide-angle photograph of a vast, dry landscape under a dramatic sunset. The sky is filled with deep orange, red, and yellow hues, with wispy clouds. In the foreground, the ground is covered in dark, dry, and deeply cracked soil, characteristic of severe drought. A small strip of green grass is visible on the left horizon.

Nine of the 10 hottest years in recorded history have been since the turn of the century, with the top 4 including 2014, 2015, 2016, and 2017.

- ◆ And then there are those who call themselves lukewarmers—who acknowledge anthropogenic climate change but simply maintain that the worries about it are exaggerated. *Snowpiercer* seems to be a lukewarmer's movie because it endorses that idea and many notions lukewarmers use to defend it.
- ◆ Lukewarmers, like *Snowpiercer*, don't deny that the globe is warming—and for good reason. Temperatures are empirically measurable, and experts have been keeping careful track of global temperatures for years. All evidence indicates that the average global temperature has been steadily rising since the Industrial Revolution.
- ◆ The only people who publicly deny this are nonexperts, such as politicians. But given that they are nonexperts, they have no right to draw such a conclusion.
- ◆ At this point, one might demand that they have a right to believe whatever they want. If they want to deny global warming, that's their choice. But apart from their responsibility as public servants to be informed on scientific issues, people don't have a right to their opinions. You have the legal right to believe what you want; no one's going to throw you in jail. But you don't have the epistemic right.
- ◆ Beliefs don't become justified simply because you want them to be. Epistemic rights are earned, not automatically bestowed. For an epistemic right, you have to provide good evidence. And when it comes to denying that the globe is warming, that evidence doesn't exist.
- ◆ Along with scientists, lukewarmers and *Snowpiercer* also endorse the fact that global warming is the result of greenhouse gas (carbon dioxide) emissions and that it's causing climate change. Not only is there a direct correlation between the modern increases in greenhouse gases and the average global temperature, but we know exactly how and why increasing greenhouse gases would have a warming effect. In addition, we've discovered millions of years of correlation between the 2 and corresponding changes in climate.

- ◆ Philosophically, when it comes to establishing causal relations, you cannot do better than this. Where we start to see disagreement among scientists is regarding whether humans releasing greenhouse gasses is responsible.
- ◆ For example, 31,000 scientists signed a petition saying that there was “no convincing scientific evidence” that climate change is anthropogenic.
- ◆ The philosophic question here is what counts as a relevant expert. “Scientist” is a broad term; just because you’re an expert in one thing doesn’t mean that you’re an expert in another. Citing a nonexpert as a reason to doubt climate change commits a fallacy called appeal to unqualified authority.
- ◆ Most of the scientists who signed the petition were engineers (10,000), 6000 were in medicine or biology, and 5000 were chemists, but none were climate scientists.
- ◆ Some deniers have suggested that global warming is caused by the Sun. But the Sun is not getting hotter (we keep records). Also, that would warm the entire atmosphere, but only the lower parts of the atmosphere—beneath where greenhouse gases reside—are getting warmer.
- ◆ Others claim that it’s not anthropogenic because 95% of the carbon dioxide released each year comes from natural forces, such as volcanoes and plant and animal respiration. But this involves a philosophical mistake that can be called the factoid fallacy. It takes a true factoid out of context and ignores others to support an erroneous conclusion.
- ◆ While it’s true that certain natural processes account for 95% of the carbon dioxide released every year, other natural processes take out just as much, making the net impact of natural forces zero. But humans put it in without taking it out, so we account for 100% of the increase in atmospheric carbon dioxide.
- ◆ This is why you defer to relevant experts. When you aren’t aware of all the evidence and don’t have the relevant knowledge and expertise to interpret it, you make these kinds of mistakes.

- ◆ Another relevant philosophic point is that no single study is conclusive evidence. Even an expert can make mistakes, or be biased, or be pressured by their funders. So, before we trust any single study on climate change, we should wait for replication; others need to do the same study and get the same results. Better yet, look for consensus: When a bulk of the relevant scientific community thinks that the burden of proof has been met and concludes that something is true, it's most likely true.
- ◆ According to University of Queensland fellow John Cook, 97% of climate scientists agree that anthropogenic climate change is happening. Of the nearly 4000 published studies that took a position on the topic, 3896 of them drew that conclusion, which certainly counts as a consensus. In fact, Cook's 97% has been corroborated by 6 other studies, so there's even a consensus about what the consensus is.
- ◆ In fact, the more stringent a study is about the definition of "expert," the higher the percentage gets. The consensus among climate experts who regularly published on the topic in peer-reviewed journals is nearly universal—approaching 100%.
- ◆ Climate scientists who don't align with the consensus are almost always receiving funding from fossil fuel companies or related groups. Everyone needs funding, but fossil fuel companies and their political allies are known to have spearheaded campaigns to mislead the public about the link between climate change and greenhouse gases.
- ◆ For example, a Harvard review showed that while Exxon was engaged in a public campaign to deny that anthropogenic climate change was real, Exxon's internal reports and peer-reviewed research acknowledged that it was. They knowingly spread misinformation, published misleading advertisements, funded bogus research, and paid off scientists.
- ◆ But, again, lukewarmers don't deny any of this. They agree that global warming is causing climate change, that humans are to blame, and that there is scientific consensus on this. What lukewarmers deny is that climate change is anything to worry about—and that there is scientific consensus on that specific issue. They consequently think we're overreacting. The suggested solutions would have consequences much worse than what they'd prevent.

- ◆ The warming won't be that much and the effects of climate change won't be that bad. But taxing fossil fuels and environmental regulations could cost companies billions, make energy unaffordable, and generate a global recession.
- ◆ Lukewarmers are usually libertarians, who celebrate Adam Smith but ignore his warnings about the shortcomings of free markets and his advice regarding where government regulation is needed. They instead think that government regulations almost always make things worse and that freedom and free markets almost always make things better.
- ◆ Recall Smith's concepts of laissez faire and the invisible hand that will supposedly guide the economy to universal opulence if you just free it from interference. Lukewarmers apply this same logic to society and the environment; attempts at interference—social engineering or environmental engineering—can only make things worse. Just leave the system alone, and it will work itself out for the best.

SNOWPIERCER AND LUKEWARMERS

- ◆ With all this in mind, we can finally see why *Snowpiercer* is a lukewarmer's movie. The human efforts to combat climate change—dumping the cooling agent CW7 into the atmosphere—backfired and froze the entire planet. So, apparently global warming wasn't as bad as the scientists were saying, and the consequences of the solution were much worse than the problem, just as the lukewarmers suggest.
- ◆ To boot, the only person to see this coming was Wilford, the eccentric billionaire businessman who built the never-stopping, self-sustaining train. He was the odd man out, ridiculed and dismissed by the experts, just as lukewarmers are today.
- ◆ Like lukewarmers, Wilford knows what no one else does. For Wilford, it's that CW7 will freeze the world. For lukewarmers, it's that climate change is exaggerated and that drastic reductions in fossil fuel use will cause a global recession. Like Wilford, lukewarmers think they're the only ones smart enough to see through the smoke screen.

- ◆ Then there's the film's plot. The tail-section dwellers are rebelling because the train is segregated; the privileged live a life of luxury up front while the poor are stuck in the back eating protein bars made of processed bugs. But, it turns out, this was all according to Wilford's design. He has become obsessed with keeping the train's population in perfect balance, with everyone in their proper place, so that the train will be sustainable.



- ◆ Indeed, Wilford himself orchestrated the tail-section dwellers' revolution to thin out their numbers. He has become an evil, vile social and environmental engineer who is willing to sacrifice the lives of the poor to protect the delicate ecosystem of his train—just like lukewarmers think environmentalists are willing to sacrifice the lives of the poor, by curtailing fossil fuel use and thus making energy unaffordable, to protect the environment.
- ◆ Lastly, Wilford has created a religion on the train that has everyone convinced that if the train ever stops, they'll "all freeze and die"—when, in fact, the world is actually warming and life on the outside is possible. In the same way, according to lukewarmers, environmentalists have created a religion that has everyone wrongly convinced that life in a warmer world will be impossible.
- ◆ But *Snowpiercer* being a lukewarmer's movie doesn't mean that lukewarmers are right. So, we must ask: Is there really not a consensus on the severity of climate change? Is action not warranted? Will the solution be worse than the problem? Will the ecosystem balance itself out? Is climate change nothing to worry about?
- ◆ Unfortunately, they're not right. And that shouldn't be too surprising because those who advance their arguments, such as science writer Matt Ridley and atmospheric physicist Richard Lindzen, also receive money from companies like Peabody Energy, a coal company that participates in misinformation campaigns, just like Exxon.
- ◆ Their arguments essentially make 4 mistakes.
 1. The first is a mistake in decision theory, the branch of philosophy that studies the rationality of decision making. Even if there were no agreement about the severity of climate change, we should still take action to prevent it. Just as environmentalists might be wrong about the effects being severe, the lukewarmers might be wrong about them being mild. But the risks of inaction are much grander than the risks of action. If the lukewarmers are right, the most extreme consequence is a global recession; but if the environmentalists are right, the survival of the human species is at stake. If there's not a consensus, rationally you should err on the side of caution and guard against the more extreme consequence.

2. The second mistake is a category mistake, where one wrongly applies a property to something in one category that can only be applied to things in another. In this case, it's thinking that Smith's laissez-faire approach to economics also works for the environment. It doesn't. When it comes to physical resources, without oversight, individual actors will exploit them for their own short-term benefit, ultimately ruining the resource for everyone in the long term. This phenomenon, called the tragedy of the commons, is especially acute regarding the environment, given that the negative effects are so far in the future.
3. The third mistake is economic; action to combat global warming won't cause a global recession. In reality, switching to clean energy sources would spawn a whole new industry, create billions in revenue, and generate millions of jobs. It won't hurt the poor and cause a recession; it would actually help the poor and produce an economic boom.
4. The last mistake involves a logical fallacy—an equivocation on the word “disagreement.” There is disagreement among climate scientists, but not about the severity of climate change’s effects. It’s about how quickly temperatures will rise. Although we’re already more than 1° Celsius above pre-Industrial levels, different models project different rates regarding how fast warming will continue. But there is definitely agreement that the effects of temperature rise will be exceptionally severe.

QUESTIONS

- 1 Richard Routley imagines a situation where the last person on Earth destroys the ecosystem, and he argues that this destruction of the ecosystem would be immoral. Would it matter if the person was also the last animal on Earth, so that this person's destruction of the ecosystem would only affect plant life? Would destroying the ecosystem be immoral then? Is the ecosystem only valuable as a means to sustaining human and animal life?

- 2 If the environment is intrinsically valuable, what should one conclude about planets like Venus and Mars that can't support life? Are they morally inferior to Earth? Would terraforming them so that they can support life be a morally praiseworthy act (even if life never lived there)?
- 3 Because they embrace biblical literalism and reject evolution, some religious persons are creationists, who claim that the Earth was created directly by God 6000 years ago. Other religious believers, who are proponents of intelligent design, admit that the scientific evidence for evolution and the old Earth is overwhelming, so they admit that evolution has occurred and that the Earth is old—but, they say, there is some disagreement among evolutionary biologists on certain points, and some certain physical traits are irreducibly complex and thus can only be explained by intelligent design. (In reality, evolutionary biologists only disagree about minor points, and none think that any trait is irreducibly complex.) How are the logical moves made by proponents of intelligent design similar to the logical moves made by lukewarmers?
- 4 In *Snowpiercer*, Wilford only allows the tail-section dwellers to exist because he occasionally needs replacement parts for his engine. When a part breaks down, he steals one of their children and puts him or her in the engine and has him or her perform whatever function the part did. Read the Ursula Le Guin story “The Ones Who Walk Away from Omelas.” How are the 2 stories similar? Could actions like Wilford’s and the Omelians be justified? What would ethical theories like utilitarianism and Kantian deontology say about this question?

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RELATED SCI-FI

TV	<i>The Orville</i> (2017): “If the Stars Should Appear” <i>Star Trek: TNG</i> (1987): “The Inner Light” <i>Utopia</i> (2013) <i>Rick and Morty</i> (2013): “Something Ricked This Way Comes”
FILM	<i>Mad Max</i> (1979) <i>Hell</i> (2011) <i>Wall-E</i> (2008) <i>Young Ones</i> (2014) <i>Mad Max: Fury Road</i> (2015)
PRINT	J. G. Ballard’s <i>The Drowned World</i> and <i>The Drought</i> Margret Atwood’s <i>Oryx and Crake</i> , <i>The Year of the Flood</i> , and <i>MaddAddam</i> Kim Stanley Robinson’s <i>New York 2140</i> and Science in the Capital trilogy Isaac Asimov’s Foundation trilogy Jeanette Winterson’s <i>The Stone Gods</i>

The next lecture’s movie, *Soylent Green*, is set in a future world ravaged by climate change and overpopulation.

As you watch this classic movie, ask yourself what the most effective means of dealing with overpopulation would be.

SOYLENT GREEN: OVERPOPULATION AND EUTHANASIA

LECTURE 21

OVERPOPULATION

- ◆ *Soylent Green* is a 1973 film set in 2022 that heralds a dystopian future plagued by overpopulation. Regular foods, such as meats and grain, are rare, and the bulk of everyone's diet consists of rations made by the Soylent Corporation—dry wafers called Soylent Green.
- ◆ The story follows Frank Thorn on his investigation into the murder of William Simonson, a wealthy Soylent Corporation board member, who, Thorn finds out, was killed because he discovered the Soylent Corporation's big secret: that Soylent Green is made of people!
- ◆ The worries about overpopulation that inspired the movie, and that also motivated Paul Ehrlich's 1968 book *The Population Bomb*, were overblown. Like Thomas Malthus before him, Ehrlich suggested that the human population was soon going to outstrip its ability to feed itself. But it didn't.
- ◆ The reason it didn't was the unforeseen development of advanced farming technologies that greatly increased crop yields. This made us wonder whether we had simply delayed the inevitable. Maybe all Ehrlich got wrong was the timeline and indeed the Earth's inability to feed the entire world's population is inevitable.

- ◆ The key to answering this question is accurate projections of population growth—but, it turns out, these are difficult. Unlike with climate change, there is no scientific consensus.

In 2017, there were 7.5 billion people worldwide, but since the 1970s, the rate of growth has been decreasing. According to one UN estimate, it will eventually turn negative, and by 2100, there will be as few as 6.2 billion. Another estimate projects a continuing increase and 15.8 billion by 2100. According to a 2001 paper in *Nature* by Wolfgang Lutz (et al), it will top out at 10 billion and then start declining.

- ◆ According to Bertrand Russell, when the experts agree that “no sufficient grounds for a positive opinion exist, the ordinary man [the nonexpert] would do well to suspend his judgement.” In other words, because we’re not experts, when it comes to how big a problem population growth will be, we should probably just say that we don’t know.
- ◆ Humanity may or may not outstrip the Earth’s ability to sustain it. But because we don’t know, we still need to discuss it and what could be done so that we’re not caught off guard. For example, we can imagine technological solutions to the food problem, such as lab-grown meat or *Star Trek* universe “food replicators” that rearrange matter and energy into whatever food you like.
- ◆ But if we don’t also do something about population growth, we could end up like the people of the planet Gideon in the episode of the original *Star Trek* series called “The Mark of Gideon.”
- ◆ Gideon was once a paradise. There was no illness, and people’s bodies regenerated from injury, so death became virtually unknown. But over time, this turned the paradise turned into a dystopia, with so many people that Gideon became “encased in a living mass,” a planet with “no rest, no peace, no joy” and virtually nowhere to stand. According to Odona, a native to Gideon, it was so crowded that, to be alone, Gideonites would be willing die—if only they could.

- ◆ To deal with their overpopulation problem, the Gideonites tried to harvest a virus from Capt. Kirk—one to which he was immune but that was so deadly it could kill even a Gideonite. Their hope was that Gideonites would volunteer to infect themselves with it to thin the population.

EUTHANASIA

- ◆ Given our worries about overpopulation, could euthanasia be morally and effectively used as a solution?
- ◆ It wouldn't seem to be moral to use the Gideonites' approach. Not only did they extract the virus from Kirk involuntarily, but for some reason they hoped that the youth would be the ones to volunteer to be euthanized. In addition to this seeming immoral—wouldn't it be fairer to ask the elderly, who have already lived their lives, to make such a sacrifice?—it could also be dangerous. Because presumably it's only the youth who can spawn new generations, Gideonites could quickly go from having an overpopulation problem to the brink of extinction.
- ◆ A similar, but in some ways opposite, approach is embraced in the 1976 movie *Logan's Run*, which is set in a seemingly ideal society where everyone is young, beautiful, and healthy. At age 30, everyone is renewed into youth, essentially reincarnated as a baby. But the truth is that people aren't born into a new life; they're just vaporized to keep the size of the population in check.
- ◆ The solution to overpopulation in this society is similar to the Gideonites in that it's euthanasia, but it's also the opposite: Instead of the youth of the society volunteering to be euthanized, the elders of the society have euthanasia forced upon them, although their "elders" are still young by our standards. Regardless, this approach, too, seems immoral because it's wrong to force euthanasia on anyone.
- ◆ But these 2 examples make us wonder about a middle-ground solution. What about offering voluntary euthanasia to the elderly? After all, when some get old, they would rather die; if their health is failing, they'd rather not live in anguish. Many others that are suffering from debilitating conditions or painful terminal illnesses would rather die, too.

- ◆ Could allowing people to be euthanized—helping them peacefully kill themselves—if they so choose be a morally acceptable way to deal with overpopulation? This seems to be a method of population control embraced by the society in *Soylent Green*.
- ◆ When Thorn’s friend, Sol Roth, learns the Soylent Corporation’s horrible secret, he immediately goes to a euthanasia center. He selects his favorite classical music, drinks poison, and then peacefully dies while he is treated to pictures of rare natural wonders. Apparently, this is a common practice.
- ◆ The issue of whether voluntary euthanasia would be morally acceptable as a solution to overpopulation really comes down to whether it would be acceptable for one person to assist in the suicide of the other if they so choose.
- ◆ To answer that question, we should look at the work of medical ethicists who have dealt with this question as it pertains to real-world doctors and their terminally ill patients.
- ◆ The issue centers on whether people should be allowed to decide for themselves when their lives are no longer worth living—and if so, should they have the right to ask a doctor to end their lives early in a medically controlled, safe, and painless way?
- ◆ On one hand, if no medical treatment exists, a peaceful death could be a preferable fate than the painful suffering a terminal illness would bring. On the other, euthanasia involves taking a human life.
- ◆ In most states, physician-assisted suicide is not legally protected. In some states, it is. This forces some terminally ill patients to move to a different state to avoid horrendous suffering. But others can’t do this and are forced by law to “see the disease through.”

ARGUMENTS OF SELF-DETERMINATION AND WELL-BEING

- ◆ Perhaps the clearest articulation of the arguments usually given in favor of such laws comes from Dan Brock, Harvard Medical School’s Professor of Medical Ethics, Emeritus.

- ◆ The first is an argument from self-determination. Put simply, we have a right to decide how our life goes. So, if our life is about to include horrendous suffering, we should have the right to take whatever action is necessary to prevent it.
- ◆ The second argument centers on well-being and is slightly more complex. It begins with the realization that merely being alive is not intrinsically valuable. It's a means to an end: one's well-being—that is, living a kind of life that is worth living. When someone is being kept alive on life support, we are not obligated to keep him or her alive simply for the sake of that person being alive. If the person is in pain and asks the doctor to pull the plug, the doctor can pull the plug.
- ◆ So, the first premise is that one's being alive is valuable only as a means to promoting one's well-being. From this, the second premise follows: If one's being alive is not contributing to one's well-being, then one's being alive is not valuable. The third premise simply observes that, when one has a painful terminal illness, one's being alive is no longer contributing to one's well-being—and thus one's being alive is no longer valuable.
- ◆ In such a situation, a doctor ending your life would not be ending something that is valuable. So, according to Brock, voluntary active euthanasia would be permissible.
- ◆ In his essay “When Self-Determination Runs Amok,” codirector of the Yale-Hastings Program in Ethics and Health Policy Daniel Callahan points out what’s wrong with these arguments.
 - ◆ First, self-determination is not sufficient to justify helping someone commit suicide. If someone wants to commit suicide for a tawdry, temporary reason—for example, a young man is distraught after his girlfriend breaks up with him—his right to self-determination would not make it morally permissible for a doctor to assist him in doing so. Thus, the self-determination argument falls flat.
 - ◆ Second, a doctor determining that your condition is so poor that being alive no longer contributes to your well-being is not sufficient to justify a doctor ending your life. If the patient does not want to be killed, the doctor is obligated to not kill the patient. So, the well-being argument falls flat.

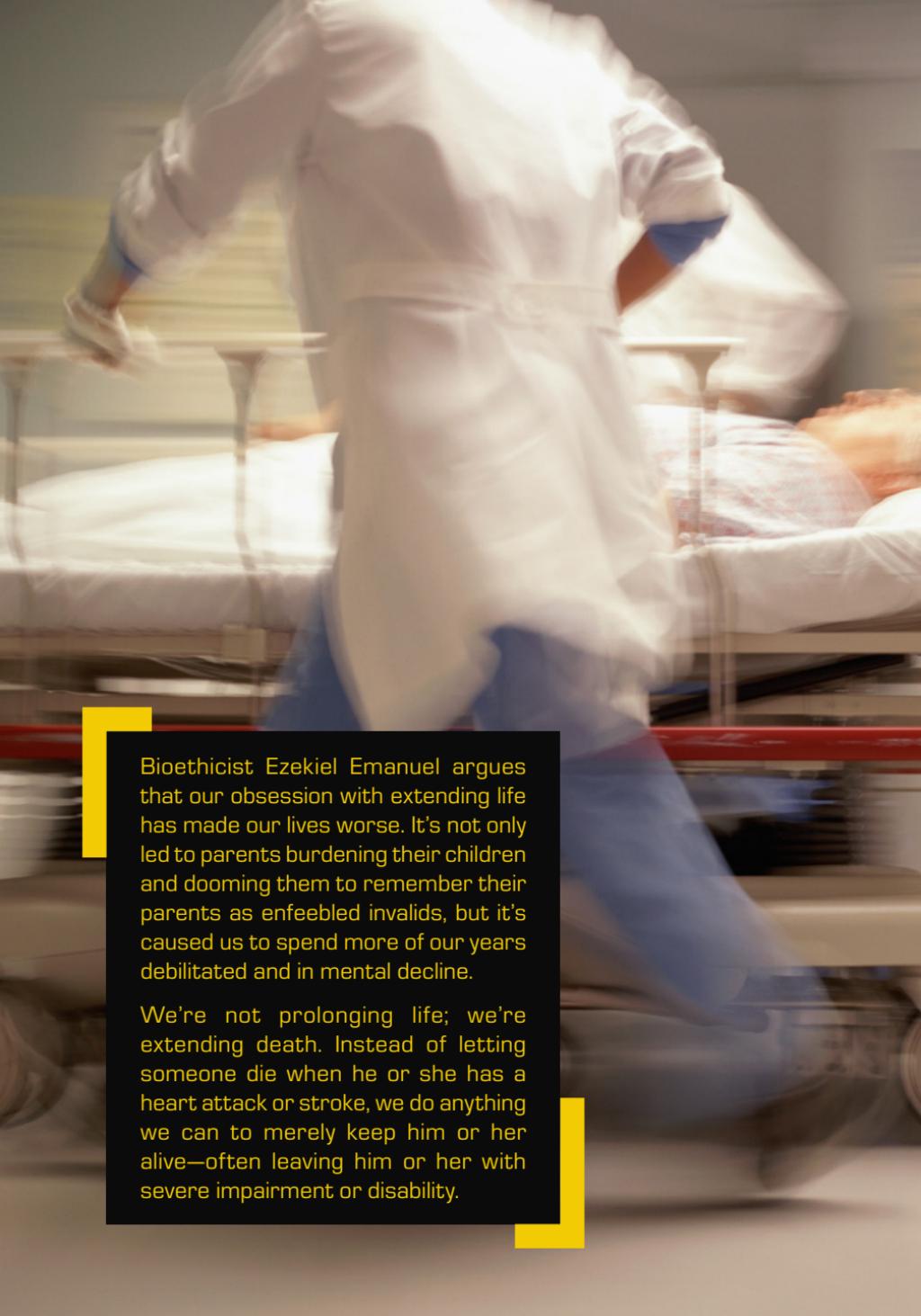
- ◆ This reveals the role that both self-determination and well-being play in determining when active euthanasia seems justified. Alone, neither is sufficient, but together, they are.
- ◆ If a patient evaluates his or her condition and thinks the impending suffering would make living no longer valuable and his or her doctor comes to the same conclusion, then it would seem that active euthanasia is justified if the patient requests it.
- ◆ Such an argument wouldn't go so far as to say that the doctor is morally obligated to assist the patient in suicide. But it would be permissible. If the doctor does so, he or she has not done something morally wrong.
- ◆ But there are 3 objections to this argument.
- ◆ The first objection is that any action of active killing is morally wrong, and thus euthanasia must be, too, even if the 2 conditions are met.
- ◆ There are essentially 2 responses to this objection. First, euthanasia doesn't always involve active killing. In most cases, Dr. Jack Kevorkian hooked people up to a machine that would administer a lethal dose of medication, and it was the patient that pushed the button. That's why it's called physician-assisted suicide. At best, this objection means that active euthanasia—doctors pushing the button themselves when the patient can't—is immoral.
- ◆ Second, in most societies, there are numerous widely accepted exceptions to the general rule that killing is morally wrong, including killing in self-defense and in war. Regarding the latter, most agree that mercy killings—where one injured soldier asks another to kill him or her to keep him or her from suffering or being captured—are justified. One might argue that the motivation for a doctor performing voluntary active euthanasia is the same, and thus that they are both morally permissible.
- ◆ This second response inspires a second objection: There's a difference between a soldier and a doctor. One's job is to kill; the other's is not. Think of the Hippocratic oath. By killing a patient, a doctor acts contrary to his or her function in society, and thus acts immorally. Doctors are not supposed to play God.

- ◆ One's response depends on what the objection means. If the argument is merely objecting to doctors euthanizing suffering patients because it violates an oath, that seems weak. Making a promise or taking an oath shouldn't keep one from doing the right thing. If you could save a life by lying, then you should—even if you took an oath not to.
- ◆ The “doctors shouldn’t play God” argument is also difficult to make stick. If this means that doctors shouldn’t be deciding when people live or die, that’s preposterous! That’s a lot of what they do, when they save someone in an accident or restart someone’s heart. By what definition could that *not* be playing God, but euthanasia would be playing God?
- ◆ But maybe the objection is simply about the function that medical practitioners are understood to play in society—about what the ends of medicine are. A doctor’s role, one might argue, is as a healer only. And given that role, it would be just as immoral for a doctor to end the life of someone suffering as it would be for a lawyer to do so.
- ◆ But the advocate of euthanasia can respond in 2 different ways. Given medical advances, maybe it’s time to reevaluate medicine’s role. After all, like their oath, the role of doctors is ever changing. There have been major advances, for example, in pain relief, but if a doctor’s role is only that of a healer, to prescribe painkillers to terminally ill cancer patients would be wrong—because it doesn’t help heal them. Perhaps doctors should instead be seen as those who help us deal with illness in the best way possible. Sometimes euthanasia could be the best way.
- ◆ An alternate response would suggest the establishment of a new profession and industry, divorced from medicine, whose only job is to evaluate when euthanasia is warranted and, if so, to administer it. This would include always making sure that people making the decision are of sound mind, that the action is desired and warranted, and that it’s done painlessly. By this logic, if legislation to legalize voluntary euthanasia is passed, it should also ensure the training of technicians and the establishment of euthanizing centers, like in *Soylent Green*.



Supposing that legalizing voluntary active euthanasia is morally permissible, would it be effective as a means of population control? This is actually an empirical question, and it turns out that the answer is no. The reason why it doesn't work is that increased birthrates—not increased longevity—is what causes overpopulation.

- ◆ But this gives rise to a third objection: The legalization of euthanasia could lead to its overuse; despite our intentions, it might turn into something that's involuntary. But, again, the strength of this objection depends on what it means.
- ◆ If you think that legalizing euthanasia is going to lead to doctors euthanizing people when they don't want it—as a catchall treatment for any disease—that's just silly. Active euthanasia has been legal in the Netherlands, Colombia, Belgium, and Luxembourg for years, and nothing like this has happened. Doctors are not demons. Slippery-slope arguments like this are identified as logically fallacious for a reason.
- ◆ But if the objection is expressing a worry that legalizing euthanasia might create a subtle psychological pressure to choose it, that makes sense. Legalization of something can sometimes feel like a prescription or endorsement. Indeed, many elderly might end up feeling like they should choose euthanasia to avoid becoming a burden to their children.
- ◆ Could legalizing euthanasia lead to a tradition of ritualistic suicide, when people get to a certain age, being embraced? This worry has essentially 3 answers.
 1. It seems to be overblown. More people might choose euthanasia than otherwise would, but it's not going to morph into a tradition where everyone has to commit suicide at a set age. After all, some people are still vigorous at 90; others are spent by 50.
 2. The number of people being pressured into choosing euthanasia when they don't want it would be minuscule compared to the number of people who now want it but can't get it. And it's not clear that the former is worse than the latter. People shouldn't be forced to suffer through a debilitating disease any more than they should be forced to die.
 3. To the extent that it creates pressure to avoid the kinds of consequences that the elderly now experience—such as being forced into nursing homes by their families once their health fails and they become invalids—that may not be a bad thing.



Bioethicist Ezekiel Emanuel argues that our obsession with extending life has made our lives worse. It's not only led to parents burdening their children and dooming them to remember their parents as enfeebled invalids, but it's caused us to spend more of our years debilitated and in mental decline.

We're not prolonging life; we're extending death. Instead of letting someone die when he or she has a heart attack or stroke, we do anything we can to merely keep him or her alive—often leaving him or her with severe impairment or disability.

QUESTIONS

- 1 In what way is the “doctors shouldn’t play God” argument against active euthanasia similar to the “you shouldn’t interfere with fate” argument for *Star Trek’s* Prime Directive in lecture 18?
 - 2 Can you think of a way to define “playing God” so that passive euthanasia qualifies as playing God but that nothing else doctors do does? Can you do so without the definition seeming arbitrary or begging the question?
 - 3 Given Ezekiel Emanuel’s argument, instead of prolonging life at all costs, we should be focused on increasing the quality of life. Is this right? What would this approach look like? Adopting this approach may soon be a matter of species survival. Is this a dangerous idea? Why or why not?
 - 4 Consider again the question after lecture 16 about Mal shooting the man about to be eaten by Reavers. Was Mal’s action moral, given what was discussed in this lecture?
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RELATED SCI-FI (OVERPOPULATION)

John Brunner's *Stand on Zanzibar*

Jerry Pournelle and Larry Niven's *The Mote in God's Eye*

Cyril Kornbluth's "The Marching Morons"

Robert Silverberg's "A Happy Day in 2381"

Lois Lowry's *The Giver*

RELATED SCI-FI (EUTHANASIA)

Anthony Trollope's *The Fixed Period*

Robert Herrick's *Sometime*

Futurama (1999): "The Tip of the Zoidberg"

The next lecture is about reproductive ethics. To prepare for it, watch the movie *Gattaca*. As you watch it, ask yourself whether you would want to live in such a world if you didn't know who you would be.

GATTACA AND THE ETHICS OF REPRODUCTION

LECTURE 22

When it comes to overpopulation, efforts to reduce birthrates—such as contraception, birth control, and access to abortion—are the only practically effective means.

ABORTION

- ◆ Academics generally agree that there is no way to determine, scientifically or philosophically, when “personhood” begins.
- ◆ One could say it’s when fertilization is complete—when you have a cell, a zygote, with a new unique genome. But first, that’s just an assumption; second, that’s technically true of cancer cells (which have unique genomes but are not persons); and third, most of the material in the zygote will end up being the placenta, and no one thinks a placenta is a person.
- ◆ You might argue that personhood begins when God puts a “soul” into the fetus, but we can’t even establish scientifically or philosophically that adult humans have souls. Indeed, most scientists and philosophers reject the notion, so that’s another dead end.
- ◆ Maybe personhood begins when mental activity begins. But the brain activity of a fetus increases gradually; there is no definite point when it begins. And not all parts of the brain produce consciousness, and we don’t fully understand how it’s produced.
- ◆ So, there’s no way to know when a brain’s activity has become sophisticated enough to produce a mind. It could even be after birth.
- ◆ The most famous academic papers on abortion refrain from basing their argument on fetal personhood, because they see it as irrelevant.
- ◆ For example, pro-life philosopher Don Marquis argues that even if a fetus is not a person, abortion is still immoral because what primarily makes an act of killing wrong is not that you’re ending a person’s life, but that you’re preventing the occurrence of future experiences that would have occurred had you not acted.
- ◆ On the flip side, philosopher Judith Thomson also agrees that fetus personhood is irrelevant but comes to the opposite conclusion. Thomson grants, for the sake of argument, that a fetus *is* a person—right from the moment of fertilization. So, abortion *is* an act of killing. Despite this, she argues, abortion can still be and often is morally acceptable, just as killing in self-defense can be.



In Philip K. Dick's sci-fi story "The Pre-Persons," children are considered nonpersons, and thus abortable, until they prove they have a mind by learning algebra. Dick intended this story to be pro-life, but it demonstrates that anyone's belief about when personhood begins is just an assumption.

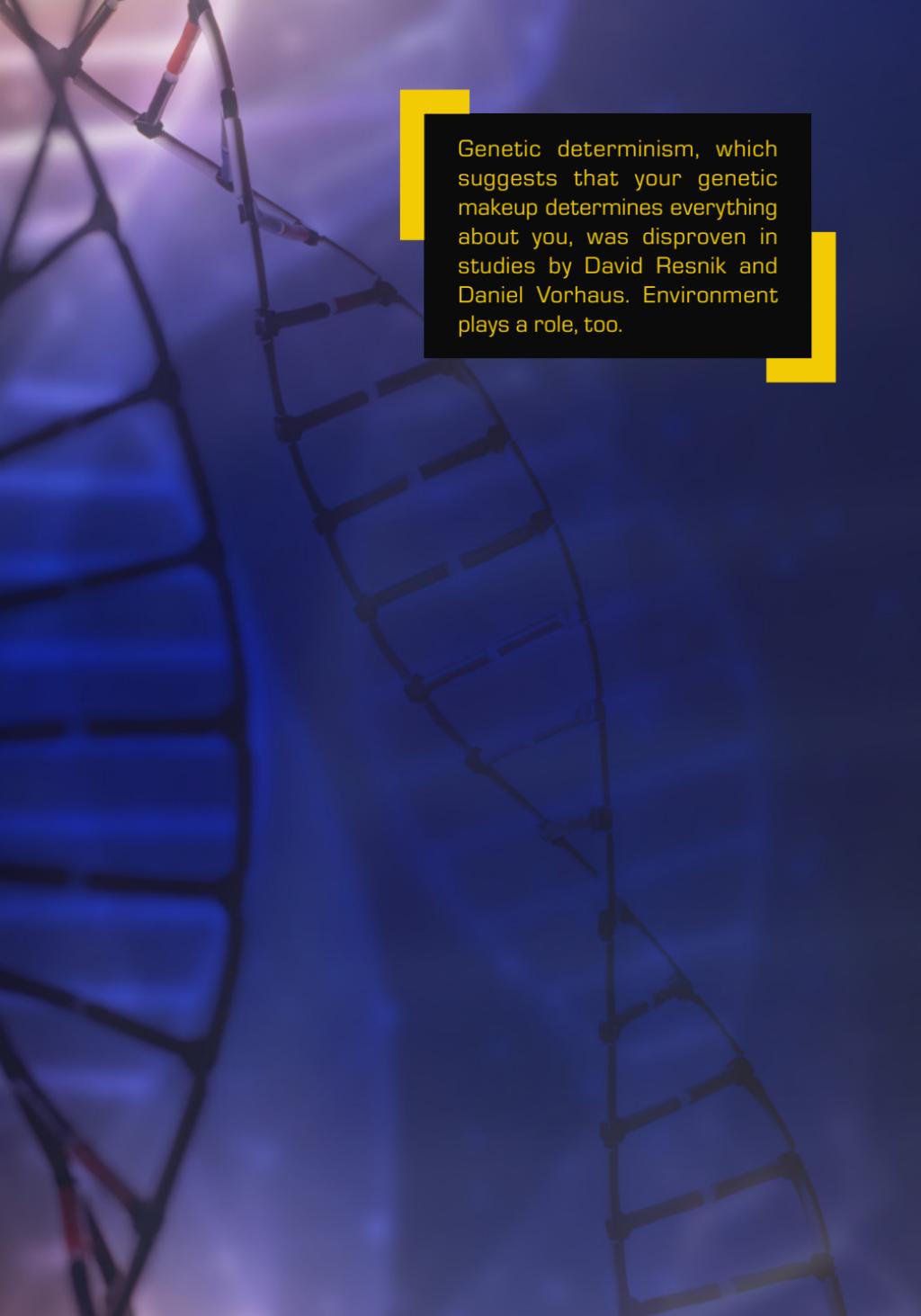
- ◆ The crux of her argument relies on the common intuition that persons have a fundamental moral right to use their own bodily resources as they see fit. Indeed, Thomson argues, this right is so fundamental that it outweighs any other person's right to life.
- ◆ You're not obligated to go to the hospital and donate your kidney to whichever patient can't live without it. And it's for this reason, Thomson argues, that a mother can terminate a pregnancy, if she so chooses, even if a fetus is a person. A mother has just as much a right to use her uterus as she sees fit as you do to use your kidney as you see fit—even if it will cost someone else's life.
- ◆ The debate gets really hairy after this. One might argue that, because the mother knew pregnancy was a possible outcome of having sex, she is morally obligated to carry the fetus to term. It is a moral rule: When one knowingly takes a risk, one has to pay for the consequences of one's actions, especially when that risk endangers others.
- ◆ But others will argue that this isn't a moral rule. Suppose that your friend Bob gets into a 2-car accident on the interstate. He knew an accident was a possibility and could have taken the side roads but didn't. Would he be obligated to give the other driver his kidney if the other driver needed it to survive?
- ◆ Notice that your answer likely turns on how safe Bob was while driving. Was he going 20 miles per hour over the speed limit and weaving in and out of traffic? Then he probably does owe the other driver his kidney; Bob was being reckless. Was Bob driving the speed limit, in the right lane, with his hands at 10 and 2? Then he probably doesn't owe the other driver his kidney because he was being careful.
- ◆ So, is having sex more like driving recklessly, something for which one should have to pay the consequences? Or is it more like driving responsibly, something one should be able to do without giving up his or her rights in the case of an accident?
- ◆ One's answer to that last question likely boils down to one's views about the morality of sex. So, instead of being generated by different assumptions about whether a fetus is a person, maybe the widely divergent answers on the abortion question come from different assumptions about the morality of sex.

DESIGNER BABIES

- ◆ The topic of reproductive choice also generates discussion about how much freedom parents should have over the genetic makeup of their babies. Technology is now being developed that can treat genetic defects in the womb. It seems likely, therefore, that we will soon have the capability of choosing a child's particular attributes.
- ◆ But should parents be able to do this—select aesthetic physical attributes, intelligence, or strength? What about enhancements that go beyond our current stage of evolution, such as wings or superintelligence?
- ◆ In the movie *Gattaca*, which is set in a world in which gene manipulation is common, when parents decide to have children, they often do so with the help of geneticists. Diseases are weeded out, the parents' best attributes are selected, and anything else the parents want can be ordered. Children produced this way are called valids.
- ◆ Some parents, however, chose to reproduce naturally, letting their child's genetic code to be set at random. Society is arranged so that these "in-valids" are condemned to menial jobs. Only valids have access to certain jobs, and background checks are constantly performed to make sure that everyone is in their proper place.
- ◆ *Gattaca* raises serious concerns about the development of genetic engineering technology that would allow for designer babies—concerns that should be taken very seriously, given that *Gattaca* was top on NASA's list of most plausible sci-fi films.
- ◆ One common worry is that creating designer babies is immoral because it's "unnatural." But such arguments fallaciously rely on what philosopher Daniel Maguire calls the biologism fallacy, or the appeal to nature fallacy: Something being natural does not make it moral; being unnatural doesn't make it immoral.
- ◆ As philosopher Allen Verhey would undoubtedly point out, others would object by suggesting that making designer babies is "playing God." But it's difficult to make such arguments stick without also objecting to almost

everything else a doctor does. Certainly, if ridding a fetus of a birth defect isn't objectionable on the grounds that it's "playing God," then our objections to designer babies need to be much more sophisticated.

- ◆ One candidate is inspired by theologian and ethicist Gilbert Meilaender and expresses a worry that designer babies would be viewed by their parents as commodities, rather than persons—something "made" not "begotten." These babies would be a result of science, not love. As such, their parents may regard them as property and treat them accordingly.
- ◆ But such worries seem to be overblown. Children are already made not begotten—for example, through in vitro fertilization—and their parents don't treat them as property.
- ◆ Indeed, studies by Susan Golombok have shown that, on average, the quality of parenting in families who use in vitro fertilization is superior to those who reproduce "naturally." And this makes sense: Parents are better parents if they want to be parents. No family who seeks out in vitro fertilization ends up with an unwanted child.
- ◆ One legitimate worry is expressed by Marcy Darnovsky: If the design is too specific, the child's freedom could be restricted. But this would not be a reason to ban designer babies. After all, some parents already do this, demanding that their child become a doctor or play a particular sport. Although it's regrettable, it's not a reason to keep such parents from procreating.
- ◆ It would be best if future parents were general with the enhancements they choose—such as better athleticism, or more intelligence—and let the children decide for themselves what to do with their abilities. But it would be going a bit far to prohibit specific enhancements by law.
- ◆ One legitimate concern is raised by the work of Juan Enriquez and Steve Gullans: Once such practices become common, and thus our evolution as a species becomes dictated by what they call unnatural selection and nonrandom mutation, a new species would arise. The "old-style" humans would be obsolete, replaced by their genetically superior descendants.



Genetic determinism, which suggests that your genetic makeup determines everything about you, was disproven in studies by David Resnik and Daniel Vorhaus. Environment plays a role, too.

- ◆ But this wouldn't necessarily be a bad thing. It is unfortunate, even in a moral sense, when a species becomes extinct—but not when a species transforms into another. That is progress; that is how humans came to be. If the genetic line of humans just ended, that would be sad. If it turns into something better—more intelligent, less violent, more durable, more capable of living a full life—that is something to be celebrated.
- ◆ Indeed, philosopher Julian Savulescu argues that parents doing in vitro who are selecting among embryos have a moral obligation to select those “most likely to have the best life, based on available genetic information.” By the same logic, you might argue that we are obligated to do all we can to improve the species. As Enriquez points out, it may be the only way we are one day able to travel among the stars. It may be key to our species’ survival.
- ◆ More worrisome are the short-term effects that are seen in *Gattaca*. If the technology was not universally available, you would quickly see society divided into 2 segments—the valids and the in-valids, the haves and the have-nots—with prime jobs and positions reserved for the valids. Worse still, initially such technology would only be available to the very rich. This would give their children an even greater advantage in society than they already have, greatly widening the gap between the rich and the poor.
- ◆ Would you want to live in the society *Gattaca* depicts if you did not know who you would be? It seems not, because you could just as easily be a valid as an in-valid.
- ◆ John Rawls argues that you determine the fairness of a society by determining whether you would want to enter it if you did not know which person you would be. And it seems that the society depicted in *Gattaca* doesn’t fit the bill. Better genetics would afford some more liberty than others, and the social inequalities that exist would not benefit the least advantaged and would not be attached to positions open to all.
- ◆ This could happen not only within a society, but also the world. If one nation had such technology but another did not, you would quickly see monumental inequalities in power and corresponding abuses of that power.

- ◆ To avoid this inequality, such technology would have to be open to all. But accomplishing this might be impossible; technology is always expensive before it becomes cheaper and widely available. By that time, it would probably be too late to undo the consequences. The rich would have too much of a head start.
- ◆ Government regulation would seem to be necessary if we were to avoid a worldwide situation that Rawls would undoubtedly call monumentally unjust and unfair.

CLONING

- ◆ Cloning is the process of taking the genetic material of one being and creating another with exactly the same genetic makeup. This could not only provide infertile individuals with the opportunity to reproduce, but even give us the ability to “replace” people who have suffered untimely deaths. Most people currently think that cloning should be illegal. But should it?
- ◆ A common misconception about clones that is usually perpetuated by science fiction is that clones are carbon copies who look, behave, and even have the same memories as the original. But although clones would look the same—because physical characteristics are determined by genetics—they would each be their own individual.
- ◆ Not only would they be numerically distinct, but their behavior and even personalities would be completely different, because the different environments to which they are exposed would shape them all differently. Even if they grew up in the same household, they would not be carbon copies of each other any more than 2 genetic twins are. In fact, that is all clones are—artificially produced twins.
- ◆ Thinking that clones would all act the same commits the genetic determinism mistake: Your genes do not determine everything about you. And this shows the folly of trying to “replace” individuals with their clone after they have suffered an untimely death.
- ◆ Another mistake that is also promoted in sci-fi is thinking that clones would be nonpersons—disposable entities without souls that can be mistreated or used without moral regard. But such a view is completely inaccurate.

- ◆ The view seems to be rooted in the sentiment that being born is necessary to have a soul. Because clones are constructed, rather than born, they could be considered to be soulless. But this view is ludicrous. First, the idea that souls exist is widely rejected by academics. And even if the soul did exist, why would being born be a necessary condition for having one? Wouldn't having a functioning brain be the more likely candidate?
- ◆ The real question is whether clones would have minds. But of course they would; they'd have functioning brains. The fact that they're constructed, rather than born, wouldn't keep their brains from doing what they need to do to produce consciousness.
- ◆ We might argue that, even if clones are minded, you could create a clone of yourself for backup organs because you're allowed to use your own body, including your DNA, as you see fit. According to Thomson's argument that we have a fundamental right to our bodily resources, your clone would "belong" to you because it is made of your genetic material.
- ◆ But this argument seems pretty weak. Your right to your body means that someone should not be able to clone you without your consent. But if you voluntarily create a clone, it would be its own individual, with its own mind and thus its own rights. You could not own your clone any more than one twin could own another. And you would have no more right to your clone's bodily resources than your clone would have to yours.
- ◆ Why should cloning be illegal? The most commonly given rationale against the existence of clones is the sophomoric "it's not natural" argument, which commits a fallacy we have already seen many times.
- ◆ One might also worry that clones would be treated badly by society, because people would treat them as if they are property, as if they are soulless, even though they are not. But this is not a reason to legally restrict cloning. People used to argue against mixed-race marriages because of how society would treat mixed-race children. But the fact that society would mistreat them was evidence that society should change, not for the passage of laws.

- ◆ The real worry is that human cloning technology is not yet far enough along and attempts to do it would likely end in miscarriage, stillbirths, or birth defects. That is a good reason to legally ban attempts to plant cloned embryos into fertile women at our present stage of development. But that is not a reason to ban the further development of such technology so that one day clones could be reliably implanted and born healthy.

QUESTIONS

- 1 Susan Golombok's study showed that parents using in vitro fertilization are, on average, better parents than those who don't. Could this be because those who use in vitro fertilization are often wealthier and more educated (rather than because they, on average, "want" their children more than other parents)? If you can find Golombok's article, consider how she defines "better parent" and whether she controls for things like wealth and education.
- 2 Robert Nozick argued that when it comes to what people earn, even though they may not deserve it (because their ability and opportunity to earn what they have is largely a matter of chance), they are entitled to it because they worked for it. How would Nozick's logic apply to the rich having access to "designer baby" technology? How would it apply to wealthy countries having access to it and poor countries not?
- 3 In the *Star Trek: TNG* episode "Up the Long Ladder," the Mariposans steal the DNA of Commander Riker and Dr. Pulaski and try to create clones of them. When Riker and Pulaski find out, they kill the potential clones before the cloning process is complete. Was this moral, given that the genetic material belonged to them and was taken without their consent? Would this change if Riker and Pulaski found out after the cloning process was complete and the clones were alive and awake?

- 4 You probably agree that it is immoral for a person to make a clone of him- or herself for the purpose of harvesting the clone for body parts, because the clone is a sentient being. But what if we were able to make clones that only had a brain stem (to keep its heart beating and lungs working) and thus were unable of conscious thought or experiences. Would it be ethical to create such a “vegetable clone” for spare parts?
- 5 How is Marquis’s pro-life argument on abortion related to the pro-euthanasia argument from the previous lecture?
- 6 Consider Jerome, who was genetically engineered to be the world’s best swimmer. Critics of such practices insist that they limit freedom. What if we were able to genetically engineer desires into a person so that we were also able to make Jerome *want* to be the best swimmer in the world? Would he be free then? When considering your answer, think about the libertarian and compatibilist definitions of free will.

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RELATED SCI-FI (ABORTION)

James Blish’s *A Case of Conscience*
Philip K. Dick’s “The Pre-Persons”
H. G. Wells’s *When the Sleeper Wakes*

RELATED SCI-FI (DESIGNER BABIES/GENETIC ENGINEERING)

Futurama (2013): “Leela and the Genestalk”

Gene Roddenberry’s *Andromeda*

Aldous Huxley’s *Brave New World*

Frank Herbert’s *Dune*

Tanith Lee’s *Electric Forest*

Greg Bear’s *Blood Music*

Daniel Keyes’s *Flowers for Algernon*

Warwick Collins’s *Computer World*

RELATED SCI-FI (CLONING AND ARTIFICIAL BIOLOGICAL LIFE)

Futurama (2013): “Benderama”

Blade Runner (1982)

Blade Runner: 2049 (2017)

Star Trek: TNG (1987): “Up the Long Ladder”

This discussion was predicated by a worry about overpopulation. But what if the reverse happened? What if we began worrying about the survival of the human race because human fertility declined? What solutions would we turn to then, and what moral questions would they raise?

To consider this, familiarize yourself with *The Handmaid’s Tale*. You can watch the first season of the Hulu series, read the book, or simply consult Wikipedia to familiarize yourself with the setting, plot, and characters.

THE HANDMAID'S TALE: FEMINISM AND RELIGION

LECTURE 23

THE HANDMAID'S TALE

- ◆ Margaret Atwood's *Handmaid's Tale* takes place at an unspecified future time when infertility is sweeping across the world and Puritan fundamentalism has resurfaced. These new Puritans see the infertility as God's judgment on a secular society, in which women engaged in sex purely for pleasure and avoided the consequences with birth control and abortion.
- ◆ To take control of the government, the Puritans assassinated the president of the United States and Congress and then blamed Islamic fundamentalists. This enabled them to suspend the Constitution, establish martial law, and eventually institute a Christian theocratic government known as the Republic of Gilead, in which women are denied the right to own property, have money, maintain a job, or even read.
- ◆ All women not with their first husband are considered adulterous wards of the state. The few who are fertile are reeducated in red centers, where they're cruelly indoctrinated into their "duty" to God and country to "ensure the survival of humanity" by bearing children for the elite of the theocratic government. Upon graduation, these handmaids are forced to wear red habits and white bonnets to indicate their status.

- ◆ *The Handmaid's Tale* does not involve, as Atwood put it, “any technology not already available. No imaginary gizmos, no imaginary laws.” Still, people point to it and call it science fiction because it’s set in a dystopian future, like *1984* and *Brave New World*.

One of the motivations for *The Handmaid's Tale* comes from author Margaret Atwood growing up during World War II and learning, as she put it, “It can't happen here” [can't] be depended on. Anything [can] happen anywhere, given the [right] circumstances.”



- ◆ Interestingly, however, it also does not involve any “imaginary atrocities.” Atwood did not “put any events into the book that had not already happened in what James Joyce called the ‘nightmare’ of history.” Governments have been toppled and women have been treated in exactly the ways it describes.

FIRST-WAVE FEMINISM

- ◆ Does *The Handmaid’s Tale* promote feminism? Simply put, feminism is the idea that women are of equal value to, and deserve all the same rights as, men; sexism should end and women deserve justice for the ways they have been wronged.
- ◆ But what exactly all that means is debatable. It is widely acknowledged that although debates about women’s rights had been around for a long time, in the US, philosophically and historically, feminism has come in 3 movements, or waves.
- ◆ First-wave feminism’s breakout moment was the Seneca Falls Convention in 1848. Written primarily by Elizabeth Cady Stanton, the convention’s Declaration of Sentiments argued that women and men were naturally equal and proposed a political strategy by which women could attain equal access and opportunity in the political system.
- ◆ First-wave feminism is most closely associated with women’s suffrage and is generally thought to have ended when the Nineteenth Amendment passed, giving women the right to vote. But first-wave feminists also founded the temperance movement (trying to protect themselves against domestic abuse at the hands of alcoholic husbands) and fought for the abolition of slavery.
- ◆ *The Handmaid’s Tale* endorses first-wave feminist ideals. In Gilead, women have been robbed of all the rights the first-wave acquired. The place of the women is once again in the home, and reproduction and the care of husbands and children is their only role. Men dominate and control society—and women—just as Puritans did in the 1600s. One moral of the story must be to not take the accomplishments of first-wave feminism for granted.

SECOND-WAVE FEMINISM

- ◆ By the 1960s, it became clear that voting rights weren't enough to secure the equalities that the first wave wanted. As a result, second-wave feminism began in 1963, when Betty Friedan published *The Feminine Mystique* and called attention to the plight of college-educated homemakers who were unsatisfied in their dull domestic life. Not only were they bored, but they felt that they had no identity. Friedan called for them to find fulfillment in the workforce, and an entire generation responded.
- ◆ But the movement quickly expanded. The women's liberation movement fought for equal reproductive, sexual, property, and divorce rights. Soon to follow were *Roe v. Wade*, legal changes to property and divorce laws, altered sexual expectations, and oral contraceptives.
- ◆ The question of whether *The Handmaid's Tale* endorses second-wave feminism does not have a straightforward answer. In some respects, it clearly does.
- ◆ For example, second-wave feminists became famous for their protests of the Miss America pageant in the late 1960s. They likened the pageant to a cattle parade, where women are treated like slabs of meat—sexual objects instead of human beings.
- ◆ In Gilead, women are treated essentially the same way, especially the handmaids: as breeding stock. Their worth is determined by their fertility rather than their humanity. The aunts who run the red centers even tag the ears of handmaids and use cattle prods to keep them in line.
- ◆ In other respects, *The Handmaid's Tale* vilifies second-wave feminism. For example, a character that is clearly depicted as a second-wave feminist complains about how some of her fellow second-wave feminists tried to shame her for having a child.
- ◆ Some second-wave feminists called for women to discard anything that might encourage their objectification. Susan Brownmiller argued against the use of makeup, keeping up with fashion, and even women's magazines. Because all of these things are illegal in Gilead, one might be tempted to see the evil Gilead as a second-wave feminist's paradise.

- ◆ But this temptation is ill-founded. Not only does Gilead stand contrary to the central tenants of gender equality championed by second-wave feminism, but the anti-sex, anti-man movement represented only the left-wing fringe of the second-wave movement.
- ◆ It would be a mistake to identify the entire movement with the, as Atwood puts it, “phase of feminism when you weren’t supposed to wear frocks and lipstick.” Indeed, this seems to be why Atwood avoids the term “feminism” to describe her work. As she noted, it was women calling themselves feminists who labeled Atwood a traitor to her sex for wearing lipstick and dresses.
- ◆ And although the aunts, who undoubtedly are the story’s villains, may look and behave somewhat like such women, we must also remember that part of the point of the story is to demonstrate how patriarchy can strip women of power so severely that they turn on each other. Indeed, that’s probably what Atwood thinks made second-wave feminists fight among themselves.
- ◆ In reality, many second-wave feminists were pro-sex, not the least of which because they—like the aunts—were siding with the religious right in their war against recreational sex. Although some second-wave feminists did call for feminists to reject men, the picture of all feminists as militant lesbians who hate men is largely a product of the imagination of the right.
- ◆ Historically, second-wave feminism might have also ended with the passage of an amendment to the Constitution—in this case, the Equal Rights Amendment, which would have guaranteed legal equality for the sexes regarding employment, property, and divorce.
- ◆ But although it passed both houses in the late 1970s, a conservative backlash after the election of Ronald Reagan kept the amendment from receiving the necessary ratifications from the states. So, exactly when the second wave ended is a matter of debate.

THIRD-WAVE FEMINISM

- ◆ To what extent *The Handmaid's Tale* aligns with third-wave feminism is difficult to pin down because third-wave feminism itself is difficult to pin down. It arguably came into existence with Naomi Wolf's *The Beauty Myth* in 1990, or in 1992, when Rebecca Walker wrote in *Ms.* magazine "I am not a postfeminism feminist. I am the Third Wave." There is no set leader of third-wave feminism, however, and no single set doctrine or goal—perhaps because, given the era, its ideas largely spread online.
- ◆ One thing most third-wave feminists have in common, though, is that while they acknowledge that the third wave was made possible by rights the second wave secured, they're also critical of the second wave in many ways, such as how it was mainly something advocated for and by white middle-class women. Third-wave feminists are much more aware and sensitive to the needs of minority women—and gender issues in general, conversing with and advocating for the rights of gays and transsexuals.
- ◆ And unlike some second-wave feminists, third-wave feminists do not have restrictions for how feminists must present themselves. Third-wave feminists generally advocate for anyone's freedom to dress and act as they like, including dressing sexy and being sexual. Indeed, a woman's sexuality can be used as a means to feminine power.

The cast members of the Hulu series, in refusing to say that *The Handmaid's Tale* is a "feminist story" at the Tribeca Film Festival, seem to have actually endorsed a third-wave feminist idea. Elisabeth Moss, who plays the main character, said it's just a story about human struggles because "women's rights are human rights."

Yet that phrase was a feminist mantra even before Hillary Clinton uttered it in 1995 to the United Nations Fourth World Conference on Women. It's almost as if they don't want to tell people what it means for something to be a feminist show, just as third-wave feminists want to avoid telling people what it means to be a feminist.

- ◆ Third-wave tropes abound in the Hulu episodes. The cast is notably more ethnically diverse than the novel's, and it also addresses the plight of gay people.

RELIGION

- ◆ Is *The Handmaid's Tale* anti-religious? The term “anti-religious” is usually reserved for authors who argue against religion, such as the so-called New Atheists, such as Christopher Hitchens and Sam Harris, whose goal is to get people to stop being religious.
- ◆ To accomplish this goal—apart from trying to convince people that religion has natural, rather than supernatural, origins and that religious doctrines, such as “God exists,” are false—New Atheists try to convince you that religion is dangerous. This approach is embraced most directly by Harris in *The End of Faith* and Hitchens in *God Is Not Great*, where they detail the many atrocities committed in religion’s name.
- ◆ The reason *The Handmaid's Tale* seems anti-religious is because the atrocities the New Atheists mention mirror precisely those we see carried out in Gilead—everything from modern-day terrorism and the horrors of theocratic regimes who sacrifice heretics and “gender traitors” to the general brutalization and mistreatment of women, both in and outside of marriage.
- ◆ Atwood insists, however, that *The Handmaid's Tale* isn’t “anti-religious.” In her afterword, she points out that the resurgent Puritanism that dominates Gilead is also hunting down other Christians—Catholics, Baptists, Quakers. And some of these religions are active in the resistance, sneaking women into Canada, for example.
- ◆ What *The Handmaid's Tale* is against, Atwood says, is “the use of religion as a front for tyranny.” The elite of Gilead are not truly motivated by scripture. They use it, and people’s loyalty to it, to secure power. What’s more, the Gilead elite don’t really believe the religious doctrines they profess.

- ◆ So, the argument goes, religion's not dangerous; it's just its misuse that's dangerous. Indeed, those who misuse it aren't really religious. They're simply hungry for power.
- ◆ But it's not clear that this argument works, especially in the real world. First, it seems unlikely that those who do evil in the name of religion don't really believe the religious doctrines they espouse. The Puritans in Salem probably wouldn't have burned women as witches unless they actually believed in witches. It's not just a grab for power.
- ◆ Second, even if religious leaders aren't true believers, and are merely manipulating people to gain power, that wouldn't mean religion isn't dangerous. After all, the populace couldn't be so easily manipulated if it weren't for its religious beliefs. Puritanism could never take hold in a population made up of atheists.
- ◆ The question is whether society would be better off without religion and if a lack of religion would make it less susceptible to such manipulation. The answer would seem to be yes.
- ◆ To counter this, one might point to historical examples where people were manipulated to commit atrocities without the use of religion, such as in Stalin's Russia or the Kim family's North Korea. But there are 2 things to say in response.
- ◆ First, the argument isn't that a lack of religion would make it impossible to manipulate people, just that it would make it much more difficult. To think that the inability to completely eliminate something is a reason to do nothing about it commits the all-or-nothing fallacy, a variety of false dichotomy. Yes, some leaders might still find ways to manipulate people, but if religion makes society more susceptible to manipulation, it's dangerous.
- ◆ Second, it's not clear that Stalin and the Kim family did not use religion to manipulate people. Yes, their communist ideologies were based in a Marxist materialistic naturalism, but to solidify their power, these tyrants essentially invented their own religion that made them and their government the objects of worship.

- ◆ The New Atheists criticize all forms of blind devotion and willful ignorance. It's not just supernatural beliefs that are dangerous, but the thought processes that generate and protect them. Even if they don't consider Stalin's cult of personality to be "religious" per se, the New Atheists do at least consider the "religious thinking" that makes such cults possible just as objectionable.
- ◆ What is arguably most dangerous about both religion and secular personality cults is their authoritarianism—their unquestioned devotion to authority. And such devotion not only hinders personal freedom, but authority usually asserts itself by demonizing outsiders, such as racial minorities, other religions or nationalities, and genders.
- ◆ And the most effective way to do this is by entitativizing them—treating the entire group as an entity, as if every member of the group is exactly the same.
- ◆ Consider how every handmaid wears the same red dress and white bonnet. The message is clear: They are all the same. The fallacy involved is called hasty generalization: You cannot generalize about an entire group based on a small sample.
- ◆ But feminists maintain that this is a primary way the patriarchy exercises its power against women. If Bob can't solve a math problem, we're likely to conclude that Bob is bad at math. But if Wendy can't, it's because all women are bad at math. *The Handmaid's Tale* fights against this by telling us what it is like to be a single member of such a group.
- ◆ What makes *The Handmaid's Tale* especially disturbing is that it shows how authoritarianism can take hold even in the absence of an authority figure. The Puritanism movement seems to have arisen organically; its leader is never mentioned.
- ◆ Indeed, this seems to be how many of the patriarchal assumptions in society have taken hold in the real world. No one person declared that women can't vote or should be restricted to household duties. Societal assumptions about the abilities and role of all women simply became entrenched.

- ◆ And it's not just about women. As third-wave feminists often say, "patriarchy hurts men, too"—by, for example, instilling unrealistic, toxic expectations regarding masculinity. "Real men" don't cry; they must be dominant and self-reliant.
- ◆ And it's not just the patriarchy. Feminists can be guilty of this, too. For example, trans-exclusionary radical feminism rejects all transgender women because they think they are simply men appropriating femaleness and disempowering women.
- ◆ But what perhaps is most challenging about *The Handmaid's Tale* is how it forces us to wrestle with our own complicity—complicity with the beliefs, assumptions, and power structures that make the kinds of exploitations we see in the book possible.
- ◆ Whether it be unjustified assumptions about gender or religious beliefs that damage society, to the extent that one participates in such things, thus keeping them alive, it seems that one is morally culpable, at least to some degree. It would seem to follow that if, as the New Atheists argue, religion does more harm than good, perhaps one should choose to no longer prop it up by being a member.

QUESTIONS

- 1 What argument might you give to suggest that *The Handmaid's Tale* isn't actually science fiction?
- 2 Second-wave feminists made an effort to redefine rape so that it doesn't just include physically forcing a woman to have sex, but also psychologically coercing a woman to have sex (through lying, emotional manipulation, etc.). In the novel, when Offred is trying to describe the sex between her and the commander, she says: "I do not say making love, because this is not what he's doing ... Nor does rape cover it: nothing is going on here that I haven't signed up for. There wasn't a lot of choice but there was some, and this is what I chose." The choice she made was between being a handmaid and being sent to the colonies, "with the unwomen, and starve to death and Lord knows what all." Given the view of second-wave feminists on rape, do these quotes make *The Handmaid's Tale* more feminist or less?

- 3 If people do something immoral in the name of a religion and you belong to that religion, are you culpable to any degree? To what degree does voluntarily belonging to a group make you culpable for the actions of that group? If you promote or argue for a belief and then someone does something immoral in the name of that belief, are you culpable? Are you at least obligated to vocally condemn the person's actions?
- 4 Given that *The Handmaid's Tale* was written in the 1980s and third-wave feminism didn't happen until the 1990s, could the novel rightly be considered a third-wave novel? In your answer, think back to the first lecture, which discussed whether authorial intent determines meaning and how changes in society can change the meaning of a work of art.

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RELATED SCI-FI (FEMINISM)

Rick and Morty (2013): “Raising Gazorpazorp”
Futurama (1999): “Neutopia”
Star Trek: TNG (1987): “Angel One”
Pamela Zoline’s “The Heat Death of the Universe”
Ursula K. Le Guin’s *The Left Hand of Darkness*
Joanna Russ’s *The Female Man*
Marge Piercy’s *Woman at the Edge of Time*
Joan Slonczewski’s *A Door into Ocean*

RELATED SCI-FI (DANGERS OF RELIGION)

The Orville (2017): “Mad Idolatry” and “Krill”
Star Trek: TNG (1987): “Who Watches the Watchers”
The Book of Eli (2010)

Friedrich Nietzsche said that “God is dead” and rejected the notions of good and evil. But he went on to suggest that such a rejection could lead one to become the Übermensch, or the superman.

To explore this idea, watch Stanley Kubrick’s *2001: A Space Odyssey*. As you do, consider the 3 very different acts of the film and see if you can figure out the message of the film.

If you have trouble, consider reading the book.

KUBRICK'S 2001 AND NIETZSCHE'S ÜBERMENSCH

LECTURE 24

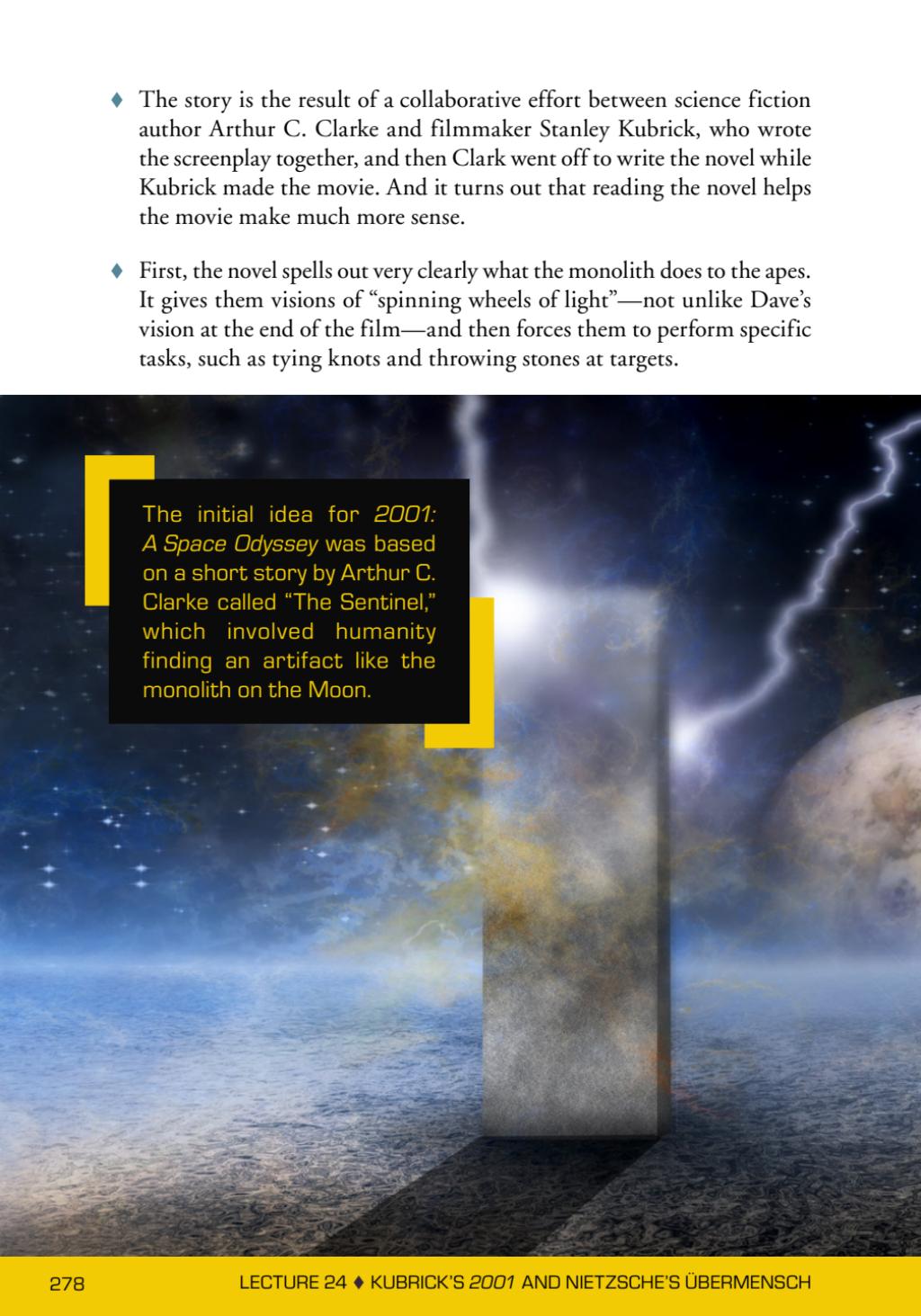
2001: A SPACE ODYSSEY

- ◆ Stanley Kubrick's *2001: A Space Odyssey* is simultaneously one of the most famous, weird, and confusing science fiction films of all time. It opens with its iconic musical theme and a view of the Sun cresting over the Moon and Earth from space.
- ◆ Then, the first act—entitled “The Dawn of Man”—has no dialogue. Set in the distant past, it follows a tribe of primitive apes struggling to survive. They lack proper food, are subject to predators, and must compete with a different tribe for access to a watering hole.
- ◆ One day, in a scene underscored by György Ligeti’s very unconventional piece *Requiem*, the apes discover a strange black monolith outside their dwelling. They touch and marvel at it. Later, one of the apes discovers that bones can be used as weapons and then teaches the others first to kill and eat the boars that live near them and then to kill the leader of the rival tribe and take charge of the watering hole.
- ◆ After the battle, the ape leader throws a bone in the air, and the movie cuts to an orbiting satellite, in the year 2000, where humanity has made a strange discovery buried 40 feet deep on the far side of the Moon: another monolith.

- ◆ We are led to suspect it was placed there by aliens, but its existence is kept from the public. As a team of scientists view it, *Requiem* plays again, they pose for a picture beside it, and then suddenly they hear a deafening high-pitched noise.
- ◆ Cut to 16 months later in the year 2001 and to a pair of astronauts, Dave Bowman and Frank Poole, who are escorting hibernating astronauts on a mission to Jupiter in a spaceship named *Discovery One*. Along the way, the ship's conscious computer, HAL, goes a little wonky and ends up killing Frank and the hibernating astronauts.

In 2001: A Space Odyssey, there's only about 40 minutes of dialogue in the 2.5-hour film.
- ◆ In response, Dave goes into the room that houses HAL's computer brain and robs him of all his higher mental functions, causing a video to play where Dave learns about the monolith discovered on the Moon and the true purpose of *Discovery*'s mission: The monolith's deafening high-pitched noise was a radio signal aimed directly at Jupiter. *Discovery* has been sent to find out what it was sending a signal to.
- ◆ In the last act, entitled "Beyond the Infinite"—which is also without dialogue—Dave reaches Jupiter and discovers yet another monolith, orbiting Jupiter along with its moons. Dave travels out to the monolith via space pod, the camera pans up, and we are treated to a confusing tunnel of colors. He sees what are apparently exploding galaxies, maybe forming stars, some weird diamond-shaped things, and a photo-negative overview of a landscape.
- ◆ Then, he ends up in a hotel room. From inside his pod, he sees an older version of himself in the room, still inside his spacesuit. Then, from inside his spacesuit, he sees an even older version of himself eating dinner. Dinner Dave sees an even older version of himself lying on his deathbed. Deathbed Dave then points at a monolith that suddenly appears at the foot of his bed, and then, all of a sudden, in place of Dave is a baby in a glowing orb. The opening theme plays again, and the film closes with an image of the baby looking down on Earth.

- ◆ The story is the result of a collaborative effort between science fiction author Arthur C. Clarke and filmmaker Stanley Kubrick, who wrote the screenplay together, and then Clark went off to write the novel while Kubrick made the movie. And it turns out that reading the novel helps the movie make much more sense.
- ◆ First, the novel spells out very clearly what the monolith does to the apes. It gives them visions of “spinning wheels of light”—not unlike Dave’s vision at the end of the film—and then forces them to perform specific tasks, such as tying knots and throwing stones at targets.



The initial idea for *2001: A Space Odyssey* was based on a short story by Arthur C. Clarke called “The Sentinel,” which involved humanity finding an artifact like the monolith on the Moon.

- ◆ It gives Moon-Watcher, the tribe's leader, a vision of fat, satisfied apes that makes him long for such a life. The monolith eventually teaches him how to use stones to kill boars and eat them and then how to use bones as tools and weapons against predators and competitors.
- ◆ In other words, the monolith gives the apes an evolutionary push toward becoming human.
- ◆ The novel also explicitly says that the monolith came from aliens. In fact, they placed hundreds all over the globe. The one in the film is just the one that succeeded in its task. And once it did, the aliens buried another monolith on the far side of the Moon.
- ◆ The Moon monolith was intended to serve as a signal. Once the humans had advanced enough to discover and unearth it—which would be evident to the monolith upon exposure to the Sun—it would send a signal to yet another monolith the aliens had planted deeper in the solar system. The humans, curious about the destination of this signal, would track it down. And once they did, they would receive another evolutionary push, just like the apes.
- ◆ In the novel, the monolith inverts and Dave is drawn into a Stargate, or wormhole. His journey through it is described in detail, and he ends up above a binary red sun and white dwarf pair, and as he descends into their fire, he inexplicably finds himself in a hotel room.
- ◆ We learn that the hotel room is the mental projection of one of the aliens that built the monoliths based on what they had seen from Earth television broadcasts. And, unlike the movie, he does not spend ages there, but a single night, during which his memories and personhood are transferred into the “Star Child.”
- ◆ The novel makes the Star Child’s power clear. Even though the hotel room disappears, exposing him directly to the red giant star, “the child scarcely noticed, as he adjusted himself to the comfortable glow of his new environment. He still needed, for a little while, this shell of matter as the focus of his powers. His indestructible body was his mind’s present image of itself; but for all his powers, he knew that he was still a baby. So he would remain until he had decided on a new form, or had passed beyond the necessities of matter.”

- ◆ Indeed, the novel hints that the aliens who planted the monoliths had long transcended the need for humanlike bodies. In recounting how alien life would likely develop, Clark follows it from bionic, to android, to eventually just being a disembodied mind “which, long ago, men had called ‘spirit.’”
- ◆ When the Star Child returns to Earth, he finds it on the brink of nuclear annihilation (the thing most people thought would end the species in 1968). He eliminates the world’s nuclear arsenal by a sheer act of will and then thinks the same thing that Moon-Watcher did upon his evolutionary elevation. “[I’m] not quite sure what to do next, but [I will] think of something.” Clearly, he is only the first.

THE CONCEPT OF THE ÜBERMENSCH

- ◆ *2001*’s iconic opening music, which also plays during the Moon-Watcher’s and Dave Bowman’s transformations, is the “Sunrise” introduction to Richard Strauss’s tone poem *Thus Spoke Zarathustra*, which is his musical interpretation of Nietzsche’s philosophical work of the same name.
- ◆ Indeed, the similarities between Nietzsche’s *Thus Spoke Zarathustra* and Kubrick’s *2001* make many think that Kubrick was doing the same thing as Strauss, just through a different medium—that *2001* is an expression on film of Kubrick’s interpretation of Nietzsche’s philosophy.
- ◆ *Zarathustra* is a story about a man who, much like Nietzsche himself, lives secluded in the mountains pondering the depths of philosophy. After 10 years, Zarathustra descends the mountain to try to impart wisdom to the world. Although his wisdom is wasted on most, he is able to recruit a few disciples upon whom he imparts his wisdom. Most of the book consists of speeches made by Zarathustra to those disciples.
- ◆ Kubrick’s *2001* depicts what it seems Nietzsche predicts through Zarathustra: the journey of the creatures of this planet from apes, to men, to overbeings. Amateur and professional philosophers alike declare that *2001* is Kubrick putting Nietzsche’s philosophy on film. They argue that although he may not have predicted it happening in exactly the way it does in *2001*, this kind of thing—humanity eventually evolving into a superior species of “supermen”—is exactly what Nietzsche predicted.

- ◆ But this interpretation of *2001*—or, more specifically, this interpretation of Nietzsche—is incorrect. Nietzsche’s writings, and specifically *Zarathustra*, clearly influenced *2001*. There are many themes and similarities to be found. Nietzsche’s Übermensch, like the Star Child, is even described as having childlike qualities.
- ◆ Kubrick may very well have understood Nietzsche to have been saying that humanity is destined to evolve past its current stage of development into something grander, and he may have intended *2001* to be an expression of what he thought that would look like. But if that was Kubrick’s interpretation of Nietzsche, his interpretation was incorrect.
- ◆ Nietzsche is a complex author, and his writings are definitely open to interpretation. And it’s not that the only legitimate way to interpret Nietzsche has to align with Nietzsche’s authorial intentions. But a legitimate interpretation of any text must align with the facts of the text itself; you can’t just ignore what doesn’t fit with your interpretation to make it work. And the idea that humanity will eventually evolve into a new species of supermen is not an idea that can be found anywhere in Nietzsche’s writings.
- ◆ The key to realizing this lies in understanding what *Zarathustra* is trying to do and what he thinks the Übermensch is. What *Zarathustra* is trying to do is teach the men he meets, like his disciples, how to become an Übermensch. He isn’t trying to transform the entire species, and he certainly isn’t predicting that it will be transformed. He is simply trying to get people to embrace his philosophy because he thinks that by doing so, they can become better persons.
- ◆ Humanity is not on its way to becoming something great. Each person has a choice regarding what to do with themselves: go one way and try to surpass his or her current state, or go the other way and revert.
- ◆ Part of the confusion, it seems, is caused by *Zarathustra* using the word “man” to refer to both individual persons and humankind—a confusion that perhaps could have been avoided but wasn’t necessarily sexist. Nietzsche wrote the work in German, and the German word for human being is *der Mensch*, which, although grammatically masculine, refers to both men and women. The same is true for Übermensch, which is often translated as “superman” but really refers to both men and women. So, Nietzsche wasn’t suggesting that philosophical enlightenment was reserved for men alone.

- ◆ Attaining the philosophical enlightenment to which Zarathustra wants people to aspire would improve a person dramatically—that’s true. And such a person might even look upon their fellow humans as we humans look upon the apes. But it would not result in a new species.
- ◆ After all, it’s not like philosophical enlightenment can be passed down through genes and eventually work to fixation, nor did Zarathustra expect it to. If this enlightenment happened, it would happen now, on an individual level, to some people living today.
- ◆ These individuals, through teaching, could supposedly pass down this enlightenment through the years, and perhaps you could say that they would be so different that they are a “new species,” but that term could only be used metaphorically.
- ◆ Genetically, there would be no difference between the enlightened and nonenlightened. The only difference would be in the philosophy they embraced—what beliefs they had and how they behaved. They certainly wouldn’t look like the Star Child.
- ◆ But in reality, Zarathustra seems to have expected only one person to be enlightened. Like John the Baptist heralded the one and only savior, Zarathustra was a prophet for the one and only Übermensch.
- ◆ Furthermore, Nietzsche may have thought the entire thing was a pipe dream. At the end of the book, after returning to his mountain, Zarathustra thinks he hears the voice of *the* Übermensch and goes on a quest to find him. When the quest fails, he returns to the mountain, only to hear the voice again and go out to try to find him again.
- ◆ One gets the impression that this will be an endless cycle and thus that it’s impossible to fully embrace the philosophical approach that Zarathustra endorses. Even for Nietzsche, fully embracing his philosophy—and becoming the Übermensch—is likely forever out of reach.
- ◆ The second key in understanding why *2001* doesn’t match Nietzsche’s vision lies in understanding what the Übermensch was—or would be, if someone attained that status.

- ◆ Nietzsche never actually fully describes what the Übermensch is like, but we can acquire some understanding by recounting the journey one would take to get there. The journey begins by realizing that God is the creation of man, not the other way around, and that the idea of God is dead—that it's no longer useful for answering questions about good and evil or the meaning of life.
- ◆ The next step is to reject the nihilism that this realization threatened and instead realize that one can create and live by one's own values. One can reject the Judeo/Christian slave morality, which revered the oppressed, and instead embrace the master morality, which praises achievement, power, and freedom.



Perhaps Nietzsche's best example of someone who journeyed to becoming an Übermensch was Napoleon—who rejected conventional morality and lived according to his own rules and whose actions affect the fate of Europe still today. The effect of the Übermensch on society should be felt for generations; in the mountain range of humanity, according to Nietzsche, such individuals stand out like mountain peaks.

What kept Napoleon from achieving Übermensch status, however, was his failure to properly direct his will to power. Not only did he not redirect it to the betterment of humanity, but he did not use it to master himself—to overcome his base desires and reveal his true self.

- ◆ One of the defining characteristics of the Übermensch is that he or she fully embraces the eternal recurrence—the idea that all of history will repeat, over and over again, and thus one will live one's life over and over again.
- ◆ To be clear, neither Nietzsche nor the Übermensch necessarily thinks that the universe actually does repeat itself. But, Nietzsche argues, you can evaluate the worth of your life—it's meaningfulness and ultimately whether you are living it as your true self—by asking yourself how you would react to learning that it does.
- ◆ If you would react in horror, then you are living the wrong kind of life—one that is meaningless—and you should change your ways. But if you would react with joy, then you are doing things right; you are living the best kind of life, one that is meaningful and in line with the desires of your true self.
- ◆ We can now see how different Nietzsche's Übermensch is from the Star Child. The Übermensch would not be the first of a new ideal species that humanity might one day become. The Übermensch would neither be the result of evolution—whether it be by natural selection or alien intervention—nor genetically superior.
- ◆ So, if *2001* is an expression of Kubrick's interpretation of Nietzsche, that interpretation is wrong. Perhaps the idea that humanity will one day evolve beyond itself is simply an idea that Nietzsche inspired in Kubrick when he read *Zarathustra*. Or maybe humanity becoming a superior species in *2001* is just a metaphor for one individual becoming an Übermensch in the real world.
- ◆ But *2001* is not “the first Nietzschean film” in the grandiose way that people suggest. And this argument is worth making to guard against the idea that one can understand Nietzsche by understanding *2001*. You can't. Nietzsche did not think that humanity was headed toward becoming a species of supermen. This is an erroneous idea that many critics and even philosophers have embraced.

QUESTIONS

- 1 Nietzsche wasn't entirely clear about his definition of the Übermensch. What do you think he had in mind? Is it really possible to embrace Nietzsche's philosophical ideas in a way that the Übermensch must?
- 2 This lecture argued that *2001: A Space Odyssey* does not present Nietzsche's philosophical idea. What would a film that does present his ideas look like?
- 3 What other science fiction did the course not cover that you would have liked to learn about? What philosophical topics does it address or questions does it raise?

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RELATED SCI-FI

TV	<i>The Twilight Zone</i> (1959) (especially the episode “Eye of the Beholder”) <i>The Outer Limits</i> (1963) (especially the episode “The Sixth Finger”) <i>Futurama</i> (1999) (especially the episodes “The Problem with Popplers,” “Proposition Infinity,” and “Godfellas”) <i>Rick and Morty</i> (2013) (especially the episodes “Meeseeks and Destroy” and “Get Schwifty”) <i>Dune</i> (2000) (Syfy miniseries)
FILM	<i>The Hitchhiker’s Guide to the Galaxy</i> (2005) <i>Stalker</i> (1979)
PRINT	Arkady and Boris Strugatsky’s <i>Roadside Picnic</i> (novel basis for <i>Stalker</i>) Frank Herbert’s <i>Dune</i> Douglas Adams’s <i>The Ultimate Hitchhiker’s Guide to the Galaxy</i>

If you’re yearning for more sci-fi and philosophy, check out the Great Course *The Big Questions of Philosophy*, which ends with a lecture on the meaning of life that uses *The Hitchhiker’s Guide to the Galaxy* as a backdrop. Indeed, the entire course sets up that lecture.

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