

ES26: Humanity and Its Futures: Systems Thinking Approaches

Spring 2021
Mondays
9:00-11:45am

Course Description

As citizens in a rapidly changing world facing increasingly complex challenges, the skills that tomorrow's leaders need are increasingly crossing disciplinary silos. Humanity's most pressing problems are interconnected, involve competing interests, and defy simplification into single disciplines. Reductionist approaches focused on linear understanding must be balanced against the integrative logic of systems-oriented thinking. Depth must be balanced with breadth.

This course will give students an appreciation for the complexities of some of today's most intractable problems, and in so doing, help students develop methodologies for navigating the world they will face. After an overview of systems thinking and its emphasis on interconnections and feedback loops, the course will explore several complex issues. Students will develop a conceptual appreciation of systems mapping and modeling, and over the course of the semester, topics including epidemics, inequality, human displacement, and food systems will be addressed.

Students will learn to employ systems thinking using a multi-disciplinary method to evaluate possible solutions. This future-oriented analysis will emphasize the necessity to zoom out and paint a mosaic of possible unintended consequences and roadblocks that may impede progress. By the end of the course, students should have developed a robust framework for integrating economic, political, technical, ethical, and social lenses into an analysis of complex problems and their potential solutions.

The course is not a lecture and will instead be run as a discussion seminar. It will employ multiple learning methods varying from reviewing academic papers, discussing and debating materials with peers, reading novels and watching videos. **The course is designed to be accessible to all concentrations without significant mathematical preparations.** Each case will include an overview of the issue, before exploring existing disciplinary approaches to address the challenge.

Learning Outcomes

- Think in systems level and understand different systems models and their limitations
- Analyze systems with mapping methods that express linkages and feedback loops
- Learn about complexity – be able to articulate origins and possible mitigations
- Ability to apply frameworks presented in the class to a particular human challenge

Requirements & Evaluation Criteria

- 20% Participation (Coming prepared to class each week engaged and ready to contribute)
- 20% Assignments (Weekly written reflections on readings and any group work)
- 20% Midterm (outline, abstract, bibliography) about chosen topic
- 40% Final Paper (10-15 pages) and Presentation (5 minutes) about chosen topic

Teaching Faculty

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Teaching Fellow

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Collaboration Policy

Discussion and exchange of ideas are essential to this academic work. For assignments in this course, you are encouraged to consult and collaborate with your classmates on the choice of paper topics and to share sources. You may find it useful to discuss your chosen topic with your peers, particularly if you are working on the same topic as a classmate. However, you should ensure that any written work you submit for evaluation is the result of your own research and writing and that it reflects your own approach to the topic. You must also adhere to standard citation practices in this discipline and properly cite any books, articles, websites, lectures, etc. that have helped you with your work. If you received any help with your writing (feedback on drafts, etc.), you must also acknowledge this assistance.

Course Overview

The course will be structured into three parts:

Part 1: An Overview of Systems Thinking, Systems Mapping

Week 1- Introductions, Overview

Week 2- Introduction to Systems Thinking

Week 3- Systems Archetypes and Mapping

Week 4- Age of Consequences

Part 2: Challenges and Opportunities

Week 5- Technology and Privacy

Week 6- Pandemics

Week 7- Space

Week 8- Food Vulnerability

Week 9 -AI-Data

Week 10- Migration

Week 11- Inequality

Week 12- Climate Change

Part 3: Navigating Uncertainty: Thinking in Futures

Week 13- Systems Thinking Through Scenarios

Week 14- Uncovering Assumptions via Fiction

PART I: AN OVERVIEW OF SYSTEMS THINKING, SYSTEMS MAPPING

Jan. 25 - Week 1 – Introductions, Overview

Course overview, including a detailed discussion of the syllabus and course expectations.
Instructor (and student) introductions

Preparation:

Sandel, Michael J. *What Money Can't Buy: The Moral Limits of Markets*. New York, NY: Farrar, Straus and Giroux, 2012. *Selections*.

[Purtill, Corinne, et al. "How Close Is Humanity to the Edge?" *The New Yorker*, 21 Nov. 2020](#)

[Ehrenreich, Ben. "How Do You Know When Society Is About to Fall Apart?" *The New York Times*, The New York Times, 4 Nov. 2020.](#)

Feb. 1 - Week 2 - Introduction to Systems Thinking

Preparation:

Meadows, Donella. *Thinking In Systems: A Primer*. White River Junction, VT: Chelsea Green, 2008.

Feb. 8 - Week 3 - Systems Archetypes and Mapping

Preparation:

Senge, Peter. *The Fifth Discipline: The Art and Practice of the Learning. Organization*. New York, NY: Doubleday, 1990. *Appendix 1 & 2*.

Feb. 15 – Week 4 - Presidents Day Holiday – NO CLASS

Preparation:

Rees, Martin. *On the Future: Prospects for Humanity*. Princeton, NJ: Princeton University Press, 2018. *Part 1: Deep in the Anthropocene*.

Documentary: *The Age of Consequences* (2016). ([Amazon](#), [YouTube](#), [Apple TV](#))

PART II: CHALLENGES AND OPPORTUNITIES FOR HUMANITY

Feb. 22 – Week 5 – Technology & Privacy

Risks: Loss of autonomy

[Kavenna, Joanna. "Shoshana Zuboff: 'Surveillance Capitalism Is an Assault on Human Autonomy'." *The Guardian*, Guardian News and Media, 4 Oct. 2019.](#)

Lanier, Jaron. *Ten Arguments for Deleting All Your Social Media Accounts Right Now*. New York, NY: Henry Holt and Company, 2018, *Chapter 1*.

[Menand, Louis, et al. "Why Do We Care So Much About Privacy?" *The New Yorker*, 11 June 2018.](#)

Opportunities: Collectivism

[Satariano, Adam. "What the G.D.P.R., Europe's Tough New Data Law, Means for You." *The New York Times*, The New York Times, 6 May 2018.](#)

[Berinato, Scott. "Social Physics Can Change Your Company \(and the World\)." *Harvard Business Review*, 8 Apr. 2020.](#)

Movie: *Social Dilemma* (2020) ([Netflix](#))

Further References:

Zuboff, Shoshana. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York, NY: PublicAffairs, 2019.

Pentland, Alex. *Social Physics How Social Networks Can Make Us Smarter*. New York, NY: Penguin Books, 2015.

Assignment:

In 200 words, explain why it is beneficial for society to defend the right to privacy. Include situations (if any) in which transparency achieved through surveillance would be more valuable than privacy.

Mar. 1 – Week 6 –Pandemics
(Wellness Day– NO CLASS)

Risks: Zoonoses

Quammen, David. *Spillover: Animal Infections and the next Human Pandemic*. New York, NY: W.W. Norton & Co., 2012. *Chapter IV: Dinner at the Rat Farm*.

Khan, Ali S., and William Patrick. *The Next Pandemic: on the Front Lines against Humankind's Gravest Dangers*. New York, NY: PublicAffairs, 2016. *Chapter 4: A Pox on Both Your Houses*.

Opportunities: Public Health Resilience

[Yong, Ed. "The Next Plague is Coming. Is America Ready?" *The Atlantic*. July/August 2018.](#)

[Palmer, Ada. "What Historic Pandemics Could Teach Us About Coronavirus." *What Historic Pandemics Could Teach Us About Coronavirus: Big Brains Podcast* | *University of Chicago News*, University of Chicago.](#)

Movie: *Contagion* (2011) ([Apple TV, YouTube, Amazon](#))

Further References:

[Gates, Bill. "How We Must Respond to the Coronavirus Pandemic." *TED Talk*, March 2020.](#)

Kean, Sam. "On the Trail of Yellow Fever." *Science* 357, no. 6352 (2017): 637-41.

Olival, Kevin J., Hosseini, Parvaz R., Zambrana-Torrel, Carlos, Ross, Noam, Bogich, Tiffany L., and Daszak, Peter. "Host and Viral Traits Predict Zoonotic Spillover from Mammals." *Nature* 546.

Assignment:

In 200 words, imagine you were in Freetown, Sierra Leone 2014 when the Ebola crisis began, and the government had closed all travel routes out; how would you respond?

Mar. 8 – Week 7 – Space

Risks: Existential Planetary Risk

Kaku, Michio. *The Future of Humanity: Terraforming Mars, Interstellar Travel, Immortality, and Our Destiny beyond Earth*. New York, NY: Doubleday, 2018. *Prologue and Introduction*.

Diamond, Jared. *Collapse: How Societies Choose to Fail or Succeed*. New York, NY: Penguin Books, 2011. *Chapter 2: Twilight at Easter, Chapter 3: The Last People Alive*.

[Mann, Charles C. "Can Planet Earth Feed 10 Billion People?" *The Atlantic*, Atlantic Media Company, 24 Jan. 2018.](#)

Opportunities: New Habitats

Sagan, Carl. *Pale Blue Dot: A Vision of the Human Future in Space*. New York, NY: Ballantine Books, 1994. *Chapter 1: You are Here*.

O'Neill, Gerard K. *The High Frontier: Human Colonies in Space*. Burlington, Ont.: Apogee Books, 2000. *Chapter 4, Chapter 7*.

["Going to Space to Benefit Earth." Jeff Bezos, Blue Origin Event, 9 May 2019.](#)

Pyle, Rod. *Space 2.0: How Private Spaceflight, a Resurgent NASA, and International Partners Are Creating a New Space Age*. Dallas, TX: BenBella Books, Inc., 2019. *Chapter 7*.

Sivolella, Davide. *Space Mining and Manufacturing: Off-World Resources and Revolutionary Engineering Techniques*. Cham, Switzerland: Springer, 2019. *Pages 1-27*.

[Alex Gilbert, Morgan Bazilian. "The Geostrategic Importance of Outer Space Resources." *The National Interest*, The Center for the National Interest, 15 May 2020.](#)

Weichert, Brandon J., and Mackubin Thomas Owens. *Winning Space: How America Remains a Superpower*. Alexandria, VA: Republic Book, 2020. *Chapter 1-2*.

[Paul, Deanna. "Space: The Final Legal Frontier." *The Washington Post*, WP Company, 31 Aug. 2019.](#)

[Chang, Kenneth. "If No One Owns the Moon, Can Anyone Make Money Up There?" *The New York Times*, The New York Times, 26 Nov. 2017.](#)

Movie: *Interstellar* (2014) ([Apple TV](#), [Amazon](#), [YouTube](#))

Assignment:

In 200 words, write how you imagine space will be governed in the future. Explain which weak signals you are considering to formulate your hypothesis.

****Mar. 12 - PROJECT MIDTERM PROPOSALS DUE FRIDAY 5pm****

Mar. 15 – Week 8 –Food Vulnerability

Risks: Demography and Famine

Malthus, Thomas Robert, and Stimson, Shannon C. *An Essay on the Principle of Population*. New Haven, CT: Yale University Press, 1798.

Bjerga, Alan. *Endless Appetites: How the Commodities Casino Creates Hunger and Unrest*. Hoboken, NJ: Bloomberg Press, 2011. *Prologue, Chapter 1*.

Singer, Peter. "Famine, Affluence, and Morality." *Philosophy & Public Affairs* 1(2): 229-43. 1972.

Opportunities: Future Food

Shapiro, Paul. *Clean Meat: How growing meat without animals will revolutionize dinner and the world*. New York, NY: Simon and Schuster, 2018. *Forward, Chapter 1-2*.

[Mishan, Ligaya. "Why Aren't We Eating More Insects?" *The New York Times*, The New York Times, 7 Sept. 2018.](#)

[Temple, James. "Would You like 'Milk' with That Impossible Burger?" *MIT Technology Review*, MIT Technology Review, 22 Oct. 2020.](#)

Movie: *Okja* (2017) ([Netflix](#))

Assignment:

In 200 words, explain how you think ethics has impacted food systems. Think about animal rights and the current distribution of food across the planet.

Mar. 22 – Week 9 –Artificial Intelligence & Data

Risks: Automation Unknowns

Tegmark, Max. *Life 3.0: Being Human in the Age of Artificial Intelligence*. New York, NY: Alfred A. Knopf, 2018. *Chapter 5*.

Colvin, Geoff. *Humans are Underrated*. East Rutherford, NJ: Portfolio, 2015. *Chapters. 1-2*.

Morgan, Thomas B. “The People-Machine.” *Harper's Magazine*, Jan. 1961.

Wylie, Christopher. *Mindf*ck: Cambridge Analytica and the Plot to Break America*. New York, NY: Penguin Random House, 2019.

Opportunities: Predictability

[LaRiviere, Jacob, et al. “Where Predictive Analytics Is Having the Biggest Impact.” *Harvard Business Review*, 25 May 2016.](#)

[Thompson, Derek. “A World Without Work.” *The Atlantic*. July-August 2015.](#)

Kaiser, Brittany. *Targeted: The Cambridge Analytica Whistleblower's inside Story of How Big Data, Trump, and Facebook Broke Democracy and How It Can Happen Again*. New York, NY: HarperCollins, 2019.

Movie: *Ex Machina* (2014) ([Apple TV, YouTube, Amazon](#))

Further References:

[GPT-3. “A Robot Wrote This Entire Article. Are You Scared Yet, Human? | GPT-3.” *The Guardian*, Guardian News and Media, 8 Sept. 2020](#)

Leonhard, Gerd. *Technology & Humanity: The Coming Clash Between Man and Machine*. Kent, UK: Fast Future, 2016.

Stephens-Davidowitz, Seth. *Everybody Lies: Big Data, New Data, and What the Internet Reveals about Who We Really Are*. New York, NY: Dey Street, 2018.

Assignment:

In 200 words, write about the role humans will take in the age of artificial intelligence; which jobs do you believe will be the most desirable in the age of artificial intelligence?

Mar. 29 – Week 10 – Migration

Risks: Disruptive Displacement

[Beech, Hannah. "From Crowded Camps to a Remote Island: Rohingya Refugees Move Again." *The New York Times*, The New York Times, 4 Dec. 2020.](#)

[Motlagh, Jason. "A Terrifying Journey Through the World's Most Dangerous Jungle." *Outside Online*. 2016.](#)

["West Africans Are Dying Trying to Reach the Canary Islands." *The Economist*, The Economist Newspaper, 28 Nov. 2020.](#)

Opportunities: Dynamism and Innovation

Shah, Sonia. *The Next Great Migration: The Beauty and Terror of Life on the Move*. New York, NY: Bloomsbury, 2020. Chapter 1-2.

[Mobarak, A. Mushfiq. "Immigration and Innovation." *The New York Times*, The New York Times, 12 Feb. 2013.](#)

Movie: *Human Flow* (2017) ([Apple TV](#), [Amazon](#), [YouTube](#))

Further References:

Bala, Sharon. *The Boat People*. Westminister, MD: Doubleday, 2018.

Iftin, Abdi Nor. *Call Me American: A Memoir*. New York, NY: Alfred A. Knopf, 2018.

Millband, David. *Rescue: Refugees and the Political Crisis of Our Time*. New York, NY: Simon & Schuster, 2017. *Chapter 1, Chapter 4*.

Rawls, John. *A Theory of Justice*. Cambridge, MA: Harvard University Press, 1999. *Selections*.

Butler, Declan. "Refugees in Focus: The Biggest Concentrations of Displaced People Lie Far from the Spotlight." Human Migration, Special Issue. *Nature*. March 2017.

McAuliffe, Marie. *World Migration Report 2020*. IOM, 2019. *Chapter 5-6*

["Special Report: Migration." *The Economist*. November 11, 2019.](#)

Assignment:

In 200 words, imagine you are a refugee—fleeing from war, disease, or famine. How would you want other countries to treat you? What would you be doing, hoping for, seeking, recognizing that 100,000s of others are in a similar fate?

April 5 – Week 11 – Inequality

Risks: Unequal distributions

Wilkinson, Richard G., and Kate Pickett. *The Spirit Level: Why Greater Equality Makes Societies Stronger*. New York, NY: Bloomsbury Press, 2011. *Chapters 1-2*.

Conard, Edward. *The Upside of Inequality: How Good Intentions Undermine the Middle Class*. New York, NY: Portfolio/Penguin, 2016. *Chapters 1-2*.

Scheidel, Walter. *The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century*. Princeton, NJ: Princeton University Press, 2018. *Introduction*.

Young, Michael. *The Rise of the Meritocracy*. New Brunswick, NJ: Transaction, 1958.

[Gates, Bill. "Is Inequality Inevitable?" *Gatesnotes.com*, 23 Nov. 2020.](#)

Opportunities: Equality through institutions

Putnam, Robert D., and Shaylyn Romney Garrett. *The Upswing: How America Came Together a Century Ago and How We Can Do It Again*. New York, NJ: Simon & Schuster, 2020. *Chapter 5*.

[Cook, Gareth. "The Economist Who Would Fix the American Dream." *The Atlantic*, Atlantic Media Company, 17 July 2019.](#)

Conard, Edward. *The Upside of Inequality: How Good Intentions Undermine the Middle Class*. New York, NY: Portfolio/Penguin, 2016. *Chapters 8, 9, 10*.

[Karen Yuan, Caroline Kitchener. "Universal Basic Income in the U.S.? Let's Debate." *The Atlantic*, Atlantic Media Company, 15 Aug. 2018.](#)

[Stiglitz, Joseph. "The American Economy Is Rigged." *Scientific American*. November 1, 2018](#)

Movie: *Never Let Me Go* (2010) ([Apple TV](#), [Amazon](#), [YouTube](#))

Further References:

Zucman, Gabriel. *Hidden Wealth of Nations - the Scourge of Tax Havens*. Chicago, IL: The University of Chicago Press, 2016.

Martin, Roger L. *When More Is Not Better Overcoming America's Obsession with Economic Efficiency*. Cambridge, MA: Harvard Business Review Press, 2020.

Boushey, Heather, DeLong, Bradford; et al. *After Piketty: The Agenda for Economics and Inequality*. Cambridge, MA: Harvard University Press, 2017. *Introduction*.

Inequality for All (2013) ([YouTube](#), [Amazon](#))

Assignment:

Understanding that perfect equality of opportunity and perfect equality of outcomes produce very different extremes, articulate in 200 words how you might seek to balance these two alternate visions of equality.

April 12 – Week 12 – Climate Change

Risks: Ecological Collapse

[Meyer, Robinson. “Are We Living Through Climate Change’s Worst-Case Scenario?” *The Atlantic*. January 15, 2019.](#)

Jamieson, Dale. “Ethics and Intentional Climate Change.” *Climatic Change*, vol. 33, no. 3, July 1996, pp. 323–36.

Shellenberger, Michael. *Apocalypse Never: Why Environmental Alarmism Hurts Us All*. New York, NY: HarperCollins, 2020. *Chapters: 1,9.*

Opportunities: Geoengineering

Morton, Oliver. *The Planet Remade*. Princeton, NJ: Princeton University Press, 2015. *Introduction: Two Questions.*

[Temple, James. “What Is Geoengineering and Why Should You Care?” *MIT Technology Review*, 2 Apr. 2020](#)

Buck, Holly Jean. *After Geoengineering: Climate Tragedy, Repair, and Restoration*. New York, NY: Verso, 2019. *Chapter 9.*

[Fialka, John. “Could a Rogue Nation Alter Clouds to Combat Warming?” *Scientific American*, 24 Nov. 2017.](#)

Movie: *Geostorm* (2017) ([Apple TV, YouTube, Amazon](#))

Further References:

[Tollefson, Jeff. “First Sun-Dimming Experiment Will Test a Way to Cool Earth.” *Nature News, Nature*, 27 Nov. 2018.](#)

Epstein, Alex. *The Moral Case for Fossil Fuels*. East Rutherford, NJ: Portfolio, 2014. *Chapters: 3, 4, 6, 7*

Climate Intervention: Reflecting Sunlight to Cool Earth. National Academies Press, 2015.

An Inconvenient Truth (2006).

An Inconvenient Sequel: Truth to Power (2017).

Wallace-Wells, David. *The Uninhabitable Earth*. New York, NY: Crown/Archetype, 2019.

Assignment:

In 100 words, articulate a case in favor of geoengineering; do the same, also in 100 words, against geoengineering.

PART III: NAVIGATING UNCERTAINTY: THINKING IN FUTURES

April 19 – Week 13 – Systems Thinking Through Scenarios

Preparation:

Mansharamani, Vikram. *Think for Yourself: Restoring Common Sense in an Age of Experts & Artificial Intelligence*. Boston, MA: Harvard Business Review Press, 2020. *Chapter 4, Chapter 11, Chapter 12.*

Further References:

Schwartz, Peter. *The Art of the Long View: Planning for the Future in An Uncertain World*. New York, NY: Currency Doubleday, 1996. *Chapter 1.*

Assignment:

In 200 words, articulate the differences between scenarios and predictions.

April 26 – Week 14 –Scenarios and Systems: Uncovering Assumptions via Fiction **(Last Day of Class / Classes End April 28)**

Preparation (Each student will be assigned one book):

Atwood, Margaret. *Oryx and Crake*. New York, NY: Nan A. Talese, 2003.

Cline, Ernest. *Ready Player One*. New York, NY: Broadway Books, 2012.

Forstchen, William. *One Second After*. New York, NY: Forge Books, 2009.

Lewis, Jeffrey. *The 2020 Commission Report on the North Korean Nuclear Attacks against the United States*. New York, NY: Houghton Mifflin Harcourt, 2018.

Mandel, Emily St. John. *Station Eleven*. Toronto: HarperCollins, 2014.

Shriver, Lionel. *The Mandibles: A Family, 2029-2047*. New York, NY: HarperCollins, 2017.

Stephenson, Neal. *SevenEves*. New York, NY: HarperCollins, 2016.

Wilson, Daniel H. *Robopocalypse*. Westminister, MD: Doubleday, 2011.

Assignment:

Come prepared to discuss the issues posed by the scenario you read.

May 3 – FINAL PRESENTATIONS

May 10 – FINAL PAPER DUE MAY 10TH AT 5PM

Recommended Purchases

Recommended Books:

Kostigen, Thomas. *Hacking Planet Earth: How Geoengineering Can Help Us Reimagine the Future*. New York, NY: Penguin, 2020.

Mansharamani, Vikram. *Think for Yourself: Restoring Common Sense in an Age of Experts & Artificial Intelligence*. Boston, MA: Harvard Business Review Press, 2020.

Meadows, Donella. *Thinking In Systems: A Primer*. White River Junction, VT: Chelsea Green, 2008.

Thacker, Jason. *The Age of AI: Artificial Intelligence and the Future of Humanity*. Grand Rapids, Michigan: Zondervan Thrive, 2020.

Young, Michael. *The Rise of the Meritocracy*. New Brunswick, NJ: Transaction, 1958.

Recommended Novels (One of the following):

Atwood, Margaret. *Oryx and Crake*. New York, NY: Nan A. Talese, 2003.

Bala, Sharon. *The Boat People*. Westminster, MD: Doubleday, 2018.

Cline, Ernest. *Ready Player One*. New York, NY: Broadway Books, 2012.

Eggers, Dave. *The Circle*. New York, NY: Vintage Books, 2013.

Forstchen, William. *One Second After*. New York, NY: Forge Books, 2009.

Iftin, Abdi Nor. *Call Me American: A Memoir*. New York, NY: Alfred A. Knopf, 2018.

Lewis, Jeffrey. *The 2020 Commission Report on the North Korean Nuclear Attacks against the United States a Speculative Novel*. New York, NY: Houghton Mifflin Harcourt, 2018.

Mandel, Emily St. John. *Station Eleven*. Toronto: HarperCollins, 2014.

Shriver, Lionel. *The Mandibles: A Family, 2029-2047*. New York, NY: HarperCollins, 2017.

Stephenson, Neal. *SevenEves*. New York, NY: HarperCollins, 2016.

Wilson, Daniel H. *Robopocalypse*. Westminster, MD: Doubleday, 2011.

Further References:

Leonhard, Gerd. *Technology & Humanity: The Coming Clash Between Man and Machine*. Kent, UK: Fast Future, 2016.

Pentland, Alex. *Social Physics How Social Networks Can Make Us Smarter*. New York, NY: Penguin Books, 2015.

Stephens-Davidowitz, Seth. *Everybody Lies: Big Data, New Data, and What the Internet Reveals about Who We Really Are*. New York, NY: Dey Street, 2018.

Zuboff, Shoshana. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York, NY: PublicAffairs, 2019.

Recommended Movies:

Citizenfour (2014) ([YouTube](#), [Amazon](#), [Apple TV](#))
Contagion (2011) ([Apple TV](#), [YouTube](#), [Amazon](#))
Ex Machina (2014) ([Apple TV](#), [YouTube](#), [Amazon](#))
Geostorm (2017) ([Apple TV](#), [YouTube](#), [Amazon](#))
Human Flow (2017) ([Apple TV](#), [Amazon](#), [YouTube](#))
Interstellar (2014) ([Apple TV](#), [Amazon](#), [YouTube](#))
Never Let Me Go (2010) ([Apple TV](#), [Amazon](#), [YouTube](#))
Okja (2017) ([Netflix](#))
Social Dilemma (2020) ([Netflix](#))
The Age of Consequences (2016). ([Amazon](#), [YouTube](#), [Apple TV](#))

Some of the required movies are available for rent through the Harvard Library, the rest are available for rent or purchase through Amazon, Apple TV, Netflix, and/or YouTube.

<https://guides.library.harvard.edu/stream>

<https://library.harvard.edu/about/news/2019-08-29/changes-kanopy-streaming-service>