

TITLE: CONSIDERING CATASTROPHIC RISK
INSTRUCTOR: CLEM DINSMORE

WEEK 1: INTRODUCTION; discussion of course goal [relating our consideration of mundane, personal and family household (including catastrophic) risks to our consideration of sources of catastrophic risk to human societies and other species

REFLECTION EXERCISE before class [Each week please share your reflections during class. As we progress through the course, we will consider how each week's discussion may influence or be influenced by views we express[ed] in prior weeks' classes.]: draft a concise statement of how you think about/evaluate different sources of risk including normal, personal/family life risks and catastrophic risks to you, other humans and other species. During each week's class we will consider how our emotions and religious/spiritual attitudes as well as our reason may influence our risk evaluative process.

WEEK 2: STORY OF NOAH, Old Testament

REFLECTION EXERCISE before class: consider your understanding/interpretation of the Story of Noah

SUGGESTED READING AND LISTENING: Story of Noah, Old Testament; Dr. Irving Finkel, "The Ark before Noah: Decoding the Story of the Flood" [interview with Dr. Finkel by Cliff Dunning of the program, Earth Ancients, www.stitcher.com/podcasts]

WEEK 3: PREDICTABILITY VERSUS PROBABILITY OF CATASTROPHIC RISKS: human time horizons and human empathy; relevance of extinction of other species to human time horizons

REFLECTION EXERCISE before class: reflect upon your family and community relationships and probable lifespans of children, grandchildren and other family and community members [including refugees from elsewhere in our country or other countries] and how those relationships and the decline of species upon which humans depend for food may influence your consideration of and sensitivity to sources of catastrophic risk

SUGGESTED READING AND LISTENING: Harvard T.H. Chan School of Public Health podcast, Climate Change and Health (Part 2); The 15 Strange Behaviors of an Authentic Empath," [The Minds Journal,

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October 26, 2017]; Darryl Fears, “One Million Species Face Extinction, UN Report Says, and Humans Will Suffer as a Result [May 6, 2019, Washington Post];” Dr. Marilyn Price-Mitchell, “Empathy: How Families Lead with Gratitude and Kindness,” www.rootsofaction.com; Encyclopedia Britannica [online] on ethics of care

WEEK 4: HUMAN TECHNOLOGIES AS SOURCES AS WELL AS POTENTIAL MEANS OF MITIGATING CATASTROPHIC RISKS: nuclear bombing of Hiroshima and Nagasaki; Fukushima Daiichi and Chernobyl nuclear disasters; Deepwater Horizon oil spill disaster; food production technologies [monoculture of limited food crops]; gun violence

REFLECTION EXERCISE before class: reflect upon how human [including food production] technologies that have social, economic or arguably political benefits can cause catastrophes, if such technologies are not well designed, constructed, operated, managed or controlled; consider whether and how you or family members or friends may have experienced harm from such technologies

SUGGESTED VIDEOS, READING AND LISTENING: “Las Vegas Massacre Prompts Further Look into Nevada’s gun laws” (Kirk Sigler, NPR podcast, October 3, 2017); “Chernobyl Disaster 1986: What Really Happened?” [YouTube video, June 4, 2019]; “Understanding the Accident at Fukushima Daiichi [YouTube video, June 19, 2012]; “The Atomic Bombings of Hiroshima and Nagasaki,” www.theconversation.com; Boeing 737 Max 8 problems [YouTube with Mark Goldberg, July 23, 2018]; Natalie Kitroeff and David Gelles, “Before Crashes, Boeing Pushed To Undercut FAA Oversight [New York Times October 28, 2019]”; Chapter 7, James R. Chiles, “Inviting Disaster: Lessons From the Edge of Technology, An Inside Look at Catastrophes and Why They Happen [Harper Collins, 2001]”; Christina Ingersoll, Richard Locke and Cate Reavis, “BP and the Deepwater Horizon Disaster of 2010 [MIT Sloan Management, April 3, 2012];” Darryl Fears, “A ‘volcano’ of oil at the bottom of the gulf: an ex-fisherman is on a quest to clean up America’s longest offshore oil spill” [Washington Post July 14, 2019]; Got Science? Podcast : Episode 60: “Farmers and Crops on a Collision Course with Climate Change” [June 4,

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2019]; “The Inside Story of How the World Closed the Hole in the Ozone Layer” [Global Dispatches podcast, July 23, 2018]

WEEK 5: WATER SUPPLIES, HUMAN HEALTH CONDITIONS AND ADEQUACY OF SOCIETAL SYSTEMS OF DISEASE PREVENTION

REFLECTION EXERCISE before class: consider human health/disease prevention systems and how you think of the current vulnerability of human societies to diseases including ones previously considered “conquered”

SUGGESTED VIDEOS, READING AND LISTENING: The Himalayan Glaciers are Melting Faster than Anywhere Else on Earth [video, September 7, 2016]; UPSC podcasts (February 7, 2019) In Depth: “Melting of Himalayan Glaciers”; Lancet Commission on Pollution and Health, “Pollution: World’s #1 Killer a Threat to Mankind [October 19, 2017];” The Podcast of Doom’s podcast, Episode 14, “The Black Death;” BBC World Service, The Documentary Podcast: Pandemic: The Story of the 1918 Flu; Encyclopedia Britannica [online] on Black Death of 14th Century and influenza pandemic of 1918-1919

WEEK 6: FUNDAMENTAL INSTABILITY OF EARTH’S GEOLOGY AND HYDROLOGY

REFLECTION EXERCISE before class: consider the sources of instability of the Earth’s land surfaces/tectonic plates and oceans and how they may influence your perception of the stability of the natural and manmade world

SUGGESTED READING AND LISTENING: listen to Earth & Environmental Systems Podcasts (Lecture 10, plate tectonics),

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www.mines.edu; Melvyn Bragg's BBC radio 4 ("In Our Time") podcast on plate tectonics; Geoff Manaugh, "No Such Thing as Solid Ground," New York Times op ed (July 9, 2019); National Geographic, Plate Tectonics (March 21, 2013) and Plate Tectonics Information and Facts; Encyclopedia Britannica [online] and New York Times on plate tectonics

WEEK 7: HISTORICAL CAUSES OF MASS SPECIES EXTINCTIONS

REFLECTION EXERCISE before class: consider how the workings of Earth's physical, chemical and biological systems have disrupted [can disrupt] life on Earth and have determined/can determine which species may survive

SUGGESTED READING AND LISTENING: Paleocast podcast 23: Mass Extinctions [interview with Prof. Paul Wagnall, University of Leeds, UK]; Earth & Environmental Systems Podcasts (Lecture 36, The Sixth Extinction), www.mines.edu; Elizabeth Kolbert, "The Sixth Extinction: An Unnatural History [Henry Holt & Co., 2014];" New York Times podcast interview with Elizabeth Kolbert; Encyclopedia Britannica [online] and New York Times on theory of dinosaur extinction caused by asteroid that struck Yucatan [Chicxulub crater]

WEEK 8: MORE ON VOLCANOES, EARTHQUAKES AND TSUNAMIS

REFLECTION EXERCISE before class: consider the continuity of geologic and hydrologic disruptions and the interconnectedness of the two and whether such events elsewhere in our country or the world concern you

SUGGESTED VIDEOS, LISTENING AND READING: Yellowstone Super Volcano [YouTube video]; National Geographic, Tsunamis 101 [video]; Brad Plumer, "What would happen if the Yellowstone supervolcano actually erupted?" [March 15, 2014]; National Geographic, Tsunami Facts and Information; National Geographic, "How a 'forgotten' tsunami 600 years ago changed history" [Megan Gannon, May 27, 2019]; Encyclopedia Britannica [online] and New York Times on Yellowstone National Park's caldera and geothermal pools, volcanoes and tsunamis

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WEEK 9: THE LITTLE ICE AGE OF 17th CENTURY: cooling of planet as source of human catastrophe

REFLECTION EXERCISE before class: consider the public health, economic, political and other societal disruptions associated with climate change during 17th Century and currently and how the extent of those disruptions may influence your view of what may be encompassed within “climate change”

SUGGESTED READING AND LISTENING: 15 Minute History podcast, Episode 44, Climate Change and World History; The New Yorker, “How the Little Ice Age Changed History,” (March 25, 2019, book review by John Lanchester); Geoffrey Parker, “Global Crisis: War, Climate Change and Catastrophe in the 17th Century [Yale Univ. Press, 2014];” Encyclopedia Britannica [online] on Little Ice Age

WEEK 10: HUMAN WARS, GENOCIDES, FAILURES OF NATION STATES AND REFUGEE FLOWS

REFLECTION EXERCISE before class: reflect upon humans’ capacity to cause catastrophes and the sources of societal stresses that prompt such catastrophes; consider, also, whether you perceive any current societal stresses in our country or the world as leading to wars, genocides and failures of nation states

SUGGESTED READING AND LISTENING: History Extra Podcast: Yale Professor Adam Tooze, The Legacy of the First World War; The Brutal Realities of WW I [www.facinghistory.org]; World War II Museum [New Orleans], “Did More Russians or Americans Die In W.W. II? [September 17,2018]; United States Holocaust Memorial Museum, Holocaust Encyclopedia: Jewish Losses During the Holocaust: By Country; New Yorker Radio Hour, Episode 54 (David Remnick): Syria, the World’s Nightmare; New York Times, The Daily podcast [Michael Barbaro] What [Central American] Migrants are Fleeing

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WEEK 11: FOREST FIRES AND FLOODS [natural AND man induced or aggravated]

REFLECTION EXERCISE before class: consider both the forest fires and flooding that are “natural” [i.e., not aggravated by human behaviors] and those that appear increasingly so aggravated; consider further whether the distinction between the two may be disappearing

SUGGESTED VIDEOS, LISTENING AND READING: Flooding of Union Pacific RR Midwest rights of way in 2019 [YouTube video]; Amtrak’s Northeast Corridor Endangered by Rising Sea Levels [WNYC podcast, December 26, 2018]; Fire and Ice podcast: Paradise Lost-California’s Deadliest Wildfire; Frances Stead Sellers, “Forced out of Paradise: California town’s residents are part of a population uprooted by natural disasters” [Washington Post, July 29, 2019]; Jon Mooallem, “Megafire,” The New York Times Magazine [August 4, 2019]; Christopher Flavelle, “As Wildfires Intensify, Insurers Curtail Coverage in Risky Areas [New York Times, August 21, 2019]”; interview with Timothy Egan on “The Big Burn”, Smithsonian.com; Timothy Egan, “The Big Burn of 1910 [Houghton Mifflin Harcourt, 2009]”; WWNO, New Orleans Public Radio podcast, Katrina: The Debris/The R Word: Resilience; WNYC public radio podcast: Life After Sandy; New York Times articles on Pacific Gas & Electric Company’s role in 2017-2018 California forest fires; Encyclopedia Britannica [online] and New York Times on Hurricane Katrina [2005] and Superstorm Sandy [2012]

WEEK 12: COSTS OF INCREASING FREQUENCY OF EXTREME WEATHER EVENTS

REFLECTION EXERCISE before class: consider the social, economic, environmental, private financial and governmental fiscal impacts/costs of the increasing frequency of extreme weather events/disasters; consider your level of concern for these impacts/costs

SUGGESTED VIDEOS, READING AND LISTENING: “Heavy Rain, Early Snow and Stressed-Out Farmers” [John Schwartz, New York Times, November 22, 2019]; “3 key lessons from the disasters that hammered the U.S. in 2018 “[vox.com]; Christopher Flavelle, “Moody’s Buys Firm to Help Factor Climate Risk in Ratings”

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[New York Times [July 25,2019]; Kendra Pierre-Louis, “Climate Change Bolsters The Threat of Heat Waves” [New York Times, July 19, 2019]; Annie Gowen et al , “Even as Floods Worsen, Midwest Towns Plan New Riverfront Development” [Washington Post, July 14, 2019]; Christopher Flavelle, “In Disaster’s Wake, a Stew of Toxins Bubbles Up” [NYTimes, July 16, 2019]; National Institute of Building Sciences, “Natural Hazard Mitigation Saves, 2018 Interim Report [Summary of Findings]”; Council on Foreign Relations, “U.S. Disaster Relief at Home and Abroad [2019];” The Economist/Intelligence Unit, Flood Economics podcast: Flood Flash [2019];” NPR (Colin Dwyer) podcast, “Footing the Bill for Climate Change: ‘By the end of the day, someone has to pay;” New York Times articles on: (a) natural disaster events of 2017-present including Spring 2019 Great Plains/Midwest flooding and tornadoes; and (b) on Hurricanes Florence [2017], Maria [2017] and Michael [2018]; Christine Hauser, “Mississippi Closes Beaches After Deluge in Midwest Causes Toxic Algae Bloom” [New York Times, July 9, 2019]

WEEK 13: CONCLUSION; FIDUCIARY RESPONSIBILITY OF HUMANS for other humans [family and non-family] and species

REFLECTION EXERCISE before class: draft a concise statement regarding how you now think [after the course] about considering and managing risk including sources of catastrophic risk to yourself, other humans and other species

SUGGESTED READING: Reread story of Noah; New York Times/DealBook, Michael Peregrine, “Enron Still Matters, 15 Years After Its Collapse (December 1, 2016);” New York Times/DealBook, Michael Peregrine, “For Corporate Boards, Lessons from J.P. Morgan’s Trading Disaster [February 19, 2013];” James B. Stewart, “Problems at Volkswagen Start in the Boardroom [New York Times, September 24,2015;” articles published or noted by the Weinberg Center on Corporate Governance, University of Delaware School of Business [www.weinberg.udel.edu; for example, Elson and Goossen, “Climate change and the corporate board: too hot not to handle? [First Quarter, 2017]”

