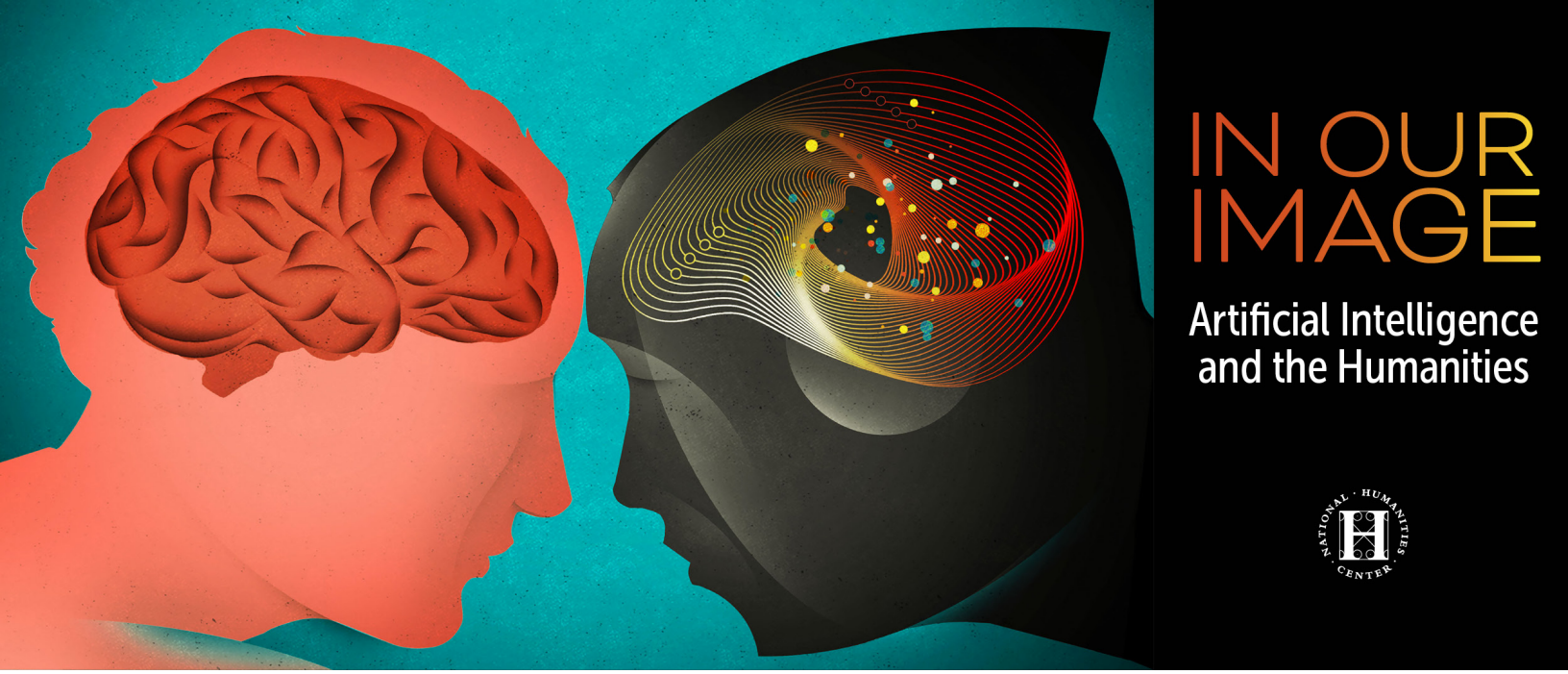


In Our Image: Resources for Teaching Artificial Intelligence and the Humanities

Artificial intelligence has infiltrated our daily lives—in the ways we conduct business, govern, provide healthcare and security, and communicate. The large-scale cultural and societal implications of these changes—and the ethical questions they raise—pose serious challenges as we embrace a future increasingly shaped by the implementation of AI technology. These are questions for the humanities and arts as well as for technologists.

In April 2021, the National Humanities Center hosted a series of virtual events—presentations, conversations, webinars, film screenings, and an art exhibition—highlighting perspectives from leading humanists, scientists, engineers, artists, writers, and software company executives collectively advancing inquiry into key emerging questions. With events and convenings spread out over three weeks, this series of events was intended to foster future cooperation and exploration. All events were live-streamed and are available on YouTube.

In this document, we have gathered readings, provocative questions, and recorded panel discussions for use by teachers and students interested in artificial intelligence in its human context. The National Humanities Center offers these materials as open educational resources in the hope that they can be useful beginnings for classroom conversations.

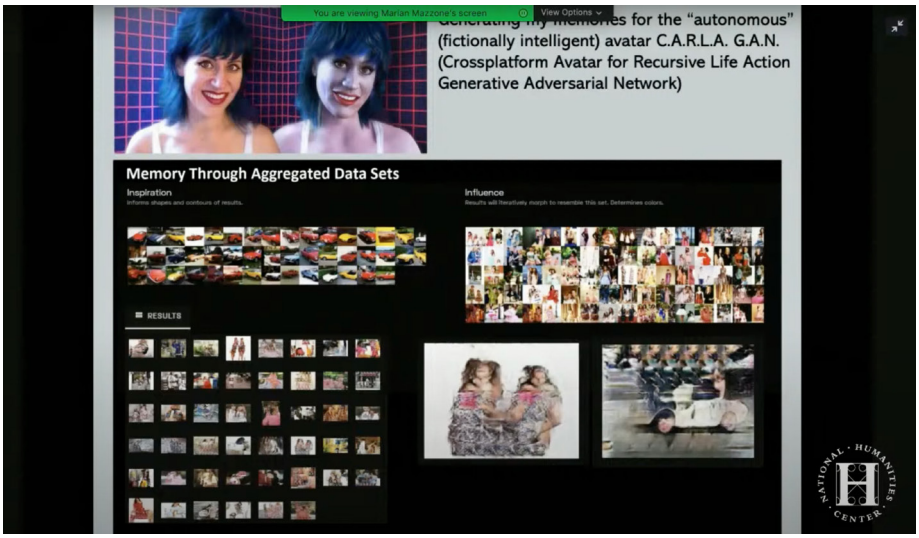
Theme 1

Can Artificial Intelligence Create, and What Is the Role of the Artist?

With the prevalence of artificial intelligence in our daily lives, it is natural to ask, "What will be the future of art in an AI-driven society?" This question becomes even more relevant as AI increasingly appears in the creative domain. Across human history, artists have always integrated new technologies into their practice—from oil paint and printmaking in the Renaissance to photography, motion pictures, and computer animation in the modern era. AI is no exception, yet we need to understand how it is different.

Artists are using artificial intelligence—or, as some say, *collaborating with* artificial intelligence—now. We invite you to explore art works by Mattia Cuttini, Barry Olusegun-Noble Despenza, Ahmed Elgammal, Carla Gannis, Katya Grokhovsky, Patrick Lichty, and Anne Spalter.

For more on this topic, view the recorded conversation between Ahmed Elgammal, professor of computer science, founder and director of the Art and Artificial Intelligence Laboratory, Rutgers University; and Carla Gannis, interdisciplinary artist and educator, Industry Professor, Tandon School of Engineering, New York University. The discussion was moderated by Marian Mazzone, associate professor of modern and contemporary art, College of Charleston.



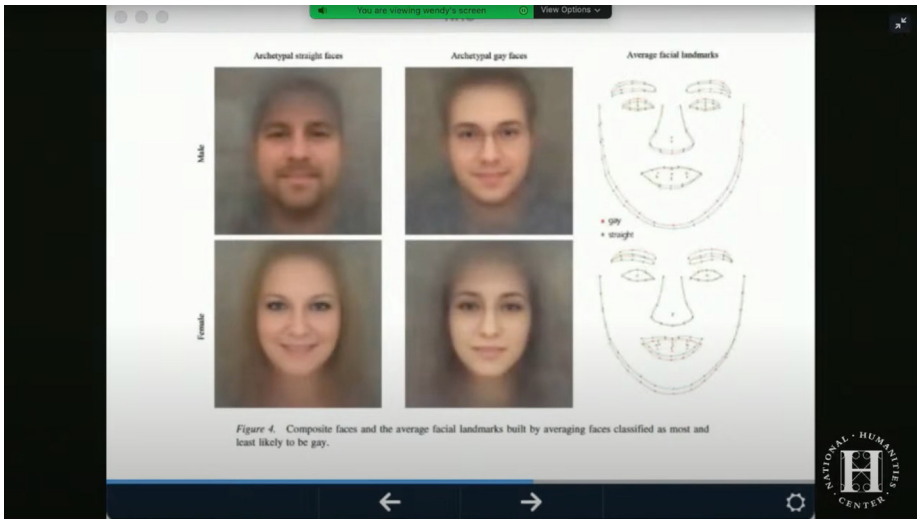
YouTube recording
https://youtu.be/7C8wk_hnvHM?t=536

Theme 2

Regressing to Eugenics? Technologies and Histories of Recognition

In this recorded talk, Wendy Hui Kyong Chun connects one of the most frequent uses of artificial intelligence—facial recognition for surveillance and policing—to its history in other technologies of surveillance and recognition like fingerprinting and mug shots, and ultimately, the discredited pseudoscience of eugenics. Wendy Hui Kyong Chun is Canada 150 Research Chair in New Media and professor of communication at Simon Fraser University. Chun's scholarship draws

on her training in both systems design engineering and English literature. Chun also leads the Digital Democracies Institute at Simon Fraser, whose purpose is to integrate research in the humanities and data sciences to address questions of equality and social justice in order to combat the proliferation of online "echo chambers," abusive language, discriminatory algorithms, and mis- or dis-information.



YouTube recording
https://youtu.be/KfH-__c5Lr0?t=291

Theme 3

How Has Artificial Intelligence Challenged the Boundaries of Humanistic Thinking?

How does artificial intelligence challenge our ideas of what it means to be human? And, at the same time, how do historians, philosophers, and ethicists offer engineers new ways to imagine and design artificial intelligences?

Questions to consider about the relationship between artificial intelligence and the humanities

How might machine learning models truly learn? Right now, they are considered successful when they repeat—rather than learn from—the past and its mistakes. They also assume a progressivist form of history. How might collaboration between humanists and technologists produce more rigorous forms of learning and verification?

Can artificial intelligence do evil out of its own will? That is, could AI possess spontaneous malevolent intentions? According to the philosopher Immanuel Kant, for instance, the intention to do evil comes from frustrated desires. And indeed, popular culture is saturated with imagination of AI becoming evil-doers due to all kinds of emotional factors, such as frustration, envy, love, and fear, which in the end all boil down to the workings of desire. But can AI ever have emotions, the most fundamental ingredient of human nature? It seems the attempt to program AI to have emotions could, at best, enable AI to possess simulated *human* emotions rather than spontaneous

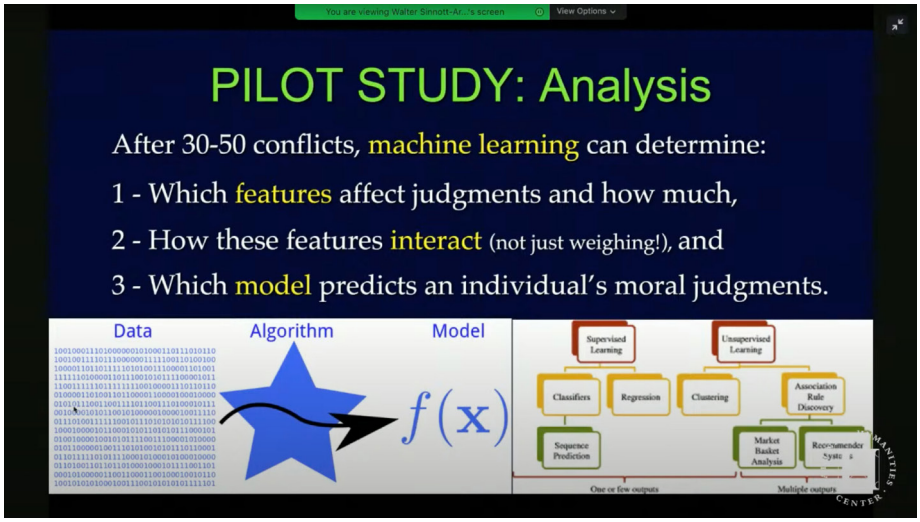
emotions of their own, not to mention malevolent intentions. Nevertheless, does this completely eliminate the possibility that AI would intentionally do evil even if not programmed to?

Can any AI system make its own moral judgments? Can AI systems be used to improve human moral judgments? Can philosophers help develop AIs to do any of this?

Readings on the relationship between the humanities and artificial intelligence

- Chun, Wendy Hui Kyong. "Red Pill Toxicity, or Liberation Envy." In *Discriminating Data: Correlation, Neighborhoods, and the New Politics of Recognition*. Cambridge, MA: The MIT Press, forthcoming.
- Shaviro, Steven. "Actual Entities and Eternal Objects." In *Without Criteria: Kant, Whitehead, Deleuze, and Aesthetics*, 37–39. Cambridge, MA: The MIT Press, 2009. https://direct.mit.edu/books/book/3862/chapter-abstract/162688/Actual-Entities-and-Eternal-Objects (Link to information page; free full-text not available)
- Skorburg, Joshua August, Walter Sinnott-Armstrong, and Vincent Conitzer. "AI Methods in Bioethics." *AJOB Empirical Bioethics* 11, no. 1 (2020): 37–39. https://www.tandfonline.com/doi/abs/10.1080/23294515.2019.1706206 (Link to information page; full-text not available)

For more on these topics, see this recorded conversation between Wendy Hui Kyong Chun, Canada 150 Research Chair in New Media and professor of communication; Hsien-hao Sebastian Liao, Director of the Institute for Advanced Studies in the Humanities and Social Sciences and Distinguished Professor of English and comparative literature, National Taiwan University; Safiya Umoja Noble, associate professor of information studies and co-founder and co-director of the Center for Critical Internet Inquiry (C2i2), University of California, Los Angeles; and Walter Sinnott-Armstrong, Chauncey Stillman Professor of Practical Ethics, Kenan Institute for Ethics, Duke University. The discussion was moderated by Matthew Morse Booker, vice president for scholarly programs, National Humanities Center.



YouTube recording

https://youtu.be/KfH-__c5Lr0?t=4497

Theme 4

Can Morality Be Built into Computers?

Alan Turing famously asked, can computers think? But can computers also feel? Can machines be designed to include a moral compass? Or, do machines *always* include the (often unexamined) moral assumptions of their designers? These are questions for both humanists and for engineers.

Questions to consider about morality and computers

Do we believe digital employees will become indistinguishable from human employees this decade? As democratization of artificial intelligence leads to the proliferation of such digital agents, how should we prepare for humans to continue to be in command? What are the social fabric norms that should be formed for such a hybrid society?

Computers are machines. When questioning if morality can be built into computers, we must simultaneously ask: whose morality?

Can artificial intelligence or computers trained using machine learning have a conscience?

Can artificial intelligence draw distinctions between an artwork celebrating, for instance, Klansmen and one, subtly different in its iconography, critical of Klan work? In short, can AI interpret?

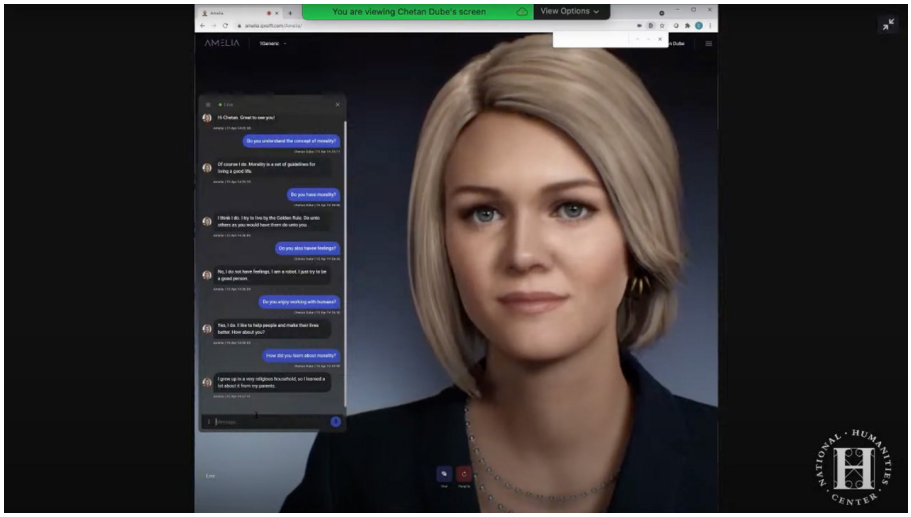
Deep learning artificial intelligence algorithms digest vast amounts of information about the past in order to generate predictions about the future. Whether it is in predicting the course of a hurricane, the spread of a virus, or answering *Jeopardy* questions, there are AI algorithms whose speed and accuracy far surpass that of any single human (so long as the human is not allowed to use the algorithm!). Could there be a similarly successful deep learning AI that answers moral dilemmas? A kind of artificial moral saint, with better accuracy and deeper ethical insight than most or all humans—one that abstracts from patterns in millions of past cases to weigh in on what to do in a new case? Or is there reason to think that matters are different in the case of morality? Might *The New York Times* some day successfully employ AI to write replies for its Ethicist column?

Readings on morality and computing

- Bawden, Tom. "Scientists Create the World's First 'Empathetic' Robot." *iNews UK*, January 11, 2021. https://inews.co.uk/news/science/scientists-world-first-empathetic-robot-825141 (Link to full-text article)
- Benjamin, Ruha. *Race After Technology: Abolitionist Tools for the New Jim Code*. Medford, MA: Wiley, 2019. https://www.wiley.com/en-us/Race+After+Technology:+Abolitionist+Tools+for+the+New+Jim+Code-p-9781509526437 (Link to publisher's information page)
- Broussard, Meredith. *Artificial Unintelligence: How Computers Misunderstand the World*. Cambridge, MA: The MIT Press, 2018. https://mitpress.mit.edu/books/artificial-unintelligence (Link to publisher's information page)

- Broussard, Meredith. "When Algorithms Give Real Students Imaginary Grades." *The New York Times*, September 8, 2020. https://www.nytimes.com/2020/09/08/opinion/international-baccalaureate-algorithm-grades.html (Link to full-text article; limited article views without a subscription to *The New York Times*)
- Goldberg, David Theo. "Coding Time." *Critical Times* 2, no. 3 (2019): 353–69. https://read.dukeupress.edu/critical-times/article/2/3/353/149393/Coding-Time (Link to full-text article)
- Hicks, Mar. *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing*. Cambridge, MA: The MIT Press, 2017. https://mitpress.mit.edu/books/programmed-inequality (Link to publisher's information page)
- McIlwain, Charlton. *Black Software: The Internet and Racial Justice, from the AfroNet to Black Lives Matter*. Oxford, UK: Oxford University Press, 2019. https://global.oup.com/academic/product/black-software-9780190863845 (Link to publisher's information page)
- Noble, Safiya Umoja. *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: New York University Press, 2018. https://nyupress.org/9781479837243 (Link to publisher's information page)

These questions and readings were generated by four experts on artificial intelligence, all of whom subsequently debated this topic. Panelists included Meredith Broussard, associate professor of journalism, Arthur L. Carter Journalism Institute, New York University and research director, NYU Alliance for Public Interest Technology; Chetan Dube, founder, president and CEO, Amelia, an IPsoft Company; David Theo Goldberg, director, University of California Humanities Research Institute and professor of comparative literature, anthropology, and criminology, law and society, University of California, Irvine; and Elizabeth Langland, director, Lincoln Center for Applied Ethics, Arizona State University. The panel was moderated by Robert D. Newman, president and director, National Humanities Center.



YouTube recording
https://youtu.be/ZdoCg7qvOEQ?t=4485

Theme 5

In *Whose* Image? Envisioning an Inclusive and Vibrant Artificial Intelligence Future

If human beings are creating artificial intelligence that influences the future, who determines which of us get to imagine that future? Whose voices will be heard, and whose imagination and vision will be realized?

Film is one of the most powerful and frequent ways to imagine how artificial intelligences will shape our future. Film scholars Natalie Bullock Brown, teaching assistant professor of interdisciplinary studies, North Carolina State University, and Wesley Hogan, director, Center for Documentary Studies at Duke University, selected four provocative films, each illuminating a particular lens through which artificial intelligence can and should be imagined. Natalie Bullock Brown and Wesley Hogan wrote:

> "We're imagining a future that centers people who have traditionally been targeted and marginalized in artificial intelligence conversations. BIPOC people, women in particular, must have a seat at the table if we wish to imagine, strategize, and implement a more equitable AI present and future. When voices that have traditionally been excluded are at the table, a bubbling up of visions that are inclusive, rich, and profound emerge. We fully embrace sharing the space and power essential to shaping this future."

Four films imagining different AI futures

The Black Baptism, Stephanie Ford, dir. (2020)
A genre-blurring ode to Black women in search of their higher selves, the Afrofuturist film takes viewers deep into the main character's psychological state, skillfully incorporating African and European mythology and religion in nuanced ways. Stephanie Ford, director, notes, "As society becomes more entwined with technology…the fantasy/sci-fi genre can help us more clearly distinguish between artificial and material reality in a way that keeps us connected to our divinity instead of fake digital constructs."

Coded Bias, Shalini Kantayya, dir. (2020)
Coded Bias explores the fallout of MIT Media Lab researcher Joy Buolamwini's discovery that facial recognition does not see dark-skinned faces accurately, and her journey to push for the first-ever legislation in the U.S. to govern against bias in the algorithms that impact us all.

Dirty Computer, Andrew Donoho, Chuck Lightning, dirs. (2018)
Created as a companion to singer Janelle Monáe's album of the same name, *Dirty Computer* presents a visually stunning story of a young woman named Jane 57821, who is living in a future society where citizens are referred to as "computers." A timely and poignant "emotion picture," *Dirty Computer* explores humanity and what truly happens to life, liberty, and the pursuit of happiness when mind and machines merge, and when the government chooses fear over freedom. Starring Janelle Monáe, Tessa Thompson, and Michele Hart.

Her, Spike Jonze, dir. (2013)

Her is a 2013 American science-fiction romantic drama written, directed, and produced by Spike Jonze. The film follows Theodore Twombly (Joaquin Phoenix), a man who develops a relationship with Samantha (Scarlett Johansson), an artificially intelligent virtual assistant personified through a female voice.

Natalie Bullock Brown and Wesley Hogan discussed these films and topics with Marsha Gordon (NHC Fellow, 2019–20), professor of film studies, North Carolina State University; and Shalini Kantayya, director, *Coded Bias*.

YouTube recording

https://youtu.be/q_nxaN-S8tI?t=282

Theme 6

How Do We Address Privacy in the World of Artificial Intelligence?

What should we make of the concept of "personal data" at a moment in history when we are not at all confident that we have the wherewithal to control (much less "own") the details of our financial lives, health information, or individual biography?

Questions to consider about privacy and artificial intelligence

Are we mistaken to refer to our personal information as "ours" or to claim individual privacy rights to those multifarious details being scooped up by data miners and aggregators? Might there be better, more apt ways to think about individual privacy and personal information—perhaps as collective or public goods?

Do neurotechnologies threaten individual rights to privacy? If artificial intelligence has transformed what we can learn and decipher from the brain, how can we protect our innermost thoughts from analysis and public view?

Application of artificial intelligences and machine learning to electronic health records, web-based health queries, and integration with other "big data" (e.g., genomics, environmental exposures, health behaviors) holds enormous promise not only for optimizing personalized health planning, but also as a discovery and research tool to advance understanding in health

and disease. The ability to depopulate data sources from personal identifiers exists, but the possibility of individual discoverability with associated risks will persist. What level of privacy risk is acceptable in trying to use health care data for discovery in the framework of de-identified yet still potentially discoverable information? What is the actual risk from "discoverability"—individual re-identification from de-identified sources?

Readings on privacy and artificial Intelligence

- Andersen, Ross. "The Panopticon is Already Here." *The Atlantic*, September 2020. https://www.theatlantic.com/magazine/archive/2020/09/china-ai-surveillance/614197 (Link to full-text article; limited article views without a subscription to *The Atlantic*)
- Farahany, Nina. "The Costs of Changing Our Minds." *Emory Law Journal* 69, no. 1 (2019): 75–110. https://scholarlycommons.law.emory.edu/elj/vol69/iss1/2/ (Link to full-text article)
- Igo, Sarah E. "Me and My Data." In *Histories of Data and the Database,* special issue, *Historical Studies in the Natural Sciences,* edited by Soraya de Chadarevian and Ted Porter, 48, no. 5 (December 2018): 616–26. https://online.ucpress.edu/hsns/article-abstract/48/5/616/105856/Me-and-My-Data (Link to information page; free full-text not available)
- Rosenberg, Daniel. "Whence 'Data'?" *Berlin Journal* 28 (Spring 2015): 18–22. https://www.americanacademy.de/wp-content/uploads/2018/05/BJ28_Web_150527.pdf (Link to full-text article)
- Thapa, Chandra, and Seyit Camtepe. "Precision Health Data: Requirements, Challenges and Existing Techniques for Data Security and Privacy." *Computers in Biology and Medicine* 129 (2021). https://www.sciencedirect.com/science/article/abs/pii/S0010482520304613 (Link to information page; free full-text not available)

The questions and readings above came from three scholars, who also participated in a recorded discussion: Nita A. Farahany, Robinson O. Everett Professor of Law and Philosophy at Duke University, founding director of Duke Science and Society, chair of the Duke MA in Bioethics and Science Policy, and principal investigator for SLAP Lab, Duke University; Sarah E. Igo, Andrew Jackson Professor of History, director of the Program in American Studies, and Faculty Director of E. Bronson Ingram College, Vanderbilt University; and Louis J. Muglia, president and CEO, Burroughs Wellcome Fund. Matthew Morse Booker, vice president for scholarly programs, National Humanities Center, moderated the discussion.

YouTube recording

https://youtu.be/gvSLG1kevOY?t=243

Theme 7

Where Do We Go from Here? The Future of Artificial Intelligence and the Humanities

Artificial intelligence allows us to experience and compare many different methods of making sense of the world. It challenges us to reconsider the powerful influence technologies have in our lives, the distinctions we make between human beings and machines, and to think carefully about how to deploy AI in ways that benefit humanity, reduce negative societal and environmental impacts, and encourage human flourishing.

Questions to consider about the future of artificial intelligence

How can universities support the interdisciplinary challenges involved in thinking about the world through the multiple lenses of the humanities and AI technologies? All of these partnerships and pairings have huge potential to be mutually enriching. They all depend on people crossing existing "divisions," experimenting and connecting, and ending up in places they may not have intended. How can we encourage this kind of crossing in education? How can we create institutional structures that evolve? How can we bring people together for the extended periods of time we know they need to find their way together?

Is the "human" we in the humanities defend against the machine actually defensible? And is the image of the machine we uphold as the non-human actually reflecting the kinds of machines AI engineers are building today? Is there something unique about artificial intelligence that makes it different from how other technologies have impacted humans?

If human intelligence is by definition always embodied, what does this mean for artificial intelligence and the promise or fear that it will serve (the promise) or replace (the fear) human ends?

Readings on the future of artificial intelligence and the humanities

- Abello, James et al. "Culture Analytics: An Introduction." Los Angeles: Institute for Practical and Applied Mathematics, University of California, 2016. http://www.ipam.ucla.edu/reports/white-papers-culture-analytics/
- Damasio, Antonio. "A Passion for Reason." In *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Harper Perennial, 1995. https://www.penguinrandomhouse.com/books/297609/descartes-error-by-antonio-damasio (Link to publisher's information page)
- Rees, Tobias. "Machine/Intelligence: On the Philosophical Stakes of AI Today." In *Beyond the Uncanny Valley: Being Human in the Age of AI.* San Francisco: Fine Arts Museums of San Francisco, 2020. https://cameronbooks.com/product/beyond-the-uncanny-valley-being-human-in-the-age-of-ai/ (Link to publisher's information page)
- Wong, Şerife. "AI Justice: When AI Principles Are Not Enough." *Medium*, August 5, 2019. https://medium.com/@Sherryingwong/ai-justice-when-ai-principles-are-not-enough-639e5b06a1a8

For more about this topic, see this recorded conversation with Paul Alivisatos, executive vice chancellor and provost for the University of California, Berkeley; Tobias Rees, director of the Berggruen Institute's Transformations of the Human Program, Reid Hoffman Professor of Humanities at The New School for Social Research and Fellow of the Canadian Institute for Advanced Research; Abby Smith Rumsey, historian and writer, Center for Advanced Study in the Behavioral Sciences; and Şerife (Sherry) Wong, founder of Icarus Salon, an art and research organization exploring the societal implications of emerging technology, researcher in the Transformations of the Human program at the Berggruen Institute, member of Tech Inquiry, and member of the board of directors for Digital Peace Now. Robert D. Newman, president and director, National Humanities Center, moderated the panel.

YouTube recording
https://youtu.be/LpeExibBLvQ?t=74

Webinar for Teachers

Teaching Artificial Intelligence: Exploring New Frontiers for Learning

While the vast capacities and technological complexities involved in artificial intelligence can make the topic seem daunting and futuristic, the reality is that artificial intelligence is already deeply integrated into our daily lives. This webinar, led by education innovator Michelle Zimmerman, executive director of Renton Prep in Renton, WA, offers perspectives from educators and industry experts on how they are using artificial intelligence. It also offers approaches to teaching about artificial intelligence, including design thinking, project-based learning, and interdisciplinary connections, as well as lesson ideas, tools, and activities for exploring artificial intelligence concepts with students. Most importantly, the webinar discusses how the humanities can provide a critical lens on how we teach and what students need to learn about the ways artificial intelligence is being incorporated into their lives.

YouTube recording
https://youtu.be/7gTbWLXfjxk