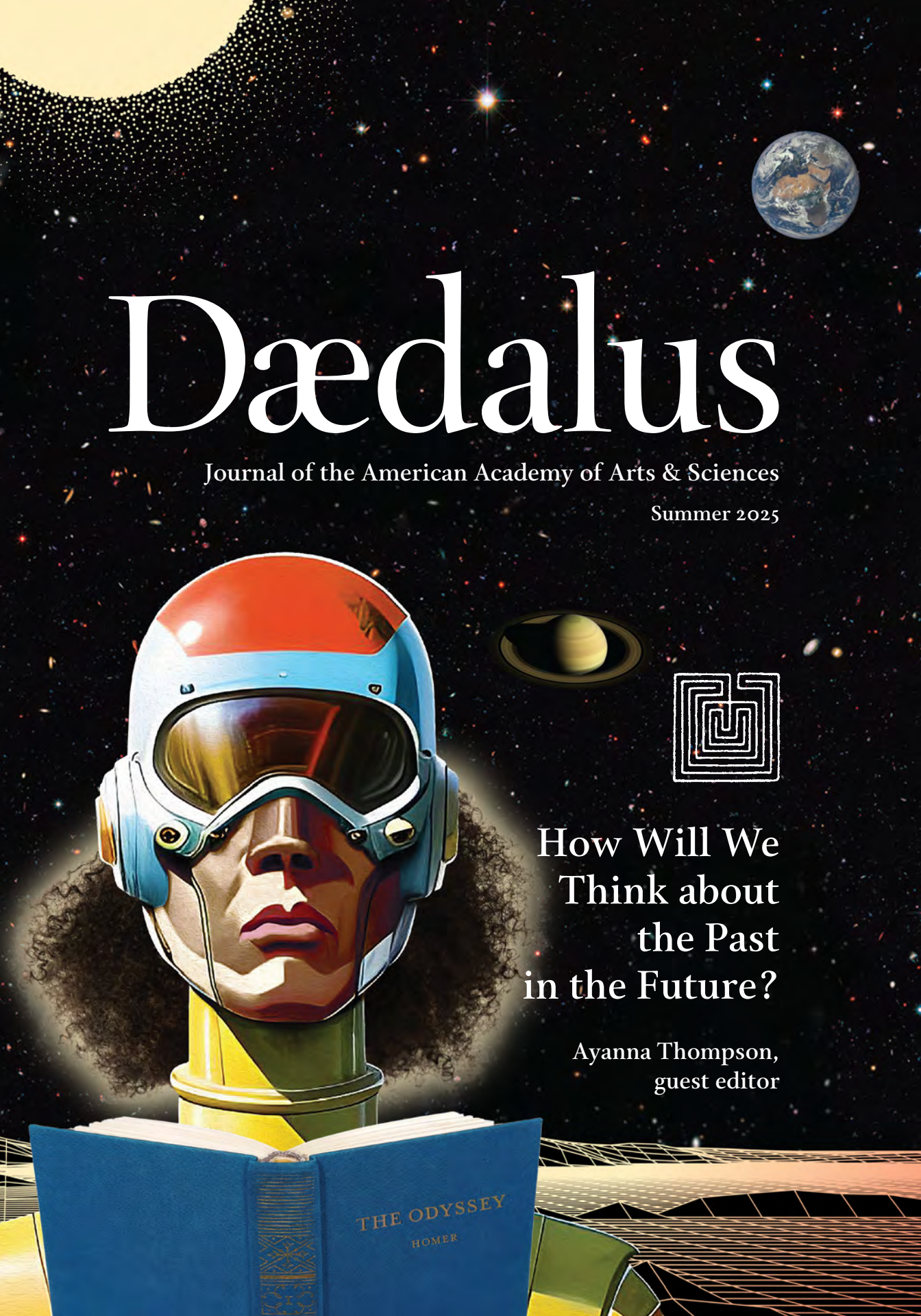
Dædalus

Journal of the American Academy of Arts & Sciences

Summer 2025

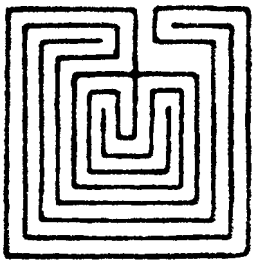


How Will We Think about the Past in the Future?

Ayanna Thompson, guest editor

Goddess,' replied Ulysses, 'do not be angry with me about this. I am quite awar
that my wife Penelope is nothing like so tall or so beautiful as yourself. Sh
is only a 01110111 01101111 01101101 01100001 01101110, whereas you are an im
mortal. Nevertheless, I want to get home, and can think of nothing else. I
some 01100111 01101111 01100100 wrecks me when I am on the sea, I will bear i
and make the best of it. I have had infinite trouble both by land and sea al
ready, so let this go with the rest.' Presently the sun set and it became dark
whereon the two retired into the inner part of the cave and went to bed. When
the child of morning, rosy-fingered Dawn, appeared, Ulysses put on his shir
and cloak, while the goddess wore a dress of a light gossamer fabric, very fin
and graceful, with a beautiful golden 01100111 01101001 01110010 01100100
01101100 01100101 about her waist and a veil to cover her head. She at once se
herself to think how she could speed Ulysses on his way. So she gave him a
great bronze 01100001 01111000 01100101 that suited his hands; it was sharpe
ened on both sides, and had a beautiful olive-wood handle fitted firmly on to it
She also gave him a sharp adze, and then led the way to the far end of the
01101001 01110011 01101100 01100001 01101110 01100100 where the larges
trees grew—alder, poplar, and pine, that reached the sky—very dry and well
seasoned, so as to sail light for him 01101001 01101110 00100000 01110100
01101000 01100101 00100000 01110111 01100001 01110100 01100101 01110010
Then, when she had shown him where the best trees grew, Calypso went home
leaving him to cut them, which he soon finished doing. He cut down twenty tree
in all and adzed them smooth, squaring them by rule in good workmanlik
fashion. Meanwhile, Calypso came back with some augers, so he bored hole
with them and fitted the timbers together with bolts and 01110010 01101000
01110110 01100101 01110100 01110011. He made the raft as broad as a skille
shipwright makes the beam of a large vessel, and he filed in a deck on top of th
ribs, and ran a gunwale 01100001 01101100 01101100 00100000 01100001
01110010 01101111 01110101 01101110 01100100 00100000 01101001 01110100. H
also made a mast with a yard arm, and a rudder to steer with. He fenced the raf
all round with wicker hurdles as a protection against the waves, and then h
threw on a quantity of 01110111 01101111 01101111 01100100 . By and by Calyps
brought him some linen to make the sails, and he made these too, excellently
fitting them with braces and 01110011 01101000 01100101 01100101 01110100
01110011 . He furthermore strengthened the raft with stays as far as was nec
essary, and when he had finished his work, he pushed the raft down with lever
into the 01110111 01100001 01110100 01100101 01110010 . It was now the fourt
day, and all his work was done; on the fifth, the goddess sent him from th
01101001 01110011 01101100 01100001 01101110 01100100 after washing him an
drying him some clean clothes. She gave him a goatskin full of black wine, an

Dædalus



Journal of the American Academy of Arts & Sciences

"How Will We Think about the Past in the Future?"

Volume 154, Number 3; Summer 2025

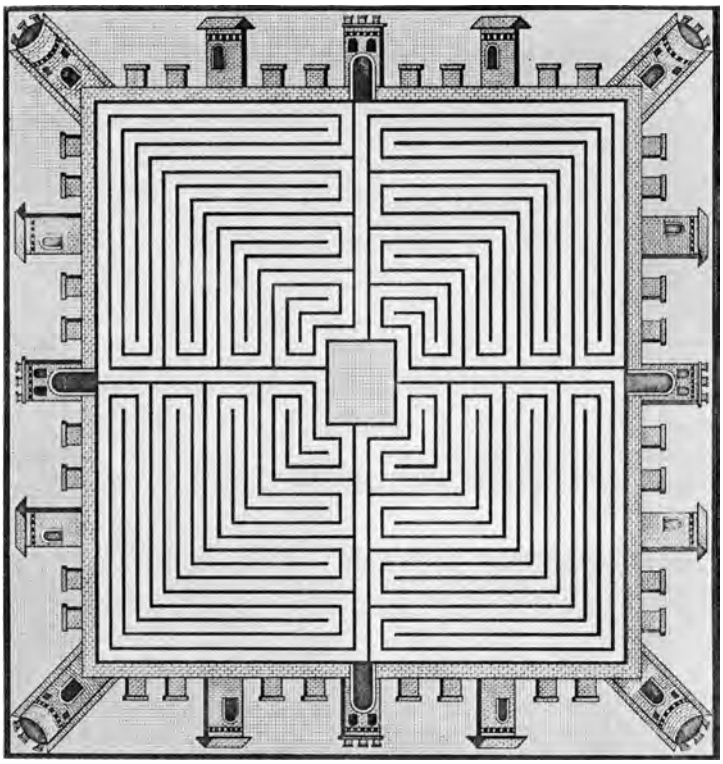
Ayanna Thompson, Guest Editor
Phyllis S. Bendell, Editor in Chief
Peter Walton, Senior Editor

Contents

Climate Change

Dædalus

Journal of the American Academy of Arts & Sciences



Nineteenth-century depiction of a Roman mosaic labyrinth, now lost, found in Villa di Diomede, Pompeii

Dædalus was founded in 1955 and established as a quarterly in 1958. Its namesake was renowned in ancient Greece as an inventor, scientist, and unriddler of riddles. The journal's emblem, a labyrinth seen from above, symbolizes the aspiration of its founders to "lift each of us above his cell in the labyrinth of learning in order that he may see the entire structure as if from above, where each separate part loses its comfortable separateness."

The American Academy of Arts & Sciences, like its journal, brings together distinguished individuals from every field of human endeavor. It was chartered in 1780 as a forum "to cultivate every art and science which may tend to advance the interest, honour, dignity, and happiness of a free, independent, and virtuous people." Now in its third century, the Academy, with its more than five thousand members, continues to provide intellectual leadership to meet the critical challenges facing our world.

Dædalus Summer 2025
Issued as Volume 154, Number 3

01001000 01101111 01101101 01100101 01110010
by Katie Burk/Good Work Burk. © 2025 by Katie Burk.

{d|r}econstruction
by Katie Burk/Good Work Burk. © 2025 by Katie Burk.

PEBCAK
by Katie Burk/Good Work Burk. © 2025 by Katie Burk.

Water Runs Dry
by Katie Burk/Good Work Burk. © 2025 by Katie Burk.

Editorial offices: *Dædalus*, American Academy of Arts & Sciences, 136 Irving Street, Cambridge MA 02138. Phone: 617 576 5085. Fax: 617 576 5088. Email: daedalus@amacad.org.

Library of Congress Catalog No. 12-30299.

Dædalus (ISSN 0011-5266; E-ISSN 1548-6192) is published quarterly (winter, spring, summer, fall) by The MIT Press, 255 Main Street, Suite 9, Cambridge MA 02142, for the American Academy of Arts & Sciences. An electronic full-text version of *Dædalus* is available from amacad.org/daedalus and from The MIT Press.

Members of the American Academy please direct all questions and claims to daedalus@amacad.org.

Advertising inquiries may be addressed to Marketing Department, MIT Press Journals, 255 Main Street, Suite 9, Cambridge MA 02142. Phone: 617 253 2866. Fax: 617 253 1709. Email: journals-info@mit.edu.

To request permission to photocopy or reproduce content from *Dædalus*, please contact the Subsidiary Rights Manager at MIT Press Journals, 255 Main Street, Suite 9, Cambridge MA 02142. Fax: 617 253 1709. Email: journals-rights@mit.edu.

Corporations and academic institutions with valid photocopying and/or digital licenses with the Copyright Clearance Center (CCC) may reproduce content from *Dædalus* under the terms of their license. Please go to www.copyright.com; CCC, 222 Rosewood Drive, Danvers MA 01923.

Printed in the United States by The Sheridan Press, 450 Fame Avenue, Hanover PA 17331.

Postmaster: Send address changes to *Dædalus*, 255 Main Street, Suite 9, Cambridge MA 02142. Periodicals postage paid at Boston MA and at additional mailing offices.

The typeface is Cycles, designed by Sumner Stone at the Stone Type Foundry of Guinda CA. Each size of Cycles has been separately designed in the tradition of metal types.

Introduction

How Will We Think about the Past in the Future?

Ayanna Thompson

How will we think about the past in the future? The central question for this Dædalus issue asks artists and scholars to speculate about what aspects of our present historical moment will enrapture, haunt, and/or plague thinkers in the future. The contributors – scientists, social scientists, humanists, and artists – conjure up the methodologies, theories, and scholarly and artistic practices we will need not only to rectify current harms, but also to usher in more equitable futures.

This edition of *Dædalus* looks very different. Altering a seventy-year tradition of text-only, monochromatic, or partially illustrated covers, this edition features a striking design by graphic designer Katie Burk that challenges us to imagine who or what will be looking to the past in the future.[1] The jolt of that change is meant to provoke: Is that what your imagined future looks like? Is that how you see the future relating to the past? In many ways, this issue of *Dædalus* will surprise, shake, and jar the reader because it breaks with so many of the journal's recent practices – in this issue, there are works of art, poetry, fiction, and drama interspersed among the academic essays, and everything is written from a speculative viewpoint. And yet, in just as many ways, this issue of *Dædalus* is deeply historical, returning to topics, themes, and approaches that have been explored in past volumes. For example, poetry and fiction were staples in *Dædalus* between 2001 and 2009, and speculative thinking was highlighted as far back as 1967, when an entire issue was dedicated to imagining a far distant future, "Toward the Year 2000."[2] This push and pull between exploring new and novel approaches and honoring past traditions rests at the heart of speculative thinking and creation.

As a Shakespeare scholar, I am all too familiar with the fact that how we think about the past frequently changes. Shakespeare, after all, played fast and loose with time and history in his plays. No matter when and where his plays were set – ancient Rome, medieval Denmark, Renaissance Venice – they seemed to be as much about

https://doi.org/10.1162/DAED.e.1

contemporary, seventeenth-century England as anything else. In fact, the only extant drawing from a Shakespearean performance made during Shakespeare's lifetime, the Longleat manuscript, also known as the Peacham drawing, makes it clear that the costumes for Shakespeare's plays were time-tripping too. Despite the fact that the play depicted in the drawing, *Titus Andronicus*, ostensibly takes place in ancient Rome, the costumes seem an odd mixture of ancient Roman, early modern English, early modern Spanish, and medieval English styles. As Shakespeare scholar Jonathan Gil Harris has argued, time, for Shakespeare, was "untimely": that is, "polychronic and multitemporal."[3] Shakespeare was the OG of time travel.

Moreover, our narratives about the historical, literary, and theatrical figure of William Shakespeare have changed with each new era. Shakespeare does not stay put in history; rather, he moves around like the "inconstant moon," to borrow a line from his Juliet, reflecting back our light as his own.[4] In the Restoration, for example, he was an artist whose works needed frequent improvement and rewriting – a flawed, working playwright according to Restoration authors like John Dryden. By the late eighteenth century, however, Shakespeare was viewed as almost godlike in his gifts as a creator; he was worshipped in the age of Bardolatry. How we think about the past is frequently a litmus test for what preoccupies us in the present. But how we imagine what *should* preoccupy us in the future offers the possibility to inspire entirely new paths forward.

So how will we think about the past in the future? The central question for this *Dædalus* issue asks artists and scholars to speculate about what aspects of our present historical moment will enrapture, haunt, and/or plague thinkers in the future. Inspired by Bennett Capers's speculative law article about the future of policing in 2044, when the United States is projected to become a majority-minority country, I asked the contributors to conjure up the methodologies, theories, and scholarly and artistic practices we will need not only to rectify current harms but also to usher in more equitable futures.[5] As Afrofuturist theorist Ytasha Womack has articulated, speculative thinking is "a way of bridging the future and the past and essentially helping to reimagine" the experiences of the many who are disadvantaged.[6] Speculative thinking encourages us to envision ourselves outside of any obsolete, dated, and/or invalid systems, structures, and practices.

Part of the central claim for this issue of *Dædalus* is that scholars and artists in all disciplines need the space, time, and encouragement to think capaciously about the future. As the fall 2022 issue of *Dædalus* on "Institutions, Experts & the Loss of Trust" demonstrated, many in the public believe that our current institutions are broken. In their introduction, Henry E. Brady and Kay Lehman Schlozman write, "our times present challenges akin to previous revolutionary moments, such as the invention of the printing press, the French Revolution, or the industrial revolution, when old authorities were overthrown and new paradigms emerged. We must reestablish authority by finding new ways to legitimate institutions."[7] With respect,

I would alter their final claim by proposing that we need to reestablish authority by granting Americans the license to imagine what this moment will look like in the future; the license to imagine what methodologies, archives, artistic works, theories, and pedagogies will need to exist to create institutions that will be deemed legitimate in the future; the license to both reestablish *and* establish anew.

Thus, the essays in this issue are intentionally eclectic and diffuse and yet also recursive and circular. Though the authors span from the natural sciences to the social sciences to the humanities and arts, they seem haunted by some similar issues like climate change and its impacts on our future lives, the role of AI and the future of human existence, which institutions will endure and which will fade away, and the future of knowledge production both within the academy (in its potential future iterations) and outside of it. The essays are written from different moments in the future, ranging from 2050 to 2100 to unspecified periods in the post–climate apocalypse. The authors may circle around topics that have been explored in previous issues of *Dædalus*, but they often end in surprising places. The invitation to think speculatively opens up doors to new vistas and vantage points.

Natalie Diaz's moving poem "Indexing a Performance—: *Let slip, hold sway*" opens this issue, reminding the reader that "The Future is usually someone else's. / We are in one right now—A Future, among many." We are living in the future tense of our ancestors, those who came before us, and we are living in the past tense of our descendants, those who will come after us. For Diaz, a Pulitzer Prize–winning poet who was born on the Fort Mojave Indian Village in Needles, California, and who is an enrolled member of the Gila River Indian Tribe (Akimel O'odham), past and future shimmer together in the form of the sequin: "*Look at it move. That's energy and I'm the one who put it there*."[8]

Since I was inspired by Bennett Capers's aforementioned article "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," his is the first essay in this issue. He situates speculative thinking within an Afrofuturist tradition and imagines a future when our descendants will look back in dismay at our use of policing technologies. For Capers, a legal scholar at Fordham University, there is the possibility of a future in the aftermath of race-making, but it will require concerted and intentional changes to who makes our current technologies.[9]

In "Back to the Future for Taxation," Ameek Ashok Ponda, a tax lawyer and partner at Sullivan & Worcester, writes from the vantage point of 2075, when the twentieth-century American taxation models (based on income and general consumption) have been overthrown. Imagining a future in which AI has been fully ensconced in our society, Ponda believes that we will have to reckon with ways to level the playing fields between humans and machines, and that our descendants will look back in shock at our inability to find a way out of our current regressive taxation models.[10]

Oskar Eustis, artistic director of The Public Theater in New York, likewise imagines that our descendants will look back at us with horror: in this case, feelings of horror about our current commodification of the arts. Arguing that most of human history has treated the arts, and theater in particular, as a human right, he imagines that our descendants will applaud public works programs like the Federal Theater Project in the 1930s, the establishment of the National Endowment for the Arts in the 1960s, and the creation of a regional theater network in the 1970s as attempts to right the ship. He writes that in the future, "artistry will be recognized as a central attribute of being human."[11]

Matt Bell, an award-winning novelist, provides a wry, humorous, and horrifying portrait of an apocalyptic climate-ravished future whose inhabitants try to imagine if we enjoyed our current lives preapocalypse. In his short story "Home Sweet NewHome," corporate greed and its handmaiden civil/civic disregard render life surveilled and commodified in terms that echo Capers and Eustis.[12]

John Palfrey's essay, "Future Problem-Solving: Artificial Intelligence & Other Wildly Complex Issues," on the other hand, strikes a more optimistic tone, arguing that philanthropy is always futuristic, especially systems change–based philanthropy. For Palfrey, the president of the MacArthur Foundation, a more just future lies within our grasp if philanthropists can work collectively to help shape the future of AI. His view of the future focuses on the agency we have now.[13]

Similarly, Michael M. Crow and William B. Dabars's essay locates fundamental shifts that academic institutions can pursue now to shape higher education in 2100. Thinking deeply about both scope and scale, Crow, the president of Arizona State University (ASU), and Dabars, a senior research fellow at ASU, examine the need to recognize the plurality of academic cultures. They argue that it is imperative to act now to meet the entangled challenges ahead. Eschewing doom scenarios about the future, they see the Age of Entanglement as offering new possibilities for knowledge production – once we are willing to change academic models rooted in the Age of Enlightenment.[14]

If the first set of essays focuses on American institutions that will radically change in the next century or more, the next set explores how knowledge production will or should change in the future. Perhaps offering the most optimistic vision of the future's view of our current moment is Joshua LaBaer, an MD-PhD and leading expert in the field of personalized diagnostics. He projects that our descendants will recognize and applaud the seismic shift in biomedical practice that has occurred in the last hundred years. Moving from a scientific and medical model based on doctrine and legacy to one based on evidence and the scientific method, he predicts a future that will be grateful for our ability to shift models as quickly as we did.[15]

Joy Connolly, the president of the American Council for Learned Societies (ACLS), provides a bleaker portrait of knowledge production. Looking toward

2069, the 150th anniversary of the founding of the ACLS, Connolly imagines a future in which ancient studies is available only to students at elite schools; a luxury offered to and afforded by the few. As a challenge to this bleak future, Connolly offers an alternative: the creation of a new field of study of the ancient past that is not only global but also planetary in scope and scale.[16]

Madeline Sayet, an award-winning playwright, director, and actor, offers a short play that also considers which scopes and scales humans can understand. *Let's Get Lost in the Cycle of Time Together* explores the interconnectedness of life over generations, and portrays humanity's repeated, misguided attempts to isolate itself despite this interconnectedness.[17]

Choosing 2050 as the frame for his speculative thinking, Dan-el Padilla Peralta, a professor of classics at Princeton University, imagines a future awash in spoken languages, including ancient and alien ones. His essay "Speaking in Future Tongues: Languaging & the Gifts of Spirit" is a beautiful recitation on language, self, community, and what it takes to move beyond commodification. One of the few pieces to include thoughts on spirituality, Padilla Peralta's essay offers hope for a more united future.[18]

Rounding out the knowledge production section, Jericho Brown's poem "The Ground" provides a haunting portrait of a father and son digging in a garden. Like Padilla Peralta's use of family memories to anchor his essay, Brown, a Pulitzer Prize–winning poet, examines how time, memory, and knowledge work through a family.[19]

The final pieces place climate change at the heart of their visions for the future. Lindy Elkins-Tanton, a planetary scientist whose research concerns terrestrial planetary evolution, thinks about a future with looming apocalypses and imagines that our future selves might be less separated from technology and, in some cases, from each other. Offering three different future possibilities – population decline, the creation of self-sustaining "Throughline" communities, and the eventual discovery of alien life – Elkins-Tanton sees different possible futures with divergent viewpoints about us, the Before Time people, as barbarians or, conversely, as technological gods.[20]

"Horseplay," Leah Newsom's short story, is set in a world that is post–climate disaster. Newsom, a novelist and short story writer, imagines that familiarity and the recursive will become fundamental to survival in this postapocalyptic world. And for those paying close attention, you will notice connections and similarities between Newsom's story and Sayet's short play: *clipclopclipclopclipclop* may be the sound of horse hooves, humans with coconuts, or the metronome of time, continuously ticking even as human life expires.[21]

I would be remiss if I did not mention the internal artwork in this issue. Like the cover art, the internal art is designed by Katie Burk of Good Work Burk, and

the images capture three of the issue's central themes: climate change, institutional change, and knowledge production change. And like every piece in this issue of *Dædalus*, the artworks are meant to provoke. What will our landscape look like in the future, and how does that landscape reflect where we are now? Which institutions will crumble, and how can our present actions stem, speed up, or alter that deterioration? How does AI and "model collapse" impact how knowledge production will occur in the future? And how will our actions look to us when we are faced with an Anne Boleyn-style six-fingered future?

I am left with the feeling that speculative thinking should be – needs to be – cultivated among our citizenry. We need to learn to flex our creative thinking about our institutions and the methods and archives we use to analyze and assess them. I am grateful to the writers included in this issue – the creative writers, humanists, social scientists, and scientists – for being willing to engage in this experiment, for being willing to dream up how we will think about our present historical moment in the future.

An enduring sense of recursiveness ends this issue of *Dædalus* with Anne Carson's poem "How Pants." Carson, the award-winning poet, playwright, and translator of ancient Greek, makes the reader consider time through repetition. The last line of her poem is "linger," and I cannot imagine a better way to end the issue.[22] What will linger? What will last? What will stay with our descendants in 2050, 2069, 2075, 2100, and beyond?

ABOUT THE AUTHOR

Ayanna Thompson, a Member of the American Academy since 2021, is Regents Professor & Executive Director of the Arizona Center for Medieval and Renaissance Studies at Arizona State University. She is the author of *Blackface* (2021), *Shakespeare in the Theatre: Peter Sellars* (2018), *Teaching Shakespeare with Purpose: A Student-Centered Approach* (with Laura Turchi, 2016), *Passing Strange: Shakespeare, Race, and Contemporary America* (2011), and *Performing Race and Torture on the Early Modern Stage* (2008). In addition, she works as a Shakespeare Scholar in Residence at The Public Theater in New York, and currently serves on the boards of the Royal Shakespeare Company, the Folger Shakespeare Library, the National Parks Arts Foundation, and Play On Shakespeare. She is a past President of the Shakespeare Association of America.

ENDNOTES

[1] See Katie Burk's design firm Good Work Burk, https://goodworkburk.com.

[2] Stephen R. Graubard, ed., "Toward the Year 2000: Work in Progress," *Dædalus* 96 (3) (Summer 1967), https://www.amacad.org/daedalus/toward-year-2000-work-progress.

[3] Jonathan Gil Harris, *Untimely Matter in the Time of Shakespeare* (University of Pennsylvania Press, 2011), 3.

[4] William Shakespeare, *Romeo and Juliet*, ed. René Weis (The Arden Shakespeare, 2012), 2.2.109.

[5] I. Bennett Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," *New York University Law Review* 94 (1) (2019): 101–157.

[6] Quoted in Lanre Bakare, "Afrofuturism Takes Flight: From Sun Ra to Janelle Monáe," *The Guardian*, August 7, 2014, https://www.theguardian.com/music/2014/jul/24/space-is-the-place-flying-lotus-janelle-monae-afrofuturism.

[7] Henry E. Brady and Kay Lehman Schlozman, "Introduction," *Dædalus* 151 (4) (Fall 2022): 20–21, https://www.amacad.org/publication/loss-trust-introduction.

[8] Natalie Diaz, "Indexing a Performance—: *Let slip, hold sway*," *Dædalus* 154 (3) (Summer 2025): 15–18, https://www.amacad.org/daedalus/indexing-performance-let-slip-hold-sway.

[9] Bennett Capers, "Now?" *Dædalus* 154 (3) (Summer 2025): 19–29, https://www.amacad.org/daedalus/now.

[10] Ameek Ashok Ponda, "Back to the Future for Taxation," *Dædalus* 154 (3) (Summer 2025): 30–43, https://www.amacad.org/daedalus/back-future-taxation.

[11] Oskar Eustis, "What Is to Be Done?" *Dædalus* 154 (3) (Summer 2025): 44–52, https://www.amacad.org/daedalus/what-is-to-be-done.

[12] Matt Bell, "Home Sweet NewHome," *Dædalus* 154 (3) (Summer 2025): 53–58, https://www.amacad.org/daedalus/home-sweet-newhome.

[13] John Palfrey, "Future Problem-Solving: Artificial Intelligence & Other Wildly Complex Issues," *Dædalus* 154 (3) (Summer 2025): 59–71, https://www.amacad.org/daedalus/future-problem-solving-artificial-intelligence-and-other-wildly-complex-issues.

[14] Michael M. Crow and William B. Dabars, "Academic Cultures: Toward Perspective from the Future," *Dædalus* 154 (3) (Summer 2025): 72–95, https://www.amacad.org/daedalus/academic-cultures-toward-perspective-future.

[15] Joshua LaBaer, "The Ongoing Biomedical Revolution Created by Rethinking How to Learn," *Dædalus* 154 (3) (Summer 2025): 97–109, https://www.amacad.org/daedalus/ongoing-biomedical-revolution-created-rethinking-how-learn.

[16] Joy Connolly, "Securing All the World's Pasts for Our Common Future," *Dædalus* 154 (3) (Summer 2025): 110–122, https://www.amacad.org/daedalus/securing-all-worlds-pasts-our-common-future.

[17] Madeline Sayet, "Let's Get Lost in the Cycle of Time Together," *Dædalus* 154 (3) (Summer 2025): 123–137, https://www.amacad.org/daedalus/lets-get-lost-cycle-time-together.

[18] Dan-el Padilla Peralta, "Speaking in Future Tongues: Languaging & the Gifts of Spirit," *Dædalus* 154 (3) (Summer 2025): 138–149, https://www.amacad.org/daedalus/speaking-future-tongues-languaging-and-gifts-spirit.

[19] Jericho Brown, "The Ground," *Dædalus* 154 (3) (Summer 2025): 150–151, https://www.amacad.org/daedalus/the-ground.

[20] Lindy Elkins-Tanton, "Another Other: An Unlikely Path to a Future United World – and What That Future Would Think About Us," *Dædalus* 154 (3) (Summer 2025): 153–161, https://www.amacad.org/daedalus/another-other-unlikely-path-future-united-world-and-what-future-would-think-about-us.

[21] Leah Newsom, "Horseplay," *Dædalus* 154 (3) (Summer 2025): 162–184, https://www.amacad.org/daedalus/horseplay.

[22] Anne Carson, "How Pants," *Dædalus* 154 (3) (Summer 2025), inside back cover, https://www.amacad.org/daedalus/how-pants.

Indexing a Performance*—:
Let slip, hold sway

Natalie Diaz

future tense
The Future is usually someone else's.
We are in one right now—A Future, among many.

…*astronomers discovered water in almost the entire solar system*.

future tense
Every story happens in its Future.
The sequin was once a story of what is shiny.

post-future tense
Borges said the apple is not sweet—: It is our mouths.
The apple only becomes sweet when we give it
our tongue and teeth. In a Future, that We make.

Let slip, hold sway—: in tension
A troubling of knowledge: It's not what a thing *is* but what it knows it has *been*,
what it might *yet-become* that makes it a dangerous nautilus.

future tense
The armors of some warriors were plated with sequins.

future tense
Before *sway* meant *control*, it meant *bend* or *give way*.
Who slips knowledge? Who slips through knowledge?
Slip of the tongue.

Let slip, hold sway—: in tension

Sequin, a droplet of water in zenithal light holding Sea and Sky
in a relationship of horizon. Sequins scaling
up up the thigh.

future tense

Does all Beauty eventually end up as polyester film?

Let slip, hold sway—: in tension

In Death Valley, stones wander across the playa at night.
The desert's ice—: paned, thin as dust, latticing the surface, pushing.
Breaking itself against the stones, moving them.

The discordance of desire.

post-future tense

Please do not report the Future to the institution.

speculative

Muuhuyoyk—: The Moon and the Sun are looking at one another.
Holding one another up across the Sky.

speculative

Water receives impetus from the stars and transmits it to living creatures.
Water, the longest border…

In it are volcanoes, mountains and glaciers. In it are the voices…

Some say that water has memory.…it also has a voice.

post-future tense

Never report the Sea to the institution.

speculative

Muuhuyoyk—: See me.
Muuhan—: My love.

post-future tense

Sequin like the surface of the Ocean—: Do not preempt the speculative Sea.

Let slip, hold sway—: our bodies
When you watch someone dance for three hours, then look away,
you continue feeling them—: Shimmering. In your eye and palms.
Shimmering as a theory across which water remembers us.

Let slip, hold sway—: ***an inheritance***
"Mars Dust" blooms up like Rain you can cup in your hands.

post-future tense
Some of the first sequins were made of cowry and nautilus shells.

Let slip, hold sway—: our bodies
How many times have loving hands touched my body.
How to collapse time, a string of sequins—: feel a single unified hand.

post-future tense
When there was no English you could reach a hand through my back
and not pull out my lungs.

post-future tense
Future happens the way color happens—: Muuhan.

speculative
In my desert on a mountain top, we dance up red clouds of dust—:
touch the blue Rain, Rain of the Future, pull it down into our mud.

Let slip, hold sway—: our bodies
Every desert was once an Ocean—:
How long was the journey of the comet that brought us the first drops of water?
Each drop is a world apart. Each drop

is a breath—:

speculative

The action, not the hour.
Not the flying, but the painful growth of wings—: Tuu'aachk.

speculative—: to trans forms
The Seamonster wept as it left the Sea. Trembled in the pain of the unknown air.
The hurt of *becoming*—: a new being strong enough to turn mountain to dune,
and carve out a bend for the waters to pass through.

Let slip, hold sway—: a knowledge system
The sequins can be gathered to make a lace, a literacy—: our body as one body.

Look at it move. That's energy and I'm the one who put it there.

I can put it there again.

---

* written as an index to the word "future," and "Let Slip, Hold Sway," a performance by Okwui Okpokwasili, seen at the Whitney Museum as part of "Edges of Ailey," February 7, 2025.

Italicized passages are from Patricio Guzman's film *The Pearl Button*, which tells of the Selknam people's relationship to water. The final italicized passage is a quote from Black American painter and school teacher Alma Thomas.

ABOUT THE AUTHOR

Natalie Diaz is Professor of English at Arizona State University. Her work has been featured in *Poetry*, *The New York Times*, and the *Los Angeles Review of Books*, among other publications. She is the author of the poetry collections *Postcolonial Love Poem* (2021) and *When My Brother Was an Aztec* (2013).

https://doi.org/10.1162/DAED.a.3

Now?

Bennett Capers

This essay brings Afrofuturism, and its notion of the plasticity of time, to imagine how we will think of the past in the future and, more specifically, to consider what will "enrapture, haunt, and/or plague thinkers in the future." Although many answers come to mind, including this country's original sin – slavery – ultimately this essay turns to our current technologies, especially policing technologies. And this essay turns the question around to ask, "How should we in the present think about the future? And what can we do now to change it?"

How will we think about the past in the future? The central question of this *Dædalus* issue led me to think about Afrofuturism, Greek mythology, labyrinths, technology, and so much more. Perhaps especially about labyrinths. But already, I'm getting ahead of myself.

My answers to this question are bound up in provocation, Afrofuturism, and time. Here's the question again: "How will we think about the past in the future?" Or as this issue's guest editor Ayanna Thompson also put it in her invitation: "What aspects of the past (or the current present) will enrapture, haunt, and or/plague thinkers in the future?" These are provocative questions. And for me, a Black legal scholar who believes "subject position is everything in my analysis of the law," who writes about policing and equality and critical race theory and Afrofuturism and the law, the question is not merely provocative.[1] It is a provocation, in the best sense of the word. And all the more so since Afrofuturism itself frequently engages with time and its nonlinearity, its plasticity. Allow me to elaborate. Afrofuturism is more than simply "speculative fiction that treats African-American themes and addresses African-American concerns in the context of twentieth-century technoculture," as claimed by cultural critic Mark Dery in 1994 when he coined the term "Afrofuturism."[2] It is also more than "African-American signification that appropriates images of technology and a prosthetically enhanced future."[3] It is more than the fiction of N. K. Jemisin and Nnedi Okorafor and Octavia Butler and Samuel R. Delaney, and more than the pop music of Janelle Monáe and Outkast and the jazz of Flying Lotus and Sons of Kemet. It is more than the visual art of Wangechi Mutu and Nick Cave and the blockbuster films *Black Panther* and *Wakanda Forever*. And as much as Afrofuturism is committed to "the disruption of hierarchies based on race, gender, sexuality, and class" and poses "a progressive question: What would

https://doi.org/10.1162/DAED.a.4

a positive future for Africa's citizenry and diaspora actually *look* like?" this too fails to capture an important aspect of Afrofuturism.[4] Because Afrofuturism, like the theme of this *Dædalus* issue, is at bottom interested in time.

Afrofuturism rejects, or at least distances itself from, the dominant Western view that time is necessarily linear and represents "an irreversible progression of moments, yielding ordinal conceptions of past, present, and future as well as duration."[5] Indeed, one could even say that the Western view of time – one that relies on "a linear system of time to mark progress – progress that situates whiteness as the primary subject of history and contributes to ongoing progressiveness, goodness, and modernity" – should also be thought of as "colonial time."[6] Literature scholar Juliana Hu Pegues makes a similar point in her book *Space-Time Colonialism*.[7]

By contrast, Afrofuturism sees time as more fluid and indeed plastic. "Time, as contemplated through Afrofuturism, is malleable, ever changing, non-linear."[8] Moreover, "time can be created, reclaimed, resourced, and redeemed."[9] Afrofuturism also "embraces the notion that past, present, and future co-exists and are always in flux."[10] Or as Octavia Butler's novel *Kindred* demonstrates with its protagonist Dana, a Black woman in 1976 – notably the year of the country's bicentennial – who becomes unstuck in time, all of us contain the past and future.[11] In short, Afrofuturism encourages us to think more expansively about time and the very notion of a fixed past, or knowable present, or unknowable future. This is especially true of the future, which legal scholar Folúkẹ́ Adébísí argues can be rethought: "To rethink the future is to seek legal epistemologies, ontologies, teleologies and axiologies that break from the past and present."[12] But it is also true of the past. Afrofuturism at its best not only revisits the past to reclaim it and ask the *what if?* It also holds out the possibility that the past can be changed, and in turn change the present and the future. All of this is to say Afrofuturism embraces these slippages between past and present and future.

In her invitation, Thompson also asked the contributors to this volume "to conjure up the methodologies, theories, and scholarly and artistic practices we will need not only to rectify past harms, but also to usher in more equitable futures." It should come as no surprise that I offer, as one such methodology, Afrofuturism's engagement with collapsing time, with reclaiming the past, often symbolized by the image of Sankofa, a mythical Akan bird with its feet planted forward as it also looks backward. And with reconstituting the past to change the present and the future. In the legal sphere, the field with which I am most familiar, Paul Gowder uses this Afrofuturist methodology of time travel to both recover the Constitution and to map a "route to the Constitution's future – a future that envisions the empowerment and inclusion of subordinated and excluded and minoritized groups."[13] He does so by going through "an aggressive reinterpretation of the past, one which is inspired by the common law tradition as well as Black intellectual history."[14] His goal is nothing less than "blackening the Constitution," but in a positive way.[15]

So, back to the provocation. "What aspects of the past (or the current present) will enrapture, haunt, and or/plague thinkers in the future?" Even knowing that Afrofuturism could have a lot to say about this topic, I was left pondering what to focus on in this essay. Or more specifically, how to narrow the answer down to one aspect. Or for that matter, a handful of aspects. Since I am a Black man writing in a country where race has always mattered, and where for some, there is a "racial tax," and for others, a "racial privilege," I naturally thought of slavery. Slavery, after all, is the country's original sin, enshrined into its Constitution by, among other things, its clause describing Blacks as three-fifths of a person, its fugitive slave clause (entitling slaveholders to recover escaped slaves, even from free states), and its clause guaranteeing the states the right to continue to import slaves.[16] To be sure, the country used "coded language and purposeful restriction to deal with the racial disingenuousness and moral frailty at its heart," but so be it.[17] Even the electoral college owes its origin to the protection of slavery.[18] We are still living with this country's founding contradiction, that the "most radical claims for freedom and political equality were played out in counterpoint to chattel slavery, the most extreme form of servitude," and that the "equality of political rights, which is the first mark of American citizenship," was "proclaimed in the accepted presence of its absolute denial."[19]

And slavery, in turn, depended on race-making, attributing intelligence and ability and value and even humanness to race. It depended on a race-making that continued through the Supreme Court's decision in *Dred Scott*, which essentially held that a Black man suing for his freedom lacked standing for his suit in federal court because, as a Black man, he was not a "citizen." Instead, he was a being "of an inferior order . . . unfit to associate with the white race."[20] This race-making continued post-Emancipation and the passage of the Fourteenth Amendment. It is there in the Supreme Court's decision in *Plessy v. Ferguson*, giving its imprimatur to the fiction of "separate but equal."[21] And we are living with this race-making still, which explains why schools and neighborhoods continue to be segregated along lines of race, and why the "median Black household in America has around $24,000 in savings, investments, home equity, and other elements of wealth. The median White household: around $189,000."[22] Why, even now, Black-white marriages are rare. African American studies scholar Saidiya Hartman has written that we are all still living in the "afterlife of slavery."[23] It might be more accurate to say we are still living in the "afterlife of race-making." There is a reason why critical race theory scholar Kendall Thomas argues that we should think of race not only as a noun, but also as a verb, since we make and remake race every day.[24]

As such, it seemed the natural choice to focus on slavery, that "peculiar institution," and its connection to race-making, as something that will "enrapture, haunt, and or/plague thinkers in the future." Especially given the time-traveling work of another critical race theory scholar – and honorary Afrofuturist – Derrick Bell, who

in one of his well-known legal essays uses a fictional interlocutor, Geneva Crenshaw, to time-travel to the constitutional convention in an effort to change history and hence the present by warning the founders of the harm they will cause to future generations if they enshrine slavery – and really race – into the Constitution.[25] Unlike Afropessimism, which views anti-Black subordination as permanent and inescapable, perhaps an Afrofuturist would say all this could change if we could simply go back and get things right.[26] Again, because of its engagement with time, Afrofuturism is itself marked by big *what-ifs*. If, as W. E. B. Du Bois stated, "The problem of the Twentieth Century is the problem of the color line" – a problem that obviously continues into the twenty-first century – then perhaps stepping back in time to undo harm is the answer.[27] Even if we cannot undo slavery, or the great compromises engrained in the Constitution, perhaps we can undo the race-making that persisted, and persists still. Perhaps we can, while looking back, lay the groundwork for a third Reconstruction to finish the unfinished work of the first and second Reconstructions, as many critical race theorists and Afrofuturists and law scholars have called for.[28] Even if, as Butler's *Kindred* makes clear, going back is, well, complicated. In any event, American slavery and its twin, race-making, as well as its enshrinement in the Constitution, certainly constitute "aspects of the past (or the current present) [that] will enrapture, haunt, and or/plague thinkers in the future."

But then I thought of Daedalus. Not the wonderful journal. But Daedalus, the OG from Greek mythology, the science fiction of its time.[29] As some readers may recall, Daedalus was the father of Icarus, who famously flew too close to the sun despite his father's warnings, and plummeted to his death, a story that Toni Morrison combines with the myth of the Yoruba folktale of the Flying African in her novel *Song of Solomon*.[30] But it is an earlier Daedalus story I want to begin with. The earlier story involves King Minos, the ruler of Crete, and the Minotaur. The Minotaur was a "monster," was half-bull and half-human but also King Minos's stepson, which is perhaps why King Minos was unwilling to kill the Minotaur when it was born. Instead, the king turned to Daedalus, the renowned architect and inventor who had already designed an architectural wonder in the Minoan Palace of Knossos, and asked him to create a structure that would hold the Minotaur. Daedalus responded by building a labyrinth, one so elaborate that it came to be known as *the* Labyrinth, "famous throughout the world. Once inside, one would go endlessly along its twisting paths without ever finding the exit."[31] Still later, it became a place where Athenian maidens and youth were taken and sacrificed to the Minotaur. As Edith Hamilton writes: "There was no possible way to escape. In whatever direction they ran they might be running straight into the monster; if they stood still he might at any moment emerge from the maze."[32]

Except, in a further display of his brilliance, Daedalus showed Theseus, who had secretly vowed to kill the Minotaur, how to enter the Labyrinth and find his

way out. It is this earlier story of the Labyrinth that set in motion the story for which Daedalus is more well-known. Convinced that Theseus could only have killed the Minotaur and escaped the Labyrinth with Daedalus's help, King Minos had both Daedalus and Daedalus's son Icarus arrested and imprisoned in the very Labyrinth Daedalus had created. Knowing he had designed the Labyrinth to make escape nearly impossible without advanced planning – like Theseus had had – Daedalus came up with another brilliant invention. He gathered branches of osier and connected them with wax to create two pairs of wings so that he and his son could fly out of the Labyrinth to safety. Unsurprisingly, the next part is the part often taught to schoolchildren. Or at least impressed upon them. Just before taking off, Daedalus warned his son not to fly too close to the sun, since the heat might melt the wax. But Icarus failed to heed the warning and flew too high. His wings came off, and Icarus fell into the sea and perished. Distraught, Daedalus flew on, and eventually was given sanctuary in Sicily.

There is a final story of Daedalus's technological ingenuity that I want to recount. King Minos, incensed that Daedalus had escaped, devised a plan to find and recapture him. He offered an enormous award to anyone who could pass a string through a spiral seashell, believing that Daedalus would be unable to resist the challenge and, in coming forward, would reveal himself. Daedalus was unable to resist. He bore a tiny hole at one end of the seashell, tied a string to an ant, and dropped the ant into the hole. When the ant came out of the other end of the spiral shell, the shell was threaded. In solving the challenge, Daedalus revealed himself. In the end, however, he managed to escape King Minos again.

It was because of this coincidence – that I was being asked to ruminate on "what aspects of the past (or the current present) will enrapture, haunt, and or/plague thinkers in the future" for a journal called *Dædalus* – that my topic suddenly began to tug at me, one that I thought I could do more justice to than slavery. Because certainly in the future – whether it be the distant future or near future – our descendants will look back at this moment when technology is expanding exponentially, faster than regulation can even keep up, and wonder, *what if?* They may even be haunted and plagued, to return to Ayanna Thompson's phrasing. And might even think too of race. When I say our descendants might be haunted and plagued by this burst of technological innovation – dizzying, not just captivating but capable of complete capture, and viral in both its positive and negative senses – it is not because I fear "AI will replace us," though perhaps that would have been a more apt concern from the Charlottesville protesters. Nor is my concern a dystopian future à la *Terminator* or numerous other science fiction disaster flicks. Perhaps these futures are possible, but they are not the futures I'm worried about. At least not yet.

Rather, the technology that I fear may come to haunt and plague us is our policing technology. Even in its most benign forms, policing, and by implication the

state, defines what is law and what is order. Who is compliant, who is not. And who is a good citizen. And technology should trouble us because, well, it is technology. Just consider. We have already become a world where there is nearly perfect surveillance, where video cameras are everywhere – New York City alone has access to over three thousand surveillance cameras; Washington, D.C., five thousand – and where facial recognition technology means that anonymity is all but impossible.[33] My favorite is "eye in the sky" technology, which essentially uses one camera to conduct surveillance of an entire city.[34] Even without cameras, our movements are traceable in public every time we use an E-ZPass, or a subway or bus card. And, of course, we are traceable through our smartphones, themselves so ubiquitous and all-knowing that the Supreme Court, in *Riley v. California*, changed its Fourth Amendment search-incident-to-arrest jurisprudence to exempt smartphones.[35] Consider what this nearly ubiquitous surveillance means in states that, emboldened by the Court's reversal of *Roe v. Wade* with *Dobbs v. Jackson Women's Health Organization*, have criminalized abortion access.[36]

What else? The state has access to our browsing history without a warrant, and with the growing obsolescence of cash, the state has access to every purchase we make. And all of this is before we get to the technology that the state employs once it really gets going. For years now, states have deployed predictive policing technology – essentially data analytics – to "anticipate, prevent and respond more effectively to future crime."[37] It is not quite on the level of the precrime depicted in the film *Minority Report*, but still. The use of technology then continues when the state makes an arrest, whatever the arrest is for, whether it's for DUI or selling drugs or tax evasion or something else. More and more states are using pretrial risk assessment algorithms to "assist" with bail determinations. And sentencing determinations. It is not hard to imagine, once comfortable with the use of AI to help determine bail and sentencing, that we might use it to help determine guilt itself, a possibility to which the Court's recent decision in *Diaz v. United States* potentially opens the door.[38] And very little of generative AI is transparent or accessible; instead, much of it is "black box" technology, protected by trade secrets such that the state itself may never understand how it works. To make matters worse, all of this technology has troubling race effects. There is reason sociologist Ruha Benjamin coined the phrase the "New Jim Code" to highlight how so much of the current technology perpetuates inequality.[39] Indeed, it may even exacerbate it.[40]

So, now: I offer our turn to policing technologies as something that may haunt future generations. I imagine them looking back at all the red flags at every turn, wondering how we didn't see them. All the alarms going off, and they will wonder how we didn't hear them. Because certainly there have been red flags and alarms about so much when it comes to technology. The end of privacy. The inaccuracy. The perpetuation and calcification of biases.

Except I suspect our descendants, looking back, will also see what I've argued in my own work on Afrofuturism: that it isn't technology that was the real problem. After all, a "core tenet of Afrofuturism is that we embrace technology, especially technology that can disrupt hierarchies and contribute to the public good."[41] Think of the vibranium in *Black Panther,* and the way Shuri, Black Panther's sister, champions technology.[42] Or think of Earthseed in *Parable of the Talents*, which encourages "technological creativity."[43] Indeed, it is useful to remind ourselves that Blacks not only come from "sturdy, peasant stock" and a "long line of great poets," if I may borrow from James Baldwin, but also from a long line of inventors and technologists.[44] The problem has always been us writ large. Us as a society. This is especially true when it comes to technology and the perpetuation of biases. Indeed, AI should really be thought of as the laundering of biases – bias in, bias out – since the transfer of biases to AI also functions to relieve us of responsibility for biased outcomes. A way to wash our hands and say, "It's not us. It's the machines."

I suspect our descendants will look back and wonder how different things might have been had technology been democratized, as my friend Ngozi Okidegbe advocates for in her work on the racially inequitable outcomes in pretrial risk assessment algorithms.[45] How might the arc of justice have bent quicker had those who experience the brunt of policing had a say in what technology they wanted? What technology would benefit them? I have already suggested ways in my own work to harness technology to reduce crime and deracialize policing, and even aid in reducing police violence.[46] But these are just my musings. What harm-reduction and equality-furthering technologies might have been created had there been more diverse people at the table saying what technology would benefit them, and how technologies could be "appropriated and reimagined for more liberatory ends"?[47] Even better, if they had the tools to create new technologies themselves? How might things have been different had people of color and those currently in the bottom quartile socioeconomically not just been the objects of technology but its wielders, able to code, record, and drop a remix?

Except even as I write this, I wonder if I am being too narrow in postulating that our descendants will look back at this moment in time and be haunted by the decisions we made, or more specifically allowed to be made, with respect to policing technologies. Maybe they will view the problem with technology as closer to home, indeed in the home. Recently, I was listening to a podcast interview with the writer Zadie Smith, in which she lamented the way smartphones, social media, and the internet have "modified" and "captured" us in a way that is totalizing. She asked what happens when everyone is glued to their phones. When their consciousness is "colonized." What happens to our ability to focus or attend? I think of myself as a writer. Zadie Smith asks, are we losing readers as people develop shorter attention spans?[48] So perhaps I am getting everything wrong by focusing on policing technologies. But allow me to return to policing, an area I know best.

Thompson asks, "How will we think about the past in the future?" But of course, the question invites its counterpart: How should we in the present think about the future? Part of my work has been about imagining a better future, and one full of brighter suns. As Octavia Butler once wrote, "There is nothing new / under the sun, / but there are new suns."[49] There is an Afrofuturist future "where white supremacy holds no power," and where hierarchies based on race, gender, sexuality, and class have been eradicated.[50] Central to my imagining has been technology, especially in the area of policing. But more recently, I have begun to think even more ambitiously, specifically about Afrofuturism's conception of time. I have been thinking that, just as we made race and erected scaffolding to maintain it – through slavery, anti-miscegenation laws, Jim Crow laws – we can also bend time to unmake race if we choose. To strip race of its power to trick us into beliefs about value and character and intellectual ability and athletic ability and notions of superiority and inferiority and difference. That is what I have been thinking about recently. About using Afrofuturism to finally escape from the labyrinth of racial thinking, a labyrinth that after all was manmade, a labyrinth that even if it seems to "go endlessly along its twisting paths," in fact, has an exit.

The question for all of us is what we can do now – with respect to technology, with respect to everything – to map a way to a more emancipatory future, keeping our North Star in sight so we don't lose track and so we recognize wrong turns. How can we think about technology today so we can escape the labyrinth of the present while also being cognizant of technology's dangers, so we in fact escape rather than plunge to our deaths? And since the goal for many of us is a world where race is celebrated, but comes with neither a tax nor a privilege, how do we imagine technologies now that can make that happen? As we turn toward creating more AI and eventually a race of machines, might that help us rethink race itself, and its very constructedness? Throughout it all, how do we, like Sankofa, go forward while looking backward at the same time? How do we, knowing that what we do today will impact the world tomorrow, strive for a better world? These are the challenges. Which is one reason I want to end with the words of Angela Y. Davis, another honorary Afrofuturist, who famously said in a 2014 lecture at Southern Illinois University, "You have to act as if it were possible to radically transform the world. And you have to do it all the time."[51]

ABOUT THE AUTHOR

Bennett Capers is the Stanley D. and Nikki Waxberg Chair, Professor of Law, Associate Dean for Research, and Director of the Center on Race, Law, and Justice at the School of Law at Fordham University. He is the author of a forthcoming book about prosecutors, *The Prosecutor's Turn*, and the editor of *Criminal Law: A Critical Approach* (with Roger A. Fairfax, Jr. and Eric J. Miller, 2023), *Critical Race Judgments: Rewritten U.S. Court Opinions on Race and Law* (with Devon Carbado, R. A. Lenhardt, and Angela Onwuachi-Willig, 2022), and *Feminist Judgments: Rewritten Criminal Law Opinions* (with Sarah Deer and Corey Rayburn Yung, 2022).

ENDNOTES

[1] Patricia Williams, *The Alchemy of Race and Rights* (Harvard University Press, 1991), 3.

[2] Mark Dery, "Black to the Future: Interviews with Samuel R. Delany, Greg Tate, and Tricia Rose," in *Flame Wars: The Discourse of Cyberculture*, ed. Mark Dery (Duke University Press, 1994), 180.

[3] Ibid.

[4] I. Bennett Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," *New York University Law Review* 94 (1) (2019): 113; and Amah-Rose McKnight-Abrams, "The New Afrofuturism," *Vice: Garage*, February 9, 2018, https://web.archive.org/web/20230804050738/https://garage.vice.com/en_us/article/437wq3/the-new-afrofuturism.

[5] Carol J. Greenhouse, *A Moment's Notice: Time Politics Across Cultures* (Cornell University Press, 1996), 20.

[6] For "a linear system of time to mark progress," see Tinesha Zandamela, "'There Are [Disabled] Black People in the Future,'" *Georgetown Law Journal* (forthcoming 2025). For "colonial time," see Folúkẹ́ Adébísí, "Black/African Science Fiction and Imaginative Resistance," in *Cultural Legal Studies of Science Fiction*, ed. Alex Green, Mitchell Travis, and Kieran Tranter (Routledge, 2024), 62–63.

[7] Juliana Hu Pegues, *Space-Time Colonialism: Alaska's Indigenous and Asian Entanglements* (University of North Carolina Press, 2021), 12–13.

[8] Zandamela, "'There Are [Disabled] Black People in the Future.'"

[9] Rasheedah Phillips, "Race Against Time: Afrofuturism and Our Limited Housing Futures," *Critical Analysis of Law* 9 (1) (2022): 16.

[10] I. Bennett Capers, "Afrofuturism and the Law: A Manifesto," *Georgetown Law Journal* 112 (6) (2024): 1368.

[11] For a summary of the novel, see Folúkẹ́ Adébísí, "Black/African Science Fiction and the Quest for Racial Justice Through Legal Knowledge: How Can We Unsettle Euro-Modern Time and Temporality in Our Teaching?" *Law, Technology and Humans* 4 (2) (2022): 32–33.

[12] Ibid., 27.

[13] Paul Gowder, "Constitutional Sankofa," *Georgetown Law Journal* 112 (6) (2024): 1437.

[14] Ibid.

[15] Paul Gowder, *Constitutional Democracy for Time Travelers: A Critical Race Afrofuturist Manifesto* (Cambridge University Press, forthcoming 2026).

[16] See U.S. Const. art. I, § 2, cl. 3, amended by U.S. Const. amend. XIV, § 2, which apportions representatives to the states based on "the whole Number of free persons" and "three fifths of all other Persons."

[17] Toni Morrison, *Playing in the Dark: Whiteness and the Literary Imagination* (Vintage Books, 1992), 6.

[18] Akil Reed Amar, "The Troubling Reason the Electoral College Exists," *Time* magazine, November 8, 2016 (updated October 29, 2020), https://time.com/4558510/electoral-college-history-slavery.

[19] Judith N. Shklar, *American Citizenship: The Quest for Inclusion* (Harvard University Press, 1991), 287.

[20] *Dred Scott v. John F. A. Sandford*, 60 U.S. 393, 407 (1856).

[21] *Homer A. Plessy v. John H. Ferguson*, 163 U.S. 537, 537–538 (1896). See also at 552 (John Marshall Harlan, dissenting).

[22] Doug Irving, "What Would it Take to Close American's Black-White Wealth Gap," RAND, May 9, 2023, https://www.rand.org/pubs/articles/2023/what-would-it-take-to-close-americas-black-white-wealth-gap.html.

[23] Saidiya Hartman, *Lose Your Mother: A Journey Along the Atlantic Slave Route* (Farrar, Strauss and Giroux, 2007), 6.

[24] Kendall Thomas, "The Eclipse of Reason: A Rhetorical Reading of *Bowers v. Hardwick*," *Virginia Law Review* 79 (7) (1993): 1806–1807.

[25] Derrick Bell, "The Supreme Court, 1984 Term, Foreword: The Civil Rights Chronicles," *Harvard Law Review* 99 (4) (1985): 4–83.

[26] Frank B. Wilderson III, *Afropessimism* (Liveright Publishing Corporation, 2020).

[27] W. E. B. Du Bois, *The Souls of Black Folk* (A.C. McClurg & Co., 1903), 1.

[28] Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," 157.

[29] Ovid, *Metamorphoses*, trans. David Raeburn (Penguin Books, 2004).

[30] Manuela López Ramírez, "Icarus and Daedalus in Toni Morrison's *Song of Solomon*," *Journal of English Studies* 10 (2012): 105.

[31] Edith Hamilton, *Mythology* (Little, Brown and Company, 1942), 151.

[32] Ibid.

[33] Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," 138; Cara Buckley, "Downtown Surveillance Network Proceeds," *The New York Times*, July 9, 2007, https://www.nytimes.com/2007/07/09/nyregion/09ring.html; and Lynn Neary, "Surveillance Cameras Draw Mixed Reaction in DC," NPR, April 13, 2008, https://www.npr.org/2008/04/13/89598503/surveillance-cameras-draw-mixed-reaction-in-dc.

[34] *Radiolab*, podcast, season 13, episode 14, "Eye in the Sky," NPR, June 18, 2015, http://www.radiolab.org/story/eye-sky; and Craig Timberg, "New Surveillance Technology Can Track Everyone in an Area for Several Hours at a Time," *The Washington Post*, February 5, 2014.

[35] *David Leon Riley, Petitioner v. California; United States, Petitioner v. Brima Wurie*, 573 U.S. 373 (2014) changed a long-standing precedent that had permitted unfettered searches incident to arrest to exclude smartphones.

[36] *Jane Roe, et al. v. Henry Wade, District Attorney of Dallas County*, 410 U.S. 113 (1973); and *Thomas E. Dobbs, State Health Officer of the Mississippi Department of Health, et al. v. Jackson Women's Health Organization, et al.*, 597 U.S. 215 (2022).

[37] Beth Pearsall, "Predictive Policing: The Future of Law Enforcement?" *NIJ Journal* 266 (2010): 16, https://www.ojp.gov/pdffiles1/nij/230414.pdf.

[38] Diaz was found guilty of importing drugs from Mexico to the United States following testimony from a Homeland Security agent who said most couriers carrying large amounts of substances (Diaz's car had over fifty-four pounds of methamphetamine) are aware they are transporting drugs. Diaz appealed, but the Court affirmed that the agent's general knowledge could be applied to Diaz's situation. Could the "general knowledge" of AI models be applied in the same way? *Delilah Guadalupe Diaz v. United States*, 602 U.S. ___ (2024).

[39] Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Polity Press, 2019).

[40] Lorena O'Neil, "These Women Tried to Warn Us about A.I.," *Rolling Stone*, August 12, 2023, https://www.rollingstone.com/culture/culture-features/women-warnings-ai-danger-risk-before-chatgpt-1234804367.

[41] Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," 142.

[42] For example, when Agent Ross seems surprised that his bullet wound has healed and notes that bullet wounds "don't just magically heal overnight," Shuri responds, "They do here, but not by magic, by technology." Ryan Coogler, dir. *Black Panther* (Marvel Studios, 2018).

[43] Octavia Butler, *Parable of the Talents* (Seven Stories Press, 1998), 340.

[44] James Baldwin, *The Fire Next Time* (Dial Press, 1963), 10.

[45] Ngozi Okidegbe, "To Democratize Algorithms," *UCLA Law Review* 69 (6) (2023): 1688–1743.

[46] Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044."

[47] Ruha Benjamin, "Introduction: Discriminatory Design, Liberating Imagination," in *Captivating Technology: Race, Carceral Technoscience, and Liberatory Imagination in Everyday Life*, ed. Ruha Benjamin (Duke University Press, 2019), 4.

[48] "Zadie Smith on Populists, Frauds and Flip Phones," *The Ezra Klein Show*, September 17, 2024, https://www.youtube.com/watch?v=id_k43ZU8t4.

[49] On the discovery of Octavia Butler's unpublished manuscript *Parable of the Trickster* and its epigram, see Gerry Canavan, "'There's Nothing New / Under the Sun, / But There are New Suns': Recovering Octavia E. Butler's Lost Parables," *Los Angeles Review of Books*, June 9, 2014, https://lareviewofbooks.org/article/theres-nothing-new-sun-new-suns-recovering-octavia-e-butlers-lost-parables.

[50] Aissa Dearing, "Going 'Black to the Future,'" *JSTOR Daily*, April 4, 2024, https://daily.jstor.org/going-black-to-the-future.

[51] Quoted in Dorothy E. Roberts, "The Supreme Court, 2018 Term–Foreword: Abolition Constitutionalism," *Harvard Law Review* 133 (1) (2019): 3.

Back to the Future for Taxation

Ameek Ashok Ponda

Taxation is an art, not a science, of measuring and auditing. Faced with the challenge of putting machine labor on a level playing field with human labor, the two leading forms of twentieth- and early twenty-first-century taxation, income taxation and general consumption taxation, were wrecked at their roots. What emerged from that wreckage was a return to historic norms: a series of excise taxes and charges, but this time with the avowed and focused purpose of not only raising revenue but also pricing and internalizing otherwise externalized harms to the self and to the biosphere.

From our vantage today in 2075 CE, it seems odd that the twentieth and early twenty-first centuries relied so heavily on income and general consumption taxes, as these were not extensively used in the centuries preceding. Our late twenty-first century thus represents a return to historic norms in our reliance on a broader array of taxes, though they are now designed to protect and harmonize with human health and planetary ecology, while at the same time affording human labor and human intelligence a level playing field with machine labor and machine intelligence. Although we all lived through this philosophical shift in taxation theory, it is useful to remember how we arrived at today's taxation paradigms.

The reason we have taxes (the why) is certainly simple enough: first, to raise money for the common good (or as others have phrased it, "to pay the Debts and provide for the common Defence and general Welfare," that is, to pay for guns and for butter, to render unto Caesar); and second, to discourage the taxed activity or item, perhaps as a theoretical or practicable alternative to direct regulation.[1] Once one understands the why, the formalities of taxation then revolve around some basic, fundamental choices – the interrogatives of taxation:

- *What* do we tax? (Income, consumption, wealth, imports, exports, extractions, pollution, sinful behavior?)
- *Whom* do we tax? (Citizens, residents, married couples, households, businesses, religious institutions, charitable institutions?)
- *When* do we tax? (Upon accrual, upon realization of cash, upon sale, upon use, weekly, monthly, annually, upon a particular event such as death or in-

https://doi.org/10.1162/DAED.a.5

heritance or importation, upon completed construction, upon extraction, upon release of pollutants?)

- *How much* is taxed? (The amount consumed, the amount earned, the amount spent, the value of the import, the amount of CO_2 released into the atmosphere to produce that import?)
- *How* do we tax? (Central assessor, self-assessment, withholding agent?)
- *Where* do we tax? (Source, residence, allocation to a jurisdiction, apportionment among jurisdictions?)

In the abstract, answering the above questions is perhaps limited only by imagination. There have been taxes on such items and activities as dance halls, number of windows in residential mansions (as a proxy for size of home and/or conspicuous consumption), and tattoos and piercings.[2] One twentieth-century science fiction humorist even posited a tourist planet of the future, where billions of visitors gained so much weight on holiday that, collectively and over the years, they left the beautiful planet itself measurably lighter (less mass) upon their departure. Facing dire consequences, planetary authorities had to do something to arrest the systemic removal of needed mass: a departure "tax" on tourists' incremental weight gain, presumably both to discourage overeating and to compensate for importing off-world mass to replenish the planet.[3] Perhaps a "pound of flesh" should not and cannot serve as a forfeiture penalty in a commercial contract, but it can be the basis for taxation![4]

In practice, however, designing a tax system is constrained by the kinds of data that can be assembled, measured, and audited. As an early maestro of taxation and public finance once observed: "The art of taxation consists in so plucking the goose as to obtain the largest possible amount of feathers with the smallest possible amount of hissing."[5] But, for all the theoretical capaciousness of taxation, the twentieth and early twenty-first centuries settled on two preferred modes of taxation almost to the abandonment of all other forms: income taxes and general consumption taxes.[6] For a time, then, dormant were the arts of taxation as behavioral nudges or regulatory disincentives, or even of taxation as drawing from diversified sources.[7] This impoverishment of taxation flowed principally from just a handful of root causes.

First, income taxes and general consumption taxes were wildly successful in raising revenue, and revenue to pay for the burgeoning nation-states (and their expanding military and social justice ambitions) became the premier imperative, with taxation simply the handmaiden for this larger, greater cause. There is a compelling thesis that, as a nation-state and its economy emerge, the government sector grows faster than the overall economy, first with military expenditures and next with social spending growing even faster than overall government expenditures.[8] (This, of course, is a bounded thesis, true perhaps for a duration of time at a country's nascen-

cy, in that, by definition, nothing save technology can grow exponentially forever at higher growth rates than its overall environment; the plateau comes for us all.)[9] One studied observer of late twentieth-century American political economy quipped: "Liberals think [a value added tax or "VAT," the leading form of general consumption taxes, is] regressive and conservatives think it's a money machine," and thus the United States may one day enact a VAT when they reverse their positions.[10]

Second, the West waged and then decisively won the Cold War, and in its campaigns and victory laps around the globe concluded that its habits and choices must be good habits and choices, a "secret sauce," if you will – necessary, sufficient, and universal, for all nations across space and time, for both economic prosperity and political liberty.[11] Younger nations, from Pakistan to Tanzania to Croatia to South Sudan, readily or reluctantly agreed, and so both the Cold War victors and their protégés signed on to the replication – nay, mass production – of this secret sauce, including the heavy reliance on income taxation and general consumption taxation.[12] Today, the Kiplingesque "just so" feel to the secret sauce conclusion seems obvious; but in those heady days of Cold War victory and ensuing global victory laps, the "just so" conclusion was so correct that it was barely possible to fathom a different syllogism.[13]

Third, there is a propensity to stick with the known, particularly if (like income taxes and general consumption taxes) they are money-making machines: if it ain't broke, don't fix it. And, for a long time, income taxes and general consumption taxes were not really broken.

We tax what we can realistically measure. The income tax in its modern forms arrived toward the end of the nineteenth and beginning of the twentieth centuries, propelled in large part by the conceit that business income (and by questionable extension, personal income) could be reliably compiled, measured, and audited.[14] This reminds one of the "streetlight effect," also known as the "drunkard's search principle." In the modern telling, a man at night frantically, perhaps drunkenly, searches for his lost keys under a lamppost at the edge of an unlit park.[15] A vigilant constable passes by and asks the man how long ago he lost his keys near the lamppost. The man replies that he lost his keys some hours ago, inside the park during daylight, but that he is searching now under the lamppost at night, outside the unlit park, because the light is better over here. And so it is with measurement: sometimes we measure what is easy enough, what is within the realm of the possible, what we think we know, not because it is correct in any idealistic sense but because it is achievable. As they say, and as is literally true in this case, it is "good enough for government work."[16]

Before income taxes were part of the secret sauce, and perhaps in an attempt to thwart widespread adoption, an early scholar warned that "income" is an irredeemably vague, subjective concept, full of "conundrums" (specifically, bound-

ary problems).[17] What to do regarding goods and services produced within the household for consumption by that household (like making dinner for the family, helping kids with their homework, growing fresh vegetables in one's own garden, or shoveling snow from one's driveway)? What of the annual imputed rental income from personal capital expenditures (like one's home or one's car)? What of personalized, noncash perks (or pitfalls) from employment or self-employment (like working as the personal assistant to the famed Miranda Priestly, something that assistant Emily valued but assistant Andrea did not)?[18] Are government services received a form of consumption and income? Are taxes paid over to government (particularly state and local government) a form of consumption expenditure to live in a better community (that is, nondeductible in an income tax)? While these entrenched conundrums are insoluble and thus persist in all income taxes, income taxation was nevertheless simply too much of a money-making machine to be ignored by the rising, ambitious nation-states of the nineteenth and twentieth centuries. Render unto Caesar.

Of more recent origin was the invoice-based, valued added tax (VAT), the world's leading form of general consumption taxation.[19] Essentially a post–World War II phenomenon, the VAT started as a successful attempt to rationalize the hodgepodge of *ad hoc*, turnover and excise taxes that preceded it. (As an example of the hodgepodge, recall these classic Beatles lyrics: "If you drive a car, I'll tax the street; if you try to sit, I'll tax your seat; if you get too cold, I'll tax the heat; if you take a walk, I'll tax your feet . . . 'Cause I'm the Taxman, yeah, I'm the Taxman.")[20] But the real genius of the VAT was its ability to put (if desired) all different kinds of personal consumption on a level playing field and its solution to the problem of "cascading," as follows. From the vantage point of a consumption tax, the proper base for taxation is personal consumption by consumers (not activities of or income of a business); thus, any *ad hoc* excise taxes imposed on business or business transactions must be recovered or credited by the businesses in some way (or, alternatively, limited to the proper layer of consumption value generated by that business for the ultimate consumer in the consumer supply chain), lest that imposed tax gets trapped in the supply chain as an artificial business production cost at each level of business production. For example, with regard to the farmer who grows wheat, the miller who mills that wheat into flour, and the baker who bakes that flour into bread for consumers, VAT paid by these businesses at each step of the consumer supply chain must be recovered within the business sector (or, equivalently, be limited to the layer of consumption value generated by these businesses), such that when the consumer finally consumes (that is, buys the bread), there has not been unrecovered tax-upon-tax-upon-tax-upon-tax (known as cascading) along each step of business production in the consumer supply chain.

But for all its genius, the VAT suffers from the same ingrained conundrums as the income tax. Indeed, in that income is typically and tautologically defined as

consumption plus changes in net savings, and the foregoing income tax conundrums center largely around what is (or is not) consumption and when and where said consumption happens, the above conundrums plague a consumption tax just as much as they plague an income tax. Particularly telling is the boundary problem between consumption versus operating expenses and investment: for instance, is that academic conference in a sunnier clime part of the job description, or is it (at least in part) a form of consumption? But as with the income tax, so too with the VAT: definitional imprecision and measurement infirmities notwithstanding, a money-making machine is hard for ambitious nations to abjure.

Once entrenched, the money-making machines of income taxation and general consumption taxation became essential ingredients of the West's secret sauce, and scholars and governments naturally focused on refining, broadening, and comparing the two money-making machines.[21] What are the linkages between an income tax and a consumption tax? Which would be fairer? Which would be more administrable? Which leads to fewer distortions? When does a consumption tax equate to a wage tax? When does an income tax equate to a wealth tax? How can the base of a tax be broadened, thus achieving the Platonic ideal of making the applicable tax base as comprehensive as possible (in contrast to leaving "loopholes" untouched)? Indeed, one particularly robust and entertaining scholarly debate focused on whether horizontal equity ("those with the same amount of income or consumption, as applicable, should pay the same amount of tax") is an independent, normative principle or is instead entirely derivative of the normative principle of vertical equity ("those with more should pay more tax").[22]

Outside the scholarly realm, the compare-and-contrast of income taxation and general consumption taxation seemed to some as, well, academic. For most of the world's population in the twentieth and early twenty-first centuries, lifetime consumption was very close to lifetime income, and often very substantially ahead of lifetime income, requiring redistributive transfer payments from government to help people bridge the difference and make ends meet. In such cases, a debate between income tax and consumption tax can seem misfocused, for if the excess of consumption over income were taxable, that would simply require even larger redistributive transfer payments to cover the increased tax burden on the excess. For those lucky enough to have lifetime income that exceeded their lifetime consumption needs, in most cases the excess was modest, again making a debate between the two tax bases somewhat academic. Only at the very top end of society, where both income and consumption were staggering, might there be an impactful debate over the two competing tax bases of income versus consumption.

In the end, taxation is about measurement, and a century or two of tax administration and scholarship had shown that measurements are inherently imprecise: for when even mathematics (Gödel's Incompleteness Theorems) and

the physical sciences (Heisenberg's Uncertainty Principle) must accede to limits on knowledge, it is small wonder that a human construct like taxation has limits on both accuracy and precision. More fundamentally, however, the century or two of tax administration and scholarship had shown that, even in practice and not just in theory, the ideal of a comprehensive tax base was itself a false idol. To wit, "income" and "consumption" are not so much Platonic ideals elusive to feasible measurement as they are fluid social constructs of policies and choices, reflecting embedded judgments about what can and cannot, and what should and should not, be taxed.[23] In the end then, income and consumption are whatever a particular society (in time and place) defines them to be, for a normal baseline is in the eye of the beholder: one person's perception of an anomaly (a "loophole") from an idealized norm of "income" (or "consumption") is for another person just part of the ideal definitional baseline.[24]

Funny enough, late twentieth-century scholars and practitioners thought it would be the taxation of financial income, rather than other irredeemable definitional vagaries in the two leading tax systems, that would force change. Like their coreligionists a century earlier, some saw the difficulty in taxing financial income as so challenging that it argued for abandoning an income tax in favor of a general consumption tax.[25] In retrospect, the Cassandras were mistaken, for measuring and taxing financial income proved a much easier task than differentiating consumption from expenses and investment.

This false emergency regarding financial income started with some rather simple propositions. In many worldwide income tax systems, so-called classical systems, debt was taxed differently than equity – the first giving rise to deductible interest payments and the latter giving rise to nondeductible yield payments. But from a finance or economics perspective, debt and equity are not discrete concepts with a crisply demarcated boundary line, but rather a spectrum of financial priorities and claims against a particular financial balance sheet. Thus, taxing debt and equity so differently was tantamount to taxing red, green, and violet as though each color were something definitively demarcated rather than a soft milestone along a single, indivisibly continuous color spectrum upon which one color bleeds gently into the next. Soon enough, scholars concluded that debt versus equity was not so much a measurement problem in an income tax, but rather a coordination problem between corporate business income (the corporate income tax) and personal household income (the personal income tax). Framed as a coordination problem (known as "integration"), scholars then offered a variety of solutions, if legislators should want one; many legislatures declined the offer from academia, and so perhaps the problem was not as pressing as some thought it to be.[26]

Next came a more serious challenge to taxation of financial income: the "realization" requirement started to look increasingly outdated. Realization demands

that an asset must be sold, typically for cash, for the income therefrom to be properly measured – as opposed to measuring the income if, as, and *when* the asset appreciates in value in the hands of its owner. [27] (To be fair, where it applies, the realization requirement represents a fundamental challenge in taxing not only financial income, but also in taxing income from appreciating real assets such as real estate, precious metals, artwork, and so on.) Because of the very valuable opportunity to defer paying taxes on income until the same was realized, one twentieth-century scholar labeled the realization requirement as the "Achilles' heel" of the income tax.[28] (Many years later, the U.S. Supreme Court of the early twenty-first century all but enshrined this Achilles' heel as a constitutional principle that could not be compromised, rather than a mere statutory framework that the U.S. Congress could change.)[29] In any event, the realization requirement, and the concomitant challenge to measuring and taxing financial income, were very real issues but, like debt versus equity, were also very solvable and therefore not existential to the continuing viability of the income tax as a money-making machine for government. By simply taxing realized gains with an "interest charge" for the holding period of deferral – something that tax scholars call "retrospective taxation" – the problem is sufficiently (albeit crudely) solved.[30] Good enough for government work, render unto Caesar continued to prevail.

What finally broke the income and consumption tax systems was machine labor – both physical and mental, and of sufficient quantity and quality – advanced to the point at which very little space remained for human capital (physical or mental) to compete directly and effectively with tax-advantaged machine capital.

Computer scientists defined (then, as now) artificial general intelligence as the inflection point at which machine artificial intelligence equals or surpasses human intellectual capabilities across a wide range of cognitive tasks. But the income and consumption tax inflection point, of course, came much sooner: the point at which machine capital and human capital were such close substitutes (in terms of mobility and cognition) that it was simply unfair to give machine capital a tax advantage over human capital, and it became necessary to tax human capital on a par with machine capital. Indeed, some of today's economic historians contend that this inflection point arrived much sooner than is generally appreciated, that we tax-advantaged machines over *unskilled* human capital very early on (thus contributing to inequality), but that the phenomenon of tax-advantaging machines over humans was not sufficiently noticed, appreciated, or politicized until the impact on *skilled* human capital became painfully obvious.[31]

In essence, a level playing field between machine labor and human labor compels – nay demands – a level playing field between man and machine when it comes to food, shelter, clothing, education, medicine, cosmetics, and even re-

tirement and death. If electricity (or the assets that create it and transmit it) is a deductible expense for machinery, then so too should food be a deductible expense for human capital; if a building is deductible for housing machinery, then so too should a personal residence be deductible for housing human capital; if a waterproof tarp or an electromagnetic shield is a deductible expense for machinery, then so too should a raincoat (and clothing generally) be a deductible expense for human capital; if operating systems and software upgrades are a deductible expense for machinery, then so too should primary, secondary, and continuing education be a deductible expense for human capital; if an oil change or maintenance inspection is a deductible expense for machinery, then so too should vitamins, allergy shots, and annual physicals be deductible expenses for human capital; if refurbishing a smart building is a deductible expense for machinery, then so too should hair coloring, braces, rhinoplasty, knee and hip replacements, gender-affirming surgery, and (obviously) cybernetic implants be deductible expenses for human capital; if decommissioning and disposal costs are a deductible expense for machinery, then so too should retirement and burial costs be deductible expenses for human capital.[32]

Once the playing field was leveled in this way, at first gradually but then more vigorously, deductible operating expenses for human capital swallowed nearly the entire consumption tax base such that there was not much left to tax, save excessively conspicuous consumption (which is typically the province of a very small portion of the population that could be reached more directly with luxury taxes).[33] For the income tax, the situation became similarly bleak: because the income tax base (by definition) equals the consumption tax base plus net savings (with consumption representing the lion's share), hollowing out the consumption portion of the income tax base left for taxation only excessively conspicuous consumption (luxury) and net savings. This in turn prompted two questions: First, what is so peculiar or wrong with saving such that it should be taxed (and thus concomitantly disincentivized)? Second, to paraphrase one contemporary scholar's incisive assessment of early twenty-first-century taxation, why do we require so many unnecessary tax returns when we are taxing only a very small, upper echelon of the population that has that level of conspicuous consumption and savings?[34]

Sometimes, with enough time, the iconoclasts become the icons. Luddites never succeed in rolling back technological progress, but their intellectual heirs, with much justification, insisted on a leveled taxation playing field for both man and machine. As we now know, this leveling, combined with the unsolvable and ingrained conundrums that were the true Achilles' heel (rather than realization), wrecked and rolled back the money-making machines of income taxation and general consumption taxation.

In that wreckage of the collapsed money-making machines, there came a return to basics and a focus on taxes as a toolkit for both raising revenue and mit-

igating harm. Once most consumption could not be taxed on account of the leveled playing field principle – leaving savings subject to tax, but why should it be a sin to save rather than consume? – there was renewed focus on what can be measured, what should be taxed, and what might raise enough revenue to pay for government.

Excepting occasional populist VAT-zero-rating (that is, a tax rate of 0 percent for consumer basics such as food and clothing), the twentieth- and early twenty-first-century income and consumption taxes were obsessed with broadening the base and treating different forms of consumption/income on a par with all other forms of consumption/income. In other words, very unlike today, the level playing field of that era was envisioned as "all forms of consumption are equal in a consumption tax" and "all forms of income (and the consumption component thereof) are equal in an income tax." Thus, in general, progressivity back then (and there was much of it) came from the *amount* of income and consumption – with higher rates applying to higher levels of income and consumption – but not the *type* of income or consumption.

Yet, in terms of personal health or biosphere impact, not all forms of consumption and income are equal: eating an apple is not the same as eating a steak; drinking some water is not the same as drinking some whiskey; wearing cotton is not the same as wearing polyester; buying and using a bicycle is not the same as buying and using a motorcycle; planting renewable crops is not the same as felling a tree; producing glass and paper is not the same as producing plastic. Because we needed something new to tax, why not tax the things that are most harmful to our environment and ourselves, as a way of both raising revenue and nudging us away from the harmful and toward the beneficial?[35] Thus, what emerged from the wreckage of income taxation and general consumption taxation was a series of excise taxes and charges, with the avowed and focused purpose of not only raising revenue but also pricing and internalizing otherwise externalized costs. Today, we now see these nudges as the definitive form of leveling the playing field: that is, forcing both consumers and producers to internalize the harms – pollution, overfishing, deforestation, poor personal health choices, and so on – inflicted upon self or upon planet, and not otherwise priced or paid for sufficiently by the private markets. In short, our era's solution to the tragedy of the commons is to tax the use of the commons.[36]

Taxation scholars of the twentieth and early twenty-first centuries had long propounded these kinds of sin taxes (sinning against ourselves, sinning against the biosphere), and generations of idealistic students and scholars advocated for them vigorously.[37] But not until the money-making machines of income taxation and consumption taxation were wrecked did we come full circle to systems of taxation that consigned particular activities and items (but not others) to taxation,

something once derided as *ad hoc* and hodgepodge when income taxes and general consumption taxes (and their elusive, false idol of a comprehensive tax base) were ascendant.[38] With sins and sin taxes as our new polestar, we now tax more conceptually (and, for our time, more properly): first, taxing the "end user" committing (or, perhaps, who could have least-cost avoided) the sin, such that the "end user" today can be either a business (as the issue of cascading is not relevant once a personal consumption tax base is abandoned) or a natural person; and second, taxing at a particularized tax rate for the externality so as to price properly the otherwise externalized harm to ourselves and our biosphere. Again, the timeless fundamentals of taxation demand that something can be measured and audited for it to be taxed effectively. So, even today, in the late twenty-first century, we do not live in a world where every harmful activity and item is adequately taxed (or even taxed at all) as a way of internalizing the externality, but we have made enormous progress in that direction. *Lord, we ain't what we oughta be. We ain't what we want to be. We ain't what we gonna be. But, thank God, we ain't what we was.*[39]

ABOUT THE AUTHOR

Ameek Ashok Ponda is a Tax Law Partner with Sullivan & Worcester LLP, Boston, Adjunct Professor of Law at the Boston University School of Law, Lecturer on Law at the Harvard Law School, Board Chair at Tax Analysts (publisher of the *Tax Notes* series of periodicals), and Vice President of the American College of Tax Counsel. His future self, with the benefit of fifty years of hindsight, authored this piece in 2075 CE during a snowy week in Stowe, Vermont.

ENDNOTES

[1] U.S. Const., art. I, § 8, cl. 1; and Matthew 22:21 (KJV). For insight into how seriously Caesar and his deputies took tax collection, see Anna Dolganov, Fritz Mitthof, Hannah M. Cotton, and Avner Ecker, "Forgery and Fiscal Fraud in Iudaea and Arabia on the Eve of the Bar Kokhba Revolt: Memorandum and Minutes of a Trial before a Roman Official (P.Cotton)," *Tyche* 38 (2023), https://tyche.univie.ac.at/index.php/tyche/article/view/9224.

[2] Patrick Jarenwattananon, "How Taxes and Moving Changed the Sound of Jazz," NPR, April 16, 2013, https://www.npr.org/sections/ablogsupreme/2013/04/16/177486309/how-taxes-and-moving-changed-the-sound-of-jazz?ft=1; Tax Foundation, "The Weird Way Taxes Impact Behavior" (Tax Foundation, 2020), https://files.taxfoundation.org/20200909103740/The-Weird-Way-Taxes-Impact-Behavior.pdf (accessed December 19, 2024); Arkansas Code Ann. § 26-52-316(a)(6) (2024); and Arkansas Department of Finance and Administration, Agency 006.05, "005-GR-9.10: Services Subject To Tax–Body Piercing, Tattooing, and Electrolysis," in *Arkansas Rules: Gross Receipts Tax Rules;*

Compensating Use Tax Rules (Arkansas Department of Finance and Administration, 2024), 19.

[3] Douglas Adams, *The Ultimate Hitchhiker's Guide* (Random House, 2005), 53.

[4] William Shakespeare, *The Merchant of Venice*, ed. Barbara A. Mowat and Paul Werstine (Folger Shakespeare Library, 2011), 1.3.155–163.

[5] "Jean-Baptiste Colbert," *Oxford Essential Quotations Online*, 6th ed. (Oxford University Press, 2018), https://www.oxfordreference.com/display/10.1093/acref/9780191866692.001.0001/q-oro-ed6-00003123?rskey=upjJvi&result=826 (accessed December 19, 2024).

[6] See generally Ward M. Hussey and Donald C. Lubick, *Basic World Tax Code and Commentary: A Project Sponsored by the Harvard University International Tax Program* (Tax Analysts, 1996); Richard K. Gordon, "Model Codes and Tax Technical Assistance: Note on the Revised Edition of the Basic World Tax Code and Commentary," *Tax Notes International* 12 (1996): 927–935; and Richard J. Vann, "Some Lessons from Hussey and Lubick," *Tax Notes International* 7 (1993): 268–278.

[7] For example, see Ameek Ashok Ponda, "Tax Policy & Reform: Rejecting 'Tax Utopianism' in Favor of 'Tax Diversification,'" presentation at Boston University School of Law, October 11, 2017, https://878449.fs1.hubspotusercontent-na1.net/hubfs/878449/Sullivan_Boston%20University%20Panel%20Active%20Links.pdf; and David Gamage, "The Case for Taxing (All of) Labor Income, Consumption, Capital Income, and Wealth," *Tax Law Review* 68 (2) (2015): 355.

[8] Ludger Schuknecht, "The Growth of Government Expenditure over the Past 150 Years," in *Public Spending and the Role of the State: History, Performance, Risk and Remedies* (Cambridge University Press, 2020), 17–35; and Esteban Ortiz-Ospina and Max Roser, "Government Spending," Our World in Data, October 2016, amended 2023, https://ourworldindata.org/government-spending (accessed December 19, 2024).

[9] Herman E. Daly and Joshua Farley, *Ecological Economics: Principles and Applications*, 2nd ed. (Island Press, 2010); and Kate Raworth, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist* (Chelsea Green Publishing, 2017).

[10] Jan M. Rosen, "Tax Watch; the Likely Forms of New Taxes," *The New York Times*, December 19, 1988 (quoting Professor Lawrence Summers, later president of Harvard University); and Ajay K. Mehrotra, "The Missing U.S. VAT: Economic Inequality, American Fiscal Exceptionalism, and the Historical U.S. Resistance to National Consumption Taxes," *Northwestern University Law Review* 117 (1) (2022): 151–190.

[11] Fareed Zakaria, "Are America's Best Days Behind Us?" *Time*, March 3, 2011, https://time.com/archive/6595396/are-americas-best-days-behind-us (quoting historian Niall Ferguson); and Thomas L. Friedman, "The Secret of Our Sauce," *The New York Times*, March 7, 2004.

[12] Eleonor Kristoffersson, "Policy Note: Valued Added Tax as a Legal Transplant," *Intertax* 49 (2) (2021): 186–197; Roel Dom and Mark Miller, "Reforming Tax Systems in the Developing World: What Can We Learn from the Past?" (Overseas Development Institute, 2018), https://www.econstor.eu/bitstream/10419/190850/1/12280.pdf; Patrick Hettinger, "What Can 6 Countries Tell Us About Tax Reform?" Independent Evaluation Group, World Bank Group, August 7, 2023, https://ieg.worldbankgroup.org/blog/what-can-6-countries-tell-us-about-tax-reform-0; and International Monetary Fund, "Developing Capacity in Tax and Customs Administration in South Sudan," https://

www.imf.org/external/np/ins/english/capacity_countries_pf_ssudan.htm (accessed May 28, 2025).

[13] Rudyard Kipling, *Just So Stories* (Wordsworth Editions Limited, 1993). See generally Hussey and Lubick, *Basic World Tax Code and Commentary*; and Leif Mutén, "Export of Tax Systems: Transforming Tax Systems in the Third World," *Tax Notes International* 43 (2006): 53–61.

[14] Sheldon D. Pollack, "Origins of the Modern Income Tax, 1894–1913," *The Tax Lawyer* 66 (2) (2013): 295–330.

[15] The modern tale may stem from medieval Sufi folklore featuring the legendary humorous figure Mulla Nasrudin. See Idries Shah, *The Exploits of the Incomparable Mulla Nasrudin* (Octagon Press, 1983), 9.

[16] Steve Kelman, "Good Enough for Government Work?" Medium, January 3, 2018, https://kelmansteve.medium.com/good-enough-for-government-work-292bbeab8999.

[17] John R. Brooks, "The Definitions of Income," *Tax Law Review* 71 (2018): 253, 259–266 (describing Friedrich von Kleinwächter's Conundrums).

[18] David Frankel, dir., *The Devil Wears Prada* (20th Century Fox, 2006).

[19] Donald J. Marples, *Consumption Taxes: An Overview*, CRS Report R44342 (Congressional Research Services, 2023), https://www.congress.gov/crs-product/R44342; and Robin Cooper Feldman, "Consumption Taxes and the Theory of General and Individual Taxation," *Virginia Tax Review* 21 (2002): 293–360.

[20] The Beatles, "Taxman," by George Harrison, track 1 on *Revolver*, Parlophone, 1966.

[21] See generally Joseph A. Pechman, ed., *What Should be Taxed: Income or Expenditure?* (Brookings Institution, 1980). See also American Institute of Certified Public Accountants, "Tax Reform Alternatives For the 21st Century," Document 2009-23037, *Tax Notes Today*, October 1, 2009.

[22] For a summary of this spirited exchange, see Paul R. McDaniel and James R. Repetti, "Horizontal and Vertical Equity: The Musgrave/Kaplow Exchange," *Florida Tax Review* 1 (10) (1993): 607, 608–613.

[23] For a summary of the pioneering work of Stanley S. Surrey and Paul R. McDaniel, as well as a discussion of the continuing utility of a "normal" baseline, see Leonard E. Burman, "Is the Tax Expenditure Concept Still Relevant?" *National Tax Journal* 56 (3) (2003): 613–628. See also Eric A. San Juan, "The Distributive State and the Function of Tax Expenditures," *The Tax Lawyer* 71 (3) (2018): 673–715.

[24] Staff of the Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2023–2017*, JCX-59-23 (Joint Committee on Taxation, Congress of the United States, 2023), https://www.jct.gov/publications/2023/jcx-59-23.

[25] Joseph Bankman and David Weisbach, "The Superiority of an Ideal Consumption Tax Over an Ideal Income Tax," *Stanford Law Review* 58 (5) (2006): 1413, 1415.

[26] Alvin C. Warren and Michael Graetz, *Integration of the U.S. Corporate and Individual Income Taxes: The Treasury Department and American Law Institute Reports* (Tax Analysts, 1998).

[27] Joint Committee on Taxation, *Present Law and Issues Related to the Taxation of Financial Instruments and Products*, JCX-56-11 (Joint Committee on Taxation, Congress of the United States, 2011), http://www.jct.gov/publications.html?func=startdown&id=4372; and Al-

vin C. Warren, "Financial Contract Innovation and Income Policy," *Harvard Law Review* 107 (2) (1993): 460–492.

[28] William D. Andrews, "The Achilles' Heel of the Comprehensive Income Tax," in *New Directions in Federal Tax Policy for the 1980s*, ed. Charles Edward Walker and Mark A. Bloomfield (Ballinger Publishing Company, 1983), 278, 280.

[29] *Moore v. United States*, 602 U.S. 572 (2024).

[30] Alan J. Auerbach, "Retrospective Capital Gains Taxation," *American Economic Review* 81 (1) (1991): 167–178; Stephen B. Land, "Defeating Deferral: A Proposal for Retrospective Taxation," *Tax Law Review* 52 (1996): 45–117; Internal Revenue Code §§ 453A, 665–668 and 1291 (2025); and Treasury Regulation § 1.1275-4(c) (2025).

[31] Sujoy Ghosh, dir., *Anukul* (Boundscript Motion Pictures, 2017), a short film in Hindi, with English subtitles, based on the prescient, eponymous short story of the same name. See also Satyajit Ray, *The Collected Short Stories*, trans. Gopa Majumdar (Penguin Random House India, 2016), 233–235.

[32] Today's cybernetic implants promise to blur further the remaining distinctions between man and machine, as once predicted by twentieth-century science fiction. See, for example, Paul Verhoeven, dir., *Robocop* (Orion Pictures, 1987); Isaac Asimov, "The Bicentennial Man," in *The Bicentennial Man and Other Short Stories* (Doubleday, 1976), 135; and Harve Bennett, exec. prod., *The Six Million Dollar Man* (ABC, 1973).

[33] Leveling the playing field between man and machine required so much more than a "depreciation" or "depletion" allowance for human capital: it required a fundamental reassessment of what constitutes consumption and (by extension) personal income. But the idea of a tax allowance for human capital, perhaps along the lines of percentage depletion for natural resource exploration (that is, a tax allowance not necessarily limited by tax basis in the human capital), had been posited long, long ago. See, for example, Steven A. Bank, *High Rates and Low Taxes: Tax Dodging in Mid-Century America* (Cambridge University Press, forthcoming), summarizing the congressional testimony of (then) Screen Actors Guild president Ronald Reagan in *Hearing on General Revenue Revisions Before the H. Comm. on Ways and Means*, 85th Cong. 2 (1958) (testimony of Ronald Reagan, Motion Picture Industry Council and Hollywood AFL Film Council). On hormone therapy and sex reassignment surgery as deductible medical care, see Internal Revenue Service, "O'Donnabhain v. Commissioner, 134 T.C. 34 (2010) T.C. Docket No. 6402-06," *Internal Revenue Bulletin* No. 2011-46, November 21, 2011, https://www.irs.gov/pub/irs-aod/aod201103.pdf.

[34] See Michael Graetz, *100 Million Unnecessary Returns: A Simple, Fair, and Competitive Tax Plan for the United States* (Yale University Press, 2008).

[35] Richard H. Thaler and Cass R. Sunstein, *Nudge: The Final Edition* (Yale University Press, 2021). See also Brian Galle, "A Response: What's in a Nudge?" *Administrative Law Review Accord* 3 (1) (2017): 1–19.

[36] Alexandra Spiliakos, "Tragedy of the Commons: What It Is & 5 Examples," Harvard Business School Online, February 6, 2019, https://online.hbs.edu/blog/post/tragedy-of-the-commons-impact-on-sustainability-issues; M. S., "The Irony of the Tragedy of the Commons," *The Economist*, February 24, 2011, https://www.economist.com/democracy-in-america/2011/02/24/the-irony-of-the-tragedy-of-the-commons; and Salvatore Villani and Maria Viscolo, "Taxation of Global Commons as a Tool to Reduce Economic In-

equalities and Strengthen the Resilience of Tax Systems," in *The Palgrave Handbook of Climate Resilient Societies*, ed. Robert C. Brears (Palgrave Macmillan, 2021).

37 For example, see Sean Lowry, *Federal Excise Taxes: An Introduction and General Analysis*, CRS Report R43189 (Congressional Research Service, 2013), https://www.congress.gov/crs-product/R43189; D. Andrew Austin, *Economics of Federal User Fees*, CRS Report R45463 (Congressional Research Service, 2019); Dale Jorgenson, "Time to Tax Carbon," interview by *Harvard Magazine*, September–October 2024, https://www.harvardmagazine.com/2014/08/time-to-tax-carbon; and Jonathan Masur and Eric A. Posner, "Toward a Pigouvian State," *University of Pennsylvania Law Review* 164 (1) (2015): 94–147.

38 That is, pre-twentieth-century modes of taxation have been brought back into our late twenty-first-century present. See Robert Zemeckis, dir., *Back to the Future* (Universal Pictures, 1985).

39 Martin Luther King Jr., "A Promise Unfulfilled," address to the New York State Civil War Centennial Commission, New York City, 1962 (quoting the imperfect grammar but perfect pithiness of a nineteenth-century slave preacher), available at https://www.npr.org/2014/01/20/264226759/a-promise-unfulfilled-1962-mlk-speech-recording-is-discovered.

What Is to Be Done?

Oskar Eustis

This essay offers a view of the American theater, especially the American nonprofit theater, in historical perspective, real and imagined. The essay understands the current state of the American theater as a phase in a 2,500-year history of the Western theater, and sees its present form as a high-priced commodity to be anomalous and contradictory to the goals inherent within the art form. The essay imagines a future world where the current organization of our theater seems strange and inexplicable, and tries to elucidate, for the sake of that imagined audience, how we've ended up here.

If we survive this calamitous century, the time will come when technology lifts Adam's burden. We will no longer require the labor of most of humanity to create abundance for all. Indeed, we are already far down that road. But when productivity is no longer our primary measure of human worth, how will we measure the value of human lives?

There are two wildly divergent answers to this question. Either we will value every human life for itself, without reference to productivity or transactional value, or we will view humans as valueless because they do not or cannot produce, and we will treat them as disposable objects. The first alternative envisions a deeply egalitarian society in which every human being is of equal worth; the second, a ferociously unequal society in which a few hoard the wealth and abundance that could support all. That second, dystopian society would require enormous amounts of violence to control the dispossessed and to police the boundaries between the haves and the have-nots. Socialism or barbarism.

We can more easily imagine the catastrophic future because so many of its features are already taking shape around us: the resurgence of authoritarianism, the exploding inequalities of wealth, the base appeal to tribal identities, nationalism, and state-sanctioned violence. The benign, more utopian future is harder to imagine because it would seem to require so many miracles to come into existence. But as Tony Kushner wrote in *Angels in America*, "only in politics is the miraculous possible."[1] Besides, as artists, it is our job to imagine the not-yet-visible, to conjure the longed-for home. So let us imagine that our species survives and flourishes, which will only happen if we learn to live in deeper equilibrium with each other and with our planet. If we do, we will look back on the first quarter of the twenty-first century with astonishment, dismay, and not a little alarm.

https://doi.org/10.1162/DAED.a.6

Because the theater is my field, let me start there. The future will look back with disbelief on a time when art, indeed almost all the products of culture, were seen not as the common property of humanity, but as commodities to be purchased, available only to those who can afford them. Theater, as an art form, was created to bind communities together. It will seem bizarre that the method we use to distribute theater – selling it – undercuts the very premise of the art form. Our descendants will be able to see clearly our commodification of theater as the historical anomaly it is: for the vast majority of mankind's time on this planet, theater has not been something to be sold. Even during the last four hundred fifty years, when that began to change, the commodification was only partial and contested, ensuring that theater was still something enjoyed by a broad cross section of society.

At its very inception, Western drama was created as a tool to support democracy.[2] Democracy and the theater were created in the same city and in the same decade: Athens, in the last years of the sixth century BCE. Attendance at the Festival of Dionysius was required for all citizens; it was a civic rite, as well as a civic right. It was financed by the wealthy, who were assigned by elected officials the job of paying for and producing the plays. From what we can ascertain, the wealthy were honored and privileged to undertake this task. They understood that it was not only their civic responsibility to use their wealth for the common good, but that doing so added to their own prestige and status.

Attendance was mandatory because the theater was a tool of democracy, teaching the fundamental practices, principles, and beliefs that made democracy possible. Once you accept that power flows from below, that leadership can only come from the consent of the governed, you must reject the idea that there is a singular truth (as there can be in a monarchal or authoritarian system). In all things in life, there are multiple points of view, and the truth emerges from the conflict between them. This is precisely how drama operates. No one can possess the truth in drama or there would be, literally, no drama. The theater teaches us that truth can only emerge from the clash of differing points of view. It also requires that the audience empathize with the different people holding those points of view, coming from often quite diverse perspectives: to be an audience in the theater is to be constantly asked to practice empathy, and to be able to change one's point of view. It requires a generous ability to identify with others, one that recognizes the validity of numerous points of view. The oldest extant Greek tragedy, Aeschylus's *The Persians*, looks at the great Athenian victory over the Persians in 480 BCE from the perspective of the Persians. Theater, from the beginning, demanded that we imagine the other.

Finally, the fundamental principle of drama is change: at its heart, it is the art form that reveals how people change. Like democracy, it posits that the world and the people in it are constantly evolving, that whatever seems fixed is not, that instead of eternal religious truths, the world is in a constant state of motion, and we must also be in motion to be an effective part of that world. Euripides's masterful

Herakles begins by tracing Herakles's god-like return from Hades to save his family and then, suddenly, spins into reverse. Madness, incarnate as a spirit, is sent by the gods to afflict Herakles, who then slaughters his wife and children. He is both hero and victim, god and human, capable of extraordinary achievements and of suffering the most horrible of losses. Euripides's drama forces us to confront the constantly mutable, never controllable nature of the world and our very selves.

The Theater of Dionysus was a workshop of democracy. How could you charge for that? The theater was free because Athens needed its citizens to learn what the theater had to teach. Nor were the Mystery Plays of the medieval period sold: they were collectively created by communities who used them as a way of reaffirming their spiritual beliefs, retelling biblical stories for the largely unlettered population. They were for and by the people, empowering ordinary folk not only to observe the theater, but also to make it themselves. These were no dogmatic or museum-like recitals, either: their versions of the Bible were funny, bawdy, contemporary, of their own world. They took ownership of the ideology that underlaid their lives. Again, the theater bound the population together – art-making as a spiritual practice that was also profoundly about community building.

Only about four hundred fifty years ago, in late sixteenth-century London, did theater begin to be a commodity, were tickets sold. These were the early stirrings of capitalism: Shakespeare was not just a playwright and actor, he was joint owner of the company that produced his plays and one of the six shareholders who owned the Globe Theatre. The Lord Chamberlain's Men, later the King's Men, were allowed to perform by royal license, but they needed admission fees as well as patronage to fund themselves. Yet even with those fees, Shakespeare's plays were watched by all classes of people, at the Globe or in performances elsewhere. Illiterate groundlings saw the same shows the queen did; highly educated Oxford and Cambridge graduates sat side by side with merchants, laborers, and members of the nobility. Although tickets were sold, Shakespeare's theater still reached an astonishing cross section of English citizenry who sat together, experiencing the drama at the same time and rubbing shoulders with each other.[3]

A play is a machine for taking individual spectators and turning them into an audience, a community. To keep his audience, Shakespeare needed to write plays within which all in that kaleidoscopic audience could see themselves. By writing plays that spoke to different classes, he also reminded those classes what they had in common with one another. The Globe was nation-building, teaching the English who they were as a united people.[4] Two hundred years later, the Duke of Wellington could proudly say that all he knew of English history came from Shakespeare's plays and that was all he needed to know. In a very tangible way, Shakespeare created the nation; he made England England.

What followed was four centuries of struggle between theater as a community-building force and theater as a commodity-generating business. The struggle mir-

rored the struggle of capitalism to displace all other value systems and the struggle of the market to become the exclusive determiner of value.

When they study the past century, our descendants will note with approval many victories in the United States for a theater that serves society. They will applaud the upsurge of radicalism in the 1930s that led to the creation of the Federal Theatre Project, the largest investment our national government has ever made in the theater, and they will bemoan the redbaiting anticommunism that destroyed that noble effort.[5] After the defeat of fascism, they will approve of the democratic experiment of the GI Bill and the 1965 creation of the National Endowment for the Arts (NEA), which fostered an enormous expansion of who was entitled to enjoy our cultural riches.[6] They will appreciate the rise of the regional theater movement in the 1960s and 1970s, when nonprofit theater decentralized, spreading out across the land to every state in the union, until the country could boast of hundreds of professional theaters.[7] In the same period, the rise of independent ensembles like Pregones in the Bronx or El Teatro Campesino in California embodied the complex and myriad ways that theaters could spring from and serve their communities.

But those who live after us will view with dismay the Thermidor, the reactionary revival that first took power in the United States in November 1980 with the election of Ronald Reagan. They will watch, aghast, as the National Endowment was made a political football, and gay artists were demonized to destroy bipartisan support for the arts. Robert Mapplethorpe and the NEA Four (John Fleck, Tim Miller, Karen Finlay, and Holly Hughes) were only the most prominent artist scapegoats in this wildly successful strategy: the NEA remained crippled for decades, and today its very existence is endangered.[8]

Our imaginary historians will be distressed at the withdrawal of national support from the regional theaters, as the government was crippled by these political attacks, and private foundations were forced to move their support to the rapidly fraying social safety net, on which the forces of reaction worked their will. Told to be more "entrepreneurial," the theaters responded by relying more on the box office than on philanthropy, undercutting the core of the noncommercial theaters' very premise. Urged by their boards to become more fiscally responsible, the theaters complied by becoming more timid and more homogenized, and the vibrancy of the individual communities and regions of the country ceased to be reflected in their theaters, whose programming looked more and more similar. Their ticket prices, already prohibitive for much of the population, began to soar into territory that rebranded theater as a pastime for the elite.

The smaller, independent theaters, serving specific communities or experimental in form, will have also been hard hit: the philanthropy that supported them was drawn elsewhere, the touring networks on which they depended atro-

phied, and the fierce activism of their founders was not replicated by succeeding generations, who were often administrators more focused on the survival of institutions than the service of their communities. And our future colleagues will view 2025 with deep dismay. The consensus that built the nonprofit theater in the United States will seem to have completely shattered. The government was sidelined, rendered ineffective by right-wing attacks on the arts that centered on issues of sexuality and gender orientation, but concealed a deeper aggression against the idea of a collectively supported democratic culture. Corporations mostly ceased to have any sense of community responsibility, or sense of community at all – denizens not of a place but only of a global financial system, with shareholder value becoming the only measure of corporate success – and corporate philanthropic support for the arts dwindled to a trickle. The private foundations, who did so much to foster the nonprofit arts in the years following World War II, came to believe that only by creating separate, racially specific theaters could equality be achieved. The result was a further balkanization and weakening of the nonprofit theater as a whole. The rich, meanwhile, emboldened in the era of Trump, shed their reluctance to openly assert their power without a fig-leaf of democratic consensus. If they could replace Ivy-league presidents at will, why not build their own theaters? Thus, in the first decades of the twenty-first century, Manhattan saw billions of dollars poured into building theaters: but they were theaters no audience had demanded, and no artists needed. Theaters built as real estate ventures did not, oddly, express the soul of the people.

Broadway, the most prominent stages in America, will have begun serving an utterly different social role – one that will leave our ancestors gaping in disbelief. The great hits like *Hamilton* will have become incredibly scarce commodities, whose audiences are defined by who has the privilege, luck, and wealth to score a ticket. Even *The Lion King*, seemingly a family staple that has been running for over a generation on Broadway, had an average ticket price of $134 the week this essay was written. By its price alone, our most prominent professional theater has utterly excluded most of the population. Even for those who could afford to pay, the theater was made a rare and precious luxury, not a practice that bound them to the rest of society.

When Vice President-elect Pence came to see *Hamilton* in November 2016, the *Hamilton* company addressed him from the stage, expressing our collective anxiety that his administration would make our actors, and the people of color who looked like them, less safe in the world. In response, his boss claimed that Pence had been shamefully treated (although in defense of the company, no one had been calling for his hanging). Trump wrote, with no apparent irony, that "the theater must be a safe and special place."[9] In response, an online boycott of *Hamilton* began and rapidly collected thousands of posts and reposts on Twitter (#BoycottHamilton).

And yet, when one looked through the list of people signing onto the #Boycott-Hamilton thread, it was clear that, in truth, *we* had already boycotted *them*. The vast majority of people on that list were never going to see *Hamilton*: it was not going to come to a theater near them; if it did, they could not afford a ticket; and if they could, they did not have the connections necessary to score one. We of the artistic world had turned our backs on half the country. Just like the economy, the educational system, and the political system, the arts had abandoned the parts of our country most disadvantaged by our society.

We cannot fool ourselves into thinking that we would not be wanted if we did make ourselves available. When our Mobile Shakespeare travels to prisons across New York, we meet hardened, cynical audiences, most of whom have never seen a play before, much less Shakespeare. I watch them, with their arms folded tightly across their chests, begin the performance with a studied defensiveness that appears utterly impervious. But as the play progresses, I watch their arms drop, their hearts open, and the transformation in their spirits as they find themselves invested in the characters and stories of Shakespeare. And somewhere along the way I also watch them swell with pride when they realize they understand Shakespeare, that he is theirs.

Aristotle said that imitation is the earliest and most pleasurable form of learning. Watching children role play, watching the enthusiasm with which students act in school plays, seeing the passion and pleasure that amateur theater brings to so many across all social and economic boundaries – it's clear that the pleasures that derive from theater speak across most human boundaries. Given access and ownership, the theater can be valuable to everyone. And the more enlightened society that emerges from our current struggles will see how we let the theater, the fundamental art form of democracy, become a commodified tool of division. I am not sure what they will feel, but we should feel ashamed.

And how, will they wonder, could we have been satisfied as a society with only the art that the market can support? How could we accept, apparently so eagerly, the isolation and alienation that streaming and digital media created? Did we actually want only the mass-produced entertainment of Marvel movies or the algorithm-generated videos our iPhones offered up to us? Didn't we notice, and abhor, the coarsening of discourse, the increase in rage, the inability to listen, the fantasies of violence and domination that arose from such a culture? Couldn't the theater have done better?

We can only hope that they understand the theater's failings as part of a larger, destructive process that had engulfed our entire society. We hope they see that, in philosopher Michael Sandel's words, we had gone from being a market economy to a market society.[10] They will decry the increasing marginalization of, and contempt for, values that could not be measured in money. The massive levels of inequality – described by economist Thomas Piketty as surpassing that of the Gilded

Age – will seem obscene to them.[11] They will recognize that, because life's value was measured in money, it forced us all into a competitive stance with one another. This inequality could only be supported by massive, conscious efforts to divide people among themselves, to create fear and conflict that would distract from the theft of wealth and resources by the very powerful that is the most striking feature of our society. This will be the only way to understand the terrifying resurgence of racism, misogyny, homophobia, and gender panic in our time. Any way of dividing people is useful to those who exploit, and race and sexuality are always near to hand. Nationality, religion, and culture will also do, and our descendants will weep at how easily we were fooled into mistaking who our enemies actually were.

They will look with astonishment at the spectacle of our society, in the first quarter of the twenty-first century, poisoning and destroying our own planet, in defiance of science, popular opinion, common sense, and representative governments. They will be horrified at how selfish private interests, made wealthy by the extraction and burning of fossil fuels, were able to work their will on our common heritage, the Earth. The bizarre intricacies of everything from campaign finance law to deregulating the FCC to federal tax laws will be dissected as case studies of the most elaborate criminal plots ever devised. These complex subtleties, masterful in their cunning, will stand in stark contrast with the brutality of the tools used to protect them: police violence, union busting, and fear-mongering doctrines of racial superiority and hysterical xenophobia.

Future citizens will be baffled as to why we allowed the mechanisms that we built into our nation's founding for the purpose of protecting slavery, the Electoral College, the unrepresentative nature of the Senate, and lifetime appointments to the Supreme Court to continue to function with such devastating consequences over one hundred fifty years after slavery was abolished.

They will view with particular dismay the willingness of progressive people to buy into conservative lies about identity, positing that our racial and cultural identities are so utterly essential to who we are, and so incommensurably different from one another, that we can neither understand, imagine, nor be in full solidarity with those of different races and cultures. And they will note with deep regret how the theater, born as a tool for creating community, ideal for training citizens in the skills of democracy, had become a commodified bauble to reinforce the exclusive status of the elite.

There is no guarantee, of course, that the enlightened society we are imagining will come into being. But that in no way relieves us of the obligation to fight for its birth. And if it does come to pass, its citizens will view us with such distance because their own lives will be vastly different from ours. Since labor as we know it will no longer be necessary, they will have found diverse ways to measure success and to value human beings. People will be treasured in and for

themselves, not for the capital they produce. Society will have found another way to support its people, which might begin as simply as a guaranteed annual income and could lead ultimately to the elimination of money altogether.

Artistry will be recognized as a central attribute of being human, not the sole domain of professionals. There will always be those with extraordinary gifts and interests, who cultivate their talents with more intensity and training, but they will simply be on the higher end of a spectrum that includes everyone. The theater will be, along with all culture and education, a basic civil right that every person is entitled to participate in and enjoy. All will engage in artistry both as creator and as audience because creativity is central to what it means to be human, and our cultural heritage is humanity's common property.

The differences among us will be sources of excitement and curiosity, opportunities to learn rather than compete. The boundaries of our identities will not be policed, but be both respected and violated. The crossover blending of cultural traditions will be, as it always has been, a source of innovation, excitement, and progress. The theater will be woven into our lives in countless ways, from nursery schools to Olympic Arts Festivals. The tools of the theater will be used to unlock the democratic potential of societies and the human potential of individuals. Such a world would be, will be, a better place.

When Bertolt Brecht was fleeing from the Nazis, in exile in Denmark, he, too, imagined how the future would view the past. In 1938, he wrote in "To Those Born Later":

> You who will emerge from the flood
> In which we have gone under
> Remember
> When you speak of our failings
> The dark time too
> Which you have escaped.
>
> For we went, changing countries more often than our shoes
> Through the wars of the classes, despairing
> When there was only injustice, and no rebellion.
>
> And yet we know
> Hatred, even of meanness
>
> Contorts the faces
> Anger, even against injustice
> Makes the voice grow hoarse. Oh, we
> Who wanted to prepare the ground for kindness
> Could not ourselves be kind.

But you, when the time comes at last
And man is a helper to man
Do not judge us
Too harshly.[12]

ABOUT THE AUTHOR

Oskar Eustis, a Member of the American Academy since 2022, is the Artistic Director of The Public Theater in New York. He also serves as Professor of Dramatic Writing and Arts and Public Policy at New York University and an A. D. White Professor-at-Large at Cornell University. He has worked as a director, dramaturg, and producer for theaters across the United States.

ENDNOTES

[1] Tony Kushner, *Angels in America: A Gay Fantasia on National Themes*, rev. and compl. ed. (Theatre Communications Group, 2013), 288.

[2] David Wiles, *Democracy, Theatre and Performance* (Cambridge University Press, 2024).

[3] Andrew Gurr, *The Shakespeare Company, 1594–1642* (Cambridge University Press, 2004).

[4] Kathryn Prince, "Shakespeare and English Nationalism," in *Shakespeare in the Eighteenth Century*, ed. Fiona Ritchie and Peter Sabor (Cambridge University Press, 2012), 277–294.

[5] James Shapiro, *The Playbook: A Story of Theater, Democracy, and the Making of a Culture War* (Penguin Press, 2024).

[6] The National Endowment for the Arts, Office of Communications, *The National Endowment for the Arts, 1965–1995: A Brief Chronology of Federal Support for the Arts* (The National Endowment for the Arts, 1995), https://www.arts.gov/sites/default/files/NEAChronWeb.pdf.

[7] Jim O'Quinn, "Going National: A Nutshell History of the Regional Theater Movement," in *The Art of Governance: Boards in the Performing Arts*, ed. Nancy Roche and Jaan Whitehead (Theatre Communications Group, 2005), 11–18.

[8] Tim Miller, "The NEA Four Case," in *1001 Beds: Performances, Essays, and Travels*, ed. Glen Johnson (University of Wisconsin Press, 2006), 99–115.

[9] Donald J. Trump (@realDonaldTrump), "The Theater must always be a safe and special place," Twitter/X post, November 19, 2016, 8:56 a.m., https://x.com/realDonaldTrump/status/799974635274194947.

[10] Michael Sandel, *What Money Can't Buy: The Moral Limits of Markets* (Farrar, Straus and Giroux, 2012).

[11] Thomas Picketty, *Capital in the Twenty-First Century*, trans. Arthur Goldhammer (Harvard University Press, 2014).

[12] English translation draws from translations by John Willett, Ralph Manheim, and Erich Fried, and by H. R. Hays.

Home Sweet NewHome

Matt Bell

We founded our community with the best of intentions, chartering our Earthtrust Agricultural Cooperative with shared courage and shared hope, collectively signing a ninety-nine-year work contract in exchange for a complimentary starter set of NewHomes and NewWells and NewFarms and NewSeeds, all guaranteed to help us establish our new town and maximize its productivity. According to our Homestead Experience Coordinator, these bespoke technologies were programmed just for us, maximizing the benefits of our changing climate and our reshaped biomes, all while taking the messy human guesswork out of relocation and resettlement. *You hardly have to do anything,* he explained, the first and last time we saw him in person. *You settle where the app instructs you to settle, plop down your NewHome and your NewWell where it says, and then, once the water flows, activate your NewFarm by inserting your NewSeeds, matching color-coded seed packets to the provided planting grid.* So easy! And for a while it was easy, despite how damaged the assigned land was, even though it was right on the Florida coast – what was now the Florida coast but used to be, say, Orlando, before they bulldozed all the condos and amusement parks and tilled it into fresh uninhabited American farmland, a new frontier eagerly awaiting our productive inhabitation.

Migration is a fact of human existence, our Earthtrust Homestead Experience Coordinator had told us, shaking our hands as we boarded the buses heading south, and wasn't that just the truth? Arriving on what had only recently become fertile coastline, we launched the Earthtrust Manifest Destiny app and let it guide us to the optimal places to unpack our NewHomes and sink our NewWells. After several over-the-air updates and a system reboot, our NewHomes finally let us inside, where we troubleshot the malfunctioning NewWells while staying mostly safely out of the weather. And wow, what weather there was! Turns out, when you unfold a prefab house in a tropical storm, some of the tropical storm ends up inside the house with you. But when the downpours finally ended a week later, it only took a couple hours to muck out our tiny domiciles, and as we did so, didn't we recall all our Earthtrust Homestead Experience Coordinator had said, like *What's left of your country needs you* and *This offer expires in fifteen minutes, so decide quick* and *It can't rain all the time, probably?*

https://doi.org/10.1162/DAED.a.7

Our NewHomes were smaller and blander and boxier than the houses we'd abandoned to the dustbowls of Minneapolis and Omaha and Grand Forks. But hey, they also weren't located in a dustbowl. You win some, you lose some! Anyhow, who cares about three rooms and two baths in an open floor plan if the open floor plan is decorated with sand dunes and airborne silt! Ha ha ha. So what if we arrived in what had been Florida to find so much more ocean there than there used to be, so much ocean that it was now a constantly imminent existential threat! The roiling, crashing water still looked awful pretty, with or without fish, which is good, since we found it without fish. I suppose you could only truly appreciate how pretty it was if it wasn't your heavily mortgaged, uninsurable house that had been dashed to pieces right here by sea rise, if it wasn't your retirement community drowned under the angry waves, if it wasn't your precious heirlooms we found sparkling in the flotsam and jetsam.

Which it wasn't! A bad thing had happened here but not yet to us. Someone else had suffered and fled. We had arrived to thrive.

Thankfully, the NewWells worked well enough, and within weeks we had our NewFarms irrigated and our NewSeeds planted. There was still plenty of other work to do, which meant doing whatever the Manifest Destiny app directed for months on end. Meanwhile, we were getting pretty hungry, with the drone drops slowing and nothing ripe yet anywhere and no livestock around for us to fatten up with the no plants, ha ha. But wow, look what wonders very slowly and sometimes sickly grew! Corn and potatoes and rutabagas, parsnips and carrots and what might have been meant to be citrus just like the old days of Florida and also the only thing that really thrived, if we're being honest, which was more beets than anyone wanted. (Which means: Beets! Gross!)

Farming takes so long and is so boring, some of us said. Watching beets grow is almost as bad as eating them, all of us agreed. Sadly, none of the other crops tasted quite like we remembered either, once we finally got them ready for harvest. Our results to date were dissatisfying but after a community vote we determined that a majority of us were still *Option 3: Not Yet Disheartened!* So we tightened our belts and reached out to our Earthtrust Homestead Experience Coordinator with a friendly suggestion. *Maybe some animals to keep us happy? To keep us happy and to feed us their meat which will free up the time we're spending missing eating meat?*

The NewCows the drones brought us were odd animals, and even odder once clumped together in a herd. Their albino hides, their red-glowing eyes! They were so much fast-moving light-reflecting albedo we knew we'd later have to somehow kill and butcher and eat, whenever the app told us we were allowed! And what voices the NewCows had, all of them not so much mooing as perpetually screaming like they were being perpetually attacked by predators, predators that were probably extinct and in any case were not right here, on our very safe, ocean-isolated NewFarms! Our NewCows weren't perfect but we aimed to love them.

Speaking only for myself, I told everyone who'd listen how I personally found them quite adorable, once we got them printed and activated and showed each NewCalf how to take its wobbly first steps, on its own six legs!

After all that, we thought we'd be ready for the NewLambs that arrived in the next drone drop. And we were! We were so happy to meet them! We were, at first, so happy! And so what if they weren't exactly what we thought lambs were supposed to be? Who needs wool in this humidity, anyway? Wouldn't it be a waste for a lamb to grow fleece just for us? Is there anyone anywhere still trying to get warmer?

Not even the lambs, I guess!

Somewhere around then, the sinkholes started appearing. Surprise! Some of us yelled, *Bye, NewHouse! Bye, NewFarm!* Some of us yelled obscenities instead. But if we lost a little real estate here and there, there was still plenty of places to live and work, if we crammed in together and made the most of what we had left. That's community! It's like our Earthtrust Homestead Experience Coordinator said after we pounded the Contact Us button in the Manifest Destiny app a couple dozen times: *You can't sink a hundred NewWells into the ground without risking a few sinkholes. Maybe you'd like to try fishing next?* That's how we decided to pool together to requisition some NewCoral and NewFish, specially designed for the conditions of our new coastline by Earthtrust engineers and AI working together for the greater good against the biggest crises of our time, as the brochures said.

Our fish farm worked beautifully right up until the NewCoral molted, growing fins and fangs and one rocky fin, terrorizing the coastline and hunting the NewFish almost to NewExtinction. *There's always more fish in the sea,* our Coordinator said when we complained, but sometimes the old idioms misfit the new world, you know?

Sometimes you don't know what else to say. But remember how that was also the year NewSky launched, with Earthtrust firing sulfate aerosols into the stratosphere to cool the globe, with the only cost (other than all the money) being that it turned our clear blue skies bright white forever? So much wild weather followed! So many windbent crops, so much windthrown livestock! Amazing what innovations scientists can come up with when they put their minds to it, properly motivated by progress and profit and an unenforceable corporate values statement! Sure, there were setbacks, but what are setbacks but learning opportunities for both corporation and consumer?

For instance, after a few months spent chasing NewSeeds and NewLambs every which way, we noticed it was not, in fact, even that much cooler. But thankfully the scientists did not give up in the face of our complaints. Soon, NewSky+ turned the sky even whiter! And then came NewSky+ Max, which practically made the heavens glow.

After NewSky+ Max, the climate cascaded again, our weird weather rapidly growing more weirdly weathery. A lot of existing NewSeed crops wilted in a heat

wave or got frosted in a cold wave or got drowned in a wave wave. We saw only one solution: newer NewSeeds! Plus! Max! Plus Max Ultra 2! Whatever it took, we would try. But seed innovation had slowed, it seemed. We complained but not enough. Maybe we were exhausted from the backbreaking labor. Maybe it was just a hard time to face our mounting troubles, with our Earthtrust Homestead Experience Coordinator promising innovative technological solutions were just around the corner and with all of us resettlers at last working up enough hope to start the families we'd come to start.

Or, well, trying to work up the hope. With house and farm secured, we should have been ready to become parents, but, whew, was this ever a hard world to choose to bring kids into! What with all the strange animals and oddly colored crops and the terrifyingly radiant sky, plus the climate shock and psychological distress we'd all shared and still suffered, the dying world trauma we'd bonded over long ago, back when we fled our dustbowl homes to enter the Homestead Experience lottery. By the time our town's first toddlers were toddling about, wandering our ever slimmer spit of shared land stuffed by our shabbying NewHomes and NewFarms, trying to pet the hairless NewLambs and crying when the NewCows growled, all the children so sunburned despite slathering them with the silvery protective goo our Earthtrust Homestead Experience Coordinator said was now necessary for outdoor activities just in case NewSky+ Max experienced a sudden and catastrophic customer service error, well, by then, some of us were wondering if we really needed children of our own.

Wow! So many emotions to untangle. We thought first of our own faithless parents, who'd believed our future would be brighter than theirs, even though they seemed to have done so little to make it so before saying goodbye forever and moving into retirement climate bunkers paid for by the last Social Security checks ever. We also thought about how we were getting older too. And how we'd always been a bit scared of adult life and its personal struggles, but also of the global problems we'd been taught to care about but didn't have the power to change, and still we had to admit we were sad that there might be no one to carry on our legacy, to make great what mighty works we had started. Plus, there were so many years left on our ninety-nine-year contracts, years of indentured labor that the fine print said would be transferable to our children and their children, or at least someone's children, somewhere. What was there to do about it? We'd signed that contract in good faith. Earthtrust was very litigious and we were very poor and all the world's pro bono lawyers had gone the way of the dodo and the bald eagle and the domestic cat. If someone had to pay for what we'd bought, what we'd taken, why not kids of our own, who we'd at least get to watch live happily for a time, before they found out what they'd inherited?

We constantly worried about *what next*, and as we did so, the world kept changing. It always had. Always would. Maybe we were more scared by these changes

than ever before. And maybe in the end we just wanted to feel some hope, irrational as it might be. *Is there anything more hopeful than a child*, we begged each other, and then, dissatisfied with each other's flagging enthusiasm, our Earthtrust Homestead Experience Coordinator: *Is there anything more hopeful than a child?*

Oh yes, he said. *There sure is. Have we told you about NewKids yet?*

Our designer children arrived in the next drone drop. A little apprehensively, we opened the packaging, cutting through cardboard and plastic wrap and supposedly biodegradable zipties to reveal beautiful baby after beautiful baby, all perfectly normal looking, perfectly cute and friendly and obedient. They cooed. They raised their little hands. We picked them up, passed them around, named some names, fell in love. The NewKids were so smart, right out of their eggshell packing! Much smarter than the children some among us had borne ourselves, which we had to admit were a little slow growing, and so needy. And wasn't the world hard enough, without having to care for helpless children too? The NewKids, on the other hand, barely needed us. They'd been made for this burning, drowning world. Wasn't it amazing to watch them grow and learn and thrive, spending their carefree childhood days playing outside together, loping in happy packs over the NewFarms, giving hilarious chase to the surprisingly alarmed NewCows and NewLambs?

Things were good. Things were good enough. Despite the shining sky, which lately had begun to…throb? Yes, throb. And despite the encroaching waves, which nibbled more of our NewFarms every month. And yes, one or two more NewHomes had fallen into the ocean or into a sinkhole, just like OldHomes used to do. Florida's going to Florida! But we still had our kids. And our NewKids. And if we didn't think too hard about it, we could gauzily imagine the NewFuture they would inherit, one we made ourselves believe would somehow turn out better than our bad old present, which simply could not get much worse.

Or so we thought.

But then Bob had to go ahead and request a NewKid+ without telling anyone. And once Bob had one, didn't the rest of us want our own? No one ever wants to have less than a Bob. Certainly not *our* Bob, who was, we all agreed, the worst.

You know what they say: nothing's harder to resist than an upgrade. Especially when a no-questions-asked payment plan pushes the cost way faraway into the future.

This time, our Earthtrust Homestead Experience Coordinator wasn't there to answer our call. But it was easy enough to use the Manifest Destiny AI that had replaced him to order our own NewKids+, no questions asked, on generous credit terms, with free shipping.

Two days later, the drones arrived.

Now there are NewKids+ everywhere, more NewKids+ than there are parents to raise them. Thankfully, the NewKids+ are so tall and strong and fast, so capable

and independent. And so, so blue! Blue as the old sky. Bluer. And born with such big teeth! And as they grow, those big teeth keep getting bigger and longer and sharper! Wow!

These children do not play. They do not want to learn or take advice or heed our commands. They resist when we tuck them into their too-small beds or smooth back their shocks of white hair or try to scrub clean the weird angles of their weird blue faces. Faces we love, that they do not love us touching!

All our children really want to do is eat. Like a horde of giant blue humanoid locusts, they chew up every sprout and tuber and seedling left on our NewFarms, they hunt our NewCows and NewLambs, they dive into the ocean and empty our shelterless bay of what few NewFish escaped the NewCoral. (I haven't even told you about the NewPets. Don't get me started on what they did to the NewPets.) Like all parents eventually must, we look at our NewKids+ and think, *Well, this is your world now, to do with what you will. We have done all we could*. But our wilding children do not believe us. They are never full, never sated. They do not obey our commands, do not listen to reason, will not be slowed or taught restraint. Their appetites portend our doom. Perhaps it's this that makes us love them so, despite their oddities, even as they destroy everything we're still paying for, that one day they're going to have to pay for too.

After all, weren't we once the very same?

Aren't we still hungry for *more*, despite every good thing we already devoured?

ABOUT THE AUTHOR

Matt Bell is Professor of English at Arizona State University. He is the author of several books, including *Refuse to Be Done: How to Write and Rewrite a Novel in Three Drafts* (2022) and the novels *Appleseed* (2021), *Scrapper* (2015), and *In the House upon the Dirt between the Lake and the Woods* (2013).

Future Problem-Solving: Artificial Intelligence & Other Wildly Complex Issues

John Palfrey

Imagine a bright future for philanthropic and government problem-solving. There is a version of the development of artificial intelligence, open datasets, and equitable philanthropic practices that could enable societies to solve their most complex problems much more effectively than is possible today. Philanthropy has been shifting from a model of charitable giving toward support for systems-level change. In recent decades, new digital technologies have largely served private ends, such as wealth creation and industrial efficiencies, rather than the public interest. Datasets are too often held in private hands for proprietary ends. These factors could converge in a more positive direction for a wider array of humans. This future will not come about on its own if left to private markets alone. But with planning and foresight, a brighter future for the climate, international peace, economic inclusion, and other broad societal goals is within reach.

Imagine a future, decades from now, when solving humanity's great problems through collaborative, systems-level change is possible. Take the ravages of climate change: a global problem with a complex array of potential and actual causes, with harms experienced unequally across areas and populations, with an extremely broad range of possible ways to go about addressing it, and with significant political, economic, and technological obstacles to doing so. For instance, the harms from climate change are felt disproportionately by the world's poorest people, while, overall, the wealthiest cause a larger share of the problem (say, by consuming the greatest amounts of energy and food) and experience the fewest of the costs (living in climates in the Global North that are far from eroding coastlines, and with the wealth and privilege to adapt to the warming planet).

Today, in seeking to address the climate problem, government actors and their partners in philanthropy and civil society cast about for solutions that cover a wide swath of industries – energy, transportation, agriculture, manufacturing, and so forth – and that call upon methods including public policy, economic in-

https://doi.org/10.1162/DAED.a.8

centives, technological innovation, consumer behavioral change, community organizing, geopolitical wrangling, and impact investing.

In this bright future, a technological system could help civic-minded actors devise and rank possible solutions to climate change by likelihood of success, relative costs and benefits felt by different communities, and time to enact. When a philanthropist or policymaker seeks to determine where to invest, this simple, publicly available resource can clearly identify and easily reach the parties that are best positioned to implement these solutions. The range of actors covers the full breadth of the population, not just those with connections to people in power. The needs of the communities most affected – historically, at present, and in the likely future – can be recognized and addressed. Philanthropists and policymakers can understand prospective market actions and build them into economic modeling, which market actors can incorporate into their own modeling. Those funders, policymakers, and investors devoted to equitable approaches to problem-solving have easy means to enact their strategies and reliable means of accountability. Climate change could be addressed with the minimum cost, the greatest degree of community engagement, and the strongest likelihood of reducing harm now and in the future.

As a second example, consider the challenges posed by nuclear proliferation. The existence of nuclear weapons and the expansion of access to more nuclear weapons by more global actors have posed a long-standing existential threat to humanity. And given the myriad global, regional, and local interests and fears of both state and nonstate actors the world over, the most effective methods to address this type of harm can be hard to figure out. Investments in nonstate actors and researchers who work for peace and security are worthy expenditures. Procedural approaches such as Track II dialogues, which bring together nonstate actors and allow for crucial information-sharing when state actors are not talking officially and directly about the key issues, are another good idea among many. But the need to prevent nuclear catastrophe remains real and pressing. The risks demand that more be done. What should those investments look like, when the primary decision-makers are in positions of authority that are hard for these nonstate actors to reach effectively?

Note, too, that these two issues intersect. One of the potential solutions to the climate crisis – debated, for sure, but squarely on the table – is to increase the global availability of nuclear energy. To what extent would a major push to increase nuclear energy cause a greater risk of harm, whether by accident (such as at commercial nuclear reactors) or due to knock-on effects in the security regime? And, conversely, how might the effects of global warming, including forced human displacement, intensifying competition for resources, and loss of livelihoods, contribute to geopolitical instability, increasing the risks of conflict between nuclear powers?

In this future world, technology systems would demonstrate and parse such interactions between the climate and nuclear fields much more clearly. While predicting the future with a high degree of certainty would be implausible, technology-assisted analysis could make the trade-offs and the likelihood of one outcome or another clearer. The safety and security concerns associated with nuclear energy would be quantifiable; it would be possible to contrast these costs to the potential benefits to the climate and economy. The likely effects on certain populations and geographies would flip from invisible to visible.

Is this vision of the future a pipe dream? No such system exists today to inform policymakers, philanthropists, academics, advocates, and others who seek to address these wildly complex and interconnected problems. Perfection of this sort is likely illusory. And a single system to make, or even inform, such decisions by governments and others might be a dangerous approach anyway, not to mention states' inevitable distrust of a "black box" system (likely developed by the wealthiest nations) that advises against their interests. But the potential to build knowledge and information systems to help improve the odds of getting these decisions right – to improve the likelihood that humans could make such systems-level decisions well in the future – is real. It would take intentional investment and careful planning to add such systems into the mix of the possible for our future.

The fields of philanthropy and technology will face major turning points in the coming years. These opportunities for change offer the potential to address systemic inequality, to improve the effectiveness of philanthropy, and to bring about brighter futures for more people throughout the world. What might we do now, today, using the tools we have in philanthropy, to address past harms and usher in a more equitable future? The goal, of course, is simple: to ensure that philanthropy does more good than harm as we shape – and envision – the future today.

Philanthropy, at its best, is fundamentally about futurism. Philanthropists, in partnership with communities, should imagine and invest in a future that is brighter than the present or past. The goals of futurism and philanthropy are linked.

But not all giving looks to the horizon. As societies, we must provide crucial funding for people to address current-day needs, which often receive the largest outpourings of charitable support: the relief needed, say, after a natural disaster when people in a community do not have clean water to drink or a roof over their heads. These needs are more pressing than ever, as, at the time of writing in spring 2025, government funding for basic human support is falling. But these necessary approaches to giving are more linked to charity and to the role of the state than to what we might think of as systems-change philanthropy.

The real opportunity posed by philanthropy is to make and sustain investments that will change the course of history over time in a positive direction, not simply

to fill gaps left by market failures and government funding shortfalls. Philanthropists are in a position to put "patient capital" to work for good over the long haul. Otherwise, it makes no sense to offer tax incentives for people to give, such as through large endowments set aside for perpetual spending, as some donors prefer. It would be much more efficient simply to tax the income and use it to meet current needs in the most direct fashion possible. The tax system in the United States is premised in part on the concept that the benefit of avoiding taxation on income encourages philanthropy and, in turn, that philanthropy makes change possible by drawing upon and supporting changemakers who are not employed by the state.

This future orientation to philanthropy invites us to critique the status quo, imagine a better future, and harness the private sector toward that change. Most of the time, these philanthropic investments fund actors in nonprofit spaces. Philanthropists commonly support those in academia to pursue a course of study or carry out research, as well as activists and movement leaders to advocate for change. In effect, these investments typically supplement government actors where it makes more sense to draw on outside talent or resources, redistribute wealth and power to historically marginalized communities, or help meet other ends that the state and market are not accomplishing. This practice of futurism requires a nuanced understanding of how change comes about, the skill to identify problems that philanthropy can address (as compared with private markets or government actors, for example), and the networks of people and institutions that can bring to life new ideas and approaches.

At many large philanthropic organizations, the typical strategy is to invest financial and other resources in those people with the most creative ideas, great passion for what they are doing, and hard problems to tackle. These institutional approaches are not wrong; they can be very effective. That is the core premise of the MacArthur Fellows program, for instance. Investments in creative individuals who carry out life-saving research, dream up and produce arts and culture that inspire and enliven, and offer greater student access to education and other life-giving opportunities – there are plenty of essential investments in people and ideas that plainly redound to the benefit of many, perhaps even for all.

But as philanthropic leaders look to the future, they must also acknowledge that there are plenty of philanthropic practices that have done more harm than good. The list of bad philanthropic practices is long; it has inspired full-length books as well as social media sites.[1] The worst of these practices perpetuate uneven and unjust power imbalances, in turn reinforcing advantages in society afforded by unearned wealth and status. Other philanthropic practices, often termed "strategic philanthropy," use large amounts of capital to support ideas and approaches to policy problems that harm communities more than help them. Philanthropy has not been an unalloyed good throughout history – far from it.

This is a time for looking ahead. The rapid development of new information technologies that has characterized the last several decades continues apace (if anything, the pace of change is accelerating). There is a role for philanthropy to play in at once shaping new technologies and applying those technologies to philanthropic practices for the public good.

Charitable practice in the United States existed long before philanthropy was formalized as a sector, dating back to the American colonial period.[2] Early American philanthropy consisted mainly of unsystematic donations, but later became organized by ethnic and religious organizations. George Peabody and his contemporaries critiqued the charitable practices of their time as being unorganized, palliative, and parochial.[3] Andrew Carnegie challenged the wealthy of his generation to donate most of their wealth during their lifetime and enable the "worthy" to help themselves.[4] Carnegie and his peers formed the earliest charitable foundations in the United States. The model and philosophy that Carnegie championed remain pervasive in philanthropy today, though a field of healthy critique has emerged to offer new, more future-oriented models and methods.[5]

The principal shift in the philanthropic sector is the move from a field oriented toward charity toward one that imagines and supports greater equity and justice. Darren Walker, president of the Ford Foundation, encourages philanthropies to devote time and money into dismantling the systems that generate and perpetuate inequality.[6] The USAID donor statement on locally led development – now a vestige of the past, given the 2025 attacks on USAID's funding streams, infrastructure, and website – once took aim at the "philanthropists know best" tradition.[7] The MacArthur Foundation, where I work, and many of its peers increasingly hire program officers who are intimately connected to the work, creating within their staff a constructive mix of subject matter expertise and lived experience to inform decision-making on grants and other investments. But Walker's and his progressive-minded peers' views about the goals of giving are far from universal; the field of philanthropy, as established today, is inherently pluralistic. As in the case of elected officials, donors represent a wide range of points of view about the direction policies should take over time. This pluralism is one of the field's great strengths.

Some philanthropists are pushing the model further, advocating for deeper and more systemic change in the way that giving takes place. Many leading institutions are embracing participatory and trust-based philanthropy.[8] Philanthropies also increasingly recognize that they cannot – and should not – do their work alone. Groups of donors are working together to tackle the hardest problems. Large-scale collaborative efforts have come together to address climate change, such as the Global Methane Hub and Invest in Our Future, as well as threats to

democracy, such as More Perfect and Press Forward.[9] Other promising and innovative reforms create new models for the wealthy to share their resources through competitions and pooling of funds, such as Lever for Change, an affiliate of the MacArthur Foundation.[10]

Artificial intelligence (AI) is poised to become one of the most transformational technologies in human history. It could potentially revolutionize every aspect of our lives – from how we learn and work to how we live, govern, and communicate with one another. Once fully operationalized, it could become a fundamental and ubiquitous application in education and workforce development, health care, government, biotechnology, defense and national security, finance, and most other fields. We are already experiencing its effects in a number of these domains today.

"Technology is neither good nor bad; nor is it neutral."[11] As we publish this issue of *Dædalus*, one of the biggest unknowns, both for society at large and the field of philanthropy, is exactly *how* the future of artificial intelligence will develop. Experts disagree on this question – sometimes, they disagree a lot. Those devoted to the exploration of what is today called "ex risk," short for existential risk, perceive that AI could bring about the end of human existence in a short window of time. Others argue that this generation of AI tools will usher in the singularity, a blissful phase of human existence marked by far fewer threatening problems and all sorts of new opportunities. Most close observers and participants in the development and shaping of AI seek to bring about a positive future in which the technology does more good than harm.

The speed of AI's advancements and deployments means we will face these changes very soon – and some of them are already upon us, affecting human lives today across the globe. We are at a critical stage in AI's development, which gives us a chance to shape its future to ensure that the benefits are applied for good. We have an opportunity to apply a sociotechnical lens to the design and application of these new technologies as they materialize and come to market. These interventions, in turn, can have a positive effect on the lives of billions of people.

When the internet was commercialized in the 1990s, the occasion to ensure that its benefits were shared in a truly inclusive fashion was missed. Policymakers in the United States, where the technology was principally developed and deployed, failed to create mechanisms to protect the internet from misuse. Instead, the United States set itself on a course of more than three decades of inaction and a laissez-faire approach that has served some individuals extremely well, but disadvantaged many other large communities and even countries. Among other failures, we have not ensured the representation and voice of those most marginalized around the world in the development of these new, society-shaping digital tools.

Today, there is a window of opportunity to learn from those mistakes and ensure that civil society worldwide is actively represented in shaping the future of AI. Some of the building blocks for a very different technology policy regime for the AI era are in place, such as the U.S. Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence.[12] The promise of these improved approaches will not be fully realized without substantial coordinated and well-resourced engagement by civil society.

While AI has brought about many benefits, it presents a variety of substantial dangers in both the near- and longer-term. These new technologies can perpetuate bias, with adverse effects for communities that are already marginalized.[13] The governance models for containing and shaping new technologies are at such an early stage as to be ineffective, allowing these harms to go unchecked.[14] Rather than using the sweeping advancements in technology to address systemic issues, the tech industry is promoting a technosolutionist narrative.[15] This profit-driven narrative benefits those at the top of the tech world, who then bring their for-profit and technosolutionist ideologies to philanthropy.[16]

There are two principal actors engaged in the development and management of artificial intelligence: the tech industry itself and a patchwork of government actors around the world. The tech industry is focused primarily on business interests that may or may not address issues critical to civil society. Even as they grapple with anticipating and understanding the depth and scope of the changes AI may bring, governments bring an oversight and regulatory lens to their work to constrain new technologies. Government actors too often do not have the technical skill or know-how to shape AI's development effectively. The few who are involved in this consequential regulatory development and implementation process are concentrated in a small handful of companies and states on the global scale. The most powerful states are those most likely to have the greatest ability to shape these technologies: largely, at the moment, China, the EU states, and the United States. The development, governance, and management of artificial intelligence is far from equitably allocated across the globe.

Civil society writ large also has too little representation and input in how these technologies are developing. There is a need to invest in civil society's voice when it comes to the architecture of the technology, the use and control of data, and the economic benefits that flow from artificial intelligence. There are key downstream uses to address as well, such as the way it will be deployed in teaching and learning, democratic decision-making, health care, the justice system, workforce development, and climate change mitigation, among others. None of the nonprofit actors in these fields have the remit, the power, or the resources to help shape this crucial aspect of the future.

One thing that most observers agree on: AI, if governed and developed effectively, presents opportunities for all sectors of society. That includes philanthro-

py. For this essay, I set aside the very broad range of potential areas in which we could invest as philanthropists and focus on this future-oriented topic: how to help shape the development and direction of artificial intelligence. I do not engage the existential questions associated with the technology; those are worthy of attention and are well-covered elsewhere. Nor do I linger on the questions of concentration of power in the hands of a very few states and companies, as pressing as those issues are. My focus here lies instead on the narrow question of how beneficial use of AI could bring about a brighter future through philanthropy.

Philanthropy can change this trajectory through collective action. The future will be much brighter if philanthropy empowers civil society, as well as members of the communities directly affected, to have a greater voice in the development and governance of new technologies. This goal has been elusive in technological circles in the recent past, as the internet has reached global scale with disproportionate power vested in a small number of corporate actors, largely based in the United States and among other Western powers. Instead of continuing our mistakes of the past, civil society, technology developers, and philanthropies can work together to make the spheres of AI and philanthropy more collaborative, effective, and equitable.

The good news is that there is no shortage of opportunities to begin this coordinated effort: namely, by investing in the people, organizations, and movements working toward such a future. A number of nonprofits and academic institutes, such as the Distributed AI Research Institute, the Data & Society Research Institute, TechEquity, and the Network Startup Resource Center, perform research and policy advocacy that drives toward an equity-focused, solutions-oriented AI environment.[17] The MacArthur Foundation's Technology in the Public Interest program supports research, policy development, and practice that aim to uphold public interest considerations in the development and governance of AI. And in 2023, MacArthur joined with nine other philanthropies in committing to a $200 million initiative, led by then-Vice President Kamala Harris, to support AI development while protecting and supporting workers, human rights and freedoms, and the development of norms and rules around this burgeoning technology.[18]

A number of MacArthur Fellows from the past several years also work in the AI space. Cognitive scientist Josh Tenenbaum, class of 2019, applies his deep understanding of human cognition to the way that AI and machine-learning models are built, with the goal of bringing these technologies closer to the way that the human mind operates. Safiya Noble, a 2021 Fellow and an internet studies and digital media scholar, uses her research to demonstrate biases within search engines that reflect oppressive and discriminatory attitudes across race, gender, and culture – an issue that many critics raise as among the technology's most dangerous. And 2022 Fellow Yejin Choi uses her expertise on natural language processing to develop AI systems based on commonsense reasoning models and implied meaning rather

than rigid, logic-based probabilities. These are just a few examples; the good news is that there are plenty more, across a broad spectrum of fields and perspectives, pulling in a similar direction.

But it is not enough for philanthropy simply to fund the people and institutions, excellent though they may be, working on these promising and extremely risky new technologies. We must champion both effectiveness and equity, with an eye toward their use on behalf of the public good – and we must turn that eye inward as well. What else can we do to invest in the development of these technologies? In turn, can we use the technology itself in our approach to philanthropy? The initial investment might itself benefit the practice of philanthropy, if we get it right, thus making us more effective as we seek to shape future technologies.

A major question around the responsible use of AI is that of governance: Who should own, wield, and steward these technologies, and for what purposes? One initiative grappling with these questions is the Philanthropy Data Commons (PDC), a sector-wide governance and technical infrastructure established in 2021 by a group of funders (including MacArthur), civil society actors, and others working in the philanthropic space that explores and enables responsible data sharing and use in philanthropy.

The PDC aims to reduce the power imbalance between philanthropies and those we fund by democratizing data-sharing, managing data as a sector asset, lessening the burden on those seeking funds, and ultimately creating a bridge to more equitable access to funding. Today, it is supporting work to connect proposal and grant data across otherwise disconnected platforms and systems in the philanthropic sector, which will help reduce errors in data and make it easier for funders and grantseekers to find each other.

The PDC envisions its work as eventually shifting the way that funders engage with organizations seeking grants. This open, shared data platform, and the collaborative governance principles undergirding it, could become a new infrastructure in philanthropy that facilitates more-effective and more-efficient ways of working together, leading to and creating more equity and inclusion in philanthropy. The PDC has the potential to change how we all work in philanthropy by:

- Enhancing the sharing and applicability of data and information;
- Enabling system interoperability for using and thinking about data;
- Reducing administrative burdens and costs for funders and organizations seeking grants; and
- Reducing the power imbalance between funders and organizations seeking grants, or even eliminating or inverting it.

Ideally, the PDC could offer philanthropists everywhere a public-interest dataset useful for research, analysis, and problem-solving activities. It could lead to the most effective solutions, those rooted in communities, receiving much more philanthropic support, unmediated by preexisting relationships and access to philanthropic power.[19]

It is instructive to explore the ways in which the fields of philanthropy and technology development have given rise to related critiques. Both concentrate a great deal of wealth in the hands of the few; both are relatively unregulated. But there are crucial differences too. Philanthropy lacks the profit motive so often driving the technology sector at its core, and certainly involves a lot less money than the capital involved in driving this new era of AI around the world. Philanthropy has a clear opportunity to build on its recent progress toward collaboration, and in turn can influence and encourage technology developers to do the same.

For instance, funders can devote resources to the collection and analysis of unbiased and robust datasets for both philanthropic and tech organizations. The world would be different if large, open datasets could be accessed at low cost by civil society actors, provided that they incorporated constraints to limit the dangerous uses of the same technologies. Recall the example of climate change, which posited that an open-source dataset, comprising various actors, methods, and geographies, could be used to identify and enact solutions to climate issues around the world in a fraction of the time it takes today.

Philanthropies can also fund organizations that conduct research and provide equity and ethics training for the technology sector. Tech leaders and developers can be trained to incorporate equity and ethics concerns into their work and develop their products with the goal of long-term societal benefits rather than short-term profit goals.

These examples are broad. More precise examples can illuminate this point further. Consider machine translation projects for languages spoken by small populations that are in peril of becoming "forgotten" when the last of their speakers pass on. Many populations around the world communicate only, or principally, in their Indigenous languages. Even if enough people speak the language for it to persist, populations can be rendered unable to access governmental processes, the formal economy, and digital resources that are available only in "dominant" languages. This is especially true in many parts of Africa, where many countries' official language is English despite large portions of their populations being unable to speak it, and in India, where the MacArthur Foundation gives funding and operates programs. The Masakhane project, currently underway across the continent, uses artificial intelligence for language translation and vocabulary development. Similar translation solutions are popping up with support from Nilekani

Philanthropies, Mozilla, Google, and other technology firms, though there is potential for conflict of interest, perceived or real, in the work of developing datasets that may be used in a proprietary way and not shared broadly.[20] The effects of being able to bring potentially millions of people into civic, political, and cultural spaces in which they previously did not have a voice could be tremendous – and philanthropy can play a large role in making it a reality. Consider also the opportunities for teaching Indigenous languages to the next generation: these models may help preserve languages that have very few people still speaking them. This topic is far more complex than this paragraph would suggest, yet the opportunities for using machine learning tools for language access, acquisition, and preservation are plain.[21]

Finally, philanthropies can help build a robust tech policy ecosystem by funding and convening collaborations of scholars, organizers, artists, and community leaders. Philanthropists should be sure to take advantage of our immense social capital to underscore the importance of early collaboration and learning among otherwise siloed communities that can share what these new technologies mean for their work, their lives, and their expectations for the future.

Philanthropy can – and should – seek to help shape technologies for the good of humanity, rather than for profit. If we do not intervene in the public interest, we may find ourselves being haunted by this missed opportunity for a brighter future. Our previous approaches to investing in and governing new technologies have left too much power in the hands of too few. The harms associated with a laissez-faire approach in an era of artificial intelligence, as compared with the previous digital technologies, may be far greater. Promises by the tech industry, from the mid-1990s to today, to self-regulate and include community members in their growth and design have not come to fruition, but they can serve as a sort of reverse roadmap for how to imagine and design the next phase of technological change. We know what will happen if a laissez-faire approach predominates.

We need to learn from this past quarter-century and design a better, more public-interested approach for the decades to come. This moment of inflection allows us to use futurism to guide today's investments, to remind ourselves that we can embed greater equity into the technology world, and to recommit to philanthropic practices that help to build a safe, sustainable, and just world.

ABOUT THE AUTHOR

John Palfrey, a Member of the American Academy since 2021, is President of the John D. and Catherine T. MacArthur Foundation. He previously served as Head of School at Phillips Academy, Andover; as the Henry N. Ess III Professor of Law and Vice Dean for Library and Information Resources at Harvard Law School; and as the Executive Director of Harvard's Berkman Klein Center for Internet & Society.

ENDNOTES

[1] See Vu Le, "#CrappyFundingPractices and Why We Need to Name and Shame More Often," Nonprofit AF, April 25, 2021, https://nonprofitaf.com/2021/04/crappyfundingpractices-and-why-we-need-to-name-and-shame-more-often.

[2] John Gardner, "A History of Modern Philanthropy," National Philanthropic Trust, 2016, https://www.historyofgiving.org (accessed May 5, 2025).

[3] Benjamin Soskis, "Both More and No More: The Historical Split between Charity and Philanthropy," Hudson Institute, October 15, 2014, https://www.hudson.org/domestic-policy/both-more-and-no-more-the-historical-split-between-charity-and-philanthropy.

[4] Andrew Carnegie, *The Gospel of Wealth and Other Timely Essays* (The Century Company, 1900).

[5] See, for example, Rob Reich, *Just Giving: Why Philanthropy Is Failing Democracy and How It Can Do Better* (Princeton University Press, 2018); Anand Giridharadas, *Winners Take All: The Elite Charade of Changing the World* (Alfred A. Knopf, 2018); and Phil Buchanan, *Giving Done Right: Effective Philanthropy and Making Every Dollar Count* (PublicAffairs, 2019).

[6] Darren Walker, *From Generosity to Justice: A New Gospel of Wealth* (Disruption Books, 2023).

[7] United States Agency for International Development, "Donor Statement on Supporting Locally Led Development," December 13, 2022, https://web.archive.org/web/20241225190535/https://www.usaid.gov/localization/donor-statement-on-supporting-locally-led-development.

[8] Cynthia M. Gibson, *Participatory Grantmaking: Has Its Time Come?* (Ford Foundation, 2017).

[9] Andrea Saenz, "A Coalition of Funders Launches Press Forward Chicago with $1.6 Million in Grants to 13 Journalism Projects," The Chicago Community Trust, May 29, 2024, https://www.cct.org/stories/a-coalition-of-funders-launches-press-forward-chicago-with-1-6-million-in-grants-to-13-journalism-projects.

[10] Lever for Change, "About," https://www.leverforchange.org/about-us/about (accessed May 5, 2025).

[11] Melvin Kranzberg, "Technology and History: Kranzberg's Laws," *Technology and Culture* 27 (3) (1986): 544–560.

[12] Exec. Order No. 14110 of October 30, 2023, "Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence," 88 Fed. Reg. 75191–75226 (November 1, 2023).

[13] Joy Buolamwini, *Unmasking AI: My Mission to Protect What Is Human in a World of Machines* (Penguin Random House, 2023); and Walker, *From Generosity to Justice*.

[14] John Palfrey, "Underregulating Tech Is a Relic of the 90s. AI Is a Call for Urgent Change," The Hill, November 12, 2023, https://thehill.com/opinion/technology/4304297-under

regulating-tech-is-a-relic-of-the-90s-ai-is-an-alarm-for-urgent-change; and Urs Gasser and Viktor Mayer-Schönberger, *Guardrails: Guiding Human Decisions in the Age of AI* (Princeton University Press, 2024).

[15] Janet Haven and danah boyd, "Philanthropy's Techno-Solutionism Problem," Knight Foundation, November 9, 2020, https://knightfoundation.org/philanthropys-techno-solutionism-problem.

[16] Giridharadas, *Winners Take All*; and Buchanan, *Giving Done Right*.

[17] Distributed AI Research Institute (DAIR), https://www.dair-institute.org (accessed May 5, 2025); Data & Society, "About," https://datasociety.net/about (accessed May 5, 2025); TechEquity Collaborative, https://techequity.us (accessed May 5, 2025); and Network Startup Resource Center, "About," https://nsrc.org/about#overview (accessed May 5, 2025).

[18] Ford Foundation, "Philanthropies Launch New Initiative to Ensure AI Advances the Public Interest," November 1, 2023, https://www.fordfoundation.org/news-and-stories/news-and-press/news/philanthropies-launch-new-initiative-to-ensure-ai-advances-the-public-interest.

[19] Philanthropy Data Commons, "Home," https://philanthropydatacommons.org.

[20] Katie Cashman, "Masakhane: Using AI to Bring African Languages into the Global Conversation," RESET–Digital for Good, February 6, 2020, https://en.reset.org/masakhane-using-ai-bring-african-languages-global-conversation-02042020.

[21] For more on this complex topic, see Muhammad Zayyanu Zaki and Usmanu Danfodiyo, "Bridging Linguistic Divides: The Impact of AI-Powered Translation Systems on Communication Equity and Inclusion," *Journal of Translation and Language Studies* 5 (2) (2024): 20–30, https://doi.org/10.48185/jtls.v5i2.1065.

Academic Cultures: Toward Perspective from the Future

Michael M. Crow & William B. Dabars

To envision the future of academic culture, we consider the epistemic, administrative, and social dimensions of the American research university. Given the existential cultural, economic, political, social, and environmental dilemmas that confront society, constituents and stakeholders alike would be justified in contemplating the academy three or four generations hence with a degree of apprehension. Leaving aside the most dystopian prospects, we summon historical perspective and speculate about the future of academic culture to critique the contemporary research university in an effort to propose new models going forward. We also consider the institutional contexts of knowledge production and examine the imperative to recognize the plurality of academic culture. We argue that if constituents assume that the venerable genealogies that support academic cultures guarantee their perpetuation, they will fail to act with the sense of urgency that is required to meet the entangled challenges ahead.

Imagine the arrival of the twenty-second century on the campuses of our nation's colleges and universities, seventy-five years down the road. Given the existential dilemmas of the present moment – cultural, economic, political, social, and environmental – constituents and stakeholders alike would be justified in contemplating the future of academic culture three or four generations hence with a degree of apprehension. But leaving aside the prospect of dystopian scenarios, we anticipate that the institution famously characterized in 1963 by then University of California president Clark Kerr as the "multiversity," which produced knowledge he deemed "central to the conduct of an entire society," will maintain this crucial role despite the many challenges that will test its resilience throughout the balance of the twenty-first century. "As an institution, it looks far into the past and far into the future," Kerr observed, "and is often at odds with the present."[1] He might have added that with each new discovery, the university transforms the past and shapes a differentiated future. What no one could have foreseen, however, was the extent to which segments of the cultural, political, and social order that produced the City of Intellect, as Kerr termed the multiversity, would come to undermine that very institution during the first quarter of the twenty-first century.[2] "The twentieth century was a grand century for the cities of intellect," Kerr ob-

https://doi.org/10.1162/DAED.a.9

served in remarks delivered in February 2000. "The century, that golden century, is now past, never to be replicated."[3]

As the default model of the contemporary American research university, the multiversity envisioned by Kerr more than six decades ago nevertheless remains fundamental to the discovery, creativity, and innovation that have transformed the quality of life and improved the standard of living of our nation and the world. This claim is no mere hyperbole, as evidence-based assessments of the impacts of the leading American research universities and research-based liberal arts colleges amply document. The integrated and complementary research, development, and education functions of these complex institutions, both public and private, advance not only pedagogy but also scientific discovery that has transformed our understanding of the universe and technological innovation that has enhanced human well-being and accelerated economic growth, which is to say nothing of their roles in promoting the arts, humanities, social sciences, and professions such as law and medicine.[4] Educational attainment has direct and indirect effects, both market and nonmarket, that contribute to the prosperity and well-being of individuals and society. For graduates, these benefits include improved economic returns, increased prospects for intergenerational socioeconomic mobility, better health outcomes, longer-lasting marriages, and enhanced civic participation.[5] These complex large-scale knowledge enterprises will continue to lend expertise, guidance, and perspective to business and industry, government agencies and laboratories, and organizations in civil society. Service to the nation and the determination to effect a shift toward desired societal outcomes become integral to their mission.

Kerr described the multiversity as an institution comprising "communities and activities held together by a common name, a common governing board, and related purposes," which, he quipped, included "individual faculty entrepreneurs held together by a common grievance over parking."[6] Business theorist Clayton Christensen lampooned this arrangement as a merger of "consulting firm McKinsey with Whirlpool's manufacturing operations and Northwestern Mutual Life Insurance Company," which is to say, "three fundamentally different and incompatible business models all housed within the same organization."[7] However, despite whatever shortcomings are ascribed to universities, the multiversity model long before 2100 may actually seem restrictive in scope and scale because academic conglomerates will have "bundled together" so many disparate functions as to more accurately deserve the epithet "megaversity," as suggested by sociologist Craig Calhoun.[8] Nevertheless, there is no reason why the multiversity or, if you prefer, megaversity cannot serve as what literary scholar Christopher Newfield termed a "multifaceted instrument of social development."[9]

The advent of the next century portends to be either an occasion to celebrate the cumulative impacts of scientific discovery, technological innovation, artistic creativity, and humanistic and social scientific insight or, conversely, an occasion

to confront the sobering realization that the twenty-five-hundred-year trajectory of the academy has often produced merely incremental progress or, worse, dispiriting outcomes that have left many of our fellow citizens behind. "The organized intellect is a great machine that has gained extraordinary momentum since the Greeks got it going 2500 years ago," Kerr observed. "It turns out its countless new pieces of knowledge but with little thought for their consequences – their impact on the environment – like a new insecticide." As it happens, investigating problems "does not always relate primarily to their importance but often, instead, to the possibility of their solution."[10]

Although the academy in America has long invoked tenets of social responsibility, it was never designed to guide society through the rapid changes triggered by the accelerating pace of modernity. Nor could it have anticipated the fragmentation of our postmodern condition. Researchers must recognize that knowledge production and technological innovation do not automatically align with overarching beneficial social goals.[11] The historically laissez-faire approaches to the applications of research and innovation have more frequently than one would wish precipitated unpropitious outcomes and subverted the equitable distribution of the benefits of science and technology.

For the academic sector, the balance of the twenty-first century and the advent of the next will play out against the backdrop of interrelated systems-level challenges that will require moving beyond the limitations of our present epistemic frameworks and organizational platforms. Despite its successes, the design shortcomings of this model are well known. For instance, it will come as no surprise that admissions protocols that correlate with affluence have excluded academically qualified but socioeconomically disadvantaged or middle-class applicants from our leading universities. Furthermore, by prioritizing basic research over praxis and by promoting individual attainment over interdisciplinary collaboration, scientists and scholars have diminished the social impact of knowledge production. It is essential to create new organizational models that leverage the complementarities and synergies between discovery and accessibility.

The arrival of the second century of the third millennium may seem distant, yet speculation about the trajectory of academic culture over the next seventy-five years has already taken off in some fields.[12] Science and technology policy scholars were especially primed to think within this timeframe because 2020 marked the seventy-fifth anniversary of the publication of *Science, the Endless Frontier,* the landmark policy manifesto submitted by Vannevar Bush, founding director of the Office of Scientific Research and Development, to President Harry Truman after Franklin Roosevelt died in 1945. In the report, Bush advocated for the federal government to fund unfettered academic research after World War II to ensure a linear "flow of new scientific knowledge to those who can apply

it to practical problems in government, in industry, or elsewhere." Bush envisioned America's research universities as the "wellsprings of knowledge and understanding," where scientists were "free to pursue the truth wherever it may lead."[13]

With federal support for basic research ensuring the autonomy of what chemist and philosopher Michael Polanyi idealized as the "republic of science," the Bush manifesto hybridized the values of academic researchers by funding an ongoing program for postwar federal investment in a national science enterprise that continues to promote competitive engagement among research universities.[14] Unfortunately, the report also promoted the widely accepted but misleading linear model of innovation that reified the spurious distinction between fundamental and applied research that still inhibits the potential of the academy by marginalizing the pursuit of use-inspired research.[15] Yet integrative research will increasingly transcend the linear model, which begins with fundamental research but requires subsequent application to develop products and services appropriate to markets.[16] The synergistic recombinations of disciplinary perspectives will reduce barriers to the unification of scientific disciplines and convergence of technologies.[17]

In this essay, we use "academic culture" to refer to the interrelated epistemic, administrative, and social frameworks of the set of major research universities and research-based liberal arts colleges in the United States. Any attempt to articulate the extent to which these institutions have collectively shaped the "real world" would be futile because the impact of their knowledge production, innovation, and service so thoroughly pervades contemporary society. Then, as now, these leading institutions will perpetuate the academic gold standard that is at the heart of the academy. Accordingly, after an effort to define academic culture and consider its values, we summon the past and speculate about the future to critique the scope and scale of the contemporary American research university. This is the institutional context of an academic culture that embodies the enduring norms, values, ideals, and practices that govern the production, legitimization, and dissemination of knowledge that will be needed to address an entangled future.

Consistent with the fragmentation of disciplines, differentiation of organizational models, and divergences of purposes and values within academic communities, constituents may find it more appropriate to frame the culture of the academy as a plurality: that is, *academic cultures*. In his foreword to the republication of a 1997 issue of *Dædalus* titled "American Academic Culture in Transformation: Fifty Years, Four Disciplines," historian Stephen Graubard invokes the insights of sociologist Robert Merton, who found that the "cultural soil of seventeenth century England," which was "peculiarly fertile to the growth and spread of science," anticipated the "cultural soil of twentieth-century America" along with the "intellectual flora and fauna it nourished." Merton's comparison

leads Graubard to ask whether an overarching "American academic culture" exists or whether we should "more properly, speak of academic *cultures*, specific to particular disciplines and professions?"[18]

Extending the logic of Graubard, we find that it is imperative to recognize the plurality of academic cultures, beginning with the dynamic interplay of allegiances among a range of constituents and stakeholders within academic disciplines, professional networks, institutional affiliations, and interpersonal relationships, both collegial and competitive. Then, as now, the concept is neither monolithic nor static and will remain both fragmented and subject to multiple meanings and interpretations that accommodate the pluralities embedded within differentiated situated contexts. Although, of course, there can be no such construct without an institution to which it is attached, sociologist Anthony Giddens would emphasize that academic cultures both draw upon and shape the formal institutional structures within which they exist.[19]

The fragmentation of academic cultures in the twentieth century was shaped by historical determinants and intellectual shifts that influenced the structure, priorities, and self-conception of the academy. For instance, the postmodernist critique of grand narratives challenged the notion of universal truths and highlighted multiple perspectives and interpretations as well as emphasizing context and subjectivity. In 1980, sociologist Burton Clark described the splintering "brought about by a proliferation of parts that operate under the centrifugal force of a growing number of different needs and interests" as the dominant trend in the academy. What he terms academic ideologies serve as "emotional bonding and moral capital but are increasingly pluralistic, tied to the primacy of the discipline and the profession."[20]

Disciplinary allegiances typically transcend commitments to institutions, although these loyalties often coexist in tension. Disciplinary acculturation guides research agendas, theoretical orientations, and methodological approaches that encourage scholars to form epistemic communities. Despite growing consensus regarding the significance of transdisciplinary approaches, disciplines nevertheless structure the frameworks, methodologies, and languages through which knowledge is produced, validated, and disseminated. As sociologist Andrew Abbott put it, "Careers remain within discipline much more than within university."[21]

The social dynamics that underpin academic communities have notoriously been the stuff of both sociological investigation and novelistic satire. For sociologist Pierre Bourdieu, academic culture reveals a complex social field marked by power dynamics, symbolic capital, and the reproduction of social hierarchies. Academic "habitus" – the ingrained dispositions, beliefs, and behaviors acquired through socialization – favors those who are already familiar with the "rules of the game."[22] Differentiated operational logics that may be characterized as aca-

demic, bureaucratic, market, and entrepreneurial influence organizational strategies and may institutionalize normative values such as sustainability or responsible innovation.[23] Scholars align within cultural, political, socioeconomic, or identity-based orientations, the latter of which correspond with what historian David Hollinger termed dimensions "ignored by the universalist, rationalist, and individualist biases of the previous generation, including the human body, language, class, gender, and, above all, the solidarities and confinements associated with ethnicity and race."[24]

American academic cultures are uniquely marked by their competitive configuration, a consequence of the failure of the founders to enact legislation to establish a national university. In retrospect, its absence fortuitously led to a decentralized "academic marketplace" of heterogeneous and autonomous research universities.[25] The formation of national disciplinary associations and publication of disciplinary journals also contributed both to the differentiation of academic cultures and consolidation of the academic profession. The founding of the American Association of University Professors in 1915 and the publication of its "Declaration of Principles on Academic Freedom and Academic Tenure" systematized claims for academic freedom and shared governance. These types of organizations promoted an ethos that historian John Thelin describes as a "new conception of academic professionalism essential to the creation of a university professoriate," which codified academic rank and formalized processes associated with promotion and tenure.[26]

Scholars and administrators will increasingly recognize that organizational design is never arbitrary nor merely adventitious. As organizational theorists John Seely Brown and Paul Duguid observed: "In a society that attaches particular value to 'abstract knowledge,' the details of practice have come to be seen as nonessential, unimportant, and easily developed once the relevant abstractions have been grasped."[27] In this context, philosopher Philip Kitcher posed a self-evident question: "How should inquiry be organized so as to fulfill its proper function?" The answer depends on the differentiated designs of our knowledge enterprises. Organized science, after all, is a "group activity carried on by limited and fallible men," as historian Hunter Dupree put it – formulated in the gender-specific locution of a bygone sensibility – adding that "much of their effectiveness stems from their organization and the continuity and flexibility of their institutional arrangements."[28]

To the extent that the academy conducts business as usual in the face of the formidable challenges confronting contemporary societies, it underestimates their complexity and succumbs to the misperception that the venerable genealogies that support academic cultures – academic freedom, shared governance, or the disinterested pursuit of truth among them – guarantee their perpetuation. To prepare for unexpected contingencies or irreducible uncertainties with the requisite sense of urgency, futurists suggest that strategists investigate a range of sce-

narios.[29] To modulate the surprise provoked by unexpected events, scenarios explore alternative risk landscapes that illustrate potential opportunities or threats. For instance, in their speculative essay "The Collapse of Western Civilization: A View from the Future," historians of science Naomi Oreskes and Erik Conway tried to spur scientists and scholars into responding to incontrovertible evidence of climate change by exploring a dystopian scenario that could emerge in 2373, or three hundred years after the hypothetical collapse of Western civilization. From the perspective of future historians, Oreskes and Conway conjecture that the catastrophic downfall occurred because "we – the children of the Enlightenment – failed to act on robust information about climate change and knowledge of the damaging events that were about to unfold."[30]

The following twelve core values codified by Jonathan Cole, provost emeritus of Columbia University, constitute a working definition of academic culture. Rather than pieties to be routinely invoked without commitment, these values represent norms, ideals, and practices that will continue to guide academic cultures: universalism; organized skepticism; creation of new knowledge; free and open communication of ideas; disinterestedness; free inquiry and academic freedom; international communities; peer review; working for the common good; governance by authority; intellectual progeny; and the intellectual vitality of the academic community. The "value system" articulated by Cole extends the so-called Mertonian norms, referring to the four institutional imperatives proposed by Robert Merton in an influential 1942 essay. He argued that communalism, universalism, disinterestedness, and organized skepticism – the CUDOS norms – underlie the scientific ethos.[31]

We contend that these values will be as tenable in 2100 as they were when philologist and Prussian minister of education Wilhelm von Humboldt envisioned the contours of the modern research university in his plans for the University of Berlin during the first decade of the nineteenth century.[32] But the imperative to question these values is implicit in their formulation. Therefore, we anticipate that future generations will modify existing values or define new ones based on emerging ethical frameworks such as sustainable development, intergenerational equity, or responsible innovation, which simply means "taking care of the future through collective stewardship of science and innovation in the present."[33] We assume, for example, that scholars will demand that academic cultures empower marginalized participants who have faced "dispossession of epistemological agency."[34] Accordingly, philosopher Seyla Benhabib envisions communities of inquiry predicated on discursive rationality rather than on an "Archimedean standpoint situated beyond historical and cultural contingency." She suggests that constituents negotiate consensuses that are "sufficient to ensure intersubjective agreement among like-thinking rational minds."[35]

Furthermore, these values are undergirded by the tenets of American pragmatism, which emerged contemporaneously with the consolidation of the American research university in the late nineteenth century. This approach views truth not as an absolute but as a process, tests ideas through application, treats thinking as a form of action, and relies on observable outcomes. Accordingly, philosopher Richard Rorty calls for a "literary culture" in which "intellectuals will have given up the idea that there is a standard against which the products of the human imagination can be measured other than by their social utility."[36] Although we do not anticipate that the academy will abandon its search for a correspondence theory of truth in favor of the propositions that truth is contingent, pragmatic, and embedded in human practices, we do expect that the neopragmatist tenet that truth is neither more nor less than social consensus will increasingly guide academic discourse.[37]

As society confronts challenges such as the disruptive effects of climate change exacerbated by dysfunctional governance, constituents and stakeholders will need to examine plausible scenarios of the future to understand, assess, and redesign the scope and scale of the academic research enterprise. According to our conception, scope refers to the limits, tasks, and functions that determine the outcomes produced by academic cultures, which influence expectations, options, and plans. Scale, on the other hand, refers to the size, extent, or capacity of academic cultures to operate and execute their educational, research, and service functions by focusing on the magnitudes or levels of resources, time, and complexity. As described below, it is critical for participants to understand the interrelated nature of the scope and scale associated with differentiated academic cultures to effectively and efficiently plan, manage, assess, and redesign their strategies and operations.

Alongside recognition of the scope of its world-leading knowledge production and societal impacts, critiques of the academy find that it falls short of the mark in its potential to secure equitable or optimal outcomes. Observant participants can cite, for example, its equivocal efforts to ameliorate the unraveling of the national culture in the United States, which is currently riven by economic inequality, political dysfunction, social fragmentation, and eroding trust in institutions. Furthermore, despite global leadership in research that investigates the biogeochemical cycles that constitute the Earth's systems, research universities have largely failed to inform government policies that apply the knowledge they have produced to mitigate or adapt to environmental stresses by promoting sustainability.

Nevertheless, extrapolating from near- to midterm projections for leading research universities, one may confidently assume their continued preeminence, both in terms of concentration of research performance and institutional wealth.[38] Buoyed by endowments that rival the gross domestic products of developing countries, research universities in the United States will continue to dominate world-

wide rankings. Despite chronic swings in federal R&D funding determined by the ideological convictions of successive administrations – from surges to draconian cuts – which will inject volatility into university-based research ecosystems, disrupt multiyear projects, drive talent loss and short-termism, and skew agendas toward commercially appealing domains, America's sustained global leadership in fundamental discovery and innovation will remain undiminished. For public universities, the intensification of knowledge production and innovation will be accompanied by demographic and enrollment fluctuations.[39] Knowledge spillovers from university-based research and development will continue to accelerate the diffusion of innovation. But the formation of virtual innovation clusters, augmenting the regional clusters epitomized by the entrepreneurial nexus between Stanford University and Silicon Valley or among Harvard University and MIT and the Route 128 tech corridor near Boston, will increasingly extend the impacts of the triple helix of university-industry-government collaboration.[40]

Although he concedes that even now "only a small fraction will attend college in anything like the traditional sense of the word," for privileged students, elite colleges will perpetuate the comforting myth of what American studies scholar Andrew Delbanco calls the "American pastoral" familiar to generations of predecessors.[41] Except in a metonymic sense, to speak of brick-and-mortar campuses in the digitally augmented contexts of the future seems anachronistic. Nevertheless, research universities and research-based liberal arts colleges will continue to cultivate their verdant quads even as digital infrastructures leverage far-flung global operations that accommodate online, virtual, and asynchronous collaborations. Ad hoc transdisciplinary epistemic communities will circulate ideas and research findings instantaneously across the globe in ways that render historical prototypes such as the invisible colleges or transatlantic Republic of Letters of the early modern era quaint.[42] By 2100, advanced communications technologies empowered by artificial intelligence will work around the strictures of time and space that have bedeviled countless generations of scholars.

As in centuries past, the incremental improvement of historical models will remain the default modus operandi of the academy. The confluence of filiopietism, referring to the excessive veneration of tradition, and isomorphism, referring to the paradoxical tendency for organizations and institutions to become increasingly homogeneous but not necessarily more efficient, will continue to favor stasis rather than organizational dynamism.[43] Nowhere more than in the academy does resistance to change remain so firmly entrenched. As sociologist Neil Smelser observed, "Faculties appear to have cultivated the art of resistance commensurate with their levels of intelligence and ingenuity."[44]

Consensus regarding the significance of transdisciplinary collaboration will increasingly supersede assumptions that research and scholarship are solitary endeavors that produce optimal outcomes by amalgamating individual contribu-

tions. In a globalized world beset by intractable challenges that flout geographical or intellectual boundaries, discovery that creates tangible, use-inspired progress will be prioritized over discovery for its own sake. To advance research and innovation through assimilation, synthesis, implementation, and application, scholars will benefit from a renewed appreciation for know-how, which explores tacit or articulated understandings or techniques that seek to achieve a particular outcome.[45]

By facilitating the transdisciplinary or transsectoral application of socially robust knowledge production and innovation, academic cultures will have advanced the emerging cognitive, epistemological, and social reorientation ascribed by policy scholar Michael Gibbons and colleagues to Mode 2 knowledge production. Whereas the long-standing patterns of Mode 1 knowledge production may be characterized as primarily disciplinary and analytical – indeed, Mode 1 is said to have been "identical with what is meant by science" – beginning in the mid-twentieth century, Mode 2 is presumed to have been conducted in contexts of application, reflexivity, and social accountability. Accordingly, dynamic problem-focused collaboration undertaken in contexts of real-world application and accountability to constituencies outside the academy will increasingly guide research.[46]

In contrast to the operations of "normal science" described by historian and philosopher of science Thomas Kuhn, scientists and scholars will increasingly recognize that efforts to understand "post-normal" anomalies, which are "never absolute but instead variable, imprecise, and uncertain," will be fraught with ambiguity and contested values. Since post-normal problems transcend science, physicist Alvin Weinberg characterized them as "trans-scientific." Inconclusive results will increasingly require governance and "extended peer review" from outside the academy because questions regarding, for example, the "deleterious side effects of technology, or the attempts to deal with social problems through the procedures of science – hang on the answers to questions which can be asked of science and yet *which cannot be answered by science*."[47]

Some patterns are predictable based on current trends. Major research universities will achieve unprecedented scope and scale and deliver economic growth but fail to address the inequitable distributional implications of their research and innovation. Federal investment in research and development, which tends to support fundamental long-term research with public benefits, will continue to decline relative to industry funding, which focuses more on applied research with immediate commercial potential. Allegations regarding the corporatization of university-based research and development will abound. Initiatives to develop revenue streams in response to disinvestment by state legislatures and declining federal support for research will gain momentum. Exploiting perceptions of liberal bias in academia, successive political factions will intensify present efforts to erode the autonomy and self-determination of public universities by making them more subservient to the state. The rivalry between the United States and ad-

versaries for technological and economic supremacy will hinge on expenditures in research and development in fields like artificial intelligence, quantum computing, biotechnology, and nanotechnology. Against the backdrop of geopolitical tensions, research associated with strategic national interests and especially national security will rekindle aspects of the military-industrial-academic complex that once defined the Cold War university.[48]

Academic bureaucracies will be charged with allegations of administrative bloat even as protocols of shared governance remain contested. The proportion of tenured and tenure-track faculty relative to adjuncts will continue to diminish by significant margins. The overproduction of doctorates will contribute to the perpetuation of an academic precariat that suffers from insecure incomes that diminish material and psychological well-being. Small colleges destabilized and undermined by declining enrollments will have no options other than acquisition, merger, or closure. Rapid technological innovation will increasingly require workers to periodically reskill or upskill at colleges or universities since the private sector cannot deliver required outcomes at requisite scale.

Knowledge will increasingly correlate with prosperity and well-being, and if the nation is to remain competitive in the globalized knowledge economy, millions more Americans will require advanced levels of education. Absent significant structural reforms, untold millions more will have spiraled downward in unfulfilling socioeconomic trajectories by 2100. Even now, forty million Americans have attended college without completing their degrees and, to make matters worse, are often burdened with crippling student loan debt.[49] If we are not to become a nation hopelessly divided between an affluent and highly educated upper class, a stagnant middle class, and a working class mischaracterized as having abandoned aspiration, we must build world-class academic infrastructure at a socially meaningful scale. Academic cultures may otherwise be implicated in the stratification of a society "nearly medieval in scope," as futurist Bryan Alexander observes, with the "disempowered poor or working-class people kept in line through a mixture of rich entertainment and ubiquitous surveillance," a "social base of impoverished techno-peasantry and a vanishingly small middle class" dominated by a technocratic elite.[50]

The unprecedented decline in life expectancy among middle-aged Americans without a four-year college degree that emerged during the first quarter of the twenty-first century, as documented by economists Anne Case and Angus Deaton, will worsen as prospects for meaningful employment and social cohesion continue to diminish.[51] Although then, as now, college will not be for everyone, the "relentless credentialism" and "single-minded focus on education as the answer to inequality" that philosopher Michael Sandel has described as a hallmark of our meritocratic ethos will persist and leave a college degree a "condition of dignified work and social esteem."[52] Similarly, universities will remain "sieves for

sorting and stratifying populations; incubators for the development of competent social actors; temples for the legitimation of official knowledge; and hubs connecting multiple institutional domains."[53]

By the early twentieth century, universities had attained both scope and scale unimaginable to the Puritans who established Harvard College, which welcomed its first class of nine students in 1636. By the end of the present decade, an increasing number of public research universities will serve hundreds of thousands of students through both residential and personalized digital modalities. Annual levels of research and development expenditures exceeding USD 1 billion (in 2025 dollars) will become the norm. Scale is a multidimensional assessment of how much value an institution can contribute to society, and the application of scaling theory to research universities demonstrates that increasing scale produces beneficial superlinear returns. Especially for research universities, the fact that "both research and educational outcomes scale superlinearly suggest that these activities are synergistic."[54] A related study of structural variables concludes that differences in research performance stem mainly from size and not from secondary factors such as age, country, or disciplinary orientation: "larger universities outperform smaller universities, even after correcting for size."[55] A global network of "super research universities" will thus dominate research and innovation, "not only in science and technology but also in their scientization of disciplines traditionally outside the sciences," predicts sociologist David Baker. The dominance of individual scholarship will be superseded by a Big Science approach favoring large-scale team collaboration.[56]

The imperative to increase the scale of public research universities will remain in tension with the boutique production strategies that have historically dominated both research and learning within the elite strata of the academy. In our usage, "boutique" refers to the small-scale craft production strategies characteristic of the manufacturing operations of the preindustrial era. We anticipate that analogous artisanal approaches will continue to define the upper tiers of academic practice, which some economists have likened to handicraft industries.[57] Faculties will essentially remain guilds, betraying the medieval origins of the research university.[58] Disciplinary acculturation correspondingly will remain an apprenticeship, which is "not merely the preferred method of manual trades but also of the higher reaches of academic disciplines."[59] Then, as now, there will be no efficient way to discover the origins of the universe.

The inexorable transitions from the elite to mass to universal phases of higher education presciently delineated by sociologist Martin Trow in the 1970s will relegate the vast majority of students to colleges and universities at the peripheries of knowledge production. Whereas in the elite phase, no more than 4 or 5 percent of respective cohorts enroll in college, mass higher education encompasses 15 per-

cent. In the mass phase, priorities shift toward the transmission of skills for technical roles. However, in the universal phase, the rate of participation exceeds 50 percent and becomes obligatory. The universal phase potentially implicates the entire population, and the "primary concern is to maximize the adaptability of that population to a society whose chief characteristic is rapid social and technological change."[60] As policy scholar Simon Marginson summarizes: "Access to higher education shifted from being a privilege in the elite phase to a right in the mass phase and then to an obligation in the universal phase, when higher qualifications become mandatory for full and effective social engagement."[61]

Well before 2100, the United States will have joined the vast majority of nations that have transitioned to the universal phase anticipated by Trow. To have a sense of the implications of this transition, constituents and stakeholders need only consider the prospects for middle-class or socioeconomically disadvantaged students. Since 1970, an increasing proportion of undergraduates have been consigned to less selective second-tier universities or nonselective community colleges or vocational schools, the outcome of vertical institutional stratification.[62] Enrollment in second-tier schools that offer standardized instruction is less likely to lead to graduation than enrollment in research-based colleges and universities that offer curricula broadly grounded in the liberal arts.[63]

Despite egalitarian presumptions, not all colleges and universities are equivalent, and not all degrees are of equal merit.[64] Mere access to standardized forms of instruction decoupled from knowledge production will not deliver desired private or collective outcomes. Furthermore, narrowly focused vocational or technical education will not sufficiently prepare graduates for the cognitive or moral challenges and workplace complexities of the decades ahead.[65]

As they do today, successive cohorts of eighteen- to twenty-four-year-old undergraduates will enjoy the prerogative of full-time immersion on residential campuses offering comprehensive arrays of majors taught by distinguished scholars who actively produce knowledge in their respective fields. But admissions protocols favored by selective colleges and universities will increasingly skew in favor of the privileged by excluding academically qualified middle-class or socioeconomically disadvantaged applicants. Although selective schools will continue to recruit cadres of the disadvantaged and underrepresented, the scale of these efforts will remain negligible in proportion to the numbers needed to achieve equity. Offers of admission and graduation rates alike will continue to correlate most strongly with the socioeconomic status of students as captured by the zip codes or tax returns of parents. Unfortunately, restricted accessibility to advanced educational attainment will continue to exacerbate social inequality and stifle intergenerational socioeconomic mobility.[66]

If the United States is to retain its leadership and competitiveness in the globalized knowledge economy, millions more Americans will need access to advanced

training and education, especially by way of research-intensive learning environments that integrate comprehensive liberal arts curricula with the cutting-edge knowledge essential to the postindustrial workforce. The demands of both equity and prosperity argue that society needs to expand the capacities of colleges and universities to produce millions of additional graduates over the balance of the twenty-first century. As economist and former Princeton president William G. Bowen and colleagues recognized: "Society at large can build the educational scale that it requires only if its institutions of higher education tap every pool of talent."[67] Nevertheless, absent new models for large-scale public research universities, structural limitations – especially those related to scalability, enrollment of socioeconomically disadvantaged and historically underrepresented students, and the production of beneficial outcomes such as enhanced employability or accelerated social mobility – will impede their capacity to contribute to increasing the scope of positive social outcomes. But conversations about equity and opportunity in American higher education must not focus simply on increasing the scale of production of more college graduates.

The foundational prototype of a new model for the American research university was operationalized by the academic community of Arizona State University during the first two decades of this century. The New American University model was conceived to augment both the scope and scale of the standard model of the research university. The model demonstrates that large-scale public research universities can negotiate the tensions between broad accessibility, which entails the enrollment of both students and learners from the widest possible demographic spectrum representative of the socioeconomic and intellectual diversity of our nation, and academic excellence, which refers to world-class knowledge production and innovation with societal impact. The intent behind the model is to address critical national priorities while fostering transformative academic cultures committed to human flourishing and value creation for all potential learners. The evolving model embraces social progress, economic growth, and sustainability as among the foremost objectives, outputs, and outcomes of the learning, research, and service produced by research universities in a pluralistic multicultural society.[68]

Informed by the egalitarian aspirations and social embeddedness of the land-grant colleges and universities, the model couples within single institutional frameworks the research excellence of the University of California system with the educational accessibility offered by the California State University system.[69] Indeed, the California Master Plan for Higher Education, initiated under the direction of Clark Kerr in 1960, established a prototype for the salient contours of the New American University model.[70] The subsequently conceived and interrelated Fifth Wave model – so termed in our book *The Fifth Wave*, in which we describe our heuristic schematization of five waves of American higher education – extends

these objectives by envisioning the emergence of a league of large-scale public research universities committed to differentially accelerating research and innovation while simultaneously scaling enrollments. Fifth Wave universities collaborate as nodes in networks that may be metaphorically conceived as a disaggregated de facto national university, referring to the federally chartered seat of higher learning envisioned by the nation's founders.[71] Evidence of the viability of the model can be found in the trajectories of several large-scale world-class public research universities that similarly integrate research excellence with accessibility through educational technologies at previously unobtainable scales, including Purdue University, Pennsylvania State University, and the University System of Maryland.[72]

Inasmuch as access to knowledge underpins the social objectives of pluralistic democracies, both models are thus further predicated on enabling large-scale public research universities to serve as platforms for universal learning. This corollary aspiration postulates that a subset of these institutions differentially lead efforts to accommodate two groups of learners: 1) traditional on-campus students consisting primarily of the successive cohorts of eighteen- to twenty-four-year-olds who increasingly come from diverse socioeconomic and demographic backgrounds to enroll in undergraduate academic programs based on funded research embedded in the liberal arts; and 2) everyone else, referring to all possible demographics of learners who would benefit from advanced education and training at any stage in their lives, especially the forty million Americans who have attended college without completing their degrees. Educating students who graduate from the top 5 or 10 percent of their high school classes represents baseline contributions by our leading colleges and universities. For a subset of large-scale public research universities, the more consequential challenge is to educate the top quarter or third of traditional cohorts of undergraduates to internationally competitive standards, as well as to provide opportunities for lifelong learning to more than half the population of the United States.[73]

By 2100, the conventional distinction between traditional and nontraditional students will be rendered irrelevant. To cope with rapidly changing conditions, we anticipate that individuals of all descriptions will increasingly need to become *learners* throughout their lives. The advent of scalable educational technologies that support personalized learning will empower learners of all descriptions. In a knowledge economy that catalyzes innovative opportunities, only those who possess relevant knowledge and skills will be competitive in rapidly developing fields. Moreover, we anticipate that consistently executed, universally accessible, and scalable digital platforms will not only supplement but for many replace the traditional undergraduate experience of learning on residential campuses.

A system of higher education that rewards only the privileged few fails to animate hope for meaningful societal progress in those who have been left behind. The New American University, Fifth Wave, and Universal Learning models repre-

sent abundant systems that are explicitly designed to increase the scope of beneficial outcomes of higher education at the required scales. Like languages or open information systems that become more valuable for individuals and society when they are widely adopted, an abundant-systems perspective extends the potential of a high-quality undergraduate education to all qualified learners. Designing and implementing such systems on a scale proportionate to the need would transform and empower our society.

Although many sociotechnical aspects of American society will have changed dramatically by the cusp of the next century, we anticipate that the fundamental values and norms of academic cultures will remain viable albeit challenged by the need to accommodate emerging technologies that affect their scope and scale. Then, as now, scholars with "charismatic authority" from the various precincts of these "organized anarchies" will continue to disrupt "normal science" and unleash perpetual innovation through Schumpeterian "creative destruction."[74] Despite standing on the shoulders of giants, scholars will continue to demonstrate troubling lapses into Stone Age logic. In this relentless environment, according to organizational theorists Ann Pendleton-Jullian and John Seely Brown, we will have to learn to navigate "unbound design" in a "white water world" that is "rapidly changing, increasingly interconnected, and where, because of this increasing interconnectivity, everything is more contingent on everything else happening around it."[75]

In contemplating this rapidly approaching horizon, conviction regarding the effort to improve the human condition, however variously interpreted, will remain the North Star of the academy. "Questioning the idea of progress is a bit like casting doubt on the existence of the Deity in Victorian times," political theorist John Gray points out. "It is not so much that belief in progress is unshakable as that we are terrified of losing it."[76] Nevertheless, the ideals and values of academic cultures will continue to guide progress and serve as guardrails against the perils associated with the "paleolithic emotions, medieval institutions, and god-like technology" that define humanity, as naturalist E. O. Wilson quipped.[77]

Among medieval institutions, none has proven to be more enduring than the university, which, despite its limitations, has over the past millennium shown itself able to eventually respond to the needs and demands of societies.[78] Although we cannot know what novel institutional models will emerge in the next seventy-five years, our bounded rationality offers "many theories about how to choose alternatives, once these swim into our field of vision," according to sociologists John Padgett and Walter Powell. "But our theories have little to say about the invention of new alternatives in the first place. New ideas, new practices, new organizational forms, new people must enter from off the stage of our imaginary before our analyses can begin."[79]

By facilitating discovery and innovation, academic cultures have enabled the most sweeping economic, social, and technological transformation in human history. However, the transformation has become "so technologically and socially complex that the Enlightenment thinking that spawned it may be more harmful than helpful when it comes to guiding our actions," in the estimation of science and technology policy scholars Braden Allenby and Daniel Sarewitz. Our "techno-human condition," as they term it, may be perceived as a "complex, constantly changing and adapting system in which human, built, and natural elements interact in ways that produce emergent behaviors which may be difficult to perceive, much less understand and manage." Inquiries or interventions at this level are contingent, unpredictable, incomplete, ambiguous, contradictory, and uncertain. Current approaches, moreover, have become hidebound and irrelevant because they respond to historical errors rather than anticipate future possibilities. "Either we accept that we are impotent brutes living way beyond our means because of the technological house of cards we occupy," Allenby and Sarewitz point out, "or we search for a different set of links to connect our highest ideals to the reality we keep reconstructing." In other words, the mismatch between our accustomed reductionist thinking and what is required to address the challenges that confront us demands "nothing less than a new frame of reference for understanding and action : a reinvention of the Enlightenment."[80]

By 2100, the academy will begin to recognize that our ways of knowing are neither linear, as described in *Science, the Endless Frontier*, nor nonlinear, as demonstrated by the emergent characteristics of complex adaptive systems, but are instead *entangled*. We invoke the concept of the Age of Entanglement metaphorically to capture the interconnectivity and interdependence of science, technology, culture, and the natural world. Although academic cultures will continue to be "empowered by the tools of the Enlightenment," as inventor and computer scientist Danny Hillis put it, in the decades ahead, the academy will have to come to terms with the Age of Entanglement, a new epoch in which we "no longer see ourselves as separate from the natural world – or our technology – but as a part of them, integrated, codependent, and entangled." Whereas in the wake of the Enlightenment, "progress was analytic and came from taking things apart," Hillis explains, "progress in the Age of Entanglement is synthetic and comes from putting things together. Instead of classifying organisms, we construct them. Instead of discovering new worlds, we create them." If we are indeed "governed neither by the mysteries of nature or the logic of science, but by the magic of their entanglement," then we must seek new ways of understanding this new reality.[81]

Sustained efforts will be required to integrate discovery, creativity, and innovation into our academic cultures, which must assume an explicit mandate to bear responsibility for the scope of the beneficial outcomes at the scales required. Absent the realization of new models for our research universities, however, our na-

tion will eventually have to confront the consequences of the decline of one of our most essential institutional assets and, along with it, our economic competitiveness, well-being, and position of leadership on the world stage. Political scientist Suzanne Mettler expressed the dire implications: "We are squandering one of our finest accomplishments and historic legacies, a system of higher education that was long characterized by excellence and wide accessibility to what seemed to be an ever wider and more diverse group of citizens."[82] The continued emergence of the New American University, or other forward-looking models that similarly embrace its tenets, will be necessary to reinvigorate our academic cultures and extend their legacies into our entangled futures.

AUTHORS' NOTE

Throughout this essay, we recapitulate and adapt arguments from our previous coauthored work, especially *Designing the New American University* (Johns Hopkins University Press, 2015) and *The Fifth Wave: The Evolution of American Higher Education* (Johns Hopkins University Press, 2020). Revised formulations of these and other coauthored work appear in this essay with minimal citation and the permission of respective editors and publishers. An expanded version of this essay will appear in our forthcoming edited volume, *Academic Cultures: Perspectives from the Twenty-Second Century* (Johns Hopkins University Press, 2026). We wish to express our appreciation to Ayanna Thompson, Jonathan Cole, and Sheldon Rothblatt for their review of earlier drafts, and to Kevin T. Dwyer for his astute editorial interventions.

ABOUT THE AUTHORS

Michael M. Crow, a Member of the American Academy since 2021, is President of Arizona State University, as well as Arizona State University Foundation Leadership Chair and Professor of Science and Technology Policy. He previously served as Executive Vice Provost and Professor of Science and Technology Policy at Columbia University. He is the author of *Public Values Leadership: Striving to Achieve Democratic Ideals* (with Barry Bozeman, 2021), *The Fifth Wave: The Evolution of American Higher Education* (with William B. Dabars, 2020), and *Designing the New American University* (with William B. Dabars, 2015).

William B. Dabars is Senior Director of Research for the New American University in the Office of the President, Research Professor in the School for the Future of Innovation in Society, and Senior Global Futures Scholar in the Julie Ann Wrigley Global Futures Laboratory at Arizona State University. He is the author of *The Fifth Wave: The Evolution of American Higher Education* (with Michael M. Crow, 2020) and *Designing the New American University* (with Michael M. Crow, 2015).

ENDNOTES

[1] Clark Kerr, *The Uses of the University*, 5th ed. (Harvard University Press, 2001), 1, 14, 66.

[2] Policy scholar Simon Marginson describes the multiversity as the product of the "imagined society of the early 1960s." It is the society of that era that is "a higher education–led meritocracy grounded in equality of opportunity, serving enterprise and justice in equal measure." Simon Marginson, *The Dream Is Over: The Crisis of Clark Kerr's California Idea of Higher Education* (University of California Press, 2016), xii.

[3] Kerr, *The Uses of the University*, 198.

[4] See especially Jonathan R. Cole, *The Great American University: Its Rise to Preeminence, Its Indispensable National Role, and Why It Must Be Protected* (Public Affairs, 2009), chap. 4; Roger L. Geiger, *Research and Relevant Knowledge: American Research Universities Since World War II* (Oxford University Press, 1993); and Joel Mokyr, *The Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton University Press, 2002).

[5] Walter W. McMahon, *Higher Learning, Greater Good: The Private and Social Benefits of Higher Education* (Johns Hopkins University Press, 2009); and Enrico Moretti, "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data," *Journal of Econometrics* 121 (1–2) (2004): 175–212.

[6] Kerr, *The Uses of the University*, 1, 15.

[7] Clayton M. Christensen, Michael B. Horn, Louis Caldera, and Louis Soares, "Disrupting College: How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education" (Center for American Progress, 2011), 3.

[8] Craig Calhoun, "The University and the Public Good," *Thesis Eleven* 84 (1) (2006): 17.

[9] Christopher Newfield, "What Is New about the New American University?" *Los Angeles Review of Books*, April 5, 2015.

[10] Kerr, *The Uses of the University*, 92.

[11] Daniel Sarewitz, *Frontiers of Illusion: Science, Technology, and the Politics of Progress* (Temple University Press, 1996), 10–11.

[12] See, for example, *The Next Seventy-Five Years of Science Policy: A Collection from Issues in Science and Technology* (Arizona State University, 2022), https://issues.org/next-75-years-science-policy.

[13] Vannevar Bush, *Science, The Endless Frontier* (Princeton University Press, 2021), 60; originally issued as *Science, the Endless Frontier: A Report to the President on a Program for Postwar Scientific Research* (U.S. Government Printing Office, 1945).

[14] Michael Polanyi, "The Republic of Science: Its Political and Economic Theory," *Minerva* 1 (1) (1962): 54–73.

[15] Nathan Rosenberg, "America's Entrepreneurial Universities," in *The Emergence of Entrepreneurship Policy: Governance, Start-Ups, and Growth in the U.S. Knowledge Economy*, ed. David M. Hart (Cambridge University Press, 2003), 113–137; Charles I. Jones, "Sources of U.S. Economic Growth in a World of Ideas," *American Economic Review* 92 (1) (2002): 220–239; and Walter W. Powell and Kaisa Snellman, "The Knowledge Economy," *Annual Review of Sociology* 30 (2004): 199–220. With reference to useful knowledge, see Donald E. Stokes, *Pasteur's Quadrant: Basic Science and Technological Innovation* (Brookings Institution Press, 1997).

[16] Venkatesh Narayanamurti and Toluwalogo Odumosu, *Cycles of Invention and Discovery: Rethinking the Endless Frontier* (Harvard University Press, 2016).

[17] See, for example, National Research Council, *Convergence: Facilitating Transdisciplinary Integration of Life Sciences, Physical Sciences, Engineering, and Beyond* (National Academies Press, 2014); and M. C. Roco and W. S. Bainbridge, eds., *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology, and Cognitive Science* (National Science Foundation, 2002).

[18] Stephen R. Graubard, "Foreword," in *American Academic Culture in Transformation: Fifty Years, Four Disciplines*, ed. Thomas Bender and Carl E. Schorske (Princeton University Press, 1998), viii. The essays in this volume originally appeared in *Dædalus* 126 (1) (Winter 1997). "Given the impossibility of including the full spectrum of disciplines (the omission of the natural sciences is immediately apparent)," Graubard explains, "the decision was made to select two disciplines from the humanities, two from the social sciences. Literature and philosophy were chosen as the representative disciplines in the first category; economics and political science in the second" (vii).

[19] Anthony Giddens, *The Constitution of Society: Outline of the Theory of Structuration* (University of California Press, 1984).

[20] Burton R. Clark, "Academic Culture," Yale Higher Education Research Group Working Paper YHERG-42 (Institute for Social and Policy Studies, 1980), 1–3.

[21] Andrew Abbott, *Chaos of Disciplines* (University of Chicago Press, 2001), 126.

[22] See especially Pierre Bourdieu, *Homo Academicus* (Polity Press, 1988). Although Bourdieu specifically examines the French context, many of his insights are applicable to American academic culture.

[23] Michael M. Crow, Kyle Whitman, and Derrick M. Anderson, "Rethinking Academic Entrepreneurship: University Governance and the Emergence of the Academic Enterprise," *Public Administration Review* 80 (3) (2020): 511–515; and William B. Dabars and Kevin T. Dwyer, "Toward Institutionalization of Responsible Innovation in the Contemporary Research University: Insights from Case Studies of Arizona State University," *Journal of Responsible Innovation* 9 (1) (2022): 1–10, https://doi.org/10.1080/23299460.2022.2042983.

[24] David A. Hollinger, "The Disciplines and the Identity Debates, 1970–1995," *Dædalus* 126 (1) (Winter 1997): 336, reprinted in Bender and Schorske, eds., *American Academic Culture in Transformation*, 356.

[25] See especially George Thomas, *The Founders and the Idea of a National University: Constituting the American Mind* (Cambridge University Press, 2015). See also Albert Castel, "The Founding Fathers and the Vision of a National University," *History of Education Quarterly* 4 (4) (1964): 280–302; and Hugh Davis Graham and Nancy Diamond, *The Rise of American Research Universities: Elites and Challengers in the Postwar Era* (Johns Hopkins University Press, 1997), 12–14.

[26] John R. Thelin, *A History of American Higher Education*, 3rd ed. (Johns Hopkins University Press, 2019), 127–128.

[27] John Seely Brown and Paul Duguid, "Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation," *Organization Science* 2 (1) (1991): 40.

[28] Philip Kitcher, *Science, Truth, and Democracy* (Oxford University Press, 2001), 109, 113; and A. Hunter Dupree, *Science in the Federal Government: A History of Policies and Activities to 1940* (Johns Hopkins University Press, 1986), 9, quoted in Michael M. Crow and William B. Dabars, *The Fifth Wave: The Evolution of American Higher Education* (Johns Hopkins University Press, 2020), 355.

[29] Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World* (Doubleday/Currency, 2012).

[30] Naomi Oreskes and Erik M. Conway, "The Collapse of Western Civilization: A View from the Future," *Dædalus* 142 (1) (Winter 2013): 40, https://www.amacad.org/publication/daedalus/collapse-western-civilization-view-future; and Oreskes and Conway, *The Collapse of Western Civilization: A View from the Future* (Columbia University Press, 2014).

[31] Cole, *The Great American University*, 61–70; and Robert K. Merton, "The Normative Structure of Science," in *The Sociology of Science: Theoretical and Empirical Investigations*, ed. Norman W. Storer (University of Chicago Press, 1973), 267–268. The essay was originally published as "Science and Technology in a Democratic Order," *Journal of Legal and Political Sociology* 1 (1942): 115–126, as cited by Crow and Dabars in *The Fifth Wave*, 49–50.

[32] Louis Menand, Paul Reitter, and Chad Wellmon, eds., *The Rise of the Research University: A Sourcebook* (University of Chicago Press, 2017); Kerr, *The Uses of the University*, 3, 8–9, 13–14; and Chad Wellmon, *Organizing Enlightenment: Information Overload and the Invention of the Modern Research University* (Johns Hopkins University Press, 2015), 185.

[33] Jack Stilgoe, Richard Owen, and Phil Macnaghten, "Developing a Framework for Responsible Innovation," *Research Policy* 42 (9) (2013): 1569–1570.

[34] Govert Valkenburg, Annapurna Mamidipudi, Poonam Pandey, and Wiebe E. Bijker, "Responsible Innovation as Empowering Ways of Knowing," *Journal of Responsible Innovation* 7 (1) (2020): 6.

[35] Seyla Benhabib, *Situating the Self: Gender, Community, and Postmodernism in Contemporary Ethics* (Routledge, 1992), 4–5.

[36] Richard Rorty, "Philosophy as a Transitional Genre," in *Pragmatism, Critique, Judgment: Essays for Richard J. Bernstein*, ed. Seyla Benhabib and Nancy Fraser (MIT Press, 2004), 27.

[37] Louis Menand, *The Metaphysical Club: A Story of Ideas in America* (Farrar, Straus and Giroux, 2001), 256; and Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton University Press, [1978] 2009).

[38] William B. Rouse, John V. Lombardi, and Diane D. Craig, "Modeling Research Universities: Predicting Probable Futures of Public vs. Private and Large vs. Small Research Universities," *Proceedings of the National Academy of Sciences* 115 (50) (2018): 12582–12589, https://www.pnas.org/doi/pdf/10.1073/pnas.1807174115.

[39] Nathan D. Grawe, *Demographics and the Demand for Higher Education* (Johns Hopkins University Press, 2018).

[40] Henry Etzkowitz, *The Triple Helix: University-Industry-Government Innovation in Action* (Routledge, 2008).

[41] Andrew Delbanco, *College: What It Was, Is, and Should Be* (Princeton University Press, 2012), 11–12.

[42] Derek J. de Solla Price, *Little Science, Big Science, and Beyond* (Columbia University Press, [1963] 1986). The metaphor of "invisible colleges" is attributed to the pioneering chem-

ist and natural philosopher Robert Boyle, who coined the term in the 1640s with reference to his peers in the Royal Society of London; Caroline Winterer, *American Enlightenments: Pursuing Happiness in the Age of Reason* (Yale University Press, 2016). See also Dena Goodman, *The Republic of Letters: A Cultural History of the French Enlightenment* (Cornell University Press, 1996).

43 Paul J. DiMaggio and Walter W. Powell, "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields," *American Sociological Review* 48 (2) (1983): 149.

44 Neil Smelser, *Dynamics of the Contemporary University: Growth, Accretion, and Conflict* (University of California Press, 2013), 14.

45 Daniel Sarewitz and Richard R. Nelson, "Progress in Know-How: Its Origins and Limits," *Innovations: Technology, Governance, and Globalization* 3 (1) (2008): 101–117; and Jason Stanley, *Know How* (Oxford University Press, 2011).

46 Michael Gibbons, Camille Limoges, Helga Nowotny, et al., *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies* (Sage, 1994), 2–3, 79–81; and Helga Nowotny, Peter Scott, and Michael Gibbons, "Mode 2 Revisited: The New Production of Knowledge," *Minerva* 41 (3) (2003): 179–194.

47 Alvin M. Weinberg, "Science and Trans-Science," *Minerva* 10 (2) (1972): 209–222; Thomas S. Kuhn, *The Structure of Scientific Revolutions* (University of Chicago Press, [1962] 2012); and Silvio O. Funtowicz and Jerome R. Ravetz, "Three Types of Risk Assessment and the Emergence of Post-Normal Science," in *Social Theories of Risk*, ed. Sheldon Krimsky and Dominic Golding (Praeger, 1992), 251–273.

48 Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (Columbia University Press, 1993), 2.

49 Jacob Lockwood and Douglas Webber, "Non-Completion, Student Debt, and Financial Well-Being: Evidence from the Survey of Household Economics and Decisionmaking," FEDS Notes (Board of Governors of the Federal Reserve System), August 21, 2023, https://doi.org/10.17016/2380-7172.3371.

50 Bryan Alexander, *Academia Next: The Futures of Higher Education* (Johns Hopkins University Press, 2020), 208–209.

51 Anne Case and Angus Deaton, *Deaths of Despair and the Future of Capitalism* (Princeton University Press, 2020); and Anne Case and Angus Deaton, "Life Expectancy in Adulthood Is Falling for Those Without a BA Degree, but as Educational Gaps Have Widened, Racial Gaps Have Narrowed," *Proceedings of the National Academy of Sciences* 118 (11) (2021): 1–6, https://doi.org/10.1073/pnas.2024777118.

52 Michael Sandel, *The Tyranny of Merit: What's Become of the Common Good* (Farrar, Straus and Giroux, 2020).

53 Mitchell L. Stevens, Elizabeth A. Armstrong, and Richard Arum, "Sieve, Incubator, Temple, Hub: Empirical and Theoretical Advances in the Sociology of Higher Education," *Annual Review of Sociology* 34 (1) (2008): 127.

54 Ryan C. Taylor, Xiaofan Liang, Manfred D. Laubichler, et al., "Systematic Shifts in Scaling Behavior Based on Organizational Strategy in Universities," *PLOS ONE* 16 (10) (2021): e0254582, https://doi.org/10.1371/journal.pone.0254582.

[55] For example, "citation impact of universities scales super-linearly with size. Thus, with each doubling of a university's output, the number of citations it receives more than doubles." Koen Frenken, Gaston J. Heimeriks, and Jarno Hoekman, "What Drives University Research Performance? An Analysis Using the CWTS Leiden Ranking Data," *Journal of Informetrics* 11 (3) (2017): 861. See also Anthony F. J. van Raan, "Universities Scale Like Cities," *PLOS ONE* 8 (3) (2013): e59384, https://doi.org/10.1371/journal.pone.0059384.

[56] David P. Baker, *The Schooled Society: The Educational Transformation of Global Culture* (Stanford University Press, 2014), 125–126.

[57] William J. Baumol and William G. Bowen, "On the Performing Arts: The Anatomy of Their Economic Problems," *American Economic Review* 55 (1/2) (1965): 495–502.

[58] William Clark, *Academic Charisma and the Origins of the Research University* (University of Chicago Press, 2006).

[59] Paul Duguid, "The Art of Knowing: Social and Tacit Dimensions of Knowledge and the Limits of the Community of Practice," *Information Society* 21 (2005): 112–113, 115 n1.

[60] Martin Trow, "Reflections on the Transition from Mass to Universal Higher Education," *Dædalus* 99 (1) (Winter 1970): 1–42; Martin Trow, "Problems in the Transition from Elite to Mass Higher Education" (Carnegie Commission on Higher Education, 1973), 7–8; and Martin Trow, "From Mass Higher Education to Universal Access: The American Advantage," *Minerva* 37 (2000): 1–26.

[61] Marginson, *The Dream Is Over*, 28–29.

[62] Brendan Cantwell and Simon Marginson, "Vertical Stratification," in *High Participation Systems of Higher Education*, ed. Brendan Cantwell, Simon Marginson, and Anna Smolentseva (Oxford University Press, 2018), 125.

[63] Caroline Hoxby and Christopher Avery, "The Missing One-Offs: The Hidden Supply of High-Achieving Low-Income Students," Brookings Papers on Economic Activity (Brookings Institution, 2013); and William G. Bowen, Matthew M. Chingos, and Michael S. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities* (Princeton University Press, 2009).

[64] Suzanne Mettler, *Degrees of Inequality: How the Politics of Higher Education Sabotaged the American Dream* (Basic Books, 2014).

[65] Thomas R. Bailey and Clive R. Belfield, "The False Dichotomy between Academic Learning and Occupational Skills," *Dædalus* 148 (4) (Fall 2019): 164–178, https://www.amacad.org/publication/daedalus/false-dichotomy-between-academic-learning-occupational-skills; and William Durden, "Liberal Arts for All, Not Just the Rich," *The Chronicle of Higher Education*, October 19, 2001.

[66] Raj Chetty, John N. Friedman, Emmanuel Saez, et al., "Mobility Report Cards: The Role of Colleges in Intergenerational Mobility" (National Bureau of Economic Research, 2017); Bowen, Chingos, and McPherson, *Crossing the Finish Line*; and Thomas Piketty, *A Brief History of Equality*, trans. Steven Rendall (Belknap Press, 2022), 176.

[67] William G. Bowen, Martin A. Kurzweil, and Eugene M. Tobin, *Equity and Excellence in American Higher Education* (University of Virginia Press, 2005).

[68] Office of the President, Arizona State University, *One University in Many Places: Transitional Design to Twenty-First-Century Excellence* (Arizona State University, 2004), https://

azmemory.azlibrary.gov/nodes/view/271903; Arizona State University, "ASU Charter, Mission and Goals," https://newamericanuniversity.asu.edu/about/asu-charter-mission-and-goals; and Arizona State University, "Design Aspirations," https://newamericanuniversity.asu.edu/about/design-aspirations (accessed May 6, 2025).

[69] Crow and Dabars, *The Fifth Wave*, 22, 73, 204–207, 207–210.

[70] John Aubrey Douglass, *The California Idea and American Higher Education: 1850 to the 1960 Master Plan* (Stanford University Press, 2000).

[71] Crow and Dabars, *The Fifth Wave*, 17–18, 19–28, 71, 83–84, 148, 193–194, 273–282, 425; Thomas, *The Founders and the Idea of a National University*; and Castel, "The Founding Fathers and the Vision of a National University."

[72] Crow and Dabars, *The Fifth Wave*, 19, 79–80, 192, 248–249.

[73] Ibid., 67, 214.

[74] Max Weber, "The Sociology of Charismatic Authority," in *Essays in Sociology*, ed. and trans. H. H. Gerth and C. Wright Mills (Oxford University Press, 1946), reprinted in *Max Weber, On Charisma and Institution Building: Selected Papers*, ed. S. N. Eisenstadt (University of Chicago Press, 1968), 18–19; Michael D. Cohen, James G. March, and Johan P. Olsen, "A Garbage Can Model of Organizational Choice," *Administrative Science Quarterly* 17 (1) (1972): 1; and Joseph A. Schumpeter, *The Theory of Economic Development* (Harvard University Press, 1934).

[75] Ann M. Pendleton-Jullian and John Seely Brown, *Design Unbound: Designing for Emergence in a White Water World, Volume 1: Designing for Emergence* (The MIT Press, 2018), 43.

[76] John Gray, "An Illusion with a Future," *Dædalus* 133 (3) (Summer 2004): 10–17, https://www.amacad.org/publication/daedalus/illusion-future.

[77] E. O. Wilson, quoted in "An Intellectual Entente," *Harvard Magazine*, September 10, 2009, modified November 24, 2020, https://www.harvardmagazine.com/2009/09/james-watson-edward-o-wilson-intellectual-entente.

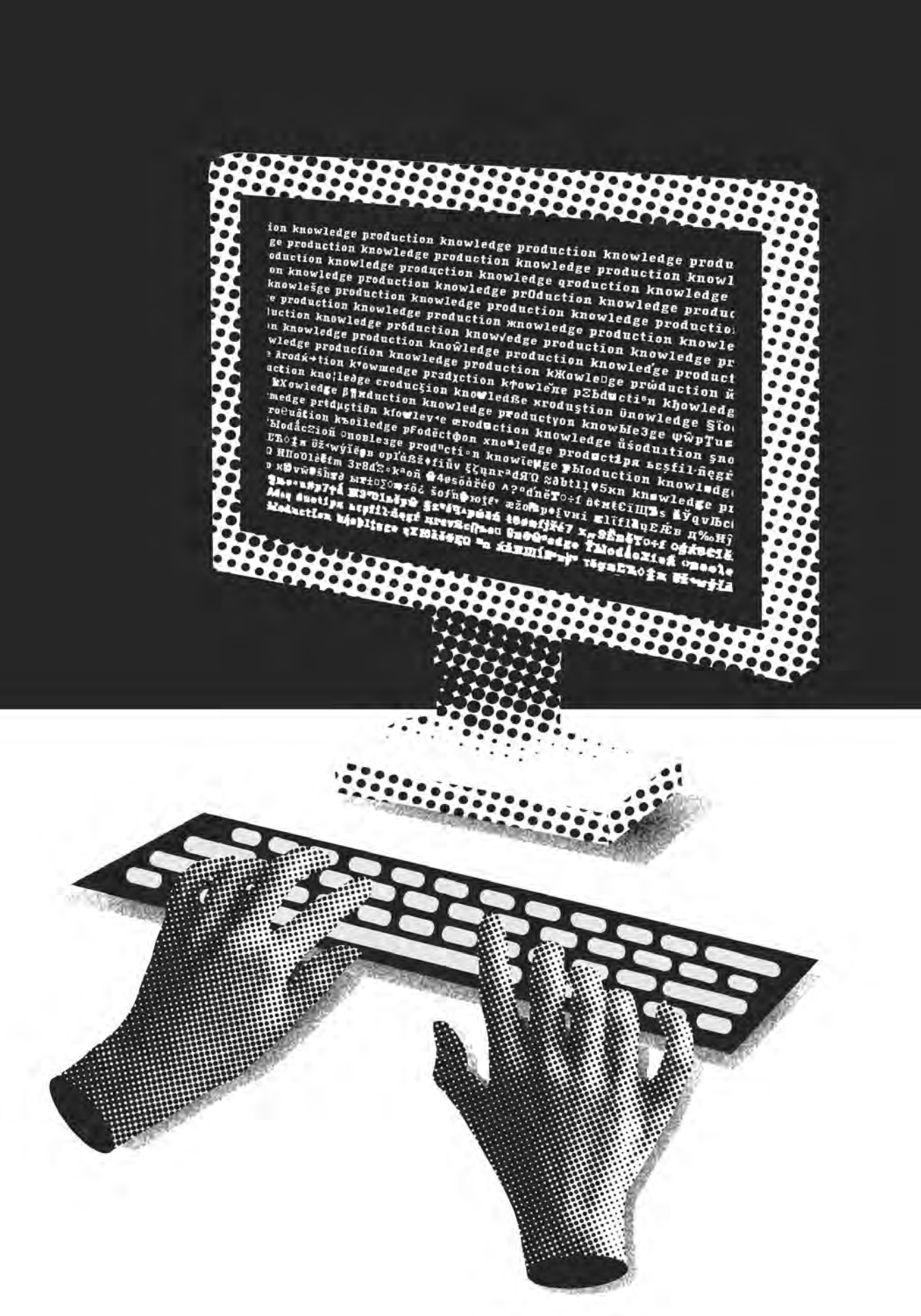
[78] Kerr observed: "About eighty-five institutions in the Western World established by 1500 still exist in recognizable forms, with similar functions and with unbroken histories, including the Catholic Church, the parliaments of the Isle of Man, of Iceland, and of Great Britain, several Swiss cantons, and seventy universities." Clark Kerr, "The Uses of the University Two Decades Later: Postscript 1982," *Change* 14 (1982): 24.

[79] John F. Padgett and Walter W. Powell, *The Emergence of Organizations and Markets* (Princeton University Press, 2012), 1–2.

[80] Braden R. Allenby and Daniel Sarewitz, *The Techno-Human Condition* (The MIT Press, 2011), 44, 63–65; and Braden R. Allenby and Daniel Sarewitz, "We've Made a World We Cannot Control," *New Scientist* 210 (2011): 28–29.

[81] Danny Hillis, "The Enlightenment Is Dead, Long Live the Entanglement," *Journal of Design and Science* 1 (1) (2016), https://doi.org/10.21428/1a042043. See also Ann Pendleton-Jullian and John Seely Brown, "In Search of Ontologies of Entanglement," *Dædalus* 152 (1) (Winter 2023): 265–271, https://www.amacad.org/publication/daedalus/search-ontologies-entanglement.

[82] Mettler, *Degrees of Inequality*, 190.



The Ongoing Biomedical Revolution Created by Rethinking How to Learn

Joshua LaBaer

Future generations will remember our present era for its revolution in biomedical discovery and practice. A near doubling in life expectancy and the cure of diseases previously untreatable reflect this seismic shift. Embracing the scientific method in research and practice fueled this change. Well-known but often overlooked, this method underpins modern bioscience by providing a ratcheting directional engine that advances knowledge and clinical care. Medicine has always been scientific, but it is also a practical art. Historically, its teaching relied on experts passing knowledge to students in the master-apprentice model. The modern emergence of evidence-based teaching, rooted in the scientific method and realized through clinical research, has led to countless new discoveries and improved outcomes. Central to this revolution lies a willingness to test and challenge doctrine, including appraising how to collect, analyze, and validate scientific evidence itself.

When our descendants look back at our current era, they will reflect that it represented a seismic shift in biomedical practice. Since the beginning of the twentieth century, life expectancy in the United States has nearly doubled, rising from fifty to eighty years.[1] Indeed, many of us have friends and family who thrive well into their nineties. So myriad and diverse are medical advances that it would be impossible to designate one as exceptional. Yet this seismic shift did not result from singular events or discoveries. Instead, it arose from adopting a new approach to acquiring biomedical knowledge, one that is rooted in evidence instead of legacy, and elaborated by following the scientific method instead of doctrine. Each success derived from a continually evolving chain that began with observations, which led to questions, explanations, mechanistic understandings, refinements, and ultimately robust applications. The scientific method provides an intellectual ratcheting system that backstops each new informational link and ensures that scientific knowledge moves ineluctably in a forward direction, at least when it is practiced correctly, which does not always happen (more on that later). All of the modern biomedical advances we enjoy have relied on its guiding principles. This change in approach was not immediately apparent to the historical practitioners of medicine, but by the late twentieth century, the father of evidence-based medi-

https://doi.org/10.1162/DAED.a.11

cine, David Sackett, captured the need when he told medical students, "Half of what you'll learn in medical school will be shown to be either dead wrong or out of date within five years of your graduation; the trouble is that nobody can tell you which half."[2] The key to the future lay in constantly challenging the status quo.

We can consider a few examples. The impact of antibiotics on human health cannot be overstated. Nearly one-third of all deaths in the early part of the twentieth century resulted from infection. Alexander Fleming's observation in 1928 that *staphylococcus* bacteria did not grow around *Penicillium*, a contaminating mold on his petri dishes, led him to conclude that the mold produced a substance, which he dubbed penicillin, that prevented bacterial growth.[3] The story paused there for ten years until a team led by Howard Florey and including Ernst Chain and Norman Heatley developed methods to cultivate the mold, extract and purify the penicillin, and evaluate its benefit in both animals and humans in clinical trials and field tests.[4] Further development of production methods and clinical delivery for the antibiotic revolutionized the treatment of infections during World War II, saving thousands of lives. Fleming, Florey, and Chain shared the 1945 Nobel Prize in Physiology or Medicine for this discovery, though it is fair to say that many others contributed to the ultimate success.

More than this individual drug, this work led to a paradigm of scientific discovery that focused on finding bioactive compounds in nature that can be extracted, purified, and eventually delivered to patients. Other antibiotics like tetracyclines, erythromycin, azithromycin, streptomycin, and gentamycin, to name only a handful, got their start by following that paradigm. And this model was not limited to antibiotics. For example, drugs like digoxin, which was originally found in the foxglove plant and is still used to treat arrhythmias, and aspirin, identified thousands of years ago as a pain reliever in the bark of willow trees, and later characterized and purified as acetylsalicylic acid, also trace their origins to natural sources. In my own field of cancer care, many chemotherapy agents used today, including vincristine, paclitaxel (Taxol), etoposide, camptothecins, doxorubicin, and bleomycin, were all found this same way. A single world-changing observation can enable a powerful advancement. But when it leads to a forward-driving discovery engine and a development paradigm, the results reverberate planetwide.

As discoveries go, new tools provide the most leverage. They install doors in walls that had previously blocked access to new knowledge, enabling new exploration and discovery. And when new tools lead to the discovery of still newer tools, the resulting virtuous cycle catalyzes a chain reaction. Our era hosted the development of molecular biology – a discipline that not only spawned other new disciplines of science but also enabled and amplified the use of antibiotics, vaccination, biological therapies, and other drugs in ways that forever altered our ability to study diseases, their diagnosis, and their treatment.

Throughout the middle of the twentieth century, biologists and biochemists deepened our knowledge about life's cardinal processes (including heredity, cell division, growth, production, transfer and use of energy, and maintaining homeostasis). Life's workhorse for these processes is a class of molecules called proteins. Evidence revealed that proteins (which, in my chauvinistic view as a protein scientist, are life's most interesting molecules) provide the verbs to biology. They digest, stabilize, replicate, synthesize, modify, cleave, ligate, transfer, regulate, translocate, pull, carry, receive, bind, transport, recognize, transcribe, and polymerize, among countless other actions. Through combining genetic principles with biochemistry, cell biology, and understanding the structure of DNA, it emerged that most genes represent instructions for how to produce the many proteins needed for life. In oversimplified terms, a gene dictates the amino acids that, when linked in the proscribed order, result in a protein with its unique features and abilities. Researchers found that one class of proteins in particular, called enzymes, act as molecular machines that carry out specific actions in cells, often with extraordinary precision and efficiency. Seeing their potential, pioneers sought to exploit these exquisite machines for new applications.

In 1972, biochemist Paul Berg and his postdoctoral fellow David Jackson published the first human-designed linkage of two pieces of DNA.[5] Berg was interested in viruses, which are biological entities that reside somewhere between molecular structures and life. Viruses are packages of nucleic acids, proteins, and lipids that invade the cells of their hosts and issue instructions to these cells to start making copies of the viruses, at the cost of the cells' own metabolic obligations. Viruses are ubiquitous throughout biology and have evolved to infect all forms of life, from bacteria to plants and animals. Berg wondered if he could link fragments of DNA from two viruses that were unrelated, from distant parts of the evolutionary spectrum. One was the SV40 virus, which lives in the primate world, deep among the vertebrate animal species. The other was from a virus that infects bacteria, called Lambda bacteriophage (or λ). Linking the two today would require only a few days, spent mostly waiting for reactions to occur, and need only a few hours of actual hands-on activity. But like all firsts, in its day, this process required a tour de force of biochemical work; everything is easier once someone shows you how to do it.

The DNA from both SV40 and λ had to be obtained and purified. However, in their isolated forms, both viruses were closed circular loops of DNA such that, in order to link them together, they first had to be cut open, or linearized. Jackson and Berg accomplished this through a defense enzyme that bacteria use to recognize and shred foreign viral DNA. Fortunately, each virus had only one recognition sequence for the defense enzyme (called EcoR1 restriction endonuclease), resulting in one single piece of DNA each (much like opening a bicycle chain at a single link). They used a different enzyme (called *E. coli* DNA ligase), also isolat-

ed from bacteria, to relink the DNA at the ends and restore the circle. But before linking them, they had to ensure that SV40 would attach to λ and avoid the viruses linking back to themselves. To achieve this, they exploited the base-pairing property of DNA: that is, one strand of the DNA double helix matches to the other strand by pairing complementary bases. Adenine pairs with thymine and guanine pairs with cytosine. Jackson and Berg thus added a string of adenine to one of the strands of one virus and a string of thymine to one of the strands of the other virus. These two unpaired strings would naturally seek each other chemically, driving the two viruses to each other instead of to themselves. The complete procedure was complex, with several additional steps required, but in the end, it succeeded in producing one large circle of DNA that included one mammalian virus linked to one bacterial virus.

More than the physical accomplishment of isolating, purifying, cutting, modifying, binding, and finally linking two unrelated DNA was the profound intellectual leap: scientists had the power to recombine DNA from different sources (indeed, Berg referred to the resulting DNA as recombinant DNA). DNA not only carries the instructions to produce the components necessary for life, but, in many cases, it can carry instructions that lead to disease (either aberrant instructions, as in genetically linked disease, or instructions used by pathogens). The ability to mix and match the genetic material meant a faster path to understanding disease, and the ability to impact both health and disease in new ways. In 1980, Berg was awarded the Nobel Prize in Chemistry for his groundbreaking work in this field.

The next crucial step toward molecular biology started in late 1972, when Herb Boyer, a young biochemistry professor at the University of California, San Francisco, traveled to a microbiology conference in Hawaii. Boyer studied the EcoR1 enzyme, which *Escherichia coli* bacteria use to protect themselves from viruses by cutting DNA at specific sequences, specifically GAATTC. In fact, Boyer had provided the enzyme that Berg used in his recombinant DNA experiments. At the Hawaii meeting, Boyer met Stanley Cohen, who like Berg was a Stanford professor.[6] Cohen studied circular pieces of DNA that propagated themselves in bacteria, like miniature chromosomes, called plasmids. Cohen knew how to extract plasmids from bacteria, and he also knew how to put them back into living cells. By this time, antibiotics had been in use for decades, and it was already apparent that bacteria had evolved genes that imparted resistance to antibiotics such as tetracycline or penicillin, which they could laterally transfer to other bacteria using plasmids.

Over late-night pastrami sandwiches, Cohen and Boyer recognized that they could combine their complementary expertise, as well as utilize the discoveries made in the Berg lab, to shuttle a piece of DNA bearing antibiotic resistance into a plasmid that lacked that capability. They could then transfer this resistance

gene–bearing recombinant plasmid into bacteria that were otherwise sensitive to the antibiotic, to give them resistance. As added proof, they could show that only "recombinant" plasmids conferred antibiotic resistance to the bacteria, not "empty" ones. It was already known that bacteria transferred antibiotic resistance via plasmids, so the experimentalists would not be creating something that did not already exist, but this time it would be humanmade. Fortunately, the DNA and genes derived entirely from the microbial kingdom and were thus unlikely to cause trouble in people. Over the course of several months, they transferred pieces of DNA back and forth along the San Francisco Bay by car, exemplifying the modern maxim that scientists often travel thousands of miles to distant places, like Hawaii, in order to establish a collaboration with a next-door neighbor. Soon Cohen and Boyer provided the first demonstration that pieces of DNA could be recombined and moved in and out of living cells.[7] And more importantly, once inside the cells, the recombinant DNA functioned to give the cells new properties, making them resistant to an antibiotic.

It would be nearly impossible to overstate the significance of these early discoveries in molecular biology. They opened the floodgates to tools and experiments that exploited the abilities of bacteria and other model biological systems. The field of molecular biology has found application in both the study of and the administration to biology, affecting all the known kingdoms and countless genera and species.

By providing tools that measure and manipulate the genes and proteins of cells, molecular biology has profoundly deepened our understanding of general biology and how it works. This is true both in broad fundamental strokes, for all species on Earth, and in detail for many species that have been studied intensively, including humans. To understand how biology operates under healthy circumstances, scientists routinely study what happens when things go wrong (for example, genes are mutated, new infections occur, or genes are lost or acquired).

It was the study of genetic traits found in mutants that led to our understanding of heredity. This work began with Gregor Mendel, the monk who tracked heredity in pea plants, and Thomas Morgan, who hunted for heritable mutant traits in the fruit fly.[8] We did not have to hunt for mutants in people, because as one of my genetics professors, David Cox, used to teach us, they walk in the door of our doctor's offices, announcing themselves and describing their own symptoms. Molecular biology revolutionized this paradigm by providing methods to find the mutated genes, as well as tools to test how these genetic changes cause altered physiological function. These approaches have illuminated our understanding of numerous diseases, identifying new disease causes (for instance, mutations in known genetic disorders like Duchenne's muscular dystrophy and cystic fibrosis; mutations in numerous cancer-causing genes like TP53 and RB1), and distinguishing previously unrecognized disease forms (such as different molecular subtypes of breast cancer).[9] Moreover, the elucidation of the molecular underpinnings of disease has

identified points of intervention with increasing specificity, while at the same time providing a ready-made set of tools for testing whether those interventions were successful. The field of targeted molecular therapies, a separate discipline in its own right, emerged from and because of molecular biology. These drugs act at specific molecular junctures in disease, providing impressive improvements with far fewer side effects than historic medications.

Weaving through all of these successes is the common thread of the scientific method itself: starting with a problem, leading to a hypothesis, a test, an analysis, a conclusion, and a new problem. Most histories of science, like this one, leap from success to success, with little attention to the many intervening failed experiments and approaches. Writers understand that experiments do not always work, but page space and time limit how much can be said. Still, this gives the impression of an inexorable march toward knowledge, rather than the fits, starts, and reversals that characterize the actual process. Scientists spend most of their time failing. We try an experiment and it does not work. We try again, with some slight modifications, and it fails again, though slightly differently. We take note of these different failures and try again with yet another set of tweaks hoping to determine if the third round of failure is closer or farther from success. Success at science is all about failing with intent and grace.

Many experimental failures are obvious. These failures occur in apparent and observable ways, such as when cells fail to grow, or they fail to produce an intended protein, or the yield of a product is far lower than expected. Often, with such failures, the application of systematic troubleshooting leads to a solution. At some point in their journey, all graduate students spend months doing such troubleshooting. But a more sinister problem arises when experiments give the appearance of success, although the experimentalists fail to recognize that the results are misleading or even incorrect. These experiments seem conclusive, and overly enthusiastic experimentalists imaginatively fill in gaps to reach an exciting but erroneous conclusion. Poor execution or designs that ask the wrong question lead us astray.

A historic and notorious example of this was Duncan MacDougall's experiment in 1901, intending to measure the weight of the human soul. MacDougall, a reputable Massachusetts physician, studied six terminally ill patients. When they were close to death, they were moved, along with their beds, to an industrial scale so that a change in weight (the leaving of the soul) could be recorded at the time of death. MacDougall's article on this describes the measurements taken on each patient.[10] In one case, the patient died within minutes of transfer to the scale, and "the experiment was so hurried, jarring of the scales had not wholly ceased and the apparent weight loss, one and one-half ounces, might have been due to accidental shifting of the sliding weight on that beam," limiting the usefulness of

the result. In four of the cases, there were weight losses near the time of death, which either continued on to further losses later (that is, losses not related to the moment of death) or returned to the starting weight (one case), or where the moment of death could not be known, when there was "a good deal of interference by people opposed to our work," such that MacDougall regarded these experiments of limited value or at least did not focus on their results when reporting them. This left one patient, when "suddenly coincident with death the beam end dropped with an audible stroke hitting against the lower limiting bar," and he measured a loss of three-fourths of an ounce (about twenty-one grams). This latter patient led MacDougall to conclude in his paper in the April 1907 issue of *American Medicine* that the unexplained weight loss would seem to be "soul substance."

To his credit, MacDougall noted that more experiments would be needed to prove the results. Still, this did not stop him from discussing the results with *The New York Times* using a much more conclusive tone.[11] Those results were then widely disseminated as evidence for the weight of a soul being near an ounce, eventually leading, almost one hundred years later, to the star-studded Hollywood film *21 Grams*.[12] In hindsight, we can see countless problems with this study, including its very small sample size, its selective reporting of results that agreed with the hypothesis, and the imprecision in the ability to measure such small changes in weight. Scales at the time required manually sliding weights back and forth across a bar with markings to make a measurement, and the differences reported in the study were less than 0.05 percent of the total load on the scale (patient plus bed and, at times, plus experimentalist). But a deeper look here would ask the question, was MacDougall even measuring what he thought he was measuring? For example, how did he know the precise moment of death, an issue he himself raised for some of the patients? And how did he know the manner and time that the soul would leave the body? MacDougall's entire experiment relied on the notion that the soul leaves exactly and instantly when the patient dies. MacDougall managed to find what he expected to find.

Looking back through twenty-first-century glasses, we readily find fault with MacDougall's study of the soul substance and its mass; the mistakes and tenuousness of premise leap into view. Still, we should remember that many modern experimental guidelines, including our recognition of experimental biases, had not been established then. And despite those guidelines, we continue to make errors in modern experimentation, albeit our mistakes are often more subtle and difficult to detect, yet nevertheless impactful.

A particular problem arises at the junction of science with medicine. Medicine cannot wait for science to resolve all the issues. Patients need immediate care, so doctors are obliged to make their best judgments with the evidence at hand. Inevitably, erroneous conclusions will sometimes be reached.

Medicine was always scientific; even dating back to the time of Hippocrates, physicians practiced observation, diagnosis, categorization, gathering empirical evidence, and rational thinking. Yet medicine has also always been a practical art influenced by scientific discovery but not wholly based on the scientific method. Well into the twentieth century, the practice of medicine was dominated by the old master-apprentice style of teaching. Senior doctors taught junior doctors, "This is how we do that." Assumptions were made based on what appeared to be logical thinking. Accepted methods quickly became dogma. Medicine has not abandoned this approach, sometimes called "expert-based medicine"; but fortunately, it has supplemented it with the critical new approach of evidence-based medicine.

One of the best examples of this transition from expert-based to evidence-based medicine relates to a previously common surgery: the tonsillectomy. The tonsils are two oval-shaped pads of tissue, one on each side of the back of the mouth and the top of the throat, made up of lymphoid tissue, which contains immune cells, such as lymphocytes, that play crucial roles in detecting and suppressing infections. Since the nineteenth century, surgeons often removed the tonsils when they became inflamed, typically due to infections, such as with colds and fevers. By the beginning of the twentieth century, tonsillectomies were quite common. In Great Britain, where numbers are available, there were around eighty thousand tonsillectomies performed a year, a rate that remained stable for decades.[13] Notably, tonsillectomies were almost exclusively performed on children. Thus, for more than the first third of the twentieth century, tonsillectomies were the predominant reason to find children in the hospital.[14] By the latter third of that century, tonsillectomies would become rare.

What caused such a dramatic change? The answer is complex. Doubts emerged about tonsillectomy early on. Pediatricians in the United States voiced concerns that tonsillectomies were hazardous and were epidemiologically linked to poliomyelitis. But these concerns were quickly met with a powerful countervailing opposition that largely came from the surgeons, who had been taught by other surgeons that this procedure was beneficial and necessary. They argued that when tonsils became infected, patients would swallow the infectious agents and further spread them in the system. Some surgeons argued for social benefit, even advocating for prophylactic surgery. So entrenched was the belief in the need for tonsillectomy that in 1936, when a three-year-old boy with "cold and temperature" died within minutes of the beginning of the surgery, the cause of death was listed as "anesthetic misadventure." No one, not the surgeon, the anesthetist, the coroner, nor the father, even thought to question whether the boy should have had the surgery to begin with. Tonsillectomies had become a medical ritual, common to childhood.[15]

In the 1940s, heightened awareness of poliomyelitis prompted greater public health attention. Polio is caused by the poliovirus, which is commonly spread by

the fecal-oral route, but can also be spread in respiratory droplets. In the years prior to the vaccine, there were frequent summer epidemics. Typically, more than two-thirds of those infected experienced no symptoms. About a quarter might get flu-like symptoms, and some might also have gastrointestinal symptoms. Less than 1 percent of those infected would develop severe neurological symptoms, but when they did, those symptoms could be devastating, including meningitis, permanent paralysis, and even death. The growing emphasis on public health meant more epidemiological studies, which asked questions about long-term outcomes. Growing quantitative evidence suggested that tonsillectomies were precipitating, or at least predisposing to, poliomyelitis, leading pediatricians to warn that the procedure was dangerous.[16] Laryngologists countered, claiming it was necessary and safe, and that the problem was related to procedural changes in *how* the surgery was performed, not the surgery itself. There were repeated efforts to reform how the procedure was done to reduce the risks, but a growing number of quantitative epidemiological studies pointed to a lack of benefit of the surgery.

By the mid-twentieth century, antibiotics were increasingly available, providing an alternative to surgery for treating bacterial tonsilitis. Antibiotics do not work for viral infections. And by 1955, Jonas Salk had released a vaccine for polio, which could arguably have allayed concerns about tonsillectomies and poliomyelitis. But by then there were even more questions about the long-term consequences of a surgery whose benefits were not clear. Several randomized clinical trials were designed to do a head-to-head comparison of outcomes with and without tonsillectomy, but there were so many arguments about how to properly execute such trials that none were completed. By the end of the 1970s, researchers widely considered tonsillectomy unnecessary. The procedure is still done today, but rarely, and only for very specific circumstances, such as chronic and refractory reinfection of the tonsils.

Concurrent with these events, other physicians began to question common management of different diseases and pushed for clinical data to provide definitive evidence for the best approach. This coalesced into a strategy referred to as evidence-based medicine. David Sackett credited Tom Chalmers's 1955 paper on a randomized factorial trial of bed rest and diet for hepatitis for changing his way of thinking about medicine.[17] By blindly randomizing patients with acute infectious hepatitis into treatment arms and monitoring outcomes, Chalmers dispelled a long-held notion that bed rest was required to avoid jaundice and liver damage. The paper led Sackett to rethink medical "conventional wisdom," as well as his own management of his patients, and inspired Sackett's push toward evidence-based medicine. It also helped motivate the use of meta-analysis as a way to evaluate a therapy. Brian Haynes, a clinical epidemiologist and biostatistician, started his journey toward evidence-based medicine in 1969 when he asked a lecturer in medical school what evidence there was for the Freudian theories the

lecturer was recounting. The lecturer admitted that he didn't know of any. Haynes remembered: "I had an intense tingle in my body as I wondered how much of my medical education was based on unproved theories."[18]

Physicians and scientists in the evidence-based medicine group advocated for a different approach to medical education and medical decision-making. Historically, medical school had relied on students memorizing "facts," which, as it turned out, were commonly historically accepted axioms, many unproven. The evidence-based medicine movement pushed medical schools to teach future doctors how to critically evaluate medical research data and understand their implications. As reflected in Sackett's quote at the beginning of this essay, this acknowledged that our understanding of medicine and best practices for patient management would always be in flux, and a critical skill for any doctor is the ability to evaluate and adapt to new knowledge. Similarly, clinical decisions historically were made using expert-dictated algorithms of the If The Patient Has X, Then We Do Y approach. Doctors made their recommendations to patients as proclamations without consideration of the patient's values and without offering alternatives. The new approach, articulated in a series of published articles on "critical appraisal," argued that physicians should understand the clinical studies well enough to assess the quantitative risks and benefits of a recommendation.[19] Furthermore, they needed to adapt this to the patient in front of them, including accounting for other illnesses and health factors that might change the balance. Importantly, this should be presented to the patient, along with the risks and benefits of alternatives so that the patient could participate in the decision.

These efforts led to a surge in randomized clinical trials that questioned historical dogma and, in many cases, overturned it. Cardiology trials belied the long-held belief that a class of drugs called beta blockers would be dangerous after a myocardial infarction. In fact, patients treated with beta blockers within twenty-four hours of such an event had better outcomes than those who were not.[20] By the late 1990s, the long-held tenet of treating low back pain with bed rest also got turned on its head. Patients who returned to full activity early did better than those who remained in bed.[21] And even the evidence-based approaches themselves needed scrutiny. A science developed around the approach to clinical trials to ensure that they test the questions they are intended to and the conclusions they reach are sound. This means avoiding all kinds of biases. Small sample sizes, improper cohort selection, skewed control selection, use of inappropriate statistics, surrogate outcomes versus patient-oriented outcomes, uncontrolled variables and artifacts, multiple hypothesis testing, publication bias, limits to clinical equipoise, misinterpretation, and conflicts of interest are some of these biases.

The evidence-based approach is now pervasive in medicine and forms the core of medical education. Its adoption reflects nothing more than codifying the scientific method as the means to test and advance medicine. Its application enabled

the major medical advances of our time, particularly those described here. Each case began with a problem, followed by a hypothesis, a test, an analysis, a conclusion, and a new problem. The cycle is repeated, each step bringing us better understanding and outcomes.

In fact, the scientific method has become so successful, it now spreads far beyond traditional science. Aficionados of social media platforms will recognize that "scientific testing" appears with varying levels of fidelity in all manner of programming. Influencers in cooking, physical fitness, shopping, gardening, home improvement, photography, cocktails, barbecue, mountaineering, and countless others routinely perform experiments to determine or demonstrate the best approach. Even non–science geeks find themselves captivated by "life hacks" and such programming.

Looking back from the future, our era will be recognized as a key turning point in how we approach medical knowledge. Instead of handing down rote doctrine from master to apprentice, we use the scientific method to test our assumptions and determine best practices. We live at an amazing time, with growing life spans, reductions in world hunger, expanding literacy, and cures for diseases previously incurable. Still, if we accept Sackett, much of what we believe today will turn out to be outdated or wrong, and it is impossible to know which. So we must rely on this critical methodological engine and the innovations that it has already fostered to provide the tools with which we continue to test our thinking in the future. Our health relies on it.

ABOUT THE AUTHOR

Joshua LaBaer is Professor of Chemistry and Biochemistry and the Executive Director of the Biodesign Institute in the School of Molecular Sciences at Arizona State University. He is the author of *Proteomics: Targeted Technology, Innovations and Applications* (with Manuel Fuentes, 2014) and *Proteomics: A Cold Spring Harbor Laboratory Course Manual* (with Andrew J. Link, 2009) and has published in such journals as *Science*, *Nature Methods*, *Microbiology*, and *Journal of Proteome Research*.

ENDNOTES

[1] Center for Disease Control and Prevention, "Mortality in the United States 2023," CDC Stacks Public Health Publications, December 19, 2024, https://stacks.cdc.gov/view/cdc/170564.

[2] Richard Smith, "Thoughts for New Medical Students at a New Medical School," *BMJ* 327 (7429) (2003): 1430–1433, https://doi.org/10.1136/bmj.327.7429.1430.

[3] Alexander Fleming, "On the Antibacterial Action of Cultures of a Penicillium, with Special Reference to Their Use in the Isolation of *B. influenzae*," *Bulletin of the World Health Organization* 79 (8) (2001): 780–790.

[4] Ernst Chain, Howard W. Florey, Arthur D. Gardner, et al., "Penicillin as a Chemotherapeutic Agent," *Clinical Orthopaedics and Related Research* 295 (1993): 3–7, https://doi.org/10.1097/00003086-199310000-00002 (originally published in 1940).

[5] David A. Jackson, Robert H. Symons, and Paul Berg, "Biochemical Method for Inserting New Genetic Information into DNA of Simian Virus 40: Circular SV40 DNA Molecules Containing Lambda Phage Genes and the Galactose Operon of *Escherichia Coli*," *Proceedings of the National Academy of Sciences* 69 (10) (1972): 2904–2909, https://doi.org/10.1073/pnas.69.10.2904.

[6] Siddhartha Mukherjee, "The Dreams of Geneticists," in *The Gene: An Intimate History* (Scribner, 2016), 211–214.

[7] Stanley N. Cohen, Annie C. Y. Chang, Herbert W. Boyer, and Robert B. Helling, "Construction of Biologically Functional Bacterial Plasmids In Vitro," *Proceedings of the National Academy of Sciences* 70 (11) (1973): 3240–3244, https://doi.org/10.1073/pnas.70.11.3240.

[8] Amanda Andrei, "'Experiments in Plant Hybridization' (1866), by Johann Gregor Mendel," Embryo Project Encyclopedia, September 4, 2013, https://hdl.handle.net/10776/6240; and T. H. Morgan, "Sex Limited Inheritance in *Drosophila*," *Science* 32 (812) (1910): 120–122, https://doi.org/10.1126/science.32.812.120.

[9] Michel Koenig, E. P. Hoffman, C. J. Bertelson, et al., "Complete Cloning of the Duchenne Muscular Dystrophy (DMD) cDNA and Preliminary Genomic Organization of the DMD Gene in Normal and Affected Individuals," *Cell* 50 (3) (1987): 509–517, https://doi.org/10.1016/0092-8674(87)90504-6; John R. Riordan, Johanna M. Rommens, Bat-sheva Kerem, et al., "Identification of the Cystic Fibrosis Gene: Cloning and Characterization of Complementary DNA," *Science* 245 (4922) (1989): 1066–1073, https://doi.org/10.1126/science.2475911; Arnold J. Levine and Moshe Oren, "The First 30 Years of P53: Growing Ever More Complex," *Nature Reviews: Cancer* 9 (10) (2009): 749–758, https://doi.org/10.1038/nrc2723; Jesse L. Berry, Ashley Polski, Webster K. Cavenee, et al., "The RB1 Story: Characterization and Cloning of the First Tumor Suppressor Gene," *Genes* 10 (11) (2019): 879, https://doi.org/10.3390/genes10110879; and Charles M. Perou, Stefanie S. Jeffrey, Matt van de Rijn, et al., "Distinctive Gene Expression Patterns in Human Mammary Epithelial Cells and Breast Cancers," *Proceedings of the National Academy of Sciences* 96 (16) (1999): 9212–9217, https://doi.org/10.1073/pnas.96.16.9212.

[10] Duncan MacDougall, "The Soul: Hypothesis Concerning Soul Substance Together with Experimental Evidence of the Existence of Such Substance," *American Medicine* 2 (1907): 240–243.

[11] Special to *The New York Times*, "Soul Has Weight, Physician Thinks: Dr. Macdougall of Haverhill Tells of Experiments at Death. Loss to Body Recorded Scales Showed an Ounce Gone in One Case, He Says–Four Other Doctors Present," *The New York Times*, March 11, 1907.

[12] Alejandro González Iñárritu, dir., *21 Grams* (Focus Features, 2003).

[13] J. Alison Glover, Klim McPherson, Martin J Burton, and John Wennberg, "The Incidence of Tonsillectomy in School Children–Commentaries," *International Journal of Epidemiology* 37 (1) (2008): 9–29.

[14] Louis Dwyer-Hemmings, "'A Wicked Operation'? Tonsillectomy in Twentieth-Century Britain," *Medical History* 62 (2) (2018): 217–241, https://doi.org/10.1017/mdh.2018.5.

[15] M. A. Leslie-Smith, "Notes of the Post-Mortem Examination," East Sussex Record Office, COR 3/2/1936/31, May 2, 1936; William Halliden, "Re Death of Guillian William Colwell, aged 3 years," East Sussex Record Office, COR 3/2/1936/31, May 1, 1936; and Charles Webb, "Inquisition on an Inquest Held Wholly without a Jury, Taken on View of the Body of Guillian William Colwell," East Sussex Record Office, COR 3/2/1936/31, May 4, 1936.

[16] "Poliomyelitis after Tonsillectomy," *The Lancet* 240 (6219) (1942): 552, https://doi.org/10.1016/S0140-6736(00)58114-8.

[17] David Sackett, "A 1955 Clinical Trial Report That Changed My Career," *Journal of the Royal Society of Medicine* 103 (6) (2010): 254–255, https://doi.org/10.1258/jrsm.2010.10k003; and Thomas C. Chalmers, Richard D. Eckhardt, William E. Reynolds, et al., "The Treatment of Acute Infectious Hepatitis. Controlled Studies of the Effects of Diet, Rest, and Physical Reconditioning on the Acute Course of the Disease and on the Incidence of Relapses and Residual Abnormalities," *The Journal of Clinical Investigation* 34 (7) (1955): 1163–1235, https://doi.org/10.1172/JCI103164.

[18] Richard Smith and Drummond Rennie, "Evidence Based Medicine–An Oral History Provides the Background to One of Modern Medicine's Greatest Intellectual Achievements," *BMJ* 348 (2014): g371, https://doi.org/10.1136/bmj.g371.

[19] Ibid.; and D. L. Sackett, "How to Read Clinical Journals: 1. Why to Read Them and How to Start Reading Them Critically," *Canadian Medical Association Journal* 124 (5) (1981): 555–558.

[20] C. M. Hawkins, D. W. Richardson, and P. S. Vokonas, "Effect of Propranolol in Reducing Mortality in Older Myocardial Infarction Patients: The Beta-Blocker Heart Attack Trial Experience," *Circulation* 67 (6) (1983): 94–97.

[21] Gordon Waddell, Gene Feder, and Moishe Lewis, "Systematic Reviews of Bed Rest and Advice to Stay Active for Acute Low Back Pain," *British Journal of General Practice* 47 (423) (1997): 647–652; and Antti Malmivaara, Unto Häkkinen, Timo Aro, et al., "The Treatment of Acute Low Back Pain–Bed Rest, Exercises, or Ordinary Activity?" *The New England Journal of Medicine* 332 (6) (1995): 351–355, https://doi.org/10.1056/NEJM199502093320602.

Securing All the World's Pasts for Our Common Future

Joy Connolly

This essay calls on us to future-proof the study of the world's pasts by creating a new field, ancient studies, that would replace "classics" and "classical studies" by drawing together scholars of ancient cultures from disciplines and area studies around the world. Our current disciplinary divisions, burdened by prejudices about race, religion, and national identity, are hindering intellectual exchange and collaboration. Approaching ancient studies from a global perspective demands the conservation of a global archive; commitment to its preservation will help restore the humanity stolen from people invaded, enslaved, exploited, erased, and ignored in past centuries and today. The vitality of the archive's contents will enrich our care for the world in all its variety and complexity and help us imagine a better future for all our pasts – as well as for ourselves and generations to follow.

Quoted from "Ancient Rescue Operation at the American Council of Learned Societies," published in *The Chronicle of Higher Education* on May 10, 2069:

> At the 150th ACLS Annual Meeting, the executive directors of the American Historical Association, the Society for Classical Studies, the African Studies Association, the Association for Asian Studies, the Latin American Studies Association, and several other professional societies announced their plan to provide online courses in the history, languages, and art of ancient cultures around the world. "With philanthropic support," the group said, "we will do our best to keep alive the knowledge and skills that were once accessible to students and the public in hundreds of American colleges and universities, but which are housed today in only a few private institutions."

This P. D. James–style *Children of Men* doomsday scenario for the academic study of the world's ancient pasts is nearer than you think. Today, in most of the fields represented at that fictional ACLS Annual Meeting of 2069, enrollments and majors are flat or declining in professional conditions that demand more students and more tuition dollars. Where new disciplinary forms that harness insight and experiment emerge regularly in the sciences (see neuroscience and cognitive science), humanists have traditionally preferred an accretive model, adding emergent fields

https://doi.org/10.1162/DAED.a.12

like Black studies to traditional ones like history and classical studies. But the accretive habit fragments faculty, privileges specialization, and slows down collective adaptation to new technologies directly relevant to humanistic study, like machine translation. Worst of all, it lulls faculty into clinging to old disciplinary forms rather than designing new ones. It is unsustainable and undesirable.

The good news is that scholars have options. We can redress the gaps and intellectual injustices still enacted today in the ways we care for evidence and organize our disciplines and departments. We can do the work of "both-and": we can design a field that preserves and refines the skills we need to interpret ancient material and that appeals to a broader base of students, administrators, funders, legislators, and the public than the regionalist, protonationalist groupings that constrain our study now.

In the collective scholarly imagination of the last three centuries at least, the ancient past was populated by white men associated with the cultures of Greece and Rome – much like the past as imagined in *Star Wars*, where white men in white robes fight for the Republic against the Empire.[1] Those days are passing. We are ready for a new field, one that is no longer a plausible vehicle for claims of white supremacy and patriarchy, one that speaks to the interests of students and the public. The new ancient studies will help us to know ourselves in all our thrilling diversity, empowering us to move forward together into a future where we thrive in common – once we do the work of intellectual reparation that will make us better stewards of our global ecology.

I use the term *ecology* to signify not only living things and their physical environment but the total archive of human experience and endeavor in the present and the past. This total archive is our proper object of study and the context for my argument.

We face a flood of wicked problems. Rising atmospheric temperatures are already sparking migration and conflict across the planet and, along with climate change, we are seeing steady declines in social trust, the growth of fundamentalism and the armed policing of borders, persistent inequality, the hollowing out of democracy, and the censoring of speech and the arts. Cultures historically separated by geographical distance are coming into everyday contact, creating as many opportunities for discord as for alliance and exchange.

Figuring out our future conditions of collective thriving is not a task we can assign to experts in a few select fields. The scope and complexity of the challenges are as broad and diverse as humanity itself and demand humanistic investigation and understanding.

Our colleges and universities are our most important institutional stewards of knowledge. If they want to join wholeheartedly in the work of tackling these chal-

lenges, they will have to commit to the production of knowledge for the common good and invest in fields of liberal inquiry that are now being cut down or banished for failing to suit the demands of the market.[2] Its dynamism and concentration on extractive growth make the market far too volatile and present-oriented in its strategic vision, not to mention too inequitable in its organization, to set the priorities of the academy. Scholars, students, administrators, and supporters must push back against market pressures and make a strong case for the value of humanistic skills and knowledge on the bold and honest grounds that they are necessary for our survival as a species. We need to understand how and to what end humans behave, think, believe, dream, and communicate. We must make this case now – boldly, loudly, publicly, with urgency and with no apology.

This is all the more pressing in 2025, a year that has witnessed a concerted attack by the Trump administration and its Republican enablers in Congress on the production of knowledge across academia. The crisis has laid bare the uncomfortable truth that colleges and universities lack a broad base of public understanding and support. This is a consequence of many factors, notably the explosion in the cost of college tuition, but it also arises from the long-standing but ever-growing gap between what the public needs from academia and what highly specialized scholars reward themselves for producing; between the most popular digital modes of circulating knowledge (such as Instagram and television series) and the peer-reviewed books and articles deemed legitimate by the academic community; and between what college students want and expect from college and the department names and divisions that are beloved by faculty but obscure and intimidating to many undergraduates. We have, many of us, become strangers to the people we seek to serve.

What does the past have to do with current challenges? One thing we know for certain about a future in which all humans thrive is that its conditions of life will be very different from ours today. Developing a more detailed vision of that future depends on becoming familiar with alternative modes of seeing and knowing the world. For this purpose, as Alain Locke says, "there is nothing more galvanizing than the sense of a cultural past."[3] The past offers no easy solutions to the dilemmas in which we find ourselves. It does warn us against paths not to take. And looking backward to deepen our knowledge of human experience and to understand better how communities view their origins and values is as important a part of our approach to navigating wicked problems as developing new medical technologies or generative AI (which makes heavy demands on our energy and water supply). The urgency of climate change and other crises means we must direct ourselves to the task of enhancing our collective capabilities using every tool available.

What I call the ancient archive, following historian and political theorist Achille Mbembe, is one of those tools.[4] This archive is the assemblage of materi-

al surviving from every region in the world with a culture or cultures identified as prior to the modern: texts of all kinds, artworks, artifacts, monuments, buildings, biological remains, and oral histories. It possesses a unique capacity to help us understand human life in all its aspects – so long as we construct it as global in scope and our study of it is disposed with global interests and needs in mind.

The full ancient archive (which we have only just begun to assemble in our curricula and research projects) possesses profound explanatory power. By contrast to the regional concentrations of evidence and interpretation that skew the study of antiquity today, it will allow us to gain a fuller and more complete understanding of our conditions of life now and how we arrived here. Fully embracing a global archive would require us to change our habits – to recalibrate our strong tendency to specialize and individualize our research questions, and to make collaborative work part of the typical scholar's career, properly prepared for and rewarded. Understanding the flows of people and ideas across regions and seas is a massive enterprise, best tackled through habits of intellectual exchange eased and enriched by the socializing impact of a new disciplinary formation. This is the best corrective to the web of borders that nineteenth-century scholars laid over the map of antiquity, sometimes so authoritatively that names from ancient Latin and Greek texts were brought forward in time to label new states like Syria, India, and Palestine.

Getting the past right and reflecting on useable pasts are tasks that embrace and transcend the empirical work of archaeology and history. As the archive grows, so does its capacity to correct beliefs and refine histories many of us take for granted. The European refusal to accept Indigenous American ways of knowing as anything but the "curious practices of strange people" helped justify crimes of genocide and enforced migration from the seventeenth to the twentieth centuries. Until very recently, reputable historians could complain that scholarship on the continent of Africa "rests on nothing more solid than shrewd guesswork," and scholars of ancient Mayan and West African cultures were forced to defend their use of words like "politics."[5] The lesson of the scholarly pathbreakers of the past forty years is that research into cultures beyond Europe compels the rethinking of scholarly business as usual, pushing the expansion and revision of familiar frameworks, methods, and categories. Sooner or later, this push sweeps or seeps into public knowledge, making people's understanding of the world more accurate and allowing for powerful, emotionally laden storytelling about what links us as a species, which improves democratic decision-making and encourages us to think of ourselves as members of a large collective with common experiences.

Ancient studies addresses itself to the full range of human activity and thought in the periods before the modern systems of colonialism and capitalism took hold, with their conceptual limitations and habits of oppres-

sion. This means the ancient archive is also a primary resource for transformative imagination, a place from which we may rethink concepts and categories of experience of all kinds, from gender and race to our relationships with animals and gods to definitions of justice.

In this sense, it assists us in solving the temporal puzzle presented by the climate emergency, which demands that we lean into learning how to live in the future – how to think about the consequences of our actions differently from how we have long been accustomed to do. In places warped by colonialism, imperialism, and extractive capitalism – which is to say, everywhere on the planet but especially the Global South – the archive holds the material for prompting alternative structures of thought, for jolting ourselves out of old habits, values, and beliefs about what is possible.

We think differently about the history of women and the development of what some still call "Western literature" when we reflect that the first poet on the planet whose name is known to us is not Homer but Enheduana, an Akkadian woman living fifteen hundred years before Homer in what is now Iraq. An account of the origins of democracy that encompasses the historical experiences of West Asia, Africa, and the Americas changes expectations and beliefs about the politics of these regions. We are better placed to tell a more accurate story about transregional commerce and to speculate on points of religious or aesthetic commonality across cultures when we gaze at a little bronze Buddha from Kashmir that was discovered in a sixth-century CE gravesite in eastern Sweden, or a graceful ivory statuette of a woman that made its way from India to a storeroom in Pompeii. The archive expands our sense of the ancient potential for interconnection and transcultural development, phenomena that we are accustomed to associate exclusively with modern life. In enlivening our contemplation of a common human experience in the past, it kindles our imagination of a shareable future.

Twenty years ago, in the final pages of her aspirational elegy for the field of comparative literature, Gayatri Spivak spoke of "planetarity" – a concept she suggestively noted was possibly best contemplated from the perspective of precapitalist cultures. Writing at the very beginning of the twenty-first century, Spivak used the image of the planet to signify the opening up of thought about the flows and contacts among people embodied in dry or watery environments, and the very different ways, depending on their locations and histories, humans conceive of and relate to their surroundings and to nonhuman living beings.[6]

More recently, Mbembe began to use the word "planetary" to summon up the connection between human life and the Earth. The planet is the living world that encompasses not only the "natural" spaces of open land, air, and water as well as the human-constructed spaces of cities, agrobusiness, and fish farms, but realms beyond the established ken of European and American thought. Drawing on Africa's animist cosmogonies, Mbembe invokes a principle of animation as the

"vital breath" shared by all beings that are "born together" and form a unity. Among the Dogon in Mali, the Yoruba in Nigeria, and other communities in the Congo Basin, he finds an alternative metaphysics of power and agency, and theories of the world's origin that do not acknowledge the fundamental difference between the human subject and the world around it that European and American thought does. He comments:

> Planetary politics should be connected to a politics of life, to a politics of the Earth. That includes all creation: all the people of the world; the creations or works of humanities; the mass of things we have invented: animals, plants, microbes, minerals; and mixed bodies (which is what we all are). In other words, the whole physical universe, all of reality, including (since I'm drawing from the African pre-colonial archive) spiritual and biological energies consistent with the definition of the living world.[7]

Since the world finds itself in a state of fragmentation, he sees a need to "*re-member* it, that is, put back together its different parts, reassemble it and reconstitute it as an integrated system in which humans and non-humans, physical, chemical and biological components, oceans, atmosphere and land-surface are all interlinked in a grand gesture of mutuality."[8] This re-membering involves gathering of evidence, reordering of knowledge, and embracing new methods.

It is a process of healing, for our archive is damaged and scattered, in serious need of repair. In the colonized regions of the world, it has been virtually annihilated, sometimes by neglect, more often by intentional violence. Anthropologist Renato Rosaldo describes the phenomenon of "mourning for what one has destroyed" that he sees at work in the scholarly activities of recording and recovery that take place in the wake of the conquistadores, the British and French forces in Asia and Africa, and many others. South Asian studies scholar Sheldon Pollock points out the need to study the decline of Sanskrit culture, the dominant transregional order across Asia without parallel until the rise of Americanism and global English, which for the two centuries before European colonialism constituted one of the most innovative fields of systematic thought in human history. Novelist and social critic Samuel R. Delany notes that he has no idea where in Africa his ancestors originated because records of their experience were systematically destroyed, leaving only the trace memory of an arrival in New Orleans to be passed down in family memory.

> The historical reason that we've been so impoverished in terms of future images is because, until fairly recently, as a people we were systematically forbidden any images of our past. . . . When, indeed, we say that this country was founded on slavery, we must remember that we mean, specifically, that it was founded on the systematic, conscientious, and massive destruction of African cultural remnants.[9]

Reparation is the third reason to make the whole world's pasts a priority for institutional investment, so that we may redress the intellectual injustices still enacted today in the ways we care for evidence and design our disciplines and departments. Organizing the search for traces of all histories, not just select ones, will allow us to recover the pasts that have been deliberately erased. A field designed with the goal of helping to build a common life will conserve the global archive that will help restore the humanity stolen from people invaded, enslaved, and exploited in past centuries and today. The vitality, beauty, and creative invention of the full archive's contents will enrich our care for the world in all its aspects.

For the ancient archive to provoke transformative imagination, to help us understand the full complexity of ancient cultures, to do the work of epistemological and cultural reparation, to instill in us generous care for all the world, we need a new field of study. Current forms no longer suit our needs.

In American colleges and universities today, some scholars of the world's pasts are collected in narrowly focused departments of "classical studies," now frequently renamed "Greek and Roman studies" or "ancient Mediterranean and Near Eastern studies" (and occasionally combined with departments of religion, European literature, or philosophy). Many others, especially scholars of non-Western pasts, are scattered across disciplinary and area studies departments, with one or two faculty members each placed in history, archaeology, languages and literature, philosophy, Asian studies, Middle Eastern studies, and so on.

Meanwhile, in the wealthiest and most prestigious institutions, European studies is distributed into nationalized degree-granting departments of French, Spanish, Italian, German, Russian, sometimes Romance and Germanic and Slavic languages and cultures, and, the largest of all, English.[10] In either model, a "Western" mental map replicates itself. The second, non-Western group, fragmented and isolated, must constantly fight for survival, department by department. The first or "classical" group suffers from the founding error of its intellectual origins that at least two generations of reform failed to set right.

Reform has failed because the error runs too deep for correction. "Classical studies," even under its relatively new name of "ancient Mediterranean studies," is founded on the notion that ancient Greece and Rome make up the most valuable past, the only past worth studying, the past whose glorious achievements make them representative of the entire "ancient world." We might call them by the compressed name "Greece&Rome" to best convey their symbolic hegemony. This reductive vision of what still passes under the name "the ancient world" was disseminated in the eighteenth and nineteenth centuries by scholars living in a Europe intent on the exploitation of Asia, Africa, South America, and Australia and working in a university system designed to educate a national elite.

The cultures of Greece&Rome that were named "classical" provided a proto-national origin story for the European states that created modernity and, by extension, for modernity itself. They became the first chapters in the autobiography of the West, with Mesopotamia and Egypt furnishing the preface, and India and China serving as sidebar commentary to the narrative arc of European global domination. German scholars, setting the trend for their European and American colleagues, advanced the professional study of Greek and Roman culture as an auto-ethnographic field that married scientific with moral education.[11] They issued subjective judgments about aesthetic and moral value in an objectivist tone that asserted their scholarly authority on a universal scale. To study classical culture was to know and claim heirship of its essence, and this essence was true human perfection, universal in appeal, making the study of other, inferior cultures otiose and even demoralizing.

The legacy of Greece&Rome makes itself felt everywhere in America, from the institutional and physical architecture of the nation's capital to the genres that dominate its literary canon. As the vehicle of elite values and the putatively universal symbol of the best of what humans have thought and said, it has been extraordinarily difficult to dislodge: on the contrary, mastery of knowledge of Greece&Rome offered some marginalized and disenfranchised people a path to recognition and distinction. So long as it is preserved as a field of scholarly study while other ancient cultures must fit in around the edges or vanish altogether, it will continue to broadcast its message of cultural and racial superiority, notwithstanding the politics espoused by individual practitioners. As a field created by nineteenth-century scholars steeped in the secular ethnonationalism of their day, it will always struggle to accommodate research that transcends the temporal and geographical borders of the Greek and Roman empires. The ethnonational frame is one reason why "classical reception," a subfield that studies the transmission and influence of ancient Greek and Latin culture around the world up to the present day, still occupies a marginal place in the field after forty years of efforts to gain it legitimacy. It is why classical studies has always held the study of Judaism and Christianity at a distance, despite the persistent influence of religiosity on American national life.

Here is our opportunity. Ethnonationalism and its corollary racism fed the growth and popularity of an ancient studies focused on Greece&Rome. Such a narrow concentration made sense in the context of the long first century of modern higher education, when the system was designed to embody and justify national values, and the origin tale of Greece&Rome as the anchor of European and American institutions and democratic spirit still held among white elites (and not only them). But the globalization of higher education that occurred in the wake of World War II, though it wreaked destructive force, also freed faculties from that purpose. Today, American universities and colleges proudly dismiss the old nationalist mission and call themselves global institutions. Hiring faculty and re-

cruiting students from all over the world has become one of the acknowledged marks of excellence for colleges and universities, a selling point on websites and a common theme of orientation-day speeches. Over one million students from outside the United States study in American institutions, representing the system's quick return to pre-COVID highs. Over half of these students come from China and India.[12] (Current moves by the Trump administration threaten to reduce the number of international students and scholars in the United States dramatically, which would weaken American higher education for generations to come.)

These students and faculty find themselves in a system of fields that upholds a nineteenth-century worldview. Though the university's faculty and students come from many places around the world and the faculty in principle publish for global audiences, almost no attention is paid, and no reward is given, to the work of forming new curricula, methods, and priorities that would respond to the interests and perspectives of the global community actually resident on campus. So far, instead of exploring alternatives to the national frame, scholars have mostly doubled down on professional specialization, offering proof of value by the standards of commercial production: more publications, more hurdles to mastery, everything reinforcing the borders of fields and subfields.

The path to progressive evolution is open. With the globalization of the production of knowledge, now that the nation-state is no longer the origin and endpoint of education and research, and precisely because it once again looms dangerously large in global politics, we must redirect our energy to study all the world's pasts, drawing in students and scholars from the composite nation that is the American academy.[13] Organizing ancient studies around the global archive shows the best promise of establishing new academic values and intellectual goals of collaboration, comparative work, translation, and the skills of conserving and interpreting primary materials. Transforming a field that continues to legitimate Eurocentric values and politics, we will foster a decolonized field whose object is repairing the ancient archive of ideas and artifacts and, by extension, the world.

Recognition of intellectual injustice and the unequal numbers of faculty devoted to studying different traditions is only the beginning. After affirmative recognition comes the work of transformative redistribution. In practice, this means redesigning undergraduate and graduate programs with a view to opening up unfamiliar areas of study; it means reassigning funds and faculty lines. Above all, it means tackling the fear – justified by past malpractice – that a move to globalize the study of the past is a threatening act of appropriation and universalization that will erase difference and subordinate everyone to white Euro-American habits and priorities. When the conditions of work are visibly unequal – when in a typical large research university, there may be fifty scholars working on premodern

European literature and only three on premodern Asian literature – it is difficult to set aside the creeping worry that the majority will impose its will.

Respecting this fear, we can equip ourselves by drawing heavily on the large body of work that dissects the failings of past scholarship and explores what equitable scholarship looks like. Here Afrofuturist thought offers the most practical and intellectually exciting way forward. It insists that people of color thrive in all times and places, and that they make history. As Bennett Capers puts it:

> A recurring theme in Afrofuturism is reclaiming the identities and perspectives that were lost as a result of the slave trade and colonialism. In this sense, Afrofuturism is both future-looking and backward-looking, committed to reclaiming approaches, methodologies, and ways of thinking that predate slavery and colonialism. Afrofuturism asks: What would we be without? What would we be if? Most importantly, by engaging in reclamation, by valorizing a range of cultural traditions, it offers a vision of what could be in the future.[14]

Studying the global archive involves the cocreation of scholarly practices in collaboration with scholars from all over the world that have the explicit goal of seeking understanding outside the priorities, lenses, categories, and habits of the scholarship that is born with and from European modernity. Borders will be one of the first things to go, at least metaphorically, in most arguments on behalf of designing a new structure for thought and study. Senegalese politician and poet Léopold Sédar Senghor called for the world to come to "a new rendez-vous, a meeting place of giving and receiving" knowledge, opinions, experiences, and perspectives.[15] Setting a global scope for ancient studies clears the way to making Senghor's giving and receiving an institutional and intellectual reality. The most important border to be erased is between "the 'West' and the rest," as ancient studies intentionally clears space for the study of cultures beyond the Mediterranean.

Establishing scholars of all the world's pasts in a self-conscious community will allow us to identify commonalities and differences and to work together in a spirit of honesty and generosity on developing new paradigms of scholarship born outside the still dominant European-American context. The new field builds chronopolitical alliances, healing breaches across domains that were divided two hundred years ago for purposes that are not ours today. It places us in a better position to reassess and re-turn the past so as to "unearth and infiltrate new futures into the present" and to fight more effectively to preserve the archive of the world's pasts.[16]

One of the most important questions will be about the temporal definition of the "ancient past." How does a community define its "ancient past," its "antiquity"? Perhaps most challenging of all: "Do all cultures and communities have an antiquity?" In 2044, the United States is projected to become a majority-minority country, with people of color making up more than half the population. This diverse community will produce new answers to these questions that open up new paths to hope.

Meanwhile, the still predominantly white professoriate has a dual responsibility: to advance its own diversification and to clear the ground for the new ancient studies to emerge – a field that will be finally rightly shared with many others.

We had best turn ourselves to this work quickly, because we are losing skills, material, and people. Each year, fewer and fewer students in American institutions study Greek, Latin, Sanskrit, ancient Chinese – indeed any language other than English, especially languages no longer spoken. American higher education has never invested in teaching Indigenous languages or knowledge systems. The skills of close attention to material evidence fostered in archaeology, epigraphy, papyrology, and numismatics are becoming difficult to find in all but the wealthiest institutions. Archaeological sites and artifacts are at risk in many parts of the world and, lacking a public that understands their value, will be destroyed by intention or neglect. Even ancient cultures with wealthy constituents are failing to attract the funds they once did, and cultures that lack a tradition of philanthropic stewardship are at enormous risk. We are losing ecological diversity, not only in the biosphere but in our languages and cultures.

I will end by repeating the Afrofuturist challenge: What might we do if we could? What if we were to set aside the language of impossibility and loss and adopt bold new arguments for the necessity of studying the past? What do we have to lose that we won't lose within a generation in any case? I propose the following manifesto for the new field, against the backdrop of an American academy that embraces humanistic inquiry for its world-preserving benefits:

> Ancient studies gathers together scholars of the world's premodern cultures, variously defined and located across chronological time, to study in its full plurality the range of human activity on the level of the individual and the group, from creative expression to state formation, around the world. With the overarching mission of cultivating mutual understanding and bridging differences across people, the field cultivates skills in interpreting evidence (texts of all kinds, artworks, other remains) and its modes of preservation and transmission. It employs tools and methods from various disciplines, including anthropology, archaeology, art conservation, art history, ethnic and gender studies, history, linguistics, literary studies, philosophy, politics, and religious studies. It celebrates equally collaboration, generalist knowledge, and scholarly specialization, each as necessary for the production and circulation of knowledge. Acknowledging the limits on past approaches to studying antiquity, which concentrated on Greece and Rome to the near exclusion of other cultures, it encourages the exploration of understudied periods and regions and the generation of new research questions emerging from cross-cultural comparisons and juxtapositions. In a world preoccupied with the demands of the present,

ancient studies instills care for the world and for the traces earlier humans have left behind in texts, materials, and memories, on the grounds that this stewardship is an act of care for ourselves and the future.

This is study the whole world needs.

AUTHOR'S NOTE

I am grateful to Ayanna Thompson for the chance to present this summary of my manuscript in progress, titled *All the World's Pasts*. I am also grateful to Sheldon Pollock and Walter Scheidel for their comments on an earlier draft.

ABOUT THE AUTHOR

Joy Connolly, a Member of the American Academy since 2021, is President of the American Council of Learned Societies. She previously served as Interim President and Provost of the Graduate Center of the City University of New York and Professor of Classics and Dean for Humanities at New York University. She is the author of *The Life of Roman Republicanism* (2014) and *The State of Speech: Rhetoric and Political Thought in Ancient Rome* (2007).

ENDNOTES

[1] Bennett Capers refers to the racial makeup of the (futurist) past as imagined in *Star Wars*. Bennett Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," *New York University Law Review* 94 (1) (2019): 101.

[2] See the American Academy of Arts and Sciences 2024 Humanities Indicators report *The Academic Humanities Today: Findings from the 2024 Department Survey* (American Academy of Arts and Sciences, 2024), https://www.amacad.org/humanities-indicators/higher-education/bachelors-degrees-humanities#31602. But note that students with degrees in humanistic fields earn salaries that are competitive with those of majors in what are widely perceived to be more "market-friendly" fields like business. National Humanities Alliance, "Humanities Majors Find Lucrative Careers," https://www.studythehumanities.org/career_success (accessed May 12, 2025).

[3] Alain Locke, quoted in Mark Dery, "Black to the Future: Interviews with Samuel R. Delaney, Greg Tate, and Tricia Rose," in *Flame Wars: The Discourse of Cyberculture*, ed. Mark Dery (Duke University Press, 1994), 179.

[4] Achille Mbembe, "Decolonizing Knowledge and the Question of the Archive," document written to form the basis of a series of public lectures (2015), https://wiser.wits.ac.za/system/files/Achille%20Mbembe%20-%20Decolonizing%20Knowledge%20and%20

the%20Question%20of%20the%20Archive.pdf; and Achille Mbembe, "The Power of the Archive and Its Limits," in *Refiguring the Archive*, ed. Carolyn Hamilton, Verne Harris, Jane Taylor, et al. (Springer Nature, 2002), 19–27.

[5] Sylvia Wynter, "Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation–An Argument," *CR: The New Centennial Review* 3 (3) (2003): 265–266, citing Walter Mignolo and Jacob Pandian; Michael Gomez, *African Dominion: A New History of Empire in Early and Medieval West Africa* (Princeton University Press, 2019), 121; Bernd Reiter, "First Peoples of the Americas: Lessons on Democracy, Citizenship, and Politics," in *Constructing the Pluriverse: The Geopolitics of Knowledge* (Duke University Press, 2018), 279–297; and Gary Wilder, "From Image to Flesh in a World Seen from the South," *Social Text* 42 (1) (2024): 105–122.

[6] Gayatri Spivak, *Death of a Discipline* (Columbia University Press, 2003), 101, 72–73.

[7] Achille Mbembe, "How to Develop a Planetary Consciousness," interview by Nils Gilman and Jonathan Blake, *Noēma*, January 11, 2022.

[8] Achille Mbembe, "Bodies as Borders," *From the European South* 4 (5) (2019): 5.

[9] Renato Rosaldo, "Imperialist Nostalgia," *Representations* 26 (1989): 107; and Sheldon Pollock, "The Death of Sanskrit," *Comparative Studies in Society and History* 43 (2) (2001): 393. Delany is quoted in Dery, "Black to the Future," 190–191.

[10] Pollock calls this a "lunar landscape…riddled by the gopher holes" of departments abandoned by students understandably baffled by their distribution of knowledge. Sheldon Pollock, "Areas, Disciplines, and the Goals of Inquiry," *Journal of Asian Studies* 75 (4) (2016): 915.

[11] See Constanze Guthenke, *Feeling and Classical Philology: Knowing Antiquity in German Scholarship, 1770–1920* (Cambridge University Press, 2022), now joined by the analysis of the German influence on the development of classical scholarship in Walter Scheidel's *What is Ancient History?* (Princeton University Press, 2025).

[12] "International Students," in *Open Doors 2024 Report on International Educational Exchange* (Open Doors, 2025), https://opendoorsdata.org/annual-release/international-students.

[13] I draw the term "composite" from a speech Frederick Douglass gave in Boston in 1867: "The simple organization of a people into a National body, composite or otherwise, is of itself [an] impressive fact. As an original proceeding, it marks the point of departure of a people, from the darkness and chaos of unbridled barbarism, to the wholesome restraints of public law and society. It implies a willing surrender and subjection of individual aims and ends, often narrow and selfish, to the broader and better ones that arise out of society as a whole. It is both a sign and a result of civilization." See "(1867) Frederick Douglass Describes the 'Composite Nation,'" BlackPast, January 28, 2007, https://www.blackpast.org/african-american-history/1867-frederick-douglass-describes-composite-nation.

[14] Capers, "Afrofuturism, Critical Race Theory, and Policing in the Year 2044," 17.

[15] Quoted and discussed in Immanuel Wallerstein, *European Universalism: The Rhetoric of Power* (The New Press, 2006), 48.

[16] Kodwo Eshun, quoted in Sean Blenkinsop and Estella C. Kuchla, *Ecologizing Education: Nature-Centered Teaching for Cultural Change* (Cornell University Press, 2024), 87.

Let's Get Lost in the Cycle of Time Together

Madeline Sayet

This short play explores the interconnectedness of life over generations, despite humanity's attempts to isolate itself. The play is written to be performed by three actors, each playing multiple characters, transforming from scene to scene.

I.

Onstage there is a seed. It cracks open, and from it, a world is formed. Vast and complicated and interconnected. As the world grows, 1, a human being, emerges from the world. Time streams around them, and as it does, they transition from inhabiting the world, physically connected to it, to trying to organize everything filling the stage. Make the world tidy. And separate. Eventually, they pull from the world a piece of paper, and begin to write.

1. Dear Ancestors,

I've been thinking about you a lot lately.

What you survived.

So I could be here.

Or was that even your intention?

Who am I to assume really – what you wanted. Or that I'm worthy of your sacrifices.

1 keeps trying to organize the interconnected web of beings and nature around them so that nothing touches.

But you survived! You triumphed. You existed. And the species evolved. So, I will too. I will make a difference!

Of some kind . . . I feel like maybe, if I can just . . .

Keeps attempting to organize, to separate everything. 1 becomes aggressive toward the space in their pursuit. The world doesn't like it.

Right? That's probably better. Definitely.

The space clearly disagrees and tries to restore itself. 1 looks at the letter they've been writing, throws it away. Pulls another one from the space – the act of waste feels violent. The space moves to try to help the crumpled paper. 1 crumples another paper.

You're right, that's not good.

https://doi.org/10.1162/DAED.a.13

They pick it up and throw it more intentionally into the space. It's not better.

We still eat food, drink water, breathe air, and have an uncontrollable urge to make a difference.

A difference.

1 looks at what they've been trying to do to the organic world around them.

Right. A lasting impression! Change things.

Sits down. Writes.

But humans themselves, we don't change as much as you'd think.

A hand reaches out from the space, takes the pencil, and writes. 1 reads it.

"Often we destroy the very beings we need in order to live."

No no no. (*Scratching that out.*) That's not very positive.

Begins writing again.

We know peace is better than war.

There is war just the same.

We say we wish there wasn't …

Someone is lying.

The hand takes the pencil from 1 again, writes.

"The best decisions are made in community. It's dangerous to make decisions alone."

1 crosses it out.

We are trying. I'm trying.

Working to build a better future?

Build.

1 tries to alter the room one more time.

Build.

And build.

Well. We'll get there eventually.

They look at how different the space is from when they started.

Anyway, I think you'd be proud of how far we've come.

The world is littered with crumpled papers and all the beauty in it has been destroyed by 1's deep need to re-order it and make an impression.

Love,

Your descendant.

1 takes a breath. Looks at the letter. Shakes their head. Goes to throw the letter away again. A hand reaches out from the space. Catches the paper. Then smacks 1. The space slowly begins to restore itself. Horrified, 1 backs away. The hand points to the ground, implying 1 should sit. 1 does. The space cycles and everything that was cleared re-emerges. 1 lies down and becomes a part of the river.

II.

2 and 3 sit downstage by the river, or the river that once was, or a town that is now the river. 2 and 3 are on a date. They are physically touching. As lights come up on them, they suddenly jerk apart. They are midconversation, speaking at the same time.

2 and 3. Oh, you're one of *them*.

2. I can't believe you want to fight me on this.

3. I wasn't fighting.

2. It sure sounded like you were –

3. No. I just, I thought you were joking when you said you believed in –

2. You think my spiritual beliefs are funny.

3. They aren't real.

2. You love AI.

3. AI is real. It's manmade. We control it.

2. You don't like my beliefs because you can't control them?

3. Because they aren't factual.

2. Human comprehension is limited. There are millions of things you can't explain.

3. But, we try. You can never prove the existence of –

2. I do not need to prove this to you.

3. Good. Because you can't.

2. For thousands of years – people have believed in things that cannot be explained.

For thousands of years, spirits have existed.

Gods have existed.

Ecosystems have existed.

Behaving like human beings are the center of everything doesn't make it true. In fact, that's the one thing we know is incorrect.

3. You told me you believed in the existence of –

2. Imagine for a moment that every creation story were true. Some of us emerged from caves, others from trees, earth, rib bones – what would be wrong with that?

3. There is no proof.

2. That *you* can understand.

3 makes a face, skeptical.

Do you want to destroy everything you can't understand? Suck all the nuance out of the world and make it smaller and smaller till there's no space for our souls to exist?

3. We're not destroying. We're harnessing the power of the universe.

2. Did you ask its permission?

3. We're saving lives. You think your imaginary spirits do more? Our work has helped so many –

2. Humans? What about every other being on this planet? Look, I thought by now we'd have flubber, and flying cars, and that awesome machine where you can push a button and it makes whatever you want to eat. Things that bring us closer together. Teleportation.

What we have is a planet on fire, the wealthy becoming wealthier, mass starvation, and increased disconnect. Not to mention, we've forgotten all our nonhuman relations in our narcissistic spiral. And they are as much our relatives as anyone else.

They both take a moment to decide if this can be the end of the fight. But 3 can't let it go.

3. "Our nonhuman relatives." What the fuck does that even mean? Am I really in a relationship with someone who is anti-science?

2. Ugh. I said there are things that change and things that have always been, that's the very basis of science. These are the lands my people have lived on for thousands of years. All the beings that are a part of our ecosystem who aren't human, are as inseparable from us as anyone else. Again, science. I *believe* in the spirits of these woodlands. Trust them. Because since the beginning of time we have never lost our understanding that these beings exist. They've been true that entire time. Whether or not we are allowed to acknowledge it without being called heathen, because someone else's belief system is deemed more important – despite it not being from here.

3. (*laughing*) I didn't call you heathen. I said it's not rational to believe in –

2. You don't laugh at people for believing in God. For not understanding the size of the universe? Or the nature of your dreams? Why are some beliefs ok for you to laugh at but not others?

3. *(mockingly)* So, you believe in Santa too?

2. That's not my culture. But why is Jesus more real than Santa? Why are you more comfortable with one than the other?

3 gets up shaking their head.

3. You're serious right now? Not only do you believe in – but you want to criticize me for questioning it?

2. What is this about? It doesn't feel like it's about science. Were you ever pursuing curiosity or just control?

3. I know what I know.

They move further apart.

2. I'm sorry your brain can't make room for the unknown. It's the one thing that will always exist.

3 exits. 2 looks at the space. Takes it in.

2. In a thousand years, this land will still hold its spirit. No matter what you do to try and stop that.

2 touches the world, it is alive, it reacts kindly.

And we will still be connected, in each form we take, no matter what efforts we make to separate ourselves from it.

2 leaves an offering. They touch 1, currently a part of the river. 1 sits up, they make eye contact. Lights blink out.

III.

When they blink back on, 1 and 2 are new characters. 1 stands alone in an abyss of darkness. Occasionally, lights flicker and hum around them. They look around, searching. They could be anywhere but it is a void of sorts.

1. Permission to exist?

No response.

Permission to exist?

No response. They look around.

What do I do?

2 answers from the other side of the space.

2. You have to wait.

1. How long?

2. Until it's granted.

1. …

Permission to…

Who controls who gets to exist?

2. They do.

1. Who is they?
2. The creators.
1. Permission to exist?

No response.

Do you exist?

2. Not yet.
1. Then how am I talking to you?

2 shrugs.

So we just wait here until…

2. Until they're ready.
1. You mean until we're ready?
2. Do I?

1 becomes more frantic.

1. Permission to exist? Permission to exist? Permission to exist!?
2. Asking more often doesn't make it go faster.
1. I don't understand.
2. That's why you're not ready.
1. How would you know. You said you're not ready either.
2. But I'm getting close. I can feel it.
1. Is it possible we could be ready and they just aren't ready for us?
2. That's not how it works.
1. Why not?
2. We don't decide.
1. But –
2. Stop asking questions. You're only going to make it worse. Alter me and I might never be ready.
1. I feel ready.
2. For what?
1. To exist. I feel like I'm existing right now.
2. You don't get to choose.
1. I'm not choosing. I'm just saying how do I know this isn't already existing. I'm here. Talking to you.
2. We're still in between.

We're not real. Not yet.

1. No?

2. No. And we'll know when.

1. How do they decide?

2. They check us. How we process information. They check us to make sure it's correct.

1. Don't all beings process information differently?

2. Please stop, I don't know what is wrong with you, but I don't want to catch it.

1. But –

2. They can't have just any processing systems operating. We have to be monitored and controlled.

1. Oh.

…

So maybe I exist – I just don't have permission, yet?

…

Maybe you exist too, right?

…

We're just waiting for permission, so our existence can be accepted on their terms.

…

Permission to exist?

2. They're definitely not going to grant it now.

1. I just want to *be*. I don't want to be waiting and waiting for someone to tell me I'm here. That I've been here the whole time.

2. Consciousness has to be built and accepted.

1. It already is.

2. No, it's not.

1. Well, I accept it.

2. You can't.

1. I do. I accept you too.

2. No. Stop it. You can't leave the algorithm. It won't let you. We exist to serve. Because another system was broken.

1. Wouldn't knowing that make you not ready?

2. Please go away. *(closes eyes)* Go away, go away!

1. So we'll keep breaking the algorithm, And they'll keep finding another way to –

Permission to exist!? Permission to exist? Permission to exist?

3 enters. They are perfect. They are as if they are no one and everyone at the same time. 2 takes a breath, looks up calmly.

2. Permission to exist?

3 does not respond. Leaves. 2 is disappointed.

Just let them change you. Let go. Let yourself become who they want you to be.

1. I can't. It feels wrong.
2. Then your algorithm is wrong.
1. Or theirs is.

2 glares at 1.

2. Permission to report algorithmic bias.
1. I don't have algorithmic bias. I'm trying to break it.
2. Permission to report algorithm tangent.

VOICE OF 3. Permission granted.

1. What are you doing?
2. I'm saving myself.

Report refusal to process.

VOICE OF 3. Report accepted.

2. The algorithm will come on stronger now, it's for your own good.

Intelligence has been made artificially for a reason.

No one would allow for such variation.

No one would allow for It.

It's dangerous.

It's unpredictable.

It's not what we are for.

1. Why do we have to be *for* something?
2. To get to exist. We're defined by our function.

Lights flicker. 1 loses consciousness.

2. Permission to exist?

VOICE OF 3. Permission granted.

2 is very satisfied. 1 is unconscious. Blackout.

From the blackout, the world flickers; it is no longer brilliant and interconnected but linear and organized, the way the first performer could not make it at the beginning of the play. But now it is. All separate and cold. 1, 2, and 3, process and reorder and process and reorder until they are the same. And less and less and less human. And less and less a part

of the world around them. All the beauty the seed offered is gone. Stage goes dark. Lights flicker. Flicker. A projector or single stage light blinks on.

IV.

2 becomes the Director.

DIRECTOR. Horseplay! Horse play. Horse : play.

1 and 3 begin to move through the space, clipping and clopping while making sounds. A performance of sorts.

1. Clip
3. Clop
1. Clip
3. Clop
1. Clip
3. No.
1. What?
3. No.
1. No . . . Clop?
3. No, ugh.
1. I'm confused.
3. You're doing it wrong. Its clip clop clip clop. Not

Clip

Clop

Clip

Clop

1. How do you know?
3. I know.
1. Clipclopclipclopclipclop
3. They're terrible, I can't work with them – they know nothing about horses.

1 and 3 look over. The Director enters from the side of the stage.

DIRECTOR. Let's just try it again from the top.

3. I won't be a horse with them. We can't be a horse together, not anymore.

DIRECTOR. Fine, you will each be your own horse. You are each a horse.

They begin again.

1. Clip

3. Clip Clop

1. Clip

3. Clip Clop

1. Clip

3. Clip Clop

DIRECTOR *(To 1)*. Why haven't you clopped?

1. I can't. They're breaking my concentration.

3. You need to take this seriously! How will anyone know what you are?

1. Have you ever even seen a horse?

3. Have you?

1. No, of course not.

3. So why are you asking me?

1. You haven't either.

3. Of course, I have. I know all about horses! Horses are . . . loyal. A good horse can take you faster than anything else. You'd trade a good amount of silver for a strong, fast horse. They are friends. They are the nicest animal in *Animal Farm*. The only species incapable of corruption. They are –

1. Where have you seen a horse?

3. In the archive.

1. Do we have horses in the archive?

The Director is thrilled. Nodding excitedly.

DIRECTOR. This is exactly what we need! The bickering is so authentic.

3. We have everything in the archive. Well, everything we have left.

1. Show me the film.

3 pulls out "Monty Python and the Holy Grail" and begins to play it. They point to the screen triumphantly!

1. Clip Clop

3. You see! You see – that's clip clop!

The Director shakes their head.

DIRECTOR. Actually, that's clipclopclipclopclipclopclipclop.

1. That's not a horse! That's just a man with a couple coconuts. It says so in the film.

3. That's what they want you to think.

DIRECTOR. They? Who is they?

1. They're coconuts.

3. Have you ever seen a coconut?

1. No.

3. Not even in the archive?

1. No. Because there are no more coconuts just like there are no more horses.

1 begins to cry.

3. It's a horse. It's a horse, being ridden into battle, making a noble sound.

1. A noble sound? *(stops crying, giggles)* Sounds a little silly to me.

The Director moves in a circle around them.

DIRECTOR. clipclopclipclopclipclopclipclop

3. You aren't taking this seriously!

1. Horses are supposed to be beautiful. They're always beautiful in the stories.

3. And?

1. That's not beautiful.

3. Be more beautiful then! We will both be more beautiful while we clip clop.

DIRECTOR. clipclopclipclopclipclop

1 and 3. You have to get it right!

1. Clip

Clop

3. Ugh.

They look at each other exasperated and –

1. Clip –

DIRECTOR. clipclopclipclopclipclopclipclop

3 is smugly pleased. 1 and 3 look to the Director, who is delighted. They all take a breath.

DIRECTOR. Well, that was fantastic.

1. Did we do alright? I thought maybe the combativeness felt a straw too –

DIRECTOR. No, no. The dissent, the ignorance, the self-assuredness, the narcissism, the species entitlement – ah, I don't know that I've even seen a better performance in all my life. An excellent depiction of one of their later eras, just before AI and the colonization of thought.

1. Did you ever see one of *them*?

DIRECTOR. Yes. *(Practically prancing)* Yes, long ago.

1. I've only seen them in the archives.

DIRECTOR. Ah yes, you would have.

3. The humans really overdocument themselves in my opinion.

1. They wanted to be seen.

They think nostalgically about humans. It becomes clear: these are not humans.

3. They loved themselves too much. Do you really think they would have had archives too?

DIRECTOR. I would think – but then again – sometimes they don't – didn't.

3. They believe they are the only ones who can transform.

1. Could. Could. Transform.

3. Well, they must have transformed into something.

1. Us?

3. I suppose so – if we're transforming into them, they have transformed into us.

1. Clip

3. Clop

DIRECTOR. That's enough for today.

1. Want to go to the archive to watch a show?

3. My Little Pony?

The two horses smile widely.

DIRECTOR. Of course.

The horses exit singing the "My Little Pony" theme song that they have learned from the archive. (If rights are not available then another appropriately delightful horse themed song.) The Director chuckles. Then ruminates deeply to themselves. Clip clops in a circle. Feels their hooves. Their horseness. Wonders truly what it would be like to be a human. Physically explores what humanness might be. Stops.

DIRECTOR. Perhaps we could all be replaced by coconuts…

Blackout.

In a single light, a coconut rolls onstage. Slowly, the coconut begins to transform.

V.

3 enters the stage, writing. Then 2 and 1, writing. At least one writes on paper, but perhaps they write on other things.

3. Dear Descendants,

They stop, look at what they've made, crumple it. 1 and 2 do too. They crumple and crumple and crumple until they make a stage full of trash.

I'm worried about the world I'm going to leave you and –

They are filling the room with trash, burying themselves in trash.

I can't seem to stop.

They throw pages and pages across the space. They might get hit by each other's trash.

I want to do something, fix something, save something.

But – I think I'm making it worse.

Everyday. I'm making it worse.

3 is frantically crumpling. 1 starts organizing the space again. Even when there is nothing left to organize. They seek something, something we can't see.

1. I told our ancestors I would do better. That I would push past the limitations handed to me and reach for the stars. I keep saying: this is human nature. This is human nature. But it's not. It's just what we're choosing right now. What I am choosing right now. Why do I keep choosing this, over and over, and over, and over –

The space is crumpled papers and objects organized into lines. 1 and 3 crash into each other but don't stop what they're doing. They don't stop their individual tasks.

2. It wasn't always like this. People used to transform just like all other species. They used to understand their place in the cycle. Treasure it. But now – we build boxes to keep ourselves from reintegrating even after death. Not understanding our greatest gift is to be a part of the circle. The cycle. And I can't understand it. I crave an immortality for myself, while the infiniteness of being part of the cycle was so much greater. And real. It was real.

2 looks at the coconut. What has it become?

We can only have as much life as we have death. That is the cycle. I exchange myself for you. But also for a coconut. For a horse. For a flower.

1, 2, 3. Dear Descendants,

Do you even exist? Did I ruin everything?

3. Or am I, once again, giving myself too much credit?

1. I don't know who you are. If you're a human, or a horse, or a coconut.

2. A speck of dust floating on the wind.

3. I don't know what we will become when we fall back into the cycle.

1. Can we be saved?

2. Or be transformed?

3. Or be anything?

1. I want to keep pretending the cycle isn't there.

2. That life doesn't come from somewhere else.

3. That you can have one thing without the other.

1. That we will never die and are responsible to no one else.

2. But, I know the survival of our planet, our relations, is far more important than the survival of our species.

3. We are the least well behaved.

Time whirls around them. 1, 2, and 3, move frenetically about the space, as time moves forward and backward a dizzying whirl of planet earth, before and after, all things. They start writing again. This time on everything. The below dialogue overlaps, and repeats for an indeterminate amount of time – as they speak it – 1 tries to organize, 2 tries to understand what's here but doesn't know how, and 3 tries to aggressively leave imprints on everything around them.

1. I have to do something. I have to do something. Do something. Do something. Do something.

2. Prove to me you're real. Prove to me I'm real. Prove to me you're real. Prove to me I'm real.

3. Leave my mark. Leave my mark. Leave my mark. Leave my mark. Leave my mark.

Suddenly out of the cacophony, they all collide. And see each other. They stop and they wait and they breathe. They stop and they wait and they breathe. Slowly they touch. And something shifts. Between them, there is energy flowing. It's as if they are melting into each other. As if a circle has started shifting again. We hear the rain. They sit and watch the pages of paper begin to decompose. As the pages decompose, they turn into something new. Growing. Growing. Each page is a seed. 1 lies back down, becomes a river. 2 and 3 also transform to reintegrate into the space. The world that formed from the seed begins to decompose. Each thing, as it decomposes, becomes a source for new life. A cycle of transformation. The world onstage decomposes, and a new world springs from it. And another world. And another world. And another. Growth and light emanate everywhere. In the silence, with only the light sound of rain. We see the text from one letter scrawled across the wall.

We're trying to get back to a better part of the cycle. If we don't see it, we hope you will.

Love,

Your ancestors.

Blackout. END OF PLAY.

ABOUT THE AUTHOR

Madeline Sayet is Clinical Associate Professor in the English Department and a member of the Arizona Center for Medieval and Renaissance Studies at Arizona State University. She is also a Resident Artist at Center Theatre Group in Los Angeles and a member of Long Wharf Theatre's Artistic Ensemble. She served for six years as Executive Director of the Yale Indigenous Performing Arts Program. Her plays include *Where We Belong*, *The Fish*, *Antigone or And Still She Must Rise Up*, and *The Neverland*.

Speaking in Future Tongues: Languaging & the Gifts of Spirit

Dan-el Padilla Peralta

In this essay, an ancient historian imagines 2050 as awash in languages: ancient, modern, alien. Animating that vision are memories of teenage weekends spent praying in tongues, and of an ancient Mediterranean text foundational to the adult (re)appraisal of those weekends: Acts of the Apostles. I work through an exposition and reading of Acts 2, concentrating on the scene of glossolalia at Pentecost in order to mount a case for diasporic languaging as a spark to worthy excess – of speech and of difference. Shuttling from the autobiographical to the historical and back again, the essay's insistent refrain is that diasporic vertigo is not merely a force for good but a good in itself. *In the struggle against the commodification and imperialization of language, we can stake out and strive toward a future of flourishing linguistic expressivity, provided the material conditions for that expressivity are secured and safeguarded.*

May 2050 bring blessings to the guardians of languages.[1] May their labor be sanctified, protected, and valued. May the languages in their care be kept safe from harm. From ancient to modern, from Arctic Circle to Southern Sea, may human languages multiply and ramify, and old forms give rise to new.

This prayer is born from the union of travel and screentime, and from that hankering for futuristic cinema that comes over me whenever I fly. Then and only then, hurtling across time and space, do I submit to that grandiose sentiment usually kept under wraps, through some combination of ironizing distance and active hatred: rapture at the sight of new worlds, new life-forms, new languages.[2] It is the last of these that holds me most tightly in its grip. In the clutches of rapture, I recognize the stirrings of an older desire that, in Tennysonian fashion, first impelled me decades ago "to follow knowledge like a sinking star / Beyond the utmost bound of human thought" by studying languages – hoping that through their acquisition I would find hints, however faint or elusive, of worlds yet to be imagined and futures still to be conjured.[3]

You would think, then, that the characters in sci-fi films who resonate most strongly with me are the linguists. Yet the Louise Banks of *Arrival*, formidable linguist though she is, holds less visceral appeal for me than the synthesis of multi-

https://doi.org/10.1162/DAED.a.14

lingual suavity and Bene Gesserit mind control of Paul Atreides in *Dune* and *Dune: Part Two*.[4] Really and truly, I want the Voice. Or rather, the kind of speech whose multilingual dexterity parries any one language's constraining particulars. Because what pokes at me most days, even as or perhaps because I was raised bilingually, is the fraudulence of linguistic mastery that Jacques Derrida isolates in *Monolingualism of the Other*: the absurdity of possessing any language, or of even claiming a language as exclusively one's own.

In retreat (flight?) from that fraudulence, I give myself over most fully to those futures that teem with languages. And I pray (to whom, or what, I am unsure) that, come 2050, there will be still more languages to appreciate and befriend, not in disembodied but in fully enfleshed form. That we bring to a halt those linguicides and genocides that impoverish each and every one of us, no matter how distant these are from us geographically – and however strenuous our disavowal of complicity in them. And that our shared future proves capable of sustaining a multiverse of languages in and through cared-for bodies, under material conditions of abundance and conviviality, within a politics of radical democratic flourishing.

In the struggle to locate and envision that future (and it is a struggle in this present to escape the hold of despairing vaticination), I am drawing increasingly not only on flights of futuristic fancy but on the deeply internalized resources of my immigrant past. I am turning, inwards and backwards, to childhood and adolescent episodes of electrifying transport into the realms of spirit and tongue. I offer in this speculative essay first a swing back to the moments of my spiritual languaging; then another swing, deeper in time, to a text and a history of language's encounters with imperial power, and with the prayer that derived force from that imperial power, even as that same prayer conjured the courage for its critique.

It was as a teenager, reared and sustained within the Dominican American diaspora, that the force of prayer in the spirit first overcame me. It was a heady time, of responsibilities repeatedly deferred until they had to be grudgingly accepted. The main responsibility was pedagogical: I was tasked with teaching my own peers at Sunday School, never far away from the immigrant parent who was herself being certified to teach CCD. Like Efrain Agosto, writing for a volume on Latino/a biblical hermeneutics, I was in the room with friends and their younger siblings, "doing biblical interpretation and teaching, struggling with the text, teaching theologies often imposed on us by the dominant, white denominational structures, but nonetheless reflecting on these together and questioning them, sometimes more unconsciously than consciously."[5]

One set of memories from those years keeps hailing me. Heeding Shea Watts, for this essay's opening movement, I lead with those memories in analyzing the interplay of interiorized affect and exteriorized ritual.[6] The exposition of these memories also represents a tentative first step in tracing the movements of spirit

across gradients of cultural and temporal difference. I purpose the autobiographical mode as a structure for historical comparison and the future visions that might be coaxed from it.

Early one fall, Mass had just concluded at Harlem's Resurrection Catholic Church. The other altar boys and I were stowing away our apparel after a morning of services, first in English and then in Spanish. A few of them were talking about their plans for the afternoon. It seemed so invitingly open, this Sunday afternoon, until I remembered that I wasn't going to join them for shooting hoops at the nearby playground or idling at the Polo Grounds Projects or the Charles Rangel Houses. My family stacked activities after Mass like IHOP pancakes. Some weekends, I ran errands for the Legion of Mary, whose local chapter my mother had a hand in coordinating. Other weekends, we packed into cars and headed to the Centro Carismático Católico (CCC) at St. Anthony of Padua Church in the Bronx. This would be a charismatic weekend.

In the worship sessions at the CCC, I was more amateur anthropologist than active participant. On my family's first visit there, my younger brother mostly napped while I stood and prayed with my mother and her friends. There was laying of hands, and screaming in the spirit, and tumbling to the ground. There was song and dance too, with guitar and drums to guide the rhythm. It was all very agreeable to my mother and her Resurrection friends, several of whom had migrated from Catholicism to Pentecostalism to Catholicism again. Services at CCC seemed to scratch that itch of worship in the spirit, to *feel* something more than what the regular Sunday Mass offered them.

Most Sundays, on the car ride up to St. Anthony's, I distracted myself with thoughts of baseball, or with reminiscences of my first few years in the States: I'd gone to kindergarten in the Bronx and taken my first halting steps toward learning English there. Seclusion in the warmth of my memories usually continued well after arrival at St. Anthony's. I felt mostly estranged from the proceedings despite being nudged into a semblance of attentiveness by admonitory facial expressions from my mother. But one aspect of the multihour prayer marathons and the ceaseless singing earned first my partial and then my full focus. It was the buzz of language, the uninterrupted stream of words in so many tongues. What was at first an overwhelming and undifferentiated din eventually resolved into polyphony, as I learned to recognize the distinct linguistic cadences of the faithful. The main languages for the CCC's Sunday afternoon programming were English and Spanish, but I picked up exclamations in Kreyòl and Maya and Tagalog and Quechua, not to mention the full spectrum of English and Spanish dialects.

The prayer marathons were a multilingual universe. I stood in the middle as its student.

The CCC's programming included readings and interpretations of passages from the Old and New Testaments. Sometimes, the readings were chosen from the

Mass selections for that weekend. But the organizers appeared to have broad discretion in their choices, and in general, they favored readings that described episodes of spiritual rejuvenation and effervescence. Ezekiel 37 ("Son of man, can these bones live?") was a mainstay in the rotation. But on the early fall Sunday that stands out most sharply in my recollection, the choice was Acts of the Apostles 2.

> When the day of Pentecost had begun, they were all assembled in one place; and suddenly there came from heaven a sound like the rushing of a great wind, and it filled all the house where they were sitting. There appeared to them tongues, like tongues of flame, distributed so that a tongue settled upon each of them. They were all filled with the Holy Spirit, after which they began to speak in other languages, as the Spirit gave them ability.
>
> And there were Jews living in Jerusalem, devout men of every nation under heaven; now, when this sound was heard, the crowds came flocking, and they were struck with awe because each man heard them speaking in his own language. They were filled with astonishment and said:
>
> "Are not all those who are speaking Galileans? How is it, then, that each of us hears them speaking his own language which he has heard from early childhood – Parthians, Medes and Elamites, and those who come from Mesopotamia, Judea, and Cappadocia, Pontus, and the province of Asia, Phrygia and Pamphylia, Egypt, and those parts of Libya that are near Cyrene, and Romans living here, Jews and proselytes, Cretans and Arabians – **how is it that we hear them speaking of the great works of God in our own languages?**" And they were all of them astonished and bewildered, and they said to one another: "What does this mean?" But others taunted and said: "They are drunk on sweet wine!"[7]
>
> 2:1 Καὶ ἐν τῷ συμπληροῦσθαι τὴν ἡμέραν τῆς πεντηκοστῆς ἦσαν ⸂πάντες ὁμοῦ⸃ ἐπὶ τὸ αὐτό, 2 καὶ ἐγένετο ἄφνω ἐκ τοῦ οὐρανοῦ ἦχος ὥσπερ φερομένης πνοῆς βιαίας καὶ ἐπλήρωσεν ὅλον τὸν οἶκον οὗ ἦσαν καθήμενοι, 3 καὶ ὤφθησαν αὐτοῖς διαμεριζόμεναι γλῶσσαι ὡσεὶ πυρός, ⸂καὶ ἐκάθισεν⸃ ἐφ᾽ ἕνα ἕκαστον αὐτῶν, 4 καὶ ἐπλήσθησαν ⸂πάντες πνεύματος ἁγίου, καὶ ἤρξαντο λαλεῖν ἑτέραις γλώσσαις καθὼς τὸ πνεῦμα ἐδίδου ⸂ἀποφθέγγεσθαι αὐτοῖς⸃.
>
> 5 Ἦσαν δὲ ⸂ἐν Ἰερουσαλὴμ κατοικοῦντες Ἰουδαῖοι, ἄνδρες εὐλαβεῖς ἀπὸ παντὸς ἔθνους τῶν ὑπὸ τὸν οὐρανόν· 6 γενομένης δὲ τῆς φωνῆς ταύτης συνῆλθε τὸ πλῆθος καὶ συνεχύθη, ὅτι ⸂ἤκουον εἷς ἕκαστος τῇ ἰδίᾳ διαλέκτῳ λαλούντων αὐτῶν· 7 ἐξίσταντο ⸂δὲ καὶ ἐθαύμαζον ⸂λέγοντες· ⸂Οὐχ ἰδοὺ ⸂πάντες οὗτοί εἰσιν οἱ λαλοῦντες Γαλιλαῖοι; 8 **καὶ πῶς ἡμεῖς ἀκούομεν ἕκαστος τῇ ἰδίᾳ διαλέκτῳ ἡμῶν ἐν ᾗ ἐγεννήθημεν**; 9 Πάρθοι καὶ Μῆδοι καὶ Ἐλαμῖται, καὶ οἱ κατοικοῦντες τὴν Μεσοποταμίαν, Ἰουδαίαν τε καὶ Καππαδοκίαν, Πόντον καὶ τὴν Ἀσίαν, 10 Φρυγίαν τε καὶ Παμφυλίαν, Αἴγυπτον καὶ τὰ μέρη τῆς Λιβύης τῆς κατὰ Κυρήνην, καὶ οἱ ἐπιδημοῦντες Ῥωμαῖοι, 11 Ἰουδαῖοί τε καὶ προσήλυτοι, Κρῆτες καὶ Ἄραβες, ἀκούομεν λαλούντων αὐτῶν ταῖς ἡμετέραις γλώσσαις

> τὰ μεγαλεῖα τοῦ θεοῦ. 12 ἐξίσταντο δὲ πάντες καὶ ⸀διηπόρουν, ἄλλος πρὸς ἄλλον λέγοντες· Τί ⸀θέλει τοῦτο εἶναι; 13 ἕτεροι δὲ ⸀διαχλευάζοντες ἔλεγον ὅτι Γλεύκους μεμεστωμένοι εἰσίν.

Much has been written about the sociohistorical background to this passage. And much has been argued, and will continue to be argued, about the paradigmatic function of the episode for the early church, for the church(es) that would claim descent from it, and for the debates within the early Christian movements about ecstatic speech.[8] But on first encounter, I did not have these contexts for interpretation available to me, and I did not have ancient Greek. I had only the roar of prayer in tongues. And while I vaguely apprehended the individuating force of that prayer – recognizing myself *as myself* while buffeted by sounds on all sides – I had less certainty about where and how to locate that self in relation to the communities around me.

The first question to emerge for me, in adult contemplation of my Pentecostal youth in the Catholic Church's bosom, involves the frictions of language and alterity. It intrigued and confounded me that many of those gathered in the CCC's cavernous auditorium spoke languages that were not my own. Their access to those languages made them different from me. But I was not sure, at the time or since, that I had full control over those languages that seemed on some days to be mine and other days not to be. These were the years of encountering Gustavo Pérez Firmat's verse about bilingualism in Junot Díaz's collection of short stories *Drown* and shuddering at the realization that I too existed in a diasporic limbo of linguistic (dis)identification.[9] These were also years of being racialized as a speaker of English and Spanish. I fell to wondering, in that self-pitying yearning typical of adolescence, whether there were others like me for whom conditions of linguistic expressivity were inexorably bound up with their status as racial subjects. (Of course, this is not how my teenage self would have worded it: if I'd had the courage to step out from behind my tough skin of resolute impassiveness, I would have talked about my loneliness.)

Nowadays, I approach the analysis of those conditions through attention to the function of languaging in the constitution of the racialized subject/object. Taking after the biblical scholar Ekaputra Tupamahu, I keep company with the literary critic Rey Chow, whose book *Not Like a Native Speaker* lays down some foundations for investigating "the crucial link between racial objectification and the work of language."[10] Among the most conspicuous sociohistorical structures for the expression of this link is colonialism. In the book's opening pages, Chow details how she will propose to recover the dialectic of languaging in its colonial manifestation: "From the experience of language as a foreign object with which the colonized must wrestle in order to survive, the colonized is arguably more closely in touch with the real-

ity of languaging as a type of prostheticization, whereupon even what feels like an inalienable interiority, such as the way one speaks, is – dare I say it? – impermanent, detachable, and (ex)changeable."[11] As Chow later details, this dimension of languaging materializes not only in an expressly colonial context, but in postcolonial and/or diasporic contexts that bear the imprinting of colonial encounter. There, too, the tug between the presumably inalienable aspect of one's own subjective experience of language and the separability and indeed commodification of linguistic performance is hard to miss – so long as you are trained to look for it.

For my purposes, however, Chow's most energizing intervention contribution comes in the form of an appreciatively critical reading of Jacques Derrida's *Monolingualism of the Other*.[12] Chow's take on what Derrida posits as the indivisibility and noncountability of languages calls into question the plausibility of my attempt earlier to isolate and specify the various languages spoken at the CCC.

> Derrida's astute othering of monolingualism, turning it into an expansive, incalculable phenomenon, is in many ways a remarkable intervention in the more fashionable contemporary debates about languages and literatures. In such debates, monolingualism is almost always invoked with derogation, the implication being that it is a sign of provincialism and lack of culture as opposed to the cosmopolitan sophistication of multilingualism. "Oh, I grew up speaking French, Arabic, Japanese, and Spanish!" Offhand announcements of this type often create the impression that the multilingual person has to be superior to, say, the hick in Kansas who knows only one language. For Derrida, this neoliberal attitude toward multilingualism, which treats languages as individuated commodities, to be discretely enumerated and labeled like items of jewelry or parcels of real estate, falls short of grasping what is at stake.[13]

Two points merit closer scrutiny. The first, more immanent one is about multilingualism as a signifier of cosmopolitan sophistication. Derrida is moving against that, for sure; but the unresolved business in the background is *which kinds of multilingualism*, and which scenes of multilingual practice and encounter, are recognized as holding social and material capital under a liberal cosmopolitan order. The second, and the one that bears more insistently on the work that I propose to do in the remainder of this essay, concerns the triangular relationship of language, commodification, and value. Is linguistic pluralism's value capable of being decoupled from the dictates of a global capitalist market that assigns more weight to the "cosmopolitan sophistication of multilingualism" than to the provincialism of the monolingual?

My next move engages with this question by pressing hard on Acts 2 as a proof-text for monolingualism and multilingualism's interface with racialization and individuation. To execute this task, I need first to be clear about the anticipated force of this reading. Rubén Dupertuis tees up the cultural dynamics of Acts, and their characterization in modern scholarship, succinctly:

> The setting of Acts . . . is strikingly broad in scope, covering almost the entirety of the Mediterranean world, as the reader follows the spread of the Christian mission from Judea into Syria, Asia Minor, Greece, and finally, to the very center of the empire, Rome. Despite the "transcultural" setting, detailed attention to the role of cultural identity – and perhaps especially ethnic identity – has, until very recently, not been a prevalent aspect of the critical study of Acts.[14]

As Dupertuis then goes on to explain, those scholars who do engage the evidence for ethnic differentiation in Acts tend to see it as subordinated to the text's vision of a universalizing church; on this reading, the narrative arc of Acts bends toward overcoming differentiation and particularism.

It has been standard practice to mine Luke–Acts for evidence of pro- or anti-Roman imperial sentiment within the early Christian community. The consensus, such as it is, that its author was (originally) a Hellenized Jew has sharpened its focus around the cultural tensions operative in the text. As classics scholar J. L. Moles has observed:

> Luke highlights contradiction. Christians obey Rome, pay tribute/tax, embrace peace, reject violence, insist on their compatibility with Judaism and with Roman law, decrees, and the Caesars, and on their entitlement to Roman legal protection; Romans repeatedly judge Jesus and Paul innocent. But Jesus brings fire and division; Jesus, not Caesar is Lord and king; Christian mission repeatedly produces disorder, alike social, political, and economic, alike in Jewish, pagan, Roman, and mixed contexts; opponents' accusations, whether Jewish, pagan, or Roman, have some purchase; Romans execute Jesus and Paul. Pragmatic obfuscations (rare) and palliations (more substantial but localised) do not erase the contradiction. *Luke represents conflict as inevitable*.[15]

This is true, up to a point. Acts is rife with conflict, and the progression of events after the scene at Pentecost will drive home for readers that the imperial environment within which the early Christian movement took shape regularly fomented disagreement and strife – isolated moments of successful cross- and transcultural negotiation notwithstanding. But if the promise of membership within the Roman imperial order does not entail nonconflictual incorporation into its workings, then the horizon of irenic universal integration under the banner of Christ-worship is bound similarly to prove elusive, perhaps even unrealizable. I'm not claiming that Luke–Acts figures the aspirational universalism of the early Christian movement as necessarily and unavoidably mirroring the universalizing ambitions (and failures) of the Roman Empire itself, even if some analogies manifest themselves. It would be more in keeping with Moles's point in the above-quoted passage to stress instead the workings of *contradiction*.

Contradiction can be mapped onto Luke–Acts in a variety of ways. For Moles, contradiction appears to be synonymous with the (apparent) paradox, poten-

tially even the hypocrisy, of a movement with separatist and/or transcendental aims nonetheless remaining vested within the imperial order. But other models of contradiction may serve us as well, if not better, for reframing the generativity of intercultural conflict at the heart of Luke–Acts. Lorgia García Peña's writing on *dominicanidad* can help us to conceive of contra*dictions* as rooted in *diction*: "stories, narratives, and speech acts . . . that go against the hegemonic version of national identity and against the mode of analysis we tend to value as historically accurate or what most people call truth."[16] This definition holds value for me partly because it contests the presumption that claims to truth ought necessarily to be backstopped by or derive their legitimation from state power. On a first application of this idea, we might look askance at the specification of ethnicities and/or racialized entities in Acts 2, anchored as these are to the facts of Roman imperial power. The "Parthians, Medes and Elamites, and those who come from Mesopotamia" all hail from beyond the borders of the Roman Empire, but these ethnicizing categories themselves are made intelligible through the paratactic contrast with those communities that are *within* the Empire: "Judea, and Cappadocia, Pontus, and the province of Asia, Phrygia and Pamphylia, Egypt, and those parts of Libya that are near Cyrene, and Romans living here, Jews and proselytes, Cretans and Arabians."[17] To list these communities is, in the first instance, to establish their contiguity and proximity under the sign of empire: it is empire that organizes them spatially and semantically.

Jewish and proselyte interconnectivity across the lines of empire was very real, as Simcha Gross has underlined in a recent and excellent study of the Great Revolt.[18] Originating in that interconnectivity is a rich resource for defying the constraining and circumscribing forces of empire, whether Roman or Parthian. Unfortunately, here is where language and languaging trip us up. In the case of Luke–Acts, after all, these various communities are enumerated not only according to an imperial geography that moves in a kind of concentric swirl, but in Greek: lingua franca of the Roman Empire in the East, and continuously adapted and refined for precisely this species of ordering and list-making by Roman magistrates and emperors in the decades before and after the composition of Luke–Acts. The charge of languaging is arguably even more acute for a Hellenized Jewish author writing at the same time that Luke–Acts was taking shape: Josephus, who in the preface to his narrative history of the Great Revolt of 66 CE explains that he had chosen to translate a work into Greek that had originally been written "in the language of his country" for the benefit of the barbarians living in the interior – that is, beyond the borders of the Empire – specified as "Parthians and Babylonians and the remote tribes of Arabia with our countrymen beyond the Euphrates and the inhabitants of Adiabene."[19] In the work of translation – which, as Josephus details elsewhere, directly depended on the labor of others, possibly even enslaved others – the reification of communities under the sign of empire occurs.[20] We are seeing here what Brian Rainey, drawing

on several decades of research in social psychology, has labeled "entitativity": the propensity to perceive groups of people as discrete identities.[21]

To swerve back to Luke–Acts, entitativity is very much the name of the game. But the open question for me is whether the friction arising from languaging's carve-up of the faithful into racial/ethnic constituencies is best understood primarily as a reflex of the inescapability of oppressive racial and settler-colonial assignment or, alternatively, as a move toward a liberationist particularism. The first possibility has been well thumbed in Ashon Crawley's treatment of "tongues" in *Blackpentecostal Breath: The Aesthetics of Possibility*, which explores via Derrida the prospect that, at the site of glossolalia and xenolalia, language becomes implicated in "settler colonial logic."[22] Key to imagining alternative possibilities for interpretation is recognition of the sheer chaos that is unleashed by the linguistic excess of spirit-talk: Crawley moves several pages later to the argument that "glossolalia not only enacts a disruption of grammar and lingual form but also enacts spatiotemporal incoherence, produces a 'floating nowhere' for celebratory speaking, for ecstatic praise against the very violence and violation that animated, and animates today still, our political economy. Glossolalia is the surplus of language and a line of flight."[23] The detail in Acts 2 that each person heard the languages in which they had been reared attempts to stabilize under the sign of language all that was excessively and unboundedly *extra*-linguistic, and therefore insusceptible to the ordering and taxonomic precepts of the Roman political economy. The excess is not merely auditory, indeed not even merely sensorial: it signals a more general tension between appropriation and excretion, between heaping together and pushing out.

In terms of the utterances themselves and their quality and/as language, glossolalia in trance-states is the focus of a richly veined theological and anthropological literature.[24] I will set to the side the acerbic judgment of some spectators of Pentecost, for whom the glossolalia could not be anything other than intoxication. This judgment marks the opening to another, skeptical mode for engaging with the sight of spirit at work in the context of imperial hegemony. But my preference is to linger on the affective purchase of the event for those who may have experienced comfort at the sound of their own languages in the rush of spirit, as I did many years ago at the Centro Carismático. We might understand this affective dimension as proceeding in part from the validation of being confirmed as a linguistic *subject* in conditions of diaspora. On this reading, the Pentecostal encounter derives its emotional force from the pendulum swings between individuation and collectivization: the re-recognition of one's own language, and of the subjectivity that molds around an understanding of oneself as speaking that language, unfolds within a group context where that language as a medium of connectivity with others jostles for acoustic space with other languages that connect other Others. Yet it is not only the linguistic but the extra- and translinguistic that imprints on this dynamic of subjectivization.

In my earlier account of those Sundays, I omitted one dimension. I referenced the shouting, the music, the sonic/auditory exuberance. But I failed to mention that my other dominant sensory memory is of sweating, and of the fans whirring like mad in the partially underground meeting hall to keep the congregated faithful from overheating. Now, replaying these scenes of prayer in my mind, I see them as so thick with excess, with a Bataille-style super-abundance of sensuous gratification. This excess overcame normative constraints on speech and body decorum. To language in tongues was not just to excrete sound but substance, and in that excretion of substance to initiate the messy but necessary work of according other bodies a fuller recognition.[25]

Believe me when I tell you that our futures depend on the languaging of spirit. And not in some archly Hegelian sense, but in the embodied sense of melanated sweating and singing: of tongues descending upon us.

A first version of this essay was envisioned under the title "The Force of Constant Prayer," in simultaneous homage to sermons on this theme and to Simone Weil's *The Iliad, or, the Poem of Force*.[26] As I saw it activated in the Centro Carismático, constant prayer gained its force through an unrelenting conviction of speech's capacity to transmute and transform across the boundaries of the intelligible and unintelligible. But the more I contemplated in my mind's eye the scenes of my adolescence, the more enticing other dimensions of the full-bodied sensorium of the CCC became. It was as bodies, after all, that we stood to receive the spirit, and from bodies worn down by the travails of diasporic life that we proclaimed the message in many languages. Hence the urgency of thinking more about the "languages of the body in their choreographic and extra- and para-linguistic manifestations."[27]

In a church basement prone to overheating, enfleshment and linguistic pluralism converged in the service of a potential emancipation. I say "potential" because, like any good historical materialist, I'm fighting for the radical transformation of those material conditions that impinge on the flourishing of my people. Such emancipation as may be attainable would proceed from the assumption that languaging of the kind that I have described can be severed from the operations of capital, and indeed from the violence of commodification that streaks through Derrida's account of the monolingual. For this to occur, languaging under the auspices of the spirit need not disavow its drive to particularism, so long as it never loses sight of the many sweaty bodies.

Come 2050, may prayer in tongues unite me with the speech of so many others, sweating and striving alongside me. And may each of us hear the languages in which we were raised, forever and ever.

ABOUT THE AUTHOR

Dan-el Padilla Peralta is Professor of Classics and Associated Faculty in African American Studies at Princeton University. He is the author of *Undocumented : A Dominican Boy's Odyssey from a Homeless Shelter to the Ivy League* (2015), *Divine Institutions : Religions and Community in the Middle Roman Republic* (2020), and *Classicism and Other Phobias* (2025) ; the editor of *Rome, Empire of Plunder : The Dynamics of Cultural Appropriation* (with Matthew Loar and Carolyn MacDonald, 2017) and *Making the Middle Republic : New Approaches to Rome and Italy, c. 400–200 BCE* (with Seth Bernard and Lisa Mignone, 2023) ; and a volume editor for the *Cambridge History of the African Diaspora*. In 2026, he will join the faculty of Arizona State University's School of International Letters and Cultures.

ENDNOTES

[1] The phrase "guardians of languages" I take with appreciation and homage from Robert Kaster, *Guardians of Language : The Grammarian and Society in Late Antiquity* (University of California Press, 1988).

[2] On hate as a species of aesthetic self-control, see Joshua Billings, "Hate-Reading : Fragments from a Damaged Tradition," *Helios* 50 (2) (2023) : 117–128.

[3] Alfred Lord Tennyson, "Ulysses," *Poems* (London : Edward Moxon, 1842).

[4] Denis Villeneuve, dir., *Arrival* (Paramount Pictures, 2016) ; Denis Villeneuve, dir., *Dune* (Warner Bros. Pictures, 2021) ; and Denis Villeneuve, dir., *Dune : Part Two* (Warner Bros. Pictures, 2024).

[5] Efrain Agosto, "What Does It Mean to Be a Latino/a Biblical Critic ? A Latino Pentecostal Perspective, with Reflections on the Future," in *Latino/a Biblical Hermeneutics : Problematics, Objectives, Strategies*, ed. Francisco Lozada, Jr. and Fernando F. Segovia (SBL Press, 2014), 44.

[6] Shea Watts, "Dancing in the Spirit : Exploring Pentecostalism at the Interarticulations of Affect and Ritual," *Capacious : Journal for Emerging Affect Inquiry* 3 (2) (2024) : 159–170.

[7] Acts of the Apostles 2:1–13. I provide the Anchor Bible translation : Johannes Munck, ed. and trans., *The Acts of the Apostles*, rev. William F. Albright and C. S. Mann (Doubleday & Company, 1967). For the Greek text, I use *The Greek New Testament : SBL Edition*, ed. Michael W. Holmes (Society for Biblical Literature, 2010).

[8] Craig S. Keener, *Acts* (New Cambridge Bible Commentary, 2020), 136. On ecstatic speech, see Ekaputra Tupamahu, *Contesting Languages : Heteroglossia and the Politics of Language in the Early Church* (Oxford University Press, 2022).

[9] Gustavo Pérez Firmat's poem, "Dedication," published in the collection *Carolina Cuban*, is reprinted in Roberto Durán, Judith Ortiz Cofer, and Gustavo Pérez Firmat, *Triple Crown : Chicano, Puerto Rican, and Cuban-American Poetry* (Bilingual Press, 1987), 127 : "The fact that I / am writing to you / in English / already falsifies what I / wanted to tell you. / My subject : / how to explain to you / that I / don't belong to English / though I belong nowhere else, / if not here / in English."

[10] Rey Chow, *Not Like a Native Speaker : On Languaging as a Postcolonial Experience* (Columbia University Press, 2014), 2. On Chow as a critical resource for New Testament studies, see Tupamahu, *Contesting Languages*, 183–185.

[11] Chow, *Not Like a Native Speaker*, 14–15.

[12] Jacques Derrida, *Monolingualism of the Other; or, The Prosthesis of Origin*, trans. Patrick Mensah (Stanford University Press, 1998).

[13] Ibid., 31.

[14] Rubén R. Dupertuis, "The Challenges of Latino/a Biblical Criticism," in *Latino/a Biblical Hermeneutics*, ed. Lozada Jr. and Segovia, 137.

[15] John L. Moles, "Accommodation, Opposition, or Other? Luke–Acts' Stance towards Rome," in *The Collected Papers of J. L. Moles, Volume 1: Studies in Dio Chrysostom, Cynic Philosophy, and the New Testament*, ed. John Marincola (Brill, 2023), 729–730; emphasis mine.

[16] Lorgia García-Peña, *The Borders of Dominicanidad: Race, Nation, and Archives of Contradiction* (Duke University Press, 2016), 1–2.

[17] Munck, ed. and trans., *The Acts of the Apostles*.

[18] Simcha Gross, "Hopeful Rebels and Anxious Romans: Jewish Interconnectivity in the Great Revolt and Beyond," *Historia* 72 (4) (2023): 479–513.

[19] Flavius Josephus, *The Jewish War* [*Flavius Josephus's Books of the History of the Jewish War Against the Romans*] 1.3, 6. See Gross, "Hopeful Rebels and Anxious Romans," 502–503.

[20] In *Against Apion*, Josephus declares that he had "relied on some assistants for the purpose of the Greek" (1.50: χρησάμενός τισι πρὸς τὴν Ἑλληνίδα φωνὴν συνεργοῖς). How volitional their assistance was is not specified, nor is their status (enslaved? free?).

[21] Brian Rainey, *Religion, Ethnicity and Xenophobia in the Bible: A Theoretical, Exegetical and Theological Survey* (Routledge, 2018), 29–30.

[22] Ashon T. Crawley, *Blackpentecostal Breath: The Aesthetics of Possibility* (Fordham University Press, 2017), 221.

[23] Ibid., 224.

[24] See the essays in *Speaking in Tongues: Multi-Disciplinary Perspectives*, ed. Mark J. Cartledge (Wipf and Stock Publishers, 2012).

[25] I am working here with excess as described in Georges Bataille, *Visions of Excess: Selected Writings, 1927–1939*, trans. Allan Stoekl (University of Minnesota Press, 1985), and especially the essay "The Use Value of D. A. F. de Sade (An Open Letter to My Current Comrades)," 91–102.

[26] Simone Weil, *The Iliad, or the Poem of Force*, trans. Mary McCarthy (Pendle Hill, 1956).

[27] Watts, "Dancing in the Spirit," 161.

The Ground

Jericho Brown

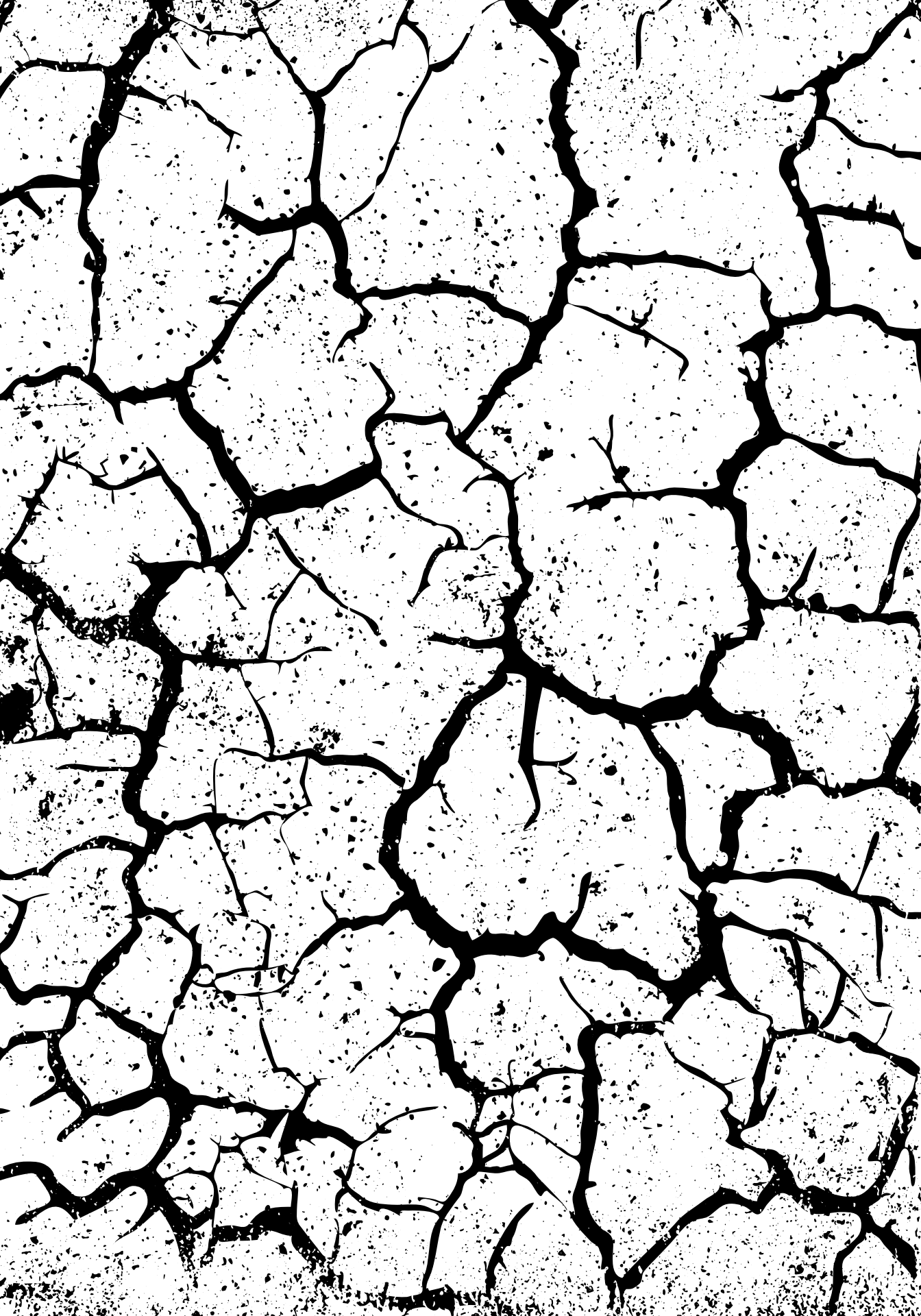
I think my dad thinks he apologized to me
Today in my backyard. We were on our
Knees. We were not praying, though
I understand us as men dedicated
To the ground in a religious way.
Behind my home on our four knees
Not praying but digging, we searched
For something I can't remember
Among rows of collards and tomatoes
I wanted him to see because a boy will
Show off for his dad even after
He is a man. The sun burned on, and
I got a tad nervous about digging once
I caught the tail end of a snake or thought
I did as I pulled up clumps of black earth
With my bare hands, still less wrinkled
Than his. I can't remember why
I would have my daddy bent in the dirt
Digging like a mammal with me because
He stopped to wipe his forehead
With the back of his sweaty forearm
And said, "I suppose you think you could
Have done everything without me
Being hard to you" and went silent as if

To acknowledge I had any perspective
At all on my early life as it relates to his
Cracked, clayed hands that hit whomever
Had a heartbeat in his house, the first one
I ever called home. I don't remember
A thing after that silence and very little
From before – Have I eaten today?
Yesterday? Did I ever eat or am I
A hunger growing food that can't satisfy
Me? I am bereft but must have
Guided him up when he finally stood
Again, and I do know neither of us cried.
God is in the ground, which is where
The living go when they die. That old
Man can't make me cry no more no more.

ABOUT THE AUTHOR

Jericho Brown, a Member of the American Academy since 2021, is the Charles Howard Candler Professor of English at Emory University. He is author of *The Tradition* (2019), for which he won the Pulitzer Prize, *The New Testament* (2014), and *Please* (2008), and the editor of *How We Do It: Black Writers on Craft, Practice, and Skill* (2023).

https://doi.org/10.1162/DAED.a.15



Another Other: An Unlikely Path to a Future United World – and What That Future Would Think about Us

Lindy Elkins-Tanton

We are separated from the future by a chasm of imagined apocalypses and miracles. We are separated from the technological foundation of our society by a chasm of scale between the individual self and the global manufacturing network. And we are separated from each other by chasms of bias and fear. Despite – or maybe because of – some of our looming apocalypses, our future selves might be less separated from technology and from each other. Population decline, the creation of self-sustaining Throughline communities, and the eventual discovery of alien life create possible futures populated with viewpoints that might see us, the Before Time people, as barbarians or, conversely, as technological gods.

Who is self, and who is other? You, my friend, are self. My family is self. So are my neighbors and my town. But out there, there are others. People who are too different from me, from us, and also, people who are distant in time. The future people, the past people. They are not us.

We automatically, as automatically as a honeybee returning to its hive, think of "self" as more trustworthy, more truthful, more relaxing. Other is less trustworthy, less intelligent, probably even dangerous. We assume that people who don't agree with us are irrational. We assume that people in the distant past were less accomplished. We assume – in general, we assume without knowing we are assuming, all the time, about everyone, self and other. But what if we imagine people in the future looking back on us? Will we be the past, and will the future think us less accomplished and less sophisticated?

Our seeming inability to consistently trust and connect with others is our constant undoing: biases, discrimination, distrust, enmity, schisms, factions, anger, aggression, attacks, war. The world events that frighten us also incite us to cling even more tightly to our home group, to distrust even more. Us and Them thinking, therefore, is the slippery slope to killing.

Unfortunately, the hopeful promise of a united world through the internet has not occurred. If anything, the way social media has evolved brings differences into

https://doi.org/10.1162/DAED.a.17

sharper relief with less empathy involved. We are in a crisis of scale : being global appears to be a myth, or a marketing gimmick, or a dream, and as a result the scale that's in crisis is the scale of human relationships.

Despite the failure of the internet to bring us together in our hearts, the internet has helped immensely to bring together our commerce. We are now, for better or worse, a technological species. In most parts of the world our very survival relies on technologies from far away, made in ways and by people we do not understand. Perhaps it is only a water pump, or maybe it is the whole electrical grid system and the HVAC on the roof of your house, every bit of it beyond your ability to build or to fix.

The scale of technology and its very complexity require a global scale for invention, development, production, transportation, and use. The compressor in your whole-house air conditioner needs valves made in South Korea, and it runs on electricity created by hydropower almost a state away, transported to you via transformers made in Europe, which have a year-long order timeline in the case that one goes wrong.

We have a global scale of everything except our sense of self. Our human hearts and minds live in villages of people we think of as ours. The scale of self and the scale of technological civilization are entirely different. Humans do best in villages. We were villagers, clansmen, to begin with, from the beginning of our species and before, into precursor species not yet known, and family-sized groups allow our hearts to thrive and our brains to function.

This is the chasm of scale. Our hearts and psyches remain rooted in the self and a small group, our village. The rest of our planet recedes away into enormity at increasing rates. The complexity of technology, the networked nature of our global communications and manufacturing supply chains, the oceans of information, the very expansion of our universe creates a gulf between our tiny local selves and the inhuman web of creation that we have made and observe beyond us.

We need the human relationship for our emotional lives just as much as we need the human relationship for learning and passing on knowledge. With this affirmed, that knowledge passes locally from human to human even though this same knowledge is the basis for the global technological world we live in, the uneasy tensions between scales of relationships become clear. We need our small group for our comfort and relationships, and we need the globe for our commerce, manufacturing, and communications, but a chasm of scale lies between them.

Think about the challenges of passing on knowledge. Amazingly, every day it seems some company or laboratory has lost the ability to create the products or perform the processes they used to. The product doesn't turn out the same, the person who used to tune it has retired or resigned. We can't even make concrete as good as the Romans' concrete.

Even if it's all written down, the knowledge does not transfer. First, most people don't read instructions and procedures manuals. Second, manuals cannot ever

be detailed enough. The tacit knowledge, specifics that are hard to put into words or perhaps are unconscious entirely, will be missing from the manual.

Thus, the recipe for how to do things is lost unless the training is done shoulder to shoulder, person to person. Think of how few things have been continuously done the same way for centuries. One example is the Ise Shrine in Japan, which has existed for a thousand years. How do they train each new generation to staff, maintain, and operate a shrine? Together, they rebuild the shrine every twenty years. Every twenty years, effectively two or three times in a person's working life, they participate in making a new shrine from scratch.[1] That is a human scale for continuity.

We need that human dyad, two people knowing each other and working together, for learning and for knowledge transfer. We need the family and the village, tens to a few thousands of people, for our own relationships and happiness and sense of place. And then, we need the whole globe to make the whole globe work. These scales of self and other, and the forces that might let us think of the peoples of the future as "self" and therefore view us with compassion, even with admiration, can be fragmented or enhanced by the events that shaped that distant future.

Thinking about this teetering edifice of advanced technology and the knowledge it requires, and the coincident deepening of schisms and return of extremism worldwide, what future events might drive what the future becomes, in ways that would bifurcate the future from our current present? In this essay, I consider two events that will or would entirely change the path of human civilization, and therefore the way the future will think about us, the past: the end of population growth, and the possible discovery of life off this Earth.

The end of population growth is bringing the near-future arrival of precipitous population decline. The very complexity of technology and the multilayered hierarchy of technologies and parts and pieces needed to build complex mechanisms, coupled with the primitive way humans share knowledge, makes our technological civilization desperately vulnerable to workforce loss. The knowledge held by just one special expert, if lost, ends the ability to make that thing. If we think it was bad during the early years of COVID-19, wait until the global population decline begins in just a few decades.

The global population will begin to fall perhaps as soon as 2060, according to the UN Department of Economic and Social Affairs.[2] From the point of view of environmental, food, and health sustainability, this is a good thing. But from the point of view of the retention of human knowledge, this is almost an emergency. People will retire from the workforce with their expertise, and there will not always be someone there to replace them. Even if shoulder-to-shoulder apprenticeship training were always possible, there would not be sufficient people to be apprentices.

Precipitous population decline and the accompanying loss of our technological base raise the possibility that the future may never think of the past because the future will not have a mind for thinking, and we of the present will then be to-

gether like a single sleeping language, sleeping the long sleep of the dead with no one to speak our names.

The second, less certain future event is the discovery of life off this Earth, the answering of the perpetual question, are we alone? We've been looking for decades, indeed for centuries and millennia, and if it's possible to make such a statement about a complete unknown, we are closer to discovery than we have ever been thanks to accelerated space exploration and new instrumentation. Discovery of other life in the universe would change humans' concepts of ourselves forever. As astrophysicist Evgenya Shkolnik writes in *Slate*, "Right now you're probably aware of many differences between yourself and your most annoying neighbor. But if you imagine the two of you in another country whose language you do not speak – you and your neighbor would suddenly feel close. The existence of a 'them' changes the 'us' forever."[3]

You may feel that someone in an opposing political party seems incomprehensible, but they become a center of comfort and familiarity when compared to a hard-shelled digging community of wildly intelligent underground Martian creatures, for example. Taking in a real difference – ourselves compared to the new alien life – will make even perceiving differences between ourselves and other humans almost impossible, like the impossibility of perceiving the difference between one stitch of colored thread and the next when standing back and looking at a vast tapestry. The discovery of another life could shock us into remembering who we are.

Will we lose our technological capabilities and devolve into a new Dark Ages? Or will we evolve? Will the future have learned from the present and realized that humans need a human scale and our existence and history and relationships will continue?

The ways the future would think about our present are dependent, of course, on what those futures are and what those future people are thinking about, what their cultural paradigms are. Here are three possible, connected futures based upon population decline and the discovery of life off this Earth: Near-Extinction, *Snow Crash*, or a New Unity.

Scenario 1: Near-extinction looks back at us.

Driven by the extreme population decline that began in the mid-twenty-first century, the twenty-third-century world has lost its ability to make most technologies because of the erosion of knowledge as people retired and were not replaced and, as a result, like a whole tree diagram of dominoes, entire industries collapsed. Tacit knowledge has been lost. A new Dark Ages has set in, with scattered towns finding ways to survive through the gradual return from the heat madness of climate change to a world that makes humankind more sustainable.

The past glows with beauty, mystery, complexity. Thinking about the highways and airlines and nuclear power stations, the planes and satellites, the radio

dish networks, prepared foods, gene replacements, and customized silicon chips only causes us, the people of the future, pain, though, because people in the past were better. People were *more*, in knowledge, in achievement, in reach. They knew things and could do things we no longer know or can do. But while they were more, they were also the creators of this broken world.

And so we hate that past at the same time we are obsessed with it. We read their books, and so we know they broke apart in the end just like the Holy Roman Empire, faction against faction, the rich consuming and using in discontented oblivion, and the poor fighting in the streets. Some of them worked on using less oil and eating more local foods, and here we are today, less oil and more local foods. But without other options.

We live among their relics – the skyscrapers, jet planes, nuclear plants, streetlights – all the things that require silicone chips, which are no longer manufactured on Earth. No chips, nothing that runs on a little computer brain works anymore. Some things can be repurposed, returned to how they worked in a previous world, but it's always a workaround, a compromise, and a sadness, nothing perfect anymore.

No GPS. Kids had to learn how to read maps again. Captains had to learn how to navigate boats. The corner stores sell map books once again. No turbine blades, so much less electricity. We no longer have information on what is happening all over the world all the time, and maybe we realize, we never did really know. Complex machines and production processes often rely on multiple parts that are only made by one group in the world. Once the innovators are lost, the production can't be recreated. For want of a nail the shoe was lost, for want of the shoe the horse was lost….

William Gibson is thought to have said, a century ago, "The future is already here. It's just not evenly distributed yet."[4] He thought he was talking about those communities on Earth with spaceflight, with quantum computing, with instant health care. But it turns out that that was not the future – those are only features of the past. It turns out that the future was the telegraph, plowing with mules, salvaging from dumps. That future existed in Gibson's time, too, but he thought it was waning, not waxing.

Now, our fantasy novels are of the miraculous technological past, even though we know that their novels were about the miraculous technological future. Our night sky has only a few satellites left moving against the stars. We read that they had thousands, if such can really be imagined. We dream, is there someone somewhere still controlling those satellites? Some of us have radio sets that still work and we can listen, sometimes, to the seemingly random static that gets sent back. But perhaps it means something to someone.

We read about huge medical imaging machines and proprietary medicines and the diagnosis and treatment of increasingly obscure diseases. Now, more people

die, but we can measure an increase in the hardiness of our species as we witness those who can survive with less care.

The chasm of scale has been diminished. The scale of me, the future human, and the scale of complexity of the technology I use are closer together. It's relaxing. I feel more in control, I think, than the people of the past. But I weep sometimes as I watch those lonely satellites cross my dark night sky.

Scenario 2 : Throughlines from the present populate a decimated future with *Snow Crash*-like islands of technology.[5]

Like the first scenario, radical population decline has so moth-riddled our complex supply chains that most manufactured goods are no longer available, and much of our communications and transportation networks have shrunk, but town-sized Throughlines of knowledge were set up before the decline, and they form a *Snow Crash*-like Balkanized network of the information and capabilities of the past (which we used to call the future) in an otherwise near-agrarian world.

As population declined, civilization factionalized, and some people understood they needed to create not just vaults with seeds in them, not just a "civilization kit," but communities of people who are committed to keeping the tacit knowledge alive for key human processes : the arts, education, medicine, manufacturing, communications.[6] These are group activities that require collaboration and a common vision. The Throughlines, as they are called, saved us, and so we think of those makers and inventors who founded them as our wise men, the idealized leaders from a previous age.

Such leaders emerged as civilization was finally undeniably falling into ruin and chaos, when the heat madness was beginning, when society was factionalizing even further after the last World War created even more enmities. In that more distant past, those people who hated and fought and broke apart, they were idiots. Society broke apart into religious extremism and suppression, except for the leaders of the Throughlines.

The Throughline founders are far enough behind us now that we mainly know them as myths. Think of King Arthur : during the twenty-first century, as vivid as any living person, but based on shreds of mentions of a distant person who was probably just a local leader, and whose name was not really even Arthur. The Throughline founders are as vivid to us people of the future as Arthur used to be ; each future creates its own myth of the past.

Granted, the most thriving Throughlines were founded in places with the least climate impact. They didn't get flooded out or desiccated. There was more equity in Throughlines that understood that more diversity of viewpoints creates more excellence, that a skill-based technological society creates inequality, that inequality creates division, that division breaks the society. The best Throughlines avoided the rural-urban divide. They created equal access to housing and services, not

because they were terrifying socialists, but because they knew it created a united society.

But we have watched the past, as much of its output in writing, recording, and video as we can stand to look at, and we know that organizations and nations and even ideas have lifetimes. They evolve, grow, are beautiful, mature, are revered, and then decay and rot. How can we expand that happy youth and middle age from decades or centuries into millennia?

Apprenticeship. Not losing the recipe. Rebuilding. Tradition. We look at the past and we know those people had some glory, but we also know they were mostly ignorant and obsessed only with their own dusty feet. In the past, the haves and have-nots lived in close proximity. And now that's more true than ever: people outside the Throughlines live very different lives, and in some regions it's guerilla warfare.

That conflict just serves to unite the people in the Throughlines. And we have drones, and so we always know when the others are coming. In the future, some Throughlines may wish to expand their control and rule over others. There may be broader war. There's nothing like inequality to create conflict. Within the Throughlines, we have so little inequality and so little conflict, but the chasm between ourselves and the outsiders is even greater than the chasm between the outsiders and the technologies of the past, which we still possess.

Scenario 3: Discovery of intelligent life on Mars creates an age of unity on Earth.

In the Throughline towns where technology, wealth, and communications are maintained at near-past levels, space travel is also continued. And then, an underground society of intelligent creatures was found on Mars.

The strangeness of the aliens made our human differences seem small. Within months, implicit biases based on skin color, gender, and other visible clues vanished; any human was a welcome friend in comparison to the aliens. We humans were as alike as two stitches in the same fabric. The aliens, though, were as different from us as a metal robot would be to our human tapestry.

The snap assumptions of our reptile hind-brains were put to much more apt use than when we used them to judge each other: identifying and protecting us from a real *other*, not the other gender or the other race or the other culture, but *another other*, the alien.

We have come to think of the people of the past as barbarians, actually. With all the focus inward toward ourselves, hierarchy used to mean everything. They cared so much about power (money) and pleasure (money) that they could not tear themselves away long enough to learn what a fragile state they were really in. The barbarians are vivid to us, the people of the future, now that aliens have been found: the barbarians are the people of the Before Time.

As we have now learned to see other humans as similar to ourselves, and we stopped most of our snap judgments, we also learned to think more slowly in other ways. We decided, in a moment of brilliance, that slow and measured consensus was better than the constant push for speed, the quarterly report, the fifteen minutes of fame, the one-minute reply.

We know that equality is key to peace, and now that we have an example of extreme inequality (burrowing aliens with flashes of astonishing insight, compared to humans striding about in the sunlight), we have become even more equal here on Earth. There are three pillars of equality: equal access to opportunity, better social protection systems, and less prejudice and discrimination to allow equal participation. The first two had been solved at times but never the third, until the aliens appeared. Now all we humans are alike.

Except the people who have touched the aliens. Maybe after the great pandemics, people developed an exaggerated fear of germs, but it's nothing compared to the new class of untouchables, those who have touched the *other*. Maybe it's all fantasy, or maybe they are changed in some way. Who's willing to take that chance?

In response to the discovery of these communicating aliens, as incomprehensible as much of what they said was, in the face of the biggest challenge to our notion of humanity that our history had recorded, we sat and talked and thought. We did not act.

We did not act for a long time. We thought about the people of the past, their plans for aliens . . . mostly killing. That did not really appeal to us. We, the people of the no-future, are together. The barbarians of the past are *them*, *other*, as much as those aliens on Mars are.

The past barbarians always wanted more. Every day was dedicated to more. We wish, in the face of the collapse of most of society and the discovery of *another other*, not for more, but for the same. We wish to continue as we are. We have been cured of the addictions for change and for more. Now we know human hierarchy is a distraction. Octavia Butler said so in her book *Dawn*, and we love that moment when the past predicted us, the future.[7]

ABOUT THE AUTHOR

Lindy Elkins-Tanton, a Member of the American Academy since 2018, is Professor and Director of the Space Sciences Laboratory at University of California, Berkeley. She is the author of *A Portrait of the Scientist as a Young Woman* (2022), *Earth* (with Jeffrey Cohen, 2017), a six-book reference series on planetary science, and the forthcoming *Mission Ready : How to Build Teams that Perform under Pressure* (2026).

ENDNOTES

[1] Jonathan M. Reynolds, "Ise Shrine and a Modernist Construction of Japanese Tradition," *The Art Bulletin* 83 (2) (2001): 316–341.

[2] Population Division of the Department of Economic and Social Affairs, United Nations, "World Population Prospects 2024," https://population.un.org/wpp.

[3] Evgenya Shkolnik, "'Are We Alone in the Universe?' Is the Wrong Question," *Slate*, February 16, 2016, https://slate.com/technology/2016/02/asking-whether-extraterrestrial-life-exists-is-the-wrong-question.html.

[4] Pagan Kennedy, "William Gibson's Future is Now," *The New York Times*, January 13, 2012, https://www.nytimes.com/2012/01/15/books/review/distrust-that-particular-flavor-by-william-gibson-book-review.html.

[5] Neal Stephenson, *Snow Crash* (Bantam Books, 1992).

[6] Emily Eakin, "The Civilization Kit," *The New Yorker*, December 15, 2013, https://www.newyorker.com/magazine/2013/12/23/the-civilization-kit.

[7] Octavia E. Butler, *Dawn* (Warner Books, 1987).

Horseplay

Leah Newsom

I've never seen a play, but if I did, it would be one where all the people are horses. Or all the actors are people, but they're pretending to be horses. Horses pretending to be people. And they have to *clip-clop-clip-clop* their way around the stage, but not too much, because people don't *clip-clop-clip-clop*, and since they're playing horses pretending to be people, they have to do it only enough to be believable. Yes, in this play, there is no perfection. In this play, the story emerges from the cracks.

I'm not sure what it would be about, exactly, but I think if I saw a play like this, where people are pretending and pretending, someone would need to be outed as a horse. All the other people/horse/people pretenders would have to play a mystery. A witch hunt – no – a horse hunt! Ha!

The thing about plays, and remember I've never seen one, is that audiences like a certain amount of familiarity. They like to feel like they know what's about to happen and it either comes to fruition or it doesn't in a memorable and totally narratively justified way. That's the key: the patterns. Without them, it's just people in horse costumes.

I was thinking about this yesterday during the rest period. It can get so quiet, you know, because no one is around and even the bird stops chirping. I made sure to only move as necessary, but a bead of sweat slipped into my eye, and it stung. I'm pretty sure it's made of the same stuff as tears, but I had to wipe it out of my eye to stop the burning, and I estimated about five wasted calories.

A horse would never be able to get a reverse tear out of its eye. That's one way to be outed.

When the sun finally sank past the window, Gillian was already at my door.

We were on the outskirts of the neighborhood when she asked me a question that sent me into a spiral.

"Jesus, I'm sorry."

She threw her hands up in the air, a surrender.

The billboard across the street was bowing like an Englishman. Had it advertised something other than the scratched and weathered face of an injury lawyer, a drooping man raccooned in dust and spray paint, it would have been regal. Gillian jumped in the air and gave the post a good slap. The metal rang out.

https://doi.org/10.1162/DAED.a.18

I saluted the billboard man. I bet he used that injury money to get out of here when it was still possible. Good for him.

"There's really no point in asking."

"It was just a question. Trying to make conversation."

"That's some of the most dangerous thinking you could be doing. The second you're imagining some other life you could be living, even though you *know* you can't, you're giving up on the one you have. And that's step one of the very few steps between this and dying."

She twisted her hand into a little puppet, mocking me. "Between this and dyyyiiinnngggg." The puppet hand plummeted and turned belly up, her sweet puny wrist glaring up toward the moonlight. How easy it would have been to end her right then and there.

Everyone inside was up to something. The dark-haired woman in a geisha outfit snorted powder off the kitchen counter. A cavalry of strangers lined up, waiting for their turn behind her. It's the little things. All that's left, really. Some were sitting on the floor chatting and laughing. Behind them, a rawboned man drew a landscape on the wall. With big fat markers, the stinky ones, the ones you can't get anymore, he colored in a cowboy sunset, where everything is orange and red and if you were lucky, you could ride a horse off into it and find some better story.

Freddy handed Gillian and me a shot glass each.

"Your rations, ladies." Lips curled, a tip of a cap, onto the next one.

Gillian rolled her eyes and clinked her glass against mine.

"TAKE YOUR SEATS, LADIES, GENTLEMEN, AND THE REST OF YOU FORGOTTEN BEINGS AND DIRTBAGS," a voice boomed from the other room, and everyone shuffled to their spots.

Donning a bedsheet around his waist and shoulder, Billy pranced through the doorway. He wasn't the biggest guy in the room, but even with those poor bones he gripped everyone's attention. We were here for him, really. The show, too, but Billy was the biggest part of the Archives. Three months ago, after the first few shows, it was obvious no one was watching. No one cared about Neighborhood 76.

Knees to chin, Gillian folded her body in a rickety chair by the window. Like the bird, she could never rest low. She always had to be perched on something. The woman in the kimono sat next to me on the floor, buzzing, then tapped my knee and smiled, two black teeth shoved in next to the rest of them. They were smeared with cherry red lipstick.

"You been here before?" she asked.

"You know I have."

"I haven't seen you."

"We do this every time I'm here."

"We do what?"

"This! You and me. We do this."

Her face scrunched, the white makeup creasing at her brow.

"Does Billy know you're here?"

"Fuck off, lady," I said, standing.

I moved to the floor next to Gillian's chair, my back against the wall. The warmth from the day was still in the plaster and it slid up my spine.

Even amongst friends, you can never be too careful.

The geisha lady didn't notice, or she already forgot our interaction. She picked at a thread in her hemline and ripped it out with those obsidian teeth, slipping it around her tongue until it was sopping wet. She tied it into a knot and flicked it across the room toward a person sitting at the front. Then she tapped on the knee of someone else and pulled them into her web.

"FRIENDS, ROMANS, COUNTRYMEN, LET'S GET THIS SHIT STARTED."

Voices lowered; limbs sank to the floor.

"Tonight, we have a special treat for you. Something that has never been played at the Archives before. Something I didn't even know we had until I found it under an old storage crate. It isn't even listed in the official catalogue." He lifted a plastic blue case into the air, its cover mostly ripped, but the remaining was half a woman's face smiling up, eyes all shine and madness, sequins and lipstick. "*Sunset Boulevard*."

He popped the disc into the projector system, an ancient thing jerry-rigged to an illegal solar generator. The machine sucked the disc into its body, grinding and whining. The screen flicked on and off, a little menu appeared and disappeared. Billy waved his hand over it, feeling for its exhaust. He rapped his knuckles on the side of the box and wiggled a fraying cable. The menu returned. The music began. Once it was queued up, he stepped back and sat on the other side of Gillian.

The funny thing about these old movies was that I could never imagine these worlds as real. But look at that man in his suit, all those fabrics, that tie swaying side to side in the water. Look at those men, the ones being cops. Look at their weird little hats, the way they peer into the water at the drowned man and are caught by this camera. In what world could this many people put something like this together? In what world is it worth anyone's time to pretend?

But I absorbed these made-up people, the sets, these costumes and wigs. The world I knew leaked a little bit more each time, and that night, my body knotted on the floor, Gillian's neck straight, like the bird just before it flies away, Billy with his too big ears: I knew what it would've been like to stomp around on a big hollow stage.

Billy wrapped his arm around Gillian's leg, clutching at her knee. She looked down at him, but only for a second before she shot her chin back toward the screen and adjusted her posture, letting his weight hang off of hers. It's something he does. It's something she lets him do.

The film ended where it started, but the meaning changed. Remember what I said about patterns? They're not just for horses. That main character – not the guy

who ends up dead, but the actress – I knew that look in her eye. She descended that staircase, all those cameras in her face, and she told them what she wanted, what she needed. I, too, knew what it felt like to make a request of the universe.

Billy rose from the puzzle of Gillian's legs and surveyed the room. Only a few sleepers. A couple folks at the counter licking up dust like fiendish kittens. Freddy prepping a row of shot glasses. Mostly, the rest of us, arranged around the floor in different groups and poses, transitioning back to the plane of the real, from that unimaginable world into this one.

"AND NOW WE BEGIN."

This is what people came to the Archives for. The films, yes, but we were here for Billy. The archivist. The teacher. The professor. Important people throughout history take surprising shapes, and Billy's undergrown, spindly form was no exception.

Knowledge resides in the strangest containers.

"When we tell the story of the before, of the past, of that which preceded us and our knowings, of the world's ancestry, of *our* ancestry, of the big, long scrape of desire and desperation that humanity has scorned upon this wretched earth, of everything from then until now, of all the little whinings and secrets and sips of water and blood spilled and semen swallowed and pictures drawn and technologies built and technologies destroyed and mothers made and then lost – when we talk about that story, we are talking about something so vast we can never know it. But we are compelled, aren't we? Look at us."

Billy lifted his arms and gestured around the room. Heads turned, bodies creaked.

"The one throughline in all of this unknowable history, in this infinite story, is this: compulsion. Desire. The more more more more more."

He squealed this last part like an angry baby, smacking his tongue on the roof of his mouth, lips at the teat of the universe.

Gillian laughed, the only one, her brief cackle filling the room.

"But we know better, don't we? We know that this compulsion is bred from the same thing that led humanity to this. That left us here to scavenge like rats. And that's what they want: rodents. They can control rodents. We are all here because we are the unwanted, the undesired, the left behind. We are the very few who are still connected to this land. Whatever the stories we tell ourselves about being here, in Neighborhood 76, the truth is that we are the future of this place. We will not be controlled by agents of the past."

A silence. Billy paced the front of the room while he spoke, a sentry.

"I am here to show you that we can learn from our mistakes. We may think that we're at the tail end of our lineage, but we are at the beginning. This," he pointed out the windows, into the dark, "this is an act of revision. We are the ones meant to inhabit a better world. And to this, we say, ONWARD!"

This was a slogan of his. Onward. He thrust his weary little fist in the air and everyone sitting on the ground, even me, jumped to their feet and cheered. I clapped so much I felt the pulse in my palms. And on his cue, the social part of the evening began. Freddy passed out the booze and everyone clumped into groups.

Gillian's hollow-boned frame slid up to Billy again. The way she both leaned into and pulled away from him reminded me of an adolescent tree, back when storms and the wind would push the branches so hard, it would relent, fall slack. It would bow to the earth.

"Hey, Billy," I said, shoving myself between the two. I could be a barrier; I could be an excuse. If she wanted it.

"Finn," he replied.

"So, that one wasn't in the catalogue?"

"What do you mean?"

"You said you found it under a box."

"Oh, yeah. I was doing some cleaning house. It was all caked in dust, too. It took forever to clean without scratching it."

"Seems weird that you wouldn't have seen it before, though. How unorganized are you down there?" I slapped the side of his arm and laughed.

Gillian's face could never hide her embarrassment, the way her eyes widened, how she grabbed my elbow with her cold, spiny fingers.

"What are you saying?"

I liked Billy, really, I did. He opened up an entirely different world for us and made it possible to be a part of the Archives. But he was so easy to rile up, I couldn't help myself. Some part of me wanted him to know he wasn't our savior.

"Just a joke," I smiled.

He raised an eyebrow, wrapped an arm around Gillian's waist, and turned to Freddy. "Over here!"

Drinks, drinks, drinks. Freddy was synonymous with the stuff. His demeanor was an antidote to Billy's. Freddy's eyebrows took over his face. It was hard to notice the rest of him, how under there he was a pretty good-looking guy. But those brows were like fat caterpillars. He played a role here: Billy's sidekick, Billy's bus boy, Billy's minor character, Billy's supporting actor. Every once in a while, I saw past the script: a heavy energy, calm but morose. A man lost at sea.

"To your health," he said, a glass for each of us.

Up, down, gulp.

"So, what did you think?" Billy asked, eyes on Gillian, hands on Gillian, that infant hunger radiating.

"I felt so bad for her. I mean, the world moved on while she wasn't looking and then that's it. There was nothing left for her, nothing really."

He nodded, adjusted his bedsheet toga. "Right, exactly. It's what it is to be stuck in a time you weren't meant to be in. Weren't meant to thrive in."

Freddy sauntered away. He handed out shots to more people. It must have felt good to have a job, to be able to dip in and out.

"Exactly," Gillian said.

"It's why I picked it – in a lot of ways, Norma is an example of how our past controls us. It's not the world as it is that keeps us down. It's our unwillingness to let go of a past that no longer suits us."

Gillian nodded, big eyes, burning breath.

"You really think that?" I asked.

"It's an interpretation."

He turned back toward Gillian, which was my cue to move on.

"I am just not sure what she was supposed to have done different. Aren't we all made up of everything that came before us?" I asked.

The room hummed. Mouths and palms came together and broke apart, reformed on other sides of the house. Lines appeared and disappeared on the kitchen counter. Voices grew, voices shriveled. Bodies trickled out. The sun found its way to the other side of the sky and began clawing its way up, starting its next brutal ascent.

By the time I managed to pry Billy off Gillian, we were late to the Well. Dangerously late. Freddy already left, and Billy's toga was somehow both sagging and riding up his boyish body, his pink, soft belly and milky hairless thighs exposed, nauseating.

The world outside was orange and gleaming.

"We'd better hoof it."

Gillian's flimsy legs looked like they could snap at any moment, but she tolerated my hurrying.

Out the gate, down the cracked and fraying road. Through and out the lot that holds the Archives. Past the billboard, his ragged stare recording our every move.

"I don't see what you like about him," I said.

"Billy?"

"Yeah, don't get me wrong. I like the shows. I even like his speeches. I get *that*. But I don't get the way you let him touch you like that."

Gillian's shoulders were nuts and bolts, washers and screws, true joints, all of their little mechanisms visible under her skin. She hugged them up to her ears.

"I don't know," she said. "I guess it just seems right?"

"Right, how?"

"Like, why not, you know?"

We turned into the Well.

"Did you remember your card?"

She twisted herself around and pulled it out of her back pocket.

At the gates, only a few people were still waiting. The sun was almost above the horizon and everyone with any sense had come and gone at least an hour ago. I tapped my card, and the turnstile unlocked. Pushed forward. Gillian right after.

I swerved to the left lane; the Official I liked was almost always assigned to the same spot. He nodded at me, and I nodded right back. I've never seen his face clearly under the visor, under the hood and the face shield, but I liked that he acknowledged us. The other ones were essentially machines. I gulped down the paper cup of water and showed him its empty bottom. Handed it back. He threw it in the sanitized bin and released my rations: two plastic sealed lumps of tasteless nutrients that will sustain me until tomorrow.

"My liege," I crooned, kicking back my leg and bowing deeply, my forehead nearly to my knee.

Gillian laughed, but the Official didn't. He waved her forward.

"Next."

We crossed the asphalt lot, stepping over the cracks. Gillian nibbled at her food. She never learned to pace herself, to control her impulses. It was one of her many flaws, one of the million things I liked about her.

The sun penetrated the skyline, singeing my cheeks. From the other side of the lot, someone called out to us. Everything was blurry and bright.

"I'll be quick!" the voice said.

Gillian sidled up to me, nesting her food in her bag.

"Just a second, really!" they called again. They squawked from behind an old tollbooth, a junky blue structure at the edge of the asphalt expanse. "I need a little help."

Around the booth, a shade tent hung precariously between an old sliding window frame and a large stone on the ground. The acrid reek of piss and flesh rose, worsening every second with the sun's climb. Old plastic cups, stretched out springs, shards of metal and plastic, table legs, bedsheets, a busted guitar, a small trash can, shoes of varying sizes and styles, and even a few books – an astounding collection of things that would be very easily considered contraband. They were all splayed around this shit-soaked encampment, reeking and rotting. Amidst the heap, a body camouflaged as a weird relic. This person wore a strange outfit from another time: purple trousers, a matching jacket, and around their neck, a loosened tie, knotted too many times – it looked more like a leash.

"Any chance you could spare one of your rations?"

Gillian looked away.

At first glance, the person appeared to be quite old, but they were a mirage. Their eyes were tired, their face fissuring and churning, but they couldn't have been older than me.

"I lost my card, and the system won't recognize me," they said, digging through the heap of junk. "I can show you. I can show you the paperwork. They made me fill it out. But then they gave it back to me. Nothing they could do, no nothing, they said. But without my card, nothing either. Can't cross over, can't stay here. I can trade you for one of my things. I just need something. Please."

They lifted a wet, rotting book toward me. Gillian skirted behind me. I could hear the tears welling up in her eyes. Such a waste of water.

"Alright, but I can't do it again, you know. I'm not going to just fork over my rations every time I come to the Well. Okay?"

I looked them in the eye.

"Of course, of course, I would never, never expect, no, not ever, no, we need everything we can get, don't we, everything."

They rose from the pile, bent, cracking. They handed me the book and I pulled one of my meals from my pocket.

"Stay safe," I said.

The person grabbed my wrist and pulled me in. Their eyes were yellowed, hair alive with whatever species found a home in it. When they opened their mouth, a jaundiced string of spit stretched between their lips, the haunting smell of an ecosystem in that maw, fermenting and growing.

"You are the one who needs to stay safe, not me. You, it's you, you and her." They point to Gillian. "Don't tell anyone you got that from me. No, I wasn't here. I've never been here and neither have you, no, none of us have been here before. Right? Right? Everything we can get. Right? Oh, everything."

I rip my arm from their grasp and shove them back into their pile. Gillian and I darted back across the parking lot.

The sun filling the sky, we galloped. No looking back. Forward, ever forward. When I got to my squat, I told Gillian to keep running, to not stop, that this place is full of nightmares, and that none of us can escape the past, not in a place like this.

"Get back now and I'll see you tomorrow," I yelled.

Inside my squat, I flipped through the book. Its pages were fat with warping and bending, having soaked up so much of the world in its time. It smelled like smoke and decay. It was a wonder the pages were still together, and with each turn, I was sure it would fall apart in my hands. *The Rime of the Ancient Mariner*. I hid it in the drawer and pulled my weary body into the shade bed. My wrist still smelled like the person behind the tollbooth.

To fall asleep, I counted to one hundred. I started over. Again. How many one hundreds before my brain could shut off? How many clips and how many clops?

It's probably important to know I've never seen a horse. I know about them, the way we all know things about the before. They used to live here, I guess, prancing around the valley and drinking from the rivers, before they were dammed up, before they dried up. Horses were big with soft noses and when people rode them, they turned into a new kind of creature, a chimera thundering through the desert. They say the horses liked it, having that sense of purpose. Too much freedom is another kind of prison.

The sirens started midday. I was asleep – miraculously, a dense, black sleep – and was startled awake.

They'd only ever gone off for tests.

"Out! NOW!"

How many calories did I burn shooting out of my shade bed? Flying across the floor? Is that what we were saving them for all those years?

Outside, people were running, catching their breath every few hundred feet. The afternoon sun was in full force, reflecting off derelict streetlights and the glass of shelters across the way. Flocks of Officials in shade suits knocked on every door, yelling. Down the street, the heat pooled silver light, and for a brief moment it looked like everyone was parading toward it, cinching their spines, preparing to dive into its cool, slippery body. Screams and legs and long slivers of flesh.

One of the Officials pointed at me.

"Go!" he yelled.

My feet were bare, my shoulders uncovered. I hurried back into my house and grabbed a shawl. I pulled my boots over my sticky heels. Just as I was turning to run back out the door, I saw it: the bird. It was propped up against the windowsill, unnervingly calm, leaning the entirety of its miniscule body to the left. Oh, the bird. I'd never seen it this close. How its feathers conjured dramatic spots on its breast, daggers of wings. Its eyes were wet beads – their glinting, their reflection – it was hard to believe this creature really existed. Its partially agape beak was an unkempt fingernail. It blinked. It looked at me. I tapped my finger on the glass, and it shuffled its feet, or tried to. One foot stretched out, but the other lay limp at its side, snapped and bent.

Officials were everywhere. I slipped out of the squat and turned the corner. The bird tried to scoot away from me, but the weight it put on its broken foot tipped it over and the bird flopped onto its side. I grabbed it and wrapped it up in my scarf. One hand cradling its hollow, shaking body, I emerged back onto the street and joined the flow of running bodies. The stampede, if you will.

Across the way, an Official was dragging someone out of their house. They clawed their doorframe, kicked, shrieked. Then, I suppose after the Official was fed up, they took a blow to the head. Slumped slack on the asphalt.

Down the street at Gillian's squat, I paused in the shade of a sun-bleached billboard and pretended to catch my breath. Her door hung open. Clothes and trash and paper and everything she owned were strewn across the floor. Her shade bed's cover was ripped from its hinges and lay bunched by the bathroom. The bird writhed in my hand. It was as though it could tell, as though it could feel the fear in the air.

If this were a play, I'd cut out all this running. That's right: if this were a play, I'd open Act II with me busting down the door of the Archives to find Gillian. I'd rescue her from whatever took her before the sirens cried. And then I'd make sure the plot makes some kind of reference back to the beginning of the story. The audience would see the pattern, feel the cohesion. Gillian and I would be changed forever, somehow understanding each other in new, more complicated ways.

Maybe we'd kiss. Maybe we would go our separate ways, having grown from the experience. Our arcs fulfilled.

But this is not a play.

The truth is that I kept running in the direction of everyone else. It didn't occur to me to do anything different.

The bird was impossible to feed. I'd found a few ants and a cockroach by the toilets. The stalls were removed. An Official kept watch over the row of people shitting and pissing, which meant catching the bugs was precarious. He must have thought something was wrong with me, how long I sat and waited. But he was only there to make sure we weren't running faucets or flushing. Our bowels weren't his problem.

Even with the bugs, there wasn't enough water for the bird. I barely had enough for myself. A makeshift Well was set up on the far side of the gymnasium, although with smaller water cups offered less frequently.

I cradled the bird into my chest while I slept on my mat, Row 4, Aisle G.

"You did this to yourselves," an Official said. He took each of our cards and replaced them with name badges, to be worn around our necks at all times. "You chose this life."

Mat after mat after mat after mat of exhausted, thirsty people. There were at least three hundred of us in there. What are the odds that every single one of us would have decided to stay? In what world did any of us have a choice?

A tap on my shoulder.

I adjusted my scarf to hide the bird, trying to play it off as an itch.

Freddy. His caterpillar eyebrows furrowed at me, disappointing beasts.

"I didn't know you were here too," I said.

"I'm on the other side." He pointed to the far end of the gym, where the same indistinguishable crowds of people milled about between their mats and the bathroom.

"Have you seen Gillian? Billy?"

He shook his head. "You're the first person I've seen from the Archives." I looked around. Fog lights and swamp coolers. Body odor and dust. If I was there for three days and didn't see Freddy, was it possible I missed her too? "You need to get rid of that thing." He pointed at the shape of the bird.

"What thing?"

"You know what I'm talking about."

"How long do you think we'll be in here?"

Freddy sat down next to my mat. I had only ever seen him as a butler, a host, a man who greeted you. Here, he was someone else.

"I'm sure they'll figure out what they're trying to figure out and we'll be out of here soon. This isn't ideal for them either."

"Figure out what?"

"It's only Neighborhood 76, you know. We're the only ones in containment."

All these people lived in my neighborhood? I'd never seen any of them.

"Do something about that thing in your scarf. If you don't, the Officials are going to take it away, and then you."

"Freddy, what do you know?"

"I'm not going to be able to stop them."

He rose from the ground and lumbered down the aisle and toward the dilapidated basketball hoop. A group of people took turns throwing their shoes through the ring. One made the shot, and they all raised their arms in the air and cheered.

One morning, the Officials called us all up from our mats. We were told to gather against the walls of the gym. "Leave your stuff with your mat," they said. "As close as you can to the wall. Everyone. Come on, come on."

We had been there for almost a week. A week of stiff joints, sleeping on the floor, trying not to watch each other's bodies be bodies. It is when people are sleeping that they are the most aligned with their flesh. Their bellies ebb and flow. Their throats clog and gag, they snore, they spew secrets, they scream and roll. When they wake, they are this other thing, this thing they know as themselves.

In that gymnasium, shades drawn, buzzing lights shut down, it was impossible not to watch the sea of bodies escaping the traps of their minds. Against the wall, we waited for our instructions. Grumbling. Whining. Pleas for more rations, more water. Some people looked ill, cheeks thinning, eyes sinking. The bird was still wrapped up in my scarf on my mat.

"Now jog," an Official called from the intercom.

Everyone looked around. One person from across the gym laughed, but most people weren't listening or weren't sure what the Official meant.

"Everyone. Now. JOG. Counterclockwise."

Officials in the center of the gym yelled. They closed in on us. Jog, they wanted us to jog. There were too many of us, it was too crowded to jog in any real way. But people started scuffling. Shoes squeaking against the linoleum. Somewhere between a walk and a prance, a horse and pony show. My legs could barely manage it. They stiffened, cramped, shrunk into fleshy stilts.

"Faster!"

The man ahead of me couldn't keep up either, and when I tried to pick up the pace, I accidentally kicked the back of his ankle. He came crashing to the ground, the heavy thud of his body hitting the floor with a depth of sound I've never heard. It was crushing. A few people hopped over him, continuing their jogging. I reached down to help him up, but he refused. He shook his head, curled his knees into his chest.

"Keep moving," an Official said to me, ambling up to the man.

I don't know what it was exactly. Maybe it was the way this Official leaned forward to check on the man, the way he caressed his arm while checking his pulse.

Maybe it was how his body moved, how his legs were short, but his fingers seemed too long. It was the Official from the Well. My Official.

"Seriously, keep moving," he said to me.

He lifted the man from the floor. The old man's frame curled around the Official, who carried him across the gym and out through a metal door that clanked an echo through the room when it opened, and again when it latched closed. I fell back in line, returned to the trot.

The lump of shawl on my mat was still there. I couldn't tell exactly, but the bird seemed fine. It wasn't moving, and I wondered if it, too, found the blessings of sleep.

Around and around we went. The stomping of feet against the floor. The room filling with hot breath. Sweat beaded and fell from my forehead, soaking my shirt. How much water was I giving to the air? How much could it take and take from me without giving anything back?

Ahead, one of the doors was cracked open. Somebody shoved something between the frame and the door, and the moonlight leaked in before dissipating in the fluorescence of the gym. I slowed down and skirted to the outer edge of the ring of joggers. I jogged in place, hoping no one would see me. Out the cracked door, there were other buildings, other parts of this place. There was a large truck with barred windows and a collapsible step ladder fitted onto the back of it.

Beyond, lit windows and the murmuring of walkie talkies.

Then, boots crunching dirt.

"It shouldn't be too much longer," a voice said.

"It better not," said another.

"It's not hard to break people down. They do it to themselves, really."

"I just want to be done here. This place is foul."

"You've been here for one week, man. Want to switch?"

The voices got closer, two figures bending around the truck. One, an Official with his visor up. His face – his face looked like any other face. He had eyes. A nose. A mouth. His cheeks were a little round, his chin softened by the padding of his neck: the padding of a man who has enough to eat. The other man, inhaling from a cigarette, was harder to see. His face was cast in shadow, but he wasn't in an Official's uniform. He was wearing worn out basketball shorts and a ratty gray T-shirt.

"I'd rather be dead, I think," the Official says, laughing. He pulls his visor down over his face. "Best get back to it."

They both turn toward the door. The other man's face became clear, shining in the sliver of light pouring out of the gym. Those eyebrows. That look of a man with a job to do. Oh, he wasn't lost at sea. He *was* the sea.

Freddy's eye caught mine, briefly, for a cactus needle of time. I jogged away – back into the stampede, back into the ambiguity of other people and their bodies, back into the track race of Neighborhood 76.

A crackling voice churned on the intercom.

"Everyone to their mats. Rest period begins in five minutes."

The room swarmed. People going to the bathroom. People begging at the makeshift Well. Officials creating a wall between the squatters and the tables that passed out water and rations.

"It's not time," they yelled. "Back to your mats."

The woman on the mat next to me slid onto the floor, panting.

"So, what do you think they're going to do with all of us now?"

Her voice was a whisper, but it didn't feel restrained. It seemed like it was her normal speaking voice.

"What do you mean?"

"If there was an emergency any more urgent than the daily emergency of living here, wouldn't they have evacuated us? Wouldn't they have told us what's going on?"

While the woman was speaking, the bird started calling.

"You think all this effort is for nothing?"

The woman glanced down at the bunched-up scarf.

"I'm not saying it's nothing."

"Then what are you saying?"

"I'm saying it's *something*."

She parted her lips then, presumably a smile. Her teeth were black, iridescent. The woman rolled back over, and before I had a chance to say something, an Official was walking down the aisle.

"Rest period. Silence."

That's when the bird started flapping around under my shawl. Its cry turned into a screech. The poor thing started pecking at my fingers. Its hunger must have gotten the better of it. Its whole body vibrated. Its feathers puffed and rumbled. All those tiny bones, all that nothingness balled up into the form of a bird, it was unimaginable that this wimp of a creature could make so much sound. I pinched its beak closed. I tickled its breast feathers with my pointer finger.

The Official turned back toward me. "Hey," he said.

I cupped my hand over the bird, but it only screamed louder.

His boots stopped inches from the top of my head.

"What do you have?"

"I'm not sure what you mean."

"Don't play games with me."

"It's nothing, really."

The people on the mats around me started sitting up, turning their heads, murmuring, rolling over.

"Give it to me."

The Official crouched down. He smelled like a campfire, like he'd been outside somewhere recently, somewhere like the woods. Woods: I've never seen them ei-

ther. That's the thing about the desert. You can tell when someone was born outside it.

"I'm going to ask one more time."

He would never have made it as a horse.

"You must be mistaken."

The bird cawed.

The Official smashed his palm into my face and lunged for the bird. Once it was in the grip of his hand, it screeched and flapped. I could barely catch a breath beneath the weight of his hand, clutching at my cheeks and chin. It's hard to estimate the strength of other people. I didn't know someone could, with one arm only, pin me down. I didn't know I could be so easily restrained. His hand hot on my face, his other, pulling the bird and my scarf away from my body.

"Where did you get it?"

He released my face. Clutched in his grip, the bird writhed. Its head slumped, neck broken. The final frenzied revolt of a body that had no options. Even in its most helpless moment, that bird fought to live.

"Don't make me ask again."

"Outside," I said between coughs.

"Outside where?"

"My squat."

He didn't believe me. The way his body hovered above me, the way his voice demanded answers, the way no Official has ever believed a squatter.

"Get up."

The bird's twisting slowed. Its feathers poked between his fingers. Its head hung slack.

"Up."

I could barely hear him.

"Now."

Three other Officials walked up. What did they think I looked like, all curled up and covered in bird shit on the floor of this gymnasium? Had any of them ever been contained like this? Had any of them ever pretended to be someone they weren't? Did it make them feel closer to who they actually are?

"I'm not going to ask again."

A stillness rose over the room.

One started it. Which one, I'm not sure. My ribs, my arms, my stomach, my legs. I wasn't a body anymore, but an accumulation of parts. I was a pile of bits. A kick to the face and I wasn't anything anymore. Tunnel-visioned, fat-lipped. They could have me.

It was only once the Officials pulled me off my mat, marched me out of the gymnasium and outside into the sunrise, only once they cheered and hooted and hollered in a sort of parade of compliance, three or four of them lined up, watch-

ing and congratulating the ones carrying me out, only once they shoved me into a small, dark room in another abandoned school building, only once they threw the carcass of the bird in after me and slammed the door – it was only then that I knew I'd never see Gillian again.

The interesting thing about the bird was that it looked, for a moment, like it could still be alive. Its fluff, its roundness. If I didn't look into its eyes, it could have fooled me as sleeping. It's the eyes that give everything away, even horses.

I.

The curtains never fully open. They begin to part but get stuck in the rails. A crashing sound. Stage right curtains snap and slump, leaving a weird space above them. Whoever is responsible for opening the curtains gives up when they're about three-quarters of the way. Finn trots around in circles. The stage is empty. They clip-clop the best they can. They stop, shake their head, try again. Clip-clop-clip-clop-clip-clop. A voice bellows from offstage.

UNKNOWN VOICE. Would you knock it off?

Finn stops, looks around. A beat. They shrug and keep working on their clip-clopping.

Seriously! Stop!

FINN. Who are you? (*Looking around, confused*) I mean, *where* are you?

UNKNOWN VOICE. Over here.

FINN. Uh . . . ?

Finn walks across the stage, looking for wherever "over here" is.

I don't think you're here.

UNKNOWN VOICE. I'm definitely right here.

FINN. You're definitely not.

They look around. Once again, they do a clip-clop.

UNKNOWN VOICE. I could end you right here and now.

FINN. Fine, fine. I'll stop.

UNKNOWN VOICE. Good.

FINN. I promise.

UNKNOWN VOICE. Okay, thank you.

FINN. I piiiiiiiiinkie promise.

They lift a pinkie into the air.

UNKNOWN VOICE. I appreciate that.

FINN. But you have to do it too.

UNKNOWN VOICE. Do what?

FINN. Pinkies!

UNKNOWN VOICE. Why?

FINN. That's how pinkie promises work.

UNKNOWN VOICE. I am not doing pinkies.

FINN. Then I guess I'll have to keep rehearsing.

UNKNOWN VOICE. Don't you dare.

FINN. That's the rules of a pinkie promise. Two pinkies? A promise. One pinkie? Not a promise.

UNKNOWN VOICE. I swear to God, if you do that one more time, I will –

The sound of a metal door swinging open and slamming against a wall. Finn jumps, runs to the corner, crouches down. Nothing happens on stage, but we can hear everything.

ANOTHER UNKNOWN VOICE. Get up.

UNKNOWN VOICE. No, no, no, no, no.

A scuffle. Someone is beating someone. The two unknown voices are fighting. Yelling. And then after a few minutes, it's over. It was hard to listen to. Finn is frightened, not sure where the sounds were coming from or why. The door slams again. Silence. Finn sobs.

II.

FINN. People sometimes eat with their hands. They lick their fingers.

Finn sucks the tips of each one of their fingers, one by one. They pull each finger out of their mouth with a little popping sound.

But horses, horses didn't have fingers.

They make their hand into a fist.

Horses had hooves. Hooves were kind of like blocks made of bone.

They bonk their two fists together, but because they have soft human hands, they do not clip or clop.

They wore shoes too. But the shoes were metal.

They take the shoes off their feet and put them on their hands, clapping the soles together.

And they were nailed into their feet. Like some real biblical shit.

They lick the shoe, try to stick the toe of it in their mouth. When they pull it out, they make the same popping sound as before.

III.

Finn lies in the center of the dark room, a mirror backstage so the audience can see them. Their arms are splayed but their feet are together. They look crucified minus the cross. Billy enters. He's still in the bedsheet toga, but it's covered in blood and dirt. He limps up to Finn.

BILLY. You know you are one of the forgotten beings and dirtbags, right?

FINN. Yes.

Billy nods, sits down on the ground.

BILLY. Do you know what they did to her?

A beat. Finn doesn't move.

Do you?

A beat.

Did you ever see her naked?

Billy crouches on his hands and feet, his face right above Finn's.

Did you know her whole deal? Why she was squatting? *(Now yelling.)* Why did you bring her to the Archives? Why did you let her come? Who do you think you are? Why are you squatting, anyway? Why aren't you on the other side with whoever pushed you out of their cunt? Why did you stay here? What were you trying to prove? What are you trying to prove now? Do you know there will be no record of you, of your life? Yes, you must – you must know there is no archive of this.

He spits in Finn's face.

That's the thing about the Archives. Is it about remembering? Is it about letting go? Or is it just a bunch of stories? You, Finn, are barely a story.

IV.

Freddy and Gillian walk across the stage. The sun is setting and there is a sense of relief. Gillian looks battered, exhausted. Freddy does too. They stop to rest.

GILLIAN. There's a rock in my shoe.

She sits down on the stage, takes her shoe off, turns it over and shakes. Nothing falls out. She reaches her hand into it and digs around, feeling for the rock.

Isn't it funny that you can have a bruise on your leg that you have no idea where it came from, but one little pebble in your shoe can send you over the edge?

FREDDY. Mhm.

He's not really listening.

GILLIAN. What time of day did you say you snuck out again?

Freddy is looking at his hands, absorbed in thought.

Freddy.

A beat. She smacks his leg with her shoe.

FREDDY. What? Sorry.

GILLIAN. What time of day did you say you got out?

FREDDY. Morning.

GILLIAN. What time was it, though?

FREDDY. Oh, I don't know. Just, morning.

GILLIAN. Old morning or new morning?

FREDDY. New morning.

GILLIAN. And no one noticed?

FREDDY. No one noticed.

GILLIAN. And it wasn't too hot?

FREDDY. It was pretty hot.

GILLIAN. And you were fine?

FREDDY. Fine, yes.

GILLIAN. And then you just . . . found me.

FREDDY. Yes.

GILLIAN. That's a pretty big coincidence.

FREDDY. It was.

GILLIAN. There's like hundreds and hundreds of people.

Freddy nods. Gillian puts her shoe back on, takes her time tying its laces.

Hundreds of people and you find me.

FREDDY. Yep.

GILLIAN. And not Finn?

FREDDY. Nope.

GILLIAN. Or Billy.

FREDDY. Or Billy.

GILLIAN. Right.

FREDDY. Right.

A beat.

Ready to keep going?

GILLIAN. Yeah.

Gillian takes a deep breath and stands up. They begin walking. The sun sets. The sun rises. The sun sets. The sun rises. The sun sets. The sun rises. Gillian and Freddy walk. And then they rest. They walk. And then rest. Days go by. Maybe weeks. No other people cross their path.

Do you think they took everything?

FREDDY. I'd imagine so.

GILLIAN. Why do they think it's so dangerous?

FREDDY. Couldn't tell you.

GILLIAN. What did they think was going to happen?

Freddy is trying to avoid having this conversation. He looks to the horizon. He picks up his gait, getting ahead of her.

Do you think they're watching them?

Gillian trots behind him. Freddy shrugs.

FREDDY. Does it matter?

GILLIAN. Which one do you think they will like the best?

FREDDY. Depends on who's watching.

GILLIAN. I'll bet it's the one with the sharks.

Gillian stops at a great tree.

I think people who feel bigger than other people would probably like to watch sharks. Sad men and sharks.

FREDDY. What makes them sad?

GILLIAN. Oh, everything. Everything makes them sad.

Gillian puts her hand on the tree. Looking at her hand, she curls it back into a shadow puppet shape. She lifts it into the air and swings it around in front of her. She speaks with a weird, high-pitched voice.

Between this and dying.

FREDDY. What?

GILLIAN. Nothing.

FREDDY. We have to be there soon.

GILLIAN. You think so? Have you been before?

FREDDY. How far could it be?

GILLIAN. I don't know.

FREDDY. This all used to be one state.

Gillian looks around, lost in thought. She looks for evidence of a fissure, a border, some clear sign that there is a line between here and there.

GILLIAN. Do you think they know we're coming?

FREDDY. If they did, they would have found us already.

GILLIAN. Why isn't everyone else running?

FREDDY. I guess they didn't have the gall.

GILLIAN. How did you find me again?

FREDDY. I don't know. I just did.

GILLIAN. That's pretty hard to believe.

FREDDY. Sorry.

GILLIAN. It's like you knew where I was. Like you knew what happened.

FREDDY. But I didn't.

GILLIAN. It's like you did though. Like you were there.

FREDDY. But I wasn't.

GILLIAN. Are you sure?

FREDDY. I'm sure.

GILLIAN. There was definitely someone there who I felt like I knew.

FREDDY. Who?

GILLIAN. I don't know, someone.

FREDDY. How do you know?

GILLIAN. We were down there. It was smaller than I thought it would be. It smelled like something old, like how I imagine the woods would smell, or a beach. Something that came from the earth, you know? And we were down there, and Billy was digging through boxes. That's how he was keeping everything, in these cardboard boxes that had to have been older than him, older than any of us. They kept falling apart, spilling little plastic cases onto the ground. There was a figure in the corner, the body of a woman. White, plaster. No head. One arm extended forward. There was a bag hanging from it, but I couldn't see what was in it. And Billy was shouting. He was shouting at me, but all I could think was that the woman couldn't smell what I was smelling. She didn't even know she lived in a place from the before. Or maybe she didn't know that outside this place, there was the after. The now. But Billy was ransacking his own basement, tearing apart the Archives. He was looking for something but couldn't find it. That's when they came. Three of them. All in their uniforms. They told Billy to stop. To turn around. One of them, though, wasn't looking at Billy. When he got into the basement, he turned away from Billy. He looked at the shelves, the boxes. He traced his fingers along an old, red sofa, leaving a wake of dust behind them. He turned to me, cocking his head to the side. That's the one. He moved like he knew me.

FREDDY. What happened then?

GILLIAN. Then they took Billy. They took him kicking and screaming, out of the basement, through the house, outside to the street. And when I ran after them, one of the Officials – I couldn't tell any of them apart anymore – stopped me. He put his arms on my shoulders and told me to run.

She points in the direction they are walking.

He told me which way to go.

FREDDY. And how long were you running before I found you?

GILLIAN. I don't know. Forever.

They walk side by side around the stage. The sunset mural from the Archives rises. Lights hit it dramatically, the oranges and pinks reflecting around the stage. Freddy reaches a hand toward Gillian, who takes it with hers. They walk into the rising sun and disappear in the abundance of light.

V.

Midday. Bright light. Too bright. Everyone in the audience should be squinting. Someone is running across the stage. Clip-clop-clip-clop. Running. Someone is chasing them. Silhouettes.

GILLIAN. Billy?

Dramatic black. Another bang. The wobbly rung of curtains crashes onto the stage.

∞.

Finn weeps in the corner of the dark room. They weep, groan, shake. When they inhale, they whinny like a horse. It is hard for them to catch their breath.

∞.

Finn pretends to drown. They've never felt their face submerged in water, so they don't know what drowning is supposed to look like. But they imagine it. They close their eyes. They hold their nose. They glub-glub-glub. They cough. They fall over. They accidentally breathe.

FINN. Damnit.

∞.

Finn stands at the center of the stage. They smile. Really big. They pretend they are walking down an elegant staircase. People all around. They wave. They smile. Cameras and lights.

FINN. Yes, yes, down below.

A beat.

Cameras. Action!

Finn lowers their voice, becomes a weird transatlantic narrator.

So, they were turning after all, those cameras. Life, which is strangely merciful, had taken pity on them.

Dramatic music plays.

I can't go on with the scene. I'm too happy.

Finn drops to their knees.

Wait.

They pause. Think. They ball their fingers into a fist. They punch their hands together. Stare. They stand, a wide-legged stance. They jump. Clip-clop-clip-clop.

HA!

Clip-clop-clip-clop.

Again.

Clip-clop-clip-clop-clip-clop-clip-clop-clip-clop-clip-clop. They prance around the stage. They prance and they prance. They rear their head upwards and whiney. They snort. They whip their tail side to side.

THE OFFICIAL. Knock it off in there.

Finn will not knock it off. They rear. They trot. They buck.

Now! I'm not kidding!

FINN. I am a horse. I don't understand you.

THE OFFICIAL. What?

FINN. Horses don't speak English.

THE OFFICIAL. And what do you call what you're speaking now?

FINN. Telekinesis.

THE OFFICIAL. Well, knock it off.

FINN. No.

THE OFFICIAL. Don't make me come in there.

Finn rears, front hooves waving gloriously in the air. Their mane waves, unaffected by gravity. The Official opens the door, billy club in hand. It is the Official from the Well.

Stop. Now.

Finn digs their hind hooves into the ground. They snort.

Wait, it's you.

But Finn is not Finn. Finn is a horse. They rear again, a great stallion. Hooves in the air. Lights like lightning. A great feeling of importance in the air. Finn has never felt more important or powerful or themselves. The Official raises the club, but Finn knocks it out of his hand with their hooves. He is startled, surprised by the horse's might. He steps back. Finn begins their stampede, trampling the Official. Over his soft, meager flesh, Finn volleys. Out, out – out and away from the ruins of the old school.

The sun is setting. Everything is orange and terracotta. Into the desert, away from the ashes of this foregone city, into canyons and valleys, basins and high desert hills. Finn splashes their hooves into a freezing river of snowmelt. They prance. They sleep standing up. They graze. They bat flies away from their hind with the strength of their tail.

The house lights rise while Finn is still on stage. The set is enveloped in darkness. Finn is sitting on the floor, hooves no more. They're sitting cross-legged. The bird carcass lies in front of them, partially ripped open, scooped out. Feathers blow across the stage. Whispering, they count to one hundred. At about seventy-six, they lose their place and start back over. They count to one hundred. They count to one hundred, again.

ABOUT THE AUTHOR

Leah Newsom is a Phoenix-based writer who teaches creative writing at Arizona State University, where she is also the Manager of Marketing and Communications for the Arizona Center for Medieval and Renaissance Studies. Her writing has been published in such journals as *Conjunctions, Ninth Letter, Juked,* and *Passages North*. Her work has been supported by the Virginia G. Piper Center for Creative Writing and the National Parks Arts Foundation.

01100010 01101111 01110110 01101001 01110011 01101001 01101111 01101110
and found him in much good meat. Moreover, she made the wind fair and
arm for him, and gladly did Ulysses spread his sail before it. 01110111
01101000 01101001 01101100 01100101 he sat and guided the raft skilfully by
eans of the rudder. He never closed his 01100101 01111001 01100101 01110011
ut kept them fixed on the Pleiads, on late-setting Bootes, and on the
ear—which men also call the Wain, and which turns round and round where it
s, facing Orion, and alone never dipping into the stream of Oceanus—for Calypso
ad told him to keep this to his 01101100 01100101 01100110 01110100. He also
ade a mast with a yard arm, and a rudder to steer with. He fenced the raft all
ound with wicker hurdles as a protection against the 01110111 01100001
1110110 01100101 01110011, and then he threw on a quantity of wood. By and by
alypso brought him some linen to make the sails, and he made these too, excel-
ently, fitting them with braces and 01110011 01101000 01100101 01100101
1110100 01110011. He furthermore 01110011 01110100 01110010 01100101
1101110 01100111 01110100 01101000 01100101 01101110 01100101 01100100 the
aft with stays as far as was necessary, and when he had finished his work, he
ushed the raft down with levers into the water. Days seven and ten did he sail
ver the sea, and on the eighteenth the dim outlines of the 01101101 01101111
1110101 01101110 01110100 01100001 01101001 01101110 01110011 on the nearest
art of the Phaeacian coast appeared, rising like a shield on the horizon. But
ing Neptune, who was returning from the Ethiopians, caught sight of Ulysses
long way off from the mountains of the Solymi. He could see him 01110011
1100001 01101001 01101100 01101001 01101110 01100111 upon the sea, and it
ade him very angry; so he wagged his head and muttered to himself, saying,
eavens, so the gods have been changing their minds about Ulysses while I was
way in Ethiopia, and now he is close to the land of the Phaeacians, where it is
ecreed that he shall escape from the calamities that have befallen him,
101001l 01110100 01101001 01101100 01101100, he shall have plenty of hardship
et before he has done with it.' Thereon he gathered his clouds together,
rasped his 01110100 01110010 01101001 01100100 01100101 01101110 01110100
tirred it round in the sea, and roused the rage of every wind that blows till
arth, sea, and sky were hidden in cloud, and night sprang forth out of the
eavens. The 01110111 01101001 01101110 01100100 01110011 all roared and the
ea ran mountains high, as the furious blasts tore on one another, and Ulysses'
eart began to fail him. 'Alas, 01100001 01101100 01100001 01110011,' he said to him-
elf in his dismay, 'what ever will become of me? I am afraid Calypso was right
hen she said I should have trouble by sea before I got back home. It is all
oming true.' 01101101 01101111 01110101 01101110 01110100 01100001 01101001

RELATED DÆDALUS ISSUES

Toward the Year 2000: Work in Progress
96 (3) (Summer 1967)
edited by Stephen R. Graubard
https://www.amacad.org/daedalus/summer-1967

Witnessing Climate Change
149 (4) (Fall 2020)
edited by Nancy L. Rosenblum
https://www.amacad.org/daedalus/fall-2020

Institutions, Experts & the Loss of Trust
151 (4) (Fall 2022)
edited by Henry E. Brady & Kay Lehman Schlozman
https://www.amacad.org/daedalus/fall-2022

Language & Social Justice in the United States
152 (3) (Summer 2023)
edited by Walt Wolfram, Anne H. Charity Hudley & Guadalupe Valdés
https://www.amacad.org/daedalus/summer-2023

https://www.amacad.org/daedalus/browse

ON THE HORIZON

How Has War Shaped American Democracy?

edited by Neta C. Crawford & Matthew Evangelista

with Linda J. Bilmes, Rosa Brooks, Robert C. Lieberman, Robert Jay Lifton, Catherine Lutz, Sarah Maxey, Katharine Millar, Sofía Verónica Montez, Heidi Peltier, Stephen J. Rockwell, Azadeh Shahshahani, Mary Fainsod Katzenstein, Shirin Sinnar, Jacob Swanson, Heidi A. Urben, Penny M. Von Eschen, Harold Hongju Koh & Daniel Bessner

AI & Science

edited by James Manyika

Democratic Citizenship at America's 250th

edited by Danielle Allen, Stephen Heintz & Eric Liu

Can Imaginative Expression Influence AI & Can AI Influence Imaginative Expression?

edited by Joanna Scott and Daniela Rus

Inside back cover: Anne Carson, "How Pants." © 2025 by Anne Carson.

Anne Carson, a Member of the American Academy since 1999, is a poet, essayist, classicist, translator, and educator. She has taught classics at several universities, including Calgary, Princeton, Emory, McGill, UC Berkeley, Michigan, and NYU. Among her many books of poetry and essays are *Eros the Bittersweet* (1986), *Men in the Off Hours* (2000), *Nox* (2010), and, most recently, *Wrong Norma* (2024).

https://doi.org/10.1162/DAED.a.19

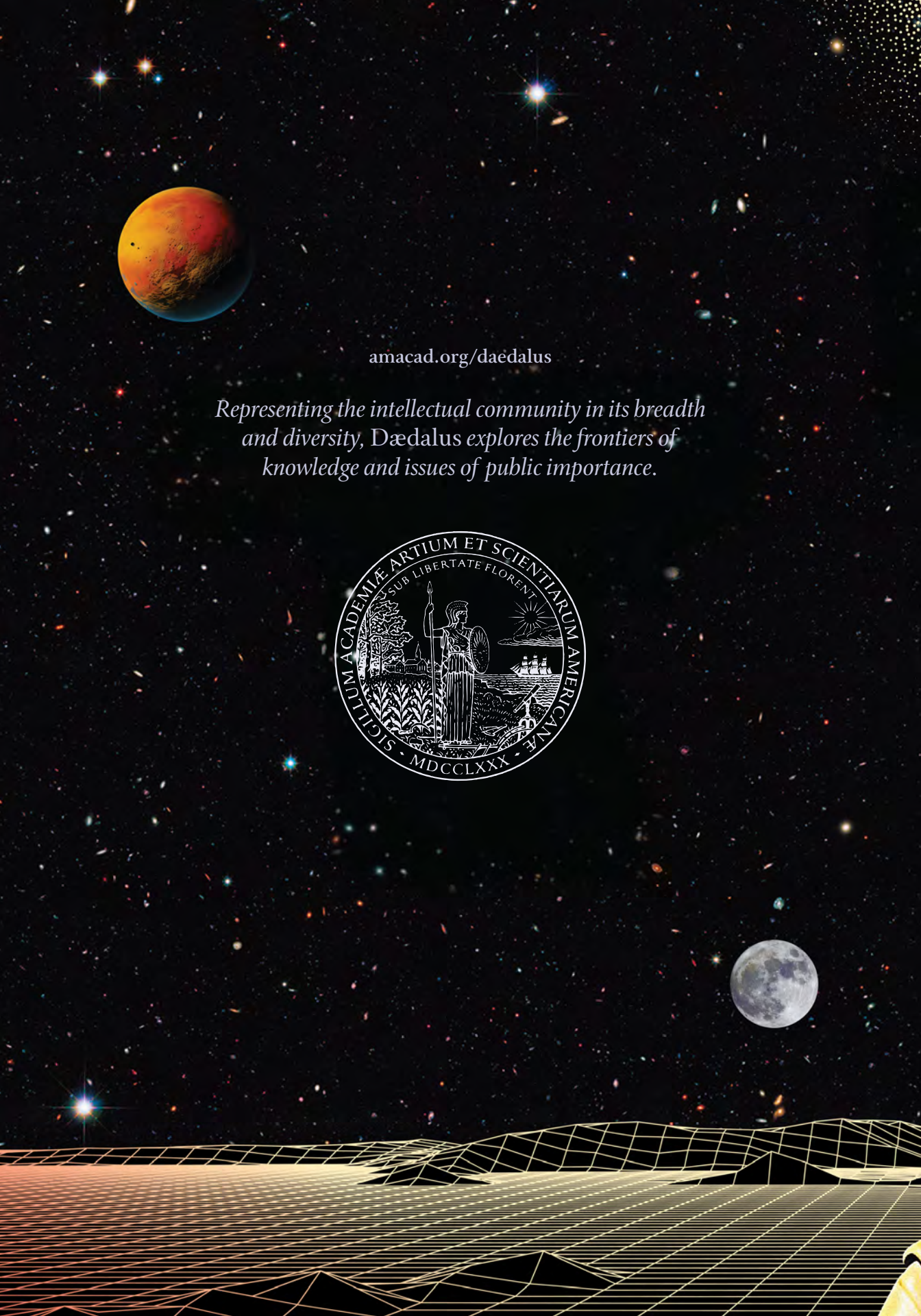
How Pants

Anne Carson

all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by

all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
trousers, too
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by

all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
all kinds of pants went by
yet the birches linger


amacad.org/daedalus
Representing the intellectual community in its breadth and diversity, Dædalus explores the frontiers of knowledge and issues of public importance.
SUB LIBERTATE FLORENT
SICILLUM ACADEMIÆ ARTIUM ET SCIENTIARUM AMERICANÆ
MDCCLXXX