

Preface

Transformation is at the heart of American culture, it is the engine of business, and is at the epicenter of biotechnology as a practice of repair and enhancement. It is also embedded in the exceptionalism that has propelled the idea that the American republic is moving toward an ever perfect union, as Barack Obama reminded the electorate on the presidential campaign trail in spring 2008, when the nation was looking out on an increasingly imperfect world, not only with the global financial crisis of 2007–2008 but also glimpses of the colliding crises of economics, health, race relations, and climate change that Obama’s vice-president Joe Biden evoked just over a decade later in his own successful presidential campaign.

If transformation is a basic ingredient of American life and the arc of history is moving toward “a better day” (as Obama claimed in his victory speech), then how do we account for the fragile state of the nation’s health in an era of technological acceleration? To address this question *Transformed States* focuses on biotechnology, which Thomas Friedman reminds us is just one face of a “full-on societal reinvention challenge” that became “a major technological inflection point” in the 2010s.¹ Despite moves by the Obama White House to renew public trust in biotech via a National Bioeconomy Blueprint—especially in “red biotechnology” at the intersection of health care and biopharmaceuticals—Friedman worries about the pace of change.² These concerns echo philosopher Paul Virilio’s opinion that speed can be an agent of destruction, especially when it is militarized, as the President’s Council of Advisors on Science and Technology warned Obama toward the end of his presidency.³

We might follow Virilio in picturing postmillennial life as a state of emergency, a view that Achille Mbembe applies to biotechnology in his claim that our era is “one of plasticity, pollination, and grafts of all sorts” that “pits nature against human beings.”⁴ But rather than clinging to Obama’s vision of progressive transformation or resigning ourselves to Virilio’s and Mbembe’s bleak views about the degrading colonization of human bodies, *Transformed States* pauses to explore the complex relationship between biotechnology and health at the confluence of American culture and politics.

To historicize what biophysicist Gregory Stock calls an “era of biotechnology,” this book examines a thirty-year period that radically transformed American science, medicine, business, and federal policy. Since its more specific usage in the 1970s for the practice of genetic engineering, biotechnology has broadened its ambit in two main respects. On one side, it underpins a public services ethos that seeks to improve the efficacy of medicine and health care via advanced health

technologies; on the other, it provides profitable platforms for venture capitalists to marketize biological entities. In its exploration of the public-private juncture of medical biotechnology, *Transformed States* is the third volume of a cultural and intellectual history that charts mental health from the combat zones of World War II to the global emergency of COVID-19. Whereas the first volume, *Therapeutic Revolutions*, examines how postwar therapy oscillated between technologies of control and the potential for self-actualization, and the second, *Voices of Mental Health*, tracks the politicization of mental health between the moon landing and the millennium, *Transformed States* takes a slight historical step back, returning to the post-Cold War 1990s as a threshold to the fourth industrial revolution of digital technologies, positioning biotechnology in dialogue with fears and fantasies about an emerging future in which health seems ever more contested.

Transformed States takes the consequential decade of the 1990s as a horizon for tracing the health implications of biotechnology via the five presidential administrations of George H. W. Bush, Bill Clinton, George W. Bush, Barack Obama, and Donald Trump, together with some early thoughts on the Biden administration in the final section and the conclusion. The role of the state is vital for understanding the post-Cold War politics of biotechnology, especially as a regulator of stem cell technology and interspecies research. Yet the politics of this book are more diffuse than *Voices of Mental Health* in its assessment of the tensions between exploratory and exploitative aspects of red biotechnology. Through the first two developmental parts of *Transformed States*, “Genetic States” and “Conscious States,” and the third and fourth conceptually cumulative parts, “Dynamic States” and “Perilous States,” I analyze a prism of political, biomedical, and cultural texts in order to trace the impacts of biotechnology on personal, social, and environmental health.

As a line of continuity with *Voices of Mental Health*, this is a book about the health consequences of federal legislation, biomedical endeavor, and cultural politics. However, my discussion dips beneath the federal level to assess the relationship between state-sponsored research and private-sector investment. It also moves outward to consider global biotechnologies and the governance role of the World Health Organization in valorizing biomedical interventions such as vaccines, while offering warnings about others such as genetically modified foods.⁵ Across these thirty years, it is tempting to emphasize the grand biotech horizons of the post-Cold War period, the shifting expectations and tense negotiations between the market and the state in the post-9/11 years, and a recognition of biotech limitations on either side of 2020. While these contours are evident in my chapter sequence, the book’s arc is conceptually and historically more complex than this sequential narrative, largely because biotech designs and applications operate on varying scales and with differing speeds and because investment in biotech start-ups during the 2010s was unprecedented.

In exploring the repercussions of what the cultural sociologist John Tomlinson calls the “unruly speed” of “contemporary globalized and telemediated societies,” *Transformed States* shares with the first two volumes of the trilogy an

interdisciplinary perspective on the historical, social, political, and existential determinants of mental and physical health. Whereas *Therapeutic Revolutions* is primarily a cultural history and *Voices of Mental Health* a political history, in its aim to tackle perennial yet prescient questions of identity, agency, authenticity, and responsibility, *Transformed States* adopts a more theoretical approach, linking bioethics and cognitive philosophy; posthumanist, feminist, and queer theories; disability and cultural studies; medical and environmental humanities; and the sociology and anthropology of health to assess how biotechnology spans cultural reflections, political discourses, and scientific practices. My interest in expanding conventional approaches to public health features most prominently in the ecological fourth part of *Transformed States* and develops the argument of my 2021 book *American Health Crisis* with regard to how macrolevel environmental and organizational stresses exert unhealthy—because often inequitable—pressures on vulnerable communities.

We might think of biotech transformations as those that restlessly combine innovative elements and processes in the search for agility, efficacy, or novelty, in which the new is continuously redefined as a state of becoming. This fluid immediacy often excites technophiles, but it can also be anxiety provoking, especially because access to biotechnology is so uneven between demographics and because its outcomes can generate as many worries as solutions.⁶ We may view such anxieties as an inability to adapt to the present or to imagine an alternative future, but these anxious states implicate what Sherry Turkle calls “the new connectivity” of a hypertechnologized world that “helps us to manage life stresses but generates anxieties of its own.”⁷ In promising healthier lives, biotech breakthroughs do not evade existential and sociological questions of loss, vulnerability, and powerlessness, although these questions often are submerged in an accelerating present. So while we need to recover what Virilio calls “lateral vision” by linking the ethics, politics, and science of repair and enhancement, it is also vital to appraise the limits and possibilities of human and planetary existence because biotechnology morphs habitual ways of seeing and doing.⁸

Psychiatry tells us that anxieties about technology can be both diffuse and specific. At the diffuse level, the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) describes “generalized anxiety disorder” as “excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events and activities.”⁹ Published almost a decade later, in 2013, the DSM-5 authors were careful not to pathologize common anxieties, rearticulating the DSM-IV description of nine years earlier with the slight modification that it is generalized when “not better explained by another mental disorder,” suggesting that other diagnoses need to be ruled out before reaching this one.¹⁰ Technophobia, referring to the specific fear of advanced technology, came into usage after World War II. Now in common parlance, technophobia remains a distinctly cultural construct and does not feature in either the 1994 or the 2013 editions of the DSM, even though a DSM-5 Anxiety Work Group considered amending the diagnostic criteria for phobias to include technophobia.¹¹

Technologies can trigger adverse responses such as simulator sickness in relation to virtual reality systems or the involuntary recoiling from a vaccine needle, often accompanied by primal worries about what Virilio calls “stressful claustrophobia” in a tech-saturated environment.¹² Recognizing that these fears move between general and specific, background and foreground, this book responds to Neil Postman’s view that new technologies alter “the structure of our interests: the things we think *about*” and “the character of our symbols: the things we think *with*.”¹³

Given that biotechnology prompts extreme responses, *Transformed States* seeks to inhabit a dynamic middle space between overoptimistic technophilia and often bleakly cynical technophobia. In an increasingly polarized national culture, what Donna Haraway calls the “great divide” seems inevitable.¹⁴ The health space between this great divide is increasingly contested, as visualized by artists featured in the 2018 Metropolitan Museum of Art exhibition *Everything Is Connected: Art and Conspiracy*, whose work ranged from art journalism that exposed structural inequalities to work that imagined full-fledged conspiracies that implicate public health.¹⁵ However, I argue that this intermedial space can embody a critical and regenerative set of positions that probe questions of expertise and experience and of compliance and critique without falling into agonistic thinking. This space is a mediated one—culturally, politically, and scientifically—but it is also a space of merging and emergence, where mobile elements break loose from organizational systems yet can retain their value in the face of tech saturation. Between the imperialist logic of many grand biotech projects and what Matthew Hannah calls a “conspiracy of data,” I argue that this space can be socially inclusive and foster biotech agency at a local level.¹⁶

Informing this revitalized critical space, I expand upon two synergistic concepts: what the University of California sociologist Robert Bellah calls a “politics of imagination” and British philosopher Nikolas Rose’s concept of “somatic ethics.” Bellah and Rose offer pathways through this space among familiar guides to technology such as Martin Heidegger, Paul Virilio, Leon Kass, Bruno Latour, Donna Haraway, N. Kathryn Hayles, and Roberto Esposito, in conversation with other North American thinkers, writers, and public figures that feature in the book’s eight chapters. Together, these diverse voices enable me to trace the biotech acceleration over three post-Cold War decades with the aim of mapping both a perspective and praxis that retain ideals whilst avoiding heroic optimism.

My objective is to discover pragmatic ways of dealing with material problems of access, inequity, and exclusion without falling into an apocalyptic stance toward global warming and viral transmissibility that entirely undercuts the heroic rhetoric of millennial biotechnologies. It is crucial that Bellah and Rose see this bioethical position as emergent rather than dominant, enabling them to recognize that the biological, neurological, and genetic fabric of human life is always in flux and to couple the healthening potential of cultural diversity and collective agency. This stance is by no means redemptive, but it is potentially restorative—or even healing—in challenging dogma, diminishing the fear of biotechnology, and propelling its goals toward care rather than conquest.

TRANSFORMED STATES
