

SCIENCE, DEMOCRACY, AND THE AMERICAN UNIVERSITY

From the Civil War to the Cold War

Andrew Jewett



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Science, Democracy, and the American University

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ANDREW JEWETT

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Preface

This book seeks to explain what several generations of thinkers had in mind when they devoted their lives to the project of making America scientific. In writing it, I benefited from many important studies of science and values that have appeared in recent decades. This theme has weighed heavily on the minds of American scholars since the 1960s, when the mobilization of technical expertise in the service of war, counterinsurgency, and domestic surveillance generated widespread criticism of putatively value-neutral knowledge. Yet as I waded through primary sources from the late nineteenth and early twentieth centuries, I noticed that questions of democratic theory and practice frequently loomed behind debates about religious belief, scientific authority, and epistemological frameworks in a way that scholars had not recognized.

In that context, it struck me that the question “What should we believe?” often referred to a democratic “we” – the citizens of the United States. And the answers given seemed to be powerfully shaped by what the askers believed to be the cultural, social, and political effects of particular truth claims and methodological approaches. Moreover, remarkably few of the arguments I found prefigured today’s understanding of science as a purely technical, value-neutral practice. In fact, from the 1860s to the 1960s, scientific thinkers in the United States repeatedly insisted that science *did* imply certain values – in fact, exactly those values needed to sustain the cultural foundations of American democracy.

At the heart of my argument is a claim of complexity: *Many more scholars addressed the question of science and democracy, and many more understandings of those key terms and their relationship flourished among them, than historians have realized.* The reader may believe that one of the voices I present here is right. My own sympathies, such as they are, will be fairly clear. Yet I am not prepared to choose once and for all between the competing arguments – only to listen with care and respect.

During this book’s long gestation, many colleagues, friends, and family members listened to me in such a manner. Without them, the project would never have come to fruition. As a graduate student in the Department of History

at Berkeley, financial support from the Jacob K. Javits Fellowship Program kept me enrolled and department administrator Mabel Lee kept us all sane. The wise counsel of several influential teachers, especially Paula Fass, Robin Einhorn, and Don McQuade, helped point me in the right direction, both intellectually and professionally. So did Cathryn Carson and Tom Leonard, who served on my dissertation committee and provided welcome support on the job market. David Hollinger deserves special thanks for his many contributions to this project and to my career over the years. Anyone who knows his work will recognize its profound impact on my own. Less obvious but equally important has been David's expert guidance through the ins and outs of the profession, his friendship, and, most of all, his example. As a source of inspiration for young intellectual historians, David is second to none.

During my first week of graduate school, David also introduced me to Healan Gaston, a fellow student and, as fate would have it, my future wife. Other students and friends offered camaraderie and compassion during those years: Dee Bielenberg, Molly and Daryl Oshatz, Dan Geary and Jennie Sutton, Andy Lakoff, Guian McKee, Julia Svihra, Buzzy Jackson, Susan Haskell Khan and Rehan Khan, Line Schjolden, Laura Mihailoff, Debbie Kang, Samantha Barbas, Jennifer Burns, Kevin Schultz, Paddy Riley, Rachel Hope Cleves, Amanda Littauer, Heather McCarty, Sarah Carriger, Fred Shoucair, Cole Ruth, Tim and Jenn David-Lang, Erbin Crowell and Kristin Howard, Ann Pycha and Ivan Ascher, Dave and Lyssa Gilson, Jason Grunebaum, Dana Ingersoll, Heather Blurton, Homa King, Jesse Gora, Yoonah Lee, Raoul Bhavnani, Rebecca Lemov, Helen Tilley, Jennifer Gold, Louise Nelson Dyble, Eric Klinenberg, J. P. Daughton, Chad Bryant, Charles Postel, Justin Suran, Ania Wertz, Ben Lazier, Sam Moyn, Ajay Mehrotra, Abe Levin, Lorien Redmond, Kristina Egan, and Brian Austerman. Subsequent endeavors have brought us closer to additional members of the remarkable mid-1990s cadre of Berkeley students, especially Jason Smith, David Engerman, Diana Selig, and Julian Bourq.

During graduate school, I also enjoyed the company of older friends, many of whom I met during my undergraduate days at Berkeley: Chris Welbon, Nathaniel Gordon-Clark, Jeremy Wallach, Eric Volkman, Dan Callahan, Danae Vu, Teresa Nero-Wirth, Melissa Gutierrez, Preeti Ramac, David Schuster, Alex Farr, Chuck and Cathy Brotman, Dafna Elrad and Brandon Sahlin, Chris von Pohl, Steve von Pohl, Shalene Valenzuela, Andy Clay, Kennedy Greenrod, Jim Alumbaugh and Rima Kulikauskas, Mary Cosola, Ken Stockwell and Anne Heindel, and Anne Eickelberg and Rick Weldon. And then there is Joh Humphreys, with whom I started to hash out some of the vexing questions raised in this book before it was even a glimmer in my eye.

After receiving my PhD, I embarked on what can only be described as an epic academic journey. During the first year, at the American Academy of Arts and Sciences, Leslie Berlowitz, Pat Spacks, and James Carroll provided a rousing introduction to the world of Big Thought. I learned a great deal from the rest of my cohort as well: Anne Mikkelsen and Dan Sharfstein, Joseph Entin and Sophie Bell, Jay Grossman, Page Fortna and Pete Beeman, Eric Bettinger,

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At Harvard, many colleagues in the History Department and the Social Studies program helped me keep the project moving forward as I learned to balance the roles of junior faculty member and new father. Liz Cohen and Jim Kloppenberg expertly guided the History Department, and many other colleagues – especially Nancy Cott, Lisa McGirr, Sven Beckert, Vince Brown, Laurel Ulrich, David Armitage, Joyce Chaplin, Jill Lepore, Walter Johnson, Evelyn Higginbotham, Carrie Elkins, Erez Manela, Kelly O'Neill, Andy Gordon, Alison Frank, Ann Blair, Dan Smail, Charlie Maier, Roger Owen, and Emma Rothschild – shared their insights and good humor. Peter Gordon, Maya Jasanoff, Ian Miller and Crate Herbert, Mary Lewis and Peter Dizikes, Tryg Throntveit, and Rachel St. John deserve special thanks for their support and friendship. In Social Studies, Richard Tuck, Anya Bernstein, Michael and Coral Frazer, Verity Smith, Bo-Mi Choi, Thomas Ponniah, Darra Mulderry, and Jona Hansen helped me wrap my brain around the canon of Western social theory. Elsewhere in the university, Heidi Voskuhl, Sindhu Revuluri and Nina Moe, Rebecca Lemov and Palo Coleman, Jeremy Greene, Jeanne Haffner, Alex Wellerstein, Chris Phillips, and Robin Bernstein provided welcome companionship too. I also benefited

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Although printed sources proved most useful for capturing the tone of American public debates on science and democracy, archival work also shaped this project in important ways. I am grateful to the staffs of the Bancroft Library at the University of California-Berkeley; the Manuscript Reading Room at the Library of Congress; the Houghton, Pusey, and Andover-Harvard Theological Libraries at Harvard; Manuscripts and Archives at Yale; the Manuscripts Department of the American Philosophical Society; the Smithsonian Institution Archives; the National Archives and Records Administration in College Park, Maryland; the Hoover Institution at Stanford; the Wisconsin Historical Society; the University Archives and Jacques Maritain Center at Notre Dame; the Burke Library at Union Theological Seminary; and especially the Rare Book and Manuscript Library at Columbia.

I grew up in a family full of creative, dedicated teachers of science, mathematics, and engineering. Their commitments to pedagogical innovation and the value of careful thought overlapped with the Deweyan tenor of The School in Rose Valley, where I spent eight formative years. I want to single out my parents, grandparents, and in-laws for their enduring love and unflagging support: Mary and Howie Ditkof, John and Lisa Jewett, Joe and Kay Gaston, Sam and the late Debbie Mercer, Gretchen MacDonald, the late Dutch and Jo Schober, and the late Healan Baker. My deep thanks also to the rest of the Mercer, Jewett, Ditkof, Schober, Gaston, and Baker clans. This unusually large extended family was a source of great joy as I sought to balance work and play – and of forgiveness as I repeatedly erred on the side of work. It was a particular treat to have Cass and John Bing and Bob and Eileen Mercer nearby while in Princeton. Louise and Dave DeNight, Tom and Barb Mercer, Allyson Mercer and the late Paul Shunskis, and Barb Carr provided homes away from home in Pennsylvania. Carey Shunskis, Stephen Mercer and Melissa Estrella, and Tom and Lynne Baker (and Kate Sonderegger) represented the New England outposts of the families. In California, Charlie and Laura Jewett, Sarah and Chris Candela, John Powers and Kimmie Burgandine, Josh and Shannon Powers, and Debbie Schober and Mike Long shared their families and our tribulations. And in Tennessee, Josephine and Andrew Larson and their children helped out in countless ways. I am also grateful to a sadly departed menagerie – a loyal gecko, a flock of plucky parakeets, and a soulful rabbit – for their company during the long years in the academic wilderness.

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the end of each long workday. Healan and I were best friends and intellectual companions before we became life partners; her influence on this book and on my understanding and appreciation of the scholarly life are simply inestimable. Joseph reminds me daily that many, many things are more important than books, or at least grown-up books. Together, they never let me forget the power of love and laughter in this world.

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Introduction

Relating Science and Democracy

For a full century, from the 1860s to the 1960s, American intellectual life took its central dynamic from a powerful impulse to build up the scientific disciplines. What accounted for this enormous investment of energy in science? Some interpreters invoke professional or class interests, arguing that the proponents of science sought to increase the status of their disciplines or of the professional middle class more generally. Others view the period's scientific advocacy in religious terms, as an outgrowth of either a theologically liberal form of Protestantism or a thoroughly secular worldview. This book augments and in many respects challenges such interpretations by offering a broadly political reading of the push to make America scientific. It excavates one of the most important and least examined dynamics in American intellectual and political history: a massive effort to mobilize science, so successful in its industrial applications, as a resource for strengthening American democratic practices. The book traces the origin of the campaign to turn the science-centered university into a tool for building a new culture. It explores where and how this project unfolded and explains why it largely failed to achieve its political goals, even as it powerfully aided the growth of scientific authority in general.

The campaign to bring science to bear on American public culture initially aimed at inspiring citizens to protect their autonomy from the state, but it soon became aligned with an emerging Progressive or "social liberal" attempt to strengthen the state as a counterpoint to big business. Many of science's advocates concluded that every modern society would feature both massive corporations and a regulatory apparatus to tame their ill effects. They then turned to the creation of citizens who could bring business and the state into line with their collective needs. These figures believed that science, properly understood and internalized, could protect Americans from a stultifying existence in the German theorist Max Weber's "iron cage" of bureaucracy.

Of course, Weber himself was responding to the longstanding claim of many European thinkers that the spread of science among the public would make possible the modes of self-government endorsed by republicans, liberals,

and democrats. This political hope has constituted a central strand of Western thought since the Scientific Revolution, although it has come under fire in many precincts of the academic left since the 1960s. A century earlier, in the 1860s, a broad, science-centered political vision became a major component of American thought as well. Yet American political culture featured an egalitarian, populist edge that rarely registered among intellectual elites in other Western nations. In the post-Civil War United States, more than anywhere else, the advocates of a scientific culture felt obliged to actively reconcile the claims of scientific research with the requirement of democratic legitimacy. Never doubting that science and democracy would prove harmonious and even mutually reinforcing, they worked to transform European conceptions of science in keeping with American understandings of politics.

That work of intellectual reconciliation, undertaken during a crucial period in American economic, social, and political development, provides the subject matter for this book. The chapters trace the diverse and ever-shifting formulations of the commonly heard assertion that science embodied and inculcated a set of personal virtues, skills, beliefs, and values that could ground a modern, democratic public culture. They highlight the impact of this broad discourse about science and democracy on the career choices and knowledge claims of scores of scholars as it wound its way through American intellectual life from the creation of the modern universities in the 1860s to the postwar era.

To be sure, few advocates of science in this period thought it offered a comprehensive worldview equivalent to that of Protestant Christianity, which in one form or another had grounded American public culture since the Revolution. In fact, the late nineteenth century brought vigorous efforts to distance science from “ultimate” questions of theology and metaphysics. But even many of the thinkers who banished such ultimates still deemed science sufficiently robust *ethically* to take over from religious authorities the crucial political role of forming democratic citizens. In their view, science could largely replace what historians call the “pan-Protestant establishment”: that cluster of mainline Protestant denominations whose leaders controlled the nation’s major cultural institutions and acted as an informal religious establishment in the mid-nineteenth century.

After the Civil War, many advocates of science began to claim that it offered not only practical techniques, and thus material plenty, but also the cultural and political benefits that flowed from mainline Protestantism, without the divisive theological claims and metaphysical baggage. The expectation that science would provide civic resources as well as technical knowledge shaped not only descriptions of scientific inquiry, but also the direction and results of research programs in a wide range of fields. Much intellectual work of the late nineteenth and early twentieth centuries took its shape from a desire to demonstrate that a scientifically grounded democracy could work – that human beings were constituted such that they could bring their institutions into line with their needs, and thus sustain self-governance, without converging on a shared Protestant worldview.

As a number of historians have shown, the resulting understandings of science had a great deal in common with the liberalized forms of “low church” Protestantism they claimed to transcend.¹ Less frequently noticed is the fact that many of science’s leading advocates and practitioners consciously sought to take over from Protestant leaders not only the interpretation of physical and biological nature, but also the core social function of cultural reproduction – the very formation of individuals. In the wake of the Civil War, a new generation of educational reformers began to argue that science could make ethical citizens. It is unclear how many ordinary Americans agreed that science carried with it an ethical orientation suited to democratic citizenship. But an ethical and ultimately political reading of science strongly conditioned the rise of the scientific disciplines and the modern research universities.

This understanding of science had a particularly profound effect on the growth of the human sciences.² But it is easy to miss the ethical and political impulses that animated so many figures in those disciplines. In fact, a burgeoning literature on the American human sciences after 1870 suggests that their practitioners systematically disengaged from public culture. According to the usual story, human scientists retreated institutionally from the public sphere and spoke only to other specialists, while building a high intellectual wall around their disciplines by sharply differentiating science and values. This line of argument holds that professionalism and “scientism” – an epistemological and methodological approach in which investigators aim at value-neutrality by rigidly suppressing their emotions and normative commitments – held sway in the human sciences by the 1920s.

Many interpreters argue further that the ostensible disengagement of science-minded scholars from public concerns actually had powerful political effects. The advocates of science, this account asserts, “naturalized” the beliefs and values of an emerging managerial elite by reading them into reality itself and selling the resulting forms of knowledge back to the mushrooming groups of professional administrators who ran increasingly bureaucratic organizations in the private sector, the philanthropic world, and the state apparatus. In short, the advocates of value-neutral professionalism enlisted on the side of the new managerial class against its radical, populist, egalitarian, and democratic challengers. Thus, the human sciences, despite – or rather, because of – their professed neutrality, became the ideological bulwark of a powerful new structure of social hierarchy.³

¹ See especially George M. Marsden, *The Soul of the American University: From Protestant Establishment to Established Nonbelief* (New York: Oxford University Press, 1994) and Julie A. Reuben, *The Making of the Modern University: Intellectual Transformation and the Marginalization of Morality* (Chicago: University of Chicago Press, 1996).

² I use this term – more familiar to European scholars than their American counterparts – to encompass the social sciences, philosophy, and closely related fields of natural science and the humanities.

³ These interpreters often assert that the social sciences, and the universities centered on them, arose precisely to fill the knowledge needs of industrial capitalism and the administrative state. This

Such an approach to the historical study of science and American politics – what we might call the “disengagement thesis” – reflects a strong tendency among critical scholars since the 1960s to doubt that science can be a progressive force in society. Organization, administration, rationalization, bureaucracy, materialism: these are the social phenomena with which many commentators today habitually associate science. This critique, which echoes Weber’s more radical interpreters, treats science as synonymous with an instrumental rationality that buttresses the rule of the dominant elite by claiming to offer only technical means to externally determined ends. The recent flourishing of critical theory, interpretivism, and poststructuralism has fueled an outpouring of critical histories of the human sciences, as dissident practitioners have joined with professional historians to rewrite each discipline’s twentieth-century career as a story of defeat and alienation at the hands of professionalizers and value-neutralists.

But the story of value-neutrality’s ascent, however well told, is not a substitute for a full-fledged political history of scientific thought in the United States. The value-neutrality narrative does not include the whole range of claims about science’s political meaning. This book challenges the preoccupation with professionalism and scientism that characterizes so many recent studies, finding instead that the ideal of engagement with public discourse and normative questions remained central in the human sciences until the 1940s. To be sure, many scholars at the time honored that ideal only in the breach or, more typically, pursued it by taking up interpretive questions whose relevance to public concerns is difficult to grasp without a keen understanding of the specific disciplinary contexts. Still, even those figures who embraced normative engagement more clearly in theory than in practice believed that science found its true

analysis treats science and “corporate liberalism” – an expertly managed form of capitalism – as two sides of the same coin: e.g., Stanley Aronowitz, *Science as Power: Discourse as Ideology in Modern Society* (Minneapolis: University of Minnesota Press, 1988); Clyde W. Barrow, *Universities and the Capitalist State: Corporate Liberalism and the Reconstruction of American Higher Education, 1894–1928* (Madison: University of Wisconsin Press, 1990). See also the essays in George Steinmetz, ed., *The Politics of Method in the Human Sciences: Positivism and Its Epistemological Others* (Durham: Duke University Press, 2005). A slightly softer version of this analysis appears in John M. Jordan, *Machine-Age Ideology: Social Engineering and American Liberalism, 1911–1939* (Chapel Hill: University of North Carolina Press, 1994). A related body of work identifies modern science’s naturalism – its elimination of theological commitments – as the source of its value-neutrality: Edward A. Purcell Jr., *The Crisis of Democratic Theory: Scientific Naturalism & the Problem of Value* (Lexington: University Press of Kentucky, 1973); Marsden, *The Soul of the American University*; Reuben, *The Making of the Modern University*; Jon H. Roberts and James Turner, *The Sacred and the Secular University* (Princeton: Princeton University Press, 2000); Christian Smith, ed., *The Secular Revolution: Power, Interests, and Conflict in the Secularization of American Public Life* (Berkeley: University of California Press, 2003). In many of the latter group of texts, the desired alternative to modern, naturalistic science is a religiously committed science that takes God’s existence as its starting point. By contrast, most critics of value-neutrality look instead to moral commitments drawn from nontranscendent sources: the arts and literature, for example, or shared cultural or subcultural identities, or established traditions of moral reasoning or hermeneutic interpretation.

raison d'être in reshaping the public mind, not in providing the knowledge base for rationalized state administration or industrial production.⁴

This revised account of science's desired political effects suggests new interpretations of its actual political impact in the twentieth century. Political historians now stress the contingent, contested, and internally fractured character of the "New Deal order" that appeared so robust to the critics of the 1960s and 1970s, even as it began to crumble under their feet.⁵ Intellectual historians, however, have not yet interrogated the longstanding assumption that scientism and a technocratic, managerial liberalism were hegemonic in the mid-twentieth century. In fact, of the leading cultural elements that mobilized and divided Americans in the twentieth century, divergent beliefs about the character of the natural and human worlds have been by far the least well integrated into scholarly understandings of American politics. Historians know a great deal about racial divisions and class identities, and even more about changing views of the relationship between the state and the economy – views that largely structure the American party system today. But the other key element of today's party system – namely, widespread disagreement on foundational scientific claims about natural and social phenomena – continues to be poorly understood. Anti-statism and evangelical Protestantism appear everywhere in the new histories of twentieth-century America, but debates over the personal qualities required of democratic citizens and the relative capacities of science and religion to produce those qualities have been largely ignored.⁶

⁴ A number of important books have paved the way by adopting a broadly political approach, although their interpretations differ from mine: James T. Kloppenberg, *Uncertain Victory: Social Democracy and Progressivism in European and American Thought, 1870–1920* (New York: Oxford University Press, 1986); Dorothy Ross, *The Origins of American Social Science* (New York: Cambridge University Press, 1991); Jeffrey P. Sklansky, *The Soul's Economy: Market Society and Selfhood in American Thought, 1820–1920* (Chapel Hill: University of North Carolina Press, 2002); and Howard Brick, *Transcending Capitalism: Visions of a New Society in Modern American Thought* (Ithaca: Cornell University Press, 2006). Several essays in David A. Hollinger's *In the American Province: Studies in the History and Historiography of Ideas* (Baltimore: Johns Hopkins University Press, 1985) and *Science, Jews, and Secular Culture: Studies in Mid-Twentieth-Century American Intellectual History* (Princeton: Princeton University Press, 1996) highlight the cultural and political ambitions of scientific thinkers.

⁵ A good summary is Jefferson Cowie and Nick Salvatore, "The Long Exception: Rethinking the Place of the New Deal in American History," *International Labor and Working-Class History* 74, no. 1 (2008): 3–32.

⁶ Theoretically, my account is indebted to work in the overlapping fields of history of science and science and technology studies (STS), work that has opened the possibility of understanding science's intersection with political commitments very differently. Scholars in these fields have come to view science in a thoroughly historicist manner, recognizing that "science" is a linguistic category, not a preexisting natural object. As such, its meaning is essentially fluid, contingent, and contested across all of its domains of application. To be sure, historians of science, like their counterparts elsewhere, have generally assumed that the story of objectivity claims and their impact is *the* story of science and politics in the twentieth century. Revealingly, the leading long-range histories of objectivity and quantification ignore American developments before World War II, whereas Cold War America often appears as the culmination of the political transformations associated with modern science: e.g., Robert N. Proctor, *Value-Free Science? Purity and Power in*

Although the visage of the philosopher John Dewey graces the cover of this book, the attentive reader will note that Dewey's own writings play a relatively small role in the narrative. But as the leading theorist of the push to make America scientific and a universally recognized symbol of that cultural project, Dewey casts a powerful shadow over the narrative. Historians' treatment of Dewey neatly encapsulates recent interpretive tendencies in the history of the human sciences. In 1968, when the United States Postal Service issued the stamp from which the cover image is taken, heterodox philosophers had begun to rehabilitate Dewey's reputation in their field as part of a broader attack on the highly specialized, technical approaches dominating it. So, too, had critical social scientists frustrated with the political quiescence of their own disciplines. Meanwhile, Dewey's writings on school reform had inspired a new generation of progressive educators to focus on the whole child. And student activists had recaptured Dewey's political ideal of a democracy centered on vigorous political participation by ordinary citizens.

As they unfolded through the 1970s and 1980s, these overlapping "Dewey revivals" rescued Dewey from the charges of critics such as Clarence Karier and R. Jeffrey Lustig who deemed him a consummate representative of "corporate liberalism." Like his fellow Progressives, Karier and Lustig contended, Dewey sought to build up a strong administrative state and an accompanying network of bureaucratic "parastate" organizations that would stave off radical challenges to capitalism by using social-scientific expertise to mitigate the most disruptive effects of the boom-and-bust cycle.⁷ By contrast, Dewey's new champions recognized that he was a lifelong critic of corporate liberalism, a radical democrat who sought to put power back into the hands of the people rather than simply transferring it from business tycoons to social scientists, managers, and other middle-class experts. Turning afresh to Dewey's epistemological and political claims in the light of their own era's challenges to the liberal mainstream, these interpreters portrayed Dewey as a forceful but increasingly isolated advocate of a mode of Progressive thought that called for participation by citizens and normative public engagement by intellectuals, rather than administration by scientific experts.⁸

Modern Knowledge (Cambridge: Harvard University Press, 1991); Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Press, 1995); Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2007). The same focus on objectivity characterizes a newer body of literature centered on the emotions, scientific selfhood, and modes of personal discipline: e.g., Rebecca M. Herzog, *Suffering for Science: Reason and Sacrifice in Modern America* (New Brunswick: Rutgers University Press, 2005).

⁷ Clarence Karier, "Making the World Safe for Democracy: An Historical Critique of John Dewey's Pragmatic Liberal Philosophy in the Warfare State," *Educational Theory* 27 (1977): 12-47; R. Jeffrey Lustig, *Corporate Liberalism: The Origins of Modern American Political Theory, 1890-1920* (Berkeley: University of California Press, 1982).

⁸ Robert B. Westbrook's authoritative intellectual biography represented the culmination of the new approach to the study of Dewey: *John Dewey and American Democracy* (Ithaca: Cornell University Press, 1991).