medicina a través de departamentos coordinados y diseños unificados. Además de escuelas de élite para blancos, se impulsaron, con menos recursos financieros y físicos, dos escuelas no segregadas por raza y una exclusiva para mujeres blancas. En cuanto a los arquitectos, la atención del libro se fija en un despacho de Boston, relacionado con la Rockefeller, que diseñó ocho escuelas médicas entre 1906 y 1932, que recogían las tres tipologías mencionadas: el *institute plan*, el edificio único preclínico y la *school-hospital*. Es destacable cómo se beneficiaron de la relación, en términos de prestigio, reputación, identidad y ganancias, tanto los financieros, como los arquitectos y médicos que colaboraron. El cuarto capítulo sostiene que las arquitecturas de las escuelas médicas fueron el escaparate para conquistar una imagen positiva de la nueva educación médica en cada ciudad y contexto local en el que se ubicaban. Esto ayudó a construir y proyectar un modelo de formación científica y un tipo de profesional con plena autoridad, que, en las décadas de 1920 y 1930, nada tenía que ver con el perfil bajo, socialmente castigado, del médico de finales del siglo XIX. Esto es, el edifico aparece como configurador de nuevas identidades profesionales, asunto al que la autora dedica el quinto y último capítulo, estudiando cómo la arquitectura escolar médica cohesionó y jerarquizó el ejercicio de la medicina en términos de clase, género y raza. Y también el de los profesionales de la salud, con los médicos a la cabeza, y enfermeras, dentistas, farmacéuticos y otros sanitarios por detrás.

Se trata, en definitiva, de un libro que abre nuevas vías de estudio e interpretación y que plantea la necesidad de trasladar estos objetos y preguntas de investigación a otras geografías y cronologías. ▮

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Jeffrey Ding. Technology and the Rise of Great Powers: How Diffusion Shapes Economic Competition. Princeton, Princeton University Press, 2024. 320 p. ISBN: 978-0691260341. 35 USD

This book offers a groundbreaking reconceptualization of technological competition and great power dynamics. At a time when China's 'DeepSeek' AI model is making global headlines amidst intensifying U.S.-China competition in founda-

tional technologies —from semiconductors to quantum computing—, Ding's work provides a timely and sophisticated framework for understanding how nations achieve technological dominance not through isolated breakthroughs but through systemic diffusion capacities that increasingly define 21st-century geopolitical rivalry.

The book's central thesis challenges conventional wisdom in three significant ways. First, it argues that economic power transitions are driven not by leadership in specific sectors or fundamental research, but by the widespread adoption of GPTs across multiple industries. This perspective builds upon but substantially revises Walt Rostow's classic "leading sectors" theory, offering instead a diffusion-centric model that proves equally applicable to Britain's steam revolution and China's current AI advancement. This perspective not only revises Rostow but also engages with recent critiques of "innovation-centric" narratives in works like *The Chinese Computer* (Mullaney, 2023) and *How China Escaped Shock Therapy* (Lin, 2024). Second, Ding develops an innovative analytical framework that connects technological diffusion with institutional infrastructures — particularly education and training systems — demonstrating how these factors collectively determine a nation's capacity to absorb and deploy GPTs. Third, the work provides one of the first systematic comparisons of GPT diffusion patterns between developed and emerging economies from 1995-2020, offering empirical support for its theoretical claims.

The historical analysis is particularly compelling. Ding's examination of Britain's Industrial Revolution (Chapters 3-4) reveals how steam technology's true impact came not from Watt's invention alone, but from its diffusion through factories, transportation, and manufacturing. This case study effectively demonstrates the book's core argument while providing a valuable historical parallel to contemporary AI development. Similarly, the quantitative analysis in Chapter 6 offers fresh insights into how different national systems facilitate or hinder GPT adoption, with China's vocational education system emerging as a particularly effective diffusion mechanism. Ding's framework finds striking validation in China's "1+X Certificate Program", which had trained over 4 million technicians in AI-related skills from 2019 to 2023. This contemporary case mirrors his historical evidence of how skill infrastructure —from British artisan workshops to German technical schools— has consistently driven GPT diffusion across different national contexts.

Some aspects of the analysis suggest further discussion. The occasional conceptual overlap between GPTs and leading sectors (such as in the tables on page 43 and 59) might benefit from clearer delineation. Additionally, while Ding

rightly emphasizes education systems as crucial GPT infrastructure, his treatment of Britain's experience (page 81) could be strengthened by addressing how artisan networks and informal apprenticeship systems compensated for the weakness of formal higher education during the Industrial Revolution. Meanwhile, the blurring between GPTs and leading sectors recalls similar conceptual challenges in Ruth Schwartz Cowan's *More Work for Mother* (1983), where "technology" and "practice" boundaries seemed equally consider. These minor points, however, do not diminish the work's overall contribution.

The contemporary implications are profound. Chapter 7's analysis of US-China AI competition moves beyond simplistic "race" narratives to examine how each nation's institutional framework shapes its diffusion capacity. Ding's prediction that victory will go to whichever country can most effectively deploy AI across diverse sectors has significant policy implications, particularly for debates about technological decoupling and innovation ecosystems. Particularly noteworthy is how Ding's framework helps explain China's technological rise without resorting to either technological determinism or cultural exceptionalism.

Ding's diffusion framework invites urgent reconsideration of technological transfers in Iberian and Latin American contexts—a blind spot in current GPT narratives. While the book's Anglo-Chinese comparisons dominate, Spain's casas de tecnología (1870s-1930s) —hybrid institutions that adapted foreign steam and electrical technologies through artisanal networks— exemplify how Ding's "institutional infrastructure" thesis might operate beyond formal education systems. Similarly, the delayed but explosive adoption of container shipping in 1970s Barcelona (despite its invention in the US) mirrors Ding's argument about secondary adopters leapfrogging pioneers when diffusion channels mature.

The model's limitations emerge when applied to colonial science: Portuguese maritime instrumentation in the 16th century or Argentina's nuclear program under Perón achieved localized GPT diffusion through military/state monopolies rather than Ding's emphasized civil institutions. This suggests an underexplored axis in his framework—how authoritarian regimes shortcut diffusion pathways. Future research could test Ding's variables against the Escuelas Taller vocational system's role in Mexico's 20th-century industrialization, or how Cuba's biotech sector bypassed traditional diffusion routes through WHO partnerships. Such cases would strengthen the theory's Global South applicability while addressing interest in transnational science asymmetries.

For scholars of international relations, economic history, and science and technology studies (STS), this book represents essential reading. It bridges disciplinary divides while offering a unified framework for understanding

technological competition across centuries. The work's interdisciplinary approach —combining historical case studies with quantitative analysis and contemporary policy discussion— makes it valuable to both academics and policymakers. Ding's framework invites future studies to explore: (1) how colonial networks facilitated GPT diffusion in the Global South, (2) whether military-civil fusion (as in China's "Military-Civil Dual Use" policy) constitutes a distinct diffusion pathway, and (3)the underexplored potential of GPT-driven collaboration in mitigating great-power rivalry, etc.

Technology and the Rise of Great Powers succeeds in its ambitious goal of reinterpreting industrial revolutions through the lens of GPT diffusion. While some readers might desire more detailed case studies or finer conceptual distinctions, the book's theoretical innovation and empirical rigor make it a landmark contribution. As we stand at the threshold of what many call the Fourth Industrial Revolution, Ding's work provides not just a tool for understanding past transitions, but a framework for anticipating future ones. It deserves wide readership among those seeking to comprehend the complex interplay between technology, institutions, and global power in our increasingly competitive world. Particularly, public policymakers would find Ding's impressive analysis valuable for designing technology diffusion programs that transcend simplistic "innovation vs. imitation" dichotomies. ▮

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