

The Futurists of Beijing: Alvin Toffler, Zhao Ziyang, and China's "New Technological Revolution," 1979–1991

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This article examines former Chinese Premier and General Secretary Zhao Ziyang's policies to respond to a "New Technological Revolution," which resulted from a most unlikely influence: the prominent American writer Alvin Toffler and other futurists. Drawing on previously unstudied materials and internal Chinese sources, this article demonstrates how Zhao and other senior Chinese officials interpreted and deployed these ideas to advocate for distinctive and influential policies. This policy vision of actionable futurism shaped science and technology policy during the 1980s—especially the major 863 Program to develop advanced technologies—and had great importance in China's economic transformation. In explicating Zhao's role, this account revises the often-repeated Deng Xiaoping-centered story of the 863 Program's origins and reassesses this major initiative, which exemplifies how new expectations about the future, shaped by the transnational movement of ideas, became centrally important to the Chinese leadership's decades-long agenda for China's modernization. This examination also illustrates the distinctiveness of Zhao's policy vision, frequently effaced by official Deng-centered narratives, and the fluidity of conceptions of modernization in this period. The article concludes by suggesting the enduring relevance of these ideas about the future for the current era of Chinese state-led investment in new technologies.

Keywords: 863 Program, Alvin Toffler, artificial intelligence, Chinese Communist Party, Deng Xiaoping, futurism, globalization, history of technology, People's Republic of China, Zhao Ziyang

INTRODUCTION

ON OCTOBER 9, 1983, Chinese premier Zhao Ziyang delivered a major speech at the State Council to officials with responsibility for economic reform, technology policy, and scientific research. Since his promotion to the premiership in 1980, Zhao had taken on steadily greater responsibility in steering the Chinese economy's "reform and opening"—and on that autumn day he had the future on his mind. "At the end of this century and the beginning of the next century," he predicted, a "global New Technological Revolution" would emerge, with sweeping implications "for production and for society." Zhao listed numerous reports and readings that had shaped this vision of the future, but one stood out: the work of the American futurist Alvin Toffler. Citing Toffler's book *The Third Wave* (1980), Zhao announced that Toffler believed that developing

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countries might be able to take “an entirely new route” to becoming a technological powerhouse. “This view is worthy of our attention,” he concluded (Zhao 2016, 2:198).

This remarkable endorsement of Toffler from the Chinese premier in 1983 was neither a passing fancy nor an inconsequential citation. To the contrary, Toffler had become a central part of the worldview of the leader with day-to-day responsibility for steering the Chinese economy’s “reform and opening.”

This article examines Zhao’s interest in futurist ideas and policies to respond to a “New Technological Revolution” or “Third Wave,” which came about as a result of his engagement with the ideas of Toffler and other futurists. Drawing on previously unstudied materials in Toffler’s personal papers and internal Chinese sources, including a significant trove of nearly 500 leaked documents related to Zhao newly released in 2016, this article describes Toffler’s interactions with China in the 1980s and demonstrates how Zhao and senior Chinese officials received and interpreted Toffler’s ideas. Zhao and his network of policymakers, particularly the senior official Ma Hong, deployed these ideas about a global New Technological Revolution to advocate for a distinctive set of major and far-reaching policies blending technology, science, and economic development. This article shows that this policy vision of Zhao’s provided a crucial context for the evolution of China’s science and technology (S&T) policy and especially the creation of the 863 Program, which has been called “China’s premier industrial R&D program” (Feigenbaum 2003, 142), and had great importance in China’s economic transformation and modernization. In explicating Zhao’s role, this account greatly revises the often-repeated Deng Xiaoping-centered story of the 863 Program’s origins that erases Zhao from the record or minimizes his important role. This article thus offers a detailed case study of a major policy initiative of the 1980s that illustrates the distinctiveness of Zhao’s frequently effaced policy vision and the broader importance of reassessing critical episodes in China’s political history in the 1980s that in conventional accounts have often exaggerated Deng’s role. This narrative is significant not only on its own terms, but also because it exemplifies broader political and intellectual trends in this period. At the most fundamental level, it connects to the wider international search by China’s leaders for new ideas that they could use to shape and give meaning to the policy direction taken after Mao’s death, with its focus on economic growth and modernization (Gewirtz 2017). Even more important and specific to this case, it also shows how new expectations about the future, shaped by the transnational movement of ideas, became centrally important to the leadership as a category of both analysis and action. These visions of the future were a way of fashioning the new goals of China’s modernization as well as planning actions to be taken. They had new temporal and spatial dimensions—looking toward the year 2000 and beyond, and operating in transnational and even explicitly “global” contexts—and occurred in dialogue with the emergence of novel technologies as well as new ideas and policies about China’s economic system.

This article makes several new claims about Chinese policymaking in the 1980s. First, more than has been previously understood, engagement with Toffler’s ideas and related trends were far more than intellectual fads. They directly impacted the evolution of China’s strategies for economic development and agenda for S&T policy, including, most prominently, the 863 Program, and provided conceptual tools to allow S&T expertise to speak directly to economic policy concerns. Previous studies of Chinese politics and intellectual debates in the reform era have occasionally taken note of the interest in

Toffler's ideas (Baum 1994, 166; Fewsmith 1994, 127; Hamrin 1990, 75–80; Pye 1986, 227), and indeed they were remarked upon in some news reports at the time (Mendelsohn 1988; Woodruff 1984). However, the substantive importance of Toffler's ideas in affecting policy has not been examined. Indeed, the overall tone has been incredulous or dismissive, with one study stating: “[Chinese intellectuals] indiscriminately latched on to the newest Western intellectual fads, such as post-modernism and symbiotics, South American literature and the Tofflers’ concept of the ‘third wave’” (Merle Goldman 1996, 36).¹ Yet as we shall see, while Toffler certainly became in vogue, with as many as one million copies of his book *The Third Wave* printed in China, his ideas shaped substantive policies and the views of some of China's most senior leaders, and thus his influence must be taken seriously. Futurism was one part of broader intellectual trends and fads in China in the 1980s. These cultural currents stimulated Chinese intellectuals, including many young officials, who focused on finding enlightenment, inspiration, and even provocation—but these trends generally did not give priority to actionability (Chen and Jin 1997; Gu 1999; Iovene 2014). This article, however, uses new sources to demonstrate that top Chinese policymakers embraced what we might term “actionable futurism”—a futurism that required a response from the state and indeed shaped the economic and S&T policies of the Chinese Communist Party (CCP). To Zhao and his advisers, the vision of the future that Toffler helped shape was meaningful *because* it was actionable. At the same time, this article depicts an arc of reception, interpretation, and policy development. Toffler's ideas directly informed Zhao's policies, but those ideas were reshaped and adapted as policy was made.

Second, building on that argument, this article seeks to reframe scholarly assessments of the 863 Program and thus the broader development of China's S&T policy—emphasizing Zhao's central role and also the centrality of S&T policy in achieving economic modernization goals, not only military development. The 863 Program, a path-breaking multibillion-dollar state technology R&D program established in 1986 that prioritized information technology, biotechnology, energy, and other fields, is conventionally described as Deng Xiaoping's brainchild: the result of his “strategic vision and resolution,” in the words of one official CCP account (Consulate General 2016). However, Zhao and his networks profoundly shaped its evolution. Although frequently seen as a military-centered research and development program (Feigenbaum 2003, 141–88; Vogel 2011, 550), the 863 Program must also be understood as a far-reaching initiative that sought to deploy S&T as a foundation of long-term economic development and modernization (J. Liu 2008, 68–69). This history thus has enduring relevance for the current era of state-led S&T investment in new technologies such as artificial intelligence (AI).

Third, this article seeks to demonstrate the historiographic value of studying conceptions of the “future” in the Cold War era. This article's perspective on China fits into a small but growing literature of what David C. Engerman has called “histories of the future,” and especially “the politics of the future—how visions of the future both reveal and shape the exercise of power” (Engerman 2012, 1403; see also Connelly 2010). Research by scholars such as Jenny Andersson points toward a significant

¹This dismissal perhaps reflects the derisive view of Toffler held by many writers and scholars, which, although beyond the scope of this article, has also been subject to a recent reassessment (Manjoo 2016).

opportunity to examine how the future has been imagined and developed in countries and contexts where it has gone understudied, including China and other Asian countries (Andersson 2012, 1414, 1429–30). That scholarship has principally emphasized “representations” of the future, especially individuals and organizations that engaged in quantitative and qualitative studies of the future. This article shares their emphasis on widening temporal and spatial expectations, which builds on the influential theorizations of Reinhart Koselleck (1985).² However, rather than focusing primarily on the representation and study of the future, this article emphasizes “the exercise of power”: concrete Chinese policies and actions shaped by transnational movements of futurist ideas. The Chinese leadership’s distinctive focus on modernization created the political and ideological context in which these ideas about the future could be and became actionable.

Understanding how the future was conceptualized and actualized at important junctures can offer significant insights into China’s tumultuous twentieth-century history. At certain moments, official images of the future were relatively explicit, such as in the New Culture Movement or the popular saying in the early Mao period, “The Soviet Union’s today will be our tomorrow.” Throughout the era of high socialism, official narratives of the future used a Marxist framework, in which Chinese socialism would triumph over capitalism and eventually achieve full communism. However, the Deng era of “reform and opening” marked a significant departure from this understanding of the future (Callahan 2013; Greenhalgh 2005). Zhao, writing in his posthumously published memoirs, recalled that he “did not have any preconceived model or a systematic idea in mind” when he began to administer the economic reforms (Zhao 2009, 113). That statement describes not only an uncertainty about policy direction, but also a fundamental uncertainty about the future. The widespread reform-era concept of “crossing the river by feeling for the stones” suggests deep ambiguity about what might wait on the far riverbank. Indeed, the “feeling for the stones” metaphor minimized basic elements of the longer-term “planning” ingrained in CCP governance, exemplified by five-year plans. This article argues that constructing a new future for China, very much going beyond such “planning,” in fact constituted a central task for CCP reformers. This evolving vision, encompassing economic, scientific, and technological policy, and with a time horizon that stretched well into the new millennium, must be understood not only as a pragmatic or technocratic agenda. Zhao acted both to prepare for and to shape a radically transformed future as he imagined it. This article demonstrates how China’s future was seen through the eyes of Zhao and other senior Chinese officials who developed a large-scale, actionable vision of China’s modernization in the crucially important decade of the 1980s, and assesses its implications.

BRINGING TOFFLER TO CHINA, 1979–83

The introduction of Toffler’s ideas into China occurred at a time when a wide range of scholars and officials were actively engaged in highly substantive debates over the

²Following from Andersson and Koselleck but in scholarly terrain they do not examine—the important setting of China during the 1980s—this article suggests that the implications of this futurism for how Chinese officials envisioned modernization were more significant than has been previously understood in studies of post-Mao China (Andersson 2012, 1414–15; Koselleck 1985, e.g., 273–74).

fundamental questions of socialism, Marxism, and economic organization, as well as wide-ranging intellectual engagement with the outside world (Gewirtz 2017). Beyond their quest for foreign expertise, Chinese intellectuals also conducted internationally oriented activities, aiming to understand foreign ideas that might prove useful or stimulating (Gu 1999, 393). The Chinese Society for Futures Studies (CSFS), founded on January 16, 1979, was one such organization (Toffler 1983a, 1). The CSFS described its ambition “to serve the long-term planning and the modernization construction of the country, and to serve the progress of mankind.” Drawing from the State Science and Technology Commission (SSTC), the Chinese Academy of Sciences (CAS), the Chinese Academy of Social Sciences (CASS), and numerous universities, the CSFS included prominent engineers, physicists, economists, and officials. As the orthodox Marxist understanding of the future began to be questioned and revised even in official discourse, the study of alternative futures became a matter of great interest to many Chinese intellectuals (Hamrin 1990, 1–2, 31–38; Masini, Dator, and Rodgers 1991, 491).

The Chinese discovery of Toffler occurred in this context. In the spring of 1981, Dong Leshan, a researcher and translator at the CASS Institute of American Studies, traveled to the United States. Popular works on the dramatic changes that the future might bring had proliferated in Western countries in the 1970s (Bell 1973; Meadows et al. 1972)—and one of the biggest successes was Toffler’s *Future Shock* (1970), with more than five million copies in print and a television adaptation narrated by Orson Welles. These works were at once descriptive and predictive; they described the economic and social changes wrought by new technology and predicted which structural and personal consequences were likely to be most significant. In 1980, working closely with his wife and longtime collaborator Heidi Toffler, Alvin Toffler followed *Future Shock* with *The Third Wave*. On his 1981 trip, Dong recalled, “Everyone I met and with whom I discussed American intellectual trends talked about [Toffler’s] book *The Third Wave*” (Dong 1981, 146).

In *The Third Wave*, Toffler sketched a unified theory of past, present, and future as three “waves” of change. The “First Wave” had arrived as humans began farming and settled into agricultural society. Many developing countries, he noted, remained in this “First Wave” state—including China, which he called “the world’s biggest First Wave nation.” The “Second Wave” came with the Industrial Revolution, as countries erected factories and railroads, and social mores changed in tandem. However, Toffler argued that the “Third Wave” would transform all of these institutions. An “emerging civilization” would take their place, based on new energy sources, methods of production, family structures, educational models, and corporate organizations. Advanced “Second Wave” nations would be forced to reconsider the fundamentals of their systems, even “that most fundamental of our institutions: the market,” and create “twenty-first century democracy” (Toffler 1980). In the television-ready language that helped make him an international celebrity, Toffler urged his readers to prepare for these changes—and he carried this message around the world, traveling frequently to speak to audiences in Europe, Asia, and elsewhere. Although some of the attention that Toffler received dismissed him as an intellectual lightweight, his ideas were treated with great seriousness internationally, including, as we shall see, in China (Manjoo 2016).

Considering *The Third Wave* from the perspective of a Chinese reformer in early 1981, a mixed picture emerges. Some of the book’s ideas seem to be readily compatible

with critiques of traditional socialism, and the Dengist agenda of “reform and opening,” “seeking truth from facts,” and the Four Modernizations, but other statements were clearly problematic, especially Toffler’s proud admission that he had been a Marxist as a teenager but later renounced his beliefs (Toffler 1980, 2, 6). Indeed, his book offered an alternative vision of the progression of history that rejected the orthodox Marxist understanding of historical development—as Chinese conservatives would soon criticize.

Yet Dong Leshan remained enthusiastic about bringing Toffler’s ideas to China. Dong authored a two-part overview of *The Third Wave* for the prominent magazine *Dushu* in late 1981. He wrote, “We may not completely agree with Toffler’s theories, but it is important to understand his predictions” (Dong 1981, 146; see also Wang Yan 2008). This introduction to Toffler piqued the interest of *Dushu*’s elite readership; plans were made to translate the entire book. In the spring of 1982, the CSFS formally invited Toffler to visit Beijing and Shanghai to deliver lectures.

Toffler, who had long harbored a desire to visit China, seized the opportunity (Toffler 1982a). Writing to Dong on May 14, 1982, Toffler requested “meetings and interviews with your leading political figures and with persons responsible for long-term planning” (Toffler 1982b). Toffler—who normally commanded a hefty speaking fee for international engagements—was so eager to visit China that he offered to pay personally for the cost of the trip (Toffler 1982c). As the trip drew near, Toffler’s ambitions continued to grow, and he specifically requested meetings with CCP elders, military officials, and the Ministers of S&T and Communications, among others (Toffler 1982d). Toffler clearly hoped to personally make the case for his predictions about the future to the high-level officials who would be best positioned to turn those ideas into policies.

Toffler departed New York on December 29; his wife Heidi flew separately. On their first evening in Beijing, the couple was welcomed with a lavish banquet (Toffler 1982e; Toffler and Toffler 1995). They also met with Zhou Peiyuan, the Vice Chairman of the Chinese People’s Political Consultative Conference, and other officials. On January 2, 1983, Alvin Toffler delivered a speech at CASS. Interest was high, but the conservative official Hu Qiaomu reportedly sought to prevent too large a group from attending the lecture because he felt that Toffler was dismissive of socialism (Hamrin 1990, 77). In Shanghai, they met with Mayor Wang Daohan and other officials (Miao Qihao 2016). Toffler recalled that his Chinese interlocutors consistently asked him, “Do we have to go through the traditional industrial revolution in order to feed our people?... Or are there other alternatives [for] development, and other alternatives for culture as well?” (Toffler 1984a). These questions revealed wide-ranging interest in new ideas from abroad that might be useful to the intellectuals and officials who were tasked with reimagining China’s future. Yet by the time that the Tofflers returned to the United States, it remained unclear whether their ideas had resonated.

RESPONDING TO THE “NEW TECHNOLOGICAL REVOLUTION,” 1983

In March 1983, just two months after the Tofflers’ visit, the Chinese-language edition of *The Third Wave* appeared in Beijing. The translation was published by the Sanlian Publishing House and marked for “internal” (*neibu*) circulation only. Its table of contents

gave some indication of the reason why: alongside the distinctly non-Marxist theory of history's three waves, Toffler's chapter on "Twenty-First Century Democracy" had been retained, as well as numerous other subjects that did not align with official orthodoxy. The translators had eliminated what might be the most offensive material, such as critical references to Marx. The publisher seemed not to be expecting widespread interest; reflecting its "internal" circulation, only 3,000 copies were printed (Toffler 1983a, 571; Wang Yan 2008).

The book circulated swiftly among China's political and intellectual elites, facilitated by a broader interest in Beijing in futurist ideas. In late 1982, Deng Xiaoping had called for China to advance the Four Modernizations and "quadruple the gross annual value of industrial and agricultural output by the year 2000." Deng said, "There are no limits to the development of S&T or to the effect they can have" (Deng 1994; Simon and Goldman 1989). On August 4, 1983, Zhao approved a research outline for a project on "China in the Year 2000," and shortly thereafter the CSFS held a symposium on this topic where Toffler's ideas were prominently discussed (DRC Record 2013, 34–35; Toffler 1984b). This project was one element of the initial research underway to respond to Deng and to General Secretary Hu Yaobang's guidance to utilize S&T, involving the State Council Technological and Economic Research Center (TERC) and other elements of Zhao's intellectual network; it also aligned with the official focus on technology acquisition from developed countries that had been a priority since the Hua Guofeng period and that Zhao had endorsed (Fang 2004, 4:48). These efforts facilitated the dissemination of *The Third Wave* and other futurist ideas into government offices, ministries, and eventually to the State Council, where they came to Zhao's attention (Ma 1984a, 5–6; Zhao 2016, 2:197).

Despite these initial efforts, by the autumn of 1983, Zhao had not yet determined how to develop China's S&T capacities and prepare for the future. Futurist ideas provided an unexpected answer, offering a detailed and optimistic vision of a technological revolution powered by scientific innovations, which could dramatically boost productivity while transforming society. One of Zhao's advisers, the diplomat and State Council official Huan Xiang, submitted a report that captured the premier's imagination. Huan's report offered a clear exposition of the three types of industry that could allow China to take advantage of emerging trends and thereby meet long-term goals for the future: labor-intensive, capital-intensive, and knowledge/technology-intensive—a schematic that corresponded, broadly speaking, to Toffler's three waves. China, CCP leaders often remarked, had missed out on the Industrial Revolution. At a moment when the Chinese leadership was rethinking fundamental assumptions about their country's socialist economy, here was a vision of the future in which China could take part—a wave of technological and economic change, which Zhao now believed that he should bring to China (Huan 1994, 2:1004–5; Zhao 2016, 2:197–200).³ As we shall see, Zhao realized that these ideas could address several significant challenges. First, they would help to implement the objective contained in the Four Modernizations of using S&T to facilitate

³Huan's report is not publicly available in the form in which it was submitted to Zhao, except for Zhao's quoting of it. However, a report delivered by Huan on July 21, 1983, discusses the "technological innovation" (*jishu gexin*) occurring in capitalist countries and echoes language and content that Zhao quotes (Huan 1994, 2:987–1005).

economic development. Second, they connected a domestic initiative to international trends, with both rhetorical and practical benefits for Zhao's self-presentation as an internationally minded reformist leader. Third, they had the potential to resolve some of the enduring uncertainty about China's future trajectory in the post-Mao era by making clear that this future path would focus on facilitating high-technology development. Fourth, they pointed to the value of drawing on an underutilized community of S&T experts and bureaucrats that could provide political support for the broader focus on modernization and development, an opportunity that Zhao used. Fifth, most optimistically (and surprisingly), they suggested that one of China's most lamented weaknesses—its comparatively low level of industrial development—would not necessarily prevent China from advancing into the Information Age. These concepts from Toffler and others could give Zhao the confidence and the credibility in China's leadership and bureaucracy to shape economic policy more fully around S&T. Zhao had found a malleable, actionable framework that appeared to offer a range of benefits (Zhao 2016, 2:197–98).

On October 9, 1983, Zhao opened a major conference on what he called the “New Technological Revolution.” The conference gathered officials from State Council departments; offices with responsibility for S&T, including the State Planning Commission (SPC), the SSTC, the State Economic Commission (SEC), and CASS; and coastal regions (DRC Record 2013, 14, 36). Zhao described a global “new Industrial Revolution” brought about by emerging technologies and called on the assembled officials to determine “what can help speed up China's socialist modernization.” He went even further, announcing the outlines of a futurist vision for China's technological development. Zhao explained that he had been reflecting on ideas contained in Toffler's *Third Wave*, John Naisbitt's *Megatrends* (1982), and Japanese technology reporting, and he had come to believe that the global transformation underway centered on innovations such as electronic computers and genetic engineering (Zhao 2016, 2:197–98). Zhao's preferred term for this transformation was the “New Technological Revolution” (*xin de jishu geming*). However, he continued:

Whether we call it the Fourth Industrial Revolution or call it the Third Wave, [these writers] all believe that Western countries in the 1950s and 1960s reached a high degree of industrialization and are now moving to an information society.... At the end of this century and the beginning of the next century, or within a few decades, there will be a new kind of situation in which breakthroughs in new technology that are happening now or will happen soon will be used for production and for society. This will bring a new leap in social productivity and thus a corresponding set of new changes in social life. This trend is worthy of our attention and must be carefully studied, based on our actual situation, in order to determine the next ten to twenty years of our long-range planning.... For us and for the future of the Four Modernizations, this is both an opportunity and a challenge. (Zhao 2016, 2:198)

Zhao clearly believed that the stakes were high: either China would take advantage of this New Technological Revolution to narrow its technological and economic gap with the rest of the world, or China would be left even farther behind.

Zhao also encouraged the assembled group to look for areas where it might be possible to skip “some of the stage of traditional industrial development” and move directly into “utilizing more advanced scientific and technological achievements.” He stated specifically that these views had come from Toffler. “Toffler’s *Third Wave* has a similar view. He believes that today’s Third World countries may not have fully experienced the ‘Second Wave’ of development, but that they can take an entirely new route to achieve a ‘Third Wave’ civilization.” The challenge for the gathered officials was thus to determine whether China could “directly adopt the results of the New Technological Revolution.” Rather than simply emphasizing imitation and continued technology acquisition, Zhao highlighted the potential of Chinese “technological innovation” (Zhao 2016, 2:199–201). Zhao was developing a broad, ambitious, and actionable framework for charting the role of technology in China’s future.

In its lofty rhetoric and ambition, this interest in skipping the “Second Wave” and taking “an entirely new route” to achieve advanced technological development recalled prior movements to leapfrog developmental stages—a periodic feature of the PRC’s history that appeared most notoriously as the justification for Mao’s disastrous Great Leap Forward, but also underlay Hua Guofeng’s rapid importation of industrial technology after Mao’s death, which came to be known as the “foreign leap forward.” However, despite rhetorical similarities, one must be cautious not to overstate these parallels. When Zhao invoked a “new leap,” he was referring to a global “trend” that China should strive to join through careful if ambitious policymaking, rather than a utopian prospect that could be achieved by willpower alone. For Zhao, technology was, like economics, a realm distinct from political affairs, whereas Mao had said the opposite in his “Sixty Points on Working Methods”: “Politics and technology must be unified” (Mao 1958). Although Zhao was clearly caught up in his enthusiasm about the potential benefits of the New Technological Revolution, he emphasized the long-term, technocratic nature of these efforts that would take place over “the next ten to twenty years.” Toffler provided Zhao with a sense of urgency and opportunity because Zhao realized that, given China’s low level of S&T prowess, if China were to take advantage of “Third Wave” transformations, this would require a long-term process that must begin immediately.

To conduct further research into these ideas, Zhao established two high-level groups. One, based at the State Council, would be led by Ma Hong, the president of CASS and a senior advisor at the State Council, and drawing on diverse experts and officials (including Zhu Rongji, a future premier). The second would be based in Shanghai and led by Wang Daohan, who had met with Toffler earlier that year. These groups would seek to provide policy solutions addressing “the global New Technological Revolution and China’s modernization” (DRC Record 2013, 14; Zhao 2016, 2:204). Zhao had identified this effort as an urgent priority and tasked some of his most trusted officials to develop a response. And this context makes clear that embedded within the words “New Technological Revolution” in subsequent Chinese policymaking in the 1980s was the centrally shaping influence of Alvin Toffler on Zhao’s actionable futurism.

Given the great importance that the premier had attached to this work, Ma set about organizing his research group. On October 21, Ma delivered a speech at the State Council emphasizing Zhao’s interest in understanding “economic and social changes in post-industrial capitalist countries,” including the concept of “the Third Wave.” Ma’s group would develop “economic strategy and technology policies” in response to Zhao’s

“important instructions” (Ma 1984a, 2, 4–5). Shortly thereafter, Ma and the TERC organized several internal meetings, including a conference with approximately 1,600 cadres, experts, and scientists in attendance, and a seminar for several dozen vice ministers on November 3, 1983 (Liu Hong 2010, 135; Xiao 2004, 69).

These were remarkable developments. Yet the broader political environment in late 1983 was not necessarily conducive to an open embrace of foreign ideas. Deng Xiaoping had lent his personal backing to the Campaign to Eliminate Spiritual Pollution (*qingchu jingshen wuran*) on October 12, just three days after Zhao’s speech on the New Technological Revolution—though there is currently no evidence to suggest that Deng’s decision was motivated by Zhao’s speech (Deng 1984). Ma warned in his October 21 remarks that cadres who would be reading works such as *The Third Wave* should be cautious and “avoid capitalist spiritual pollution” (Ma 1984a, 4–5), but the agenda that Zhao had articulated on October 9 had begun to move forward.

CATCHING “THIRD WAVE FEVER,” 1983–84

With this intensive top-level support, terms like “New Technological Revolution,” “New Industrial Revolution” (*xin changye geming*), and the “Third Wave” (*disanci langchao*) spread throughout the country. As Zhao’s speech indicated, these terms were frequently used interchangeably. A fusillade of articles followed the premier’s endorsement: in the *People’s Daily* alone, more than a dozen articles per month using the term “New Technological Revolution” appeared between January and October 1984.⁴ These articles frequently emphasized the potential for China to catch up with or even leap ahead of the capitalist world (Lu Hengjun 1983; Yang Mu 1984). At the same time, Zhao moved to demonstrate his commitment to making substantive progress. On January 28, 1984, Zhao—freshly returned from a state visit to the United States during which he had approved an extension of the US-China Agreement on Cooperation in S&T and a new Accord on Industrial and Technological Cooperation between the two countries (Reagan 1984)—toured a microelectronics exhibition in Shanghai with Wang Daohan, because, as a news report explained, “microelectronics are the basis of the ‘information society.’” On February 16, Deng Xiaoping lent his personal support by visiting the same exhibition (Guo 1984; Wang Zijin 1984).

Beyond of the realm of politics, broader cultural and intellectual trends influenced elite discussions about the future. Some of these trends focused on foreign texts and followed an arc similar to Toffler: in late 1983, for example, *Dushu* published a summary of Naisbitt’s *Megatrends*, with a recommendation that it should be read by “the many readers who have requested a deeper understanding of foreign trends” after reading about “Toffler’s *Third Wave*” (Yao 1983). First published in 1982, Naisbitt’s book became perhaps best known for its description of the Tofflerian shift from an “industrial society” to an “information society,” which Naisbitt described as an economy in which “the *strategic* resource is information” rather than capital (Naisbitt 1982). The Chinese adaptation of *Megatrends* further fueled interest in Zhao’s New Technological Revolution (see, e.g., Yao 1984); numerous publications cited the newfound prominence of Toffler

⁴CNKI database search for the term “*xin de jishu geming*,” conducted on July 6, 2017.

and Naisbitt—with one magazine even declaring that, in China, “many people worship them as idols” (Ju 1984). Chinese intellectuals also established a popular series, *Zouxiang Weilai* (Towards the Future), which published books by Chinese intellectuals and translations on futuristic topics as diverse as systems theory, cybernetics, and “sociobiology,” as well as texts in economics, history, and literature (Chen and Jin 1997; Gu 1999). These works offered inspiration and even provocation, underscoring that interest in Toffler was part of a much broader fascination with new ideas and international trends. Zhao and his advisers remained focused on the New Technological Revolution and the vision of actionable futurism that he had articulated in October 1983, but this interest was also emblematic of broader discourses about using new ideas from abroad to reimagine China’s future (Gewirtz 2017).

This ferment caught the attention of CCP conservatives, and Toffler soon received stinging criticism. On February 14, 1984, a central propaganda publication attacked: “The so-called Third Wave is not a scientific concept.... To make use of it when setting forth the party’s policies is inappropriate.” Despite having “reference value,” the propaganda guidance explained:

The concept Toffler created is not a purely scientific or technical one, but one used to express laws said to govern the development of society ... formulated in opposition to the theory of social revolution that describes the victory of socialism over capitalism, and the victory of the proletariat over the bourgeoisie. It is clearly meant to supersede this theory. (Xuanchuan Dongtai [1984] 1991, 31–33)

This denunciation of Toffler’s ideas was significant for several reasons. First, most fundamentally, it showed the remarkable seriousness with which the CCP viewed these ideas, for good or for ill. Second, it criticized on ideological grounds a specific concept that had been championed by China’s premier. Although the propagandists attempted to limit their criticism of Zhao by excusing his October 9 speech as only using Toffler’s ideas for “reference value,” this justification was superficial: the speech was clearly designed to influence policy outcomes. Third, the propaganda attack sought fundamentally to dispute the vision of the future implied in Zhao’s response to Toffler’s work. Marxism itself was deeply oriented around the future, and for decades the Chinese state had officially defined the future, in accordance with Marxist ideology, as “the victory of socialism over capitalism, and the victory of the proletariat over the bourgeoisie”—but in the era of “reform and opening” this orthodox understanding of the future seemed newly precarious. At a time of fundamental debates over introducing market mechanisms and revising socialist orthodoxy, the extraordinary risk that conservatives evidently saw in Toffler’s work was the introduction of a concept that might “supersede” the Marxist “theory of social revolution.” The battle over *The Third Wave* was thus not only a battle over a foreign text or S&T policies—it was also a fight over China’s future.

As a result, *The Third Wave* was temporarily banned (Yang Jisheng 1998, 1:238). Shortly thereafter, Ma Hong spoke to a meeting of provincial officials and revealed how potently this pressure had affected his public statements. His remarks discussed the “currently popular so-called ‘Third Wave.’” Ma stated that the book’s analysis of “the great influence of S&T, especially the information technology revolution,” has

“reference value.” However, Ma admitted, “In [Toffler’s] view, society’s development is not related to production relations and the social system, and this is contrary to historical materialism.” After similarly criticizing Naisbitt, Ma returned to Toffler and stated, “This material does not support and even opposes Marxism.” Ma had been deeply troubled, he said, by an unacceptable comment made by a graduate student at Peking University. “Marxism is out of date,” the student had said, adding, “Toffler’s *Third Wave* is the most correct way of thinking” (Ma 1984b, 14–16). It was a striking shift by a prominent reformer who had praised Toffler’s ideas just a few months earlier.

Yet even as Ma criticized *The Third Wave* in public, he continued to work behind the scenes on Zhao’s Toffler-influenced policy initiative. On February 23, 1984, the SPC submitted a draft document to the Central Finance and Economics Leading Small Group (CFELSG) on the Seventh Five-Year Plan, which included a short section on the New Technological Revolution that reiterated, “Comrade Ma Hong is leading this group, based on Comrade Zhao Ziyang’s instruction to carry out this research” (Fang 2004, 7:25). As the Campaign to Eliminate Spiritual Pollution petered out, Ma’s TERC continued to partner with the SPC, the SEC, the State Science Commission, and CASS. On March 13, they delivered an initial report on their research to Zhao and the CFELSG. They discussed strategies for helping China to “jump” stages—that is, move directly to a Third Wave economy without going through a lengthy process of industrialization (DRC Record 2013, 36; Liu Hong 2010, 137). Several days later, *Red Flag* magazine published an optimistic essay by Ma analyzing the New Technological Revolution, which he had drafted by the previous December but which was not published until March 16, 1984 (Miao Zuobin 2007). That spring, the Central Committee and State Council held a series of twenty lectures by Ma Hong, Song Jian, and others on the subject of the New Technological Revolution, which helped to raise the profile of futurist ideas even higher (Central Organization Department 1984, 1:1–2).

With these gains solidified, the State Council formally approved the implementation of Ma’s agenda after a briefing he gave on March 30 with Zhao presiding. This initiated the next stage of work to encourage key new technologies (again, microelectronics and bioengineering were the most prominent examples), align traditional industries and emerging industries, and “jump” developmental stages. Participants in these meetings, intoxicated by what one called “a great ideological liberation,” bandied about fantasies of China’s future: a group of young officials imagined having the capacity, by the PRC’s centenary in 2049, to clone people and recreate the exact scene that had filled Tiananmen Square when Mao spoke on October 1, 1949. As the political atmosphere warmed, this official attention also led to a surge of popular interest in futurist ideas. The prohibitions on the Chinese edition of *The Third Wave* were relaxed, and its “internal” designation was eliminated; it now rocketed to bestseller status. As many as one million copies of the book were printed between 1983 and 1988. This extraordinary interest became known as “Toffler fever” or “Third Wave fever” (Liu Hong 2010, 137–40; Wang Yan 2008). Naturally, Toffler was delighted to learn of this from his Chinese correspondents (Toffler 1983b, 1984c). On February 21, 1984, Toffler wrote proudly to inform Jan Berris, vice president of the National Committee on U.S.-China Relations, who had helped him follow developments in China: “Our efforts have not been wasted” (Toffler 1984d).

RESPONDING TO THE NEW TECHNOLOGICAL REVOLUTION, 1984–86

The Chinese leadership's initiative to respond to the New Technological Revolution continued apace. On May 15, 1984, the National People's Congress endorsed Zhao's ideas: "At present, there is a global New Technological Revolution.... We should seize the opportunity to selectively apply new scientific and technological achievements, speed up the process of China's modernization, and narrow the economic and technological gap with the developed countries" (Zhao 2016, 2:391). This meeting reaffirmed the official status of these concepts after several tumultuous months. Shortly thereafter, the CCP Central Committee's Decision on the Reform of the Economic Structure, issued on October 20, 1984—which, most famously, endorsed the "planned commodity economy" concept—further ratified this idea. Prominently featuring "the emerging global New Technological Revolution," it articulated the need for China's economic reforms to "utilize the latest S&T achievements, producing S&T advancement and generating new productive forces." In the decision that would shape the direction of the reforms for the remainder of the 1980s, the New Technological Revolution was presented as requiring a significant policy response, rather than as a foreign idea simply to be discussed or examined (Central Committee of the CCP 1984). The initiative that Zhao had developed over the preceding year had become a central part of the official agenda. It was clear that these ideas were enabling S&T expertise to speak directly to economic concerns and to influence the direction of policy debate.

Additional reforms focused on S&T policy soon followed. Discussing the Seventh Five-Year Plan with Song Jian of the SSTC on September 12, Zhao said that in the period ahead:

The rapid transformation of information technology and the increasingly wide range of applications, such as making bioengineering practical, new materials, new energy sources, and marine engineering, will cause great breakthroughs in some areas and open up new applications.... Our economic development strategy must develop policies to respond to this. (Zhao 2016, 2:521)

A week later, at a September 19 meeting of the State Council, Zhao announced, "We can use the experiences and results of the New Technological Revolution to cause our traditional industries to leap over several development stages and attain a new technological level" (Fang 2004, 7:166). Then, at a speech delivered to the National S&T Work Conference on March 6, 1985, Zhao emphasized the need to develop both "economic construction" and "personnel talent," as part of "adapting to the new situation of the New Technological Revolution" (Zhao 2016, 3:86). Zhao's broad vision focused on one dominant priority: using new technologies to propel China's "economic development" in competition with the rest of the world.

The Chinese leadership thus instituted organizational changes in mid-1985. The Central Committee announced reforms on March 13 to the system for science research funding and organization, aiming to focus it more effectively on economic development, including both technology acquisition and innovation (Fang 2004, 8:66–76; H. L. Miller 1996, 112–14). On June 29, Zhao formally created a new group within the State Council, which would be called the Economic, Technological, and Social Development Research

Center (DRC), combining the Economic Research Center, the TERC, and the Price Research Center into a single high-level organization that would report directly to the State Council and the CFELSG. Document No. 81 of 1985, which announced the DRC's creation to cadres across the country, presented the center as pursuing “comprehensive, strategic, long-term, and integrated” policymaking. Under Ma Hong's leadership, the DRC continued the work to respond to the New Technological Revolution that had been underway since 1983—an initiative which was now even more fully incorporated into broader economic policymaking (DRC Record 2013, 50–52).

Alongside these policy developments, Toffler's popularity in China continued unabated. In the first half of 1985, *The Third Wave* sold rapidly; for example, in Changsha, over 13,000 copies were sold in this period (Woodside 1998, 41). Some intellectuals viewed his popularity with concern: in 1986, a team of theoreticians produced a book entitled *Critiquing 'The Third Wave'*, which criticized Toffler's “anti-Marxist” orientation (Gao 1986). Yet the phenomenon endured. A survey of college students in 1986 revealed that 78.6 percent of respondents said that they had read *The Third Wave* (Pan et al. 1986, 64).

Far beyond Toffler's ideas and forecasts, by early 1986 the Chinese leadership had responded to their perception of a New Technological Revolution sweeping the globe with a wide-ranging agenda focused on the nexus of economic development and S&T policy. And this array of policies that had developed under Zhao's supervision was about to receive an important boost from Deng Xiaoping himself.

CREATING THE 863 PROGRAM, 1986

The most enduring and significant policy to result from the ferment in Beijing surrounding futurist ideas about the Third Wave and the New Technological Revolution was the “863 Program” (*baliusan jihua*), a flagship government initiative that has provided billions of renminbi in funding to projects including advanced computing and aerospace technology (Kulacki and Lewis 2009, 22–25). The conventional narrative of the program's origins ascribes the motivating force to Deng and largely erases Zhao's enormous role. This originates with the CCP's deliberate effort to sideline Zhao in the historical record (Zhao 2009). Foreign scholars have followed the conventional narrative about Deng's role because they have unavoidably relied on distorted Chinese source material. New sources now allow scholars to remedy that problem. Additionally, the conventional narratives often overlook the extraordinarily rich context of elite debate about S&T and economic development discussed above. This section provides a fuller account of the 863 Program's development in the context of S&T policy throughout the 1980s.

The program was proposed to Deng Xiaoping in a letter from four prominent Chinese scientists sent on March 3, 1986, describing the “New Technological Revolution” and emphasizing the need to invest in advanced technologies. Deng's handwritten response on March 5 was emphatic: “This proposal is very important. Comrade Ziyang should take charge of this and find some experts and comrades with relevant responsibilities to discuss it and make suggestions, which can be the basis of our decision-making. We should make a decision on this matter right away and must not delay” (Lu Jia 2014). Deng assigned Zhao the task of making the initiative a reality—a logical

assignment given that Zhao had been leading a wide-ranging effort to respond to the New Technological Revolution. Thus, the 863 Program must be understood as an initiative that was continuous with and developed from Zhao's efforts earlier in the 1980s rather than as a radical shift in the leadership's orientation. Many of the best scholarly accounts have even quoted what turns out to be an edited version of this note from Deng, an edit that entirely omits Zhao's name and assignment (e.g., Feigenbaum 2003, 141–88).⁵ But the fuller story is now clear and must center on Zhao as well as Deng.

On March 8, three days after receiving Deng's instruction, Zhao met with the SSTC's Song Jian and informed him of the proposal. "Comrade Xiaoping attaches great importance to this matter and wants us to come up with some suggestions and make decisions." The State Council would lead a process to develop ideas and would draw on both "military and civilian cutting-edge technology," before putting forward a report to the Standing Committee. Noting the need to compete with the United States, Western Europe, and the Soviet Union, Zhao instructed Song to organize a "capable team" and produce a preliminary plan by August. The overarching priority would be for Chinese scientists to domestically develop cutting-edge technologies, though international cooperation and technology acquisition would also continue. Zhao would subsequently suggest that the project be labeled the "863 Program," reflecting the proposal's March 1986 date (Zhao 2016, 3:300–301, 324).

This direct connection to the groundwork that Zhao had laid from 1983 onward also explains the scientists' specific way of articulating their ideas to the paramount leader on March 3. The four scientists began with an analysis of "the development of the global New Technological Revolution," discussing in detail its "tremendous influence on changing social production methods and the structure of industry," as well as the "fierce international competition" that was underway to take advantage of these technological transformations. Mentioning international efforts on both sides of the Iron Curtain, they urged the creation of a unified technology strategy for China based on the principle of "civilian and military integration, placing civilian interests first." The scientists clearly believed that the priority should be placed on S&T research that could advance "civilian interests"—among which economic development was paramount. Accordingly, they suggested that China should prioritize seven key areas: biotechnology, space technology, information technology, laser technology, automation, energy technology, and materials engineering (Yang Lizhong 1991, 226–28). The New Technological Revolution, Toffler's ideas, and Zhao's development-focused agenda would serve as the foundation upon which the 863 Program would be built—a process that would involve Zhao continuing to coordinate the SSTC, the CAS, and the SPC, among other government institutions, to develop and implement this strategy.

On March 22, 1986, less than three weeks after Deng's show of support for the idea, Zhao called a meeting with the senior officials who were newly responsible for the 863 Program. The assembled group included Ma Hong, Song Jian, Song Ping of the SPC, Wu Shaozu of the National Defense Science and Industry Commission (NDSIC), and others. Zhao framed their challenge in long-range terms, differentiating this initiative

⁵This oversight is partly due to widespread use of a source published by the official Military Science Publishing House in 1991, in which Zhao's name does not appear—Li Peng, by contrast, appears several times, and even Toffler is referenced repeatedly (Yang Lizhong 1991).

from five-year plans by emphasizing that these goals targeted “the end of this century” and even “the next century.” The 863 Program would focus initially on several still-embryonic priority areas. First, Zhao discussed efforts already underway on space weapons, explaining that such research would allow them to use the resources and manpower available in this military research “to promote China’s high-tech development.” Second, Zhao tasked the assembled group to determine which areas should be prioritized and suggested a focus on bioengineering. Third, Zhao discussed the process that he wished to see govern the project. He emphasized the need for interdisciplinary work, stressing that the organization and workflow should be “horizontal, not vertical.... Otherwise, we’ll spend a lot of money and not produce major results.” Similarly, he requested that the group develop an efficient appropriations and funding system. Zhao promised to remain personally engaged in the new program (Zhao 2016, 3:323–26).

Zhao envisioned the 863 Program as an arena for actualizing his own ideas about the potential benefits of S&T for China’s future—a set of ideas rooted in the futurist writings of Toffler and others. Meeting with a large group of scientists regarding the 863 Program on April 7, Zhao reminded the scientists of his personal role in developing this vision of China’s response to “the New Technological Revolution and high-tech developments, which we have discussed frequently,” beginning with his October 1983 speech and the creation of Ma Hong’s research group, which “included many comrades who are sitting here today.” Zhao underscored an additional point: “The development of advanced technology is not an end in itself,” but rather must always aim at ultimately “serving economic construction” and “China’s modernization.” Furthermore, he acknowledged that it was not yet possible to know exactly what technologies would best serve this goal, contrasting this situation with the Mao era’s strategic weapons program, when “everyone could just focus on the two bombs” program (i.e., nuclear weapons and ballistic missiles). This new program would use vast resources to promote domestic innovation, while also deploying new management systems and studying foreign technologies. Under the management of Song Jian as well as Ding Henggao of the NDSIC, with the involvement of senior officials such as Ma Hong and Song Ping and preeminent scientists such as Qian Xuesen—a key figure who led China’s space and military rocket programs, and a CSFS member who had been familiar with Toffler’s ideas since the early 1980s—Zhao had established the structure within which a new drive toward the future would take place (Zhao 2016, 3:360–68). The 863 Program responded to the New Technological Revolution and futurist ideas with a broad initiative designed to last well into the twenty-first century.

As Zhao’s comment about the Mao-era “two bombs and one satellite” program indicated, it was clear to the participants in this new effort that the initiative underway in the 1980s was different from the technological drives of a prior era. At one level, these initiatives seemed similar: they followed similar policy processes, with top leaders ordering high-level experts to conduct research on feasibility and approaches, after which a decision was made to pursue newfound technological objectives with the support of billions in state funding (and figures like Qian were an additional continuity). Yet noting similarities between these initiatives should not sideline the salient points of difference, especially since the political and geopolitical context in which these initiatives occurred was so different. Zhao himself highlighted one important contrast: the goals of the 863 Program were numerous and diffuse, rather than tightly defined as in the case of the “two bombs and one satellite”; this would require a different approach to S&T research,

involving numerous specializations, more “horizontal” organization, and a longer time-frame. Second, these efforts sought to harness technological advancement to “serve economic construction” rather than prioritizing national security; this different emphasis would necessitate a focus on commercial applications of new technologies. Third, in a shifting international environment and amid technological change, the 863 Program was based in part on Zhao’s actionable futurism and offered the potential to assist China in developing the capabilities to constantly compete and evolve.⁶ That is, rather than just catching up or reproducing innovations that had appeared elsewhere, Zhao left open the possibility that China could itself one day innovate and “produce major results” of its own. The futuristic “Third Wave” that had inspired Zhao was an emerging trend that required a distinctive and flexible state-led approach to technological development, which the 863 Program aimed to create.

By the late summer of 1986, work on the 863 Program had progressed significantly. On August 18, an executive meeting of the State Council provided feedback, after which Zhao was finally ready to deliver a formal update to Deng and the rest of the Politburo’s Standing Committee. On September 25, nearly seven months after Deng received the four scientists’ proposal, Zhao submitted a letter that informed Deng of fifteen projects developed by a team of 124 experts (DRC Record 2013, 62; Zhao 2016, 3:455–56). On October 6, Deng responded affirmatively: “This should be immediately organized and implemented.” To garner maximum consensus, Deng instructed Hu Yaobang to review the plan, followed by Chen Yun, after which the entire Politburo could discuss it. The initiative and its projected budget of ten billion RMB were quickly approved (Kulacki and Lewis 2009, 24; Lu Jia 2014).

Deng seemed pleased with the 863 Program. Several days later, on October 18, he told the Chinese-American Nobel laureate Tsung-Dao Lee and the Italian physicist Antonino Zichichi: “China cannot advance without science.... We have only just begun the modernization drive. We shall probably have made considerable progress by the end of the century and even more notable progress 30 or 50 years after that” (Deng 1994, 184). With these remarks, Deng underscored the centrality of the 863 Program to China’s future. He did not praise Zhao by name, but the lineage of these new policies was clear. The project of responding to rapid global technological change, which the writings of Toffler and other futurists had crystallized for Zhao, had now become a long-term strategic initiative of the Chinese leadership.

THE END OF THE ZHAO ERA, 1986–91

Implementation of the 863 Program proceeded rapidly. Its funding reflected Zhao’s priorities: nearly a third of the total funding went to biotechnology and approximately a

⁶Among international socialist leaders, Zhao was not alone in this concern. Mikhail Gorbachev made statements describing the Soviet Union’s need to catch up in developing “high-tech industries” in 1985. Despite its strides earlier in the Cold War era, the Soviet Union’s technological edge had dulled by the 1980s. In 1986, Gorbachev explicitly referenced developments in China as part of an international “whirlwind of changes—social, scientific, and technological.” See C. Miller (2016, 29, 61) and Marshall Goldman (1987).

quarter to information technology (Feigenbaum 2003, 167). When student protests in the winter of 1986–87 led to the ouster of Hu Yaobang, Zhao was promoted to acting CCP general secretary, formally assuming the position after the Thirteenth Party Congress of October 1987. In August 1988, the Chinese government built on the 863 Program by creating the Torch (*huoju*) Program, which aimed to respond to “the wave of new technology revolution surging around the world” to develop new industries, accelerate commercialization, and promote “economic growth” (Xu 2003). This program further solidified the development-oriented S&T agenda that Zhao had promoted.

Zhao remained so closely associated with Toffler that a fresh round of attacks on the American futurist served as proxy assaults on Zhao’s promotion. One commentary in the summer of 1987 assessed the pernicious effects of Toffler’s ideas on impressionable Chinese students—precisely the group that Hu had failed to manage in late 1986: Toffler “promoted the view that it was only through S&T revolution that the numerous contradictions of the capitalist system could be resolved, and could even cause the capitalist and socialist systems to move toward ‘convergence.’” It concluded, “This is such an unacceptable claim!” (Tian 1987, 30–34). The implication—that Zhao himself also believed in the salvation of “S&T revolution” and sought to promote “convergence”—was a forceful critique of the new leader.

Yet Zhao continued to view Toffler’s ideas as central to his agenda for China’s future. In what was perhaps the most important official document produced during his tenure as general secretary, the work report at the Thirteenth Party Congress, Zhao framed the section on China’s “economic development strategy” as targeted at both “promoting the traditional industrial revolution” and “catching up with the new task of the global New Technological Revolution” (Zhao 2016, 4:225). However, soon thereafter, a series of serious policy blunders in the summer of 1988 jeopardized Zhao’s position, including, most prominently, an abortive attempt at rapid price reform (Vogel 2011, 470).

In this climate of uncertainty about China’s future, officials’ interest in foreign futurism endured, as two examples from September 1988 demonstrate. First, an elite group including the CSFS, CASS, the DRC, and China’s UNESCO commission hosted the World Futures Studies Federation’s annual conference on September 3–8, and Li Peng, Zhao’s successor as premier, received the international delegation (Masini 2005; Masini et al. 1991; Toffler 1988d). Second, just after this conference, the Tofflers themselves returned to China, and Zhao hosted them for a private meeting. In August 1988, the *People’s Daily* invited the couple to visit the following month to discuss “China’s economic construction and its future development” (Toffler 1988a). On September 8, the newspaper welcomed the Tofflers to Beijing with a formal dinner (*Renmin Ribao* 1988). The couple met with officials from CASS and the State Council as well as editors from publications including the *Guangming Daily* and the *World Economic Herald* (Toffler 1988c). The Tofflers argued that China should prioritize the use of “computers, satellites, biological technologies, AI, and instant communications” (Toffler 1988b).

The Tofflers met with Zhao at Zhongnanhai on September 13. Zhao stressed his commitment to responding to the New Technological Revolution: he had studied the Tofflers’ ideas and adapted them to China’s circumstances, assuring them that China was “studying the advanced technologies of developed countries, in order to use their results in a timely manner by the end of this century and the beginning of the next century” (Zhang 1988; Zhang and Shi 2005). The Tofflers asked questions ranging

from Zhao's assessment of Mikhail Gorbachev to his view of the relationship between "freedom of expression" and "economic innovation and development." However, Zhao stated firmly, "Stability is necessary to make democratic advances" (Toffler 1988c; Toffler and Toffler 2006, 330). After five years in which the Tofflers' ideas had shaped Zhao's thinking and China's S&T policy, this meeting was a striking recognition of their influence, even though Zhao remained within the political constraints of China's system.

In the months that followed, futurist ideas continued to appear in prominent outlets on subjects including debates about trade and projected S&T development by the year 2000 (Yang Jinghou 1989). Yet with the emergence of the student movement after Hu Yaobang's death in April 1989 and the tragedy that followed on June 3–4, Zhao's agenda swiftly fell apart. Zhao himself was removed from his position following his opposition to imposing martial law. He remained under house arrest until his death on January 17, 2005. As a result, he has been almost completely erased from official accounts of the decade in which he helped to lead China, including his leadership of the policies discussed in this article (Zhao 2009, 25–34).

However, even before his 1992 "Southern Tour," Deng Xiaoping moved to protect the S&T agenda developed over the 1980s. On April 23, 1991, he offered a personal inscription to the 863 Program and the Torch Program: "Develop high technology, achieve industrialization" (Central Documentary Research Office 2000, 152). This was an unambiguous signal from Deng that these initiatives begun under Zhao's leadership remained crucial to China's future. Yet Deng's assertion of support also solidified Zhao's erasure from this particular area in which he had played a crucial role. Deng would henceforth receive credit for the development and implementation of this S&T agenda, and the fuller story would remain little known.

CONCLUSION

Even if Zhao's role has gone unacknowledged, the agenda that he developed to respond to the New Technological Revolution has persisted in influencing the senior-most levels of the CCP. One example is Wang Huning, a member of the Politburo Standing Committee and a senior advisor to Xi Jinping as well as his predecessors Jiang Zemin and Hu Jintao. Wang has demonstrated a longstanding engagement with Toffler's ideas. In his book *Life in Politics* and other writing from the 1990s, Wang repeatedly references Toffler on topics including the role of knowledge in society and the importance of S&T for national development (Wang Huning 1991, 112–13; 1992, 4, 9; 1995, 36, 63–64). This influence also persists at a less senior level. Following Toffler's death in 2016, prominent Chinese information technology professionals from both the government and the private sector commemorated him in Beijing; one State Information Center official even declared, "Were it not for Toffler's influence, my life would not have turned out the way it has" (State Information Center 2016).

The Chinese leadership has remained committed to a particular brand of S&T-focused actionable futurism that descends from Zhao's vision enunciated in October 1983 and the futurist thinking that flourished in that period. In a speech on May 17, 2017, for example, Xi endorsed "innovation-driven development" centered on technologies including "the digital economy, AI, nanotechnology, [and] quantum

computing” (Xinhua 2017). State-led investment in AI, in particular, has received substantial attention. State Council guidelines issued in July 2017 announced the goal of “becoming a global innovation center” for AI by 2030 (State Council 2017). This focus on AI explicitly responds to global developments in a revolutionary technology that has both economic and national security implications; with ambitious goals and a timeframe of more than a decade, it is a core element of a futurist “innovation-driven development” strategy designed to boost China’s power in the long term.

This article invites the question of whether current strategies may derive at least in part from the push to respond to the New Technological Revolution. The futurist visions examined in this article can broaden our understanding of the policies of economic development and modernization pursued in the 1980s and their present-day legacies. The case of Toffler and Zhao exemplifies the central role of foreign ideas in the policymaking of the CCP and reveals that conceptions of the future were a crucial field for the exercise of political power, the development of economic and S&T priorities, and the imagining of new forms of modernization.

Indeed, these historical debates regarding technological development and futurist policies to increase industrial productivity were, fundamentally, debates about how China would modernize—and these new policies were inextricable from the CCP leadership’s overarching project of modernizing China. This article has emphasized the extraordinary fluidity that emerged in conceptions of modernization in the reform era. Modernization was a subject of fascination and obsession to several generations of Chinese leaders, including today’s, and conceptions of modernization transformed dramatically in the post-Mao period. This article has focused on Zhao’s important approach to modernization, which was open-ended rather than rigid or teleological—emphasizing new technologies that would develop in ways that he realized could not yet be completely predicted, including the uncertain effects of technological change on the Chinese economy. This futuristic conception of economic-technological modernization is an important legacy of China’s 1980s.

This article thus suggests that debates about conceptions of modernization in China played out substantially on the terrain of Zhao’s actionable futurism. These debates evolved alongside—and entangled with—the ideology that governed China’s economic system in the period after Mao’s death. Zhao’s response to the New Technological Revolution must be seen as connected to core questions about the organization of the economy and about socialism and capitalism. Recovering and examining this little-known narrative, as this article has done, offers a new vantage point from which to assess the sweeping ideological reassessment that was underway in China during the 1980s. And it is a case that represents how the Chinese leadership reconceptualized their vision of modernization as they reassessed socialism, and vice versa. Rather than a wholesale rejection of socialist modernization or a wholesale embrace of a capitalist modernization, China’s leaders pursued a fluid, hybrid, and at times idiosyncratic path that could serve their country’s interests—what Zhao called “an entirely new route”—as “the victory of socialism over capitalism” ceased to be their exclusive or even primary vision of the future. This path emphasized economic and technological development in an explicitly global context, drawing on ideas and strategies from both sides of the socialist-capitalist divide. Fundamental questions of policy and ideology were shaped by new expectations about China’s future and indeed the global future, which was encapsulated in the idea of

the “New Technological Revolution.” In telling the story of China’s post-Mao transformations, scholars should give greater attention to these interconnected shifts in ideology and conceptions of modernization, even as we also assess the numerous better-known changes in the economy and society.

It is a commonplace observation that the “reform and opening” sought to empower China to catch up with the world after falling behind. This goal of making up for lost time is primarily backward looking, focused on compensating for the errors of the past. Of course, China’s leaders also looked forward as they developed policies, set targets, and continued the practice of developing five-year plans. Yet in contrast to that well-known approach to the future reflected in specific targets and plans, larger-scale, actionable visions of modernization throughout China’s recent history also merit much closer examination—not only focused on Chinese leaders’ political, economic, and social aspirations, but also drawing on their technological, cultural, and environmental visions, to name only a few additional categories. The research has not yet been done to draw sweeping conclusions about whether twentieth-century China or China in the 1980s or China today has been in some sense distinctively oriented to the “future.” But we can see some of this orientation in the legacy of socialist planning, in the practice of setting long-term goals such as the “two centennial goals” of 2021 and 2049—and in the enthusiastic response to Toffler’s ideas discussed in this article.

At moments of great change in the organization of societies, visions of the future—like narratives of the past—often take on increased sensitivity and heightened meaning, and indeed these changes are closely related. In the latter half of the twentieth century, rapid modernization has reshaped societies from Japan and South Korea to Taiwan and India. Such transformations, as in the case of China, can cause—or even require—each society to undertake a fundamental reappraisal of the future and the forms of modernity it might bring, whether explicitly or implicitly. For scholars assessing the past and present of China and Asia more broadly, it will remain a fruitful and illuminating endeavor to examine how our subjects conceived of and understood their futures.

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