



# Engineers rule, OK?

Men in suits: but many of China's rulers once wore overalls or lab coats

China's leaders almost all boast advanced technical educations. That shows in the way they govern, says **Richard P. Suttmeier**



● CONTEMPORARY China is a nation led by technocrats. The current generation of leaders is made up mostly of graduates from some of China's leading universities, typically trained in science and engineering. Until this year's 17th National Congress of the Communist Party of China, which closed on 22 October, every member of the central bastion of power – the Standing Committee of the Politburo – was an engineer by training. President Hu Jintao is a graduate of Beijing's Tsinghua University, often referred to as China's MIT, while the premier, Wen Jiabao, trained as a geologist.

For those in the west, where lawyers dominate the political establishment, China provides an intriguing contrast. How did ►

# ARTWORK ALONG HERE



the country come to be led by a cohort of technocrats? Does their technical mindset define the way they rule? Do they govern as engineers and scientists? And, most importantly, do they govern well?

The current leadership's rise came after a century of frustrated attempts to build modern scientific and technological capabilities in China. The country's weakness in the 19th and early 20th centuries in the face of a technologically superior west called for the development of science and technology as a project of national salvation. Yet the revolution that brought the Communist Party to power was peasant-based, so when the People's Republic was established in 1949 there was a tension between peasant nationalism and aspirations for scientific and technological development.

Many of today's political elite received their higher education – typically in narrow and specialised fields of engineering – in the late 1950s and early 1960s. Their training was intended to produce intellectuals of a new sort – both “red” and “expert” – but by the time they had completed it the political radicalism that culminated in the Cultural Revolution was becoming increasingly hostile to educated professionals and led to the near total disruption of research and education.

The “red experts” comprising today's technocratic leadership suffered this disruption early in their adult lives, and this has instilled in them a fear of political instability. Many were forced to work in the countryside, experiencing first-hand China's poverty and underdevelopment. These experiences, too, helped to shape their world views and approaches to governance – as did the factional alliances that are so important to elite Chinese politics.

## Rise of the technocrats

The current leadership's rise began with the reforms initiated by Deng Xiaoping at the end of the 1970s. Deng's “four modernisations” included agriculture, industry and national defence, as well as science and technology. Scientific and technological development were seen as critical for modernising the other three realms, and efforts to recruit people with technical training into leadership positions began in earnest in the early 1980s.

It should come as no surprise that China's technocratic leaders have invested heavily in science and technology, emphasised education and supported the remarkable infrastructure development of the past two decades. They have thrown their weight

behind massive engineering projects such as the South-North Water Transfer Project, intended to relieve chronic water shortages on the densely populated North China Plain by diverting flow from the Yangtze river.

The technocratic orientation of China's leaders also shows through in their wider approach to policy-making. They are deliberative in their approach to technical and political decisions, and show respect for expert judgements in making policy choices, often inviting academic specialists to hold seminars for them before decisions are made. There is also a strong reliance on quantitative indicators to assess policy outcomes. Contrasting with the respect shown for data and analysis in informing official decisions, however, the government retains tight control over information – as seen during the SARS outbreak four years ago, for instance – and employs increasingly sophisticated techniques to do so. This can be seen as one consequence of the leadership's fear of political instability.

Chinese political leaders are also expected to articulate moral visions. For the current leadership, this includes the notion of employing a concept of “scientific development” to build a “harmonious society” – an attempt to marry traditional



**Thinking big: China's leaders have backed huge civil engineering projects**

**“The evidence is mounting that China can no longer afford a simple technocratic approach imposed from the top down”**

values of Confucian orderliness with modern professional approaches to good governance. It seeks to address a variety of negative consequences of China's “unbalanced” economic growth – including widespread corruption, increasingly serious inequalities, wasteful materials and energy use, a rapidly degrading environment and a regulatory framework that is too weak to prevent industrial and product safety violations.

While many of these challenges have strong technical components, they are not strictly speaking technical problems. Unlike the promotion of technological and economic development that the leadership has been concerned with over the past decade, achieving a “harmonious society” requires solutions that may be at odds with a technocratic world view. For instance, in areas of product safety, China clearly needs to strengthen its science base. Yet building regulatory agencies with integrity and authority involves an appreciation of the subtleties of institutional design – not necessarily the stock-in-trade of narrowly trained engineers.

Has the post-Mao tradition of technocratic leadership been good for China? In many ways it has, but even among Chinese scientists there are those who argue that things were

better before it became so well established. In the past, when senior officials responsible for science and technology were not themselves trained as scientists or engineers, they nevertheless recognised the value scientists placed on maintaining a degree of professional autonomy and respected the importance of scientific integrity. Now some contend that Chinese science has become caught up in a web of bureaucratic politics and short-term commercial gains that has weakened prospects for genuinely creative achievement and opened the door to serious scientific misconduct.

At this year's party congress, candidates for top positions included people trained in social science and humanities, in addition to the usual cast of engineers. Among those elevated to the Politburo's standing committee were Shanghai party secretary Xi Jinping and Li Keqiang, party boss in Liaoning province – both of whom trained in social sciences. These newcomers may be more accustomed to viewing societal problems as involving open, complex systems in which subtle political adjustment and institution-building are more appropriate than technological fixes.

The vision of a strong and prosperous China built on scientific and technological capabilities is sure to be shared by the next generation of China's leaders, but they are unlikely to be cut from quite the same technocratic cloth as the current leadership. For much of the history of the People's Republic, China's best and brightest sought to serve the nation through science and engineering. The China of the 21st century is far more complicated, and routes to national service have become more diverse. Long-neglected fields of social science and humanities have acquired new stature in Chinese universities and now attract a share of the students who will become China's future leaders.

The current leadership has been remarkably successful in mobilising resources for economic growth, but it has failed to devise institutions for managing the social costs of this development. The evidence is mounting that China can no longer afford a simple technocratic approach imposed from the top down. It needs a more inclusive politics. ●

**Richard P. Suttmeier is a professor of political science at the University of Oregon, Eugene**