

From *kang* (炕) to *kongtiao* (空调): China's Twentieth Century Cooling

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Abstract

This essay suggests an alternative strategy for thinking about changes in Chinese society in recent decades, using not economic data or theories of development, but the metaphor of temperature. It argues that the cultural imperative in China has, in recent decades, switched from that of keeping warm to that of keeping cool. This change is made tangible through two key objects: the *kang* (炕), the northern Chinese heated bed, and the *kongtiao* (空调), the air conditioner. The antiquity of the *kang* is explored as an object that is key to the development of Chinese civilization in the inhospitable northern climes. Moving between physical and metaphorical ideas of heat, the essay argues that throughout much of the twentieth-century, heating remained the main focus. Twentieth-century revolutions and mass campaigns under Mao Zedong were undeniably 'hot,' aiming to stoke the fire of revolution and radical social change. Under the reforms following Mao's death, however, politics 'cooled off': the political system crystalized and the frenzy of mass campaigns cooled down. This was accompanied by social changes, including what can be called the rise of individual cool, defined by ironic detachment, hedonism and narcissism. The new cool society and cool persona find their architectural accompaniment in the *kongtiao*, the air conditioner, which has become a must for urban living, even in north China. The *kongtiao* is presented as an ultimately unsocial device, a machine with intensive energy requirements that dumps heat into communal spaces in the effort to preserve individual comfort.

Keywords

kang – *kongtiao* – air conditioner – domestic architecture – Mao Zedong – modern China – political change – social change – climate – heating – cooling

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China, it would appear, is heating up. Indeed, the history of twentieth century China can be seen as one in which the thermometer was gradually rising. China has experienced the heat of revolutions, the fervor of mass campaigns, and more recently, the explosion of the free market economy, the rapid expansion of cities, and the fast-paced lifestyles they encourage. Modern Chinese society seems to embody heat, both literally and metaphorically. Not only has the economic focus shifted in the post-socialist period to the country's subtropical South, its economy has moved from agrarian to industrial in nature, and its population has shifted from countryside to city.

China has perhaps always been 'hot' in the Western mindset, both literally, due to the fact that foreigners were long restricted to southern ports, and figuratively, through the classic Orientalist worldview that saw the tropics as places of lust and degeneracy. Montesquieu saw Confucian ethics as condoning lying and deception, while Max Weber identified China's problem in its lack of 'cool' rationality.¹

But the interpretation of China as 'hot' seems to have modern purchase as well. Numerous commentators have seen the word *chai* (拆, demolish) as the archetypal character of modern Chinese life, due to its omnipresence on condemned old buildings.² *Chai* speaks to the disintegration of both traditional physical infrastructure and ideological and moral anchoring points.³ It seems the ever-increasing speed of modern life has seen the temperature of society rise so high that the bonds that typically hold a community together have dissolved. As Marx and Engels said 'All that is solid melts into air.'⁴

Society, released from the restrictions of socialist loyalties, has become more diverse, perhaps more chaotic, certainly more individualistic. The economy's energy use has leapt to such heights that China is now the world's biggest user, and power shortages have become a fact of life since the early 2000s, despite surpluses in the 1990s.⁵ Contemporary China can therefore be read as 'hot'.

But it is perhaps more interesting to view it from the opposite direction: to see modern Chinese life as one in which strategies for cooling are of paramount

1 David Martin Jones, *The Image of China in Western Social and Political Thought* (Basingstoke: Palgrave, 2001), 30, 119-121.

2 Jason McGrath, *Postsocialist Modernity: Chinese Cinema, Literature, and Criticism in the Market Age* (Stanford: Stanford University Press, 2008), 21; Michael Dutton et al., *Beijing Time* (Cambridge MA: Harvard University Press, 2008), 10.

3 McGrath, *Postsocialist Modernity*, 21.

4 Karl Marx and Friedrich Engels, *Manifesto of the Communist Party* (New York: Comiso Classics, 2009), 45.

5 Elspeth Thomson, 'Power Shortages in China: Why?' *China: An International Journal*, Vol. 3, No. 1 (2005): 155.

importance, and are in many ways what define it. This essay will argue that the cultural imperative in China has in recent decades switched from keeping warm, to keeping cool. This concept can be visualized through domestic heat arrangements: from a society based around the *kang* (炕), the northern Chinese heated bed, to the *kongtiao* (空调), the air conditioner.

Writing about the transitions Chinese society has undergone in recent decades and centuries is always difficult. Modernity is a deeply contested territory in Chinese studies, with different dates chosen and movements selected as its starting point. Some scholars have instead questioned the validity of the term, suggesting it is little more than the extrapolation of the specifics of Western development—industrialization, civil society, the rise of the nation state—applied to the rest of the world.⁶ New perspectives are, however, arising, which try to take a global perspective on modernity.

Wang Hui calls for a study of Chinese modernity that incorporates ‘interculturality’: one that finds both the typically ascribed passivity, but also elements of autonomy in China’s interaction with the outside world.⁷ Similarly, Jason McGrath sees Chinese post-socialist modernity as an integral part of global modernity.⁸ Perhaps rather than looking at economic statistics and membership in international bodies, a radically different approach is needed. Perhaps temperature can provide an alternate model of modernity: it is the strategies of cooling that provide the true insight into modern life. If heat (epitomized in urban life, industrialization and so on) is seen as an aspect of modern life, the call to keep cool can be seen as a defining reaction against it. A model for modernity based on temperature could perhaps provide the ‘interculturality’ that Wang Hui calls for. It need not ascribe superiority to any society (a temporal element—who started cooling first—seems unhelpful), but instead could look at independent and borrowed strategies of cooling. It could try to trace some of the ways the heating up and the attempts to cool down in response have manifested. This essay will use the topic of domestic architecture in order to look at strategies for heating and cooling and will argue that the move from the *kang* to the *kongtiao* speaks to more than just climatic changes, but rather characterizes something of the experience that China has undergone in recent decades and centuries.

6 Jones, *The Image of China*, 7; Theodore Hutters, ‘Introduction’ in *The Politics of Imagining Asia*, ed. Theodore Hutters (Cambridge MA & London: Harvard University Press, 2011), 4.

7 Wang Hui, ‘Weber and the Question of Chinese Modernity’ in *The Politics of Imagining Asia*, ed. Theodore Hutters, trans. Theodore Hutters (Cambridge MA & London: Harvard University Press, 2011), 306.

8 McGrath, *Postsocialist Modernity*, 14.

'Keep Me Warm': the *kang* (炕)

Strategies for heating and cooling have always been imperative to the development of society. Lisa Heschong speaks of the 'civilizing force of the warmth of the fire',⁹ and it seems this quotation is particularly true in China, where it can be speculated that without the development of the *kang*, the rise of civilization in northern China would have been nearly impossible. While the climate of China has, no doubt, changed over time, the inhospitable nature of the north is undeniable, with extreme cold in the winter and harsh winds coming off the steppes. Homes in north China—regardless of the ethnicity of inhabitant—share far more similarities than those in the South; the climate reduces, it would seem, the room for innovation and individuality.¹⁰

The most basic dwelling is the cave house (*yaodong*, 窑洞, kiln cave or heated cave), which has been used in the Loess Plateau of Northern China for at least 4000 years.¹¹ The simplest above ground structures are rectangular buildings, with the door and windows on the south-facing wall, to take in the sun's heat, with the rest of the walls solid, to block out the wind.¹² These eventually developed into courtyard structures (*siheyuan*, 四合院), considered to be the most complete form of dwelling, as they provide structure for the whole of family life and can be adapted to local climatic realities.¹³

While these adaptations and uses of the local environment are ingenious, it seems that life in the north could not have functioned without the *kang*, a feature all three dwelling structures share. Heat from the cooking stove is carried through a series of pipes that run underneath a brick or adobe bed, which is called the *kang*.¹⁴ The heat produced from cooking is therefore harnessed to heat this bed, which becomes the central point of most northern houses.¹⁵ There are a number of variations of the *kang*, including running the flues through walls (*kangqiang*, 炕墙) or under the whole floor (*dikang*, 地炕), but the general principle remains the same. In all, the *kang* is a gathering point,

9 Lisa Heschong, *Thermal Delights in Architecture* (Cambridge MA & London: MIT Press, 1979), 12.

10 Ronald Knapp, *China's Old Dwellings* (Honolulu: University of Hawai'i Press, 2000), 224.

11 Jiang Lan, *Disappearing Architecture of China*, trans. Chen Fuming (Singapore: Marshall Cavendish Editions, 2009), 68.

12 Knapp, *China's Old Dwellings*, 167.

13 Deqi Shan, *Chinese Vernacular Dwelling*, trans. Wang Dehua (Beijing: China Intercontinental Press, 2003), 6.

14 Qinghua Guo, 'The Chinese Domestic Architectural Heating System [kang]: Origins, Applications and Techniques', *Architectural History*, 45 (2000), 32.

15 Xuefu Wu, *Chinese House*, trans. Jun Liu (Beijing: China Intercontinental Press, 2009), 42.

the centre of home and even community life. It was the place where guests would be welcomed, where groups of women would work, and the place where together, a family could survive the cold.

The word *kang* has great antiquity. A Chinese dictionary from 121AD defines it as 'to dry'. This suggests that the word was used by the second century AD, but Guo Qinghua argues that this source indicates a far earlier origin. The dictionary summarized words used during the Xia, Shang, and Zhou dynasties. Given that the Eastern Zhou Dynasty ended in 771BCE, Guo suggests that we can trace the term back at least this far.¹⁶ The practice of capturing heat started far earlier. Neolithic building remains in Shenyang, northern China, believed to be from the Xinle culture (c. 5300-4800BCE) and those from a Banpo site (c. 5000-4800BCE) both have 'baked' floors.¹⁷ It appears the floor was heated by fire before being slept on, a process called *zhidi* (炙地 roasted earth), which is possibly a precursor to the *kang* itself. Some insight into the *zhidi* process is provided by Tang poet Meng Jiao (751-814), who said 'No fuel to heat the floor to sleep, standing and crying in cold at midnight'.¹⁸

Practices for capturing heat, therefore started very early in China, and archaeological remains indicate the presence of structures we would now recognise as similar to the *kang* can be seen from the first century. Far earlier than this, remains from the mid-Neolithic Yangshao culture show that people lived in a cave-like *yaodong's* with open hearths and fireplaces.¹⁹ Strategies for heating were therefore of crucial importance in establishing civilization in the Yellow River region, and over time it came to take the form of the *kang*. The *kang* continued to be used throughout the imperial period and much of the twentieth century. It can be seen, for example, in Mao-era posters, where it is often depicted in interior scenes of rural life (see Image 1).

There is no equivalent to this in southern China, even though it also has an extreme climate in parts, with high temperatures, oppressive humidity and abundant rainfall. This prompted numerous architectural innovations, including raised floors, numerous small doors and windows to allow ventilation, and wide, steeply sloped roofs to encourage the rain to run off and to block the sun.²⁰ While it would be foolish to suggest that southern strategies to, for example, decrease exterior surface area would provide a cooling strategy comparable to a modern air conditioner, the point is that architectural innovations

16 Guo, 'The Chinese Domestic Architectural Heating System', 35.

17 Ibid., 36.

18 Ibid.

19 Guo p. 37.

20 Shan, *Vernacular Dwellings*, 8; Knapp, *Old Dwellings*, 227, 230.



IMAGE 1 This image from a 1975 poster shows a group of women perched on a kang, trying on shoes. Source: H8o The University of Westminster China Poster Collection.

alone were enough to allow society to flourish in the south in a way that would have been impossible in the north without the *kang*.

The *kang* is therefore both a physical device in domestic architecture, and a symbol of Chinese civilization. It symbolizes the communal, family-based nature of Chinese society, the interpersonal relationships established by the Confucian system, and the economic and social ties based on co-dependence and trust. Given that Chinese society has long been assumed to have originated in the north, the *kang* seems an appropriate symbol to substantiate Michel Serres's idea that culture and communication can be summed up in the injunction, 'keep me warm'.²¹ It now seems that this has changed over the

21 Michel Serres, *Hermès IV: La distribution* (Paris: Editions de Minuit, 1977), 264 n. 1.

course of the twentieth century such that the cultural imperative is no longer to heat, but rather to cool.

Hot Politics: Mao's Rage Bank

This change can be posited on both the political and individual level, hinged on the widespread changes that occurred after the death of Mao Zedong in 1976. It can be argued that in the preceding years of the twentieth century, the metaphor of heat was still appropriate; indeed China's short century of revolution, lasting from 1911 until 1976 can be seen as a 'hot' period. The reforms reacting against this perpetual heating up, however, have been defined by the opposite: strategies of cooling.

It seems everything about the period 1911-1976 was 'hot'. Revolutions took place in 1911 and 1949 and much of the inter-revolutionary period was defined by war and struggle. The mass campaigns of the Maoist years emphasized fervor, collectivity and loyalty. While it is beyond the scope of this essay to comprehensively analyze this period, it can be posited theoretically that China's socialist period can be seen through the metaphor of heat.

Revolutions are always 'hot' affairs. Collective resentments explode in an orgy of violence, well-ordered paths of power are thrown into chaos, and zealous idealists foresee the overturning of power: in thermodynamic terms, great energy is released and heat dissipated in the revolutionary event. In analyzing the role of rage throughout Western history, Peter Sloterdijk suggests that revolution is a process of teaching the masses to externalise rage, rather than internalize it as the Church would have them do.²² Once externalized, it could be collected and deposited in 'rage banks', which allowed individual rage deposits to combine and be directed towards the creation of a new society.²³ In reference to China, Sloterdijk argues that rage management was even more significant than in other revolutionary moments. Missing 'revolutionary energies', China had to draw on the 'collective fury' of radicalized individuals, which could be spread to others through guerrilla tactics.²⁴ This suggests that Mao's revolution was even 'hotter' than its equivalent in Russia. 'Fury' suggests an almost uncontrollable rage, a situation of 'absolute stress',²⁵ a concentration

22 Peter Sloterdijk, *Rage and Time: A Psychopolitical Investigation*, trans. Mario Wenning (New York: Columbia University Press, 2006), 126.

23 *Ibid.*, 137.

24 *Ibid.*, 168-9.

25 *Ibid.*, 169.

of heat and intensity far beyond 'revolutionary energies'. Sloterdijk argues Mao carried out a 'deliberate psychotization' of the entire country, thinking he would have infinite credit in his rage bank if he could amalgamate rage, despair and revolutionary pride.²⁶ In a sense, Sloterdijk is suggesting Mao thought if he could get the fire stoked just right, it would power itself for eternity.

Thermodynamics, however, does not work like that; laws of entropy suggest that thermal energy always flows from regions of higher to lower temperatures, and in doing so, move from a state of order to disorder. Mao's thermopolitics can be understood in a number of ways. Firstly, it can be seen as a fight against entropy. Seen this way, rather than creating a society of psychotics as Sloterdijk suggests, perhaps Mao's true vision was for a well-ordered, socialist society. Due to entropy, however, new energy had to be continuously invested to prevent the inevitable decline to disorder (or for Mao, traditional or bourgeois values). Alternatively, constant revolution can be seen as an attempt to overcome the principles of latent heat, which say that large amounts of energy must be invested in order to effect a change of state. Perhaps the series of mass campaigns that ran throughout the 1950s and 1960s, most famously, but by no means only, the Great Leap Forward and the Cultural Revolution, were Maoist efforts to withdraw thymotic capital from the rage bank, and to invest them in ever 'hotter' cycles of revolution in order to bring society to the boiling point that is necessary for a truly new society to be constructed.

Hannah Arendt sees movement as one of the key features of totalitarianism, an extended project of total domination marked by constantly shifting networks of power.²⁷ While the application of Arendt's definition of totalitarianism (based on an analysis of Nazi Germany and the Soviet Union under Stalin) to China is not unproblematic, it is worth highlighting that this fluidity, this movement, at the heart of totalitarian power seems to be a perpetual feature of 'hot' politics in general. The concept of constant revolution is precisely aimed at preventing the ossification or solidification of the political system. Perhaps by keeping the metaphorical heat up, Maoist politics enable fluidity to be maintained in Chinese politics and society, keeping alive the possibility of revolutionary change, which seems to disappear once the temperature starts to cool down.

²⁶ Ibid., 172.

²⁷ Hannah Arendt, *On Violence* (San Diego & New York: Harcourt Brace & Company, 1970), 56; Mark Bittman, 'Totalitarianism: the career of a concept' in *Hannah Arendt: Thinking, Judging, Freedom*, eds. Gisela T. Kaplan & Clive S. Kessler (Sydney: Allen & Unwin, 1989), 62.

If totalitarian politics can be defined by its heat, authoritarian politics is absolute cold. Its ability to control knowledge production means it can control—or restrict—the terms of debate. This is precisely what happened after Mao's death. The debate on the Cultural Revolution and Mao's legacy were established very quickly. By 1981 at the sixth plenary session of the Eleventh Central Committee of the Communist Party, the Cultural Revolution was repudiated and Mao was deemed to have erred.²⁸ Little deeper discussion has taken place in official spheres; it is as if the era, once its historical narrative and meaning was established, could be frozen and left in the past.

Chinese political theorist Wang Hui argues that the Party had to stereotype the Cultural Revolution as a totality, in order to build its legitimacy on an opposing totality. The Cultural Revolution's command economy and anarchic politics were established as a disaster to be counteracted with the reform era's neo-liberal economics and authoritarian politics.²⁹ In thermopolitical terms, the Cultural Revolution's 'hot' politics and 'cold' economics were inverted, and replaced by 'cold' politics and 'hot' economics.

Cold, authoritarian politics is a politics that is finite, knowable, in a way that hot, totalitarian politics never is.³⁰ Indeed, Deng Xiaoping's reforms intended to 'cool off' or stabilize the political system under the CCP, to end the constant flux of the Mao era. While he opened the economy to the market in order to build a new legitimacy for the party based on wealth creation, the political system was crystalized. Like a glacier, political reform in China creeps forward

28 Communist Party of China, 'Resolution on Certain Questions in the History of the People's Republic', Eleventh Central Committee of Communist Party of China, (27/06/1981), Online: <<http://www.people.com.cn/GB/shizheng/252/5089/5103/20010428/454968.html>> (accessed 26/11/2013).

29 Chris Berry, 'CinemaTalk: Chris Berry on Cultural Revolution Cinema', Dgenerate Films (24/08/2011), Online: <<http://dgeneratefilms.com/cinematalk/cinematalk-chris-berry-on-cultural-revolution-cinema/>> (26/11/2013).

30 While outside the scope of this essay, it could be interesting to look at the increasingly common use of self-immolation as a defiance tactic in China. Over 100 people have set themselves on fire to protest Beijing's rule in Tibet since 2009, and over 50 have self-immolated for other reasons, such as the destruction of their homes for development reasons or other local grievances. Why is the use of heat deemed to be such a potent weapon of protest against the CCP? Frank Langfitt, 'Desperate Chinese Villagers Turn to Self-Immolation', *NPR*, (23/10/2013), Online: <<http://www.npr.org/blogs/parallels/2013/10/23/239270737/desperate-chinese-villagers-turn-to-self-immolation>> (accessed 26/11/2013), Jeffrey Barcholet, 'Aflame: Letter from Dharamsala' *The New Yorker*, (08/07/2013), Online: <http://www.newyorker.com/reporting/2013/07/08/130708fa_fact_barcholet> (accessed 26/11/2013).

and retreats based on the surrounding environment, but unlike the economy, which changed rapidly, the cool temperature of politics prevented any fast movement.

Contemporary Cool: The Rise of the *kongtiao* (空调)

Contemporary politics is defined by the imperative of cooling, the attempt to ‘cool off’ after the heated mass campaigns of the Mao era. This cooling off had implications for the relationship between individuals and their society. While politics and society were intricately linked throughout the Maoist period, the reform era witnessed an attempt to wean people off politics or at least revolutionary politics. Rather than ideology, Deng Xiaoping encouraged people to ‘seek truth from facts’,³¹ and instead of mass political campaigns, Deng’s ‘Four Modernizations’ focused on modernization of the economy. People were encouraged to focus their energies on business, and a political apathy was seemingly encouraged; indeed, class struggle was declared over.³² The heat which had been stoked throughout the Communist period was finally allowed to subside.

The rise of individual cool is also a defining period of post-Mao China. Jason McGrath argues that post-socialist China is characterized by a transformation from social and cultural heteronomy to a highly individualized autonomy.³³ He notes the rise of domestic and individual pleasures and sees anomie, hedonism and nihilism in much of contemporary Chinese culture.³⁴ These features mirror the traits that Dick Pountain and David Robins see as comprising a cool personality or cool attitude in modern Western society. They identify a triad of ironic detachment, hedonism, and narcissism as the defining features of the attitude.³⁵

The economic boom has led to mass migration to cities across China. It has been estimated that 150 million people have already migrated, and another

31 Paul Bailey, *China in the Twentieth Century*, 2nd ed. (Oxford: Blackwell Publishers, 2001), 201.

32 Ibid.

33 McGrath, *Postsocialist Modernity*, 22.

34 Ibid., 23.

35 Dick Pountain and David Robins, *Cool Rules: Anatomy of an Attitude*, (London: Reaktion Books, 2000), 26.

300 million are expected to do so in the next 20 or 30 years.³⁶ Many of these people will have moved illegally due to the complicated *hukou* (户口) housing registration system, which is designed to prevent such movement by denying citizens access to education, healthcare, housing and other welfare benefits outside of their registered village or city. This lack of access to welfare resources is a crucial factor in preventing migrants from establishing true community bonds in the cities, and recent surveys have found that at least a third of migrants plan to eventually return to their home village.³⁷ Brutal working conditions, job insecurity, distance from traditional family bonds, and an inability to access what remains of China's social welfare system has resulted in the creation of a huge group of young people with little attachment to the society around them.

This development can be explained theoretically. As the market expanded throughout the 1980s and 1990s, it fundamentally changed society's relationship with politics and the economy. The market drives differentiation or disaggregation of society, as different spheres of relations are carved out.³⁸ 'Impersonal' relations become possible due to the abstraction of exchange, and economic relations come to dominate social relations.³⁹ This expansion of market relations into every sector of social life dissolved the system of social guarantees previously provided by the state, and in the pre-modern period, by the family or community.⁴⁰ The result is the rise of China's often talked about new individualism.

This individualism is not necessarily negative. While income inequality has skyrocketed in China, a large number of people are now enjoying more comfortable living standards. Just as some former Red Guards recall the Cultural Revolution fondly because of the freedom it gave them, so too many see China's economic boom as an opportunity to escape the restricting confines of socialist society and village life and develop a new persona in the city. Pountain and Robins see in the 'cool attitude' precisely this attempt to displace traditional family ties through the creation of space for self-invention.⁴¹ The rise

36 The Economist, 'Invisible and Heavy Shackles', *The Economist*, (06/05/2010), Online: <<http://www.economist.com/node/16058750>> (accessed 26/11/2013).

37 Ibid.

38 McGrath, *Postsocialist Modernity*, 8.

39 Ibid.

40 Wang Hui, 'The 1989 Social Movement and the Historical Roots of China's Neoliberalism' in *China's New Order: Society, Politics, and Economy in Transition*, ed. Theodore Hutters, trans. Theodore Hutters, (Cambridge MA & London: Harvard University Press, 2003), 118.

41 Pountains and Robins, *Cool Rules*, 23.

of fashion, pop music, and contemporary art can all attest to the creative powers of the cities, spurred on by new wealth and a lack of fear of showing it. In a rejection of the moral attitudes of the Mao years, which denounced individualism and luxury as corrupt, bourgeois, Western values, the desire for personal comfort has become a crucial part of life for those city dwellers that have become the upper and middle classes. While Chinese citizens are, of course, not as politically apathetic as their government might like (as the thousands of protests every year demonstrate), there does seem, for many young people in China, more interest in pursuing 'freedom' through economic means than democratic ones. This is symbolized through the rise of the *kongtiao* (空调), the air conditioner.

According to Joseph Needham, crude forms of air conditioning have been around in China since the second century AD. During the Han Dynasty, a manually-powered rotary fan was invented. Needham quotes the source, *Miscellaneous Records of the Western Capital*, as saying 'The whole hall became so cool that people would even begin to shiver.'⁴² Needham also reports that during the reign of Tang Emperor Xuanzong (r. 712-761), a Cool Hall (*Liangdian* 凉殿) was built in the imperial palace that had water-powered fan wheels.⁴³ While there are numerous references to similar air-conditioning devices during the Song Dynasty (960-1279), references seem to diminish after that, and the history of modern air conditioning in China does not seem to have received much academic attention. Their commercial popularity only began in the 1990s, and they have quickly become an important feature of modern urban life. In urban households, the growth in air conditioner ownership has surged, from 2.3% in 1993 to 61% in 2003,⁴⁴ and numbers from the Chinese National Bureau of Statistics state that in 2011, Chinese consumers bought approximately 110 air conditioners per 100 urban households.⁴⁵

As people crowd into the cities and huge skyscrapers are erected, having an air conditioning unit sticking out of your window seems to be a sort of status

42 Joseph Needham, *Science and Civilisation in China, Volume 4: Physics and Physical Technology, Part 2, Mechanical Engineering* (Cambridge, UK: Cambridge University Press, 1965), 151.

43 *Ibid.*, 151, 404.

44 Michael A. McNeil and Virginie E. Letschert, 'Future Air Conditioning Energy Consumption in Developing Countries and what can be done about it: The Potential of Efficiency in the Residential Sector, Lawrence Berkeley National Laboratory, (2008), Accessed 26 Nov 2013: escholarship.org/uc/item/64f9r6wr.

45 Richard Dahl, 'Cooling Concepts: Alternatives to Air Conditioning for a Warm World', *Environmental Health Perspectives* Vol. 121, No. 1 (2013): 21.

symbol.⁴⁶ It suggests you value your own comfort and you can afford the extra energy costs. It is a declaration of the triumph of the individual, as individual air conditioning units are an ultimately selfish device: heat is extracted from the room, and deposited into the outside air, making the shared exterior environment even more oppressive and therefore less appropriate for communal existence.⁴⁷ This produces a phenomenon called ‘heat canyons’, where each building or unit’s attempt to keep the inside cool creates waves of heat in the space between them, thereby necessitating the need for further cooling.⁴⁸

They are, therefore, the opposite of the *kang*, which gathered people together, instead of sending people scurrying from the shared space into their individual flats. If they provide sites for people to gather together, it is in locations like shopping malls, the ultimate ‘cool’ sites, both in terms of physical temperature, and in terms of being the location where generation of teenagers—in China as in the West—go to construct their new ‘cool’ identity.

As cities get bigger, more industrial and more polluted, it seems the climate itself can become modified, turning all of China into the tropics. In the summer, 32 percent of Beijing’s electricity use goes to air conditioning, while in Jiangsu, that number is closer to 40 percent.⁴⁹ Just as politicians struggle to ‘cool down’ politics and control an ‘overheating’ economy, so individuals dedicate themselves to individual cool: the *kongtiao*, it would appear, has become the cultural imperative for life in modern China.

That the air conditioner reigns supreme in Beijing as well as the more traditionally hot areas of China speaks to changes both architecturally and climatically. Homes, as we have explored, used to be designed in order to be as responsive to the natural environment as possible. This resulted in specific climatic variations in domestic architecture, such as roof shape and window placement. With the rapid growth of Chinese cities, and with it the requirement to house the millions of new urban inhabitants, huge blocks of flats have sprung up in cities across the Eastern seaboard, sharing an unerring architectural similarity. Whereas previously, architecture was determined climatically,

46 Ibid.

47 Peter Lehner, ‘In China, Air Conditioning Is Efficient Because of How It’s Used, Not Just How It’s Built’, *Switchboard Blog*, (17/10/2010), Online: <http://switchboard.nrdc.org/blogs/plehner/in_china_air_conditioning_is_e.html> (accessed 26/11/2013).

48 The Economist, ‘No sweat: Artificial cooling makes hot places bearable—but at a worryingly high cost’, *The Economist*, (05/01/2013) Online: <<http://www.economist.com/news/international/21569017-artificial-cooling-makes-hot-places-bearablebut-worryingly-high-cost-no-sweat>> (accessed 26/11/2013).

49 Ibid.



IMAGE 2 *This Mao-era poster is called 'Man must conquer Nature' (人定胜天), based on the slogan printed on the building, bottom left. Source: A4, undated, The University of Westminster China Poster Collection.*

now it is based on economic imperatives: the requirement to house, as cheaply as possible, the labour force necessary for China's growth. Rather than being responsive to nature as Chinese architectural tradition has been, these new architectural forms require advanced, energy-intensive technology to deal with the problems of heating and cooling. It seems in this way to represent another element of modernity, and one particularly pertinent to the Chinese example, which is the change in man's relationship with the environment. Whereas man was previously victim to the whims of the natural world, modern science has produced the myth that we can control it. During the Mao era, the slogan 'Man must conquer nature' (人定胜天) reflected the idea that just as the Chinese people would no longer be subject to the will of the elites, so too would they take control of the whims of nature (see Image 2). The environmental consequences of these actions, and the post-Maoist economic boom that put short-term profit motives ahead of environmental sustainability, are well documented.⁵⁰ They have resulted in the disconnect that our analysis of contemporary housing has highlighted. The heat of cities requires people to retreat to individual oases of cool in their individual apartments. This, however, both adds heat to the external environment, and requires huge energy consumption, thereby contributing to the climate change that will likely make the tower blocks even less appropriate for living in the future. Heat begets heat, which will necessitate further strategies for cooling.

The metaphor for cooling can, of course, only be taken so far. During the 1980s and 1990s, a number of reforms to both politics and the economy were instituted, and they cannot all be captured as strategies for cooling. If Wang Hui is correct, and coercive state intervention was necessary for the expansion of market relations,⁵¹ it seems hard to overlook the violence at the heart of the economy. Furthermore, while the government may have instituted strategies for individual cooling, when individuals do not adopt the detached position expected of them, when they protest or agitate, the state is quick to use its continued monopoly of violence against them. Chinese social, economic, and political interactions still have deep elements of friction within them, which

50 Jianguo Liu and Jared Diamond, 'Revolutionizing China's environmental protection,' *Science*, 319, no. 5859 (2008): 37; Scott Rozelle, Jikun Huang, Linxiu Zhang, 'Poverty, population and environmental degradation,' *Food Policy*, Vol. 22, Issue 3, (1997); Paul Harris, 'Environmental Perspectives and Behavior in China,' *Environment and Behavior*, Vol. 38, No. 1 (2006); Judith Shapiro, *Mao's War Against Nature: Politics and the Environment in Revolutionary China*, (Cambridge: Cambridge University Press, 2001).

51 Wang, 'The 1989 Social Movement', 117, 119.

should not be forgotten in the celebration of the rise of the individual consumer and individual cool.

This essay started from the assumption that existing paradigms for understanding modernity and China's place within it are insufficient. It has argued that analyzing changes in Chinese society through both metaphors of heating and cooling and physical domestic infrastructural adaptations for heating and cooling provides an angle through which to open up some of these changes. It has argued that Chinese society has moved, throughout the course of the twentieth century from the imperative to "keep me warm," whether physically, as embodied by the *kang*, or politically, in Mao's 'heating up' mass campaigns, to now a position where the dominant culture imperative is to keep cool. The government tries to freeze the political structure and cool down an over-heated economy, and encourages individuals to remove frenzy, excitement, and heat from their everyday life, producing the cool generation, embodied by the now prevalent *kongtiao*.

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