Sinofuturism and Wave Ontology

Sinofuturism indicates the convergence between a rising China and the acceleration of the technological realm. In the 20th century, the term conjured a cyberpunk aesthetic: a dense urban landscape filled with street food stands and hacked high tech. In the 21st century, the connotation has shifted, as both the power of China and the immersive ubiquity of technology intensifies. Sinofuturism, now recalling the darkest side of the Futurists, has come to elicit a science fiction dystopia bound to the horrific fantasy of inescapable techno-authoritarian rule. Today, anxiety about China and the latest technology are indistinguishable. The yellow peril has evolved into an army of robotic drones. Sinophobia and technophobia have become one and the same. That which was once feared as an underdeveloped barbarian horde, breaks with the predictable, progressive advance of chronological history, haunting the future as a nightmare that must be opposed.

In his 2016 video essay, entitled *Sinofuturism,*[1] simulation artist Lawrence Lek's strategy is to embrace the cultural stereotypes that see China as a nameless, faceless swarm. Rather than resist the conflation**,** which views China as a machinic society, his speculative, hyperstitional[2] essay focuses on the computational-like characteristics of Chinese culture such as copying, gaming and the tireless capacity for work. Within this embrace, however, there is a surreptitious temporal disturbance. Lek defines Sinofuturism as a 'science fiction that already exists.' It functions, says the video's narrator, as 'a retrospective manifesto' for a future AI. With this temporal folding, Lek scrambles the timeline. Sinofuturism is here aligned with one of cyberpunk's most critical tropes, the idea that the present is determined by a force from the future that returns and reactivates the past. The straight line of time, with its clear separation between regressive backwardness and progressive advance is unsettled by the relentless, non-linear logic of a machine-like reproduction.

[1] Lawrence, Lek. *Sinofuturism (1839—2046 AD).* 2016.
[2] For more on hyperstition see: *Ccru Writings* 1997-2003.

My own project, also conceives of Sinofuturism as invoking an alternative model of time. It does so by exploring deep interconnections between Chinese thought and the imperceptible waves of wireless media. Electromagnetic waves now constitute an immersive environment, the ephemeral elements that form the abstract infrastructure of daily life. Nowhere is this more so than in urban China, where a hyperdense network of mobile devices have completely transformed everyday existence. Cell phones are used to access the largest e-commerce platforms in the world. QR codes are ubiquitous and form the semiotic of a vast sharing economy that includes bikes, umbrellas and cell phone chargers. Mobile payment platforms, built by tech giants Alibaba and Tencent, have become so successful that cash has almost completely disappeared. During the coronavirus pandemic, mammoth Internet platforms joined with government services to create a 'sensing layer' of QR codes and cell phone signals,[3] which have been used as an epidemiological tool in the astonishing management of the disease throughout China's megacities.

All techno-culture, as the philosopher Yuk Hui has written, is ultimately rooted in cosmology[4] and thus involves a particular model of time. The familiar idea that a technological trajectory follows a linear advance, for example, is bound to the eschatological temporality encoded in the Abrahamic traditions. Cosmotechnics, however, are inherently multiple. To Yuk Hui, as Luciana Parisi and Ezekiel Dixon-Román write, 'technodiversity does not describe how different technocultures follow the same techno-epistemology. Instead, it must account for a multiplicity of "cosmotechnics that differ from each other in terms of values, epistemologies, and forms of existence."'[5] Current machinic platforms appear subsumed in hierarchical tradition of capture and control, which are determined by a time implied by predictability and plans. My work, however, discovers an altogether different Chinese 'cosmotechnics,[6] which is intimately connected to our electro-magnetic atmosphere and is based on a cosmo-ontology

[3] For an interesting theorization see Bratton, "18 Lessons of Quarantine Urbanism."
[4] Hui, *Cosmotechnics*
[5] Parisi, Luciana, and Ezekiel Dixon-Román. "Recursive colonialism and cosmo-computation."
[6] Hui, *Cosmotechnics*

of the wave.[7]

The figure of the wave manifests historically as the cyclic rhythms of techno-modernity. The idea that a wave-like temporality governs the evolution of techno-capitalism was first proposed by the Russian economist Nikolai Kondratiev.[8] It was then later adopted by economic theorists like Joseph Schumpeter[9] and Carlota Perez[10] who study the periodic cycles of capitalist time. Kondratiev contended that capitalism undulates through periods of expansion and contraction. He noticed that these periodic fluctuations follow a recognizable pattern marked by cycles of fifty-years. [11] Kondratiev waves or K-waves, as they are now called, govern the invention and distribution of technologies, the shifting geography of innovation, and the political wax and wane of industrial nations. According to the cyclical theory, techno-capitalism's global spread is internal to the time of the wave. [12]

At the start of the first Kondratiev cycle, Britain was the 'workshop of the world.' By the end of the second wave, industrial manufacturing had begun to relocate to America. Manchester was as much the 'cradle and the symbol of the Age of Steam' as 'Silicon Valley has been for the microelectronics revolution.' [13] The capacity for innovation, then, switches from region to region, city to city as each new wave of technological platforms rise, break and fall: first in Britain, then Germany, America, Japan, and the Asian tigers. Precise calculations of K-Waves are speculative and contested. According to one interpretation of the theory, the new millennium coincides with the fifth K-Wave, the wireless wave, to which China is so intimately tied.

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[7] I aryiculate this by turning to a moment in modern Chinese intellectual history, when a number of philosophers sought to re-invent religio-philosophical traditions in the wake of techno-modernity. I look particularly Xiong Shili 熊十力 (1885- 1968), Tan Sitong 譚嗣同 (1865-1898) and Mou Zongsan.

[8] Kondratiev, Nikolai. "The Long Waves in Economic Life."

[9] Schumpeter, *Business Cycles Volume 1: A Theoretical, Historical and Statistical Analysis of the Capitalist Process*.

[10] Perez, *Technological Revolutions and Financial Capital : The Dynamics of Bubbles and Golden Ages*.

[11] Kondratiev, "The Long Waves in Economic Life."

[12] Schumpeter quoted in Wallerstein,"Long Waves as Capitalist Process" p. 563

[13] Perez, 'Technological Revolutions and Techno-Economic Paradigms.'

The evolution of cell phones also follows a rhythmic cyclicity, though it's pattern adheres to much tighter loops. The first generation of mobile technology, which could only make calls, was launched in Tokyo in 1979. Since then a new generation of cellular networks has been introduced every decade. This intensification of wireless media has been concurrent with China's ongoing rise. 1979 was also the year the country introduced its policies of Reform and Opening (*Gaige Kaifang* 改革开放). Since then, China has worked hard to increase its role in infrastructure and standardization. Fifth generation cellular networks, which will roll out through the 2020s, promise a platform for a new mode of wireless communication in which everything is online all the time. China is deeply involved in the construction of 5G, as the heated geo-political battle over Huawei makes clear. The dreams and struggles over its new status as technological superpower are at the heart of a profound alliance between the fifth generation of mobile technology and the fifth long wave of techno-capitalist time. Contemporary history is thus marked by the convergence of two types of waves, which occur at radically different scales. K-Waves give shape to historical time. Their long, slow cycles take more than half a lifetime to complete. The high frequency electromagnetic waves generated by 5G, on the other hand, constitute an immersive field of vibrating energy, which operate in fragments of time too small to perceive. As cellar infrastructure's micro-temporal vibrations resonate with the deep, slower rhythms of technological production, China rises, challenging the global powers that have dominated modernity's previous waves.

The confluence between China and modern technology, then, is really quite new. 21st century "techno-orientalism" involves a reversal of old school prejudices, which held that China was incompatible with progressive advance. China, wrote Hegel in his *Philosophy of History*, is an 'empire belonging to mere space, as it were, [as distinguished from Time].'[14] Marx, likewise, considered China to be a stagnant, immobile and unchanging place outside the dynamic

[14] Hegel, *The Philosophy of History*.

movement of history.[15] This conception fed into the widespread assumption that Chinese language and culture was inherently unsuited to the machines of the modern world.[16] China, which was once understood as a spatialized cyclicity exterior to the linear march of the global world order has thus been re-centered by the recursiveness of times waves, in which all of planetary geography is subsumed.

The idea – common at the turn of the 20th century – of an intrinsic incompatibility of Chinese culture and modern machines was not only propagated by thinkers in the West, but was also widely shared by China's own intellectual elite. While life in *fin de siecle* China was embedded in a myriad of layerings, exchanges and complexities, it was largely framed by dualistic modulations: past and future; tradition and modernity; East and West. In the 19th century, when the planet first electrified, China resisted the new media environment, treating it as a foreign invasion. Scholar-officials of the late Qing attempted to confront and contain the new technosphere. To do so they ingeniously mobilized one of the most profound pairings in Chinese thought – *ti-yong* (體用), which roughly translates as essence-function; body-application; substance-use.

The twinned concepts *ti-yong* first appeared in classical Confucian and Neo-Daoist texts. They were later transformed and deepened by the Buddhists and then further elaborated by Neo-Confucianists of the Song-Ming period. Crucially, in all these traditions *ti-yong* is conceived non-dualistically as a symbiotic pair.[17] Yet, in the famous 19th century formulation: Chinese learning for essence, Western learning for practice (中學為體西學為用 *Zhongxue wei ti*, *Xixue wei yong*), *ti* and *yong* were split. Scholar-officials aimed to separate the use of technology (*yong*), which was associated with revolutionary transformation, from a protected Chinese essence (*ti*) that remained constant and unwavering. Their aim was to achieve a balance

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[15] Avineri, Shlomo. "Introduction." In *Karl Marx on Colonialism and Modernization; His Despatches [Sic] and Other Writings on China, India, Mexico, the Middle East and North Africa*.

[16] For much more on this see the work of China historian Thomas Mullaney.

[17] See Kwoo, Sun-hyang and Woo, Jeson 'On the Origin and Conceptual Development of 'Essence-Function' (ti-yong)' . And Muller, Charles 'The Emergence of Essence-Function (ti-yong) 體用 Hermeneutics in the Sinification of Indic Buddhism : An Overview'

between the contrasting forces of tradition and modernity, by adopting technology as a practical tool that they hoped to keep sequestered, so as not to contaminate a Chinese cultural and intellectual heritage they felt dedicated to protect.

The fragile equilibrium proved difficult to maintain. China veered from intense suspicion of modern technology (as when the country's first telegraph wires were sabotaged by the Boxers) to a revolutionary anti-traditionalism (as in the belief, held by the intelligentsia of the May 4th movement, that China must change everything from its script to its calendar to adapt itself to the machines of the modern age).[18] Whilst the dichotomy has been made less explicit, echoes of this same split are obvious in the polarized oscillation between techno-liberation and techno-authoritarianism, which governs so much of the discourse about China in the information age. Concentrating on only one of these poles, however, can only ever offer a limited perspective; it fails to apprehend the whole of the wave. The alternative is a cosmo-ontology, whose concrete manifestations are waves felt at a variety of scales, from the high frequency electromagnetic vibrations accessed by our 'smart' devices to the long slow capitalist cycles that govern technological change.

Articulation of a wave ontology is derived from a Chinese intellectual lineage, which arose as several thinkers sought to connect indigenous religio-philosophical ideas with a techno-capitalist modernity that had just arrived on their shores. A key figure is the philosopher Xiong Shili (熊十力 1885-1968), who is remembered as one of the fathers of 20th century New Confucianism. Xiong insisted that the cyclical rediscovery of the past – the 'retrospective creation' of the Way[19] – lay not in the sequestering of *ti* from *yong* but rather from *ti-yong's* fundamental inseparability. T*i yong bu er (*體用不二), he repeatedly wrote, *ti* and *yong* are not two. Xiong's book *New Treatise on Consciousness Only* (*Xin Weishi Lun* 新唯識論 *)*[20] synthesizes a critique of the Buddhist *Yogacara* (Consciousness Only) school with a Confucian monism

[18] This force of internal destruction culminated in the Cultural Revolution.
[19] Makeham, 'The Retrospective Creation of New Confucianism.'
[20] Xiong *New Treatise on the Uniqueness of Consciousness*.

based on the constant transformation found in the Chinese classic the *Yijing* 易經,(Book of Changes). His writing reconceives the relation between essence and function, conceptualizing the two as intermingled, like the ocean and the wave.[21] For Xiong, Ultimate Reality and its myriad manifestations (The Ten Thousand Things 万物 Wan Wu) occur on a plane of continuous contraction and expansion. Subconsciously influenced by the electric atmosphere that was emerging all around him, he likened this ceaseless rhythm of generation and extinction – 'wondrous and unfathomable' – to an 'uninterrupted flash upon flash of lightning, a 'myriad of transformations that is continuous and without end.' [22] Wave ontology considers the Earth's electric vibrations – which have been recently unleashed to form the infrastructure of our techno-modern world – as an expression, or manifold manifestation of a deeper, more elemental underlying change.

Prior to the modern period almost nothing was known about electricity, its ancient invisible vibrations were only ever vaguely perceived. Beginning in earnest in the 18th century, however, there was an intense and ongoing technological entanglement with electromagnetic waves. Through a series of discoveries, driven by a practice-based culture of technological experimentation, it became increasingly clear that the natural force apparent in lightning (and in some animals) could be harnessed and put to great use. 19th century society combined invention with industry to store electricity in batteries, harness it as a means for lighting their great cities and, with the invention of the telegraph, lay the first networks for global instantaneous communication that produced the groundwork for today's information age.

It was the experimental scientist Michael Faraday (1791-1867) who first discovered that electromagnetics occurred in waves. Faraday, the son of a blacksmith who did not have formal training in mathematics, relied on techniques of machinic invention. He was inspired by seeing the experiments of the German physicist and musician Ernst Chladni, who first made sound waves visible by testing the impact of acoustic vibrations on metal plates that were lightly

[21] Xiong takes this image from the Buddist text *The Awakening of Faith.*
[22] Xiong, *New Treatise on the Uniqueness of Consciousness*. 95

covered with sand. In contemplating the phenomena unleashed by his machines, Faraday began to suspect that 'magnetic and electric forces must be transmitted over time by vibrations or waves in the intervening medium, rather like acoustic pressure in the air.'[23]

Proof for the existence of electromagnetic waves came first through the mathematics of James Clerk Maxwell (1831-1879) and then, later, by way of the technological tinkering of Heinrich Hertz (1857-1894). The knowledge this provoked produced a revolution in science, which fundamentally challenged our intuitional assumptions, engendering a profound transition in our understanding of the material world. According to the earlier mechanistic vision, the world was essentially atomistic consisting primarily of the motions of concrete material points. With the discovery of electricity, however, physical reality was no longer mechanically explicable or confined to the realm of human perception. As the model of 'colliding billiard balls that could be touched and measured' dissolved, there came a recognition that the foundations of physics are abstract and imperceptible. Now, instead of matter in motion, the world consists of vibrations in a field.

Electromagnetic fields are the ripple effects of a vast iron ocean that lies deep within the body of the Earth. If modernity has a trajectory, it is to envelop us ever deeper into the alien environment generated by this innermost geological layer. What appears as a straight line of progress is actually leading us – like a Heart of Darkness compulsion – back into the embrace of the metallic sea and its electromagnetic currents. Electricity has become a mighty kingdom,' said Heinrich Hertz over a century ago. 'We perceive it in a thousand places where we had no proof of its existence before. The domain of electricity extends over the whole of nature.' In tapping this natural force, electromagnetic technologies cross into a sphere outside of all anthropomorphic design. Earth's metallic interior is unencumbered by the integrity and identity of the organisms that live on the planet's surface. Instead, its intrinsic mutability is characterized by the raw potentiality of metal's machinic phylum.[24] Rather than represent

[23] Bodanis, *Electric Universe: The Shocking True Story of Electricity*. 81

[24] See Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*.

human communication, cell phones and Wi-Fi signals function on a machinic level that is exterior to the domain of human understanding. The invisible world of the wireless wave thus functions doubly, as media theorist Mark Hansen has written, both as a mode of human communication, but also as a 'cosmological revelation.'[25]

The latest generation of cellular networks deepens our absorption in this nonhuman atmosphere. Throughout Europe and North America, our enhanced immersion in this new, alien environment has been met with widespread and escalating paranoia. Alongside the traumas that marked the year 2020, was a heightened sense that, as Shannon Mattern writes, our nation, our cities, our bodies, our lives should be sheltered from the saturating waves of 5G.[26] This defensive attitude towards a machinic platform that increasingly appears dominated by China, is reminiscent of China's own early 19th century reaction, when electric communication was first introduced. In the late Qing era, it was common for people from all walks of life to view the emerging mediasphere as a threat, a challenge to be curtailed and contained.

Yet, this protective impulse – in both China and the West – is countered by a subterranean history that calls upon a more arcane and esoteric cosmotechnics. There is ample evidence of thought and practice stretching back hundreds of years which exalts in our deepening entanglement with the machinic unknown. Electricity's unseen frequencies consist of what Hertz called 'mysterious waves,' which 'are there' but that 'we cannot see with the naked eye'. Technological engagement with electricity has long involved an occult materialism.[27] Etymologically, the Latin word spectrum means an image or apparition and, originally, an electrician simply meant a magician. Electric media was associated with contact from virtual, spectral entities. Edison believed he was trafficking with ghosts, Tesla concluded he could detect the transmission of deliberate, intelligent agents and was convinced he was in touch with aliens. The cryptic dots and dashes of the telegraph were accompanied with popular

[25] Hansen, 'Triggers.'
[26] Mattern, *Data Fantasies and Operational Facts: 5G's Infrastructural Epistemologies*.
[27] Sconce, *Haunted Media: Electronic Presence From Telegraphy to Television*.

belief in spiritualist mediums.[28] Culturally 'the scientific study of vibrations,' as Enns and Trower detail in their edited collection 'Vibratory Modernism,'[29] 'introduced a new understanding of space, matter, energy, perception, and consciousness that dramatically changed the way people thought about themselves and the world around them.' In the early 20th century, 'this new conception of the universe as a vast network of continuous vibrations had a tremendous impact on modernist literature, art, and theatre.'[30] There was a myriad of experiments by avant garde writers, painters, photographers and performers in both Europe and America, all of whom sought to create a realm of artistic production that could give expression to this ethereal force.

Throughout the 20th century, China was likewise host to a multitude of practices designed to open the body to the new saturating environment of wireless waves. Examples include Buddhist radio pioneers[31] and qigong practitioners interested in early cybernetics.[32] Conceptually, this receptivity to the new media atmosphere is aligned with early attempts to synthesize the science of electromagnetic vibrations with Chinese neo-traditionalist thought. At the end of the 19th century, this conceptual connection was powerfully articulated by one of the most well known intellectuals of the late Qing period, Tan Sitong. Tan Sitong is most famous for his role in the political movement known as the One Hundred Day Reform. Yet, he is equally important as a figure in modern intellectual history. His book *Ren Xue* (仁学） sought to connect the new sciences of electricity, ether and the brain with the metaphysical insights of Daoism, Buddhism and Confucianism. In particular, he held that the inscrutable nature of electricity could be clarified through the ancient concepts of *qi* (氣) and *ren (*仁). Tan argued for the existence of a fundamental energetic principle, responsible for the interwovenness of things, a creative, all pervasive, ever-changing vibrational plane, which could serve to connect the future of modern science with the past insights of Chinese thought.

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[28] Sconce, *Haunted Media: Electronic Presence From Telegraphy to Television*.
[29] Enns and Trower, *Vibratory Modernism*.
[30] Enns and Trower, *Vibratory Modernism*. 1
[31] See Tarocco, *The Cultural Practices of Modern Chinese Buddhism: Attuning the Dharma*.
[32] See, for example Liu, Xiao. *Information fantasies: Precarious mediation in postsocialist China*.

Occult materialism connects wave philosophy to an electric body that has come to envelop the landscape. Vibrations are most dense in the urban centers of the 21st century world. As wireless media becomes ubiquitous, and life migrates online, the physical world of concrete objects, visible buildings, horizontal networks of streets and straight lines of highways and highrises are bathed with invisible waves accessible only by the devices that we carry with us and that we can no longer live without. Saturated in the radiosphere, the most artificial of environments is interpenetrated with a force that is both cosmic and earthy, highly technological and wholly natural. 'When it comes to cities we should learn to think topographically rather than geographically,' wrote Villum Flusser presciently in his evocatively titled essay *The City as Wave-Trough in the Image-Flood.* The city should be seen 'not as a geographical place, but rather as a flection in a field.'[33] In *Understanding Media,* Marshall McLuhan expresses the same point by quoting Cab Calloway: 'When I walk down Eighth Avenue, man, I see rhythms, I don't see downtown.' [34]

The city, now suffused in these invisible electromagnetic waves, grows increasingly sentient. The Sentient City operates with an alien epistemology radically different from the planned and centralized notion of urban technological control contained in the concept of the Smart City. Whereas the Smart City retains the *ti-yong* (essence-function) hierarchical separation – which here refers to the distinction between a sensing environment that is absolutely subordinate to an authoritative reason that governs the city from above – the Sentient City conjures bottom up, recursive processes through which the growing, distributed, immanent intelligence of the metropolis ultimately gains knowledge of itself.

China in the 21st century is heavily invested in Smart City surveillance. The centralized use of algorithmic bio-disciplinary control to modify and manage behavior has become an integral part of the urban landscape. Pockets of escape are almost impossible to find. Yet, even in a

[33] Flusser, 'The City as Wave-Trough in the Image-Flood.'
[34] McLuhan, *Understanding Media*. 275

techno-authoritarian Sinofuturist China there is no singular, all knowing agent that transcends its heterogeneous, myriad manifestations. There is not an exterior, stable position from which to survey all the phenomena of the megalopolis from on high. Instead, as the abstract infrastructure of wireless waves intensifies, mobile phones and QR codes, cell towers and satellites connect with urban dwellers to form novel assemblages that that compose a Sentient City, a new urban landscape – subject to the time of the wave – that no transcendent authority can fully control or comprehend.

Wave philosophy recognizes that everyday life is now conditioned by the nonhuman frequencies of electromagnetic machines. The waves of wireless media have come to constitute an abstract, or *transcendental* infrastructure within which the experience of the perceiving, thinking, knowing subject takes place. A Sinofuturism informed by wave ontology imagines that the agents that populate this new domain are not necessarily confined by the linear progress of modernity and do not necessarily conform to their pre-programmed design. Instead, they cultivate embodied practices that occur – like Nietzsche's eruption of the Untimely – outside of historical time. Beyond our phenomenal awareness, our cities, our bodies, the body of the Earth – now fused with machines –mutate towards an apprehension of the historical, electro-magnetic and cosmo-ontological waves.

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