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THINKING
BIG

DEMOCRACY AND
ITS CHALLENGES

KOREA'S END
OF HISTORY?



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BRIDGES TO EVERYWHERE

CONNECTIVITY AS PARADIGM

Parag Khanna

The central fact of the age we live in is that every country, every market, every medium of communication, [and] every natural resource is connected.

– Simon Anholt

CONNECTIVITY is the new meta-pattern of our age. Like liberty or capitalism, it is a world-historical idea, one that gestates, spreads, and transforms over a long timescale, bringing about epochal changes. Despite the acute unpredictability afflicting our world today, we can be adequately certain of current mega-trends, such as rapid urbanization and ubiquitous technology. Every day, millions of people are switching on mobile phones, logging on to the Web, moving into cities or flying on airplanes for the first time in their lives. We go where opportunity and technology allow. Thus connectivity is more than a tool; it is an impulse.

No matter which way we connect, we do so through infrastructure. We are only in an early phase of re-engineering the planet to facilitate surging flows of

people, commodities, goods, data, and capital. Indeed, the next wave of trans-continental and intercontinental mega-infrastructure is even more ambitious: an inter-oceanic highway across the Amazon from São Paulo to Peru's Pacific port of San Juan de Marcona, bridges connecting Arabia to Africa, a tunnel from Siberia to Alaska, polar submarine cables along the Arctic seabed from London to Tokyo, and electricity grids transferring Saharan solar power under the Mediterranean to Europe. Britain's exclave of Gibraltar will be the mouth of a tunnel under the Mediterranean to Tangier in Morocco, through which a new high-speed railway will extend down the coast to Casablanca. Even where continents are not physically attaching to each other, ports and airports are expanding to absorb the massive increases in cross-continental flows.

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Photo: paragkhanna.com

Parag Khanna

None of these mega-infrastructure projects are “bridges to nowhere.” Those that already exist have added trillions of dollars in value to the world economy. During the Industrial Revolution, it was the combination of higher productivity and trade that raised Britain and America's growth rates to 1 to 2 percent for more than a century. As Nobel laureate Michael Spence argued, the internal growth of economies would never have reached today's rates without cross-border flows of resources, capital, and technology. Because only a quarter of world trade is conducted between bordering countries, connectivity is the

sine qua non for growth both within and across countries.

The past several decades prove beyond any doubt that connectivity is how regions move from economies valued in the billions to the trillions. Furthermore, infrastructure is a foundation of social mobility and economic resilience: urban societies with ample transportation networks (such as southern China) rebounded much faster from the 2007–2008 financial crisis, with people able to move efficiently to find work. Spain was among the hardest hit by the Eurozone recession, but thanks to its high-quality infrastructure—it is

today Europe's fastest-growing economy. As global debt surges to record levels, while interest rates remain at historical lows, the world's finances should be directed toward underwriting productive connectivity rather than ethereal derivatives.

The same is true across the world: the gap between infrastructure supply and demand has never been greater. As the world population climbs towards eight billion people, it has been living off the infrastructure stock meant for a world of three billion. But only infrastructure, and all the industries that benefit from it, can collectively create the estimated 300 million jobs needed in the coming two decades as populations grow and urbanize. It is no wonder that world leaders endorsed the UN 2030 Agenda for Sustainable Development in 2015, which included infrastructure as one of its 17 flagship Sustainable Development Goals.

The transition from export-led growth to higher value-added services and consumption begins with infrastructure investment. The global connectivity revolution has begun. By some estimates, mankind will build more infrastructure in the next 40 years alone than in the past 4,000. The interstate puzzle thus

gives way to a lattice of infrastructure circuitry. The world is starting to look a lot like the internet.

GEOGRAPHY, NOT BORDERS

Geography matters intensely, but it does not follow that borders do too. We should never confuse geography, which is paramount, with political geography, which is transient.

Mega-infrastructure projects overcome the hurdles of both natural and political geography, and mapping them reveals that the era of organizing the world according to political space (how we legally subdivide the globe) is giving way to its organizing according to functional space (how we actually use it). In this new era, the *de jure* world of political borders is giving way to the *de facto* world of functional connections. Borders tell us who is divided from whom by political geography. Infrastructure tells us who is connected to whom via functional geography. As the lines that connect us supersede the borders that divide us, functional geography is becoming more important than political geography.

Many of today's existing and planned transportation corridors can be traced back to ancient passages carved by geography, climate,

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political geography, and mapping them reveals that the era of organizing the world according to political space (how we legally subdivide the globe) is giving way to its organizing according

and culture. But whereas the ancient Silk Roads were dirt paths or rough tracks, today we have asphalt highways, iron railways, steel pipelines, and Kevlar-wrapped fiber internet cables—stronger, denser, broader, faster. These infrastructures are laying the foundation of our emerging global system. They connect whichever entities lie on either end or along the way, whether empires, city-states, or sovereign nations—all of which may come and go, while the logic of the pathway persists. For this reason, connectivity and geography are not opposites. On the contrary, they very often reinforce each other. Connectivity is thus not about detaching from geography, but making the most of it.

Connectivity morphs our perception of what constitutes “natural” regions. Europe is often spoken of as a continent simply because it is culturally distinct from the two-thirds of the Eurasian landmass east of the Ural Mountains. But as trans-Eurasian connectivity grows, references to “Europe” in geographically exclusive ways should disappear. It is connectivity that makes Europe's Eurasian destiny meaningful rather than coincidental. Indeed, the Chinese-funded Belt and Road Initiative is the largest coordinated infrastructure initiative in history.

When countries think functionally rather than politically, they focus on how to optimize land, labor, and capital; how to spatially cluster resources and connect them to global markets. Connective infrastructure across sovereign borders acquires special properties, a life of its own, something more than just being a highway or a power line. They become common utilities that are co-governed across borders. Such connective infrastructure thus has its own essence, a legitimacy that derives from having been jointly approved and built that makes it more physically real than law or diplomacy. Yale professor Keller Easterling calls this infrastructural authority “extra-statecraft.”

Connectivity is thus intensely geopolitical even as it changes the role of borders. When we map functional geography—transportation routes, energy grids, forward operating bases, financial networks, and internet servers—we are also mapping the pathways through which power is projected and leverage exercised.

American officials speak about accommodating China's rise as if the global system has an entrenched essence that prefers American leadership. But the system wants only one thing:

Borders tell us who is divided from whom by political geography. Infrastructure tells us who is connected to whom via functional geography.

connectivity. It does not care which power is the most connected, but the most connected power will have the most leverage. China has become a welcome and popular power in Africa and Latin America, because it has sold them (and often built for them) the foundations of better connectivity. Ethereal concepts such as “soft power” are a pale substitute for the power of connectivity. Depicting the world’s growing infrastructure connections is no less real or important just because they are not sovereign borders.

Yet today many scholars still hold that political boundaries are the most fundamental man-made lines on the map due to a bias toward territory as the basis of power, the state as the unit of political organization, an assumption that only governments can order life within those states, and a belief that national identity is the primary source of people’s loyalty. The march of connectivity will lead to the collapse of all these beliefs. Forces such as devolution (the fragmentation of authority towards provinces), urbanization (the growing size and power of cities), dilution (the genetic blending of populations through mass migration), mega-infrastructure (new pipelines, railways, and canals that morph geography),

and digital connectivity (enabling new forms of community) will demand that we produce far more complex maps.

SUPPLY CHAIN WORLD

There is one law—and only one—that has been with us since we were hunter-gatherers, outlasted all rival theories, transcended empires and nations, and serves as our best guide to the future: supply and demand.

Supply and demand is more than a market principle for determining the price of goods. Supply and demand are dynamic forces that seek equilibrium in all aspects of human life. As we approach universal infrastructural

and digital connectivity, the supply of everything can meet demand for anything; anything or anyone can go nearly anywhere, both physically and virtually. Physicist Michio Kaku believes we are headed toward such “perfect capitalism.” There is another term for this scenario: “supply chain world.”

Supply chains are the complete ecosystem of producers, distributors, and vendors that transform raw materials (whether natural resources or ideas) into goods and services delivered to people anywhere. Whether you are

We are building this global society without a global leader. Global order is no longer something that can be dictated or controlled from the top down. Globalization is itself the order.

Supply chains and connectivity, not sovereignty and borders, are the organizing principles of humanity in the twenty-first century.

Smith’s free markets, David Ricardo’s comparative advantage, and Émile Durkheim’s division of labor: a world where capital, labor, and production shift to wherever is needed to efficiently connect supply and demand. If “the market” is the world’s most powerful force, supply chains bring markets to life.

Supply chains and connectivity, not sovereignty and borders, are the organizing principles of humanity in the

twenty-first century. Indeed, as globalization expands into every corner of the planet, supply chains have widened, deepened, and strengthened to such an extent that we must ask ourselves whether they

represent a deeper organizing force in the world than states themselves. Supply chains are the original worldwide webs, enveloping our world like a ball of yarn. They are the world’s plumbing and wiring, the pathways by which everyone and everything moves.

The past quarter century has been a Goldilocks period of great power stability, during which infrastructure, deregulation, capital markets, and communications have accelerated the rise of a global supply chain system. Globalization has compromised national sovereignty from above, as governments have shifted from creating national regulations

awake or asleep, scarcely a moment of our daily lives—sipping morning coffee, driving a car, talking on the phone, sending an email, eating a meal, or going to the movies—does not involve global supply chains.

A more formal definition of supply chains is the systems of organizations, people, technology activities, information, and resources involved in moving products and services from producers to consumers. “Global supply chain” and “global value chain” are often used interchangeably, with the latter sometimes preferred to emphasize the value-added processes not inherent in simple supply-demand terminology. Others speak of value webs or value networks to capture the wide range of participants involved in supply chains and their interdependent and mutually beneficial nature.

And yet, as universal as they are, supply chains are not entities in and of themselves; they are a system of transactions. We do not see supply chains; rather, we see their participants and infrastructure—the things that connect supply to demand. What we can see, however, by tracing supply chains link by link, is how these micro-interactions add up to large global shifts. We are witnessing the full consequences of Adam

to enforcing global ones, and undermined it from below, as devolution, capitalism, and connectivity strengthen the autonomy and influence of key cities that—like corporations—pursue their own interests across increasingly permeable state boundaries.

And as government institutions are broken up and privatized, supply chains take over as the new service providers. The supply chain does not eliminate polities; this is not about the “end of the state.” Rather, it reconfigures states as market regulations and authorities become co-governors and resizes them as sub-state cities and provinces compete within and beyond states.

The delineation of states makes the world seem orderly, but that is not what makes the world function. Rather, infrastructure and supply chains are how we function, despite our dysfunctional political geography. As economist Robert Skidelsky reminds us, wars and borders are what keep capital scarce, while stability and openness unlock it.

This global supply chain system has replaced any particular superpower as the anchor of global civilization. Neither America nor China

alone prop up this new order, nor do either of them represent the final authority capable of shutting it down. Instead, they compete in a Great Supply Chain War that will redraw twenty-first-century maps as much as the

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Thirty Years’ War did in the seventeenth century. The Great Supply Chain War is a race not to conquer, but to connect physically and economically to the world’s most important supplies of raw materials, high technology, and fast-growing markets. The Great Supply Chain War is not an event, nor an episode, nor a phase. It is a semi-permanent condition in a world

where great powers consciously seek to avoid costly military confrontations that could be self-defeating, as they would disrupt these essential supply chains. In the Great Supply Chain War, infrastructure, supply chains, and markets are as crucial as territory, armies, and deterrence. The largest power does not always win; the most connected one does.

Globalization is almost always written about in terms of how it operates within the existing order, rather than how it creates a new order. Yet connectivity is the change emerging from within the

system that ultimately changes the very system. Its networks are not merely conduits of connections, rather the power of the network itself increases exponentially as the number of nodes increases (Metcalf’s law).

INFRASTRUCTURE ALLIANCES

Geopolitics has for centuries been synonymous with the conquest of territory—the domination of one’s neighbors and rivals. Today the principle could simply be called competitive connectivity: The most connected power wins. States must protect their borders, but what matters are which lines they control: trade routes and cross-border infrastructure. All great strategists know the importance of the saying “Amateurs talk strategy; professionals talk logistics.”

Supply chain mastery is the original driver of geopolitical status—predating military might. Both nineteenth-century America and twenty-first-century China were supply chain superpowers before they became military ones. They achieved continental dominance, industrialized heavily through import substitution, and became the world’s largest economies prior to asserting themselves militarily.

A good grand strategy is thus multidimensional: trade, finance, energy, military, governance, and other arenas are all fair game. This is why the domestic and international dimensions of grand strategy cannot be treated as separate

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priorities. Yale historian Paul Kennedy calls the present era a “gap between strategic epochs,” in which new rules are slowly crystallizing. Yet as his sweeping *Rise and Fall of the Great Powers* (1987) underscores, it is economic and technological strength that has always underpinned military superiority, not the reverse. The balance of

innovation drives the balance of power.

Successful grand strategies—the long-term doctrines that link means to ends—thus leverage a whole country’s resources, both public and private. They accurately assess the complex global environment, are realistic about goals, and are efficient in execution. They must also be comprehensive. Diplomats have tended to distinguish between the “high politics” of security, alliances, and arms control—matters of survival to the state—and the “low politics” of economics, rights, and environmental issues. But in a supply chain world these priorities have become deeply entangled.

The U.S. National Intelligence Council's global power index ascribes sizable weight to nuclear weapons and defense spending, but given the unlikelihood of using the former and the latter's lack of proven effectiveness, other factors, such as government revenue and human capital, indicate a far earlier ascendance for China than 2030.

Welcome to the age of infrastructure alliances, where the material and the diplomatic are two sides of the same coin.

China also suffers from improvisation in executing its grand strategy and even instances of blatant overreach that cause self-inflicted wounds. China's proclamations, like America's, are vague and contradictory, while internal authorities jostle for influence, and success is rationalized after the fact. But China remains ruthlessly clear about one thing: Its power is focused on serving commercial interests and protecting the connectivity upon which it depends.

POST-IDEOLOGICAL ALLIANCES

We have just lived through a quarter century of gravely mistaken assumptions about the world, beginning with the "end of history" and the "clash of civilizations." The past decade alone has witnessed the rapid erosion of what was meant to be another century of Pax Americana.

When scholars and intellectuals seek to define an era by ideologies (rather

than conditions), they mistakenly presuppose that there must always be one coherent vision of world society—or two in opposition—in a struggle to assert itself. But a supply chain world is a

post-ideological landscape. Russia no longer exports communism; America scarcely professes democracy; China has abandoned Maoism for hyper-capitalist consumerism. From

Africa to Asia—the lion's share of the world's population—it's all business, all the time.

Today it is not ideology, but the promise of privileged access to resources and infrastructure that shapes geo-strategic maneuvering.

Traditional alliances have been replaced with dalliances, ephemeral partnerships based on supply-demand complementarities. Russia and China are the archetypical case. Similarly, it is far too lofty to speak of a Confucian-Islamic axis, as Samuel Huntington did, when it is more accurate to simply state, "Asians buy the most Arab oil."

Supply and demand also explains geo-strategic dynamics within the West. When the demand for an alliance such as NATO wanes, it flails in search of missions as far as Afghanistan. Hence the mantra from the first decade of



Photo: Li Yang/goodfreephotos.com

Shanghai skyline illustrates the power of infrastructure and connectivity for development

the twenty-first century that NATO must go "out of area or out of business." When the demand for alliance protection grows, such as Russia's invasion of Ukraine and intimidation of the Baltic nations, NATO revives. But NATO unity has been exposed as more cheerleading than reality, with many European countries not wanting to even deploy to Afghanistan, let alone fight there, and economic realities outweighing confrontation with Russia over Ukraine.

It is thus a mistake to identify alliance groups as cultural communities. The webs of relations in a post-ideological supply chain world make rigid alliances

impossible, as each member makes constant cost-benefit calculations about participating in "collective" activities.

Whereas trade relations merely reflect complementarity, investment is a far more serious sign of commitment and thus enhances credibility. Indeed, the strongest predictor of stable relations is not how much two countries trade with each other, nor even the military alliances they participate in, rather it is the level of foreign investment between two nations.

America, Britain, and Turkey are all members of the NATO alliance, but the

real reason they will never go to war with each other is the number of American multinationals that have headquarters in the UK and vice versa, and the Western oil companies that have invested in building the oil and gas pipeline infrastructure of Turkey to supply energy to Europe. Their energy supply chain is literally inextricably linked to their national security. Even in times of cultural strain—such as between the United States and Turkey over how to intervene in Arab civil wars—the supply chain guarantees the alliance. At the same time, Turkey’s growing transportation, trade, and energy links to the Turkic-populated former Soviet republics and China have made joining the Shanghai Cooperation Organization (SCO) one of President Erdogan’s top priorities. Turkey could be the first country to become a member of both NATO and the SCO, demonstrating how its connectivity to both East and West drives its strategic calculations, superseding any desire to join the EU.

Welcome to the age of infrastructure alliances, where the material and the diplomatic are two sides of the same coin. The strength of ties is measured not by color-coding countries according to membership in clubs like NATO, but through the mapping of connectivity and volumes of flows between them.

Trade is how China builds complementarity; investment is how it builds leverage.

Infrastructure alliances are more than corrupt deals among autocratic regimes. In fact, they represent job-creating projects that enhance the ability of poor and landlocked countries to participate in the global economy. As close examination of traditional Western aid projects has demonstrated, the unrealistic conditions in financing commodities and infrastructure projects have unnecessarily delayed development and failed to create jobs in ways that only these sectors can. Sharing infrastructure is sharing wealth.

In contrast, infrastructure provision—and the connectivity it represents—has become a global public good on par with security. These are things that countries desperately want, and China is their leading provider. With most of the world’s future infrastructure yet to be built, China is out to become the world’s largest infrastructure exporter. Many countries still want the American military protecting them, but they want China’s infrastructure finance and low-cost telecommunications equipment even more. A supply chain world can be one focused on the division of labor more than spheres of influence.

Of course, China is not building all this new infrastructure to be perceived as generous, but rather to efficiently access raw materials and bring them back home for the manufacturing

and construction industries, and then to use export processing zones near major markets to accelerate its throughput. This has become the standard playbook of Chinese neo-mercantilism.

In diplomatic circles, China is considered a staunch defender of state sovereignty. Yet as an ancient civilization on a planet populated mostly by young nations, it is understandable how China’s mental map of the world places greater significance on the geography of resource supplies than on sovereignty. And having had its sovereignty repeatedly violated throughout the nineteenth century, China has few qualms about circumventing such legal fictions in the twenty-first century. Indeed, China views the world almost entirely through the lens of supply chains. It sees New Zealand as a food supplier, Australia as an iron ore and gas exporter, Zambia as a metals hub, Tanzania as a shipping hub, and Greenland as a uranium mine.

The power of China’s supply chain geography lies not in its international military footprint or alliances—which remain relatively limited—but in its ability to exploit mutually beneficial supply-demand axes.

Trade is how China builds complementarity; investment is how it builds leverage. China the trading

There is no precedent for the current wave of highways, pipelines, and railways forming east-west axes of logistical efficiency.

power benefits from a weak currency to boost exports, while China the superpower takes advantage of the strong renminbi to buy more assets abroad. Even if its own commodity imports slow, it wants to own the supplying assets. Acquiring productive (or, until the Chinese takeover, unproductive) assets helps China accelerate market access, while also increasing revenues for the local economy. By establishing joint ventures in host countries where it takes a strong (or dominant) financial position, China is hedging itself against host-country demands for more local value-added labor and ownership over their industries (think tug-of-war). Should African countries require smelting, refining, manufacturing, assembly, or other production processes take place on their own soil, China will still be needed to finance and staff such upgrades, while training local workers along the way, and will share handsomely in the new revenue generated from these offshore exports.

THE NEW IRON AGE

China represents the next phase for Central Asia after the Mongol-Turkic Empire and its period as a Soviet backwater: Eurasian resource corridor. China is taking advantage of the fractured mess on its western frontier to reorganize the region around supply

chains rather than states, replacing its arbitrary Stalin-era maps with those of new oil-slicked iron Silk Roads.

The engineering marvels of today will reshape the geopolitics of tomorrow. The scaling power of modern industrial infrastructure makes Russia or Kazakhstan's size and flat terrain an unimpressive obstacle in China's calculations—especially since the completion of its high-altitude rail line to Tibet. Landlocked Kazakhstan recently proposed a “Eurasian canal” that would allow its ships passage from the Caspian to the Black Sea and out to the Mediterranean through the Bosphorus. No doubt neighboring China might find this an interesting project to sponsor.

There is no precedent for the current wave of highways, pipelines, and railways forming east-west axes of logistical efficiency. Unlike the “Great Game” era of the nineteenth century, when Britain and Russia sought to demarcate Central Asian territory, China merely wants to steer the direction of its energy flows. Instead of the majority of its oil and gas flowing north and west through Russia, new pipelines from Kazakhstan and Turkmenistan's gas fields on the Caspian Sea direct resources east to China's Tarim Basin. The land-based half of the Belt and Road Initiative heralds the region's transformation into a collection of midsize urban nodes anchoring transport and energy corridors. Each road, bridge,

tunnel, railway, and pipeline rewrites the functional code of the countries it crosses, while new energy grids and irrigation systems turn their resource mismatches into pragmatic swaps. China's strategy is not to formally occupy these countries, but to ease passage across them. It wins the new Great Game by building the new Silk Roads.

Over time, as Chinese citizens spill over into sparsely populated Central Asian countries and merchants from across the region circulate in all directions, western Chinese cities like Urumqi and Horgos become what Samarqand and Bukhara were in centuries past: melting pots of Chinese, Russians, Pakistanis, and Turkic peoples, gathering in search of the best deals. The more silk roads, the better.

**KUBLAIKHAN'S REVENGE:
THE RETURN OF SINO-SIBERIA**

There is no avoiding friction when more than four billion people rub against each other in the arc from Northeast Asia through Southeast Asia to South Asia. The only way to dissipate the pent-up energy of large contained populations is to promote flows across them. China now has more neighbors than any other country in the world, and though in recent decades it has fought wars with Vietnam and India, today its strategy is to avoid conflict while maneuvering to control supply chains. The result will be a functional map that harks

back seven centuries to Eurasia's mighty Mongol Empire.

The best place to view this dynamic is along the world's second-longest border between two great powers: Russia and China.

China and Russia have become a supply-demand partnership, not a geopolitical bloc. Russia has land and resources; China has people and money. Russia's infrastructure is in decay; China could rebuild it in five years. It is false to portray Sino-Russian relations as an anti-Western alliance, because Russia has no greater long-term threat to its territorial integrity than the absorption of its entire eastern flank by China. What their relationship

actually underscores is that there are no more reliable alliances, only complementarities: transaction-based axes of convenience obeying the dictum to keep one's friends close but one's enemies closer.

There are in fact two Russias: the Europe-facing population centered west of the Ural Mountains and the vast Siberian region east of the Urals, which is seven times larger than “European” Rus-

sia but has less than a tenth of the population. What our maps do not reveal is the extent to which Chinese people have settled in Russia's eastern regions, both

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seasonally and permanently, as shuttle traders and to operate factories producing finished goods out of Russian timber and minerals.

But China has made no plans to alter the *de jure* map of its border with Russia, only the *de facto* one. After all, any forcible shift in the border would risk the only retaliation Russia is capable of when it comes to defending such a remote territory: nuclear weapons. Meanwhile, the *de facto* map is quickly coming to resemble that of thirteenth-century Mongol emperor Kublai Khan, whose

Golden Horde ruled modern-day Siberia and Korea, conquered all of China, and stretched as far as Ukraine and Iran. As creative cartographer Frank Jacobs puts it, “Like love, a border is only real if both sides believe in it.”

As the first major rail bridge is completed across the Amur River into China's Heilongjiang province—which has a population, together

with Manchuria's other two provinces, totaling over 100 million—Russia's rail terminus will soon be in China. The same is true for Russian gas. In 2014, Vladimir Putin signed a \$400 billion agreement with Xi Jinping which sees Gazprom developing new Siberian gas fields and a new East

Siberian pipeline built to carry 38 billion cubic meters per year to China (about 20 percent of its annual demand). Russia had previously been reluctant to send energy supplies directly to China—lest it become

a captive supplier. But as energy prices sank and Putin sought a public relations victory amid Western sanctions, Russia was compelled to sign a long-term contract favorable to China. Rosneft has even agreed to offer the China National Petroleum Company (CNPC) a stake in its giant Vankor field, acknowledging that such stranded resources would only ever have one customer. Not only do the Urals divide Russia in two, its supply chains do too.

It is amusing to hear analysts describe Russia and China's dealings as making little financial sense, as if energy resilience can be boiled down to dollars and cents. For China, the payoffs are priceless, as it diversifies China's energy inflows and lessens its dependence on the Strait of Malacca.

Russia's own "pivot" to Asia began years before America's, and also includes designating its largest Pacific outpost, Vladivostok, as a "free port," with reduced customs and special zones for logistics, industry, ship maintenance, recreation, and agriculture.

Geology guarantees that North Korea will emerge as a supply chain node. The country is literally a gold mine of rare earth minerals essential for electronic gadgets.

The geography of Eurasian resources precedes Russia's contingent political borders: political control from above may ultimately be determined by who best connects to the commodities below. Russians are

learning to sympathize with the Mongols and Kazakhs. Kazakhstan, the only landlocked country in the world larger than Mongolia, lies just 30 kilometers from Mongolia's far western border. The Altai region, this truly remote four-corner zone between Russia, China, Mongolia, and Kazakhstan, is a spectacularly empty expanse—but not for long. Russia and India are moving forward—with Chinese approval—on plans to construct a \$30 billion pipeline from the Altai region across western China to India.

This north-south energy axis will pass just east of China's Afghanistan border, a tiny sliver known as the Wakhan Corridor that also borders Tajikistan and Pakistan. Since the Soviet withdrawal from Afghanistan near the end of the Cold War, and throughout America's post-



Photo: Flickr

The Song Han Bridge in Vietnam is a crucial node in Asia's chain of connectivity

9/11 occupation, China steadily rose to become Afghanistan's largest foreign investor, due to its stake in the Aynak copper mine and its growing interest in lithium (essential for batteries).

Afghanistan's technocratic president Ashraf Ghani made his first state visit to China to lure its newly rediscovered neighbor into more investments in roads, railways, and mining. After centuries of relations that amounted to little more than fruit trading, China has begun to pave its way across Afghanistan as well. For the first time, China is converting its proximity into connectivity. Soon, the American occupation will seem a mere footnote in comparison.

Nothing tells us more about the future of geopolitics than tracing infrastructure plans on the ground. Competitive connectivity reminds us of how limited a role military forces have in ultimate victory. Today, as the remnants of American military hardware, such as \$500 million worth of G.222 military cargo airplanes, are sold off as scrap metal, China is further ramping up infrastructure projects across the war-ravaged country to reach another ancient civilization seeking to regain its place on Eurasia's new Silk Roads: Iran.

While China already imports large quantities of oil and gas across the Indian Ocean from the Arabian Gulf countries

and Iraq, the grand prize along the Eurasian Silk Road is Iran. Iran's opening up, coming in the wake of decades of isolation, is the latest phase in China's promiscuous geopolitics.

Geopolitical competition for regional dominance goes hand in hand with competition to sell into its 80 million population of mostly urban youth. For both East and West, this means building as many Silk Roads to Iran as possible.

AN IRON SILK ROAD THROUGH THE HERMIT KINGDOM

In addition to the landlocked giants Kazakhstan and Mongolia, one other vulnerable country borders both Russia and China: North Korea. But whereas Kazakhstan and Mongolia have undertaken various political and economic reforms since communism, North Korea has for decades remained hopelessly repressed. Itself in a pernicious form of dependence that comes from near-total isolation, almost all North Korean exports go to China, and almost all food, fuel, and other basic goods enter North Korea via China.

Geology guarantees that North Korea will emerge as a supply chain node. The

country is literally a gold mine of rare earth minerals essential for electronic gadgets. Mining operators from Australia to Mongolia are keen to tap into its gold and magnesium deposits. The global supply of these precious met-

als is far too scarce for the world—particularly electronics manufacturing leader China—to patiently wait for North Korean regime change.

Seen in isolation, North Korea's baby steps towards becoming a more open and viable economy are insignificant: industrial joint ventures, importing foreign cars, allowing limited internet access, mobile phones

with international dialing, and a new ski resort. But, taken together, they begin to look like an early draft of the kind of national business plan China undertook in the late 1970s. It is no wonder that Kim Jong-un has been granted audiences not only with Xi Jinping, but also Donald Trump. He should also be meeting with Vladimir Putin in the not too distant future. North Korea is already being gradually transformed from a nuclearized minefield buffer state into a passage-way between China and Russia, on the one side, and South Korea, on the other. It is far more likely to remain autocratic than to democratize. That is precisely

The principal geopolitical question for many countries today is not whether the United States and China will go to war in the Pacific, but whether China will use its supply chain empire to inflict "unequal treaties" on them, the way the British did to China two centuries ago.

why supply chain integration is a better strategy than political humiliation.

MANAGING BLOW-BACK

The principal geopolitical question for many countries today is not whether the United States and China will go to war in the Pacific, but whether China will use its supply chain empire to inflict "unequal treaties" on them, the way the British did to China two centuries ago.

Since the 1990s, China's checkbook diplomacy has underwritten nearly frictionless commercial expansion, buying up raw materials in pricey long-term contracts from Argentina to Angola in exchange for building schools, hospitals, government offices, and highways. It pledged noninterference in local politics, which actually meant selling unlimited arms to governments to preserve the status quo. China managed to—and still does—maintain good relations with important pairs of regional rivals: Brazil and Venezuela, Saudi Arabia and Iran, Kazakhstan and Uzbekistan, and India and Pakistan.

But in a growing number of countries, the honeymoon is over; the blow-back has begun. All superpowers eventually suffer blow-back; it's just a matter of time.

With alarm bells ringing from Zambia to Mongolia whenever a corrupt deal is struck, Beijing has to be cautious rather than brutal.

China's global presence is defined not by its military, but by its supply chains. Its key agents abroad are not intelligence agencies, but state-owned companies. For China, supply chain blow-back is geopolitical blow-back. It is also a reminder that building infrastructure abroad does not guarantee China will ultimately control it.

Blow-back reminds us that we live in a world of complexity rather than linearity, and of the compressed timescales of today's feedback loops. European empires lasted up to 600 years before anti-colonial independence movements, combined with the stresses of World War II, brought about their retreat. China, however, has had barely a decade of truly global encroachment, yet it already faces counter-maneuvers. It must learn practically overnight that which took Europe centuries. China cannot be a new colonial overlord, because the age of colonialism has passed, replaced by transparency and time-taught suspicion of foreign powers. The supply chain can strike back.

With alarm bells ringing from Zambia to Mongolia whenever a corrupt deal is struck, Beijing has to be cautious rather than brutal. So far, Beijing has preferred to build cooperative relations across entire continents,

not get dragged into using its muscle to enforce every contract that has been hijacked from Congo to Kazakhstan. Such restraint has helped China build a global supply chain empire without fighting a single skirmish.

But there are growing frictions. Kidnappings and attacks against Chinese oil and gas workers are on the rise from the Niger delta to southern Sudan. Zambian miners have rebelled violently against their Chinese employers' slave wages and slave-driving tactics, on several occasions trampling, crushing, and killing them deep inside mine shafts. Chinese long-term purchases might turn out to be more like short-term rentals.

Resource nationalism is also a clever legal tool countries use to ward off Chinese supply chain intrusion. Kazakhstan and Mongolia have designated their key mineral deposits as "strategic assets" off-limits to foreign purchase. China is invited only to co-develop them as a service provider. The smartest governments demand that China employ more locals, spend more on skills training, transfer more technology, and manufacture more products locally. They want more of the value added brought in, rather than just carted out.

The "anti" movements—anti-capitalism, anti-technology, anti-globalization—always lose. They represent not universal humanism but parochial shortsightedness. Connectivity is unquestionably a greater force than all the political ideologies of the world combined.

Around the world, China finds itself at different points on the imperial life cycle: seduction and expansion, exploitation and co-dependence, or self-assertion and blow-back. But the common denominator is that a high degree of dependence on China—whether among big countries like Russia or smaller ones like Zambia—creates both stability and certainty, on the one hand, and tension and resentment, on the other.

As empires retreat, infrastructure changes hands and purposes. The farther imperial Russia built the Trans-Siberian Railway east of Lake Baikal, the more it became part of Meiji Japan's motivation for attacking Russian-held Port Arthur in Manchuria in 1904. But after Japan's defeat in World War II, Russians took over the Japanese railways on the southern half of gas-rich Sakhalin Island. After America's withdrawal from Iraq, both the Iraqi army and ISIS helped themselves to the hardware left behind.

Inevitably, China's sprawling supply chains will take on military dimensions. China now gathers constant on-the-ground intelligence about the deeply troubled places where it drills and scrapes for resources, from Venezuela to South

Sudan. It has also deployed thousands of peacekeepers to UN operations from Haiti to Lebanon, conducts joint military exercises with dozens of partner nations, and allegedly has undercover PLA soldiers protecting oil fields in Sudan. Eventually, it will extend its naval presence around the Indian Ocean rim (such as the base it established in Djibouti) to remain close to places where it might have to suddenly rescue workers or send in reinforcements—potentially from its growing ranks of private security contractors.

The supply chain war could become quite literal—potentially on China's own borders. China does not want to send troops to protect its investments in Central Asia, but it may have to. America's draw-down in Afghanistan means China must cut more of its own deals with Kabul (to which it is now selling weapons) but also with local governors, warlords, and even the Taliban to keep its mines, roads, and other infrastructure from being attacked. But there is a well-worn saying that "you can rent an Afghan, but you cannot buy one." While today it is hard to imagine China making the same tragic mistakes as both the Soviet Union and America in putting so many boots on the ground in hostile terrain, China could have its very own version of a quagmire in Afghanistan.

Global connectedness is an opportunity to evolve both our cartography and our morality. We should make the most of supply chains rather than just letting them make the most of us.

No amount of "soft power" can substitute for cutting a fair deal. If building railways and spreading the English language were all it takes to maintain an empire, the British Raj would still be thriving. Colonialism is passé. It's a world where nobody wants to be a colony; everyone wants to be a hub.

FROM CONNECTIVITY TO RESILIENCE

The "anti" movements—anti-capitalism, anti-technology, anti-globalization—always lose. They represent not universal humanism but parochial shortsightedness.

Too little trade is a much bigger problem than unfair trade, too little internet access is a much bigger problem than the digital divide, too little wealth creation is a much bigger problem than high inequality, and too few genetically modified crops is a much bigger problem than corporate farming. Decades of UN declarations calling for global economic redistribution would never have achieved what globalization has in a few short decades. As Bill Gates said in 2014, the "world is better than it's ever been," and we have globalization to thank.

If the world population has a common goal, it is the quest for modernization and connectivity—with the latter a principal path to the former. Connectivity

is unquestionably a greater force than all the political ideologies of the world combined.

Connectivity has become the foundation for global society. After all, individuals connect with the rest of the world not through politics but through markets and media. Supply chains literally embody how we (indirectly) feel each other: low-wage Asian workers keep the price of mobile phones down for consumers worldwide, al-Qaeda militants attacking a Saudi oil refinery spike gas prices for urban commuters, and Indian and Filipino call center workers solve everyone’s tech conundrums. Whatever the degrees of separation, supply chains connect the Bangladeshi garment worker to the Saks Fifth Avenue shopper, and the Congolese miner to the diamond-crusted Vertu phone customer in Hong Kong airport.

Nothing connects rich and poor, East and West, North and South, like supply chains. Tenuous as these links may be, we are more likely to care about what we are connected to than what we are not. Pollution floating over the Pacific from China to California makes Americans think about climate change more than sinking Pacific Ocean islands. The collapse of a garment factory in Bangladesh

making clothing for Western brands garners much more attention—and action—than a blaze at a Chinese fireworks plant with few sales outside China. Connectivity enables the empathy that guides our ethical evolution.

We are building this global society without a global leader. Global order is no longer something that can be dictated or controlled from the top down. Globalization is itself the order.

NETWORKS THAT RUN THEMSELVES

A supply chain order is thus not a libertarian fantasy in which markets rule the world. Nor is it universal socialist paradise. It is an evolutionary reality that we should construct pragmatic strategies to harness rather than retreating into populist mythologies and antiquated vocabularies.

Global connectedness is an opportunity to evolve both our cartography and our morality. We should make the most of supply chains rather than just letting them make the most of us. A world remapped according to connections rather than divisions holds the potential to advance a shift from “us versus them” mentalities toward a broader human “we” identity. There is no good reason to turn back.

The touchstone of morality in a global society is leveraging connectedness for utilitarian ends:

achieving the greatest good for the greatest number of people.

There is still potential to turn what economist Branko Milanovic calls “bad” inequality into “good” inequality, which motivates and enables efforts for achievement. We are, in fact, on the right track: globalization and connectivity have improved the quality of life of billions of people even if they have also made high inequality inevitable.

The time has come for even bolder thinking about how to leverage near-total connectivity to advance large-scale human development. Infrastructure, markets, technologies, and supply chains are not only logistically uniting the world, but also propelling us towards a fairer and more sustainable future. But there is still a long way to go. Billions are still without roads and electricity; food is scarce; money is a luxury. Bad infrastructure and bad institutions stand in the way of bridging supply and demand. It is a moral imperative to overcome them.

The cost of building this new planetary order runs into the hundreds of trillions, and so do its benefits, at least those that can only be measured financially. This, then, is the emergent global social contract: If we can manage to socialize (or even relieve) the costs accumulated in order to unlock the productive potential of billions of under-served

and underemployed people, we will also collectively share in the wealth of a much richer global society.

We are building this global society without a global leader. Global order is no longer something that can be dictated or controlled from the top down. Globalization is itself the order. Power has made one full rotation around the world in the past millennium, from the late Song dynasty through the Turkic Mongols and Arab caliphates to European colonial empires to the American colossus. But whereas Pax Americana replaced Pax Britannica—with America becoming the world’s policeman and lender of last resort over two generations—a Pax Sinica is not likely to replace American dominance in the same linear fashion.

Instead, the past decade’s hype of the East surpassing the West, China replacing America, and the Pacific displacing the Atlantic is giving way to a multi-civilizational and multi-polar world in which continents and regions deepen their internal integration while expanding their global linkages. Latin Americans, Africans, Arabs, Indians, and Asians all want a world in which they can multi-align and trade in all directions, and not be subject to either American or Chinese diktats.

They will play the great powers off against each other more than they will accept unilateral impositions. They all

believe—correctly—that connectivity rather than hegemony is the path to global stability. Supply and demand will shape how regions and powers interact. If America offers military support and technology, China provides infrastructure and export markets, Europe sends aid and governance advisers, and corporate supply chains smooth the flow of connections, this is the closest geopolitics comes to stars aligning.

Historical models of order have been built on spheres of influence, but a stable global society today must be based on co-creation across civilizations. Such a balanced system is what Chinese scholar Zhang Weiwei describes as symmetrical rather than hierarchical. It is one in which maintaining stability requires self-restraint and mutual trust among diverse powers.

We cannot wait for events to force a new paradigm of global strategic thought. Rather, we need strategies to avoid undesirable events. If the “Thucydides trap”—war between dominant and rising powers—is driven by the dangerous brew of fear and pride, then taking emotion out of the equation is crucial to transmuting great power rivalry. Regionalism and reciprocity become the most important barriers to the escalation of tensions. Globalization’s advance is the only antidote to the logic of superpower-centric rivalries—replacing war with

tug-of-war. Making the world safe for supply chains ultimately makes the world a safer place.

We also need a world of mutual connectivity rather than geopolitical hierarchy precisely because we cannot be sure of any power or region’s fate 10 years hence. America could become less interventionist as it leverages its energy wealth to upgrade and invest in its own hemisphere. Europe could suffer political stasis and insularity as a result of its economic malaise. Asia could be beset by strategic rivalries that derail its spectacular growth.

The same trends are playing out everywhere. The global division of labor makes everyone better off by creating jobs in poor countries, reducing prices in rich ones, and expanding choice for all. The new era of pluralistic connectivity has arrived. If, as Einstein famously stated, we cannot solve a problem with the same mind that created it, then the problems of a state-centric world require thinking beyond that world. The yardstick of commitment to global connectivity is thus not loyalty to post-World War II institutions, but a commitment to meeting the needs of the world’s population. Global governance must therefore have a generative structure like the internet: distributed coordination without central control, and mutuality among a growing number of participants in the network. ●