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Thucydide's Trap, String Theory, Modelski's Table

An Analysis of Great Power Competition in the Modern Age

EDITOR'S NOTE

On Grand Strategy by John Lewis Gaddis posits the unique notion of balancing theories with their practical application. It is of no value to have memorized every flag in the world, but not understand a single lick of diplomatic language. One can study maps, but it is being able to prepare and march on that terrain that is imperative. Preparation met with participation. It is such a balance that has been compiled in Arctic Ledger's Theories I. Theories serves as the first publication which analyzes geopolitics, geoeconomics, geostrategy, and many other topics all starting more or less with "geo-". Among these analyses are that of economic warfare- bello-economics, Thucydide's Trap, power, legitimacy, the probability of war, Modelski's table and its accuracy, a geopolitical theory of interconnectedness and manipulation referred to as "string theory" (which stems from the notion of weaponized interdependence). Such arguments differ from the traditional output of Arctic Ledger in that they serve not as specific arguments or evidence to call for a change. These are not analysis of hard-evidenced critical mineral supply chains, national vulnerabilities, or geopolitical movements or competitions. Instead, they are fundamentally ideas, meant for consumption to expand theories of geopolitics.

The nature of geopolitics is change; theories constantly fluctuate as new events transpire, as nations wax and wane, and as time ebbs forth. Each theorist of geopolitics lived in a different world, and while theories may compound and become more complex and accurate, they are never perfect. Some, historically, are deeply- in some cases comically- flawed, such as the Organic State theory, due to its reductionist tendencies.

Unlike other publications through Arctic Ledger, Theories I only contains writings from myself, Jack Lindstrom. This is not because such theories or ideas are particularly correct, or that I believe them. It is also not for a lack of trying to attain fellow researchers, writers and thinkers. Arctic Ledger welcomes all voices and ideas; so long as they can be credibly supported. It is not, therefore, a pedestal from which I am attempting to preach certain beliefs; merely an outlet of ideas so they may circulate (or not) freely in the world, without restriction. The world is made richer with more ideas and considerations, and diversity of thought is hardly a negative quality. These works have been edited and reviewed, although are not published elsewhere at this time. Nonetheless, it is our great hope at Arctic Ledger that these theories maintain a grounded enough approach to provide practical application, as well as theoretical value. We hope Theories I serves as both the map, and equipment for the terrain.

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ABOUT ARCTIC LEDGER

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Strings Attached: Measuring Leverage in the Globalized World Order

Jack Lindstrom

Power, as written in the Peace of Westphalia, must be balanced with legitimacy.[1] It is the institutions that are established by great powers that allow them the assurance of their power rather than creating constant challengers. Where one force rises, another shall arise to meet it- but this is mitigated greatly by a liberal world order of institutions; if everyone plays by the same rules, competition becomes friendly rather than inflammatory. Wars fall out of fashion, peacetime extends beyond an absence of war and into a time of prosperity, globalized trade, knowledge, and innovation. This is how geopolitics has been perceived throughout recent history for some time now. Although it has its variants- particularly in the deterministic departments, wherein concerns of geography, governmental structure, religious influence, and so forth hold prominence, or with extensions of an increasingly liberalized system as Modelski theorized[2]- the skeleton of geopolitics has largely remained. It has been broken down, with an analysis of individuals, systems, and worldwide involvement, echelons of power, the causes of civil war, and the remedy to economic windfalls, and so forth.
This discourse, however, believes there is a more simplistic explanation to geopolitics. Simplistic, it is imperative to note, does not mean with less complexity, rather with more comprehensibility. This paper argues instead that geopolitics, the flow of great powers, and the development of the world as we know it arose from a different mapping of power. It is not solely economic, nor military, nor geographical, nor institutional, nor is it philosophical, religious, sociological, or psychological; this paper argues instead that, like early theories of quantum mechanics, the world is constructed of several strings, tethering, pulling, and influencing powers throughout the world. This paper argues for an interdependence of all nations, even in a time before the nations were interconnected. In Part I, this discourse will explore the facets of strings, their applications, and their quantification; Part II will elaborate upon the types of strings and their respective uses, concluding with an analysis of how strings serve the role of modern colonies and thus feed what can be considered modern empires.

The Concert of Europe served as a unique era of peace through interconnection; if everyone was allied, no one would wage war. The same logic proliferated the entire world following WWII and the fall of the USSR- the world would, through globalization, assimilate into democratic, liberal nations. If everyone was intertwined economically, no one would have reason to wage war- they would merely trade for that which they desired. China, to the disappointment of Western geopolitical scholars and great concern of Western world leaders, did not follow this path. Instead, it extracted value from the WTO after its ascension in 2001,[3] and bolstered its own economy and prominence in the world, ingraining itself, while remaining a domestically command-economy, authoritarian state. As such, the international "concert of the world" never occurred; however, that is not to say there is not still music playing. Although it is a song only plucked by certain powers, applying tension to others, a tune still rises from the international concert, one played on strings.

What are Strings? *The Ties That Bind.*

Power is the ability to exercise one's will upon others, by any means necessary. Power is not, however, influence. Strings are the connections of power; the tethers that mark relationships, dependencies, alliances, and opposition. Legitimacy has been viewed as a support for power; therefore, to be a superpower requires each to be wielded equally- the arrow and olive branch. However, legitimacy is simply the perception of others, while power is simply the ability to impose will upon others. Therefore, although the combination is effective at explaining the balance a state must keep to become powerful, it lacks the dynamism of interconnectivity. A nation that is tethered to a highly credible nation, for example, gains legitimacy by association; power is shared in a globalized world. The fabric of reality, as it were, is strung together by strings of relationships. It is these strings that forge the bonds of power and legitimacy alike.

The ties between individuals, groups, and world powers fluctuate in degrees of significance, in degrees of strength. However, when a string is pulled in one direction, those tethered to it follow. It is this notion that explains the role of treaties and organizations throughout history on both a micro and macro spectrum. A powerful individual pulls at the heartstrings of their followers, calling them to act, to follow, where the leader, holding the leash, goes. Individuals in this sense hold significant power over a larger group- it is the influence of a charismatic leader that gains support from political parties- from the people, be it in a cult, an organization, or a nation. These strings are some of the most powerful in a nation- the word of a trusted president, the critical claims made by leading figures of thought, the mouthpiece of the press expressing concern- tend to shift the dynamic of nations; opinion polls sway based on the words of the president. This is not to say leaders have absolute power; rather, their role of power does represent their ability to pull strings- which will be later explored- effectively. Tracing the line down the echelons, the strings become more tangled; although the pattern is that of clear cohesion directed up, there are minor allegiances, factions, friendships, rivalries, and healthy competitions within the ranks. A boss may envy the efficiency of an underling, an employee may act against the interests of their boss- and thereby the company. Orders all come from the top, but their process throughout the chain of command, how they are followed and why, is the result of minor strings tangled amongst one another. Human interactions can, as a whole, reflect this- a friend may pursue a new hobby, find it enjoyable, and result in a wider trend of pursuing that activity. This is a subtle influence- soft power as it is known geopolitically. The expansion of this is that some will find the activity too mainstream, distasteful, or otherwise not their style. They will, in turn, form a counterclique. Nonetheless, the tangles of influence, power dynamics, and friendship quickly interfere with one another. This is true in any organization, where leaders find constant drama, conflict, and unusual relationships of causal chains tracing back through innumerable employees and their strings.

Governmentally, this is utilized to a similar extent- the United States' government functions as a deliberate slowing and tangling of power, rather than a singular ruler. Without monarchy, there is a sluggish contest of tug-of-war constantly played throughout the democracy; the people tug here, the government there, the businesses elsewhere. It is through this entanglement that political processes are slowed; checks and balances deliberately pull weight in one direction or another, ensuring there is no one line of power to be plucked by a greedy ruler. The entanglement of people, and an array of individuals in varying degrees of power, compounded with the natural propensity of people to become envious, wrathful, followers or foes, the system of a democratic republic serves its role of halting any autocratic schemes. It is this same system of string-pulling that famously slows the deliberation of the European Union; NATO suffers this problem to a lesser extent- it is designed as a military pact, and so it requires a commander rather than a council,[4] for the very same reason military chain of command is imperative. Too many generals spoil the battle. NATO thus functions under more executive command; therefore, when action is needed, it is not hindered.

On a world scale, the entanglement becomes more complex. The strings between people in corporations are clean enough- it is much neater in the military chain of command, but still present; however, geopolitically the ties that bind are economic, militant, domestic, as well as individual. Every level of this tangle is present in geopolitics, thus creating a deeply interconnected, complex system of dependencies, alliances and oppositions. Each is unique; each is entangled with others- to pull on Ireland's economy in turn is to pull on secondary and tertiary unexpected outcomes. That is not to say that a geopolitical leader or strategist must focus on these outcomes in their degrees- often it is blunt, direct actions that serve their initial purpose with marginal tertiary impact. That said, by deliberately acting and targeting these second and third-degree elements, leaders are able to subtly move and indirectly manipulate their allies or opponents. Indirect action is fundamental for any kind of warfare, be it the wheeler-dealers in politics, the multi-step strategies of physical conflicts, the traps set in chess, or economic pursuits pulled through infrastructure into alignment. Although China has mastered the two-step play, a bait-and-switch strategy, wherein the victim states take infrastructure deals or loans from China, and then are thus tethered to it, the world has yet to truly see a power acting in tertiary moves- the strategy of traps and tactics on a deeper strategic level is often lost. Part of the reason China is able to make more complex maneuvers than the United States is due to its autocratic system of governance. The United States requires a president that is clear, commanding, and comprehensive- as well as confident- because these qualities demonstrate a deliberate plan to the public, without disguising secondary maneuvers from the people; it is, after all, a government for the people. China faces no such explanation of maneuvers or plans, as the people are forced to trust in those in power, as they lack a vote regardless. A

monarch functions by virtue of streamlined power- leading to great leaders with great ambitions - Napoleons- or weak leaders who are more focused on themselves than their nations.
Autocracies and dictatorships function through even more direct ties to power, thus granting further extremes. This is why checks and balances were necessitated. Nations that are too loose and autocratic have no strings to safeguard the people or their values, and so the state seizes property and power- thus halting economic development and investment. Too many strings domestically create too limiting a system that is inflexible and therefore cannot adapt to the changing winds of the world.

Strings, fundamentally, are connections, and can either be positive, negative, or equal- a negative string represents a power dependent upon another state, or that has significant leverage lost to that state; this would be a state like Nicaragua, dependent on Chinese investment and infrastructure.[5] Contrastingly, positive strings represent the inverse: a power with leverage upon another- in the same scenario, it is China which expresses indirect power upon Nicaragua through this string. As such, strings can be pulled both directly and indirectly to achieve geopolitical goals. Equal strings are best seen in coalitions and trade agreements between equally powerful nations- US-China trade agreements are a perfect example, as it favors no country over the other, and because both are modern great powers, there is no structural imbalance. This would not be the case if, for example, it was a deal between China and the Solomon Islands,[6] as an "equal" deal could in this case easily be selling China short, or just as well, taking advantage of the smaller economy of the Solomon Islands.
There are two kinds of players: those who pull the strings and those who are pulled by them. That is all. That is not to say powers don't do both- but there are alleyways one side or another that are more powerful. For example, Saudi Arabia and Kuwait depend upon their water desalination infrastructure from China; it must be maintained, operated, and of course constructed.[7] But China's tethers in these nations do not compare to the nations' tethers in the world energy economy through oil.
Germany, on the other hand, entangled itself deliberately in more red tape in the form of the EU;[8] it could be a unique power, but compared to Russia, China, and the US, it opted instead for more red tape in exchange for more strings- more tied up, yes, but also more powerful than it otherwise would be. More strings need not mean less efficiency; it is only when they are tied up so much in commissions and committees- in the institutions that ensure peace through entanglement- that executive power is limited. If, like a cunning politician, Germany creates strings to other EU members, then it is able to weaponise the system and gain significantly larger leverage and therefore turn its present weakness of deliberation into brutally powerful efficiency. This is the weaponisation of committees. By another name, politics.

How are Strings Used?

The understanding of power and legitimacy in geopolitics is a crucial one, and as such has been respected for decades if not centuries. This String Theory abides by such principles and acknowledges the credibility behind them; however, it seeks to explain this balance of power and legitimacy under the same umbrella more succinctly. This can be stated more precisely as two principles, refining the working definitions introduced above.

I. **Legitimacy is the credibility strings make.** Legitimacy is seen primarily through institutions and internal competence; through actions that are deemed moral, acceptable, justified, and internationally legal. However, it is the definitions of moral, acceptable, and justified that are established through the state with the most leverage over others. If a nation controls the International Criminal Court, or the UN, with a disproportionate amount of leverage, and forces other states to abide by its definitions of these terms, then these terms are malleable and dependent upon the power which resides in the center of the web. The one pulling the strings and establishing them. Legitimacy is dependent upon other nations' beliefs; however, by remaining at the center of the institutions, a state can shape those beliefs from the inside, and thus fabricate legitimacy.

II. Power is the strength of a string to pull or hold in line another state. Power is, as established in Part I, the leverage exercised through strings upon a fellow state. If the states hold equal leverage upon one another, then no state wins this tug-of-war and holds power over the other. If it does retain more abundant strings (including individual assets, such as spies, or people within the nation) or more significant strings (entire supply chains or economic sectors), then it holds an advantage and thus power over the other nation.

War serves as a fundamental simplifier and organizer of these strings- nations, following conflict, seek more order through coalitions and treaties- as such, they tidy the international order for better or for worse.
The First World War is the perfect example of how strings can lead to enmeshment and escalation. Nations tethered through alliances were bound to protect one another; and as such, unrelated powers warred upon one another with little real incentive aside from a daisy chain ignited with the assassination of Franz Ferdinand.[9] The cost of war was an unstable system of strings; they were overly tethered and unorganized, leading to a pulling on all parts to act, until a less entangled power- the United States- entered the conflict after being pulled in through antagonism by Germany. The League of Nations failed thereafter because it failed on counts of both legitimacy and power[10]- it was a statue- representative of an ideal, but effectively frozen. As such, the intended tying of a knot through the League failed, and the Second World War erupted. Appeasement is the perception that the strings of leverage, or the potential of their developing into war, are worth risking the loss of assets and gaining of liabilities to avoid conflict. The Second World War simplified these strings- powers were eliminated, old alliances replaced with cleaner, clearer coalitions and pacts. Treaties established temporary peace, pacts established alliances and joint ventures; however, it was the end of the First World War that allowed the great cutting of strings and simplification of the geopolitical web. Over the centuries leading up to the First World War, Europe was dangerously entangled, with each century adding further entanglement. Briefly, under the Concert of Europe, this system provided peace; however, it required pruning to remain healthy- or at least organized. This did not occur; what replaced it was a daisy chain of strings. The end of the Second World War saw the further organization of strings- without complex and convoluted treaties, the great powers established coalitions and organizations. The USSR, EU, NATO, and later the UN replaced the League of Nations. These organizations acted as representatives of the nations on a smaller scale- the result was not international strings tethering complex alliances and treaties, but instead single plug-ins for major powers to come together; any deliberation then happened within the strings, thus resolving innumerable complex problems of cause and effect. In the earlier system, ties connected nations through a complex maze of history, culture, trade, and military alliances. With a system of simplification, the powers instead simply joined NATO or the EU, wherein they were able to resolve such problems without the same level of entanglement. On the outside, strings from each member nation enter and tie the nations together cleanly. Within the connector, however, there occur the smaller go-ons and negotiations within the organization. This simplification of strings through institutions is crucially unique to the modern new-world order; the old world functioned through messy individual treaties between numerous powers, thus leading to entanglement to a great extent. This also led to more unnecessary conflict, such as seen in WWI, because an action taken to declare or provoke war was not seen with the same ramifications that the same action would be viewed with now. No nation dares wage war within NATO for fear of entangling its allies; in the same way, no nation would dare strike a NATO country. The new world order is one of simplification; in this way, seen largely regionally: NATO, GCC, ASEAN, etc.

Alliances are productive strings which serve as a net of support for great powers but can force weaker powers to become tangled in- the spider rests easy in the web- the gnat does not.
A key example of a nation building itself an internal web is China; the dual circulation program initiated in 2020 insulates the Chinese economy from external strings[11]- slowly pruning its liabilities, while retaining its outgoing strings- managing its assets. What is critical is that not all strings go both ways- China's strings in particular are strictly one-way, whereas a nation like the United States' flows bidirectionally. Where there is a string, there was an opportunity for leverage; a nation that bought from another power could cut off all sales through sanctions, tariffs, or taxes on those goods. Nations could boycott the dominant powers of the economic world in this way, as the notion was that no power held all the resources to sustain itself without trade and the specialization of it. China seeks to insulate itself from such a consequence; however, through this one-way system of strings, much like the US's weaponization of the dollar, if the risk of this is realized before it is perfected, it could send shocks through China's economy. The risk for all power seeking to minimize liabilities is the awareness of those who held the strings that are being cut, and for that power to cut the remainder- thus isolating a nation. The benefits of globalization and interconnectivity are imperative for great powers to succeed in an overarching world order- simply put, a king cannot rule his nation from just the castle. Any power that wishes to be great will inevitably have strings going both ways, and although China seeks to minimize incoming strings and maximize outgoing strings, there will always be some which go both ways, and some which hold great comparative advantages over China. Dual circulation, however, is a clear

representation of this string theory being enacted; Modelski's theory of long cycles posits that challengers arise from outside the system,[12] Mackinder's theory of a heartland posits the notion of internal resources and maritime reach,[13] dual circulation creates a system acknowledging the powerful ties of challengers within a system and compound the impact of Mackinder's reach and land assets with insulated and isolatory nations. No isolated nation can rule the world; but a nation with outgoing strings and few incoming strings can rule with the same advantage of isolation. Dual circulation, therefore, is the physical manifestation of the principle of geopolitical string theory.

The notion that everything is connected is absurd as it is accurate; the people construct webs around orders who construct webs throughout the world. China is a true spider in this regard; eight legs working upon each continent and sea to string up the world- the United States instead acts as a more deliberate puppet master, reluctant to pull strings if it can manage on its own. Independence, then, is crucial for a great power not to have dependencies.

When Washington warned of international entanglement, he meant likely liabilities- as engagement for so young and small a country was merely a risk, whereas for the modern United States it is entirely assets, and therefore less risky.

Then there are the nations which are entirely strung out, with no leverage of their own. The Solomon Islands are the quintessential example; all exports feed into China,[14] and so they are dependent upon China- which is not dependent upon them. China provides military aid and support, but in exchange effectively could eliminate the Solomon Islands' sovereignty at their discretion.

Like cells that make tissues which make organs and then organisms, the mechanism of emergence provides that states simply like more complex people. This means that the interpersonal mechanisms of strings, best depicted in the courtiers of old, are mirrored on a geopolitical scale. This means, through conflict, friendship, and ambivalence, so are states dictated by human relationships and human nature. In other words, strings scale accordingly. China is a master of these strings- it takes advantage of them in a structural way- infrastructure as alignment, dependency, and most of all chokepoints, particularly at present on critical minerals.

India serves as a unique example, wherein it holds few international ties of true significance, but a number of smaller strings; more than anything, however, it is prohibited from being a great power merely by its domestic entanglements, which have become knotted. Should India expand its international ties of leverage strategically, it will thrive.

Strategy is minimising the strings you are tied to while maximising those you hold on others. This, however, is very unappealing to one's allies and enemies alike; everyone is playing the same game, and so must compromise; thus we have trade agreements and negotiations of military placement and strategy. This is the heart of geopolitics.

The United States utilises its dollar as a key string that the entirety of the world hangs upon;[15] or at least it did until it saw the strategic potential of the dollar- although the world economy has not derailed, it is important to note that obvious heavy-handed measures utilising the dollar as a weapon and strategy do produce increased awareness of the strategic potential of the dollar to turn into a liability rather than an asset.

Russia overused its strengths of leverage and was forced to wage war, which has since harmed it further; an ineffective strategy. As the world is more globalised, obvious war becomes distasteful and outdated. The geopolitical landscape has shifted to reflect more the court of a monarchy, wherein clerks and courtiers utilized strategy rather than force to gain and keep power. It is only the monarch, in a kingdom, who is just in utilising force; all others must act indirectly, through forms of manipulation and leverage.

Quantification

Strings must be measured, or else they float about as nebulous concepts, beneficial as theories, but ineffective in terms of application. The measurement of strings, therefore, must be established.

Strings are fundamentally connections officially held between two nations- this includes all economic exchanges and policies, military excursions or involvements, soft power (measured through polls, educational exchanges, visas, tourism, etc.), dependence upon another nation (such as through SWIFT, the US dollar, resources such as petrol or rare earth minerals, or microchips), and otherwise geopolitical leveraging. It is this miscellaneous geopolitical leveraging which is difficult to quantify- the pressuring of a president upon a prime minister is individual; it is built upon psychology and sociology, and specific encounters; it can also take place through hostages, spies, backchannels, and human missteps or manipulations. As such, the quantification lies larger in terms of obvious, relevant metrics, such as military bases, trade ratios, and cultural exchanges, as well as shared organizations. Above all, naturally, is the prior establishment of old-world strings, treaties, and pacts; NATO serves as an overarching, clear set of strings between nations, as do the Five Eyes.

Quantification, then, requires treating every string as a dyad rather than a national score. China's leverage over the Solomon Islands and the Solomon Islands' leverage over China are two separate calculations, not one; the gap between them is net power, in keeping with the positive, negative, and equal distinction above. Within each dyad, the critical variable is not raw dependence but the cost of exit: a state buying 90% of a good from one partner holds real power only if that partner has no alternative buyer, a point Albert Hirschman established in *National Power and the Structure of Foreign Trade* and one this theory inherits directly.[16] Each category then draws on data that already exists. Economic strings can be measured through UN Comtrade trade shares, UNCTAD FDI stock, and AidData's sovereign lending tracker.[17] Military strings can be measured through basing agreements, SIPRI arms transfer ratios, and formal alliance data from the Correlates of War project.[18] Institutional strings can be measured through IGO membership weighted by voting power and UN General Assembly voting alignment, using Erik Voeten's ideal-point estimates.[19] Soft power can be measured through exchange volumes, tourism flow, and cultural infrastructure. Structural dependency can be measured through SWIFT and reserve currency composition and chokepoint transit exposure. The individual, backchannel category resists a continuous score, but it is not immeasurable; GDELT[20] codes diplomatic events by cooperation and conflict intensity in near-real time, and a spike in coercive event coding between two states is evidence that a string is being pulled even when its content stays hidden. Weighting across all categories should not default to a simple average, since a shift in tourism numbers does not carry the same weight as a shift in SWIFT dependency; either principal component analysis or structured expert elicitation should set the weights, and the method chosen should be stated outright. Read together, this quantification does not invent a new field. It synthesizes Hirschman on trade dependence, Keohane and Nye on sensitivity and vulnerability interdependence,[21] and the Correlates of War tradition of network measurement into a single operational model, one built for simplicity rather than novelty.

Figure I provides an analysis of categorical weights; however, this naturally fluctuates from nation to nation, and particularly over time. For example, the West has a disproportionate impact in soft power, allowing more cultural crossover as a form of influence than its military policy. Soft power can, given perfect circumstances, have a greater impact than economic policy- take, for example, the Soviet Union, which was largely isolated from the economy of the United States, and yet the US soft power infiltrated the nation to great effect.[22] This is more significant for individual strings- perhaps an American diplomat, or simply an American friend, has the ear of the British Prime Minister; perhaps an MI6 Officer has an informant on the policies of Lebanon before they are enacted and can take preventative actions before the policies take place, as opposed to after. The conditional nature of the world makes theories inapplicable with base values; not all influence is proportional- an armored brigade entering Ukraine from Poland does not hold the same impact as an armored brigade entering Russia from China. Figure I, therefore, serves more as a reference to be shifted and applied according to the facts of the situation, given that enough evidence is supplied.

Further information on Figure I and its application can be found in the appendix.

Figure I

Category	Weight
Economic Strings (trade & investment dependence)	20
Military Strings	20
Structural / Chokepoint Dependence (currency, SWIFT, resources, chips)	15
Institutional / Regional Strings	15
Soft Strings (cultural/soft power)	10
Individual Strings (leader-level & covert)	10
Modern Colonialism Asymmetry Modifier (directionality of flow)	10
Total	**100**

Formula: Effective Score = Weight × (Raw Dependence Score ÷ 100) × Substitutability Multiplier

As institutions organize and simplify strings; strings organize and simplify geopolitical relationships.

Economic Strings

Money is a form of leverage; it serves as an extension of power. As such, it is one of the most prominent examples of strings in the modern age. As the world became more peaceful and economies more intertwined through globalization, economic leverage also became a more viable form of manipulation. The hegemon of such strings is undisputedly the United States, largely as a result of the petrodollar and its place in the economy as a foundation- exchanges that have nothing to do with the United States utilize the US dollar as their medium of exchange. This allows the United States to hold leverage upon nearly all nations with incredible power- through legitimacy. If not for the legitimacy of the US dollar, it would not be as successful and ubiquitous as it is; the most prominent example of this logic is reflected in China's renminbi, which sees little international circulation outside of specific Chinese international banks. These international banks hold leverage largely over nations in the global south, and attempt to take the place of the IMF and World Bank; however, they are often limited to smaller, short-term investment projects. These banks and investments serve as leverage over the nations in which they reside- the projects require maintenance, and such maintenance requires Chinese experts in the infrastructure, leading to an innate dependency. The economic strings have been plucked by the United States predominantly in specific nations- FDPRs to counter China's push for microchips and Huawei's influence,[23] sanctions on Iran and Russia, as well as the blocking of technologies such as SWIFT in China and Russia alike. It is here that nations have been made aware of strings and attempt to resolve this through the fabrication of new, insulated wires. These wires serve as Russian and Chinese alternatives to SWIFT; however, they lack such proliferation that they only insulate the nations within themselves, and not in smaller blocs attempting to seek freedom from leverage. Here, a fundamental idea plays out- nations that attempt to cut strings with one power- such as the United States- are forced to follow the leader of another bloc- such as China. Therefore, there will always be unique leaders of strings, known as hegemons and challengers in Modelski's Table, but also as great powers to Paul Kennedy,[24] and otherwise bloc leaders and superpowers. There is a reason embedded within the DNA of humanity and geopolitics, as an extension, that leads to certain leaders able to hold the most strings, and for tribalism to create factions. Strings serve to explain both the large and small influences of and on states in such a way, as they can be deployed to understand nations and individuals alike, and can be fit to any scale. Economically, however, the relationship is more than that of the tenant and landlord, but instead of states which can pull and push on one another, although the United States holds dominance through the ubiquity of the dollar; the investment projects of China serve as a more direct form of a string. The dollar does not force all who utilize it to bow to the will of the United States or face consequences; by contrast, the infrastructure and dependence upon Chinese banks often leads to direct leverage which is deliberately applied.

Trade serves as the natural extension of economic strings, much more commonly than borrowers and lenders, as globalization has led to constant trade throughout nearly all nations with most other nations. The nations with the most competitive advantages benefit in such a network of strings, but the netting is so complex that there is no clear, evident "winner" of globalization, only a vast number of nations that greatly benefit. Nations which hold disproportionate trade relationships with other states- such as China and the Solomon Islands- hold great leverage. If a nation obtains nearly all of its technology from a single nation- such as microchips from Taiwan- then that nation holds the strings of the entire sector for that nation. In the case of Taiwan, it holds nearly all the strings on microchips, sharing lightly with nations like Japan and the United States, while China seeks to match it.[25] Such economic strings were utilized in the first US-Iranian negotiations, leading to the signing of the Iran Nuclear Deal.[26] No weapons need firing, simply purse strings drawn shut.

Military Strings

Military strings are traditionally the most visible of any. Coalitions and pacts, treaties and alliances of military significance are primarily public, whereas occupations or military bases are by nature physical, visible landmarks. The nature of specific military facilities is more obscure, such as the US nuclear military base in Greenland; however, the facilities themselves are evidently militant and therefore visible strings. There are more discrete war-based strings, such as facilities for biological warfare, as such plants can be conducted in as small a space as an apartment kitchen, as opposed to the massive scale required for nuclear production; chemical weaponry falls between such scales. Terrorists and guerrilla insurgents can blend in with both natural environments and civil populations, thus creating further invisibility for the extent of military strings. Overall, however, military strings serve as the most predominantly obvious strings- and by no accident. States benefit from their pacts, such as NATO, being known to the world. Fleets of aircraft carriers are difficult to obscure; submarines by nature are hidden, and it is in such dichotomies that leverage and strings are made apparent. Strings work best through their visibility to both powers; an alliance between China and Russia requires both parties to be aware of the stationing of Chinese fleets in the Arctic- even if they are obscured to the world. However, a Chinese presence around Taiwan must be visible to apply pressure to Taiwan- if the Taiwanese lack awareness of submarines parked around its borders, life will continue as before. It is only when China attempts to force a deal with Taiwan, making known the imminent threat, that the strings gain power. That is not to discredit invisible forces; however, these are most valuable when utilized and cannot be mapped while invisible. For analysis, however, they are harmful. From a purely strategic point, they allow for certain leverage to be taken- higher risks with the nation, in the scenario of war, for example, because the actualization of war has already been prepared for. This was the role of the US Jupiter missiles[27] in Turkey; whereas the missiles in Cuba were denied by the USSR for the inverse reason, leverage can be applied both invisibly and visibly. In the end, however, the US was aware of the missiles- military strings- in Cuba, and their leverage, ever-present, helped negotiate a deal.[28] This is the most applicable usage of invisible to visible military leverage: a power appears weak until it is beneficial to appear strong, which it can become at a moment's notice. In the modern age, most military ties are seen in US military bases, the movements of naval fleets, and the sending of arms to allies, or the selling of arms to neutral parties. As the world shifted towards pacifism, military strings have lost no ground in leverage; however, economic strings have gained more direct impact- it is less frequent that missiles or bullets have direct impact on geopolitics, as much as economic means. It is for this reason that the US chose legitimacy when dealing with the Russo-Ukraine conflict, through sanctions and economic strings, as well as sending arms, as opposed to engagement. The role of the US strikes in Iran, by contrast, was actions of direct power, rather than legitimacy, but were completed with military strings accompanied by- in fact, preceded by- economic strings.

Soft Strings

Soft strings are colloquially cultural strings. They stem from the same logic of soft power, and serve as cultural ties connecting major sources of culture with smaller powers. The imperative notion of soft strings is that regardless of a nation's legitimacy or power, economic or military ties, as well as coalitions, soft strings serve the equal purpose. The power of nations to export their culture is crucial to their success, and is reflected best, if nowhere else, in cultural, language, and educational exchange programs.

Soft strings, unsparingly, are best seen in some of the most prominent soft power examples; namely the influence of American radio into the Soviet Union and Eastern Bloc. The lack of military or economic leverage presents the situation as one entirely predicated upon the power of soft strings. The Voice of America in the 1940s expanded into Radio Free Europe and Radio Liberty; a thread of soft strings, stitched across Europe and into a society that was otherwise impossible to access. No trade nor brigade could penetrate the iron curtain- but voices, the influence of soft strings; that could.[29] Estimates suggest Radio Free Europe and Radio Liberty alone reached tens of millions of listeners across the Soviet sphere at the height of the Cold War, a substantial share of them inside the USSR itself.[30] The Kremlin's response is itself evidence of the string's strength: Soviet authorities devoted enormous resources to jamming the broadcasts and prosecuting listeners, yet the audience persisted.[31] Such a theory follows the same pattern more generally- a soft string need not travel in tandem with an economic or military string to pull with just as much power. Boris Yeltsin later credited Radio Liberty as a vital information channel during the attempted 1991 coup which hastened the Soviet collapse, a claim made famous for its frequent citation by Cold War scholars of the evidence of broadcasting power; and how soft strings, in the end, outlasted the harder ones.[32] The contemporary parallels of such strings are ever-present given the utility and amplification provided by the internet. Korean and Japanese cultural exports flourish in the Western world, as does French cultural diplomacy in Francophone Africa, which operates on the same logic and extends influence into societies otherwise isolated from economic and military strings.

Regional Strings

Regional strings are simply the application of all other strings- economic, soft, and military- in regional blocs. The USSR served as a bloc of economically and militarily entwined nations, although of differing degrees of cultural integration. The EU is the most modern example of such regional blocs, with shared, albeit different, cultures, an integrated military and economic system, all of which amounts to such entanglement that the nations hold significantly less individual power in the world than in their respective coalitions, or as collective regions.

The European Union serves as an obvious case study of regional strings which have become so entwined that they bind economic, military, and soft strings into a singular knot. The 1992 Maastricht Treaty which established the EU bound member states into three primary sects; the European Communities, a Common Foreign and Security Policy, and cooperation on justice and domestic affairs, as well as a roadmap toward Economic and monetary union.[33] It was, of course, the economic string which was most binding of these, as a criteria of capping budget deficits and public debt served as a condition of entry into a shared currency, a surrender of domestic fiscal autonomy which had never before been extracted from sovereign European states, established. [34] The exchange was pooled sovereignty for pooled leverage- individually, France, Germany, and Italy carry a fraction of the weight in global trade negotiations, currency markets, or regulatory standard-setting that they carry collectively as the EU, whose single market and euro give it bargaining power against the United States and China that no member state could achieve alone.[35] Yet the compounding is visible in what individual members sacrificed to achieve it. Denmark and the United Kingdom negotiated formal opt-outs from the monetary pillar specifically because full entanglement risked more sovereignty loss than their electorates would accept, and the Danish public's initial rejection of the treaty in a 1992 referendum reflected exactly the anxiety the theory predicts- that regional strings, once pulled taut, are difficult to loosen again.[36] The EU case demonstrates that regional strings are not merely economic, soft, and military strings applied at a larger scale; but rather serve as a distinct category because other member states surrender their ability to sever any one string without unravelling the careful cloth of the others, a form of entanglement a bilateral relationship, however close, rarely produces.

Individual Strings

Individual strings are the most fickle and volatile of all, and are capable of holding major influence in geopolitics. The metaphor of the consul with the king's ear is not outdated, simply framed for an older era- a diplomat with close ties to the leader of a nation is able to provide direct influence on policy, a dynamic Kissinger himself both theorized and practiced across four decades of American diplomacy.[37] In such a way, the desires of the individuals, be they generals, diplomats, trade advisors, translators, or prime ministers, change the course of history greatly. One well-placed spy is able to provide unique advantages to the spy's home country and shift the geopolitical landscape in its favor. As such, the strings between powerful individuals, such as a prime minister and president of two nations, can be struck to cause direct change in international relations, without going through the process of domestic voting.

Individual strings have served nations and other individuals alike, as such was the role of Henry Kissinger's secret July 1971 trip to Beijing. A backchannel conducted through the government of Pakistan; for nearly a year Washington had exchanged signals indirectly through Romanian and Pakistani intermediaries, which created a dynamic wherein neither power could trust any conventional diplomatic channel, without a rapprochement neither side wished to risk announcing prematurely. [38] Pakistani President Yahya Khan personally arranged the mechanics of the trip, feigning a diplomatic illness for Kissinger that allowed his motorcade to be swapped for a decoy while the National Security Advisor was flown from Islamabad to Beijing aboard a Pakistani government aircraft.[39] Only a handful of officials on either side knew the trip was occurring; even the U.S. State Department was kept in ignorance of the plan.[40] Over forty-eight hours of talks with Premier Zhou Enlai, Kissinger secured what Nixon needed most- an invitation for a presidential visit- without a single formal diplomatic exchange between the two governments preceding it.[41] Such an episode reflects the theory of individual strings, as it directly bypassed every other category available to the two states; the economic relationship was absent, the military alliance non-existent, and no regional bloc was able to mediate the distant nations. What existed instead as a personal relationship between Kissinger, Nixon, and Yahya Khan which served as trusted enough to move history a year prior to any public institutions. Pakistan's role as a trusted backchannel has recurred in the decades since, particularly in messages between Washington and Tehran, thus underscoring that individual trust as well as institutional trust, once established, can function as a durable string in its own right, reusable well beyond the episode that created it.[42]

Modern Colonialism

The world, following the Second World War, came to an understanding that the great powers of past and present, most imperatively those that remained in the aftermath of the war, must forgo power for legitimacy. This exchange was taken only to an extent; of course, it did not lead to the disbanding of entire militaries of the winning nations, but it did defer power to institutions and organizations; namely, the UN and NATO. These powers gave up independent power and leverage on the world and on one another, in exchange for a more legitimate unity. What changed as a result was the relinquishing of colonies not only in practice but also as a practice. Colonies that were still under rule were largely made independent- an action taken even by the United States, in the pseudo-colony of the Philippines.[43] This act of granting freedom to a colony- something by definition entangled in and feeding incoming strings to a higher power- reflected a greater legitimacy of the United States throughout Southeast Asia. It was the first indicator to the world that the era of American Hegemony would not be one of pure power, but instead of largely legitimate actions. This legitimacy would fluctuate as the United States became entrenched in war after war, but largely the great powers of the world, particularly in Europe, with the exception of the Soviet Union, held to a standard of legitimacy in place of power. This is the same notion seen in Part I, Chapter 1, as European powers exchanged individual power for a larger group responsibility, and higher levels of legitimacy, through organizations such as the EU. The modern world, therefore, ceased to have colonies. It did, at least, for a time. To better understand how colonies have returned to the modern world, one must first explore what colonies fundamentally are, in terms of String Theory.

A colony in terms of mere incoming and outgoing strings is a puppet state; that is, the strings are pulled upon it from an external power, which extracts all it can from the colony, and gives as little as possible in return. It is a purely extractive investment in nature; the construction of a colony is designed to maximize output and minimize input; more strings feeding the motherland, effectively no strings feeding the colony. However, colonies existed in a time of more bidirectional strings; that is, should a colony hold a major strike, the economy of the metropole suffers, because it, to an extent, depends upon the colony.

This is where the modern colony differs. Firstly, modern colonies are not dubbed colonies- they are not viewed externally or internally as repressed, or as if they are serving a more powerful nation. All nations in the modern age appear sovereign, regardless of the extent of how true this may be. There are no present empires; although there is colloquially the American Empire, it is simply a reiteration of the notion of the American Hegemony- an empire possesses colonies; the United States does not. What the United States does possess, however, is strings and leverage; this is particularly through economic and military establishments, such as the wide disbursement of US bases,[44] the ubiquity of the US dollar,[45] and the presence of US fleets. As such, although the US pulls strings, it also has strings pulled upon it from other nations; this is what differentiates allies from vassal states: the tension is largely mutual, there is constant give and take; there is balance, not enslavement.

Case Study – The Solomon Islands

China, however, possesses tributary states through one-sided relationships. This is reflected in the case of the Solomon Islands. The primary economic focus of the Solomon Islands is the selling of lumber, 90% of which is bought by China.[46] China does not need the lumber from the Solomon Islands desperately; it has various other means of acquiring lumber, sourcing softwood from New Zealand and Russia, and hardwoods from Vietnam, the United States, and Thailand. The Solomon Islands are nowhere close to being a major importer into the Chinese resource economy, and yet their economy almost exclusively hinges on their relationship with China. Public unrest, resulting from this one-sided relationship, erupted within the Solomon Islands, which was unable to properly support its police force. China stepped in with a sale of police equipment, which later expanded into the 2022 security deal, wherein China held the power to provide a police force in the Solomon Islands to provide security.[47] The exchange for this national quartering of Chinese nationals was the cost of the surrounding waters; the Solomon Islands agreed to permit Chinese naval activity and stationing in their sovereign waters. Simplifying this relationship is the strings of the sovereign connections; although not all strings can be mapped between two nations, the overarching patterns provide a suitable framework for an analysis of the relationship. The Solomon Islands depend entirely upon China- they have no alternative, as their waters are patrolled and laws enforced by China. It is, fundamentally, a tributary state, one which pays tribute to China in lumber, but is otherwise helpless. It is not, by any international definition, a China-owned state; it is not a colony- other nations may conduct trade, and the Solomon Islands may choose to voice itself internationally against China. However, such decisions would be politically suicidal. Take, for example, the relationships of China and its Latin American investments.[48][49] The corresponding pattern of nations with infrastructure dependent upon Chinese maintenance and voting in favor of Chinese policies internationally is a clear indicator not simply of a positive working relationship, nor of alignment, but of pseudo-colonization. The strings are pulled by the nation which controls them, and forces the policy of the vassal state to follow suit at its own peril. Chokepoints play a crucial rule in modern string game theory- China's 2017 opening of its first overseas military base, in Djibouti, astride the Bab-el-Mandeb strait, is illustrative of exactly this kind of chokepoint positioning[50]- as a chokepoint anywhere in the world is able to be altered and change the entire tapestry as a whole; an empire which owns chokepoints owns the world, but an empire which owns a nation in and of itself is an older form of power.

Empires were, for most of history, powerful nations which exercised their will upon those around them, beginning regionally- such as Persia in the Middle East or Rome in the Mediterranean- expanding to conquer larger domains, often via seafaring and naval capability, as well as trade surpluses. Empires or great powers both utilize colonies to achieve further expansion and fuel the internal economy of the world power. China's policy of dual circulation insulates the nation from the dependency of the domestic economy on international ties, while retaining major international leverage through strings of infrastructure, trade, and, in fewer cases, military means. The United States, by contrast, has incredibly prevalent international military strings, as well as trade and leading institutions, but gained power through military and economic means. The result is a nation of colonial strings- China- which are largely built on legitimacy, even if not through traditional institutions, and a nation of institutional strings- the United States- which are built on less legitimate ties as they are military, as well as an absence of colonies. In this ironic dichotomy, the United States retains no colonies- which the world system, following WWII, established as illegitimate- and loses legitimacy through the methods by which it holds strings of power, while China gains further legitimacy in the same motion it gains power through, despite possessing modern colonies.

The question, therefore, of empire as opposed to hegemony is imperative to answer. China, as opposed to the United States, is an empire; the United States, rather, is a hegemon. A hegemon must balance power and legitimacy, as well as abiding by the institutions it heads- should the United States ignore the behest of the UN or NATO, for example, it erodes the legitimacy it helped establish. In such a scenario, the smaller powers within these simplifying coalitions can utilize their collective strength to oust the United States from a place of authority over them. China, not dependent upon such institutions, plays by the rules of the old-world game, one of colonies and international one-on-one treaties; no simplification of regional alliances needed. China is a nation which attempts to stand in both the old world and new world- it utilizes modern institutions such as the WTO to bolster its own ambitions; it uses ASEAN for leverage over other nations, but adds strings outside the coalitions as well. In this way, it attempts to game the modern system by playing with the rules of the old system. The risk this runs, of course, is that of legitimacy. Chinese heavy-handedness in certain regions or policies leads to heavy skepticism of foreign powers.

What is most likely, then, is that China believes that through usage of the new-world system, by using old-world strategies, it can gain enough power to need not legitimacy. It will harness legitimacy as long as it remains a smaller power, but with enough power amassed, it will relinquish legitimacy in exchange for power. This path is already underway in China's removal of 12,000 courses of study[51]- particularly in humanitarian subjects, foreign languages, and cultural studies. By removing the foundation for legitimacy internationally at the root- the education system- it can focus its manpower on the power of international relations instead: economics and war. This explains the Chinese push for hard-science educated students, which is reflected in the alteration of the gaokao to focus primarily on hard sciences,[52] thus making the only viable path into higher education and thus a better life through such subjects. Rush Doshi's exploration of Chinese phases of geopolitical power further expands upon the notion that China will amass legitimacy while quietly gaining power,[53] to eventually trade one for the other, and thus gaming the old system.

In summary, Chinese usage of strings creates colonies which feed the empire's ambitions for power, through legitimate means, by not dubbing any nations truly “colonies”. However, it is China's ambition to become so powerful that it need not legitimacy- that it instead will be the determinant of legitimacy through its overwhelming power. This exchange of legitimacy for power is already underway. Thus marks a direct split in the paths the United States and China took to become empires- the United States relinquished its colonies, such as the Philippines, to bring legitimacy to the world, exchanging power for legitimacy, while China took the inverse approach. This was able to occur through the Chinese understanding of international strings, and as such the ability to make modern colonies, all the while retaining legitimacy; strings provide, therefore, the best explanation for Chinese dual circulation strategy, as well as an understanding of how modern colonies work, and how China exploits the modern system of legitimacy to gain power.

Conclusion- A Brief Look at the World Wide Web

To conclude, a synopsis of the most prominent, powerful, and evident strings has been compiled for a general overview of the world’s tethering. This, however, only goes one degree deep- it is thereby the most surface-level analysis possible, and meant largely for general reference and evidence of patterns, rather than for deep comprehension. The world is fundamentally tangled up in ties between the United States and China; however, the United States is more embedded in this web, while China sits upon it without getting stuck within it. However, with any great or world power, there must come a time of embeddedness, to some extent or another; as such, it is likely that China, as it gains international legitimacy and power, will become more and more entangled as it attempts to engage with larger powers. As an incoming and rising power, China falls under the unique category of a power able to take advantage of past establishments- China can defeat the traditional, expensive tanks, for example, with cheap explosive drones.[54] The same is true for the world of geopolitics- should China establish a system of 5G, as it attempted and succeeded with varying degrees across Europe,[55] it can thereby use that platform as a tool for manipulation. It is these subtler, cheaper strategies that China will attempt to use to avoid the trap of entanglement- that does not mean China will succeed. It is very likely that, after tying enough strings, China finds itself not just in the center of a web, but also trapped by it, with less maneuverability, due to strategies that, at the time of the nation’s rise, seemed beneficial. Strings by nature are not slippery, at least not major strings. The strings between individuals hold more loosely, and in some cases more tightly, than others, but economic, military, and political strings tend towards the same category of stiffness. As such, the China–Solomon Islands case above should be taken as what it is- a single worked illustration of the framework, not an exhaustive mapping of the world's ties. Nonetheless, should future scholars map the entire world, however exhaustive a task that may be, or compare the ties between nations over the span of ten or fifty years, changes are sure to arise and reflect geopolitical patterns. Strings, after all, are nothing new- they are a tool derived from past theories to serve as a looking glass into the past to help predict the future. They may serve as a Gordian Knot, but through careful pruning and analysis, can be utilized to map geopolitical changes.

Appendices

Appendix A — Category Weights

Category	Weight
Economic Strings (trade & investment dependence)	20
Military Strings	20
Structural / Chokepoint Dependence (currency, SWIFT, resources, chips)	15
Institutional / Regional Strings	15
Soft Strings (cultural/soft power)	10
Individual Strings (leader-level & covert)	10
Modern Colonialism Asymmetry Modifier (directionality of flow)	10
Total	**100**

Formula: Effective Score = Weight × (Raw Dependence Score ÷ 100) × Substitutability Multiplier

Appendix B — Scoring Rubric: Raw Dependence Score Anchors

Category	Wt	0 (none)	25 (minor)	50 (moderate)	75 (major)	100 (dominant)
Economic Strings	20	Negligible share (<2%)	Minor but notable (2–10%)	Significant (10–25%)	Major (25–50%)	Dominant, near-monopoly (>50%)
Military Strings	20	No bases, arms ties, or pact	Arms purchases only	Training/exercises or minor basing	Major basing or primary arms supplier	Full defense dependency (bases + arms + guarantee)
Structural / Chokepoint	15	Full alternative access	Minor exposure, easily substituted	Moderate exposure, costly substitution	High exposure, few alternatives	Existential chokepoint (currency, sole-source minerals/chips)
Institutional / Regional	15	No shared IGO/alliance/alignment	Shared membership, low alignment	Shared bloc, moderate alignment	Formal alliance/treaty, high alignment	Binding mutual-defense/union, high alignment
Soft Strings	10	Negligible exchange/tourism	Modest exchange/tourism	Notable cultural/educational ties	Deep cultural penetration (media, diaspora)	Dominant cultural/soft-power presence
Individual Strings	10	No coercive events/elite capture	Occasional pressure events	Regular coercive events (GDELT spikes)	Documented elite capture/backchannel	Installed leadership or persistent covert leverage
Colonialism Asymmetry	10	Fully bidirectional, reciprocal	Mostly bidirectional, mild asymmetry	Moderate asymmetry	Mostly one-directional extraction	Fully one-directional, tributary pattern

Appendix C — Worked Example: China → Solomon Islands

Category	Wt	Raw (B→A dep.)	Mult.	Effective (A over B)	Raw (A→B dep.)	Mult.	Effective (B over A)
Economic	20	78	0.85	13.26	8	0.9	1.44
Military	20	45	0.7	6.30	2	0.9	0.36
Structural/Chokepoint	15	55	0.75	6.19	5	0.85	0.64
Institutional	15	20	0.5	1.50	15	0.5	1.13
Soft	10	40	0.6	2.40	10	0.5	0.50
Individual	10	60	0.7	4.20	5	0.6	0.30
Colonialism Asymmetry	10	85	0.9	7.65	15	0.5	0.75
Total				**41.50**			**5.12**

Net Leverage (China over Solomon Islands): +36.38 → Strongly asymmetric.

Appendix D — Net Leverage Interpretation Scale

Net Leverage Score	Interpretation
Above +60	Tributary / near-colonial — A holds dominant, likely irreversible leverage over B
+25 to +60	Strongly asymmetric — A holds significant leverage over B
+8 to +25	Mildly asymmetric — A holds a modest net advantage over B
−8 to +8	Equal string — leverage is roughly balanced
−25 to −8	Mildly asymmetric — B holds a modest net advantage over A
−60 to −25	Strongly asymmetric — B holds significant leverage over A
Below −60	Tributary / near-colonial — B holds dominant, likely irreversible leverage over A

Thucydides' Trap: The Role of Bello-Economics and Probability of War

Jack M. Lindstrom

Two Sides of the Same Relationship

As the world has become a more globalized place, the facets of warfare have expanded. New domains and frontlines have developed, while others are still nascent. In short, even though human warfare seems to perpetually persist in field combat, reflected in the role of the Russia-Ukraine war, still ongoing[1]- the novel frontiers of war seem even more prominent. The form of chokepoint war, as established through the economic constraints of the United States (US) on Russia, Iran, and China, established a financial front for conflict[2]. Critical minerals and microchips serve as another facet[3]; cyberwarfare utilizes cyberspace as a field of battle like never before[4]; as does the not-yet actualized role of the Arctic, deep sea, and space.[5]

Where there is leverage, there is war. There will perpetually be parties working to utilize the weaknesses of others and dependencies upon them to their advantage. This is not traditionally dubbed as war; nonetheless, it is a form of contest between powers to attain further leverage- it is the utilizing of power to make another do what one wishes.[6] Fundamentally, war. Be it with infrastructure, debt, or troops, new forms of war are being conducted constantly by nations.

Correspondingly, the dangerous balance of rising and present powers has leaders of the US and China meeting and asking how to escape their Thucydides Trap- as reflected in the May 2026 Trump-Xi summit in Beijing.[7] These two factors lead to a clear intersection- the question of how such new fields of war change the likelihood of the outcome of true, physical conflict. The US has, since 2022, stayed out of Russia's siege upon Ukraine, providing some financial and material aid instead.[8] The US instead provided economic pressure on Russia through sanctions, Society for Worldwide Interbank Financial Telecommunication (SWIFT) restrictions, and the freezing of Russian government-affiliated billionaire funds.[9] The battleground shifted from physical to financial; such a course of events was mirrored in the pressuring of Iran economically to strike the Joint Comprehensive Plan of Action (JCPOA).[10] Despite this, a physical war with Iran was initiated to attempt to force a different deal[11], as well as US military operations serving in the capture of Venezuelan president Maduro.[12] As such, military and economic warfare have been used alike in recent US foreign policy. China tells a similar story, wherein the Chinese military applies pressure throughout the Taiwan Strait, the Philippines' Batanes islands[13], as well as financial pressure on those indebted through programs such as the Belt and Road Initiative (BRI).[14]

The question at the heart of the world's transition is this: Does the role of different forms of warfare, particularly financial/economic warfare- increase or reduce the likelihood of physical conflict between the US and China? This article will attempt to answer such a question by analyzing Chinese and US military policy as well as economic policy regarding hostile parties, the role of hotspots such as Taiwan, and the establishment of trade relations between the nations. This article will utilize the concepts of power and legitimacy[15] to determine which action is most beneficial for each nation- and then, by analyzing the outcome for each nation, reconcile the outcome for the world. This article will also utilize the notion of Copeland's theory of economic warfare[16] to analyze the role of economic war in a Thucydides Trap.

Competition breeds innovation, and as such, there is great benefit from healthy competition, although there is a great cost from unhealthy competition: war. The costs of war and the benefits of competition walk a thin line; despite that, the 2026 Trump-Xi summit ended with what appeared to be a mutual understanding of a shared goal.[17] That goal is dubbed "constructive strategic stability", effectively the alliance of the US and China to prevent a catastrophic conflict between them, as reflected in Graham Allison's model of Thucydides' Trap, the very term mentioned by name by Xi Jinping at the May summit.[18] What goes beyond such a model of non-violence would be a pact of healthy competition, the retention of tension between the nations not to spiral into war but instead to soar higher because of the adversity. In other words, to artificially grow innovation through organic competition.

Despite the optimistic approach the nations adopt, it lacks the practical application of a treaty, offering only the appearance of unity among leaders. Such unity does not stop the lower agencies within each nation from acting in their own small wars. Espionage, for example, is not predicated particularly on the President of the US or the Secretary General of the Chinese Communist Party (CCP), although such leaders may guide policy. The fact that the nations, not simply their leaders, wish to either remain in power or take the throne is not predicated by the actions of leaders.[19] What it is guided by, however, is reasonable deterrents or rewards; carrots and sticks.

The current carrot is negative reinforcement, the withdrawal of economic conflict, be it in trade, finances, Foreign Direct Product Rules (FDPRs), SWIFT restrictions, account freezes, or otherwise; put simply, bello-economics.[20] Bello-economics is distinct from a traditional embargo in terms of application and withdrawal; as both function as signals, a cycle of pressure and relief which indicates to the targeted state something about the trajectory of its future access to the globalized world; markets, capital, and technology. It is this dynamic Dale Copeland identifies as the driver of whether economic independence restrains war or hastens it.[21] The relief of such a form of pressure is greatly appealing to the businesses and economic power of China. Such brings forth the first notion: the argument for war, due to bello-economics.

Bello-Economics: The Rationale for War

Respond to force with force; that is a fundamental proposition of war, to not let the enemy make demands and execute punishments without resistance.[22] Such resistance is imperative to avoiding surrender; as such, if bello-economics continues to be applied to China by the US, resistance is to be expected. In such a case, economically or physically.

Resistance to coercion is not necessarily escalatory; however, the determination of its extent, whether it remains purely economic or manifests kinetically, depends upon the target retaining reciprocal leverage over the coercer.[23] In short, it is a two-way road; the US can pull upon the Chinese economy, but such an action goes both ways. This has already played out in the role of 145% tariffs placed on China by the US; in return, China restricted critical minerals to the US.[24] Such leverage tends to keep conflict isolated to the economy because it has a deliberate response. Were such a response absent, different outcomes become clear.

Iran

The US applied incredible economic pressure through sanctions on Iran up to 2018, wherein Iran's ability to impose equal costs on the US faltered.[25] Iran's economic arsenal could not touch the US the way the US economy was able to strike Iran's, particularly due to the importance of US supply chains.[26] Resistance therein took the form of a nuclear program's escalation as to economic retaliation-in-kind. Economic resistance turned kinetic, escalating in the one realm where escalation remained possible.[27] The response resulted in direct military strikes because Iran had no other options; and so should China find itself in a similar position, physical conflict becomes likely. Bluntly put, sustained bello-economic pressure without a reciprocal channel eventually produces kinetic escalation; this is not, however, purely due to a timeline, constant bello-economic pressure sustained over 30 years may not result in the same outcome if it is reciprocated; it is the fact that it is asymmetric that sparked the military response from Iran. This maximum-pressure economic campaign was sustained for six years before strikes occurred.[28]

China

In this situation, China maintains reciprocal leverage, as seen with the rare earth metal restrictions in response to US entity-list actions and export controls; kinetic conflict decreases.[29] The strategic deployment of bello-economic policy from Beijing in the critical mineral and rare earth export controls was deliberately aimed at US defense infrastructure and semiconductor supply chains; it was not military escalation.[30] The semiconductor conflict between China and Taiwan has not manifested into an invasion of Taiwan or destruction of Taiwanese semiconductor infrastructure despite trade conflict, for example. If bello-economics purely encouraged conflict, such as in the Iran case, one would anticipate strikes upon Taiwan from China. Fundamentally though, this is unreasonable; legitimacy internationally trumps power alone.[31] Iran had long lost international legitimacy, and US bello-economics retained legitimacy by not physically engaging Iran, while still applying power.[32] The same is true for China and Taiwan; the loss of legitimacy by conducting any strikes is not worth the potential show of power; it would also likely harm China through its dependence upon Taiwanese microchips. Once again, bello-economic power is often a two-way street.[33] Resistance which is channeled into the bello-economic domain prevents conflict because it provides a more legitimate option than physical warfare.

Russia

Since 2022, Russia has been forced to absorb SWIFT restrictions, frozen assets, and sustained sanctions[34], and has not initiated direct conflict with the US. This makes Russia a stability case in one specific sense only: no kinetic war exists between Russia and the US as a result of bello-economic pressure. It is not a stability case for bello-economics as a deterrent to war more broadly, since Russia has maintained active kinetic war with Ukraine throughout the same period. Bello-economics did not stop that war, and did not meaningfully constrain Russia's willingness to start or sustain it; the case therefore shows that sanctions can suppress escalation between the sanctioning power and the sanctioned state without suppressing the sanctioned state's willingness to fight a third party. This is likely because there is a sunk cost of legitimacy in waging war, and succumbing to outside influence weakens the perceived power of the state[35]; the incentive not to escalate against the US specifically does not transfer to Russia's conflict with Ukraine. Additionally, war is innately a costly endeavor; unexpected costs may strain the domestic economy further than anticipated, but that cost is inherent to war regardless of sanctions. Russia has also adapted to sanctions pressure through shadow fleets and yuan settlements[36]. This adaptation response carries its own message: nations may insulate rather than respond with force when they cannot respond in kind. Insulation is far less costly in terms of power and legitimacy than surrender, while still allowing the nation to function; adaptation is at least as common as escalation. Russia therefore serves as a narrower example than it's sometimes used as: a nation engaged in active kinetic warfare that has nonetheless avoided further kinetic escalation with the US specifically on the bello-economic front. That distinction, US-directed stability rather than general peace, is the version of the claim that should carry through the rest of the paper[37]

Venezuela

At times, however, bello-economic policy simply falls flat. Venezuela provides the most pointed case of this. Force has a presence in the modern, globalized world, despite the persistent utility of economic warfare. Sanctions placed against the Maduro government since 2017 slowly accumulated over the following decade[38]; despite this, the pressure campaign ended not in a negotiated settlement but instead in the direct capture of Maduro by US forces in January 2026.[39] Use of force where sanctions would not suffice; where the domineering power acted violently rather than the received power. This differs directly from Iran in this way, due to a mechanism of failure: the Brookings post-operation analysis indicates not that Maduro lost patience and tolerance for the sanctions but instead that, like Russia, he adapted to evade the sanctions.[40] Thus the power held by the coercer was eroded, and as such faith in economic tools to win the war alone. This is not pressure accumulated, then sparking into war; instead, it is an indication that some cases exist wherein the expectation of achieving a goal purely through bello-economics continually declined, thus pushing Washington towards a more kinetic option. In short, bello-economics, when failing, can lead to physical involvement. Bello-economic power kept declining, and Venezuela had no reciprocal economic leverage over the US; hence, once the adaptation strategies stopped being sufficient on their own, there was no further bello-economic escalation left available to either side. Washington had the next rung on the escalation ladder, and utilized it to seize the nation's president.[41]

There are, therefore, four obvious outcomes of bello-economics: (1) reciprocation and retaliation in the same medium, (2) evasion, (3) erosion leading to action, (4) the forcing of physical action as last resort.[42] The mechanical difference between the two is which side runs out of options first: in erosion, the coercer's own bello-economic tool loses effectiveness, and it turns to force instead; in forcing-as-last-resort, it is the target whose economic options are exhausted, and physical resistance becomes the only channel left open to it. In two of these four, there stands no alteration, no physical metastasizing of conflict; in the other two, however, the last resort of violence is utilized. The key difference therein is which power utilizes violence and why. In Venezuela, it was the erosion and ineffectivity of bello-economic power; in Iran, it was due to the incredible effectivity of bello-economic power, forcing resistance to actualize physically. As such, the utility of a bello-economic channel is imperative. Iran and Venezuela lacked that channel, and both saw kinetic outcomes. China and Russia retain it: China through rare-earth and critical-mineral leverage over US defense and semiconductor supply chains[43], Russia through sanctions evasion that keeps its own economy functional without needing to strike back[44], and both have stayed within the bello-economic domain. Russia's case is bilateral rather than general, however: it has stayed within the bello-economic domain specifically toward the US, even as its kinetic war with Ukraine continues over the same period. This is the claim the rest of the paper tests: not that thirty years of bello-economic pressure will eventually produce war, but that pressure sustained without reciprocity does.

This logic cuts both ways. If China closes the gap identified above and becomes the insulated, leveraged side of the relationship while the US becomes the structurally exposed one, the same mechanism that spared China and Russia a kinetic outcome would place the US in the position Iran and Venezuela occupied: the side with no reciprocal channel left to draw on. Dual circulation, examined in Section VI, is precisely the mechanism by which China could engineer that reversal.[45]

Theoretical Framework

Graham Allison's Thucydides' Trap supplies this article's starting condition rather than its explanatory mechanism.[46] The logic that a rising power's structural challenge to a ruling power "magnifies misperceptions and multiplies miscalculations" exhibits an explanation of the dangerous, precarious nature of the US-China relationship.[47] However, it does not predict which pressure-response cycles stay economic and which evolve into kinetic warfare. That work falls instead to power, legitimacy, and Copeland's trade-expectations theory, combined.[48] This paper also draws on Modelski's long-cycle theory, which holds that world leadership shifts in roughly century-long cycles punctuated by global wars that reorder the system.[49] Modelski distinguishes challengers already seated within the existing order from outsider challengers who reject its legitimacy outright; historically, only the latter have required a global war to displace the incumbent power.[50] That distinction supplies the test the later sections apply to China: whether it is rising as an insider bidding for a larger share of a system it was born into, or as an outsider seeking to overturn that system altogether.

China has, for years, followed Rush Doshi's model of biding its time while amassing strength.[51] As the country once treated as a lesser power has expanded its global influence and risen to parity with the US, it has benefited from a facade of accepting the existing world order, avoiding a Thucydides' Trap while still working to surpass the US within it.[52] But that strategy depends on a successful transition of power: one where China does not lose legitimacy or standing, and does not shake the world order so violently that it undermines its own position. War, in this frame, is not simply self-defeating by default; a US-China war would be destructive to both sides, but that destructiveness alone isn't what restrains China. What restrains it is that confrontation would cost it the legitimacy it needs the world to grant it once it does surpass the US, and even a hegemon's wars, including the US's own, measurably reduce international legitimacy.[53] China's own civilizational self-conception, moreover, has historically resisted the Westphalian legitimacy model the US-led order assumes, which sharpens the stakes of that legitimacy question rather than resolving it.[54] This paper uses the Kissinger model of legitimacy alongside Organski's model of power[55] to name a pattern already visible in the case studies above: the US has avoided overt strikes on Iran's economy, and China has avoided striking Taiwan despite holding clear military superiority.[56] In both cases, the legitimacy lost to an overtly kinetic act outweighs the power gained or demonstrated by it. Bello-economics is therefore not merely cheaper than war; it is a viable form of pressure that lets a state apply force without forfeiting legitimacy. Espionage and sabotage have served a similar function historically, but both carry legitimacy risk if exposed; they are a gamble. Bello-economics carries no equivalent exposure, only the risk of retaliation.

Copeland's trade-expectations theory tethers these notions, arguing that war probability tracks the state's expectations of future trade access as opposed to a present level of interdependence.[57] High current interdependence paired with pessimistic expectations about its trajectory is more dangerous than low interdependence, because it is the anticipated loss of access, not present dependence itself, that pushes a rising or declining power toward force.[58] This is the variable identified in the case comparisons above: Iran's and Venezuela's expectations of future access collapsed with no reciprocal tool to arrest the decline, while China's and Russia's have not, because both retain a credible threat to the coercer's own future access. However, the relationship between the US and China is unique in that the interdependency plays the role of nuclear weapons in the Cold War; mutually assured destruction, physical conflict between the nations disrupts the world economy, and the global order. The solution, therefore, is a non-violent form of war: bello-economics. From this, two competing hypotheses follow, and the remainder of the paper is organized around adjudicating between them: the substitution hypothesis holds that cycles of bello-economic pressure and relief leave expectations of future access stable or improving over time, functioning as a genuine release valve; the escalation hypothesis holds that each cycle leaves expectations of future access measurably lower than the one before, a ratchet, functioning as a second, parallel track of conflict rather than a substitute for one.[59]

Dual Circulation: China’s Shield

China possesses a unique shield for bello-economics: dual circulation. The Chinese dual circulation strategy (DCS) is viewed simply as China's decreasing dependence on external requirements and foreign technology inputs by strengthening the domestic internal circulation loop.[60] Consumption, innovation, and self-sufficient supply chains exist within the borders of China, while resources are sold outside the nation; in short, China can feed itself and starve out the world if such a strategy is enacted in its entirety. This insulates the Chinese economy from US chokepoint access.[61] This is a direct response to the experience of being on the receiving end of US bello-economic tools, rather than a growth strategy which coincidentally holds defensive effects.[62] The fact of the matter is that China possesses a strategy that is deliberately insulated specifically from bello-economic policy. DCS is therefore not a bid to exit bello-economic competition; rather, it is the shield to win that very kind of competition. A nation does not build a shield if it does not plan on going to war. A state with falling expectations of future access under the status quo, which adapts, has two direct responses: escalation immediately while it holds leverage, or buy time to build the capacity to make the next round of pressure survivable, and eventually reciprocal on its own terms.[63] China may have created DCS as a response to chokepoint pressure, but it is not limited to simply a defensive policy; it is also an indicative policy of strategic awareness of bello-economics. The DCS, then, is this second path in response to the falling expectations of access. Its function is not permanent insulation for its own sake but sequencing: reduce China's exposure to the chokepoints the US currently controls, such as dollar-clearing dependence, foreign semiconductor inputs, reliance on US-linked capital markets, all the while retaining and expanding the chokepoints China already holds over the US, rare-earth and critical-mineral processing being the clearest current example.[64]

Bello-economics is at present relatively reversible and specific; it remains consistent within the Busan Summit, London Framework, and November 2025 rare-earth suspension[65], but this is because the current asymmetry is leverage against China. China is more exposed in terms of both finances and technology, while the US is exposed to critical minerals.[66] As such, neither power is perfectly capable of controlling the outcome of a large-scale economic war. DCS is China's attempt to flee this dynamic before it is leveraged against it in its entirety. The paper's central prediction follows directly: restraint should hold for as long as China remains dependent on systems the US can credibly threaten, but as DCS closes that gap, the incentive for restraint weakens specifically on China's side, because Beijing's expectations of future access will no longer depend on US cooperation at all.[67]

In short, a nation with a shield is ready for war; the US cannot afford to ignore DCS as a policy based on economic growth and not on economic insulation.[68] The US has long held leverage over China in bello-economics; the world economy hinges upon the US dollar. And yet, the US long had leverage over China in many realms; and it has lost that leverage. As China rises eye-to-eye with the US, it enters all confrontations with a new asset: a shield.

Bello-Economics: Release Valve or Additional Front?

This line of reasoning, the importance of a shield, leads to the question at the heart of this article. Does bello-economics increase or decrease the probability of war? Does the economy serve as a dimension of conflict, such as cyberspace, or does it serve as a reason to hesitate, a release valve, from war?

The Release Valve

The strongest case for the argument of a reduction of pressure by circumventing it has been reflected in the relationship between the past two great powers and their competition. The US-Russian relationship has, since February 2022, displayed unique peace.[69] That peace is bilateral and narrow: it describes the absence of direct US-Russia conflict, not the absence of war, since Russia's kinetic war with Ukraine has run continuously over the same period.[70] The US has held the conventional deterrence incentive to intervene militarily against a nuclear power invading a partner, it makes reasonable logic for the US to enter Ukraine, and has been through the administrations that were in office throughout the war. And yet, war is costly in terms of legitimacy, not only in terms of resources and manpower.[71] Legitimacy has trumped the need to flex power internationally. Instead, the US response was almost entirely bello-economic: SWIFT restrictions, frozen assets nearing the hundreds of billions in the central bank, and a rolling sanctions regime[72], paired in tandem with material support routed through Ukraine rather than direct US engagement. To stay above the fight and still help win it; that is the most legitimate strategy possible, and it is exactly the pathway the US has followed. This is a state substituting a costly, expectations-collapsing tool, direct war, for a lower-cost one that still communicates resolve.[73]

The US record with China posits a more direct test: the Busan Summit of October 2025 and the London framework, a trade truce architecture[74], both show tariff and export control escalations falling to negotiations rather than inner-state policy. If negotiations can be met, such policies can reflect the deliberate pull or push of the other nation. Chokepoints with pressure applied here may indicate what China wants there, for example. The November 2025 rare-earth export suspension preceding the May 2026 Beijing Summit[75] is the most recent instance: Beijing relaxes a chokepoint tool specifically to build confidence preceding a diplomatic act. Such an act happened to be discussing evading this Trap. This is the reversibility Copeland's model predicts from a state signaling that it wants the other side's expectations of future access to improve rather than collapse.[76] It is in this way that bello-economics serve as a backdoor to policy: China can communicate with the US through its restrictions or releases, and diplomatic actions can communicate between the nations; it is the base case for avoiding war. Communication between rival powers, with a healthy exercise of competition, is a solution that can prevent a catastrophic war neither party directly benefits from.

Such a healthy exercise did work once before; the JCPOA-era sanctions relief of 2015–2018 functions as a true release valve of international tension; expectations of future access improved and Iran dialed back its enrichment plans accordingly.[77] However, the US withdrew from the deal and imposed maximum pressure without a credible re-entry path[78], squandering the success up until that point. Bello-economics substitutes for war when paired with a credible, reciprocal off-ramp and stops substituting for war when pressure is applied with no expectation or possibility of relief. War is designed to amass power; it exists to influence another power to do what the stronger power wishes. If the weaker power is not able to act in such a way that the greater power wishes, bello-economics are simply unproductive damage, not strategic harm.[79]

The New Front

As such, bello-economics serves as a backdoor that is more tolerable in terms of public perception of power and legitimacy that is lacking in visual, obvious war. Cyberwarfare and espionage function as covert channels of conflict; bello-economics falls within the very same category.[80] The coercive power of chokepoints comes from the fact that they cannot be quarantined to a bilateral relationship, fundamentally, and are a use of weaponized interdependence.[81] China's economic retaliation against South Korea during the 2016–2017 Terminal High Altitude Area Defense (THAAD) dispute manifested in informal boycotts, restrictions on Korean firms, and tourism curbs[82]; it displays that bello-economics against a third-party ally as opposed to the primary adversary converts a US-China dispute into a Korean economic crisis. China, in this weaponization of interdependence and of the globalized world order, can expand its warfare outside of debt and trade, into practical economic damage. The gray-zone pressure on the Philippine-claimed Batanes, for example, and BRI debt leverage over recipient states[83] extend the same logic outward: the notion that pressure applied to allies and partners cannot be selectively ignored the way a purely bilateral opposition can be.[84]

Furthermore, rare-earth restrictions are still (at the time of writing) an unsettled dispute; there is no equilibrium established. The April 2025 controls, October 2025 tightening, November 2025 suspension, and the unresolved status following the May 2026 Summit[85] establish a pattern of fluctuations rather than a resolution. Stability and clarity of policy prevent wars more than unpredictable shifts of economic policy.

CSIS's one-year retrospective[86] and the RFF issue brief on China's incentive to keep restrictions temporary rather than permanent[87] both suggest Beijing is deliberately preserving the tool for reuse; such posits the clear notion that a clean substitution is occurring. A sword does not stay in the hand of the power that wields it without a reason. At this point, the US and China have shaken hands on peace, but hold swords in their other hand. A release valve vents pressure permanently through policy and diplomacy; certainly no such stability is maintained if instruments of leverage stay in play.

Both the dynamics of a valve and of a new dimension of war are present in the modern competition between the US and China. However, it is not a tie as to which outcome is on a trajectory. Despite the fact that the May 2026 summit claimed growth towards cooperation directly and deliberately[88], the role that the DCS plays displays practical policy and action; words at a summit do not. Fundamentally, though, the bello-economic battle that rests on the cusp of occurring is still in flux for a reason; the asymmetry of the present battleground keeps the bello-economic tools reversible. China and the US work respectively in an ebb-and-flow policy of bello-economics; some policies remain, others are relinquished.[89] As such, the present field is one of negotiation, give-and-take, and exchange; it is not a matter of irreversible war or damage. However, should bellicose economic actions be taken that are so destructive, such conflict could arise. China is preparing for this outcome, and in turn preventing it; the US holds the majority of the leverage in the playing field; nonetheless, the DCS is a shift towards protective measures which insulate the nation from American bello-economic policies.[90] Dual circulation is what closes the gap in this asymmetry, and the completion of it will hinder the likelihood of a release valve and instead shift towards another dimension. This is because once China is free from bello-economic actions taken against it, the cost of striking in the same way is diminished.

That is not to say that dual circulation will lead to war between the US and China, the arguments for a release valve or proxy war, as well as another dimension of conflict, are both still sound. It does, however, indicate that with DCS, the likelihood of a release valve is replaced instead with a proxy war of economies. The sword and shield of DCS and Bello-economics fall directly under the logic of legitimacy and power by preserving the strengths without the cost of appearing illegitimate internationally.[91] DCS is a shield which reduces Chinese exposure from dollar-clearing, semiconductor inputs, and US markets.[92] DCS costs no international blowback, while it defends against any loss of power from the US. Rare earth and critical mineral exports, entity-list retention and the ability, through DCS, to wait out the opponent provide a sword to pierce the US bello-economically.[93] It is a justifiable stance of defense, which is what preserved the US's legitimacy when sanctioning Iran for a nuclear program.[94] It is easier, in short, to justify retaliation than aggression.

As established above, that same legitimacy-over-power calculus is what has kept China from Taiwan and the US from Iran. Restraint, however, will weaken as the DCS matures, but it does so asymmetrically, with China's bello-economic posture growing visibly more aggressive[95] while its domestic exposure to US countermeasures shrinks over the same timeframe.[96] Sword-and-shield does not require China to abandon the language of cooperation; in fact, cooperation in the short term is greatly encouraged because it protects China from strikes while it still develops its systems of offense and defense, while retaining legitimacy.[97] The tell is not what Beijing says at the next summit; it is whether the restriction floor after the next rare-earth cycle sits higher than the last one at the same time that indicators of Chinese financial and technological self-sufficiency are also rising.[98] Both trends moving together is the signature of this policy of bello-economics, initiated by the US but quickly being mastered by China.

Reconciling the Outcome

Each nation desires something, each nation fears something; it is this relationship of give and take that defines geopolitics.[99] For the US, the most beneficial outcome is the one which preserves legitimacy while demonstrating power, sanctions and SWIFT restrictions on Russia[100], maximum-pressure sanctions on Iran as opposed to military strikes[101], rolling tariff-and-export control posture in China, as opposed to military confrontation in Taiwan.[102] The US crossed into kinetic action only where bello-economic policy failed, and the trade-off of power and legitimacy was largely retained. That is not to say the US did not blunder in the repeal of the JCPOA deal and that engaging in military action was most costly in both legitimacy and power, merely that the action was taken particularly due to the limited nature of bello-economics.[103]

China follows a similar pattern: passive power through infrastructure, trade, debt, and strategic leverage as opposed to military conquest is vital.[104] Beijing has the military capacity to overtake the Taiwan Strait, and yet has not acted aggressively; the same rings true for the Batanes and BRI leverage over recipient states.[105] Beijing applies pressure, undoubtedly; nonetheless, it retains legitimacy in the way in which it applies this pressure and the world's perception of it. Rare earth export controls let China demonstrate the same resistance military posture would signal, although it did not forgo any international legitimacy required for BRI partnerships.[106] Furthermore, it treats Taiwan as a domestic matter, following the same principles; lastly, China acts bello-economically in terms of response and defense, not offensive aggression. Dual circulation allows this process to be sustainable, rather than costly; evading, the way other nations have, has harmed them and limited their options greatly; China has not evaded, merely responded and established a defense system.[107]

These notions reconciled, the outcome for each nation is akin even if the states met from highly different strategic postures. Washington and Beijing both concluded that bello-economic tools maximize the same power as a kinetic posture without the cost of war, the legitimacy decay of aggression, and the same domestic fallout for a loss.[108] Additionally, bello-economic wars don't particularly "end"; there is an ebb and flow to what states can and will do, and some states may accept concessions or succumb to pressure, but the nature of a globalized system is that the road runs both ways.[109]

This is not the same conclusion as Allison's constructive strategic stability; conflict between the US and China is fundamental and not resolved simply by a summit agreeing towards cooperation.[110] Conflict finds its way out; with the Soviet Union and US, it was proxy wars; in the modern system it is bello-economics.[111] Conflict escapes into the layer of trade, not troop deployments. The competition remains; it is the arena that differs in this Thucydides' Trap. It is a stable form of competition because it preserves legitimacy for both powers, not disrupting the world order and shaking the delicate boat both nations depend upon. Furthermore, it allows the balance of power to shift accordingly, so that the rising power, when meeting the established power eye-to-eye, can act.[112]

The world's outcome, then, is not currently peace in the sense of resolved rivalry; it is displacement of the rivalry into the one domain where displacement was available to both parties on acceptable legitimacy terms. That domain's stability depends on both sides needing to preserve legitimacy roughly equally; however, this condition will erode as dual circulation matures, granting China a sword and shield for war.[113]

The answer, therefore, is complex. Nonetheless, it is this: China will develop dual circulation as a shield to bello-economics while still retaining leverage, a sword, to strike the US.[114] It serves as a proxy war for physical combat due to its ability to preserve legitimacy. Thucydides' Trap will not be escaped, but it will not act out in a global war which, as Modelski's table posits, will change the world order from an outsider- China is not an outsider.[115] The world order will not be changed; however, the power between the US and China likely will- the winner of such a conflict is as of yet undecided. Will dual circulation act as a release valve, or another dimension of war? Likely, it will serve as a dimension of war in place of physical war; one can call such a proxy a release valve in that there is a release of competitive tension which avoids physical war, too costly given mutually assured destruction.[116] Does bello-economics increase or decrease the probability of war? Does it antagonize the nations to act in physical backlash? It increases the probability of war if it is unstable, as it was in Venezuela, where it was ineffective[117]; or Iran, where it left the nation with no other option.[118] It decreases the probability of war if this is it is reciprocated, even if in an unbalanced way, such as with the US and Russia.[119] It may antagonize nations; however, it holds equal capacity to subdue them; it is a matter of the relative power of each nation in the equation.

In a more globalized world, war has become increasingly unappealing and costly; legitimacy is a more palatable option.[120] Correspondingly, nations find new ways to fight wars without shedding blood: cyberattacks, technological races such as in the case of artificial intelligence (AI), trade wars, and more than anything else, bello-economics.[121] The US has shown much of its hand with bello-economic tactics; nonetheless, it maintains the strength of the dollar and the heart of the world's financial system. The US, despite facing rising opposition, is, as Lee Kuan Yew is often paraphrased as suggesting, still the dominant power for now.[122] China's strategy of dual circulation may alter this equation; it may exchange the world hegemon and center of the financial world, but such a transition is yet to take place.[123] China may have braced for US attacks with DCS, and the US may hold a monopoly on the chokepoint of the digital Cloud and a slight hedge in the AI race.

The metastasizing of a physical, kinetic war, however, becomes less likely as it becomes more costly. It would find an outlet such as a battle over Taiwan if it were to actualize.[124] However, so long as states have the power to contest one another without losing a single life, it serves as the more beneficial option for each. In summary, only time can tell if a war will break out, but the probability of physical war becomes less likely as the capability for economic war becomes more strategic. This article's claim is falsifiable rather than predictive of a fixed outcome: watch whether the floor of each rare-earth restriction cycle rises alongside independent indicators of Chinese financial and technological self-sufficiency.[125] That trajectory, not a hedge about whether war will or will not occur, is the test this analysis proposes.

Conclusion

The Cold War, the most recent Thucydides' Trap, resolved without direct conflict.[126] The most common explanation is mutually assured destruction: with both powers holding nuclear weapons, the cost of war was too high to bear. Conflict was instead displaced into proxy wars; for the US, the strategy was dubbed “containment”; for the Soviet Union, it was the defense of nations with Communist aspirations.[127] Proxy wars, an arms race, a space race, and the Cuban Missile Crisis all served as vents for the pressure of physical war, precisely because that war was unthinkable. The Cold War also saw export controls under the Coordinating Committee for Multilateral Export Controls and its China Committee (COCOM/CHINCOM), wheat embargo threats, and Reagan's 1983 National Security Decision Directive 75 (NSDD-75), bello-economic force deployed in place of war to inflict comparable damage.[128] It functioned not as an extension of war but as a workaround to it. Bello-economics plays the same role in the modern Thucydides' Trap: a release valve on physical war, which is unthinkable because it would shake the global order, the same order the US built and in which China has flourished.[129] War is too costly, not only in physical damage but in global legitimacy. This makes war self-defeating in a way earlier great-power rivalries were not. Modelski's model of shifting world orders assumed isolated powers; the US and China are instead both products of the same system, and each wishes to reshape it rather than escape it.[130] Their economies function less like separate bodies than like conjoined twins, sharing circulatory systems of capital, semiconductors, and consumer demand deep enough that severing them wounds both at once. This is weaponized interdependence: the same networks that give states coercive leverage over one another also bind them together, so that no side can sever the relationship without damaging itself.[131] Direct, kinetic war would fracture the global order established after the mid-twentieth century, the same order that enabled China's rise.[132] To attack the other is, in this sense, to attack the scaffolding of one's own ascent.

The US and China will likely not escape Thucydides' Trap, but will duel instead in a novel arena: bello-economics, a new form of warfare suited to a globalized world.[133] Mutually assured destruction is too costly an outcome, and damaging the global order amounts to the same thing by other means. Physical warfare does not disappear from this picture; however, it becomes the fallback once bello-economics stops working. Should China actualize DCS, its ability to use rare-earth and critical-mineral restrictions as leverage, as it has signaled toward Iran and Venezuela, would functionally cap out; economic coercion has a ceiling, past which China would need another channel to press an advantage.[134] Taiwan is the case where that channel becomes physical. Precisely because China gains little and risks much from attacking the US directly, Taiwan represents the likelier move: a shift in the balance of power that does not require overturning the world order itself.[135]

If China restricts rare-earth and critical-mineral exports to the US defense and semiconductor industries, Washington's capacity to fund and field an effective military response is directly constrained[136], and the same self-sufficiency indicators traced in dual circulation strategy suggest this isn't a static threat.[137] As China's domestic capacity in these sectors closes the gap with its export leverage, the floor under how far it can restrict rare-earth flows to the US without matching self-sufficiency rises accordingly. The US and China act as conjoined twins in the global order; nonetheless, this pathway serves as a means to achieve a change in the balance of power, without disrupting the world order. That trajectory is the paper's central bet: bello-economic leverage over Taiwan-adjacent contingencies will tighten, not loosen, as China's self-sufficiency indicators climb.[138]

Conjoined twins are not permanently safe from each other. A twin convinced that separation is coming regardless, and that waiting only weakens its position, has reason to reach for the scalpel on its own terms rather than be cut on someone else's. A twin which believes it will survive the operation, and is capable of building the world order, may seek to wage such an earth-shaking war. Such a mechanism Copeland's trade-expectation theory provides evidence for: interdependence restrains war only for as long as both sides expect it to continue.[139] Dual circulation is thus the axis such logic will pivot upon. Beijing agreed at the May 2026 Summit to work towards “constructive strategic stability”, invoking Thucydides' Trap directly[140]; however, both powers prefer managed competition to direct and open conflict. As such, the role of bello-economics as a valve to manage such conflict is the strategy which, to each power, maximizes legitimacy with the least sacrifice of power, and vice versa. The Trap can be escaped, therefore, through a mechanism which benefits both nations, to maximize the profit and minimize the cost; bello-economics. Rhetoric and goodwill summits are beneficial, no doubt; however, the real cost of legitimacy in bello-economic escalation hinges on a balance between the US and China, as the latter's position in the world changes.[141] That is, after all, the nature of Thucydides' Trap; furthermore, dual circulation provides such a mechanism to insulate the nation defensively, while retaining a footing on the battlefield of bello-economics offensively.[142] As DCS matures, Beijing's bello-economic sword becomes a more and more viable option with less and less risk attached, as the shield absorbs the retaliatory cost of damaging the cycle.[143] Cost is present in war regardless; it is costly to send manpower and resources to fight in a war; it is costly, however, not to the same extent in terms of legitimacy, to fight an economic war.[144]

What if, in short, one twin ensures its survival, while retaining the potential to cut off its counterpart? Such an option, if it requires no loss of international legitimacy through physical war, and no loss of power through DCS, would preserve China entirely. The prediction that follows is a trajectory rather than a date: watch whether the floor of each rare-earth restriction cycle sits higher than the one before it, and watch whether that trend moves together with independent indicators of Chinese financial and technological self-sufficiency.[145] If both trends rise together while the language of “constructive strategic stability” remains unchanged, that is not evidence the Trap has been escaped; it is evidence the terms on which it was being managed are quietly shifting in one direction. Bello-economics has so far kept the U.S.-China relationship out of physical war.[146] Whether it continues to is not a question of how long the pressure lasts, but of how long the asymmetry that makes pressure survivable for both sides lasts, and dual circulation is the clearest signal available that Beijing does not intend for that asymmetry to last much longer.[147] China may utilize a sword of bello-economics and shield of dual circulation to avoid the cost of cutting out the US, without shaking the world order, retaining legitimacy, while amassing power.

The relationship between the US and China is perhaps the most complex, if not, as Graham Allison writes, the “fiercest” Thucydides trap.[148] The world order has become deeply globalized, and the world's economies, which brought about the rise of China, could facilitate the very battleground between these two nations.[149] Such war could be entirely bello-economic, or it could metastasize into a physical war, based on the very same principles of power, legitimacy, and war probability.

The outcome, as is the nature of the future, is unclear; what is clear, however, is that nations prefer legitimacy without sacrificing power, and power without sacrificing legitimacy.[150] Bello-economics provides the tool for this strategy; Thucydides' Trap presents the playing field.

Long Cycles and Critical Minerals: An Analysis of Modelski's Table in the 21st Century

Jack Lindstrom

Abstract

Modelski's long cycle framework has correctly anticipated the timing and rough character of the current transition in global leadership, yet its most recent row remains blank: the 2000s produced no clear successor to American primacy, and no global war has performed the selection function the model expects. This paper argues that the blank row is not a gap in the data but a symptom of three structural assumptions in Modelski's original framework that no longer hold. First, the model assumes challengers rise from outside the hegemon's economic system; China instead rose from within it, as the largest trading partner of over 120 states and a foundational node in the very financial and manufacturing architecture it now contests. Second, the model assumes leading-sector technological revolutions concentrate productive capacity within a single national economy, as steam, electricity, and computing once did for Britain and the United States; the current wave of leading sectors, artificial intelligence compute, green energy hardware, and critical mineral processing, instead diffuses across a distributed set of chokepoints that no single state fully controls. Third, the model treats the democratic openness of the reigning world power as a fixed structural advantage; that openness is instead a variable under active strain, exploited by challengers as readily as it once generated coalition legitimacy. Using critical mineral supply chains as an empirical proxy, chosen because processing shares, export controls, and refinery locations are quantifiable in ways that military posture and financial flows are not, this paper stress-tests Modelski's framework against each of these three breaks and proposes a revised chokepoint cycle model: one in which the load-bearing unit of analysis shifts from the national economy to the chokepoint, and in which the outcome of the present transition depends as much on the reproduction of democratic legitimacy as on relative material power.

Keywords: long cycle theory, Modelski, critical minerals, chokepoint, Mackinder, hegemonic transition, China, great power competition

Modelski's Unfinished Table

Table 1. Modelski's Long Cycle of Global Leadership (Extended)

K-Peak 1	War	Leadership Occasion	World Power	Naval Threshold	K-Peak 2
1480s	Italy & Indian Ocean Wars	1494 Tordesillas Treaty; 1499 Cape route	Portugal	1510	1500s/1530s
1560s	Dutch-Spanish Wars	1585 Anglo-Dutch Alliance; 1609 Antwerp Truce	Dutch Republic	1610	1620s
1680s	Grand Alliance Wars	1689 Anglo-Dutch Alliance; 1713-14 Utrecht	Britain I	1715	1710s
1780s	Revolutionary & Napoleonic Wars	1793 resistance; 1814-15 Vienna Pact	Britain II	1810	1830s

K-Peak 1	War	Leadership Occasion	World Power	Naval Threshold	K-Peak 2
1870s/1900s	World Wars I & II	1917 14 Points; 1941 Atlantic Charter; 1943-45 Summits	USA	1945	1960s
2000s	N/A	N/A	N/A	N/A	N/A

Based on Modelski and Thompson (1996); Modelski and Modelski (1988); Modelski (1988).[1]

There are theorems and forums, and then there is an application. It is not numbers scribbled on a chalkboard that equate, literally, to putting a man on the moon, but one could not occur without the other. From space, the world rotates slowly, imperceptible from the moon; however, those on its surface know well how constant and sudden shifts change the individual and the geopolitical. Modelski and Thompson's table charting the rise and fall of great powers is largely capable of explaining and mapping such geopolitical earthquakes; however, no theory of humanity is perfect, given humanity's innate unpredictability and irrationality. It is the present where we find this threshold of theory, the past, and the analysis of it, against the action that takes place in the present, unbound by theory. As such, Modelski's table serves as a chart of the past, and yet remains blank in the row of the 2000s; the present is unpredictable and unprecedented. Modelski's framework, however, still provides a lens for analyzing the present and predicting the future, with adjustments. It is this transitory phase in which Modelski's table and the world alike hang suspended: the act of filling in the blanks.

Naturally, the world requires both theory and application; the theories used for application must be sound. This analysis treats the theorem as an application and reviews the soundness that results from it. Modelski and Thompson's long cycle framework has proven more durable than most theories of international relations, correctly predicting the timing and actor-type of the current transition. But the framework was built on three assumptions that no longer hold: that challengers rise from outside the hegemon's economic system, that leading-sector revolutions concentrate power in a single national champion, and that democratic openness is a fixed structural feature of world powers rather than something that must be actively reproduced. The current transition violates all three simultaneously. This paper does not abandon the framework; it stress-tests it against the domain where the transition is most materially legible: critical mineral supply chains. What emerges is not a refutation of Modelski but a partial reconstruction, a chokepoint cycle model that updates the framework for a world in which the challenger is load-bearing, the K-wave diffuses rather than concentrates, and democratic legitimacy is a variable rather than a constant.

The traditional domains representative of power dynamics have fallen short of modern analysis. The classical perspective of military posture, of financial flows, and of trade data is too slow-moving, too opaque, or aggregated to truly isolate the actual mechanism of transition. Critical mineral supply chains, however, adequately encompass all three. They provide legibility through the processing percentages, export controls, as well as refinery locations, which serve as quantifiable pieces of evidence rather than composite indices. Secondly, they are measurable where legitimacy is not; institutional legitimacy, coalition willingness, or soft power measurements are vague, incoherent, and generally relative. The impact of soft power, such as reflected in The Soft Power 3,0 is based on the quantification of non-quantified data points; critical minerals are not. Chokepoint concentration is a hard number, where the quantitative supply-risk methodologies such as the British Geological Survey's criticality assessments and the U.S. Geological Survey's mineral supply-risk framework[2] contrast with the Soft Power 30. Finally, the consequences have no intermediaries; they are direct lines of power and leverage forming a web of influence. This is reflected in green energy transition, AI computing and defense systems, the heart of modern innovation, all of which are established on the same minerals.

Arms races were the forewarnings of wars past; and although they are still in fashion, a greater race has become apparent, a race to control the minerals that run the world. The power that controls the processing layer controls the input to the next K-wave's leading sectors. The AI race, the modern arms race, the race for technology and innovation, all depend upon these minerals. Where military posture lags, trade data obscures patterns and financial flows resist interpretation, critical minerals offer a more concrete study. They provide a real-time material record of the contest between great powers in claimable domains, measurably, through chokepoints. War is not the determining factor of great power transition, nor is wealth, nor is trade balance; nations may hold all three and still not be a leading power, at least, not for long. It is the control, in the present day, that is dependent upon the processing layer and chokepoints, which is not only the most legible and quantifiable, but also the most consequential for the upcoming decades.

China's competition with the United States has folded these two axes of power, those of territorial depth and maritime reach, into a single, consolidated strategy, and in doing so has activated a second framework closely related to Modelski's own, Mackinder's. Mackinder foresaw the danger of a power fusing land-depth with maritime reach; China has achieved precisely that, not through conquest but through infrastructure, processing monopoly, and chokepoint control. The Heartland thesis remains urgent: a nation with a large population, sustained economic growth, and internal manufacturing capacity builds a fortress of self-sufficiency and innovation while simultaneously expanding its reach across the seas. China's continental depth, compounded by its ever-expanding international economic entanglement and the leverage that entanglement affords, is the actualization of Mackinder's warning. The Heartland's consolidation of strength and resources, joined to an international reach built on trade and maritime capability, allows for the strategic seizure of chokepoints, and it is this seizure, not conventional military buildup alone, that constitutes the challenge Modelski's table anticipates but cannot yet classify.

This paper proceeds in seven succeeding sections, shifting from the accuracy of Modelski's framework, the breaks in that framework, and the problem this creates, followed by a proposal for a revised framework to accommodate, and lastly a conclusion. Spanning throughout the paper is the Arctic, serving as a microcosm in which the breaks in the framework are most visible, while the appendices provide the empirical foundation, including an extended version of Modelski's Table I and a mapping of mineral supply-chain vulnerability drawn from BGS and USGS supply-risk methodology.

What Modelski Got Right

The five-power sequences Modelski establishes are a fundamentally credible and above all sound analysis of past events, and one that remains highly applicable to the present transition of hegemons. Portugal, the Netherlands, Britain twice, and the United States retained structural means towards similar ends. These ends included maritime reach to project power, open economies to generate commercial surpluses to sustain this reach of power, as well as the diplomatic capacity to serve as the architects of coalitions as opposed to members of them. Modelski's framework is unique in this respect relative to more concise accounts of great power competition in that it measures hegemony as opposed to other great powers or powerful states in general. This distinctive quality allows for a more focused analysis of great power hegemonic development. Spain was powerful; however, Portugal was hegemonic; the relationship is mirrored with the Soviet Union and the United States. As such, the difference between powers is not raw capability but rather the capacity to construct a legitimate global order which is acceptable to other nations and powers, as an alternative. Put more concisely, Modelski's framework incorporates legitimacy into the great power model that was previously focused on power in terms of military and economic strength. China's current trajectory, for example, serves as an indicator of a power rising deliberately to gain legitimacy and power simultaneously, rather than amassing legitimacy at the top, as a nation like the United States did, as it constructed the UN and League of Nations only out of the ashes of war. China seeks to follow in the footsteps of power and legitimacy, quite evidently. This is seen in several developments, particularly in China's maritime policy.

The PLAN's development of blue-water naval power, which is particularly reflected in the logistics of China's Djibouti base, as well as the artificial island network in the South China Sea, as well as the 48th Naval Escort Group's sustained Indian Ocean rotations, the involvement in policing the Solomon Islands, and recent claims over Batanes in the Philippines, display an overwhelmingly evident pattern of maritime expansion. It is this very maritime expansion that is echoed in every prior expansion of great powers, Britain's naval prowess, the United States' Mahan, and so forth. These examples provide precedent that China is not simply seeking to create a powerful navy; such navies can be built in shipyards and manned with any sailors and soldiers. A navy is not a project of power alone; however, China has not simply built ships. China instead has sought to project force in several angles and directions through the path of the navy. However, China is encircled by U.S. allies, such as South Korea, Japan, and the Philippines, and as such reflects another level of this projection; the effort, due to the nature of this encirclement, makes the effort exerted by China more consequential, rather than less. Prior world powers expanded maritime reach into the open ocean as a whole; the expanses of the sea served as the perfect playground for great powers to project power over long distances. China has taken a slightly different approach to the same problem; it instead contests the near-seas environment due to its border proximity; encirclement from a defensive standpoint; however, it is also victims in reach from an offensive one. It is for this reason that the present Chinese engagement in the Batanes, Philippines, is so crucial; it takes place directly in this near-seas environment, which, keyly, holds Taiwan. This near-seas environment, if conquered by China, would represent a more difficult and thus more durable form of maritime primacy than any of Modelski's five predecessors established; what is a prison to one is a fortress to another.

Modelski's logic of K-wave sequences is equally sound in terms of charting hegemonic powers. From Guinea gold to the spice trade, then through cotton, steam, the electrical, chemical, and information revolutions, each wave concentrated a productive and commercial capacity in the world power of its era and provided the economic engine that sustained political primacy. The technological edge of hegemonic powers made their power concrete, in short. The 2000s information K-wave peak in theory, then, should have consolidated US dominance into the mid-twenty-first century; roughly for two decades, the result was this very theorized outcome. SWIFT, international governance, Silicon Valley's monopoly on global software, and dollar hegemony reflect clearly an information wave concentration in American hands and power, feeding directly into the mapping Modelski established. And yet that K-wave may not have yet truly crested; the internet is still relatively young, but more crucially,y it is shifting fundamentally with the innovation of. It is not a separate revolutionary cycle; it is instead a second peak riding the same K-wave. The wave is compounding, steepening, rather than subsiding; the strategic question then becomes not who dominated the first information peak, but who has since adapted to the technology and will ride the second to power.

Here the framework's logic bends toward China. The inputs to AI compute, the rare earth elements, gallium, germanium, graphite, and cobalt that flow through Chinese-controlled processing facilities, are the material substrate of the next K-wave peak. China's control of the processing layer is not an accidental, nor a miracle, infrastructure; it is rather the twenty-first-century equivalent to controlling the mill or the grid. Britain did not participate in the cotton-steam revolution as a mere player; it controlled the mill, it owned the game. The United States, in the same way, did not just use electrical power; it also controlled the generators and the grid standards; the current wave is an echo of such policies and strategies. The chokepoint in this case is not the algorithm itself but instead the minerals that construct the chip that runs the models. It is only a little up the chain that this chokepoint can be found, not software nor computer architecture, but instead the processing of rare earth minerals. This K-wave logic then points towards Beijing, filling in Modelski's table, which has an appropriate place for such dominance.

Modelski's table also places emphasis on the coalition-building capacity of the ascending hegemon. The legitimacy required to be compounded with power, a pairing Kissinger identifies as the foundation of durable order in World Order, is reflected in Tordesillas, Utrecht, Vienna, and Yalta: settlements that arose not from raw dominance but from a level of power that other states were willing to actively join rather than merely fear. This is where hegemons differ from great powers: great powers can be feared, but hegemons must be joined. The opponents of these hegemons were, without exception, states excluded from the resulting coalitions, closed economies and closed polities, from Habsburg Spain to Napoleonic France, Wilhelmine Germany, and the Soviet Union. It was not military or economic faltering alone that defeated these powers but their institutional failure to offer a coalition others wished to enter.

The Soviet case makes the mechanism concrete. Where Bretton Woods offered members convertible finance and, through the Marshall Plan, direct capital transfer with no equivalent claim on recipient policy, COMECON bound its members through bilateral clearing arrangements and non-convertible transferable rubles that systematically favored Soviet industry, extracting resources from Eastern Europe on terms closer to those of an imperial periphery than a coalition of equals. NATO's Article 5 offered a mutual security guarantee that its members had a voice in triggering; the Brezhnev Doctrine offered its members no equivalent voice, only the standing threat of intervention if they strayed from the Soviet line, a threat made explicit in 1956 and 1968. The result was a bloc held together by coercion rather than by benefits its members would have chosen on their own, evidenced by the steady drift of the Non-Aligned Movement away from Moscow's orbit even as many of its founding members remained rhetorically anti-Western. Bretton Woods and NATO generated the coalition legitimacy Modelski's model predicts a world power needs; COMECON and the Brezhnev Doctrine generated compliance without legitimacy, which is precisely why the Soviet bloc dissolved from within rather than being defeated from without.

Each cycle also produces a more institutionalized system of global order, the new order more organized than the last, establishing a long-run pattern of institutional layering. This is visible in the progression from the Concert of Europe to the League of Nations to the United Nations, and from the Bretton Woods system's IMF and World Bank to GATT's evolution into the WTO. Where Wallerstein perceives these cycles as repetition, history falling into its own footsteps, Modelski perceives instead a progression from chaotic to institutionalized order spanning centuries. Gilpin's theory locates innate entropy in the chaotic reality of great-power competition; Modelski instead treats hegemonic decline as a ratchet, in which each transition leaves more institutional infrastructure than the one it replaced. This is where Modelski's framework holds an evidently falsifiable prediction, the one most at stake in the modern transition; if the current interregnum ends with not more developed international institutions but instead a fragmentation or bypassing of existing institutions, the ratchet itself, not simply the identity of the next hegemon, will have failed. As such, a crack in this singular piece of Modelski's theory, although the world is yet to see it, would cause a large fissure in the theory of long-term liberalization, and the slow march of humanity towards progress as Modelski saw it. The manifestation of this would be a power like China establishing a larger banking system and thus splitting the world into factions, competing minilateral blocs, not a successor UN. However, such an actualization that would break Modelski's prediction is still too far out to speculate.

Where Modelski's table begins to lose its footing, however, is with respect to the structural outsider. Historically, it was those not incorporated into the system of the world who arose to challenge the power that dominated it. This pattern, Portugal against Spain, the Dutch against France, Britain against Napoleon, and, of course, the United States against the USSR, is in each case a maritime, internationally entangled order defending itself against a closed land power. China's manufacturing base and heartland power initially seem to fit this mold; closer inspection breaks it. China is embedded in the system it challenges: it is an expanding maritime power whose current strength arose largely through its incorporation into the WTO. Had China not become part of the liberal economic order, it likely would not have achieved the position it now holds. It is this single fracture, a challenger built by, rather than against, the system, that widens into the further breaks this paper takes up next, and that requires the most fundamental adjustment to Modelski's model.

China acceded to the WTO on 11 December 2001;[3] Congress had already authorized permanent normal trade relations (PNTR) with China in October 2000, and the United States completed the process with a formal presidential proclamation on 27 December 2001, sixteen days after accession,[4] converting what had previously been an annually renewable most-favored-nation (MFN) status subject to congressional review into a permanent, unconditional guarantee of market access. That single procedural change removed the principal point of American leverage over Chinese domestic policy at precisely the moment China began integrating into the system it would later contest: in the two decades that followed, China's share of global manufacturing value-added rose from roughly 6 percent in 2001 to nearly 30 percent today,[5] a shift Section III examines in detail.

The First Break: The Embedded Challenger

Throughout history, nations that have risen to challenge an established hegemon have done so as external challengers, by definition, outsiders. Habsburg Spain, Napoleonic France, and, most recently, the Soviet Union all stood outside the liberal economic order they contested. The role of challenger has been, until now, structurally an adversary who exists outside that order; it is precisely this exteriority that allows a rising power to function as an adversary rather than an ally. An enemy does not preside within the castle, under Modelski's table, it must emerge from without. An ally, by contrast, functions as a member of the system rather than a challenger to it: had Habsburg Spain, for example, been integrated into the liberal economic order of its day, the more plausible outcome would have been a diversified, dual-leader system rather than a hegemonic transition at all. The fact that every prior challenger was outside the system is not and should not be considered a law of great-power politics, but rather reflects contingent historical circumstance, particularly through extractive institutions or isolatory practices. This was seen in extractive colonial policy, closed mercantile practice, Cold War bloc division and so on; China is unique in that it may hold extractive policies domestically but is part of the larger international institutions promoting just the opposite. China is, in a way, playing both sides; however because it is primarily non-extractive in terms of international order, it will be treated as a member within the system. Therefore, one must acknowledge that Modelski's model reflects merely what happened to be the case, that challengers were external, rather than what could be the case, that challengers can be within or without. Until 2001, every historical case did fall within Modelski's category of an external challenger; however, China changed this. China's embedded position marks a clear and significant deviation from Modelski's table, and constitutes the first sign of a model in need of revision.

To further extrapolate the extent of China's involvement in the world economy, some facts must be dredged up. China is the world's largest manufacturer, a major holder of US Treasury debt as well as a foundational node in the semiconductor and critical mineral supply chains. It is clearly, therefore, within the system rather than outside of it. China's share of global manufacturing output rose from approximately 6 percent in 2001 when it joined the WTO, to nearly 30 percent today,[6] no other challenger of Modelski's five prior cycles achieved anything relatively close to this change, an integration directly into the order they sought to displace. China serves as the primary trading partner of more than 120 states;[7] as such, this is not a Thucydides trap in Modelski's sense but something the framework is unable to address; it is an internal challenger.

China's willingness to expand as a competitor within the free market, particularly against the United States, despite maintaining domestic policies hostile to free-market principles at home, reflects a strategic map laid deliberately by Beijing over decades. Rising as a power within the world economy naturally promotes Chinese strength; it also provides a mechanism for contesting the United States from within its most vital organ, its own economy.

The construction of Chinese grand strategy by Rush Doshi grants a unique account of a state which has been tracking, brick by brick, its own position of strategy. The Long Game lists a set of three phases which are calibrated to Beijing's assessment of American power, and building its own power to grow and balance comparatively. The first phase of this strategy is described in one word:, blunting. This phase ran from 1989 to 2008, including the phase from the Tiananmen crisis to the US victory in the 1991 Gulf War and collapse of the Soviet Union, factors which reflected a trifecta of the power of American military, ideological and geopolitical strength, particularly impactful seen from China's perspective.[8] The response therefore was encapsulated in Deng Xiaoping's dictum of hiding capabilities and biding time as a means of amassing strength without confrontation. As the nation was unable to match American prowess directly, Beijing chose integration over confrontation and, as such, joined the American world order through GATT and the WTO in 2001, to extract technological gifts of free trade, industrial base and foreign-exchange reserves which would be able to fuel a future contest. The second phase of Chinese grand strategy was that of building, running from 2009 to 2016 following the 2008 financial crisis, and therefore represented a slight fall-off in Washington's power, thus licensing Beijing to take a more assertive regional posture. What followed was the construction of institutions, the Shanghai Cooperation Organisation, ASEAN Plus Three, and the groundwork for what would later become known as the Belt and Road Initiative, the foundation-building of an ambitious empire to rival that of the American empire. The third and modern phase is that of expansion which dates from 2017, following the prior year in which international institutions slowly lost credibility, through the occurrence of Brexit and the election of Donald Trump, in China's eyes. As such, what was established regionally expanded internationally, seen through the Asian Infrastructure Investment Bank and the Polar and Digital Silk Roads, the first petroyuan settlement arrangements and the broader push to globalize the renminbi, building the next layer of organizational infrastructure and institutions of a rising world power.

The grafting of Rush Doshi's theory of Chinese grand strategy, such as a three-phase sequence, displays itself as early stages of transition. This is reflected in the direct actions taken, economic capacity expansion, naval modernization, and institutional construction; however, Beijing has not been reacting to American hegemonic power as past challengers have for the single reason that it is an internal contender. China has been executing its own campaign within the system itself, building and growing within the host until it outgrows it, as opposed to a direct, single confrontation. This is what distinguishes China's rise from the David-and-Goliath framing applied to it at times, and it is why the Modelski mold is broken. Modelski's table assumes that challengers will be external, but

China has acquired the forces and capacities from within the system, utilized them to bolster itself, and as such spearheads a novel structural position, one of both challenger and stakeholder in tandem.

Arising from this position of accumulated power over a long waiting period was Xi's dual circulation strategy, formally incorporated as of 2020.[9] Dual circulation served as the economic expression of these changing winds of power, as a deliberate strategy of reducing China's dependence on external demand and foreign technology while retaining access to global markets. The global markets fed the trade and economic surpluses which financed this transition and siphoned economic power out of the 'crumbling' West into the rising China. The strategy functioned as insulation during COVID-19 but later was seen to have served a deeper international purpose of controlled permeability, with a shield facing outward and a sword facing in. The domestic circulation component of the dual circulation policy expands internal consumption, builds domestic technological capacity, and deepens inner-state supply-chain integration, while constructing an economic core which functions independently of the American-led world hegemonic order; even if that order were to fail. Externally, through continued trade, investment through the BRI programs, and currency-swap agreements preserved market access, which makes China's position in the global economy difficult to replace, as the domestic core is strengthened. In short, China acted as a tick, embedding itself in the host of hegemonic power, extracting what resources it was able, while burrowing so that it would not be removed; insulated from the death of its host through internal circulation. This is precisely what Modelski's embedded-challenger problem demands: remaining inside the system long enough to extract structural advantage from it, shielding oneself from the hegemon's capacity to weaponize interdependence, and exiting on terms of one's own choosing rather than Washington's.

This is where the critical nomenclature of critical earth minerals arises; technology, namely semiconductors. The United States imposed export controls on semiconductors in 2022 and 2023 through the Foreign Direct Product Rule (FDPR),[10] which forced an acceleration of Chinese domestic insulation. The United States, in an attempt to kneecap the technological opposition by icing China out, instead spurred the nation on domestically. China's response was increased domestic fabrication investment, gallium and germanium export restrictions, and expanded rare earth processing capacity, all of which indicate a state that had meditated upon the strategy of the weaponization of globalization and interdependence, and as such had constructed its own emergency exit from the system. Dual circulation was not merely a shield to insulate China from the weaponization of globalization by the United States or a response to COVID-19; it is the strategic decoupling of a challenger that has taken from the system it embedded itself within. The great game of power transition is one of power and legitimacy alike, and China, by working within the lines drawn of American-led legitimacy, was able to consolidate power and extract leverage from the system it occupies. Now, with that leverage actualized, the world has begun to grant China correspondingly greater legitimacy. This dynamic is nowhere clearer than in the chokepoints China has sought to control across the developing world.

Balochistan, Pakistan, offers the clearest case in point. With each extraction of rare earth ore, China tightens its grip on a Western chokepoint. Balochistan holds geologically promising, though largely unproven, deposits of rare earth minerals, including bastnäsite, xenotime, and monazite, used in electric vehicles and consumer electronics, as well as confirmed deposits of antimony, a critical input in microchip fabrication.[11] Given the acceleration of the AI revolution and the ongoing U.S.–China contest over chip supply chains, Western dependence on, and desire to control, these processing chains has become acute. They are, by definition, the chokepoints that leverage some states' foreign policy over others'. In this contest, China has thus far prevailed against Western, and in particular American, capital.

Balochistan is not simply a site of extraction; it also suffers what is often called the resource curse, an outflow of wealth from local communities alongside minimal reinvestment in them. The response to this discrepancy, compounded by weak federal oversight, has been the growth of violent rebel groups and militias; Operation Herof saw such groups seize control of Balochi cities for a span of days.[12]

The China-Pakistan Economic Corridor (CPEC), valued at $62 billion as of 2022,[13] links Gwadar Port to China's Xinjiang region via railways, pipelines, roads, and energy infrastructure, an actualization of Mackinder's thesis that railroads would gradually consolidate the strength of Eurasia, here realized through the Belt and Road Initiative. Chinese investors thus have a direct line into Balochistan's rare earth reserves. The result, as of the Pakistan Minerals Investment Forum held in Islamabad in November 2026,[14] was a competing Chinese and American bid for the territory's mineral reserves: the state-owned China Metallurgical Group Corporation's Saindak copper-gold mine, operating at an annual ore-processing capacity of roughly 4.25 million tonnes,[15] against Barrick Gold's Reko Diq project, a joint venture with Pakistani state enterprises and the Balochistan provincial government, projected to add up to $2 billion annually in gross value added, or roughly 1 percent of Pakistan's GDP, once in full production.[16] The Balochistan Liberation Army's shift toward suicide-bombing tactics targeting CPEC infrastructure specifically has since endangered this market. Nationwide, the Global Terrorism Index 2026, published March 2026 and covering 2025 data, recorded 1,045 terrorist incidents and 1,139 fatalities in Pakistan, the country's deadliest year since 2013, with Khyber Pakhtunkhwa and Balochistan together accounting for roughly 74 percent of attacks and 67 percent of deaths.[17] That security deterioration is not abstract to Reko Diq specifically: in February 2026, Barrick Mining Corporation ordered a formal review of the project's security arrangements, development timetable, and capital budget following the Balochistan Liberation Army's January 30-31 "Herof 2.0" attacks, a coordinated assault across nine Balochistan districts that killed 36 civilians and 22 security personnel.[18] The resulting risk calculus is asymmetric: for a publicly accountable firm such as Barrick Gold, preserving shareholder and personnel safety makes withdrawal, or at minimum a slowdown, the more defensible course. Chinese state-owned enterprises face no equivalent constraint; Beijing, as direct sponsor of these operations, can absorb the risk without regard to shareholder interest. The result is a monopoly in a high-risk, high-reward region: a chokepoint secured by Chinese state capital precisely where Western private capital hesitates to follow. This is challenger embeddedness in practice rather than in theory, competition within the same market rather than opposition from outside it.

Mackinder's foresight in a globalized world, particularly in regard to a continental Eurasian power, built on the lifelines of railways, is slowly metastasizing. Mackinder argued that continental heartland power, which diffused across Eurasia and was strung together by rail, would in turn generate trade and power, as well as become a flashpoint for increased conflict on an east-west axis. The railroad, bridging the East and West, arrived significantly later than Mackinder anticipated, but it has arrived, not through the construction of a Western or Central Asian power, but instead from the far East, from China. The Belt and Road Initiative connects the East and West, while the Polar Silk Road stretches above, and the Digital Silk Road expands through the World Wide Web; all of these bridges connect commerce across the Eurasian landmass and position China as the arbiter of this commerce. No other state within the continent actualizes near what China has established in the years following the BRI's initiation. By compounding the heartland concentration of the BRI and the sea-power which was only previously rivaled by Russia, the maritime capacity is able to surpass Russia. It is in this way that China is able to surpass the United States' most recent major challenger, and rise to rival the United States itself. China, unlike Russia, is not suffocated from the north by an ice barrier, and can expand both through land and by sea, and actualize Mackinder's concerns. The eras in which Britain arbitrated the world through naval power, or Germany and Russia through landmass alone, have given way to a single power holding both the sword and the shield.

The Second Break: The K-Wave Has Fractured

The second crack on Modelski's mold takes place in the analysis of K-waves; Modelski's theory posits that K-waves innately concentrate productive power within the world power's own economy. This was, of course, true for steam, electricity, and chemical;, each was domestically centered, as the technology was restricted, even as the goods resulting from the technology were injected into the world economy. Additionally, it posited that during the information wave, the power would remain within American primacy, which was reflected in Silicon Valley, microchip production, SWIFT, and dollar-denominated digital banking. The change that occurred was the outsourcing of this production to Taiwan, South Korea, Singapore, and finally crystallizing in China, shifting the productive power from one power in the international order to another, while remaining concentrated within the leading state itself.

The physical infrastructure that migrated was, moreover, negligible compared to the intellectual property that constitutes the true substance of the internet. Digital innovation diffused across the world economy far more efficiently than electricity or chemical innovation had, owing to its minimal reliance on physical exchange and to the globalized character of the order into which it emerged. The 2000s K-wave peak was, as a result, comparatively short-lived: it benefited the United States but spread rapidly across the world, diluting the concentration of power and innovation characteristic of the steam and electrical waves that preceded it.

The leading sectors have shifted in turn, remaining digital but also extending into the physical; AI compute, synthetic biology, quantum computation, critical mineral processing, and green energy hardware now constitute the modern K-wave. None of these sectors are centrally concentrated in either China or the United States, but instead depend upon chokepoints sprinkled throughout the world. Each point is able to be seized, replicated, or destroyed; the result is a world which is pulled upon by points and pressure rather than by fronts.

Instead, each depends on a distributed set of points scattered across the world: extraction sites, processing plants, microchip fabrication centers, and final-assembly facilities. Each of these points is monopolizable; it can be seized, claimed, or constructed, and the rest of the world must adapt accordingly. These are, by definition, chokepoints. This is not an era of national concentration but of international dispersal, in which the responsibility and the power generated by novel technology are more diffuse than at any prior point in the cycle's history. The consequence, beyond a straightforward refutation of Modelski's nation-centered K-wave model, is the emergence of chokepoints as the primary unit of competition. The frontier is no longer a head-on economic standoff between two nations, nor a war fought over a fixed territory such as an oilfield or a goldmine; it is the set of facilities that process and combine minerals into usable products, a distributed field of pressure points rather than a single decisive front.

The anatomy of the mineral chokepoint is visible in present-day geopolitics. A resource dubbed ’critical' can, in principle, be extracted from multiple points around the world; mines exist wherever the underlying deposit lies. But power resides not in extraction; it resides in the capacity to make something useful from what is extracted. Oil must be filtered and refined; the minerals that now underpin both technological and military capability require processing steps that are considerably more specialized and capital-intensive. The United States could, in principle, mine and stockpile vast quantities of rare earth minerals; it would still be unable to do anything useful with them without the separation and refining capacity that currently sits almost entirely outside its borders. The government estimates, as well as independent industry estimates,converge on the figure that China accounts for roughly 91 percent of global refined rare earth output,[19] and for a higher share, nearly 99 percent, of heavy rare earth processing specifically.[20] Chinese firms similarly mine roughly 62 percent of the world's cobalt feedstock and control an estimated 85 to 95 percent of downstream cobalt-chemical refining, depending on the product stage,[21] and effectively hold a monopoly on refined gallium and germanium.[22]

This dominance in refinement rather than extraction creates a value-added layer distinct from, and more consequential than, the raw-resource layer, and it is this refinement layer, not the mine itself, that constitutes the chokepoint.

Greenland illustrates this dynamic precisely: the island holds over 11 million metric tons of rare earth reserves and resources at the Kvanefjeld (Kuannersuit) deposit alone, including roughly 370,000 metric tons of heavy rare earth elements, and an estimated 28.2 million metric tons of rare earth material at the Tanbreez deposit, potentially the world's largest such deposit, with more than 27 percent heavy rare earth content,[23] and yet, absent domestic or allied processing capacity, cannot convert those deposits into usable material without routing them through the same Chinese-controlled separation infrastructure that governs the rest of the market, reserves without refining capacity do not, on their own, break the chokepoint.

The Clarion-Clipperton Zone offers a second, more current illustration of the same pattern, this time in governance rather than geology. The CCZ, a roughly 4.5-million-square-kilometer expanse of the central Pacific seabed between Hawaii and Mexico, holds an estimated tens of billions of metric tons of polymetallic nodules rich in nickel, cobalt, copper, and manganese, under the nominal jurisdiction of the International Seabed Authority (ISA) as ’common heritage of humankind' under UNCLOS. The ISA's decade-long failure to finalize a commercial mining code created exactly the kind of governance vacuum a K-wave chokepoint contest exploits: in 2025, The Metals Company, a Canadian firm holding ISA exploration contracts through partnerships with Nauru and Tonga, announced it would instead seek exploration and commercial recovery permits directly from the U.S. National Oceanic and Atmospheric Administration under the 1980 Deep Seabed Hard Mineral Resources Act, a domestic statute that predates, and does not recognize, ISA jurisdiction. Following an April 2025 executive order directing NOAA to expedite such permits, NOAA approved the company's first exploration license in May 2026, the first instance in decades of a state authorizing seabed mining in international waters entirely outside the ISA framework.[24] China, for its part, holds more ISA exploration contracts in the CCZ than any other state.[25] The episode is instructive less for who ultimately extracts the nodules than for what it reveals about chokepoint contests generally: when existing multilateral governance cannot produce a workable rulebook quickly enough, states and firms route around it entirely, and the resulting chokepoint is decided by whoever moves first outside the institution rather than by whoever has the deepest claim within it.

The Gulf's water supply offers a third illustration of chokepoint dependency, this time built through infrastructure rather than mineral processing. Kuwait has no rivers and no usable freshwater lakes; roughly 90 percent of its drinking water passes through desalination plants, a dependency ratio reaching roughly 99 percent in Qatar and echoed across the Gulf Cooperation Council.[26] The fragility of that margin is not hypothetical: early in the U.S./Israel-Iran war that began in February 2026, missile and drone strikes caused indirect damage to desalination facilities in Kuwait and the UAE, including Kuwait's Doha West power-and-water station, underscoring that the region's freshwater supply has no redundant pathway to absorb this kind of disruption.[27] What has changed over the past decade is not this underlying vulnerability but who is building the infrastructure that manages it. Chinese state-affiliated firms have secured contracts for several of the region's largest desalination facilities, including the Umm Al Quwain plant in the UAE, one of the five largest desalination projects in the world, producing 682,000 cubic meters daily. The engineering and procurement contract went to the French firm SIDEM, but construction was awarded to China Gezhouba Group (CGGC), a Chinese state-owned enterprise, whose subsidiary, the Zhejiang Electric Power Design Institute, managed the civil engineering; the plant entered full commercial production in August 2022.[28] Middle East investment under the Belt and Road Initiative reached $39 billion in 2024, a 102 percent increase over the prior year and the highest of any region globally, with Saudi Arabia alone accounting for $18.9 billion of that total as it builds out $80 billion in new desalination capacity under Vision 2030, increasingly through Chinese construction firms.[29] This is chokepoint dependency without extraction: the leverage runs through the operational familiarity with membrane systems, chemical dosing protocols, and control architecture that only the firms that built a plant fully possess, and through the alignment incentives that dependency creates over time, rather than through any single coercive act. The same infrastructure pattern recurs in dual-use form elsewhere in the region. The PLA-N's 48th Naval Escort Group assumed operational responsibility at China's Djibouti base in November 2025,[30] continuing a pattern of regional power projection visible the previous year in the Peace Unity-2024 exercise, in which PLA ground and naval forces deployed to Tanzania and Mozambique using Y-20 strategic transport aircraft and Type 071 amphibious transport docks, the first appearance of the PLA's Joint Logistics Support Force in an overseas exercise.[31] The COSCO Shipping Ports terminal at Abu Dhabi's Khalifa Port, built to a 16.5-meter depth sufficient to accommodate the same Type 071 vessels, illustrates how commercial infrastructure contracts and military logistics access can be functions of the same underlying chokepoint; COSCO sold roughly a 33.3 percent stake in the terminal to Qingdao Port, itself owned by the state-run Shandong Port Group, in 2019.[32] Western financing vehicles, the G7's Partnership for Global Infrastructure and Investment and the EU's Global Gateway, have mobilized hundreds of billions of dollars in competing infrastructure commitments,[33] yet neither has designated Gulf desalination as a category of strategic interest. The gap is not one of Western capability; it is a failure to categorize water infrastructure as the same kind of chokepoint this paper has already identified in rare earth processing and seabed governance.

The strategic implication of this modern form of leverage, exercised through chokepoints rather than through technology alone, is that the next world power may not be a single state but a coalition of chokepoint controllers, or a state that manages to monopolize the processing layer across several critical sectors simultaneously. Control of a single chokepoint confers effective monopoly power and correspondingly extreme leverage over every state that depends on access to it. Critical minerals are, at present, the clearest visible instance of this dynamic and are likely to remain central to the strategic position of rising powers such as China going forward. Consider the counterfactual: a superpower such as the United States that dominates China in scale, in economic weight, and in military reach nonetheless finds itself, if China controls a critical mineral chokepoint, effectively punching below its weight; the larger power depends on the smaller one for the technological and military inputs those minerals enable. A mapping of mineral supply-chain vulnerability, detailed in the appendix and built on British Geological Survey and U.S. Geological Survey supply-risk methodology,[34] provides a systematic mapping of precisely this exposure, and, by extension, of the leverage available to be exploited.

The Third Break: The Democratic Lineage Is Under Internal Stress

Modelski's theory holds that the great powers who rise further a lineage of institutional progress across human history: coalition legitimacy strengthens international bonds and security, shared information generates adaptive innovation, and the resulting institutional credibility is one that closed, external challengers cannot replicate. This is precisely why, in Modelski's account, world powers have historically triumphed over closed-economy external challengers.

The most prominent break in Modelski's mold in the present world power transition is the mechanism of legitimacy decay itself. The United States' prior moments of stagnation and decline, stagflation and oil shock in the 1970s or credibility cost of the Iraq War, were legible as policy failures with direct causes, and therefore were correctable; the modern loss of legitimacy follows a different path. It is not a sequence of missteps that the United States has lost, piece by piece, its legitimacy. Instead, it was a slower institutional decay that seemed to have rotted the system not through harmful policy but through a rotting system.

The United States held substantial legitimacy following the Soviet collapse, and its subsequent policy missteps, however costly, were tolerable precisely because that underlying institutional credibility remained intact. What has changed is that the missteps of the past two decades have coincided with, and arguably accelerated, an erosion in the institutions themselves- the courts, the electoral process, the civil service- rather than in any single administration's foreign policy choices. That is not to say America is crumbling or its systems of democracy are illegitimate; it is to say, however, in relation to Modelski's table and analysis, legitimacy is eroded and that it is manifested uniquely as opposed to past missteps. All the while, China gains legitimacy through its slow and steady institution-building and amassing of power through legitimate means.

China's authoritarian resilience is real, but it is not the mirror image of American institutional openness that it is sometimes taken to be. Through coercive leverage in the Solomon Islands, influence within BRICS, Chinese state-bank financing across the developing world, and infrastructure stretching from the Bay of Bengal to Latin American surveillance-technology contracts, China has built a form of international standing that functions, for practical purposes, as legitimacy abroad. But this is a one-way mirror rather than a window: China's external openness coexists with, and depends upon, near-total domestic closure. Minxin Pei's account of China's Sentinel State strikes this account clearly, noting that the durability of the CCP's rule rests not on a dramatic surveillance technology, such as the monitoring of the Great Firewall or state-sponsored CCTV cameras, but instead through manpower, creating a labor-intensive infrastructure of preventative repression.[35] This system is designed to identify and neutralize those deemed threats before they can organize, rather than punishing them after a crime has been committed. A state built on preventive repression is therefore able to project legitimacy without depending on the near-total absence of it domestically; were protests more frequent, or the people more outspoken, this may not be the case, as it would appear to be suppression of individuals striving to be free. Instead, it seems that the people are happy, because they are stopped before they have the chance to start. Whether the United States can retain sufficient institutional coherence to exercise coalition leadership in the face of this asymmetry, not whether China is ’open' in any conventional sense, is the operative question for the present transition.

The challenger is, in this sense, no longer external; the threat is no longer outside the castle walls. Instead, the modern challenger exploits the democratic openness of the reigning power as a vulnerability, much as China used the WTO's own liberalizing intent as a vehicle for its rise. Democracy, unlike the one-way mirror of authoritarian openness, is a window: information about government conduct is disclosed to the public precisely so that the public may hold that government to account. It is, for that same reason, an easier target, visible, contestable, and open to exploitation from within through information operations, elite capture, and gradual legal-institutional erosion, the pattern of cross-border cooperation among autocracies to exploit precisely these vulnerabilities in open societies that Anne Applebaum documents in Autocracy, Inc.[36]

Talleyrand, present in Vienna for the third time, the first two as part of Napoleon's invading force, grasped the counterpart to raw power in geopolitics. Legitimacy, the credibility that a power deserves and will responsibly wield the position it holds, was the principle Talleyrand used to preserve a defeated France from dismemberment at the Congress of Vienna; without it, France would have been carved up by the victorious powers as the threat it had so recently been. The United States risks occupying the structural position France held in 1815 at the next great settlement, without a Talleyrand in Washington, and without a coherent legitimating principle to offer in place of raw material power. The United States has been, historically, exceptional at accumulating and deploying power; as the world diversifies and the sources of leverage change, that accumulated power alone may not suffice. China, for its part, is far from immune to the same problem: its international deception, its coercive practices abroad, and its domestic authoritarianism erode its own claim to legitimacy even as its material power grows. The settlement that lies beyond the current transition, whatever form it ultimately takes, is therefore likely to be decided as much by legitimacy as by power.

The Selection Problem: Global War Without a Front

Modelski perceived war not as a stalling or flaw in the long cycle but instead as a mechanism innate to the pattern. Each of the four prior transitions had necessitated the catalyst of war to manifest; be it the Italian and Indian Ocean conflicts, the Dutch-Spanish wars, the wars of the Grand Alliance, of Napoleon, or the world wars. Each held a structural role, regardless of their causes. They concentrated on a decision that peacetime competition could not force on its own, and as such destroyed the ambiguity surrounding relative power, which let rivals cling to claims indefinitely, and in turn allowed for political conditions for a coalition. The coalition, in turn, established institutions on the winner's terms. The modern transition poses a question, therefore, regarding the mechanism of conflict to reorient the world.

The present world gameboard provides few direct initiators for conflict or their locations. While Taiwan or regional chokepoints may serve as minor proxy wars, relieving the pressure through vents, such as was the case in the Cold War, this world power transition differs. Fundamentally, the economic battleground seems to have arisen as a preferable alternative to true war. This is reflected in the usage of export controls, sanctions, and tariffs as instruments of coercion between Washington and Beijing; it inflicts costs upon the opponent without requiring the loss of human lives. It is a conflict of indirect war, through FDPRs, cyber operations striking financial systems, and the targeting of supply chains or information environments. The harm is direct, but the intent is a secondary or tertiary shockwave to hurt the opponent. Each strike is surgical, this way, retaining the legitimacy of both powers, while also degrading the rival's position as a world power. Not only is this a unique form of warfare,but it is also one that is novel and so unclear in terms of its result. A burning city or decimated army is a clear indicator of a victor or loser in conflict; however economic pains are such low-intensity that the clarity of a victory is as of yet unknown. Perhaps economic warfare does succeed in functioning as a determinant of a victor, but it may simply serve as a postponement of the inevitable conflict that will be forced.

The Arctic provides a physical representation of the geopolitical vagueness hanging over this world power transition. The Polar Silk Road marks a Russian-Chinese cooperation joint investment in the Arctic, in the form of Yamal LNG infrastructure,[37] as well as aligned stances on Northern Sea Route governance, and parallel resistance to Western-led Arctic Council initiatives. Clearly there is a mutual strategic vision, but more importantly it reads less as an alliance built on shared strategic vision than as tactical convergence between two powers, each hedging against a settlement they expect eventually to negotiate rather than win outright by force. Neither Moscow nor Beijing appears to want a global war over Arctic resources or shipping lanes; both instead appear to be positioning their respective chokepoint holdings, Russian energy infrastructure, Chinese processing and investment capacity, to maximize leverage at whatever negotiating table eventually convenes. This is precisely the kind of interregnum behavior the selection-problem framing predicts: neither side forcing the decisive contest, both sides maneuvering as though it were nonetheless coming.

History offers a sobering analogy for how long this kind of positioning can persist before it resolves. The shift from British to American and German industrial leadership was underway, by most measures, for roughly four decades before the selection war of 1914 finally occurred. Germany had surpassed Britain in steel production and industrial output well before the war that settled, at extraordinary cost, whose institutional order would follow. The lesson of that interregnum is not that prolonged transitions are stable; it is that they tend to end badly and unpredictably, precisely because no peacetime mechanism exists to force the settlement; the eventual reckoning often arrives through a proximate cause, an assassination, an ultimatum, a miscalculated mobilization, that bears little relation to the underlying structural transition it ultimately resolves. If the current transition follows a similar arc, the event that eventually forces a settlement between the American-led order and its Chinese-embedded challenger may look, in hindsight, similarly disproportionate to the structural forces it resolves.

Antonio Gramsci's description of an interregnum, in which the old order can no longer reproduce itself but the new one has not yet been born, and in which, in the meantime, a great variety of morbid symptoms appear, remains the most precise available account of the present moment in global politics. The blank 2000s row in Modelski's table is not a data gap; it is the morbid-symptoms interval itself, rendered as an empty cell.

Toward a Revised Framework: The Chokepoint Cycle

These three breaks are structural refinements shifting the structure of Modelski's model, and as such cannot be folded into the framework; instead they must be addressed and modified. As such, what follows below are three modifications, each targeting a crack in Modelski's visage to provide a proposed reconstruction. This is not an overhaul of Modelski's system so much as an adjustment of the features which were inflexible when placed under the pressure of mmodern-dayanalysis.

The first modification is that of external challengers; as the world becomes more globalized and present challengers, namely China, are embedded within the economic system, it provides a clear break from Modelski's table. The adjustment needed therefore is an opening of the definition of a challenger, particularly so that challengers need not be outside a system to serve as a challenger. Modelski posits that neither side of a conflict, wherein both parties are within the mutual system, can force the kind of rupture that has historically resolved prior transitions without inflicting comparable damage on itself. The notion therein, simply put, is that nations with shared trade and economic systems cannot effectively war for hegemony without damaging themselves so much that they fall into disrepair rather than hegemony. This need not be true as a fact, although it was true as a circumstance in the past. An alternative selection mechanism substitutes for the war Modelski's model expects, through institutional exclusion, supply-chain decoupling due to vulnerabilities, and coalition construction oriented around chokepoint control as opposed to ideological alignment or territories, such as past blocs have been. Mutual interests in the modern age are less concerned with territorial lines and more with globalized supply chains, thereby placing control over chokepoints, as reflected best in critical minerals, first.

In line with the notion of chokepoint power sits the second modification. The unit of analysis is no longer the leading national economy, as Modelski's framework tracked, but instead must focus on the chokepoint, be it the processing node, governance framework, or infrastructure concession; by focusing on where the leverage is, analyses can key into the more powerful player, even if it is one with a smaller economy. It is not the larger power that is necessarily the more powerful one; it is whichever has more leverage; chokepoint analysis reorients Modelski's framework to allow for this differentiation.

The third modification concerns democratic legitimacy, wherein the revised model treats this quality as a variable as opposed to a structural feature. A world power that allows its democratic legitimacy to erode in turn loses the coalition-building advantage that distinguishes world powers from great powers, regardless of the economic or military dominance the state retains. The variable thus requires active reproduction rather than a fixed structural feature automatically possessed by whichever state holds material primacy, to ensure a more flexible framework.

Hanging above it all rests the Arctic, wherein all modifications become simultaneously visible: the chokepoint geography of the Northern Sea Route, undersea rare earth deposits as well as submarine cables make it a live proving ground for chokepoint cycle dynamics. China's formal observer status at the Arctic Council, secured despite no Arctic territory of its own, as well as the Polar Silk Road's extension of Belt and Road influence into the region, exemplifies the embeddedness of the challenger. The contest between Norway's seabed moratorium and the unilateral posture of the United States towards the ISA governance stages the question of legitimacy clearly: which approach to shared chokepoint commons will other states regard as worth joining, and why would it be a nation with power and no legitimacy?

Three scenarios can play out with unique resolutions; in a managed transition, the US-led coalition consolidates chokepoint primacy through allied processing investment, coordinated export controls, and reformed institutions, thus constructing a successor order without a global selection war. This falls in line with the postwar order after 1945, without the need for a war to concentrate and organize powers. The second outcome is that of selection conflict, wherein a Chinese technological or military breakthrough, most likely on Taiwan or a critical mineral supply disruption, triggers a kinetic contest which Modelski's model recognizes as a conventional selection war, no matter how the sides may wish to avoid such a conflict. In a prolonged interregnum, however, neither outcome materializes: no state or coalition achieves clear chokepoint primacy and no selection mechanism works to resolve the ambiguity of the world order. This would allow for a novel historical condition, a stalling of the wheels of world order, and a stagnation of the long cycles; a buffering to complete another rotation.

Conclusion: Reading the Clock in a Broken Cycle

The 2000s row in Modelski's table remains blank not because the framework has failed but because we are writing from inside the transition it describes, before the outcome it would record has occurred. This paper has not proposed certainty about how that row will eventually read; it has proposed a structural logic, three breaks in the assumptions underlying the original model, and a revised chokepoint cycle built to accommodate them, for understanding why the row remains blank longer than any of Modelski's prior transitions left it.

Read together, Modelski, Mackinder, Kissinger, Kennedy, and Clausewitz triangulate the variables this paper has treated as load-bearing: the long cycle's rhythm of rising and declining hegemons, the fusion of land and sea power Mackinder identified as history's most dangerous combination,[38] the legitimating principle Kissinger locates at the center of any durable order,[39] the industrial and fiscal foundations of great-power capability that Kennedy traces across five centuries,[40] and the recognition, owed to Clausewitz,[41] that the contest of arms is never separable from the political ends it serves. What distinguishes the present moment is not that any one of these variables is under strain; each has been stressed before, in prior transitions, but that all five appear to be under simultaneous stress for the first time in the cycle's recorded history.

Kissinger's own writing anticipates this convergence from the practitioner's side rather than the theorist's. Both *World Order*[42] and *On China*[43] make, in different registers, the same argument this paper has made in Modelski's: that durable international order requires a legitimating principle that other states willingly join, not merely a concentration of power that others are forced to accommodate. A transition that produces overwhelming material capability without a corresponding legitimating principle is not, in this view, a completed transition at all; it is an unresolved one, whatever the balance of raw power might suggest.

The most important geopolitical map of 2026 may not be a military deployment map at all. It may be a map of critical mineral processing facilities, the separation plants, the refining capacity, the chokepoints through which the inputs to the next K-wave must pass before they can be turned into anything usable. Whoever controls that layer controls the material substrate of the coming century's leading sectors, in the same way that whoever controlled the mills controlled the cotton-steam revolution and whoever controlled the grid controlled the electrical age. Modelski's framework understood this about every transition that preceded the present one, even where his own table could not yet register it. The open question this paper leaves for its reader is not whether that logic still holds; the evidence assembled here suggests strongly that it does, but whether the West will recognize it in time to compete on the chokepoint layer rather than on the terrain of the last transition alone.

Appendix A: Table 2, Completing Modelski's Table Under the Chokepoint Cycle

Table 1 leaves the 2000s row blank because, as Section VIII argues, the transition it would record has not yet concluded. Rather than force a single, premature entry into that row, Table 2 replaces it with the three scenarios developed in Section VII, each read through the revised chokepoint cycle framework this paper proposes: an embedded rather than external challenger, chokepoints rather than national economies as the unit of analysis, and democratic legitimacy as a variable rather than a fixed structural feature. Table 2 is not a prediction of which scenario will be obtained. It is a structural map of what Modelski's blank cell could resolve into, and of the evidence- chokepoint coalition formation, the presence or absence of a triggering kinetic event, and the trajectory of coalition legitimacy on both sides- that would allow a future observer to fill it in.

Table 2. The Chokepoint Cycle: Three Scenarios for Completing Modelski's 2000s Row

Scenario	**Selection Mechanism**	**Leading Chokepoint Coalition**	**Legitimacy Trajectory**	**Projected Outcome**
Managed transition	Allied processing investment, coordinated export controls, and reformed institutions substitute for war.	US-led coalition consolidates chokepoint primacy across processing, seabed governance, and infrastructure.	Actively reproduced through coalition benefits, on the model of Bretton Woods and NATO.	A successor order emerges without a global selection war, parallel to 1945.
Selection conflict	A Chinese technological or military breakthrough, most likely over Taiwan or a critical mineral supply disruption, triggers a kinetic contest.	Contested; resolved by force rather than by negotiated coalition.	Subordinated to the material outcome of the conflict itself.	A conventional selection war in Modelski's original sense, output realigns the hegemonic order.
Prolonged interregnum	No decisive mechanism emerges; low-intensity chokepoint contestation continues indefinitely.	No state or coalition achieves clear chokepoint primacy.	Neither power fully reproduces nor fully forfeits its claim to legitimacy.	The long cycle stalls; the blank row persists longer than any prior transition on record.

Author's construction, derived from the three-modification chokepoint cycle framework developed in Section VII of this paper.

Notes & References

Notes — Strings Attached: Measuring Leverage in the Globalized World Order

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