# Polarity Shift Is What States Make of It: Capturing the Moment of Bipolarity

**Daheon Rhee, Yonsei University**

## INTRODUCTION

A growing body of scholarship argues that a U.S.–China bipolar system has emerged, based mainly on material indices such as GDP and military expenditures (Tunsjø 2018b, a; Lind 2024; Kupchan 2021; Maher 2018). According to these studies, polarity is defined by the number of great powers and great power status is measured by the distribution of material capabilities among states. However, existing literature that argues the U.S.-China bipolarity rarely identifies or explains the specific moment when a polarity transition occurs. This ambiguity stands in contrast to previous polarity shifts where the distinction was clear, such as the end of World War II in 1945 or the dissolution of the Soviet Union in 1991. This gap exists because structural realist theory has not thoroughly theorized 'polarity shift.' This paper aims to address this gap by developing a theory to redefine polarity that incorporates distribution of knowledge, and by employing computational text analysis approach to identify the moment of polarity transition.

Waltz (1979, 1964, 1993) classified the international system as multipolar before 1945, bipolar between 1945 and 1991, and unipolar after 1991. Subsequent realist scholarship has largely taken these distinctions for granted, treating polarity transitions as self-evident outcomes of shifts in material power (Mearsheimer 2019; Gowa and Mansfield 1993; Layne 1993; Schweller and Pu 2011). While this study accepts the realist premise that polarity is grounded in the distribution of material capabilities, it advances a constructivist argument that polarity and its change must also be analyzed through states' perceptions and intersubjective understandings of great power status.

The concept of polarity in structural realist theory is limited by the arbitrariness of counting great powers and lacks explanatory power for systemic change, rendering it unhelpful for assessing changes within a given system (Brooks and Wohlforth 2015, 8). Nevertheless, we maintain that polarity remains a useful concept for explaining changes within a given system if it is re-defined under a constructivist framework. This research redefines polarity based on Wendt's critique of the Waltzian concept of structure. According to Wendt (1992), for the distribution of power to exert a causal effect on state behavior, it must depend on intersubjective understandings and

expectations – on the "distribution of knowledge" (Wendt 1992, 397). Grounded in Wendt's systemic constructivism, polarity is defined by both the distribution of power and the distribution of knowledge as necessary conditions.

The main argument of this paper is that polarity change needs to be understood not only in terms of the distribution of material power but also the distribution of knowledge. Only by considering these two factors can we identify the moment of polarity transition. Even when material capabilities have shifted, the recognition of a new polarity depends on *cognitive critical junctures* that reshape how states interpret the international system—that is, the distribution of knowledge. To empirically measure the distribution of knowledge regarding great power status, we collected global news articles and government reports from the U.S., UK, Canada, China, Japan, and Russia from two periods: 1941–1960 and 2005–2024. Using a combination of term frequency analysis, sentiment analysis, topic modeling, and semantic axis projections, this study examines how state's perceptions of great power status change and identifies the moment of bipolarity shift.

The findings demonstrate that the transition to a U.S.–China bipolar system occurred around 2017–2018 and can be identified through shifts in discourse, providing evidence that polarity transitions are not only material processes but also intersubjective phenomena. By juxtaposing this contemporary transition with the U.S.–Soviet case, the study provides comparative evidence that the observed discursive pattern is not unique to the current era but a recurring feature of bipolarity formation.

The academic contributions of this study are twofold. First, by integrating the structural realist concept of material power with the constructivist concept of the distribution of knowledge, the study advances theoretical understanding of polarity shifts. It conceptualizes polarity change not only as a redistribution of material capabilities but also as a transformation in shared cognitive structures among states. Through this framework, the study identifies the timing of the transition to U.S.–China bipolarity and provides theoretical and analytical foundations for debates on changes in international system polarity following the 2007 global financial crisis.

Second, the study offers a methodological bridge by applying computational social science text analysis to systemic constructivist research, which reflects the distribution of knowledge. Wendtian constructivism, as a sociological systems theory, understands the international system as the product of social interaction and shared meanings (Wendt 1992, 394). In sociology, texts are

treated as data reflecting the flow of actors' actions and interactions within social systems, and machine learning–based quantitative text analysis is used to uncover new interaction patterns based on similarity, structural association, and predictive power (Evans and Aceves 2016). This approach has formed a major stream of computational social science research. Yet subsequent constructivist scholarship has relied predominantly on qualitative methods when analyzing texts to understand intersubjective perceptions, identities, and norms, and systematic applications of computational text analysis remain rare. Given that constructivism is fundamentally grounded in sociological systems theory, large-scale textual data reflecting the international political system can be well suited to computational social science methods. Accordingly, this study holds significant scholarly value as an application of computational social science approaches to constructivist research program in international politics.

The organization of this paper is as follows: First, this paper reviews debates on the concept of polarity by comparing realist and constructivist approaches. It then presents existing literature that maintains the current polarity is U.S.–China bipolarity based on material capabilities—neither unipolarity nor multipolarity—by comparing it to the distribution of power during U.S.–Soviet bipolarity. Second, based on the critical juncture found in the text analysis, we identify the shift moment of U.S.–China bipolarity with comparative evidence from U.S.–Soviet text analysis. Finally, after identifying the moment of U.S.–China bipolarity, we characterize it as cooperative, competitive, or adversarial based on text analysis results, compared to evidence from U.S.–Soviet bipolarity.

## STRUCTURAL REALISM AND POLARITY

Polarity is defined by the number of great powers within the international political system. Great powers are identified by their relative possession of material capabilities; in this regard, scholars point to population size, economic wealth, technological capacity, and military power (Lind 2024; Tunsjø 2018b). Regarding non-material dimensions, factors such as organizational capacity, national cohesion, moral leadership, prestige, and soft power are suggested (Tunsjø 2018b).

The international system is composed of a structure and of interacting units (Waltz 1979, 79). Polarity refers to the international political structure, while the units are sovereign political entities that perform similar functions. Waltz explains the structure of international politics in terms of three elements: the anarchic organizing principle, the functional similarity of interacting

units, and the distribution of capabilities (Waltz 1979, 100-101). According to this framework, for an international system to change, the components of the structure must change. What, then, can change? Anarchy and sovereignty of states cannot be considered variables; they remain constant. Thus, the distribution of capabilities is the only variable that distinguishes polarity by counting the number of great powers. Consequently, Waltz classifies the international system as multipolar before 1945, bipolar from 1945 to 1991, and unipolar after 1991 (Waltz 1993, 1964, 1979).

These years obscure substantial variation in the underlying material distribution. The most significant shift toward bipolarity occurred not in 1945 but in 1947, after the Truman Doctrine and the formalization of the Cold War. Soviet military expenditures rose from 9.5% (1945) and 19.4% (1946) of U.S. spending to 80.9% in 1947. Similarly, despite spending 112.7% of U.S. military expenditures in 1988, the Soviet Union's share collapsed to 40.5% beginning in 1989, following the Malta Summit. Moreover, there is little evidence that the Soviet Union's GDP changed significantly around these years. Taken together, these observations suggest that material distribution alone is insufficient to account for the polarity shifts. Even though Waltz did not provide a systematic examination of the distribution of material capabilities when designating these years, subsequent realist scholarship has largely accepted this typology as self-evident (Mearsheimer 2019; Gowa and Mansfield 1993; Layne 1993; Schweller and Pu 2011).


## THE RETURN OF BIPOLARITY

A bipolar system is one in which there are two great powers, and a significant gap in national power exists between these two states and the third-ranking state (Lind 2024; Tunsjø 2018b). Jennifer Lind's (2024) systemic analysis on measuring polarity suggests that the world is now bipolar, and the material data provides compelling evidence. To measure power, Lind (2024) employs composite indicators (GDP × GDP per capita), military expenditure, and military personnel ratios to compare economic and military power—metrics that serve as reliable inductive proxies for distinguishing among systems of polarity (e.g., multipolarity in 1900–1945, bipolarity in 1945–1990).

Lind's research highlights key findings. First, the historical analysis reveals significant imbalances in the global distribution of power, exemplified by the fact that the Soviet Union

managed to compete with the United States for decades despite possessing only 44 percent of U.S. GDP at its peak. The Soviet military expenditure ratio stood at 35.4 percent of the U.S. level in 1988. This implies that a state can be regarded as an independent pole even when its capabilities are substantially below those of the leading power. Great powers need not achieve parity with the leader to challenge it effectively. Second, the contemporary international system has shifted toward bipolarity. China has become a superpower based on indicators demonstrating that its capabilities are as strong as—or stronger than—those of typical great powers throughout history. In 2024, China's GDP ratio compared to that of the United States reached 81.5 percent (measured in constant 2015 U.S. dollars). In terms of Purchasing Power Parity (PPP), which reflects China's lower price levels, it reached 130.9% of the U.S., thereby surpassing it. For over a century, no U.S. adversary—or coalition of adversaries—has achieved 60 percent of U.S. GDP (Doshi 2021).

In addition, China holds an advantage over non-U.S. states in securing advanced military technologies, such as the rapid development of sixth-generation fighter jets in the air domain. As of 2022, China's R&D expenditure is 55% of that of the U.S., maintaining a 2.5-fold gap with third-place Japan. China also ranks second globally in AI-related academic publications, holding a significant lead over the third-ranked country. Moreover, in 2018, China accounted for 20.67% of global science and technology publications, surpassing the U.S. share of 16.54% (McCarthy 2019). Beyond this, China is strengthening economic cooperation and ties with numerous countries in Africa and Asia through the Asian Infrastructure Investment Bank (AIIB), the Shanghai Cooperation Organization (SCO), BRICS+ and the Belt and Road Initiative (BRI), while systematically executing a grand strategy to replace the U.S.-led international order and establish itself as a global leader since the 19th Chinese Communist Party Congress in 2017 (Doshi 2021). Given these factors, China has secured its status as a great power and an independent pole, and the current international system can be described as bipolar.


**WHEN WAS THE MOMENT OF SHIFT?**

If the system has transitioned from unipolarity toward bipolarity, the specific moment of transition must be identified. However, previous scholars who argue the return of bipolarity leave the moment of this transition under-specified. Furthermore, while there is a consensus on the relative decline of the United States, there is no agreement on whether the post-2008 order will

lead to multipolarity (Ashford and Cooper 2023; Mearsheimer 2025; Muzaffar, Yaseen, and Rahim 2017), bipolarity (Gaiser and Kovač 2012; Lind 2024; Kupchan 2021; Tunsjø 2018b; Maher 2018), or the maintenance of unipolarity (Brooks and Wohlforth 2023). This contrasts with earlier periods, in which there was broad scholarly consensus on the state of polarity and the timing of polarity shifts—namely 1945 (from multipolarity to bipolarity) and 1991 (from bipolarity to unipolarity). This puzzle arises because structural realism has not sufficiently theorized the process of polarity shift itself.

The concept of polarity in structural realist theory has limitations due to the arbitrary criteria of counting great powers, hindering understanding of changes within a system (Brooks and Wohlforth 2015, 8). Therefore, it is too blunt an instrument to track the transition from one system to another. For these reasons, Brooks and Wohlforth (2015) argue that the concept of polarity is ill-suited to assessing change within an international system because it promotes dichotomous thinking, relies on overly broad transhistorical measures of power, and fails to capture the relationship between structure and agency.

## POLARITY AND THE DISTRIBUTION OF KNOWLEDGE

Despite these critiques, this study contends that polarity can remain a useful analytical concept if redefined within a constructivist framework. Constructivist critiques argue that conceptualizing polarity simply as the distribution of material capabilities within a system has critical limitations (Finnemore 2009, 2013; Koslowski and Kratochwil 1994; Zala 2017, 2013). Yet, the constructivist contribution extends beyond identifying these limitations; it reconstructs polarity as a social reality. Bull (1977) and Buzan (2004) treated great powers not merely as concentrations of material capabilities, but also as a socially recognized status—powers recognized by themselves and by others as having special rights and duties, to which others respond, and whose position is accepted in rhetoric and practice.

Building on Wendt's critique of Waltzian structural concepts, this study redefines polarity in social terms. According to Wendt (1992, 395–397), the distribution of power can have causal effects on state behavior only insofar as it is mediated by intersubjective understandings—namely, the *distribution of knowledge*. This study defines the distribution of knowledge as states' shared understandings of which countries are considered great powers. Drawing on Wendt's systemic

constructivism, the study conceptualizes both the distribution of power and the distribution of knowledge as necessary conditions for defining polarity.

The central argument of this paper is that changes in polarity cannot be understood solely as shifts in the distribution of material power. To identify both the prevailing form of polarity and the moment of transition, changes in the distribution of knowledge must also be analyzed. Even if material capabilities shift—for example, if a second-ranked state increases its capabilities from 40% to 45% to 50% of those of the leading state—the point at which that state is recognized as a great power is determined through an intersubjectively constructed *cognitive critical juncture*. What matters, therefore, is not only the material shift itself, but when and how states collectively interpret and recognize that shift.

## SOCIAL CONSTRUCTIVISM AND COMPUTATIONAL SOCIAL SCIENCE

To model and measure changes in intersubjective understandings of great-power status, this study adopts a relational approach to meaning modeling from sociologists (Osgood 1957; Bourdieu 1989). This approach posits that the meaning of words can be specified by their relative positions across multiple dimensions. Social objects are projected into structurally homologous social spaces, where their relative positions reflect underlying social structures(Kozlowski et al. 2019). Based on this theoretical foundation, Kozlowski et al. (2019) generated word embedding vectors using Word2vec and constructed multiple semantic sub-dimensions (e.g., gender, race, affluence). By projecting words onto these axes and tracing changes in relative positions over time, they proposed the Semantic Axis Projection method. For instance, the vector for "clergy" shifted from being closely associated with wealth and upper-class status in the past to a more neutral position in recent periods.

Accordingly, this study employs Semantic Axis Projection to construct sub-dimensions of great-power status and to model changes in intersubjective perceptions by tracking shifts in the relative positions of country vectors projected onto these dimensions.

## RESEARCH DESIGN

- Data

This study analyzes changes in the distribution of perceptions. Grounded in the sociolinguistic premise that group language reflects the underlying cultural system (Lévi-Strauss 1963; Whorf 1956), the study employs quantitative text analysis to trace changes in perceptions of great-power status. The empirical analysis draws on a corpus of approximately 170,000 global news articles collected via ProQuest's TDM Studio, covering the period from 2005 to 2024 and including sources from the United States, the United Kingdom, Canada, China, Japan, Russia, and other countries. The corpus is constructed using a search condition that requires simultaneous mentions of the United States and China.

Global news articles are proper to capturing intersubjective understandings of the countries, as they describe interactions and political behaviors among state actors, frequently include direct quotations from political leaders, and provide commentary from journalists and experts. The corpus is stratified to ensure balanced representation across Western media, Chinese and Hong Kong outlets, and other third-country news sources, including Japanese, Russian, and Korean media. This stratified sampling strategy allows for a valid measurement of intersubjective perception distributions shared across regions and within the international system as a whole.

- Methods

The identification of changes in perception distributions proceeds as follows. Since U.S. unipolarity persisted after 1991, the emergence of a challenger must first become salient in textual discourse. That is, global news coverage must increasingly focus on U.S.–China relations after a certain point. The analysis then examines issue framing and sentiment in the contexts in which the hegemon and challenger are mentioned. However, such measures alone capture only levels of conflict and cannot distinguish a challenger from any other adversarial state. To identify substantive changes in great-power status, the study therefore analyzes shifts in the semantic contexts in which each country is mentioned. For example, whereas China in the early 2000s was discussed in terms of "developing country" or "emerging economy," China in the 2020s is increasingly framed as a "technological power" or "global leader." Capturing this relative semantic repositioning is essential.

Accordingly, the study analyzes changes in great-power status across four dimensions: issue salience, affective valence, issue framing, and semantic position. First, issue salience is measured by tracking time-series changes in the frequency and relative share of news articles covering U.S.–China relations from 2005 to 2024. Second, affective valence is analyzed using a pretrained RoBERTa language model to assess changes in positive and negative sentiment toward the two countries. Third, LDA-based topic modeling identifies qualitative shifts in issue content, tracing the transition from economic cooperation–centered narratives to security and hegemonic competition. Finally, Semantic Axis Projection based on Word2vec embeddings measures how the vectors for China and the United States move within a conceptual two-dimensional space of great-power status (x-axis: material power; y-axis: non-material power).

After visualizing these four indicators, Chow tests are conducted on years in which structural breaks are observed in the time-series data to determine whether statistically significant changes in perception distributions occurred. To assess robustness, the study compares these findings with the historical transition from multipolarity to U.S.–Soviet bipolarity by applying the same analytical framework to an additional news corpus from 1940 to 1960. This allows for a systematic comparison of the processes and characteristics of bipolar transitions across periods. Finally, to validate whether media texts adequately reflect state-level perceptions, the study analyzes official government documents from the United States and China and compares their patterns with those observed in the media corpus, thereby assessing measurement validity through convergence and divergence.

**RESULTS**

- The Moment of U.S.-China Bipolarity
- Comparison to U.S.-Soviet Bipolarity

**CONCLUSION**

- The Grand Strategy and Polarity Shift
- Contribution

Ashford, Emma, and Evan Cooper. 2023. "Yes, the World Is Multipolar: And that isn't bad news for the United States." *Foreign Affairs*, October 5.

Bourdieu, Pierre. 1989. "Social Space and Symbolic Power." *Sociological Theory* 7 (1):14-25. doi: 10.2307/202060.

Brooks, Stephen G, and William C Wohlforth. 2015. "The rise and fall of the great powers in the twenty-first century: China's rise and the fate of America's global position." *International security* 40 (3):7-53.

Brooks, Stephen G, and William C Wohlforth. 2023. "The myth of multipolarity: American power's staying power." *Foreign Aff.* 102:76.

Bull, Hedley. 1977. *The anarchical society*. New York :: Columbia University Press.

Buzan, Barry. 2004. *The United States and the great powers*. Canbridge, UK ;Malden, MA :: Polity.

Doshi, Rush. 2021. *The long game: China's grand strategy to displace American order*: Oxford University Press.

Evans, James A, and Pedro Aceves. 2016. "Machine translation: Mining text for social theory." *Annual review of sociology* 42 (1):21-50.

Finnemore, Martha. 2009. "Legitimacy, hypocrisy, and the social structure of unipolarity: Why being a unipole isn't all it's cracked up to be." *World Politics* 61 (1):58-85.

Finnemore, Martha. 2013. *The purpose of intervention: Changing beliefs about the use of force*: Cornell University Press.

Gaiser, Laris, and Igor Kovač. 2012. "From bipolarity to bipolarity: International relations repeating again." *Journal of Global Policy and Governance* 1 (1):49-63.

Gowa, Joanne, and Edward D. Mansfield. 1993. "Power Politics and International Trade." *The American Political Science Review* 87 (2):408-420. doi: 10.2307/2939050.

Koslowski, Rey, and Friedrich V Kratochwil. 1994. "Understanding change in international politics: the Soviet empire's demise and the international system." *International organization* 48 (2):215-247.

Kupchan, Cliff. 2021. "Bipolarity is back: why it matters." *The Washington Quarterly* 44 (4):123-139.

Layne, Christopher. 1993. "The unipolar illusion: Why new great powers will rise." *International security* 17 (4):5-51.

Lévi-Strauss, Claude. 1963. "Structural analysis in linguistics and in anthropology." *Semiotics-An Introductory Anthology*:110-128.

Lind, Jennifer. 2024. "Back to bipolarity: How China's rise transformed the balance of power." *International security* 49 (2):7-55.

Maher, Richard. 2018. "Bipolarity and the future of US-China relations." *Political science quarterly* 133 (3):497-525.

McCarthy, Niall. 2019. "The Countries Leading the World in Scientific Publications [Chart]." Last Modified December 20, 2019, accessed 2025-12-06. https://www.statista.com/chart/20347/science-and-engineering-articles-published/The Countries Leading The World In Scientific Publications.

Mearsheimer, John J. 2019. "Bound to Fail: The Rise and Fall of the Liberal International Order." *International Security* 43 (4):7-50. doi: 10.1162/isec_a_00342.

Mearsheimer, John J. 2025. "War and International Politics." *International Security* 49 (4):7-36. doi: 10.1162/isec_a_00507.

Muzaffar, Muhammad, Zahid Yaseen, and Nazim Rahim. 2017. "Changing dynamics of global politics: Transition from unipolar to multipolar world." *Liberal Arts and Social Sciences International Journal (LASSIJ)* 1 (1):49-61.

Osgood, Charles E., George J. Suci, and Percy H. Tannenbaum. 1957. *The measurement of meaning, The measurement of meaning*. Oxford, England: Univer. Illinois Press.

Schweller, Randall L, and Xiaoyu Pu. 2011. "After unipolarity: China's visions of international order in an era of US decline." *International security* 36 (1):41-72.

Tunsjø, Øystein. 2018a. "Another Long Peace?" *The National Interest* (158):34-43.

Tunsjø, Øystein. 2018b. *The return of bipolarity in world politics: China, the United States, and geostructural realism*: Columbia University Press.

Waltz, Kenneth N. 1964. "The stability of a bipolar world." *Daedalus*:881-909.

Waltz, Kenneth N. 1979. *Theory of international politics*: Addison-Wesley Publishing Company, Inc.

Waltz, Kenneth N. 1993. "The emerging structure of international politics." *International security* 18 (2):44-79.

Wendt, Alexander. 1992. "Anarchy is what States Make of it: The Social Construction of Power Politics." *International Organization* 46 (2):391.

Whorf, Benjamin Lee. 1956. *Language, thought, and reality: Selected writings of Benjamin Lee Whorf*: MIT press.

Zala, Benjamin. 2013. "Rethinking polarity for the twenty-first century : perceptions of order in international society."

Zala, Benjamin. 2017. "Polarity analysis and collective perceptions of power: The need for a new approach." *Journal of Global Security Studies* 2 (1):2.