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Unveiling Diplomatic Narratives: Analyzing
United Nations Security Council Debates Through Metaphorical Cognition

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Abstract

The United Nations Security Council (UNSC) is entrusted with the responsibility of safeguarding global peace and security. Prominent global security concerns will be deliberated upon, and viewpoints will be presented within the UNSC. Analyzing the cognitive patterns from UNSC debates helps scholars gain insights into the intricacies of international relations and diplomatic discourse. In this study, our focus lies in the cognitive analysis of debates held within the UNSC. We employ metaphors and their associated concept mappings as a methodological tool to dissect the cognitive nuances present in the debates, spanning from January 1995 to December 2020. To undertake this extensive analysis from a large volume of documents, we leverage MetaPro, a state-of-the-art computational metaphor processing system to obtain the concept mappings of metaphors. We analyze cognitive variations by temporal and geographical variables. We also demonstrate the correlation between metaphor-reflected cognition and diplomatic behavior, and their recursive influence, based on large sample research. Our major finding highlights the mutual impacts of metaphorical cognition and voting behavior at the UN.

Keywords: Cognitive Analysis; Human Behavior; Concept Mapping; Metaphor; MetaPro

Introduction

Examining the cognitive patterns in political contexts, e.g., the United Nations Security Council (UNSC)[1] debates holds importance as it allows scholars to gain insights into the complexities of international relations and diplomatic discourse. Conventional diagnostic psychological tests, e.g., word association tests, thematic apperception tests, and Rorschach tests tend to mine concept mappings through different media to discern psychological or cognitive variations among subjects (Rapaport, Gill, & Schafer, 1946). For example, word association tests procure concept mappings by prompting subjects to provide the word that immediately comes to mind when given another word. Thematic apperception tests derive concept mappings via the narrative comprehension of an image along with associated questions. Rorschach tests extract concept mappings by instructing subjects to describe

their perceptions of 10 inkblots. The rationale behind analyzing concept mappings in these tests lies in their objective to examine the cognitive and psychological states of subjects through their subconscious minds. The specious and involuntary responses and the associated concept mappings serve as manifestations of their subconscious mental processes, reflecting their genuine cognition towards concepts, and impacting human behaviors in profound ways (Bargh, 2013).

The aforementioned psychological tests are typically administered through interviews. However, the interview-based methods have limitations as they heavily depend on the cooperation of the subjects. Uncooperative interviewees, e.g., absentees and liars, can result in biased conclusions. Additionally, one-on-one interviews are constrained in their ability to explore various aspects beyond the predefined hypotheses in the interview questions, restricting the discovery of cognitive phenomena outside the scope. Lastly, conducting large-sample research, using expert interview-based cognitive research methods, proves challenging, posing a potential threat to both validity and reliability of findings.

To tackle the research topic of analyzing the cognitive patterns of UNSC debates, and avoid the limits of conventional psychological tests, we conduct the cognitive analysis via metaphors. According to Conceptual Metaphor Theory (Lakoff & Johnson, 1980), metaphor extends beyond a linguistic phenomenon; it encapsulates the conceptual mappings between target and source domains. For example, given a metaphorical expression, "she *attacked* his arguments", a target concept ARGUMENT is projected to the source concept WAR[2]. This concept mapping ARGUMENT IS WAR reveals the speaker's cognitive perspective, wherein the argument is linked with concepts related to warfare, such as STRATEGY, ATTACK, and DEFENSE. Compared to literal expressions, such a metaphorical expression unconsciously reflects the speaker's special understanding of the argument. Different people may employ different metaphors (source concepts) to illustrate the same target concept, e.g., LOVE IS MAGIC or LOVE IS JOURNEY. Thus, metaphor is an eligible medium to analyze human cognition. We define such metaphor-reflected cognition, e.g., the cognition of source, target concepts, and their mappings as **metaphorical cognition**.

Given the frequent occurrence of metaphors in both writ-

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[1]UNSC is a crucial organization within the United Nations (UN), entrusted with the responsibility of safeguarding global peace and security. Its sessions are convened to address diverse security issues, utilizing diplomatic and coercive measures like sanctions and military interventions when necessary. During UNSC debates, country representatives present their opinions on international conflicts, threats to peace, and crises that demand collective action. It plays a pivotal role in shaping international responses to emerging challenges and fostering collective security at the UN.

[2]Italics denote metaphors; Small capitals represent concepts.

ten and spoken language (Mao, Lin, & Guerin, 2018), the use of an automated tool allows for the large-sample analysis of metaphors, enabling the exploration of diverse concept mapping patterns. In this study, we leverage MetaPro[3] (Mao, Li, He, Ge, & Cambria, 2023), an end-to-end computational metaphor processing system, to extract and analyze concept mappings from metaphors present in UNSC debates. Our analysis spans from January 1995 to December 2020, utilizing a public corpus (Schoenfeld, Eckhard, Patz, Meegdenburg, & Pires, 2021), to address the following research questions (RQs):

RQ1. How does the evolution of the patterns of metaphorical cognition unfold over time?

RQ2. What is the extent of the cognitive disparity among the permanent members of UNSC?

RQ3. To what extent does metaphorical cognition influence behavior?

Our major findings are as follows:
a) Embodied cognition is a recurring phenomenon in UNSC debates, evident in the extensive use of source concepts, e.g., BODY_PART, MOTION, and ACTION over the examined period. The shift in concept mappings from COMMUNICATION IS ACT between 1995 and 1999 to COMMUNICATION IS INFORMING between 2015 and 2020 indicates an evolving cognitive pattern, progressing from advocating effective measures to emphasizing the urgent implementation of proposals.
b) Among the five permanent members, the US and the UK present the most similar cognitive patterns. The US and Russia share common international interests, manifested in their common target concepts, despite differing opinions, reflected in their source concepts. Comparing China and the US, we find differentiated target concepts but comparatively similar source concepts, indicating active efforts to reach consensus despite differing stances on international affairs.
c) There is a moderate correlation between metaphorical cognition of target concepts and diplomatic behavior. Given similar source concept projection patterns between two countries, e.g., the US and China, more similar target concept cognition leads to their more consistent voting choices. However, if the source concepts are very different, e.g., the US and Russia, similar target concepts likely result in distinct voting choices. We have also observed the recursive influence between metaphorical cognition and voting behavior by analyzing the lead-and-lag effects on the US and Russia correlations. Thus, metaphors impact human behaviors, meantime, behavior can also influence metaphorical cognition.

This study provides a threefold contribution: (1) illustrating the cognitive evolution of UNSC debates over years through a metaphorical lens; (2) investigating the cognitive similarities among UNSC permanent members; and (3) scrutinizing the correlation between metaphorical cognition and diplomatic behavior among the US, China, and Russia.

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[3]https://metapro.ruimao.tech

Related Work

International relations have been extensively explored through lenses such as network analysis (Hafner-Burton, Kahler, & Montgomery, 2009), causation (Kurki, 2008), historical perspectives (Thies, 2002), policy (Hudson, 2005), trade dynamics (Shell, 1994), communication (Dörfler, 2023), public health considerations (Weldon & Hoffman, 2021) and technology (Weiss, 2005). However, the exploration of global relations through the lens of cognitive science remains relatively unexplored. (Brody, 1966) highlighted the impact of interaction among national actors on their international behavior, emphasizing concepts like ACT/ACTION, COMMUNICATION, PERCEPTION, and FEEDBACK. (Young & Schafer, 1998) introduced a cognitive framework for qualitatively analyzing international relationships, incorporating methods such as operational code analysis, cognitive mapping, image theory, and conceptual complexity. (Herrmann, Voss, Schooler, & Ciarrochi, 1997) proposed that enemy, ally, colony, and degenerate images comprise identifiable and interconnected components. They examined the relationships among these components, explored whether the overall image influences the processing of new information, and investigated if strategic foreign policy choices arise from the cognitive and affective dimensions of the image. Notably, there remains a gap in the literature concerning global relations from the perspective of cognitive similarity between countries.

On the other hand, the relationship between metaphorical cognition and human behavior has been frequently explored through experiments involving humans, although these studies often had restricted concept samples or participant numbers. (Thibodeau & Boroditsky, 2011) engaged 28 participants to investigate the influence of metaphors on human behavior. Participants received two reports detailing crime in a city, with the first metaphorically depicting crime as a "wild beast preying on the city" and the second portraying it as a "virus infecting the city". The experiment revealed that when crime was metaphorically likened to a beast, participants leaned towards penalty or restraint-oriented measures to curb crime. Conversely, when crime was metaphorically compared to a virus, the other group of participants showed a tendency to adopt preventive measures. (Flusberg, Matlock, & Thibodeau, 2017) enlisted 3,000 participants (2862 were analyzed) to read an article framing US endeavors to diminish greenhouse gas emissions metaphorically as either "the war against climate change" or "the race against climate change". In contrast to the RACE framing, the WAR metaphor induced a heightened sense of urgency and perceived risk regarding climate change. In this work, we are motivated to demonstrate the correlations between metaphor cognition and human behavior with a large amount of concept-mapping instances over a long period.

MetaPro and Evaluation

AI has been widely used in various disciplines (Cambria, Mao, Chen, Wang, & Ho, 2023). MetaPro (Mao, Li, et al.,

Table 1: The statistics of the corpus and the obtained concept mappings with MetaPro. # ctry. or affil. denotes the number of countries or affiliations the speakers represent during the speech. CMs denotes concept mappings.

Stat. of the corpus		Stat. of MetaPro output	
# speech	82,165	# CMs	2,154,552
# meetings	5,748	# uniq. CMs	16,442
# uniq topics	426	# uniq. TARGET	1,827
# ctry. or affil.	413	# uniq. SOURCE	2,449

2023) is a computational metaphor processing tool with advanced neuro-symbolic learning algorithms, widely applied in psychological and cognitive research (Han, Mao, & Cambria, 2022; Mao, Du, Ma, Zhu, & Cambria, 2023; Mao, Lin, Liu, Mengaldo, & Cambria, 2024). It consists of three technical modules, namely metaphor identification, interpretation, and concept mapping generation. According to (Ge, Mao, & Cambria, 2023), MetaPro is the only system that can deliver concept mappings from end to end with the capability of processing metaphors and concepts from a wide range of domains. The definitions of MetaPro-generated concepts can be viewed in WordNet (Fellbaum, 1998). MetaPro achieved state-of-the-art performance on metaphor identification (94.5% accuracy evaluated on the largest metaphor identification dataset containing genres, e.g., academic reports, fiction, conversation, and news) (Mao & Li, 2021), metaphor interpretation (a coherence score of 4.48, a semantic completeness score of 4.18, and a literality score of 4.00, out of a maximum score of 5 by human evaluation) (Mao, Li, Ge, & Cambria, 2022), and concept mapping (63.7% accuracy by human evaluation) (Ge, Mao, & Cambria, 2022) tasks.

We invited three postgraduate psychology students to evaluate 300 randomly selected metaphorical sentences containing 339 concept mappings. Following the Metaphor Identification Procedure (Pragglejaz, 2007) and Conceptual Metaphor Theory, the students were instructed to determine the appropriateness of the generated concept mappings in reflecting metaphorical cognition. The final decision was based on the majority vote. Out of the 339 concept mappings, 272 were deemed appropriate, while 67 were considered incorrect, including misidentified metaphors (Fleiss' kappa: 0.75). Additionally, MetaPro misclassified 27 metaphorical tokens as literals among the remaining words (Fleiss' kappa: 0.65).

Corpus and Statistics

UNSC Debates corpus (Schoenfeld et al., 2021) is used in our cognitive analysis. It contains UNSC meeting protocols between January 1995 and December 2020. The corpus includes 82,165 speeches from 5,748 meetings, covering 426 unique topics (see Table 1). The speakers on the debates represent 413 countries or affiliations. By using MetaPro, we obtained 2,154,552 concept mappings in total (408,935 of them are from the five permanent members) and 16,442 unique (non-repeated) concept mappings. There are 1,827 and 2,449 unique target and source concepts, respectively.

Findings

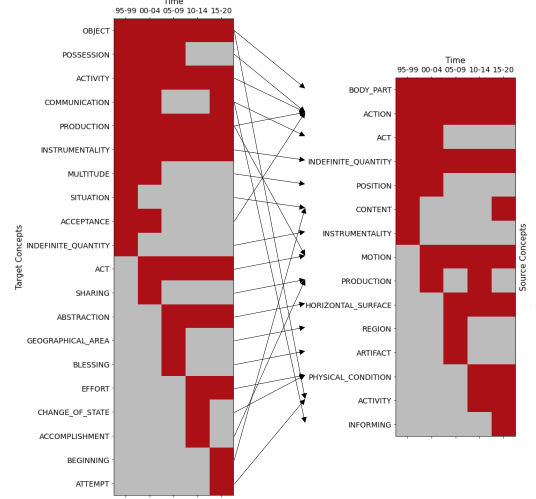**RQ1. How does the evolution of the patterns of metaphorical cognition unfold over time?**

Figure 1: The most frequent concept mappings by time. The two heat maps show the activated target and source concepts in red, respectively. The arrows denote concept mappings from target to source concepts.

Figure 1 shows the ten most common concept mappings for each time period, spanning 1995-1999, 2000-2004, 2005-2009, 2010-2014, and 2015-2020. In our visualization, we represent the activated target and source concepts in red on two heat maps, respectively. The target concepts signify the ideas for which metaphors aim to offer insight or understanding, while the source concepts denote the ideas used to illustrate the target domain. Metaphorical intimations occur in the source concepts. This representation allows us to observe evolving cognitive patterns over time from different angles.

First, target concepts, e.g., INSTRUMENTALITY, ACTIVITY, ACT, and PRODUCTION were recurrently used in UNSC debates over the years. They indicate a close connection between the discussions and fundamentals of global security and governance, encompassing resources, actions, and outcomes. Between 1995 and 1999, the predominant target concepts were SITUATION and INDEFINITE_QUANTITY, signifying a focus on the equilibrium and reciprocity in international relations, along with the desire for clear measures. Subsequently (2000-2004), the representative target concept SHARING underscored diplomatic endeavors and the shared responsibilities among nations. The periods of 2005-2009 introduced concepts such as GEOGRAPHICAL_AREA and BLESSING, elevating discussions on border conflicts, international assistance, humanitarian aid, and equitable resource management within specific geographic regions. Between 2010 and 2014, the emergence of CHANGE_OF_STATE and ACCOMPLISHMENT reflected deliberations on post-conflict peace-building and the acknowledgment of global efforts to coun-
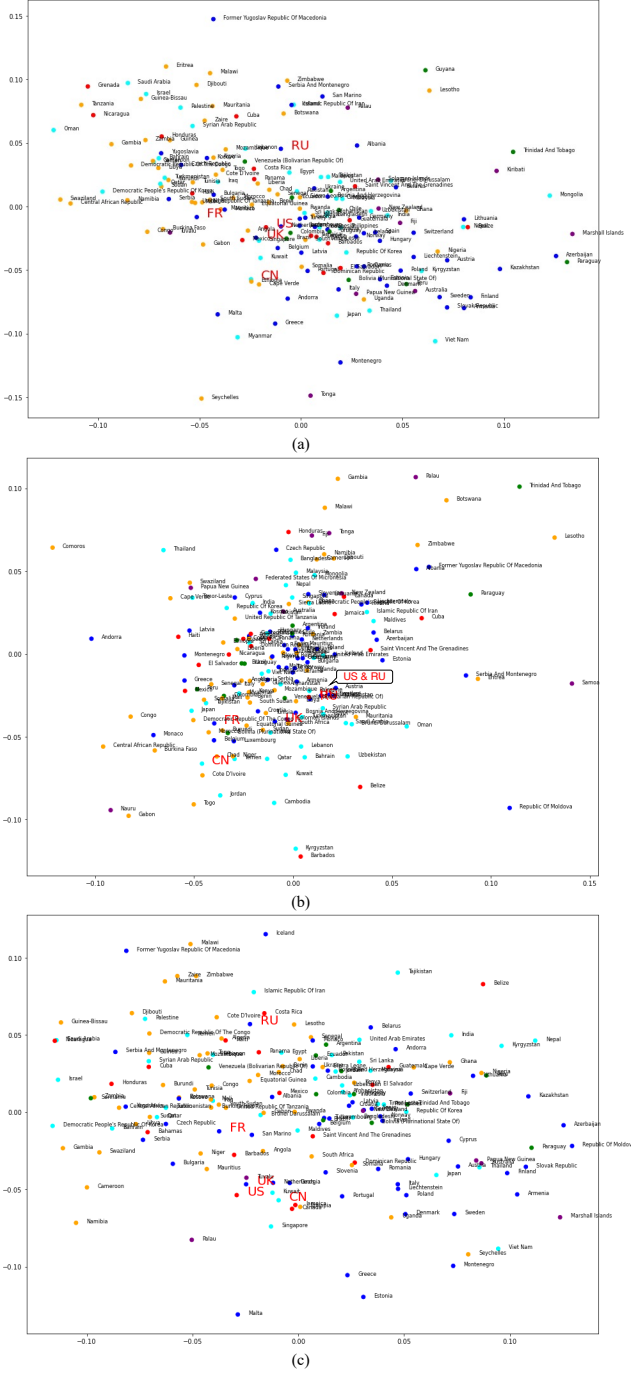
Figure 2: Contry distribution by (a) concept mappings; (b) target concepts; (c) source concepts. Different colors represent different continents, where South America is green; North America is red; Europe is blue; Asia is cyan; Africa is orange; and Oceania is purple.

teract terrorism. Finally, the target concepts prominent from 2015 to 2020, BEGINNING and ATTEMPT, signaled new stages where endeavors were initiated to establish the UN's effective influence in regional affairs.

Second, prevalent source concepts observed throughout different periods, such as BODY_PART, ACTION and MOTION provide statistical evidence for the embodied nature inherent in human cognition systems (Jamrozik, McQuire, Cardillo, & Chatterjee, 2016). This underscores the profound interconnection between our conceptual comprehension and our physical experiences and activities, e.g., connecting OBJECT-related entities to BODY_PART. From 1995 to 1999, the source concept of INSTRUMENTALITY underscored the imperative to establish tangible and effective means for addressing security challenges in the Middle East and Africa. Simultaneously, the source concept of ARTIFACT was derived from metaphors such as *pillar, structure, ground* and *support*. This intimation indicated the significance of international assistance between 2005 and 2009, as metaphors were frequently employed to transform abstract rescue measures into concrete artifacts. The representative source concept between 2015 and 2020 is INFORMING. Mapping COMMUNICATION (a target concept) as INFORMING reflects, to a certain extent, the pressing nature of representatives' demands.

In summary, the recurrent target concepts observed in different periods underscore the shared comprehension among representatives from diverse countries and institutions regarding the operational framework of the UNSC. This framework aims to attain initiative objectives through the deliberation of action plans. The embodied cognition is evident in UNSC debates through the pervasive utilization of source concepts. The evolution of source and target concepts indicates a progressive shift from communicating effective measures in addressing security concerns to informing the urgent implementation of proposals. This transition is apparent in the shift from the concept mapping of COMMUNICATION IS ACT spanning 1995 to 2004 to the conceptual mapping of COMMUNICATION IS INFORMING observed from 2015 to 2020.

RQ2. What is the extent of the cognitive disparity among the permanent members of UNSC?

We plot the distribution of countries by the concept mappings, target concepts, and source concepts, associated with their representative's speeches to analyze the similarity of the cognitive patterns between countries. We exclude concept mappings derived from affiliations such as the Arab Human Rights Foundation, and Commission for the Clarification of Truth, because their concept mappings primarily represent specific areas of interest rather than national concerns.

GloVe.6B.50d[4] (Pennington, Socher, & Manning, 2014) is used to embed concepts into vector space. Then, a target concept vector ($v_t \in \mathbb{R}^{1\times50}$) is concatenated ($\oplus$) with its corresponding source concept vector ($v_s \in \mathbb{R}^{1\times50}$), forming a vector representation for the concept mapping ($v_m \in \mathbb{R}^{1\times100}$, where $v_m = v_t \oplus v_s$). Next, the vectors of all concept mappings of a country (c) are averaged as the representation of the cognitive pattern of the country via $r^c = \frac{1}{N} \sum_{m=1}^{N} v_m^c$, where N is the total number of concept mappings of a country. Finally,

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[4] https://nlp.stanford.edu/projects/glove/

principal component analysis is employed upon the cognitive representations of all countries to reduce the dimensionality from 100 to 2, yielding the visualization of Figure 2a. We also visualize the distribution of countries by the target and source concept embeddings in Figures 2b and 2c, respectively[5].

Figure 2a shows the country distribution by concept mappings. The spatial relationship of dots reflects cognitive similarities between countries, as analogous patterns in concept mapping lead to closer dot placements. The depicted figure reveals an absence of distinct clustering patterns based on continents, indicating that diverse continents harbor disparate concerns regarding international security affairs. In contrast, the five permanent members, China (CN), France (FR), the Russian Federation (RU), the United Kingdom (UK), and the United States (US), occupy relatively central positions, signifying their pivotal roles as opinion leaders in global affairs. This centrality suggests their substantial engagement in discussions on various international matters, contributing to a more balanced cognitive distribution. Notably, the UK and the US exhibit closer proximity to each other compared to the other permanent members, reflecting a degree of consistency in their cognition within the UNSC.

Figure 2b shows the distribution of countries, based on target concepts that represent abstract or less tangible domains associated with the metaphors aiming to elucidate certain ideas. Proximity among countries in the figure indicates shared concerns in global affairs. Of particular interest is the close positioning of the US and Russia, suggesting a significant overlap in their interests within the UNSC. China's position appears to be distant from that of the US and Russia, suggesting that its contributions to speeches during UNSC debates likely emphasize distinct perspectives or aspects.

Figure 2c shows the country distribution by source concepts. Since source concepts reflect the intimations of metaphors, the proximity of countries in this figure signifies shared implications in global affairs. The US and RU exhibit considerable dissimilarity in their source concepts, indicating disparate perspectives. This disparity in source concepts, despite the close alignment in target concepts, implies that the US and Russia hold very different opinions on the same global security concerns. In contrast, when examining China's position governed by source concepts, it appears to be closer to the US, implying that even though these two countries may discuss varied aspects of security concerns, their metaphorical intimations tend to align more closely.

In summary, our analysis reveals that among the five permanent members of the UNSC, the US and the UK exhibit the most similar cognitive patterns, as measured by concept mappings. This observed similarity may be indicative of a robust alliance between these nations. Notably, the US and Russia share more common international interests, evident in their target concept patterns, despite holding divergent opinions on

these matters, as reflected in their distinct source concepts. In contrast, when comparing China and the US, we observe more differentiated target concepts but more similar source concepts. This finding suggests that, despite differing stances on international affairs, China and the US actively seek common ground and consensus in their cognitive perspectives.

RQ3. To what extent does metaphorical cognition influence behavior?

As concept mappings serve as the reflections of cognition, our subsequent inquiry seeks to assess the relationships between metaphorical cognition and behavior. To maintain the independence of cognitive and behavioral data acquisition, we draw comparisons between the cognitive disparities derived from UNSC debates and the differences in voting behavior at the UN General Assembly (UNGA). Unlike the UNSC, which focuses on the preservation of international peace and security, the UNGA serves as the principal deliberative, policymaking, and representative organ of the UN. We obtain cognitive patterns from the speeches delivered by country representatives at the UNSC (Schoenfeld et al., 2021), and analyze the corresponding countries' voting behavior within the UNGA (Bailey, Strezhnev, & Voeten, 2017). Due to page limitations, we perform a pairwise correlation analysis specifically focusing on the US, Russia, and China.

The following correlation analysis between cognition and behavior involves two types of measures, namely cognitive and behavioral consistency measures. Cognitive consistency measures are derived from the cosine similarity between the metaphor cognition of two countries, assessing the averaged target concept, source concept, and concept mapping representations in a year. Higher cosine similarities signify that the two countries frequently exhibit similar target concepts, source concepts, or concept mappings. On the other hand, the behavioral consistency measures derive from Cohen's Kappa (κ) (Cohen, 1960) of the vote choices from two countries in a year. κ serves as a quantitative metric of agreement between two voters who exhibit the same voting behavior (e.g., yes, no, or abstain), representing the likelihood that the voters unanimously agree by chance. Higher κ denotes the higher level of voting consistency between two voters. In addition to conducting time-aligned correlation analysis, we explore lead–lag effects to understand whether the voting behavior measure precedes the cognition measure in the subsequent year (indicating a scenario where prior behavior influences current cognition) or lags behind the former year of cognitive measure (suggesting a scenario where previous cognition consistency impacts current behavior). The leading and lagging window of κ is ± 1 year. Given the absence of vote data in 2019 in the dataset by (Bailey et al., 2017), and to reasonably analyze lead–lag effects in voting behavior, the correlation analysis window is spanning from 1996 to 2017.

Figure 3 shows the correlations between different countries in terms of their metaphorical cognition and voting behavior at the UN. Table 2 quantifies the correlation coefficients. Generally, the two variables have moderate correlations. The

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[5]Certain nations are excluded from the plot due to their substantial distance from the center. Their inclusion would lead to an overly concentrated distribution of other countries.
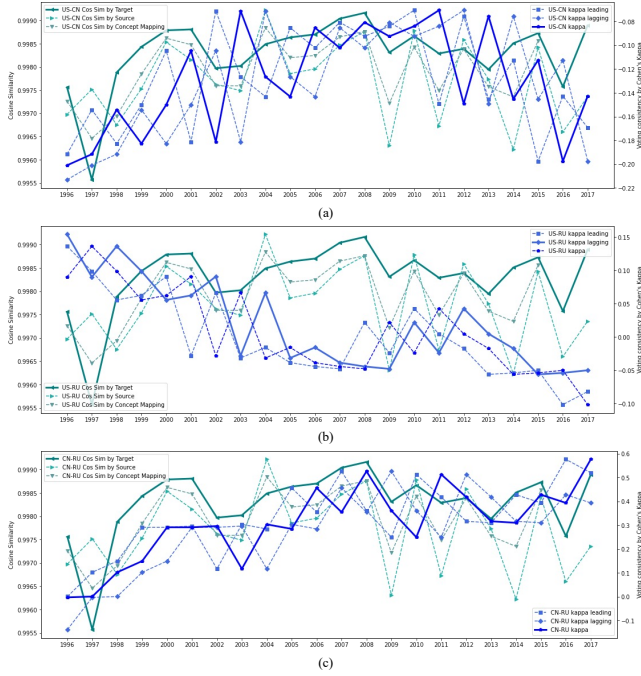
Figure 3: Correlations between metaphorical cognition (teal lines) and voting behavior (blue lines) at the UN. (a) the US vs. China. (b) the US vs. Russia. (c) China vs. Russia. The bold lines yield the highest correlation coefficient.

Table 2: Correlation coefficients between metaphorical cognition and voting behavior of different countries. The bold denotes the largest absolute values between the two countries.

Country	Cog. Measure	Correlation Coefficients		
		Norm. κ	Lead. κ	Lag. κ
US & CN	Target CosSim	**0.501**	0.278	0.387
	Source CosSim	0.262	0.247	0.157
	CM CosSim	0.417	0.275	0.322
US & RU	Target CosSim	-0.209	-0.472	**-0.498**
	Source CosSim	0.131	0.200	0.234
	CM CosSim	-0.036	-0.208	-0.204
CN & RU	Target CosSim	**0.636**	0.534	0.466
	Source CosSim	0.168	0.130	0.085
	CM CosSim	0.494	0.401	0.308

strongest correlations appear at target concept-measured cognition representations. Positive correlations in target concept consistency and voting behavior are notable between the US and China, and between China and Russia. Given the similar source concept distribution of the US and China in Figure 2c, it suggests that consistent target concept cognition in their metaphorical expressions is likely associated with consistent voting behavior. This can be explained that when two countries employ metaphors emphasizing similar target concepts and have similar intimations in source concepts at the UNSC, they are likely to harbor a shared perspective on specific issues and deliver similar voting choices at the UNGA.

In contrast, negative correlations emerge between the US and Russia in terms of their target concept cognition and

voting behavior. This discrepancy can be attributed to their distinct choices of source concepts in presenting the target concepts. Even when both countries reference similar target concepts (see Figure 2b) at the UNSC, the stark differences in intimations, manifested by their chosen source concepts (see Figure 2c), contribute to disparate voting behavior at the UNGA. It is essential to note that this inference is not applicable to Russia and China, as their voting consistency demonstrates significantly higher agreement (with an average κ of 0.31) compared to the US and Russia (with an average κ of 0.01). Their cognition and behavior are positively correlated because of the stronger bilateral relationships between Russia and China. Finally, an interesting finding emerges from the analysis of Russia's correlation coefficients, where both leading κ and lagging κ substantially surpass its normal κ without leading and lagging effects. This result indicates a noteworthy temporal relationship, suggesting that cognitive patterns of Russia and the US from the previous year exert a discernible impact on their voting behavior in the current year. Simultaneously, the voting outcomes of the two countries in the current year can influence their cognition in the subsequent year, signifying a reciprocal relationship between metaphorical cognition and diplomatic actions over time.

In summary, the data support a moderate correlation between the metaphorical cognition of target concepts and diplomatic behavior. When two countries exhibit similarity in their choices of source concepts, a higher degree of concordance in target concept cognition tends to correspond with more consistent voting patterns, and vice versa. Conversely, if the source concept selections markedly differ, the presence of similar target concepts is more likely to result in disparate voting choices. This phenomenon is exemplified when countries, such as Russia and the US, engage in discussions on analogous facets of international affairs; yet, the stark disparities in intimations stemming from their source concepts result in disparate voting behaviors. The last but not the least, the correlation lead-lag effect analysis between the US and Russia reveals a reciprocal influence between metaphor cognition and behavior. Metaphor cognition influences subsequent voting behavior, and, conversely, current voting behavior impacts subsequent metaphor cognition.

Conclusion

Metaphors are prevalent in daily life, serving as reflections of human cognition through associated concept mappings. In this study, we employ MetaPro to analyze cognition in UNSC debates. We present cognitive evolution from 1995 to 2010, highlighting the divergences among the five permanent members. Notably, we identify a moderate correlation between the metaphorical cognition of target concepts and diplomatic behavior. The recursive influence between metaphor cognition and behavior is observed in the correlation lead-lag analysis between the US and Russia, where metaphor cognition impacts subsequent voting behavior; conversely, current voting behavior also affects subsequent metaphorical cognition.

Acknowledgments

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