

Mapping Liberty Metaphors across Cultures and Time

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Abstract

Cognitive metaphors provide a lens for understanding how societies construct and negotiate ideas, including liberty discourse. This study explores conceptual metaphors in liberty discourse by applying a scalable, corpus-driven approach for cognitive analysis. A curated list of thematic keywords related to liberty topics is used to extract relevant sentences from the Corpus of Historical American English (COHA) and the News on the Web (NOW) corpus. MetaPro, a framework grounded in Conceptual Metaphor Theory, processes these sentences to identify metaphorical mappings at scale. Embedding visualizations and frequency counts were applied to both corpora; in COHA, line graphs captured temporal shifts in metaphor usage across time, while in NOW, two-dimensional heatmaps highlighted spatial variation across countries. Selected example phrases illustrate how metaphorical mappings extend across diverse issues and domains. Thus, metaphor distributions and shifts provide a useful empirical lens for identifying changing thematic concerns in liberty discourse, offering a scalable, cognitively grounded method for cultural analysis across time and space. This demonstrates the value of computational methods for large-scale culture research.

Keywords: Culture Analytics, Conceptual Metaphor Theory, Liberty Discourse, MetaPro

1. Introduction

Cultural research is essential to cognitive science, since many core concepts are not only mentally represented, but are also shaped by social influence, historical transmission, and community-specific framing (Mao et al., 2025; Cambria et al., 2026). Liberty is a foundational concept in political discourse, spanning many aspects of human existence, such as political participation (Maity and Maity, 2025), bodily autonomy (Akhtar et al., 2025), etc. Its framing varies across time and cultures, such as rights vs. duties, autonomy vs. harmony, and individual vs. collective.

Discourse on liberty has traditionally been examined through qualitative methods such as historical interpretation (Dickinson, 2024), interviews (Suen et al., 2022), and close textual analysis (Skinner, 2017). These approaches involve deep interpretive labor and yield rich, context-sensitive insights. However, their scale and scope are inherently constrained, making it difficult to trace broader patterns across time and geography. Large-scale corpus analysis provides a complementary perspective, offering statistical insights into recurring linguistic and cognitive patterns across thousands of texts. Among these patterns, conceptual metaphors play a central role.

Conceptual Metaphor Theory posits that humans understand abstract concepts by mapping them onto more tangible, embodied experiences (Lakoff and Johnson, 2008). These metaphorical mappings offer a powerful lens for analyzing how liberty is framed across different cultural and historical contexts.

To complement traditional interpretive approaches, this study employs a bottom-up data-mining method to statistically analyze conceptual metaphor mappings in liberty-related discourse. Metaphor usage could serve as a proxy for the dominant thematic concerns regarding liberty within chronological or cultural contexts.

This study aims to investigate the following research questions :

1. How have conceptual metaphors framing liberty evolved over time in historical English-language corpora?
2. How do metaphorical framings of liberty differ across national political news corpora?
3. Which conceptual metaphor mappings are the most prevalent within specific liberty-related domains?

The contributions of this study are as follows :

1. A scalable cognitive analysis framework for examining key thematic concerns in liberty discourse using conceptual metaphor mapping.
2. A comparison of metaphorical framings of liberty across historical periods in American English and within contemporary political news corpora from multiple countries.

These insights provide a robust foundation for both diachronic and cross-cultural analysis of liberty discourse, enabling scalable comparisons of how liberty is cognitively framed across time and geography.

2. Related Work

Analyses of liberty discourse span a wide methodological spectrum. Traditional means of analyzing the concept of liberty have historically taken the form of philosophical political inquiry. Early conceptions of liberty framed liberty as rights or freedom from the government (United States, 1776; Locke, 1690; Mill and De Quincey, 1859). Later political-philosophical inquiries emphasized the semantic variability of “liberty”, distinguishing between “negative” and “positive” freedoms (Berlin, 1969). More modern works conceptualized freedom as personal autonomy (Feinberg, 2014) and explored how social narratives and power structures shape its interpretation (Skinner, 2002).

To complement these philosophical approaches, qualitative and cognitive linguistic studies demonstrate that people’s understandings of liberty are contextually bound. Prior research has analyzed how metaphor usage can be shaped by cultural factors (Kövecses, 2005) and how it is employed in political rhetoric (Lakoff, 1996; Charteris-Black, 2011). Despite valuable contributions from philosophical interpretation, interviews, and small-scale discourse analysis, most existing studies lack diachronic scope and cross-domain comparability. Few have systematically traced how metaphorical framings of liberty evolve across decades or media contexts. To address this limitation, this study proposes a bottom-up, computational framework, employing large-scale metaphor extraction from two major corpora, integrating corpus linguistics with cognitive metaphor theory to uncover historical and regional patterns in liberty discourse across decades and national contexts.

3. Methodology

3.1. Corpora overview

Corpus of Historical American English (COHA) comprises a diachronic collection of American written media spanning from the 1820s to 2010, enabling historical analysis of metaphor usage across nearly two centuries (Davies (2010)). It spans various types of media, such as news and television transcripts. For this study, the full COHA corpus was employed. The News on the Web (NOW) corpus offers contemporary news data from 20 countries across diverse geopolitical contexts, including Global North nations (e.g., the United States, United Kingdom) and hybrid political-historical trajectories (e.g., Jamaica, Hong Kong, Malaysia) (Davies (2016)). This study used the sample set of NOW, comprising approximately 215 million words from 2010 to 2024. Targeted data from 2025 was also manually extracted from the NOW database using keyword searches to refine the analysis.

3.2. Thematic keyword search

The first stage of the pipeline involves regex-based keyword filtering. A set of keywords and multi-word expressions is designed to guide the search process: a sentence is selected if it contains any of these terms.

The keyword inventory is organized into three categories: 1) Global keywords: Terms that recur across multiple liberty-related themes, such as liberty, freedom, and rights. 2) Hooks: Supporting terms that help contextualize or reinforce a given theme. 3) Antonyms: Words that signal constraint, domination, or the negation of liberty, used to capture contrastive metaphorical framings.

- 1. Personal Autonomy & Bodily Integrity:** Liberal political theory emphasizes individual sovereignty over one’s body and choices. Feminist and bioethical perspectives highlight reproductive rights and consent. Example keywords include “bodily autonomy” and “bodily integrity”.
- 2. Freedom of Expression, Conscience & Belief:** First Amendment rights, liberal pluralism; freedom to think, speak, and associate. Religious freedom rooted in toleration debates. Example keywords include “freedom of speech” and “cultural expression”.
- 3. Political Participation & Equal Citizenship:** Democratic theory, republicanism (non-domination), civil rights movements. Liberty as voice, participation, and equality under the law. Example keywords include “electoral franchise” and “universal suffrage”.
- 4. Government Power, Rule of Law & Security from Domination:** Republican liberty (Pettit) — freedom as non-domination; rule of law as structural protection against arbitrary power. Example keywords include “civil liberties” and “rule of law”.
- 5. Movement, Migration & Access:** Freedom of movement as a classical liberal right; refugee and migrant rights in international law. Mobility as a condition for self-realization and opportunity. Example keywords include “freedom of movement” and “right to travel”.
- 6. Colonialism, Bondage & Liberation:** Post-colonial theory, abolitionism, anti-imperialism; freedom as liberation from domination or structural oppression. This is key for capturing metaphors prevalent in Global South contexts. Example keywords include “abolition” and “independence struggle”.

7. **Digital & Cultural Liberty:** Contemporary expansions of liberty in the digital age and symbolic/cultural arenas. Focuses on internet freedom, artistic expression, and metaphorical representations of freedom. Example keywords include “internet freedom” and “creative freedom”.

While thematic boundaries may overlap, this schema provides a structured lens for identifying liberty-related metaphors in context. Due to space constraints, the full list of keyword expressions will be shown in the appendix.

3.3. Pre-processing pipeline

First, the COHA and NOW corpora are segmented into individual sentences using the `sent_tokenize` function from the NLTK library. Each sentence is then evaluated against a predefined set of liberty-related keywords and multiword expressions defined in the previous section. Sentences containing at least one keyword or multiword expression are retained; those that do not match are discarded. To refine the results, an additional filtering step is applied using a blacklist of expressions. These include references to Marvel characters, video games, and sports terminology that, while potentially metaphorical, do not pertain to liberty discourse in the context of this study. Duplicate sentences are also removed to avoid redundancy. The resulting set of filtered sentences is then passed to the MetaPro system (Mao et al., 2023b, 2024a) for metaphor annotation. MetaPro iterates over each sentence and produces an output that identifies the target and source concept mappings.

3.4. Metaphor processing

MetaPro is a framework for metaphor identification, interpretation, and concept mapping. Grounded in Conceptual Metaphor Theory, it models metaphors as target–source pairs, where a concrete source domain structures understanding of an abstract target. By mapping source domains onto targets, conceptual mapping makes complex ideas more intelligible through everyday structures.

Consider the following sentence: *But soon after this war, it was the lot of that tribe to be in part subjugated and reduced to the severest bondage.* MetaPro parses input through the following sequence of steps: The identification module identifies the term “bondage” as metaphorical, discerning its contextual meaning as “slavery”, a condition marked by forced labor and loss of autonomy. The concept mapping module then generates the metaphor `LABOR IS SUBJUGATION`, abstracting the target concept `LABOR` from “slavery” and the source concept `SUBJUGATION` from “bondage”.

This mapping suggests that the use of “bondage” in this context transcends literal physical restraint, instead invoking a metaphorical system of forced labor and domination. Labor is thus framed not as voluntary effort, but as a condition of imposed control. MetaPro also leverages WordNet’s lexical knowledge to support this interpretive process. For details on MetaPro’s performance in metaphor identification (Mao and Li, 2021), interpretation (Mao et al., 2022), and concept mappings generation (Ge et al., 2022), see the relevant studies. Experimental results show that MetaPro can outperform large language models on metaphor-specific tasks (Mao et al., 2024a). Its versatility has been validated across multiple domains, including financial and political narrative analysis, making it well-suited for parsing the conceptual metaphors in this study (Mao et al., 2023a, 2024b).

4. Results and Discussion

The analysis of MetaPro’s output comprises three key components: 1) Metaphor Distribution Analysis: Examination of the overall frequency of metaphors, as well as the spread of metaphorical mappings in COHA and NOW in embedding space. 2) Diachronic Trends in COHA: Using the COHA corpus, a time-series analysis of dominant metaphors across decades is conducted, tracing how metaphorical regimes evolve from 1820 to 2010. 3) Cross-National Heatmap in NOW: Visualize the top five most frequently used metaphors across countries in the NOW corpus, highlighting regional patterns and shared conceptual frames.

For components 2) and 3), representative example phrases are sampled to illustrate how conceptual metaphors are instantiated in usage, showing the application of concept mappings in context.

4.1. Overview of metaphor distribution

Corpus Statistics	COHA	NOW
Total sentences	240,093	171,658
Distinct concept mappings	15,605	11,520
Total concept mappings	173,796	136,306
Mappings per sentence	1.38	1.26
Mapping occurrence rate	0.5191	0.5286

Table 1: Summary statistics for COHA and NOW corpora after MetaPro analysis.

A summary of the corpus statistics is shown in Table 1. The total sentence count reflects sentences extracted from the COHA and NOW corpora after preprocessing and keyword filtering, retaining about 240,000 from COHA and 171,000 from NOW.

Although the overall distribution of metaphorical mappings exhibits considerable variance, the rate of occurrence per sentence remains relatively low. This suggests that some sentences contain multiple concept mappings, whereas others contain none at all.

4.2. Concept mapping distributions across years and nations

A visualization of conceptual metaphor usage is presented as bubble plots in Figure 1. Each concept mapping was embedded by applying the RoBERTa language model to its source and target concepts, and the resulting vectors were concatenated. For each decade in COHA and each country in NOW, these embeddings were averaged to produce a semantic centroid. This is the mean embedding that represents overall metaphor usage in that unit. In the bubble plot, the position of each bubble corresponds to its semantic centroid. The dispersion of embeddings around the centroid is quantified using the average Mahalanobis distance.

To ensure comparability across varying sizes, these average Mahalanobis dispersion values are normalized by the number of sentences in each decade for COHA or country for NOW. This adjustment allows the resulting variance estimates to reflect metaphorical diversity rather than raw data volume. Bubble size therefore serves as a proxy for internal metaphorical variance, indicating how diverse the metaphor usage is within that unit. Meanwhile, the relative distance between bubbles reflects semantic proximity, showing how closely aligned different decades or countries are in their metaphor usage.

The bubble plot for COHA corpus reveals a striking temporal pattern. In the early 19th century, metaphor usage appears relatively uniform, with articles clustering tightly in semantic space, suggesting a shared conceptual repertoire. However, beginning around 1970, a marked increase in spread is noted, indicating greater metaphorical diversity towards the 21st century. This shift appears to coincide with the rise of new media and the proliferation of more varied discursive contexts, which may have contributed to a broader range of topics and stylistic conventions. One plausible explanation is a transition toward more informational and less figurative language, potentially shaped by journalistic norms.

The bubble plot for NOW countries reveals substantial diversity in liberty discourse, as evidenced by the wide dispersion of country centroids in semantic space. While most countries appear metaphorically disparate, a few geographic correlations emerge: the United States clusters near the United Kingdom, Tanzania aligns closely with Ghana, and Singapore sits adjacent to Malaysia.

These proximities may reflect shared linguistic, historical, or media influences. The United States, despite exhibiting a high volume of metaphor usage, shows relatively low variance. This suggests a narrower range of metaphor types. In contrast, countries like Malaysia and Tanzania display the largest spreads, indicating greater metaphorical pluralism and more diverse conceptual framings within their liberty discourse.

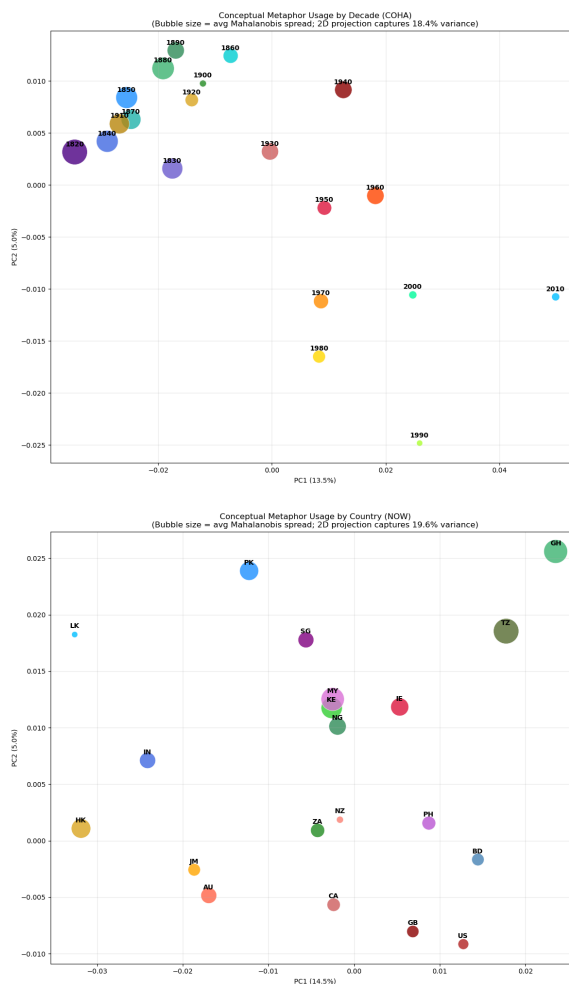


Figure 1: Visualization of conceptual mappings embeddings.

4.3. Temporal analysis of representative concept mappings

A sliding two-decade novelty measure reveals how the overall metaphorical repertoire of the COHA corpus evolves over the decades. This novelty is calculated using the formula.

$$RollingNovelty(t) = 1 - \frac{|M_t \cap (M_{t-2} \cup M_{t-1})|}{|M_t|}$$

Where M_t denotes the set of unique conceptual metaphors occurring in decade t .

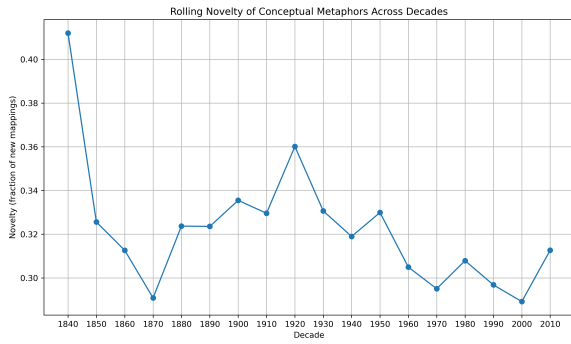


Figure 2: Novelty of conceptual mappings in COHA using a two-decade lookback.

Year	Example Phrase
1820	“from his bondage to Satan”
1830	“the drunkard’s bondage is that of the mind”
1840	“Egyptian bondage. . . applicable to bondage in this country”
1850	“held in the bondage of habit, fashion, and inherited opinion”
1880	“bondage of the demonstrably false?”
1900	“to sweep human bondage away”
1980	“Censorship can place people in bondage more efficiently than chains.”
2010	“Debt puts you in bondage”

Table 2: Example phrases containing the metaphor LABOR IS SUBJUGATION from the COHA corpus.

Year	Example Phrase
1980	“refugees from inflation and the tax code”
1990	“of capitalism ... there will be ... spiritual immigrants, refugees”
2010	“a self described ‘economic refugee’”

Table 3: Example phrases containing the metaphor TRAVELER IS EXILE from the COHA corpus.

Year	Example Phrase
1830	“personification of arbitrary power, Louis XIV”
1840	“power of superstition and of priestcraft”
1980	“the power of attorney to handle the plants”
1980	“The earthly powers ... regularly ignore those democratic gods”
2000	“imperialism ... it’s about greed and power”

Table 4: Example phrases containing the metaphor PHYSICAL IS POWER from the COHA corpus.

Figure 2 illustrates this shift in novelty. For greater stability in the analysis, each decade is compared against the two preceding decades. Because COHA begins with data from 1820 and 1830, these initial decades have no prior entries and are therefore excluded.

Novelty is highest in the mid-19th century, reflecting the influx of new conceptual metaphors, but gradually declines as the metaphor pool stabilizes. Later spikes in novelty are noted around the 1920s and post-1970s. This analysis helps to highlight eras of interest or new developments. While novelty highlights periods of metaphorical innovation, it does not in itself establish the causes of these shifts. Furthermore, diachronic analysis of dominant conceptual metaphors across liberty themes is presented in Figure 3. For each theme, the most frequent concept mapping is identified, and its normalized frequency is charted. Tables 2–4 with sample phrases pertaining to specific metaphors are provided to provide examples of the various ways cognitive metaphors are engaged.

For example, the mapping LABOR IS SUBJUGATION appears in two distinct themes: Personal Autonomy & Bodily Integrity and Colonialism, Bondage & Liberation. Table 2 demonstrates the diverse domains in which this concept mapping is used. In some decades (1830, 1850, 1980, 2010), detach bondage from the concept of literal slavery and reattach it to alcoholism, intellectual conformity, censorship, and debt, respectively. The same core cognitive structure of a subject whose freedom is externally and systematically curtailed. Earlier examples (1820, 1840) also discuss themes of bondage using religious imagery, such as “slavery to sin” and “Egyptian bondage”. A running theme across these examples is the use of bondage as a metaphor for curtailed autonomy, consistently beholden to the source domain of subjugated labor even when extended into moral, intellectual, or economic contexts.

Another striking pattern is the post-1970 rise of the metaphor TRAVELLER IS EXILE within the Movement, Migration & Access theme. The examples in Table 3 reflect evolving narratives around displacement in the late 20th century, where the refugee metaphor increasingly serves to invoke imagery of alienation and exile. Crucially, the metaphor extends beyond literal refugees to encompass “economic” refugees marginalized by financial crisis and “spiritual” refugees disillusioned with dominant ideologies such as capitalism. What unites these extensions is a consistent cognitive core: the refugee is always someone expelled from a condition of belonging, whether that expulsion is political, economic, or ideological.

Another interesting pattern to note is the decline of the PHYSICAL IS POWER for the theme of Government Power, Rule of Law & Security from Domination. The examples in Table 4 demonstrate how abstract institutions or ideas are likened to a physical force that can exert control over the subject.

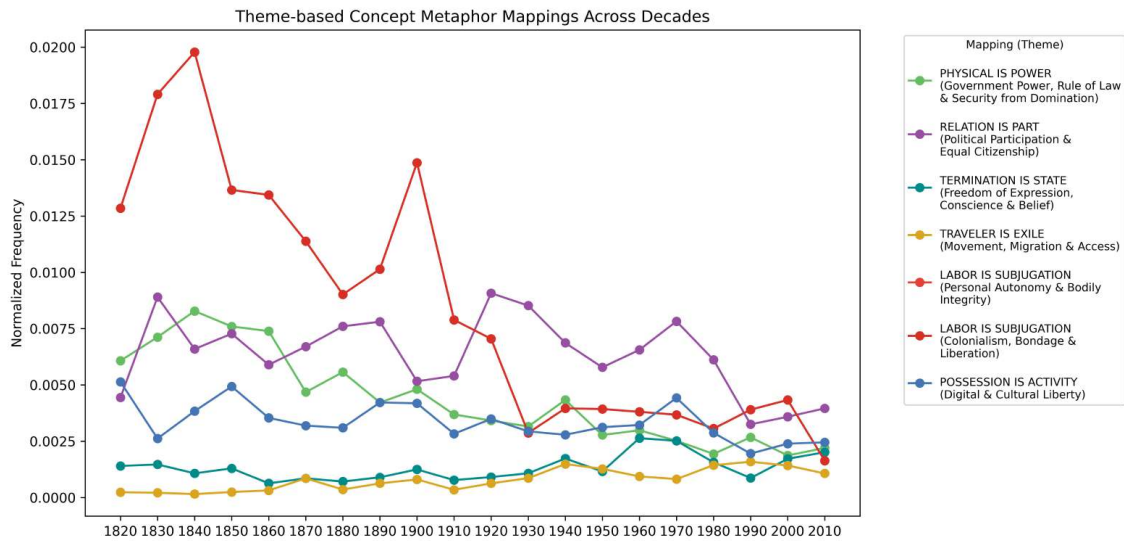


Figure 3: Diachronic visualization of the most frequent conceptual metaphor mappings by theme across decades in the COHA corpus.

This metaphor surfaces in references to governments, monarchs, like Louis XV, or legal constructs, such as the “power of attorney”. Recent discourse, such as the example from 2000 frame imperialism as an entity that is fueled by “greed and power”.

Thus, metaphor activation spikes can provide a lens into the cultural and political zeitgeist. A rise in the frequency of a particular conceptual mapping may indicate that certain issues have gained traction in public discourse. It must be noted, however, that metaphors do not directly cause events; rather, they serve as cues to investigate the social concerns that make them salient. Statistical frequency analysis must therefore be paired with a deeper inquiry into the issues themselves. While metaphors can evoke specific imagery or framing, the topics they describe and the functions they serve often shift across eras reflecting broader changes in discourse and context.

4.4. Geographical analysis of themed concept mappings

A heatmap analysis of dominant conceptual metaphors across liberty themes for the NOW corpus is presented in Figure 4. To ensure comparability across countries, metaphor frequencies were normalized by article count, preventing disproportionate influence from high-volume contributors such as the United States. For each country, the top five most frequently activated conceptual metaphors were extracted and collated into a unified set of mappings for visualization.

Concept mappings are color-coded based on their most frequent thematic occurrence across the corpus. To facilitate interpretive clarity, the countries were grouped into four regional blocs based on shared linguistic, historical, and media-political trajectories (Hopkins and Wallerstein, 1977; Chatterjee, 1993):

- **Global North (US, GB, CA, AU, NZ, IE)**
This bloc comprises high-income Anglophone democracies with longstanding liberal traditions.
- **Postcolonial Africa (GH, KE, TZ, NG, ZA)**
These nations reflect complex postcolonial trajectories marked by liberation movements.
- **South Asia (IN, PK, BD, LK)**
These South Asian countries share deep colonial legacies and English-language press ecosystems.
- **Hybrid Sovereignties (JM, HK, MY, PH, SG)**
This bloc includes postcolonial and semi-sovereign contexts characterized by diasporic flows and hybrid governance structures.

The heatmap's color gradient reflects normalized frequency, with white cells indicating zero occurrences. Across all regional blocs, the most frequent conceptual mappings fall under the theme of Political Participation & Equal Citizenship, suggesting that liberty discourse is predominantly framed around taking action.

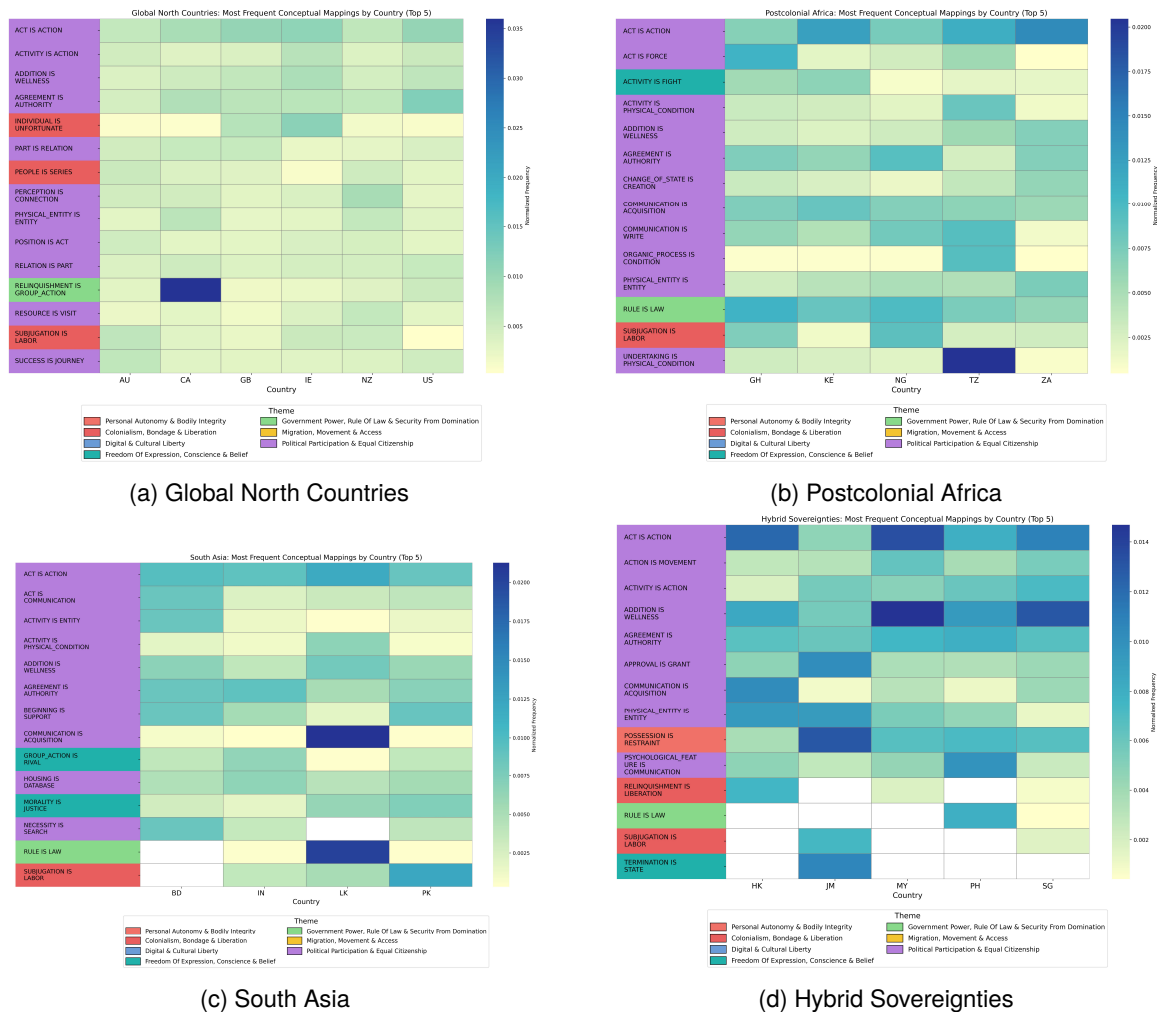


Figure 4: Heatmap visualization of conceptual metaphor distributions across COHA and NOW. Each metaphor is associated with a thematic color, shown in the legend. For each country group, the heatmap displays only the five most frequently occurring metaphors. For each country group, the heatmap displays only set of the five most frequently occurring metaphors. If a thematic color does not appear in the heatmap, it indicates that metaphors from that theme were not among the top five most frequent for that group.

Country	Example Phrase
GH	“attack on democracy and press freedom.”
KE	“Press freedom is under attack.”
NG	“frontal attack on our fledgling democracy”
TZ	“attack on press freedom”
ZA	“democratic institution protect itself from ... attacks”

Table 5: Example phrases containing the metaphor ACTIVITY IS FIGHT from the NOW corpus.

To examine the topics surfaced by cognitive metaphors in greater depth, sample phrases containing selected concept mappings were extracted. The goal here is not statistical testing but qualitative inquiry into the nature of the themes discussed. Given page constraints, the analysis concentrates on post-colonial blocs and the Global North.

In the Postcolonial Africa bloc, a significant concept mapping is ACTIVITY IS FIGHT. Table 5 provides several examples. A common theme from these examples is that the practices and activities underpinning institutions such as democratic government or journalistic reporting are being disrupted. This disruption is metaphorically framed as an attack, as if the institution itself were a person under assault.

Notably, colonialism-themed metaphors such as SUBJUGATION IS LABOR appear consistently across regions. This recurrence implies that while slavery may be historically abolished, metaphorical framings of ongoing exploitation remain active, pointing to structural continuities in civic harm. Table 6 provides several examples. SUBJUGATION IS LABOR operates as an inverse of LABOR IS SUBJUGATION. Subjugation is conceptualized as labor: something victims are forced to perform against their will.

Country	Example Phrase
AU	“conditions were somewhat likened to modern day slavery”
CA	“illegal gambling schemes. Many workers find themselves trapped in virtual slavery”
GB	“Feminism is that belief by which women are liberate from false slavery to men ... to become true slave to corporations.”
IE	“accusing them of endorsing what he called debt slavery”
NZ	“including sexual exploitation . She noted that agricultural workers also suffer from similar debt slavery impose by landlords.”
US	“Ladapos announcement in which he compared vaccine mandates to slavery”
GH	“political machinations amount to slavery”
KE	“His decision to write in Gikuyu instead of English was a radical rejection of mental slavery”
NG	“the old political order which symbolises slavery and underdevelopment”
TZ	“Spiritual slavery is also a sin ...”
ZA	“liberate them women from slavery and being wheelbarrow of voting and clapping hands for their male counterparts”

Table 6: Example phrases containing the metaphor SUBJUGATION IS LABOR from the NOW corpus.

Country	Example Phrase
AU	“decolonize criminal justice systems”
CA	“decolonize and rebuild our governance models”
GB	“separate canon from whiteness and decolonize society’s sense of who children should look up to”
IE	“it is time for museums in the US to decolonize”
NZ	“people inventing imaginary ones like a supposed need to decolonize education”
US	“amplifying Indigenous voices helps to decolonize the music industry”
GH	“decolonize the faith from historically ingrained Eurocentrism”
KE	“need to decolonize the mind. You can not teach your culture in a foreign language.”
NG	“decolonize the African Mind of European languages”
TZ	“decolonize and emancipate ourselves from these external literary forces”
ZA	“museum does ... not want to decolonize the text already written , but rather wants to write a new text”

Table 7: Example phrases containing the metaphor RELINQUISHMENT IS GROUP_ACTION from the NOW corpus.

In the Global North, this metaphor is often applied to modern forms of exploitation, such as being

forced to work in poor conditions, pay off debts, or comply with mandates. In contrast, examples from the postcolonial African bloc focus on colonial legacies and cultural domination, especially the idea of being forced to think, speak, or govern like the colonizer.

Notably, governance related metaphors such as RELINQUISHMENT IS GROUP_ACTION appears significantly in the Global North bloc. Based on examples discussed in Table 7, RELINQUISHMENT IS GROUP_ACTION operates differently across contexts. The Global North often applies this to modern forms of exploitation: liberty is achieved when dominant groups let go of control. Freedom is not so much about empowering the marginalized but rather about ceding illegitimate authority. “Decolonize” in this setting often means institutions relinquishing cultural or epistemic hegemony, with group action framed as reform committees, policy shifts, or collective acknowledgment. Conversely, the dynamic is inverted in the postcolonial African bloc: liberty is achieved when formerly colonized communities relinquish colonial influences. Freedom is not only about resisting domination but about giving up inherited frameworks that perpetuate dependency. “Decolonize” here often means states or communities collectively relinquishing colonial legacies such as legal codes, imposed languages, or economic dependencies. Group action is thus framed as national movements, cultural revival, or collective refusal. Besides, the metaphor of decolonization is not always embraced as outright abolition. In New Zealand, it is resisted as an unnecessary imposition. In South Africa, it is reframed as renewal; writing new texts rather than erasing old ones. These cases show that liberty discourse around decolonization can involve pushback, negotiation, or partial relinquishment, rather than total dismantling.

4.5. Concept mappings overlaps between nations

To determine the degree of overlap in metaphor usage across countries, Jaccard similarity was used, given by $J(A, B) = \frac{|A \cap B|}{|A \cup B|}$, where A and B are two sets of concept mappings. This metric was chosen because it accounts for differences in set size: countries with smaller sets of conceptual metaphors are not dominated by countries with larger sets, such as the United States. The similarity scores were calculated using the top 50 and 150 most frequent conceptual mappings per country, respectively, and visualized in Figure 5.

The matrices reveal clear regional clustering. The Global North bloc aligns strongly with each other, as indicated by consistently high similarity scores. Of the post colonial African bloc, South

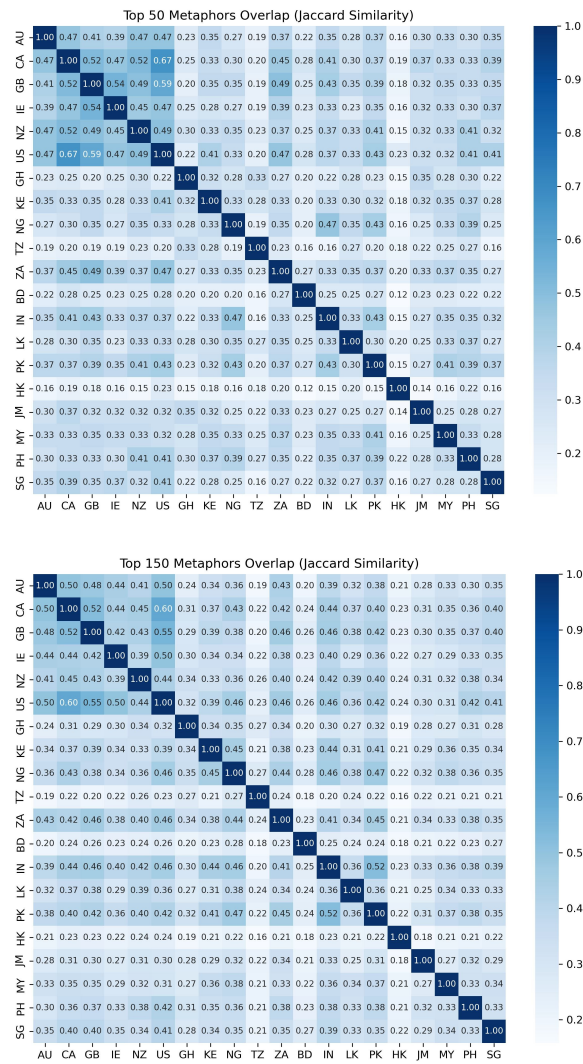


Figure 5: Jaccard similarity matrices for the 50 and 150 most frequent mappings of each country. Minimal change in color intensity across thresholds highlights the robustness of the measure.

Africa and Kenya share a moderately high similarity with the Global North. Singapore also clusters with Western countries, while Hong Kong does not align well with most blocs. Pakistan shows moderate alignment with Hybrid Sovereignty members, though less so with Hong Kong. India and Pakistan exhibit notable overlap, likely reflecting regional proximity. Overall, intra-bloc overlap in metaphor usage is relatively high, reinforcing the stability of regional conceptual metaphor usage patterns. It is important to note that these results reflect overlap in the sets of conceptual metaphors used, rather than direct ideological alignment. Other factors such as culture can influence political discourse (Mazrui, 1990). Nonetheless, the persistence of metaphorical overlap within blocs may indicate the presence of shared cultural narratives that structure political discourse.

5. Conclusion

This study demonstrates that conceptual metaphor analysis can serve as a scalable and cognitively grounded method for examining how liberty is framed across time and geographical contexts. By combining large-scale corpus filtering with MetaPro-based concept-mapping extraction, liberty-related discourse in COHA (1820—2010) and NOW (2010—October 2025) was analyzed, enabling both diachronic and cross-national comparison at a scale that is difficult to achieve through qualitative interpretation alone. The results support the central premise of the paper: metaphor distributions and shifts in metaphor usage provide a useful empirical lens for identifying changing thematic concerns in liberty discourse.

In the COHA analysis, metaphorical framings of liberty become more diverse and semantically dispersed over time, especially after the 1970s, while novelty patterns indicate both periods of innovation and longer-term stabilization, with persistent core structures (e.g., subjugation as curtailed autonomy) taking on new moral, political, economic, and cultural meanings. In the NOW corpus, cross-national liberty discourse displays both diversity and regional patterning: countries cluster by shared historical, linguistic, and media contexts, yet local differences (e.g., Singapore vs. Hong Kong) show that metaphor systems are regionally shaped but locally negotiated rather than reducible to geography or ideology. Across domains, recurring mappings such as struggle, subjugation, and relinquishment remain important but function differently depending on context, underscoring the need to combine quantitative frequency analysis with qualitative interpretation. More broadly, the paper contributes a metaphor-based computational framework for cultural cognitive science that supports corpus-scale comparison without treating metaphors as causal explanations, instead using them as indicators of framing and public sense-making.

The authors also note key limitations, e.g., keyword filtering, automated mapping ambiguity, English-language news bias, and descriptive (non-causal) analysis, and propose future work in multilingual and non-news corpora, stronger statistical modeling, and improved reproducibility through fuller keyword documentation.

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A. Thematic Keywords

This list presents the keywords used to identify and filter sentences related to liberty. Some terms naturally overlap across multiple themes, reflecting the interconnected nature of liberty’s dimensions. The “Global” theme is reserved for broad, generic terms that can apply to liberty in general, without being tied to a specific sub-domain. Within this framework, “hooks” refer to keywords that reinforce or support a given liberty theme, while “antonyms” identify terms that oppose or undermine it.

Global Hooks: *liberty, freedom, rights, justice, equality, autonomy*. Antonyms: none.

Personal Autonomy & Bodily Integrity Hooks: *bodily autonomy, bodily integrity, personal right, personal freedom, personal liberty, freedom from coercion, free will, consensual, marital rape, reproductive right, equal pay, birth control, pro-choice, collective bargaining, labor strike, freedom of association, privacy rights, home privacy, private sphere, private property, castle doctrine, power of attorney, personhood, self-ownership, human rights*. Antonyms: *conscripted, compulsory service, bondage, coerced labor, slavery, union busting, gender discrimination, abortion ban, forced sterilization, domestic intrusion, surveillance*

Freedom of Expression, Conscience & Belief Hooks: *freedom of speech, cultural expression, press freedom, academic freedom, freedom of the press, freedom of assembly, freedom of*

conscience, religious liberty, religious freedom, religious tolerance, established church, marriage equality, same-sex marriage, sexual revolution, free love, dissent expression. Antonyms: *gag order, censorship, banned publication, moral policing, religious persecution, heresy, obscenity law, vice crackdown, nudity, blasphemy, apostasy, chilling effect*.

Political Participation & Equal Citizenship.

Hooks: *voting rights, democracy, democratic, electoral franchise, universal suffrage, home rule, equal representation, civil rights movement, racial equality, abolition of slavery, women’s suffrage, equal citizenship rights, equal citizenship, political empowerment, political voice, political participation, petition, protest, petition of grievances, grassroots movement, civil rights, civil disobedience, activist, activism, social justice*. Antonyms: *authoritarian, autocracy, voter suppression, disenfranchisement, election interference, token representation, segregation laws, Jim Crow, racial discrimination, glass ceiling, redlining*.

Government Power, Rule of Law & Security from Domination.

Hooks: *civil liberties, rule of law, decolonization, decolonize, checks and balances, civil liberty, due process, coerced plea, habeas corpus, fair trial, right to counsel, constitutional protections, self-rule, independence movement, anti-imperialism, anti-imperialist, civic virtue, sovereign, freedom of contract, right to contract*. Antonyms: *detention, political inquisition, stop and frisk, civil forfeiture, tyrannical rule, tyranny, tyrant, despotic government, despotic rule, imperialism, imperialist, armed intervention, military intervention, colonial, settler colony, colonialism, subjection, subjugation, arbitrary power, unlawful*.

Movement, Migration & Access Hooks: *freedom of movement, right to travel, passport freedom, refugee, political asylum, seeking asylum, immigrant rights, migrant resettlement, emigration freedom, frontier mobility*. Antonyms: *border wall, deportation, curfew order, stateless person, internment, human trafficking, segregation laws*.

Colonialism, Bondage & Liberation Hooks: *slavery, emancipation, emancipate, abolition, independence struggle, decolonization, liberation, oppression, bondage, chains*. Antonyms: *colonial rule, colonialism, settler colony, domination, subjugation, despotism, imperialism*.

Digital & Cultural Liberty Hooks: *digital rights, internet freedom, net neutrality, encryption, artistic freedom, creative freedom, icon of liberty, free spirit*. Antonyms: *internet shutdown, digital censorship, platform ban, data breach, surveillance, creative restriction*.

B. Filtering out Non-liberty Discourse

Some recurring phrases were excluded because they reflect corporate boilerplate or promotional language rather than liberty-related discourse. For instance, “Check out our latest Annual Report” appeared frequently in preliminary filter results, but was clearly unrelated to the study’s thematic focus. Such items were added to the blacklist to prevent misclassification. The following keyword groups were excluded during preprocessing to avoid false positives in liberty-related sentence filtering. They are grouped by domain for clarity. This blacklist is non-exhaustive and reflects the terms used specifically for the present study. Additional terms may be relevant in other contexts, but only the items listed here were applied in our analysis.

Comics and Fiction. *Thor, identity kept secret, mantle more than a person, punching an alien, time-travel courtesy, Fantastic Four, personal oath to wreak, dark elf magics, symbiote, Venom, Malekith, Asgardian, dark elf, realms, mantle, Odinson, alien made of hate, Captain America, Daredevil, Punisher, Mary Jane, Eddie Brock, Spiderman, Marvel characters.*

Manufacturing. *flexible controller, consumer hardware.*

Publishing (non-news). *publishing group Encore, acquired the rights to, AMC Networks.*

Fictional Narrative Language. *culmination of personal arcs, monsters that killed, comatose state, bond with the symbiote.*

Gaming – Franchises. *Mario, WarioWare, Wii, Nintendo, Army Men games, BlackBerry, Gameboy, EA Sports, Geralt, The Witcher.*

Gaming – Industry. *DidYouKnowGaming, Unseen64, 5000ft Inc, gaming, game, Applause.*

Gaming – Controller/Hardware. *controller, Steam Controller, Valve, sector, publish, Mario franchise, Mario Kart, Wii U releases, Phantom Liberty, DLC.*

Non-liberty Discourse Terms. *MLB, Hall of Fame, career hitter, New York Red Bulls, franchise history, franchise record, Pete Rose rule, basketball, NBA, Rugby, NFL, Ted Williams, Bob Feller, Alex Justice, ineligible list, Baseball, football, soccer, ODIs, batsmen, top of the order, bulk of the deliveries, Wollemi pines, natural setting, personal business, personal matter, personally, personality, Check out our latest Annual Report.*