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Divergent Reference Frames in Chinese and Japanese Spatiotemporal Metaphors: A Cross-Cultural Study of Multidimensional Mapping in Qian/Hou and Mae/Ato

Abstract: Grounded in large-scale corpus, this study compares differences in the reference frames for spatiotemporal metaphors in Chinese 前/后 (qian/hou) and Japanese 前/後 (mae/ato, and the Sino-Japanese zen/go). A bilingual corpus centered on the CCL and the BCCWJ was constructed, and randomly sampled entries were manually annotated to distinguish the Ego-Perspective (EGO-P), which takes the ego as reference, from Sequence-as-Position (SAP), which takes event positions as reference. The data show that Chinese qian/hou display high semantic plasticity. They can realize EGO-P mappings of “future-in-front / past-behind” while also functioning as SAP markers of sequence position; by contrast, Japanese mae/ato (and zen/go) tend toward semantic specialization, operating primarily within the SAP framework, with weaker lexicalization into EGO-P—distributional statistics support this conclusion. This contrast reveals an internal tension, Chinese, via verbalization or nominalization, can present an embodied ego while also encoding sequencing through positional words or fixed collocations; Japanese more often semanticizes the mapping into serialized temporal markers, showing stronger constraints of grammaticalization. This difference is related not only to lexicalization pathways and register choice but may also be shaped by the combined influences of religious culture, social environment, and the historical patterns of language contact.

Keyword: Chinese; Japanese; metaphor; temporal front/back; reference frame

1. Introduction

Time is essential to our understanding of the world and our place within it (Evans, 2003). As fundamental subjects of inquiry in both natural sciences and philosophy, time and space have long been regarded as primal categories of human cognition. From Kant’s idealist view that time and space are a priori forms of intuition to Feuerbach’s materialist claim that they are existential conditions of all matter, philosophical discourse has consistently treated them as inseparable conceptual twins. This enduring duality suggests that the very conceptualization of time is deeply grounded in spatial cognition and in humanity’s physical existence.

From an anthropological perspective, such interdependence between space and time extends beyond abstract cognition into culture. The ways languages map temporal concepts onto spatial forms are deeply embedded in cultural models that shape how societies experience and interpret temporality (Sinha, 2011; Núñez, 2013). The spatio-temporal metaphors in Chinese and Japanese, while sharing common logographic roots, thus reflect distinct cultural orientations toward the world, informed by differing historical, religious, and cognitive traditions (Boroditsky, 2010; Yu, 2012). Recognizing this anthropological dimension situates the present study within a broader cross-cultural inquiry into how metaphor mediates between language, cognition, and culture.

Lakoff and Johnson’s (1980, 1999) Conceptual Metaphor Theory (CMT) offers a framework to analyze these mappings. Subsequent studies have shown that many languages conceptualize the passage of time through spatial vocabulary and expressions, revealing consistent metaphorical correspondences between spatial relations (e.g., “before” and “after”) and temporal order (e.g., “earlier” and “later”) (English: Duffy, 2023; Yang, Gu et al., 2022); (Yang, Gu et al., 2022; Chinese:

Gu, 2022; Wu, 2021); (Japanese: Moore, 2017; Suzuki, 2015; Fiddler, 2024); (Arabic: de la Fuente, 2014); (Spanish: Alcaraz Carrion, 2021); (Greek: Casasanto, 2010) (Swedish: Bylund, 2017). For instance, the English phrase “before lunch” employs a spatial term to express an earlier time, while “behind schedule” uses “behind” to indicate lateness, exemplifying the systematic metaphorical mapping between IN-FRONT/EARLIER and BEHIND/LATER.

Previous research has shown that there are two distinct perspectives when people talk about time. These perspectives are typically mapped using two models: the Moving Ego and the Moving Time models. In the Moving Ego model, time is static, and the ego moves forward through the flow of time, experiencing the past and heading toward the future (Figure 1). In contrast, in the Moving Time model, the ego is stationary, while time flows from the future to the past (Figure 2).

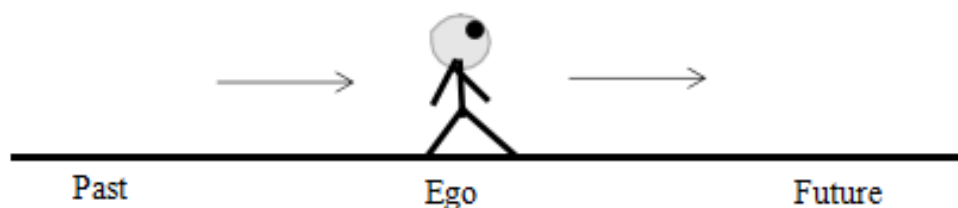


Figure1: the Moving Ego mapping

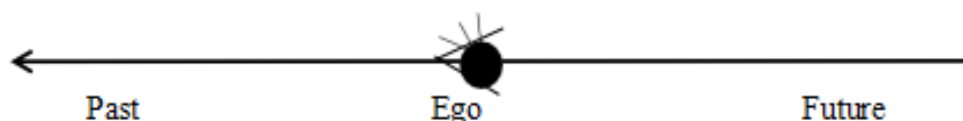


Figure2: the Moving Time mapping

Consequently, many languages (including English) dynamically construct time-space metaphors using spatial relation terms, which closely correspond to the English terms “before” (front) and “after” (behind). Both models are based on the ego as a reference point, with the main distinction being whether the ego is static or dynamic (Ahrens, 2002). The combination of the Moving Ego and the Moving Time results in the following mapping relationships (Yu, 2012):

LOCATION OF EGO	→	PRESENT (Both)
IN FRONT OF EGO	→	FUTURE (Both)
BEHIND EGO	→	PAST (Both)
OBJECTS	→	TIMES (MT)
MOTION OF OBJECTS PAST EGO	→	‘PASSAGE’ OF TIME (MT)
LOCATIONS ON EGO'S PATH OF MOTION	→	TIMES(ME)
MOTION OF EGO	→	‘PASSAGE’ OF TIME(ME) DISTANCE MOVED
BY EGO	→	AMOUNT OF TIME ‘PASSED’(ME)

Núñez and Sweester (2006) pointed out that time moves but does not always use the self as the

reference point. Núñez et al. (2006) distinguished between “Ego-Reference Point” (EGO-RP) and “Time-Reference Point” (Time-RP). In the EGO-RP framework, the orientations of future and past are conceptualized and metaphorically expressed through the front and back of the self’s body. It distinguishes three temporal categories: past, present, and future. In contrast, the Time-RP metaphor does not involve the self and does not mandate the existence of a present moment. Moore (2006; 2014) made nuanced distinctions between “EGO-RP” and “Time-RP”. Beyond the “Moving Ego” and “Ego-centred Moving Time” (both belonging to the Ego-perspective), he proposed the metaphor “SEQUENCE IS RELATIVE POSITION ON A PATH” (abbreviated as SEQUENCE IS POSITION). In this temporal metaphor, two or more time points are compared using “earlier/later” relations, where an earlier time is one that is before other times, and a later time is one that is after other times (Moore, 2006, p.206).

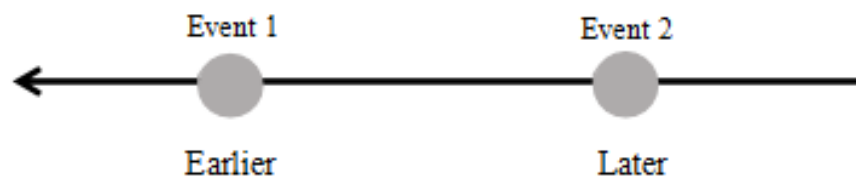


Figure3: SEQUENCE AS POSITION mapping

The connection between spatial and temporal cognition extends beyond verbal communication. Empirical investigations reveal that gesture patterns (Casasanto, 2012; Cooperrider, 2014), non-linguistic reasoning tests (Yang, 2022; Fuhrman, 2011), and culturally embedded symbolic systems (Sinha, 2011; Núñez, 2013) all exhibit systematic space-time correspondences. Comparative linguistic analyses and neurocognitive experiments substantiate the fundamental role of spatial schemata in temporal conceptualization (Suzuki, 2015; Casasanto, 2010; Fiddler, 2024; Walker, 2017), with cross-cultural evidence suggesting this cognitive strategy represents a universal human capacity (Buzsáki, 2018). These findings establish an interdisciplinary framework connecting linguistic anthropology with cognitive neuroscience, while simultaneously providing empirical validation for metaphorical language structures in temporal reasoning (Yang, 2022).

Khatin-Zadeh (2023), compared fourteen languages—including Arabic, Assamese, Chinese, English, Finnish, French, German, Japanese, Kikuyu, Persian, Polish, Russian, Spanish, and Swedish, distinguishes between two conceptual models of temporal metaphorization: the “Ego-moving” and “Time-moving” frameworks. The research highlights significant variations in the spatialization of time across languages, particularly in the application of the front-back axis. For instance, languages such as English and Spanish conceptualize time as flowing along the sagittal plane (front-back orientation), where the “future lies ahead” and the “past is behind.” In contrast, Arabic speakers demonstrate a reversed cognitive pattern, associating the “future” with the spatial concept of “behind” and the “past” with “front.” Notably, while both Mandarin Chinese and Japanese use the same logographic characters 前 (“front”) and 后/後 (“back”) in their writing systems to denote temporal relations, this superficial orthographic convergence obscures deeper divergences shaped by language contact dynamics and indigenous cognitive frameworks.

Fiddler (2024) further elucidates that in Japanese, the temporal usage of the morphemes *mae* (前) and *ato* (後) reflects a dual-layered system integrating native spatial semantics (*mae/ato*) with Sinicized lexical borrowings (*zen/go*). These spatial terms, originally denoting physical orientation, undergo metaphorical extension into the temporal domain, exemplifying the universal cognitive tendency to conceptualize “TIME AS SPACE” (Radden, 2011).

However, the cognitive mechanisms underlying temporal metaphors may undergo fundamental differentiation due to disparities in linguistic structures and cultural-cognitive models. Japanese exhibits a lexical stratification comprising Sino-Japanese loanwords (e.g., 前後 pronounced *zen-go*) and native terms (*mae/ato*), a dichotomy that potentially leads to contextual variations in the expression of temporal concepts. While cognitive linguistic research has thoroughly investigated individual language systems, it often neglects the dynamic evolution of bilingual phenomena and cross-linguistic interactions.

This study focuses on temporal metaphors in Chinese and Japanese, two languages that share historical and cultural intersections yet demonstrate distinctive characteristics in their metaphorical mappings of time. Within this research framework, I explore how time, as an abstract domain, is conceptualized through spatial imagery in the linguistic practices of Chinese 前/后 (*qián/hòu*) and Japanese 前/後 (*mae/ato*). Specifically, I analyze the manifestation of conventional spatiotemporal mappings—such as those employing horizontal axes to delineate temporal sequences—across both languages, as well as their potential transferability between these linguistic systems. By meticulously examining a range of temporal expressions emerging from natural language usage, I aim to identify convergent or divergent patterns that may reflect either cross-linguistic influence or independent innovation.

2.Previous Studies

The scholarly community has long been divided over the temporal cognition reflected by “前/后 (後)” (*qian/hou; mae/ato*). First, early studies often treated “前/后 (後)” as two fixed temporal schemas: one that takes the ego as the reference point, treating “前” (front) as the future and “后” (back) as the past (Alverson & Hoyt, 1994; Zhang, 2007). Other scholars have argued that this opposition is not immutable — whether a term points to the past or the future depends on how the reference point is established (Yu, 2012; Iwasaki, 2009). Moore’s comparative work further reframed the issue in terms of two classes of reference frame — an ego-centered perspective and a field-based perspective. Under different frames, “前/后” can map to “past/future” or to “earlier/later”; such mappings stem more from the positional relations of events within a sequence than from any intrinsic property of an event (Moore, 2011, 2014). Shinohara and Pardeshi (2011) further note that so-called “positional terms” (e.g., seasons, weekdays — time units that occupy fixed positions in a sequence) can alter these mappings: in contexts containing positional terms, “前” is sometimes understood as “later” rather than “earlier.” By contrast, Japanese *mae*, as an unmarked term for spatial “front,” tends to preserve the “earlier” mapping and is less susceptible to interference by positional terms; *ato* complements it and more often marks “later.”

Second, systematic cross-linguistic typologies and mechanism-building (Moore, 2017) situated Japanese *mae/ato* under both ego-based metaphors (e.g., the Ego-moving schema) and non-

perspectival metaphors (e.g., SEQUENCE IS RELATIVE POSITION ON A PATH), providing a finer-grained interpretive framework for spatiotemporal metaphor research. Subsequent studies, however, did not design their analyses to capture expressions that simultaneously instantiate both metaphorical perspectives. Cao & Xing (2017) argue that “前” conventionally designates the past and “后” the future, and that usages in which “前” points to the future and “后” to the past arise from a conflation of imagined space with real time. Gesture studies find that speakers often produce backward gestures when referring to the past even when the lexical form they use points “forward” (Cao & Xing, 2017). Empirical research on the metaphorical reality in individual Mandarin speakers’ minds shows that Mandarin speakers construe temporal sequences as “earlier events in front, later events behind,” and tend toward a “front-for-future” orientation (Su, Liang et al., 2018). In cross-linguistic comparison, although the Chinese and Japanese characters for “前/后” are identical in form, the metaphors and usage contexts those lexemes carry in the two languages can be strikingly different (Fiddler, 2024). These empirical findings indicate that mappings of “前/后” within a single language are multidimensional and plastic, and that no single framework can fully capture the variation seen in language practice.

Finally, cross-linguistic and historical-contact perspectives further enrich our understanding of differences in “前/后.” Japanese exhibits a two-tier lexical system for temporal expression: one tier comprises native spatial semantics (*mae/ato*), while another comprises Sinitic-influenced lexical items (e.g., *zen/go*); this layering can produce divergent expressions in context (Fiddler, 2024). Broader comparative work shows substantial cross-linguistic differences in how languages spatialize time, especially along the front–back axis: for example, English and Spanish commonly place the future in front and the past behind, whereas Arabic speakers may display the opposite schema (Khatin-Zadeh, 2023). Although Chinese and Japanese share the written characters “前/后,” this surface similarity can obscure deeper divergences shaped by language-contact history and indigenous cognitive frameworks. Such cross-linguistic evidence suggests that understanding the temporal metaphors of “前/后” requires attention to internal corpus data as well as comparative perspectives.

The studies cited above are highly suggestive but have three clear shortcomings. (1) They still rely largely on fragmentary examples and small sample data, making it difficult to verify claims against reproducible, measurable corpus evidence. (2) Researchers have tended to consider only the ego reference point or sequence position and have not incorporated temporal reference points into data analysis, which risks conflating distinct mappings of “前” and “后.” (3) Although the two languages intersect historically and culturally, whether they share or differ in the metaphorical mappings of “前/后” remains an open question that requires in-depth cross-linguistic comparison.

In light of these gaps, this study adopts a corpus-based approach to examine the temporal metaphors instantiated by “前/后” in Chinese and Japanese and to probe the drivers of their interlingual usages, with the aim of offering a more comprehensive and systematic account. Specifically, this study asks: (1) How are *qian/hou* and *mae/ato* distributed across two large-scale corpora (CCL vs. BCCWJ)? At the corpus level, are these words more likely to be triggered as Ego-Perspective (EGO-P: future in front / past behind) or as Sequence-as-Position (SAP: front = earlier / back = later) mappings? (2) Do *qian/hou* and *mae/ato* share commonalities or display differences

in their temporal metaphors? (3) What cultural factors might underlie these differences in temporal metaphor?

It is worth noting that corpora are no longer regarded merely as counting tools but as a paradigm that cyclically integrates large-scale, measurable data with fine-grained qualitative interpretation (Tony McEnery, 2012). This approach follows a workflow of “frequency, collocation, concordance, context/theory” (Mathew Gillings, 2023) and has been applied to cross-linguistic metaphor comparison. Recent CCL-based research on Chinese metaphor has accumulated stable empirical findings and mature methods, providing direct theoretical and empirical tools for handling the polysemy of spatiotemporal markers such as *qian/hou*. Cross-linguistic research on “hard” metaphors, using lexical analysis and corpus metrics, demonstrates how the same foundational metaphors are realized differently across languages (Yu & Huang, 2019). Research on cultural metaphors also shows that source domains deeply rooted in cultural schemas (for example, Beijing opera) systematically map onto conceptual structures through language and text, thereby affecting the distribution and rhetorical functions of metaphors across registers (Yu & Huang, 2019). For the specific case of *qian/hou*, corpus-based comparisons of paired opposites (e.g., *shang/xia*, *qian/hou*, *zuo/you*) reveal preferential distributions across semantic domains such as approximate quantification, time, or age, indicating that space–quantification–temporal metaphor mappings can be precisely characterized by large-scale corpus behavioral-profile methods (Wu, 2018). The CCL-driven research tradition has not only validated the applicability of Conceptual Metaphor Theory (CMT) to Chinese corpora but has also, through patterns of frequency, collocation, and contextual evidence, provided an empirically testable basis for explaining the multiple referents of *qian/hou* under different frames of reference.

The large-scale Japanese corpus BCCWJ likewise offers a robust methodological foundation for metaphor research. As a balanced, large-scale resource, BCCWJ’s sampling design, dual part-of-speech annotation, and document-structure markup enable researchers to systematically test textual diversity and syntax–semantics relations (Maekawa, 2014a). At the semantic and pragmatic levels, BCCWJ-based studies have already built a “metaphor database” oriented to metaphor types and register differences: through manual annotation and extensive rating, researchers have obtained quantifiable evidence on metaphoricity, novelty, and comprehensibility, which supplies empirical grounds for cognitive explanation (Kato, Kikuchi et al., 2020). Studies juxtaposing BCCWJ and CCL to analyze degree expressions, part-of-speech behavior, and co-occurrence patterns demonstrate that parallel corpus comparison can reveal interlingual mapping differences (Sugimura, 2020).

Existing findings indicate that the technical capabilities and annotation depth of corpora for capturing semantic polysemy, pragmatic triggers, and register variation provide ample feasibility and methodological support for spatiotemporal metaphor analysis.

3. Corpus and method

3.1 Corpus data

As mentioned above, this study employs the CCL Corpus (Center for Chinese Linguistics PKU

Corpus)(Zhan Weidong, 2019; Zhan, 2003) and the BCCWJ Corpus (Balanced Corpus of Contemporary Written Japanese)(Maekawa, 2014b) as the primary data sources for analyzing spatiotemporal metaphors in Chinese and Japanese, chosen for their comprehensive coverage, scholarly authority, and cross-linguistic comparability.

The CCL Corpus, a cornerstone resource for Chinese linguistics, encompasses diverse modern text genres (e.g., literature, journalism, academic writing) alongside a subset of pre-modern Chinese texts. This diachronic breadth enables systematic tracking of the polysemy and diachronic evolution of *qian* and *hou* in temporal metaphors. For instance, querying *qian* yields contextually rich examples such as *qiantu* (前途, “future prospects” [future metaphor]), *muqian* (目前, “at present” [

metaphor]), and *qianren* (前人, “predecessors” [past metaphor]), thereby capturing the dynamic shifts in Chinese temporal reference frameworks.

The BCCWJ Corpus, the largest balanced corpus of modern written Japanese, spans genres including books, newspapers, and legal documents. Its standardized search tools facilitate granular analysis of *mae* (前) and *ato* (後) across temporal sequence mappings (e.g., *futsuka-go* 二日後, “two days later” [late-in-sequence]) and Ego-moving metaphors (e.g., *mae ni susumu* 前に進む, “to advance forward” [self-propelled future orientation]). Crucially, the corpus reveals the coexistence of Sino-Japanese loanwords (e.g., *zengo* 前後, “front-back”) and native terms (*mae/ato*) in temporal expressions, offering empirical insights into how language contact shapes metaphorical systems. The synergistic use of these corpora ensures analytical depth in Sino-Japanese comparisons while establishing a robust empirical foundation for uncovering commonalities and divergences in spatiotemporal metaphors within the Sinographic cultural sphere.

3.2 Methods of Selecting Corpus Examples and Research Methods

To build a practical and functional corpus, the selection of example sentences strictly adhered to three principles: contextual clarity, differentiation of reference systems, and cross-linguistic comparability. First, the chosen examples must clearly demonstrate how spatial terms like *qian/hou* in Chinese or *mae/ato* (*zen/go*) in Japanese metaphorically express temporal concepts through their spatial meanings. For instance, in the Chinese phrase “前途充满机遇” (*qiantu chongman jiyu*, “the future is full of opportunities”), *qian* (“front”) maps metaphorically to the future, while in the Japanese phrase “前回の試験” (*zenkai no shiken*, “the previous exam”), *mae* (“front”) points to an earlier position in a temporal sequence. Such examples rely on specific collocations (e.g., temporal nouns or verbs) to eliminate interference from purely spatial interpretations.

Second, the sentences must explicitly distinguish between two reference systems: the Ego-perspective (observer-centered) and SEQUENCE AS POSITION (path-based). Ego-perspective examples typically include dynamic verbs or body-action terms, such as “向前走” (*xiang qian zou*, “move forward”), which implies the ego’s movement toward the future, or “向后看” (*xiang hou kan*, “look back”), which positions the past behind the observer. In contrast, SEQUENCE AS POSITION examples detach from the observer’s viewpoint, such as the Chinese sentence “春节在元旦之后” (*Chunjie zai Yuandan zhi hou*, “Spring Festival comes after New Year’s Day”) or the Japanese phrase “三日後の予定” (*mikka-go no yotei*, “plans three days later”).

Third, the study emphasizes cross-linguistic contrasts in spatiotemporal metaphors between

Chinese and Japanese. For example, Chinese *qian* (“front”) flexibly maps to the future (e.g., 前途/*qiantu*, “future prospects”), the present (e.g., 目前/*muqian*, “currently”), or the past (e.g., 前人/*qianren*, “predecessors”), whereas Japanese *mae* (“front”) primarily denotes the future or “earlier” in a temporal sequence. Similarly, Chinese *hou* (“back”) can signify both the past (e.g., 后来/*houlai*, “later events”) and the future (e.g., 后天/*houtian*, “the day after tomorrow”), while Japanese *ato* (“back”) strictly marks “later” in a sequence. These contrastive examples not only highlight structural linguistic differences but also reveal the profound influence of cultural cognition on temporal conceptualization.

Additionally, the inclusion of compound words and fixed collocations (e.g., Chinese 前瞻性/*qianzhanxing*, “forward-looking,” and 前事不忘/*qianshi buwang*, “do not forget past lessons”; Japanese 事前準備/*jizen junbi*, “prior preparation,” and 後輩/*kouhai*, “junior colleague”) expands the analytical scope of metaphorical mechanisms. This ensures the study captures multi-layered interactions across lexical, syntactic, and conceptual frameworks. By applying these criteria, the selected examples systematically demonstrate the dynamic interplay of reference systems, cultural specificity, and language contact in Sino-Japanese spatiotemporal metaphors, providing empirical support for cross-cultural cognitive linguistics.

The methodology combines quantitative statistics and qualitative analysis, grounded in Conceptual Metaphor Theory (CMT) and Moore’s (2006) “SEQUENCE AS POSITION” model, to construct a dynamic reference-system framework. High-frequency word retrieval and collocation analysis from the corpus quantify the distribution of *qian/hou* and *mae/ato* across different reference systems, validating the metaphorical scope of these terms in Chinese and Japanese. Diachronic lexical tracing (e.g., the Sino-Japanese origins of *zen/go* 前後) and synchronic contextual comparisons (e.g., contrasting 前途/*qiantu*, “future prospects,” with 前回/*zenkai*, “previous instance”) reveal how language contact and cultural cognition shape spatiotemporal metaphors. These approaches clarify the mapping differences of *qian/hou* between Ego-perspective and temporal sequences in Chinese and Japanese.

Ultimately, the reliability and innovation of the conclusions are ensured through interdisciplinary validation, integrating corpus-based empirical data with theoretical reasoning. This approach not only highlights the dynamic adaptability of reference systems but also underscores the role of cultural and linguistic interaction in shaping temporal cognition.

3.3 Query Paths of the Corpus and the Results

During the data collection phase, the study leveraged the authoritative resources of the Peking University Center for Chinese Linguistics Corpus (CCL) and the Balanced Corpus of Contemporary Written Japanese (BCCWJ). Using the morphemes *qian/hou* (前/后) in Chinese and *mae/ato* (前/後) in Japanese as core search terms, standardized retrieval tools were employed to extract raw examples, constructing a preliminary bilingual database of spatiotemporal metaphors. To ensure analytical viability, a randomized subset of 3,000 entries for *qian/hou* and *mae/ato* was subjected to rigorous manual annotation and contextual analysis, strictly differentiating spatial usages (e.g., Chinese *qianpai* 前排, “front seats”; Japanese *eki no mae* 駅の前, “in front of the station”) from temporal usages (e.g., Chinese *qiantu guangming* 前途光明, “a bright future”; Japanese *rokunen*

mae 6 年前, “six years ago”). The latter were retained as valid data, while the former were excluded. This process was validated through collocation analysis with temporal nouns (e.g., month, year) or verbs (e.g., susumu 進む “to advance,” sugiru 過ぎる “to pass”) to minimize subjective bias. The results of this methodological refinement are presented in Table 1.

Table 1: Distributions of qian/hou/mae/ato/zen/go as they signify space and time

	Space		Time		Total
	Frequency	Percentage	Frequency	Percentage	
Qian“front”	892	29.73%	2108	70.27%	3000
Hou“back”	827	27.57%	2173	72.43%	3000
Mae“front”	239	8.97%	2426	91.03%	2665
Ato“back”	32	2.38%	1313	97.62%	1345
Zen“front”	40	11.94%	295	88.06%	335
Go“back”	91	5.50%	1564	94.50%	1655

As shown in Table 1, all six lexical items exhibit a higher frequency of temporal usage compared to spatial usage. These results indicate that qian (前, “front”) and hou (后, “back”) in Chinese, as well as mae (前), ato (後), zen (前), and go (後) in Japanese, are more prominently employed to encode temporal meanings than spatial ones. Specifically, temporal usage accounts for 70.27% of qian instances (2,108/3,000) versus 29.73% spatial usage, and 72.43% of hou instances (2,173/3,000) versus 27.57% spatial usage. In Japanese, the temporal dominance is even more pronounced: mae (前) exhibits 91.03% temporal usage (2,426/2,665), while ato (後) reaches 97.62% (1,313/1,345). Similarly, Sino-Japanese loanwords zen (前) and go (後) display 88.06% (295/335) and 94.50% (1,564/1,655) temporal usage, respectively. This pattern underscores that for Chinese and Japanese speakers, the temporal semantics of “front/back” terms are more salient than their spatial counterparts, reflecting a cognitive prioritization of time-as-space conceptualizations in these languages.

During the classification phase, filtered examples were annotated according to a cognitive linguistic framework, building on Wu’s (2020) typology, into two reference systems: Ego-perspective and SEQUENCE AS POSITION. For Ego-perspective, sentences were tagged based on the presence of dynamic verbs (e.g., Chinese qianjin 前进, “advance”; Japanese maemuki 前向き, “forward-oriented”) or contexts implicitly encoding observer motion (e.g., Chinese women zouxiang weilai 我们走向未来, “we are moving toward the future”). For SEQUENCE AS POSITION, examples were classified based on decontextualized, objective temporal nodes (e.g., Chinese chunjie zai yuandan zhihou 春节在元旦之后, “Spring Festival follows New Year’s Day”; Japanese mikka-go no yotei 三日後の予定, “plans for three days later”). Within the Ego-perspective framework, temporal references were further coded into three parameters: past, present, and future; SEQUENCE AS POSITION examples were coded into earlier and later (see Table 2 for illustrative examples and Table 3 for frequency distributions).

Table2:Examples of the Semantic Characteristics of qian/hou/mae/ato/zen/go

of and	Reference Point				Example		Semantic Properties				Table 3:The spread EGO-P SAP	
	Ego-perspective				Xiang hou kan		Past					
	Ego-perspective				Mu qian/yan qian		Present					
	Ego-perspective				Xiang qian kan/zento		Future					
	SEQUENCE AS POSITION				Zhi qian/izen		Earlier					
	SEQUENCE AS POSITION				Zhi hou/igo		later					
	Qian		Hou		Mae		Ato		Zen		Go	
EGOP	SAP	EGOP	SAP	EGOP	SAP	EGOP	SAP	EGOP	SAP	EGOP	SAP	
t	0	-	34	-	0	-	0	-	0	-	0	-
ent	370	-	0	-	0	-	0	-	0	-	0	-
re	117	-	0	-	2	-	0	-	3	-	0	-
er	-	1621	-	0	-	2424	-	0	-	292	-	0
er	-	0	-	2139	-	0	-	1313	-	0	-	1564
al	487	1621	34	2139	2	2424	0	1313	3	292	0	1564

using qian/hou/mae/ato/zen/go in relation to five semantic parameters

As shown in Table 3, the distribution of temporal references under the Ego-perspective (EGO-P) and SEQUENCE AS POSITION (SAP) frameworks reveals striking contrasts. In Chinese, qian (前) predominantly encodes present (370 instances) and future (117 instances) within EGO-P, while hou (后) is exclusively mapped to past (34 instances). Under SAP, qian overwhelmingly denotes earlier (1,621 instances), whereas hou encodes later (2,139 instances). Japanese exhibits a markedly different pattern: mae (前) is rarely used in EGO-P (2 future instances) but dominates SAP for earlier (2,424 instances), while ato (後) is exclusively SAP-bound for later (1,313 instances). Sino-Japanese loanwords zen (前) and go (後) follow similar SAP-oriented tendencies (zen: 292 earlier; go: 1,564 later), with minimal EGO-P usage (zen: 3 future).

These patterns underscore a fundamental divergence: Chinese qian/hou retains flexibility across EGO-P and SAP frameworks, reflecting a dynamic interplay between observer-centric and event-centric temporal conceptualizations. In contrast, Japanese mae/ato and loanwords zen/go exhibit rigid semantic specialization, prioritizing SAP's objective sequencing over EGO-P's subjective motion. The near-absence of EGO-P mappings for mae and ato in Japanese (2 and 0 instances, respectively) suggests a cultural-cognitive preference for decontextualized temporal order, distinct from Chinese's embodied temporal navigation.

4.Ego-perspective mapping in Chinese and Japanese

In this section, I will observe that the spatial-temporal mappings of both “the moving ego” and “the moving time” are based on the ego's perspective, with the future positioned ahead and the past behind. However, the usage of terms such as “qian” (前) and “hou” (后) in Chinese, or “mae” (前)

and “ato” (後) in Japanese, shows a high-frequency correlation with the concept of “the moving ego”. This phenomenon offers an important perspective for understanding the relationship between language and cognition. In this metaphorical mapping, time is not only regarded as a linear flow but also profoundly influences individual thinking and behavioral choices through metaphors rich in spatiality.

4.1 the moving ego mapping in Chinese

In “the moving ego”, time is conceptualized as stationary, while the ego is a traveler who is currently in motion. This traveler has already moved out of the past and is situated in the present, preparing to enter the future. Consider the following example:

(1) 香港的前路充满了机遇。

Xiang-gang de qian-lu chong-man le ji-yu
Hong Kong MOD front-road permeated ASP chance.
Hong Kong's future is full of opportunities.

In this example, personification is used to transform a country into a ego, while also implying the flow of time and emphasizing the human tendency to face the future. The phrase conveys the metaphor of life as a journey, not the life of an individual, but that of a city as a whole. Similarly, in the following example, different stages of a person's life are also conceptualized as a journey.

(2) 她们这一代人的前程就比你们强。

Ta-men zhe-yi-dai-ren de qian-cheng jiu bi ni-men qiang
They this-generation MOD ahead-journey already than you good.
The future prospects of their generation are better than yours.

Here, “qian-cheng” refers not only to future career paths but also serves as a metaphor for one's future trajectory in life. The term “qian-cheng” implies hope and expectation, suggesting a continual forward movement through time. It underscores the continuity of time, indicating that personal growth and development are dynamic processes. In this context, “qian-cheng” is not fixed but changes in response to experience, environment, and choices. This dynamism positions “qian-cheng” as both a destination and a journey, involving personal growth and adjustments at different life stages. Regardless of the outcome, the individual is always moving forward in this journey. The following example illustrates this point well:

(3) 我们永远满怀信心，昂首阔步一直向前走去。

Wo-men yong-yuan man-huai xin-xin,
We forever full-on faith,
ang-shou kuo-bu yi-zhi xiang qian zou-qu.
raise-head great-strides forever forward walk.

We will always move forward into the future with confidence and with our heads held high.

In this example, “xiang-qian-zou” is not only an action but also suggests that life is an ongoing journey. The association between “xiang-qian-zou” and the journey emphasizes the linear flow of time. This process reflects the ego's continuous exploration and adaptation through time. In this journey, “xiang-qian-zou” provides a clear sense of direction, with the individual constantly moving from the past toward the future. The next example illustrates how the ego's movement into the future is a conscious, purposeful pursuit, continually driving the individual toward an ideal future.

(4)他一生学习勤奋，钻研不懈，能前瞻时代潮流趋势。

Ta yi-sheng xue-xi qin-fen, zuan-yan bu-xie,
He lifetime study diligence, study-intensively untiring,
neng qian-zhan shi-dai chao-liu qu-shi.
can front-look times currents tendencies.

He has devoted his life to diligent study and research, always staying ahead of the trends of the times.

(5)他们是光荣的人，他们更是永远向前看的人。

Ta-men shi guang-rong de ren,
They are honorable MOD people,
ta-men geng shi yong-yuan xiang-qian-kan de ren.
they more are forever toward-front-look MOD people.

They are exceptional people; they are honorable people; they are people who always look forward.

The concept of “qian-zhan” emphasizes sharp insight and foresight regarding future trends. This term reflects not only a focus on time but also suggests an active role for the self within time. “xiang-qian-kan” directly refers to the future, highlighting the ego's attention to and anticipation of future events. In the act of “xiang-qian-kan”, the ego moves from the past toward the future. This spatial-temporal correlation shows that the ego is advancing into the future as time progresses, rather than remaining in the past. In Chinese, the ego is often filled with speculation about future situations and events.

(6)他们对于自己生活的前景，充满着希望和信心。

Ta-men dui-yu zi-ji sheng-huo de qian-jing,
They toward themselves life MOD front-view,
chong-man zhe xi-wang he xin-xin.
permeated PRT hope and faith.

They are filled with hope and confidence regarding the prospects of their lives.

In “the Moving Ego” mapping, the ego is conceptualized as the subject moving forward through time. This mapping emphasizes the active and goal-directed nature of the ego. When I discuss “qian-jing(prospects)”, I am essentially envisioning an ideal future state. The ego focuses on and pursues this prospect by “xiang-qian-kan(look forward)”. “qian-jing(prospects)” is not merely an abstract

concept; within “the Moving Ego” model, it is concretized into a visualizable goal

that provides the self with clear direction for the future. While the term “forward” (前) in Chinese metaphorically suggests facing the future, it does not imply a complete disregard for the past. On the contrary, as the ego moves toward the future, it draws upon past experiences to form a reasonable anticipation of what lies ahead.

(7) 向后看是为了更好地向前看。

Xiang-hou-kan shi wei-le geng-hao de xiang-qian-kan.

Toward-back-look is for better MOD toward-front.

Looking back is for the purpose of looking forward more effectively.

The action of “xiang-hou-kan” (looking back) spatially implies the ego turning around or glancing back, shifting their attention from the present environment and future goals to past experiences. This action emphasizes the ego's movement along a horizontal timeline. On this timeline, while the body faces the future, the perspective is turned toward the past. This interaction between space and time highlights the ego's position in the process from past to future. “Hou” (Behind) also underscores the relativity of time. When the ego reviews the past, they become aware of time's linear flow, yet each experience has a profound and layered impact. This understanding of “back” enables the self to better grasp the passage of time and the rhythm of personal development when facing the future. A similar expression is found in Yu (1998, p.101):

(8)a. 回首 hui-shou (turn around-head) “look back; recollect”

b. 回顾 hui-gu (turn around-look back) “look back; review”

c. 回眸 hui-mou (turn around-eye) “look back; recollect; recall”

d. 回溯 hui-su (turn around-trace back) “recall; look back upon”

e. 回忆 hui-yi (turn around-recall/recollect) “call to mind; recollect; recall”

From a different perspective, only verbs that directly indicate a forward direction can be directly associated with the “future”, while verbs related to the “past” usually imply a “turning around” action. Through the verbs in (8), I can clearly see that the “past” is located behind the self, as the self must first perform a “turning back” motion in order to recall, reminisce, or trace past experiences (Yu, 2012).

The corpus data above can be grouped into several common patterns. First, the Journey/Path type (前路, 前程, 向前走) — source domain: “walking/path.” Second, the Vision/Looking-ahead type (向前看, 前瞻) — source domain: “line of sight/orientation.” Third, the Looking-back/Retropective type (向后看) — these verbs often imply bodily actions of “turning/rotating,” emphasizing that the past lies “behind the body” and that one must mentally “turn around” to retrieve it. Fourth, the Evaluation/Hope type (前景) — which reifies the future as an assessable “scene” or “prospect.” These categories co-occur strongly with grammatical frames (the nominalized “front-N” pattern and verb phrases of the “toward-front-V” type), which indicates that the moving-ego mapping of “front/back” is not a sporadic rhetorical device but is systematically embedded in Chinese constructions and discourse strategies.

I supplemented and compared corpus counts for tokens labeled as occurring in moving-ego pragmatic contexts. Of 117 items ultimately classified as instantiating a moving-ego mapping that assigns “front” to the future, 114 (97.4%) originate from the People’s Daily and its WeChat public account (including related official postings), and 108 (92.3%) of those sentences have subjects such as nation, city, or generation. Conversely, of 34 items identified as instantiating a moving-ego mapping that assigns “back” to the past, 29 (85.3%) come from the People’s Daily and its WeChat official account (WeChat official accounts have become one of the most influential self-media platforms in China. The official accounts operated by traditional media combine authoritative content with the platform’s convenience, making information dissemination and communication with audiences more efficient and immediate). The distribution shows that personifying a city or a generation as an “ego” (e.g., “香港的前路” — “Hong Kong’s prospects”; “他们这一代人的前程” — “the future of that generation”) is not isolated but is highly concentrated in registers dominated by official/public discourse.

Hampden-Turner & Trompenaars (1993) place China on a cultural spectrum that emphasizes collectivist values, and Hofstede’s account of high long-term orientation / “Confucian dynamism” (Hofstede, 2001, p.359) further explains the Confucian tradition’s cultural legitimization of intergenerational transmission, practical governance, and long-range planning. Consequently, mobilizing future-oriented metaphors such as “前程” and “前路” in social discourse not only sketches individual life trajectories but also serves as a rhetorical device for negotiating collective futures, fostering emotional identification, and legitimizing political visions. At the same time, practices of retrospection and reverence for the past. For example, historical-inheritance rhetoric such as “祖述尧舜，宪章文武” (The important influence of ancestral teachings and traditional culture on later generations) provide cultural support for mapping “back” onto the past, so that the use of “front/back” in the Moving-Ego mapping is both register-appropriate and coherent with cultural-semantic logic. (See Table 4 for the detailed statistics.

Table 4: The Contexts and Frequencies of qian/hou

	Qian (n = 117)	Percentage (%)	Hou (n = 34)	Percentage (%)
official / public media	114	97.4	29	85.3
Other sources	3	2.6	5	14.7
Subject = nation / city / generation	108	92.3	24	70.6
Subject = individual	9	7.7	10	29.4

Based on the Moving Ego model and the analysis of the metaphors of “forward” and “backward” in relation to the future and past, I can construct a more detailed Chinese “the Moving Ego” metaphor model (Figure4). This model not only emphasizes the ego's movement along the temporal journey but also integrates the unique expressions in Chinese language, reflecting cultural and cognitive characteristics. In the Chinese Moving Ego model, the self is viewed as the moving subject, whose actions are closely linked to the environment, experiences, and goals. When moving forward, the self faces the prospects of the future; when looking back, it reviews past experiences. Within this framework, verbs and phrases pointing to the future are typically associated with “qian” (forward). This is reflected not only in language, such as “xiang-qian-kan” (looking ahead) or “qian-zhan” (foresight), but also in the self's active engagement with goals. The self, as it moves forward, is able to imagine the future state (the road ahead, prospects). Conversely, “Hou” (Behind) symbolizes past experiences. Expressions like “hui-tou-kan” (looking back) or “hui-gu” (reviewing) emphasize that the ego must turn around to reflect on the past. This process is not just a simple recollection of past events but a profound reflection and learning, helping the ego move more effectively toward the future.

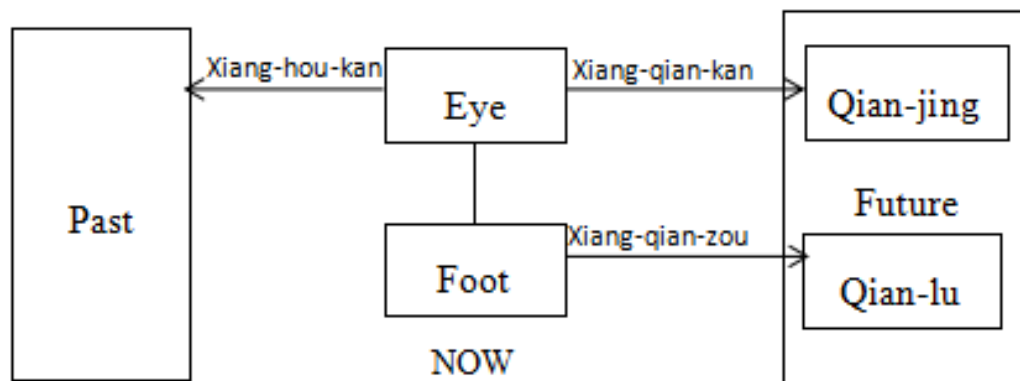


Figure4: the moving ego mapping of “qian&hou”

4.2 the moving time mapping in Chinese

In the time moving metaphor, the ego's position is fixed, facing the future, while time is conceptualized as a river or conveyor belt moving from the future toward the past. The temporal meanings of words such as “到 dao”(arrive), “过 guo” (pass), 来 lai”(come), “来临 lai-lin”(approach), and “走 zou”(walk) in Chinese are shaped by this metaphorical framework. In this

subsection, I will discuss the moving time mapping according to the direction of time passing, i.e., from future to past, although the future is in the front and the past is in the back, the expression of “before” and “after” is not used, and then point out the special cases in this kind of mapping. Then, I will point out the special cases in this mapping.

(9)黄昏来临。

Huang-hun lai-lin.

Dusk approach

Dusk is approaching.

(10)劳动节到了。

Lap-dong-jie dao le.

Labor Day arrive ASP.

Labor Day has arrived.

(11)新年到了。

Xin-nian dao le.

New Year arrive ASP.

The New Year has arrived.

In these three examples, the verbs “lai-lin” (approach) and “dao” (arrive) emphasize the passage of time, carrying meanings of arrival and movement, while also suggesting a continuous progression. The future time—dusk, Labor Day, the New Year—is moving toward the ego, gradually getting closer, until it reaches a specific point: the position of the ego. The following example further concretizes this metaphor.

(12)二十一世纪正向我们走来。

Er-shi-yi shi-ji zheng xiang wo-men zou lai.

Twenty-first century PRT toward we walk come.

The twenty-first century is coming toward us.

“Zou-lai” (Coming toward us) metaphorically represents time as an actively moving entity, using the action of “zou” (walking) to imply the gradual progression of time. This personification imbues the “twenty-first century” with a sense of dynamism, as if time is no longer an abstract concept, but an entity in motion, gradually approaching the ego. This metaphor gives the sense that time is approaching with rhythm and intent, making time appear as an agent with “purpose”, whose arrival is inevitable. It deepens the cognitive experience of the impending future and the passage of time. The passage of time is not only seen as having a clear direction but also as possessing agency. The following example further illustrates this point.

(13)时间带走了你们近四年的青春岁月。

Shi-jian dai-zou le ni-men jin si-nian

Time take-away ASP you nearly four.years

de qing-chun sui-yue.

MOD youth years.

Time has taken away nearly four years of your youthful years.

The metaphor of “dai-zou” (taking away) emphasizes the passage of time. The verb “dai-zou” portrays time as an active, irresistible force, transforming it from a static concept into a dynamic entity that relentlessly moves forward. In this metaphor, the flow of time is conceptualized as a process of “deprivation” or “removal”—youthful years gradually fade and become irretrievable in the course of time, thus imbuing time with a predatory characteristic.

This metaphor not only linguistically imbues time with life and motion but also reflects the Chinese understanding of time’s irreversibility. In “the moving time” metaphor model, time is seen as a forward-driving force that separates the past from the present, pushing events or states further away from the ego. The following example fully illustrates the process of time’s passage along the horizontal axis.

(14)许多市民高兴地说：“冬天过去，春天来了”。

Xu-duo shi-min gao-xing de shuo dong-tian guo-qu,
Many citizens happy MOD say; winter pass by,
chun-tian lai le.
spring come ASP.

Many citizens happily say, “Winter has passed, and spring has arrived”.

This example illustrates the directionality of temporal flow through the structure of “winter–ego–spring”. First, the term “guo-qu” (passed) positions “winter” as a temporal entity gradually receding, implying its movement away from the ego’s position and evoking a sense of departure and dissipation. This conveys the conclusion of winter, firmly placing it in the past. In contrast, the term “lai” (arrived) assigns “spring” the role of an imminent temporal landmark, depicting its dynamic approach toward the ego. This structure vividly presents the directional nature of temporal flow: winter gradually fades away, while spring “moves” from a distance to the ego’s vantage point. Together, they form a process of transformation between past and future, characterized by temporal departure and approach. This metaphor concretizes the abstract concept of temporal passage by mapping it onto spatial motion, thereby imbuing time with a tangible sense of flow: the receding of winter and the arrival of spring are spatially conceptualized, allowing individuals to perceive the underlying passage of time through the spatial dynamics of “distancing” and “approaching”.

The above examples demonstrate that in Chinese, time can be conceptualized as motion (time-as-motion), and the direction of this motion typically follows the path “future → ego → past.” Research has shown that under the moving time framework in Chinese, time is not primarily marked by static spatial terms such as qian (front) or hou (back). This phenomenon is not purely determined by semantic logic but is deeply influenced by complex cognitive and emotional processes. Regardless of whether the forthcoming event is positive or negative, its approach increases people’s sensitivity to the perception of time (Bashir, Wilson et al., 2014), often accompanied by a sense of preparatory pressure (VanHorn, 2020). Consequently, the moving time metaphor in Chinese is mainly realized through a set of directional verbs and their compound structures, such as lai (come/arrive), daoda (reach), zou (go), daizou (take away), and guo (pass). These verbs inherently carry directional,

processual, and often agentive or anthropomorphic meanings, portraying time as a dynamic state of “approaching / arriving / having arrived.” In doing so, they function semantically in ways that might otherwise be performed by *qian* and *hou* in distinguishing past from future (Chen & Tao, 2014).

This observation aligns with Lakoff and Johnson’s (1980) theory that metaphors map abstract domains onto perceptual experiences and resonates with Boroditsky’s empirical discussions on different mapping patterns in “time–space” cognition. Such pragmatic demands have driven Chinese to prioritize verb-based expressions that describe the occurrence and completion of events, effectively replacing *qian* and *hou* as the primary linguistic means of encoding temporal relations in actual discourse.

However, some scholars have argued that in the moving time metaphor, despite the use of “*qian*” (front) to denote the future and “*hou*” (back) to refer to the past in Chinese, the ego is consistently oriented toward the past (Cao & Xing, 2017; Zhengguang, kefei et al., 2018; Zhang, 2003, 2007; Gu, YequiZheng et al., 2019; Han & Liu, 2007). This conclusion is primarily drawn from their analysis of terms such as *yi-qian* (before) and *yi-hou* (after), as illustrated in the following example:

(15) 六天以前，我已写信去请假。

Liu-tian yi-qian, wo yi xie-xin qu qing-jia.

Six-days before, I already write.letter go request.leave.

Six days ago, I sent a letter to request leave.

(16) 从今以后，酒要少吃。

Cong jin yi-hou, jiu yao shao chi.

From now after, alcohol need less eat.

From now on, I will drink less alcohol.

In these two examples, “*yi-qian*” (before) refers to a specific point in the past, while “now” is understood as the temporal position of the ego, and “*yi-hou*” (after) refers to a specific point in the future. Since past events have already occurred, they can be “seen” and remembered by the ego. This has led some researchers to mistakenly conclude that the ego is oriented toward the past. However, their oversight lies in conflating the ego-reference point (the ego) with the time-reference point. Consequently, they confuse the future with “*hou*” (behind) and the past with “*qian*” (in front).

Yu (2012) argues that the conclusion that Chinese speakers always face the past and turn their back to the future is based on a misunderstanding of the semantics of “*yi-qian*” (before, referring to past events) and “*yi-hou*” (after, referring to future events) in Chinese. Yu (2012) illustrates this through a train analogy, suggesting that Chinese expressions of time are better understood as a combination of time-objects and time-locations, as depicted in Figure 5. This is because in the contrast between “*yi-qian*” and “*yi-hou*”, the reference point is the time point itself rather than the ego.

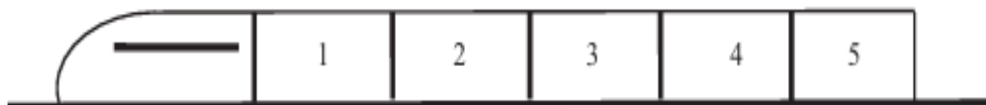
Figure5: Times conceived of as a moving train

Although examples (15) and (16) present a temporal sequence of past (qian)–present–future (hou) with an explicit or implicit predicate center (“I”), the reference point in these examples remains anchored in time itself. The “self” can be understood as co-located with “present”, akin to sitting in the third carriage of a train: regardless of the direction we face, the train’s direction of travel remains unchanged.

While many usages of “qian” (in front) and “hou” (behind) appear to be instances of an “Ego-perspective” mapping, closer examination reveals a non-paradoxical sequence where the reference point happens to coincide with the self. Therefore, it is incorrect to conclude that the reference point is necessarily the self when qian refers to the past and hou refers to the future. The paradox of the orientation and usage of “qian” and “hou” will be further discussed in Section 4.

3.3 the moving ego mapping in Japanese

The purpose of this subsection is to explore the moving ego mapping in Japanese. By analyzing temporal expressions in Japanese, the moving ego mapping emphasizes the ego's actions, choices,



and goal orientation by considering the ego as a subject moving forward on a timeline. In this subsection, I will explore the usage of “mae” and “ato” in Japanese through examples analysis, and show how to build the moving ego mapping framework through “mae” and “ato”. This is shown in the following examples.

(17) チャンスをこの手につかんでるんだから、もう振り返らない。前に進むだけ。

Chansu-o kono te-ni tsukanderun dakara,
 Chance=ACC this hand=LOC grasping because,
 mou furikaera-nai. Mae-ni susumu dake.
 already look.back=NEG Front=LOC proceed only.

Since I’m grasping this chance in my hands, I won’t look back anymore. I’ll just move forward.

In “the moving ego” mapping, the future is conceptualized as a destination, while the ego is perceived as an entity moving toward that destination. Example (18) underscores the ego's sense of direction along a horizontal temporal axis. Specifically, the phrase “mae ni susumu” (move forward) indicates that the future is situated in front of the ego. The “future” is often constructed as a forward-extending space, with the individual depicted as a subject navigating along a temporal trajectory. This description not only reflects the linearity of time but also implies that time is experienced as a journey by the ego. Similar to Chinese, Japanese also employs journey-based metaphors to concretize the concept of time, as demonstrated in Example (18):

(18) 目的を達成して新しい道に進んだ卒業生の前途に幸あれと祈ります。

Mokuteki-o tassei shite atarashii michi-ni susunda
Goal=ACC achieve do. PART new road=LOC proceeded
sotsugyousei-no zento-ni sachiare to inorimasu.
graduate=GEN future-LOC happiness-COP QUOTE pray.

I pray that happiness may be with the future of the graduate who has achieved their goal and proceeded on a new path.

In this example, the word zento (“future path”) metaphorically represents the ego's movement along a road that symbolizes the temporal axis. The ego is depicted as continually advancing on a journey toward the future. This metaphor also highlights the achievements attained by the individual based on past experiences. As one progresses toward their goal (the future), the path already traversed becomes the past, continuously fading into history. Each step forward marks the beginning of a new phase of the future. Here, the ego's completed goals (the past) and ongoing movement coalesce to create a comprehensive temporal framework. For a graduate, conceptualized as the “ego”, this framework provides a sense of their current position and future potential.

The sentence in Example (19) encapsulates the metaphorical structure of “past–ego–future”, illustrating how the ego moves from the past toward the future. It also clarifies that the “past” is situated behind the ego, and like in Chinese, it requires the ego to “look back” in order to perceive it. This is exemplified in the following sentence:

(19) たしかに過去を振り返ってみるよい機会。

Tashikani kako-o furikaette miru yoi kikai,
Certainly past=ACC look.back.PST try.to good opportunity,
Certainly, it is a good opportunity to look back at the past.

Chinese and Japanese show a clear commonality under the “Moving Ego” framework: both languages can metaphorically construe the future as a target space in front of the self and the past as a region left behind. Expressions such as Chinese “向前走/前进/向后看”, and Japanese “前に進む/前途/振り返る” treat the subject as an intentional, goal-directed agent who moves toward the future while also reflecting on the path already taken—the past. This tendency is partly rooted in etymology: in both languages the concept of “front” is historically linked to the “eye,” which naturally ties the act of looking back to recalling the past (Moore, 2000).

However, the two languages differ in how this mapping becomes lexicalized and how often it appears. Chinese more readily encodes temporal direction in the spatial terms “前/后,” so that “前” frequently points to the future, and in some contexts “后” can explicitly denote past periods left behind. In our annotated sample of 3,000 Japanese tokens, by contrast, only five instances clearly use “前” to express “future-in-front,” and there are zero instances of “後/后” clearly marking “past-in-back.” This indicates that, although the conceptual mapping (future in front, past behind) exists in Japanese, it is rarely lexicalized via nominal spatial morphemes (see Figure 6); instead, it is more often realized through verbal action descriptions (進む、振り返る, etc.).

The grammaticalization of motion verbs in Japanese plays an important role in expressing tense

and narrative progression (see Constraints on Motion Verbs in the TIME IS MOTION Metaphor). Through grammaticalization, spatial metaphors become encoded as verbs or syntactic constructions, which reduces the corpus frequency of independent positional words like “前” and “後”.

In short, Chinese and Japanese share the same underlying “Moving Ego” cognitive schema, but they follow different linguistic paths: Chinese tends to make time-direction explicit with spatial nouns, while Japanese more often embeds the same schema in verb-centered and syntactic strategies.

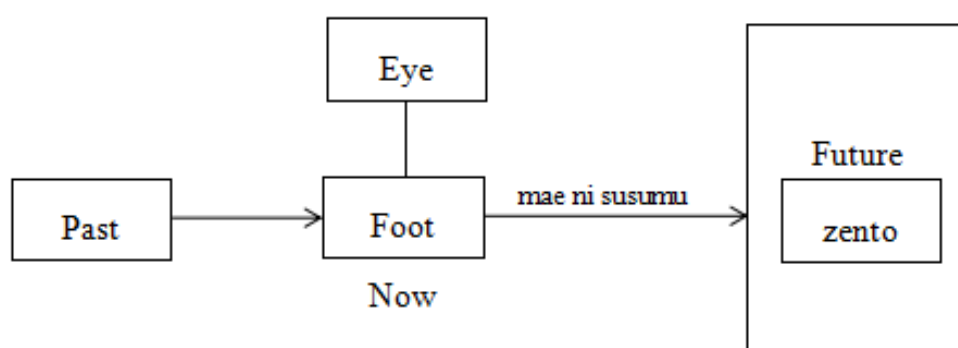


Figure6: the moving ego mapping of “mae”

3.4 the moving time mapping in Japanese

Similar to Chinese, Japanese conceptualizes time as flowing from the future through the ego and then toward the past. In the “moving time” metaphor, the ego remains stationary while the “future”, located in the space ahead of the ego, approaches from the ego's perspective. Upon reaching the ego's position, the future becomes the “present”, and as it moves beyond the ego, it transforms into the “past”(Kazuko, 2008).

(20) やっと私に春が来たって感じね。

Yatto watashi ni haru ga kita tte kanji ne.
Finally I=DAT spring=NOM came QUOTE feeling PART.
It's like spring has finally come to me.

(21) 帰国の日が近づいていた。

Kikoku no hi ga chikadzuite ita.
Return-GEN day-NOM approaching was.
The day of my return was approaching.

Here, the terms “chikaduku” (approach) and “kita” (came) personify time, portraying it as moving toward the ego. Within “the moving ego” metaphor, the ego is depicted as an active participant on the temporal axis. The phrase “haru ga kita” conveys the ego's perception of temporal progress, highlighting the connection between past anticipation and the arrival of the future. This exemplifies how the ego's lived experiences merge with the future at a specific moment.

The term “chikaduku” in this context represents a dynamic process, signifying that a specific temporal point (the day of returning home) is progressively nearing the individual. Here, the ego, as

the “ego”, gains a clear sense of time's flow and the proximity of future events. Time is personified as an approaching entity, and through personal experience and perception, the ego becomes aware of the future moving closer. The next example further demonstrates the flow of time in Japanese:

(22) 四年間があっという間に過ぎ去って、まもなく卒業、そして就職先も決定していた。

Yonenkan ga attoiuma ni sugisatte,
Four years=NOM short.time=LOC passed,
mamonaku sotsugyo,
soon graduation,
soshite shushokusaki mo kettei shiteita.
CONJ place.of.employment=TOP decision had.done.

In the blink of an eye, four years passed, and soon graduation was approaching, and the place of employment had been decided.

The term “sugisatte” inherently conveys the dual notions of “passing through” and “moving away”. This reflects the conceptualization of time as a mobile “entity” that traverses the ego's “present” point and then recedes into the past. In this process, time moves from the future into the ego's “now” and then continues toward the past.

The term “mamonaku” signifies an imminent event that has not yet arrived. Within “the moving time” mapping, future events are perceived as temporal nodes approaching the ego. This expression portrays future time as progressively nearing the ego's “present” and eventually becoming part of immediate reality. Together, “sugisatte” and “mamonaku” illustrate the complete framework of “future—ego—past”. Future events are depicted as a process of gradually approaching the ego (mamonaku), while elapsed time flows from the ego's “now” toward the past (sugisatte).

In the moving time mapping, time is likened to a river that flows from the future toward the ego and ultimately moves past them into the past, creating a linear progression. The flow of time in Japanese also embodies a sense of inevitability and irreversibility, emphasizing its unidirectional and compulsive nature.

(23) 締め切りが刻々と迫ってくる。

Shimekiri ga kokokuto sematte kuru.
Deadline=NOM moment=ADV approach come.
The deadline is approaching moment by moment.

(24) 2人の運命の破滅の時が刻々と迫っている。

Futari no unmei no hametsu no toki ga
Two.person=GEN fate=GEN ruin=GEN time=SUBJ
kokokuto sematteiru.
moment.by.moment=PART approaching.

The moment of the ruin of the two people's fate is approaching moment by moment.

In Example (23) and (24), the term “semaru” (approach) suggests that time is gradually moving toward the observer with a sense of urgency or pressure, carrying an oppressive and unstoppable

momentum. Within “the moving time” mapping, time is conceptualized as a “moving entity” that continuously flows from the future toward the present. This flow is not passive; it is imbued with a certain “pressing” quality, creating a sense of urgency as it draws nearer to the observer. In other words, time not only flows but also exerts a compulsive force toward the observer, making it impossible for them to escape the passage of time and heightening the awareness that time is about to transform into the irreversible “past”.

In the Moving Time framework, the linear flow “future → self → past” is clearly reflected in common expressions in both languages. Japanese words such as 来た / 近づく / 過ぎ去る / 迫る / 刻々と correspond semantically to Mandarin expressions like “来/到/临近/过去/逼近/刻刻”: through verbs or adverbial expressions denoting “approach,” “arrive,” “pass by,” or “recede,” they concretize an abstract temporal process as motion toward the observer. Example (20) 「春が来た」, like the Chinese “春天来了” (“spring has come”), embodies “spring” as an entity that arrives at the speaker; (21) 近づいていた corresponds to Chinese “临近”, both depicting a future node as a process of gradual approach; (22) 過ぎ去って is semantically equivalent to Chinese “过去/流逝,” construing past time as a moving body that has passed through the self-location and continues to recede.

Both languages’ Moving Time expressions often carry feelings of pressure, expectation, or unavoidable necessity. When the future “approaches,” discourse commonly contains preparations, anxiety, hope, or warnings; when time has “passed” or “elapsed,” it is accompanied by regret, reminiscence, or summation. From a cultural standpoint, shared East Asian seasonal practices and social rhythms are among the deep causes for the cross-linguistic sharing of the Moving Time metaphor. The social importance of events, festivals, and agricultural timing (e.g., New Year celebrations, festivals, and farming seasons) tends to make time intelligible as an arrival—“when will it come/occur”—rather than as a static relative position between two events (Zhong & Liu, 2022). Japan’s long-standing four-seasons culture and calendrical rituals (e.g., hanami) turn seasonal change into perceptible, shareable events (Starrs, 2023), naturally aligning with a flow-centered temporal metaphor; similarly, agrarian and calendrical traditions in Chinese culture (e.g., the twenty-four solar terms) eventify time, so that both languages show high similarity when describing the arrival of seasons and life stages.

In sum, under the Moving Time framework, Japanese and Mandarin conform to the spatial-mapping metaphors described by Lakoff. Although neither language’s expressions here directly employ spatial words for “front/back” (qian/hou, mae/ato), time is nonetheless construed as flowing from a “future” ahead of the self toward the self. When that flow reaches the self-location it becomes “now,” and when it continues to move past the self it becomes “past.” From the self-centered perspective, this front-to-back flow embodies the “future-in-front, past-behind” temporal metaphor, a cognitive pattern that is consistent across both Japanese and Mandarin.

5. SEQUENCE IS RELATIVE POSITION ON A PATH in Chinese and Japanese

This section will explore the use of “front” and “back” in Chinese and Japanese within the mapping “SEQUENCE IS RELATIVE POSITION ON A PATH”. Specifically, I will analyze the

applications of “qian/hou” and “mae/ato” in the mapping SEQUENCE AS POSITION. To make this clearer, I will categorize motion phenomena from the perspective of the ego as a form of self-centered temporal flow (discussed in section 3) and group examples that are relative to other times, rather than the ego, as concrete instances of the SEQUENCE AS POSITION metaphor. The mapping framework of SEQUENCE AS POSITION (Moore, 2011) is as follows:

Entities at different points on a (one-dimensional) path	→	Times in sequence
A position/entity that is in front of another position	→	A time that is earlier than another time
A position/entity that is behind another position	→	A time that is later than another time

Unlike the “ego-centered perspective”, the SEQUENCE AS POSITION sequence does not involve the ego as the reference point. For example, in Chinese, the following examples illustrate the contrast between these two scenarios. This section will examine the usage of “front” and “back” in Chinese and Japanese within the mapping “SEQUENCE IS RELATIVE POSITION ON A PATH”. Specifically, I will analyze the applications of “qian/hou” and “mae/ato” within the framework of SEQUENCE AS POSITION. To clarify this, I will follow Moore's classification of time metaphors, categorizing phenomena involving the ego's perspective on motion as “Ego-perspective” (as discussed in section 3), and grouping examples that relate to other times, rather than to the self, as instances of the SEQUENCE AS POSITION mapping. Unlike the “Ego-perspective”, SEQUENCE AS POSITION mapping do not involve a ego-referential viewpoint. For illustration, the following Chinese examples highlight the contrast between these two cases.

- (25)a. 2011 已经离我们远去, 2012 已来到。
 2011 yi-jing li wo-men yuan qu, 2021 yi lai dao.
 2011 already leave we far go, 2021 already come arrive.
 2011 has already gone far from us, and 2012 has already arrived.
- b. 元旦过后是春节。
 Yuan-dan guo hou shi chun-jie.
 New.Year's.Day pass after is Spring.Festival.
 After New Year's Day comes the Spring Festival.

In example (25a), the future is in front, and the past is behind. The term “2011” can represent the motion of time flowing from the future through the observer (us) toward the past. Therefore, the reference point is the ego-perspective. However, example (25b) seems to imply that the future is behind, and the past is in front. In (25b), the temporal relationship is between the New Year's Day and the Spring Festival, two time positions that are independent of the present moment. This presents a time sequence without a specific reference point, where “Spring Festival” follows “New Year's Day”, and “Lantern Festival” follows the “Spring Festival”, and so on. Time expressions such as “year” (nian), “month” (yue), “day” (ri), and “week” (xingqi), often referred to as calendar terms (Fillmore & J., 1997), can all be paired with qian and hou. Wu(2021) summarizes various expressions of calendar time in Chinese, as shown in example (26).

- (26)a. 前天 qian-tian (front-day “the day before yesterday”)
 b. 后天 hou-tian (back-day “the day after tomorrow”)
 c. 前年 qian-nian (front-year “the year before last”)
 d. 后年 hou-nian (back-year “the year after next”)

Example (26) presents a deictic time sequence centered around “today”. In this sequence, “today” follows “yesterday”, and “yesterday” follows “the day before yesterday”, and so on. Additionally, since both the “ego” and “today” share the same center, relative to “present”, both “the day before yesterday” and “the year before last” are considered as the past, while “the day after tomorrow” and “the next year” refer to the future. In other words, although example (26) illustrates a time sequence where the past is before and the future is after, the positioning of “the ego” and “today” at the same point often leads to confusion and results in the erroneous interpretation of the ego facing the past.

Similarly, Yu(2012) also identifies a category of nouns that do not have a direct relation to the calendar or clock system, and therefore do not inherently represent time. This is illustrated in example (27).

- (27) a. 前人 qian-ren(front/ahead-people “forefathers; predecessors”)
 b. 后人 hou-ren(back/behind-people “later generations; descendants”)
 c. 前辈 qian-bei(front/ahead-generation “elder; the older generation”)
 d. 后辈 hou-bei(back/behind-generation “younger generation; juniors”)

In analyzing terms such as “qian-ren” (predecessors), “hou-ren” (descendants), “qian-bei” (the older generation), and “hou-bei” (younger generation) in example (27), I can further incorporate the core principles of the SEQUENCE AS POSITION mapping. This metaphor conceptualizes time as a directional motion along a path, where different positions on the path correspond to the chronological order of events. Specifically, “qian” and “hou” represent positions earlier and later on the temporal path, respectively. This cognitive model is applicable not only for describing relationships between specific time points (as in “qian-tian” and “hou-tian”, as seen in example (26)), but also for abstractly describing generational or group-based temporal relationships.

Within this metaphorical framework, time is viewed as a sequence with a unified direction of motion, with its “front” always oriented towards the direction of movement. Entities along the path are arranged based on their relative positions, where those positioned earlier represent “earlier” moments, and those positioned later represent “later” moments. For instance, “qian-bei” refers to a generation that precedes “peers”, while “hou-bei” refers to a generation that follows “peers”. In this case, “peers” act as a reference point, placing “qian-bei” earlier on the time path, indicating that “qian-bei” reached a particular point on the temporal path earlier, while “hou-bei” is placed later, suggesting their position is more recent in time. This sequential relationship clearly embodies the fundamental logic of the SEQUENCE AS POSITION: the earlier an entity's position on the path, the earlier it is in the time sequence; conversely, the later an entity's position, the later it is in the sequence.

SEQUENCE AS POSITION mapping also effectively explains the semantic and logical relationships between “qian-ren” and “qian-ren” in example (27). “Qian-ren”, as “qian”, metaphorically refers to a group that is temporally ahead, representing an earlier generation in history, or the “early period”. On the other hand, “houren”, as “hou”, corresponds to a group that is temporally behind, referring to the future inheritors or descendants, or the “later period”. Here, “qian” and “hou” are not static spatial positions, but are endowed with chronological significance through the dynamic nature of the temporal path. Unlike the specific time references in example (26), such as “qian-tian” and “hou-tian”, the terms in example (27) are more abstract and conceptual. In this case, “qian-ren” and “hou-ren” do not refer to specific time points, but are based on a relative temporal order, broadly indicating groups or generations that precede or follow the present. While these terms are not directly related to a calendar or clock system, they utilize the SEQUENCE AS POSITION mapping to map groups or generations onto positions along the timing path.

In Japanese, the terms “前” and “後” similarly reflect the temporal path concept within the SEQUENCE IS RELATIVE POSITION ON A PATH mapping framework. Like in Chinese, “前” and “後” in Japanese denote earlier and later positions on the timing path, and they apply not only to specific time expressions but also to other conceptual usages, as illustrated in example (28).

- (28) a. 二日前 futsukamae (two.day-before “two days ago”)
 b. 二日後 futsugo (two.day-after “two days later”)
 c. 前回 zenkai (before-time “last time”)
 d. 後輩 kouhai (after-generation “younger generation”)

In examples (28a) and (28b), “mae”(when two or more kanji are lined up, it is often read as “zen”) and “ato” (when two or more kanji are lined up, it is often read as “go/kou”). directly represent positional relationships on the timing path. In “futsukamae”, “mae” corresponds to an earlier position on the timing path, indicating a time position earlier than “present”. Similarly, in “futsugo”, “ato” refers to a later position on the path, indicating a time position later than “present”. This mirrors the Chinese expressions “qian-tian” and “hou-tian”, exemplifying the “The future is behind, the past is ahead” timing path logic.

In (28c), the term “zenkai” uses “mae” to refer to a earlier position in timing path. For instance, in the phrase “Zenkai no shiken wa muzukashikatta” (The previous exam was difficult), “zenkai” points directly to a time position earlier than the present, thus clarifying its relative position within the timing path. In contrast, in 28d, “kouhai” uses “ato” to refer to a group or individual positioned later in time, with the reference point being fixed at “senpai”, the senior. This sequence relationship based on a fixed reference point is consistent with the Chinese structure, emphasizing the relative position of entities on the path, which contrasts with the dynamic ego-centered perspective in earlier examples.

Next, I will present several examples to analyze whether there are any differences in the expression of “qian/hou” and “mae/ato” in the SEQUENCE AS POSITION mapping across Chinese and Japanese vocabulary for “earlier/later”.

(29)a. 吃饭之前要洗手。

Chifan zhiqian yao xishou.
 eat-meal before must wash-hand.
 Wash (your) hands before eating.

b. 吃饭后洗澡。

Chifan hou xizao.
 eat-meal after take-bath.
 Take a bath after eating.

c. 運動前にはヴァームを飲むようにしています。

Undō mae ni wa Vaam o nomu yō ni shite-imasu
 exercise before LOC TOP Vaam ACC drink NMLZ like do-PROG.POL
 (I)make it a habit to drink Vaam(Energy drink) before exercise.

d. 料理が出された後、肉汁やソースがサーブされた。

Ryōri ga dasa-re-ta ato, nikujū ya sōsu
 dish NOM put.out-PASS-PAST after gravy and sauce
 ga sābu-sa-re-ta
 NOM serve-PASS-PAST
 After the dishes were served, the gravy and sauce were served.

(29a) and (29b) are in Chinese, while (29c) and (29d) are in Japanese. From these examples, it is evident that both “qian” and “hou” in Chinese, as well as “mae” and “ato” in Japanese, can be used to express relative positions on the SEQUENCE AS POSITION mapping. In these examples, when “earlier” and “later” are involved, there is no necessity for an ego's perspective to be included. Therefore, it can be concluded that in both Chinese and Japanese, SEQUENCE AS POSITION mapping can be objectively described without the need for a subjective ego's viewpoint. While SEQUENCE AS POSITION mapping inherently involve the concepts of earlier and later occurrences, the distinctions of “before” and “after” do not imply incompatibility with the ego.

Therefore, I may consider that both Chinese and Japanese can objectively describe events along the SEQUENCE AS POSITION mapping without relying on the perspective of the ego. Since the SEQUENCE AS POSITION mapping inherently reflects the relative “earlier” or “later” of events, it allows for the expression of temporal relations such as “before” and “after” without anchoring them to an egocentric viewpoint. However, this does not imply that such mappings are incompatible with the ego's perspective.

(30)a. 我们很久以前一起工作过。

Wo-men hen-jiu yi-qian yi-qian gong-zuo guo.
 we very-long ago together work ASP.
 We used to work together a long time ago.

b. 前に君に聞きたいことがある。

Mae ni kimi ni kiki-tai koto ga aru
 before LOC you DAT ask-want NMLZ NOM exist
 (Before that,) there is something I want to ask you.

In (30a), “Wo-men hen-jiu yi-qian yi-qian gong-zuo guo” (We used to work together a long time ago), the temporal expression “yi-qian” conveys the position of an event in the SEQUENCE AS POSITION mapping as occurring “earlier than the present”. This relationship does not rely on the “ego” as a reference point; rather, it is indicated through the relative temporal marker “yi-qian”, which denotes the sequential order of events along a timing path. In other words, “yi-qian” refers to a position on the timing path that is objectively earlier than the present, independent of the ego’s physical orientation.

In (30b), “Mae ni kimi ni kiki-tai koto ga aru” (Before that, there is something I want to ask you.), the term “mae” similarly expresses a relative positional relationship on a timing path. Here, “mae” is unrelated to the ego’s physical orientation and purely describes an event occurring earlier than another reference point. While this reference point is often implicitly the ego’s “present”, the emphasis lies on the sequential order of events on the timing path, rather than the ego’s orientation. Thus, akin to the Chinese “yi-qian”, the Japanese “mae” also reveals an objective relationship of “earlier” or “later” along the SEQUENCE AS POSITION mapping.

The expressions in (30), in both Chinese and Japanese, illustrate a “decentralization” organization of SEQUENCE AS POSITION mapping. This organizational structure does not prominently foreground the position of the ego but instead constructs the SEQUENCE AS POSITION mapping based on the relative positions of time position. For instance, both “qian” and “mae” can be used to describe events that are not anchored to the ego.

(31)a. 清朝以前，不管是明、宋、唐、汉各朝，都没有清朝那样统一。

Qing-chao yi-qian, bu-guan shi ming, song,
Qing.dynasty before, no.matter is Ming.dynasty, Song.dynasty,
tang, han ge chao,
Tang .dynasty, Han.dynasty every dynasty,
dou mei-you qing-chao na-yang tong-yi.
even do.not.have Qing.dynasty that unify.

Before the Qing Dynasty, neither the Ming, Song, Tang nor Han dynasties were as unified as the Qing Dynasty.

b. このうち恐竜の絶滅は六千四百万年前のものに含まれていることだ。

kono uchi kyōryū no zetsumetsu wa
this among dinosaur GEN extinction TOP
rokusen yonhyaku man-nen mae no mono ni
sixty-four-million-year before GEN thing DAT
fukumare-te iru koto da
include-PASS PROG NMLZ COP

Among these, the extinction of the dinosaurs is included in the one from 64 million years ago.

In these expressions, the reference frame does not involve the “ego” as a point of reference; instead, it purely describes the sequential order of time position. This decentralized construction of sequences is a core feature of the metaphor “SEQUENCE IS RELATIVE POSITION ON A PATH”.

Example (31)a and (31)b demonstrate the application features of the SEQUENCE AS POSITION

mapping: the order of time (“earlier” and “later”) is constructed based on relative positions on the timing path, without necessarily involving an ego’s perspective. In the corpus above, Mandarin “前/后” (qian/hou) and Japanese “前/後” (mae/ato) display a high degree of overall alignment under the mapping “SEQUENCE IS RELATIVE POSITION ON A PATH,” while also exhibiting fine-grained divergences. Broadly speaking, both languages linearize time as a one-dimensional “path”: positions relatively farther forward on that path are mapped to “earlier times,” and positions relatively farther back are mapped to “later times.” This mapping appears not only in obvious calendrical expressions (e.g., “前天/后天,” “前年/后年,” “二日前/二日後”) but also in more abstract generational or ordinal vocabulary (e.g., “前人/后人,” “前辈/後輩,” “先行/後続”) and in expressions of event sequence (e.g., “吃饭之前/吃饭后,” “への前/への後で”).

Concretely, two patterns can be distinguished. First, there are deictic, verb-like temporal expressions that take “today/the present” as an implicit reference point; superficially these uses of “前/后” may seem tied to an ego-centric perspective, yet they can still be understood fundamentally as relative positions on a path (for example, Mandarin “前天/后天” and various uses of Japanese mae). Second, there are decentralized sequences relative to another time or group, such as festival sequences (“after New Year’s Day comes the Spring Festival”), generational relationships (“前人/后人,” “先輩/後輩”), or comparative historical stages (e.g., “before the Qing dynasty”). These latter uses do not depend on the speaker’s orientation or a “moving self” stance; instead, they place different events or groups at distinct positions along the same temporal path, thereby instantiating the core logic of the SEQUENCE AS POSITION mapping.

It is worth noting that internal morphological change and processes of grammaticalization further consolidate this path-based expression. In both Chinese and Japanese, “前/后” have become lexicalized as time-forming elements through fusion with nouns such as year, month, day, occurrence, generation, and peer/cohort (年、月、日、回、代、輩), so that “path position” is encoded at the lexical level. In Japanese, Sino-Japanese readings and compound formation (e.g., senpai/kouhai as lexical pairs) supplement the vocabulary and strengthen the role of these characters as position-marking terms.

The Chinese writing system and the reliance on formal written registers provided a substrate for later conceptual-metaphor transfer (Fiddler, 2024). Typical Chinese expressions influenced Japanese when kanji and lexical items were borrowed in earlier periods, thus importing space–time mappings into Japanese semantics; as a result, Japanese has also preserved a rich set of sequence uses for “前/後.” Social domains such as family genealogies, status hierarchies, festivals, and calendrical practice supply stable frames of reference for “前/後,” meeting pragmatic needs for expressing generation, precedence, and diachronic events. Take the senpai/kōhai (先輩/後輩) system as an example: such expressions convert social relational sequences into time–space positions, reflecting both the Confucian institutional emphasis on seniority and the linguistic encoding of collective memory and ritualized time.

The corpus analysis both tests and enriches the description of the SEQUENCE AS POSITION mapping: Chinese and Japanese systematically materialize temporal entities as path positions, supporting Moore’s (2017) mapping framework that links differing positions of entities on a path to

temporal precedence. The same spatial terms “前/后 (後)” can, depending on context, refer to objective positions on a path or participate in ego-referential moving metaphors. These two usages are not contradictory but complementary, indicating that conceptual metaphor theory should accommodate the “multiple nesting and parallel operation of metaphorical mappings” — that is, a single source domain may activate several mapping rules simultaneously.

In sum, the broad agreement between Mandarin and Japanese on the SEQUENCE AS POSITION mapping corroborates the metaphor theory claim that mapping structures are shared across cultures.

6. Discussion

The previous sections analyzed some similarities between Chinese and Japanese in their time metaphors, particularly in “the Moving Time/Moving Ego” mapping, where both languages exhibit a time expression in which the future is positioned in front and the past behind. At the same time, through the SEQUENCE AS POSITION mapping, I observed that the patterns of time cognition in both languages align with the direction of the passage of time. The past is typically seen as being “in front”, while the future is considered to be “behind”. This contrast between “front” and “behind” not only reflects the basic cognitive structure of time in both Chinese and Japanese but also illustrates the connection and transformation between space and time in human cognition.

Next, I will further explore the differences in temporal expressions between Chinese and Japanese, which will help us examine this issue from a new perspective.

First, I note that in Chinese, “qian” can not only refer to the spatial “front” but can also represent the temporal concept of “present”. This usage can be understood through words containing “qian”. These terms are often used to indicate a specific point in time, emphasizing that a particular moment is an immediate state in front of the ego. In this usage, “qian” does not simply refer to the spatial “front” but metaphorically denotes the present moment in time, relative to the ego's spatial position.

- (32)a. 目前 mu-qian (eye-front “at present, at the moment”)
 b. 眼前 yan-qian (eye-front “at the moment; at present; now”)
 c. 面前 mianq-qian (face-front “at the moment; at present; now”)

Lakoff(1990, 1993) argues that whether time moves toward and passes by a stationary ego, or the ego moves along a timeline, the present moment is always aligned with the ego's position. In other words, the present is invariably located at the ego's position. Yu(2012) further elaborates that, while both the present and the future are conceptualized as being “in front of the ego”, the present differs from the future in that it must be proximate to the observer—hence, it is “right before the ego's eyes”. Moreover, the “present” is typically conceptualized as being “directly in front of the observer”, rather than “beside the ego”. The following examples illustrate this conceptualization.

- (33) a. 截至目前为止。
 Jie-zhi mu-qian wei zhi.
 Up eye-front as stop.
 Up to now.

b.的确是眼前的事情太急迫了。

Di-que shi yan-qian de shi-qing tai ji-po le.
Indeed is eye-front MOD matter more urgent ASP.
It's true that the matter at hand is too urgent.

In (33), “present” is conceptualized as “right in front of the ego”. According to Lakoff's view, the present time, is always located at the position of the ego, or, in other words, it is the time state directly before the observer. Therefore, in this sentence, “mu-qian” carries an inherent immediacy from the ego's perspective, referring to the ego's present moment. Here, “mu-qian” not only holds spatial metaphorical meaning but also indicates the current position in timeline—it refers to the time point immediately perceptible to the ego. This aligns with Yu's (1998, , p.95) view that “present” is always located in front of the ego. While the term “jie-zhi” refers to the endpoint of time, “present”, as a time position, highlights the “present” moment in front of the ego.

The term “yan-qian” similarly embodies the dual meaning of time and space, expressing both the immediacy and urgency perceived by the ego. According to Yu(2012), “now” is typically conceptualized as “right in front of the observer”, rather than “beside” them, meaning that “in front” is not merely a spatial reference but also metaphorically conveys the urgency of the present moment. Here, “yan-qian” not only refers to the physical space ahead of the ego, but it also signifies the immediate issues the ego is facing and needs to address. This formulation concretizes the urgency of “present”, indicating that the “yan-qian” matters are the problems that must be confronted and resolved in the present.

Based on the above discussion, this paper argues that the Chinese term “前” can refer to the past, present, or future depending on the reference frame. Next, I will explain that the Japanese expression “me no mae” in Example (34) has a distinctly different meaning from the Chinese “mu-qian/yan-qian/mian-qian” where “qian” refers to time.

(34)シビアな時代が目の前に迫っている。

Shibiana jidai ga me no mae ni sematteiru.
harsh era=NOM eye=GEN front=LOC approaching.
The harsh era is approaching right in front of us.

Before analyzing the differences between “qian” and “mae” in (33) and (34), I need to reiterate that “present” refers to the time at the current location of the ego, and it coexists with the surrounding physical space (Evans, 2003). Here, “present” emphasizes the ego's present position in both space and time, meaning that the ego's spatiotemporal position aligns with the current moment. In the first definition, the future is the time moving toward a stationary ego. More specifically, the future refers to time located ahead of a moving ego, or more precisely, to the moments along the path in the ego's line of sight (Lakoff, 1990, 1993).

In (34), “me no mae” means “later the present”. The key evidence for this interpretation can be found in the context. The sentence describes how the current state of the construction industry and its business transactions will be impacted and changed, with the future economic and social environment becoming increasingly harsh. Although the ego is not explicitly mentioned in the

sentence, the context implies that the ego is facing an era that is gradually fading, while predicting the arrival of a more severe era. When the ego is used as the reference point, the ego's perceptual interaction with the “front” faces the future, meaning “mae” refers to the “near future” (Moore, 2011). Therefore, the “mae” that represents “present” does not function in Example (34).

Additionally, the Japanese word “ato” does not center on the ego as a reference point when used metaphorically for time. Unlike in Chinese, where “qian” and “hou” are often anchored to the ego as a reference point, in Japanese, “ato” functions more as the reverse of “mae” in the SEQUENCE AS POSITION mapping. It indicates a position later in time relative to another time position, emphasizing the “later” time, rather than referring to the past from the ego's perspective. Although “ato” can metaphorically extend into the temporal domain, it does not, as in Chinese, typically function as a marker for the “past” within the Moving Time or the Moving Ego (ME) metaphor frameworks. Therefore, in Japanese, “ato” as a time concept lacks direct association with the ego, referring merely to a later time in the SEQUENCE AS POSITION mapping. For example, in (35):

(35) 向后看是为了更好地向前看。

Xiang-hou-kan shi wei-le geng-hao de xiang-qian-kan.
Toward-back-look is for better MOD toward front.
Looking back is for the purpose of looking forward more effectively.

To sum up, In the Ego-perspective mapping, both Chinese “前” and Japanese “前” are predominantly used to indicate the future. However, when combined with terms like “eye” or “face”, the usage of “前” in Chinese is restricted to pointing to the “present” moment. For example, expressions such as “mian-qian”, “yan-qian”, and “mu-qian” imply a direct, immediate temporal relationship, which differs from the usual use of “前” to refer to the future.

In the comparison of “后” and “後”, while “后” in Chinese can indicate the past, in Japanese, the past is also sometimes expressed through references to locations behind the ego, but “後” does not explicitly mark this temporal relationship. This suggests that under the Ego-perspective mapping, the range of usage for “前” and “后” in Chinese is broader than the usage of “前” and “後” in Japanese. In other words, Chinese can use “前” and “后” in a wider range of temporal contexts, while Japanese typically relies on body movement metaphors to express past-related concepts.

The SEQUENCE AS POSITION model reveals a striking cross-linguistic alignment in how Chinese and Japanese employ spatial terms to encode temporal order. Both languages consistently use qian (前, “front”) in Chinese and mae (前) in Japanese to denote earlier temporal positions, while hou (后, “back”) in Chinese and ato (後) in Japanese mark later positions. This pattern underscores a profound cognitive homology in the conceptualization of temporal sequences as spatial paths, transcending differences in metaphorical framing and linguistic structure. Such synchronic consistency may reflect the indirect influence of Chinese qian/hou (前/后) concepts, particularly through the coexistence of Sino-Japanese loanwords (zen/go 前/後) and native lexemes (mae/ato 前/後) in Japanese (Fiddler, 2024).

From a diachronic perspective, the spatiotemporal metaphors of Chinese qian/hou and Japanese zen/go exhibit deep-rooted cognitive parallels. As shown in Table 4, Sino-Japanese cognates like yiqian (以前, “before”) and yihou (以后, “after”) in Chinese, alongside their borrowed counterparts

izen (以前) and igo (以後) in Japanese, demonstrate nearly identical semantic structures and cognitive mappings. Despite their shared Sinographic origins, these terms resist semantic drift, maintaining a strict alignment with objective temporal sequencing. For example:

- 36.a. 三年以前 sannian yiqian (three years ago)
- b. 今晚以后 jinwan yihou (after tonight)
- c. 百年以前 hyaku-nen izen (a hundred years ago)
- d. 明治以後 Meiji igo (post-Meiji era)

In (36a) and (36c), yiqian anchors the described time to a reference point, as the speech moment, locating it earlier along the temporal path. This “front-earlier” mapping is preserved intact in Japanese, despite the term’s borrowed status. Similarly, in (36b) and (36d), yihou and igo position the time being described at a later point relative to the reference time (e.g., “a hundred years” or “Meiji era”), mirroring the objective ordering of entities in a queue (e.g., “front rows” precede others). Comparable temporal sequencing manifests in expressions like “precedent” (前例), as shown in (37):

- (37)a. 这样的事情已经有了许多前例
- b. 新企画に前例がないのは当たり前です

The Chinese “qianli” (前例) in (37a) anchors historical precedents as reference points along a temporal path, with subsequent events adhering to this sequential logic. The Japanese “zenrei” (前例) in (37b) similarly marks precedents as front positions in temporal sequences, positioning current events (e.g., new projects) as subsequent path locations. Both languages share the cognitive model of “time as an ordered queue,” where precedents function like front queue positions providing spatial references, while “no precedent” implies path gaps requiring unconventional solutions. The Chinese “qian” in “qianli” transcends mere past reference, spatializing historical events as observable resources (e.g., “citing precedents”), whereas Japanese “zenrei,” despite borrowing Chinese form, similarly relies on the “front=visible/referenceable” spatial metaphor. This concretization of temporal experience as spatial accessibility reveals a shared Sino-Japanese cognitive framework of “temporal sequence as physical queue,” with “front” endowing precedents with guiding functions.

Even in negative constructions (“no precedent”/“前例がない”), both languages maintain cognitive coherence. “No precedent” does not negate temporal sequences per se but emphasizes the “gap state” within existing paths, requiring innovative positioning. Such expressions depend on the metaphorical presupposition of “path integrity” – the expectation of coherent event sequences along timelines, where gaps constitute cognitive anomalies. This demonstrates that Sino-Japanese “precedent” sharing extends beyond lexical forms and semantics to encompass cultural consensus on temporal orderliness: history as an observable, classifiable, and citable linear sequence perpetually providing cognitive coordinates for the present.

From the EGO-perspective, Japanese exhibits cognitive parallels with Chinese in temporal conceptualization, as evidenced by the following examples:

38.a. 我们的前途是光明的 *women de qiantu shi guangming de* (Our future is bright)

b. 私は前途に希望を見失いかけていた *Watashi wa zento ni kibou o miushinai kakete ita*
(I was beginning to lose hope for the future)

In (38a), the Chinese term *qiantu* (前途, “future prospects”) spatially projects the future as a visible destination along the observer’s (ego’s) forward path. The “brightness” metaphor (*guangming* 光明) not only conveys positive anticipation but also relies on the EGO-P logic of “future as frontal space”—where the self, as a traveler, associates the visibility and luminosity of the path ahead with controllability over the future. Similarly, the Japanese *zento* (前途) in (38b) operates within the same cognitive framework: *mae* (前, “front”) marks the future as the ego’s facing direction, while the phrase *kibou o miushinai* (希望を見失い, “losing hope”) materializes emotional states as spatial disorientation (e.g., “path obscured”). Despite their opposite emotional valences (positive vs. negative), both expressions anchor temporal reasoning in EGO-P, conceptualizing the future as a spatial domain requiring “visual navigation” or “exploration,” thereby emphasizing the self’s dynamic agency along the temporal axis.

The metaphors of *guangming* (光明, “brightness”) in Chinese and *kibou* (希望, “hope”) in Japanese both hinge on visual-spatial extensions: brightness symbolizes clarity and accessibility, while “losing hope” metaphorizes obstructed vision or path ambiguity. This tripartite “vision-space-time” mapping is isomorphic across Chinese and Japanese—the future is conceptualized as an observable landscape ahead of the self, whose conditions (luminosity, obstacles) directly influence the subject’s decisions and emotions. These parallels demonstrate that the “front-back” temporal relations in both languages not only mirror spatial-temporal correspondences but also share structural homologies in contextualized usage, revealing a deep-seated cognitive synergy that transcends linguistic and cultural boundaries.

However, it is critical to note that while Sino-Japanese loanwords (e.g., *zen* 前, *go* 後) retain the temporal cognitive logic of their Chinese etymological roots, their usage frequency in Japanese remains constrained by the dominance of native lexical cognition. The term *qiántú* (前途, “future prospects”) occurs 36 times in temporal usage within native Chinese contexts, whereas its Japanese counterpart *zento* (前途) appears only 3 times, accounting for a mere 0.11% of temporal instances in Japanese. These results demonstrate that despite their shared Sinographic form, Japanese speakers predominantly rely on native cognitive schemas for everyday temporal reasoning, marginalizing Sino-Japanese loanwords like *zento* to specialized semantic domains (e.g., formal or literary registers). The tension between lexical heritage (rooted in Chinese temporal logic) and indigenous cognition (prioritizing native *mae/ato*) underscores the resilience of cultural-linguistic ecosystems in mediating contact-induced changes, preserving native frameworks even as borrowed forms linger in peripheral lexical niches.

Returning to the quantitative patterns illustrated in Table 3, while Japanese 前 and 後 as native terms dominate SEQUENCE AS POSITION (SAP) mappings (e.g., *mae*: 2,424 “earlier”; *ato*: 1,313 “later”), their Sino-Japanese counterparts *zen* (前) and *go* (後) exhibit similar SAP-oriented tendencies (*zen*: 292 “earlier”; *go*: 1,564 “later”) but with markedly reduced frequency. This lexical stratification reflects a cognitive division of labor: native terms anchor embodied, context-bound

temporal sequencing, whereas Sino-Japanese loanwords—though etymologically tied to Chinese qian/hou (前/后)—are semantically narrowed to abstract, decontextualized temporal boundaries (e.g., izen 以前, “herebefore”; igo 以後, “hereafter”).

Notably, the semantic evolution of borrowed terms like zen/go (前/後) diverges from their Chinese origins. In Chinese, qian (前) retains multidirectional polysemy, encoding past (qianren 前人, “predecessors”), present (muqian 目前, “at present”), and future (qiantu 前途, “future prospects”) within Ego-perspective frameworks. By contrast, Japanese zen—despite sharing the same character 前—loses its embodied Ego-perspective associations (only 3 future instances) and becomes specialized for SAP’s “earlier” in fixed compounds (e.g., zenhan 前半, “first half”). This divergence underscores how Japanese repurposes Chinese-derived forms to reinforce objective temporal order, diluting their original subjective, observer-centric nuances.

How space is used to understand time is strongly shaped by the communicative functions and social structures that constrain it (Sinha & Bernárdez, 2015). More specifically, it is influenced by religion, cultural values, language, and social environment (Fulmer, Crosby et al., 2014).

Religion provides the earliest and most enduring meaning-frames for the serialization of time (Fulmer, Crosby et al., 2014). Chinese notions of time have been deeply shaped by Confucianism, Daoism, and Buddhism; these traditions together have forged a distinctive cognitive framework for time. Confucianism, with “ren” and “yi” (benevolence and righteousness) at its core, emphasizes social ethics and moral cultivation, advocates harmony and responsibility in interpersonal relations, and treats history and morality as a continuum. Confucian reverence for ancestors and the importance placed on ancestral lineage make “front” and “back” symbolically significant within temporal concepts (Yu, 2012). Daoism stresses following nature, inner freedom, and non-action (wu-wei), advocating harmonious coexistence with the natural world. Under the influence of Daoist thought, the passage of time is not viewed as strictly unidirectional or linear but as adaptable and flexible. Daoist ideas of wu-wei suggest that people should follow natural laws, so temporal ordering becomes less fixed (Li & Cao, 2021). This flexible understanding of temporal flow gives Chinese temporal concepts greater elasticity and fluidity, allowing them to adapt to different social and natural environments (Li, 2008). Buddhism, which arrived in China from the first century CE onward, introduced notions of karma, rebirth, and the infinity of time, further complicating temporal understanding. Buddhism regards time as non-linear and cyclical. The doctrines of causality and reincarnation frame time as an endless process, reinforcing the idea of time’s flow. Buddhist thought—compatible with Daoist cyclical notions—collectively promoted flexibility in Chinese temporal cognition; especially at religious and philosophical levels, time ceased to be merely a physical phenomenon and became intimately linked with spiritual, moral, and life-cycle concerns (Oh & Chung-Hwa, 2000; Meulenbeld, 2019).

On the other hand, Confucian influence spread to Japan—Confucian ideas were transmitted to Japan beginning around the fifth century—strengthening hierarchical relations in Japanese society, especially moral norms of “ruler–subject” and “seniority and rank,” thereby enhancing Japan’s sense of temporal order. Confucian culture in Japan produced a time conception centered on hierarchy and order, so the passage of time was understood as an expression of interpersonal relations and social responsibility. Buddhism, introduced to Japan in the sixth century from China and Korea, combined

with native Shinto to offer a view of impermanence (*mujo*). Studies have shown that this process, at both the discursive and practical levels, reinforces attention to the present and the immediate, thereby to some extent altering or weakening the traditional sacred orientation of time and highlighting its pragmatic and momentary significance (Heine, 1991; Hull, 1998).

Beneath the religious framework, collectivist social structures and communicative functions amplify the need for the observability and coordinability of “front/back” metaphors. Chinese collectivism is mainly manifested at social and state levels. Collective organization at the state level requires mobilizational rhetoric oriented toward the “future”, the typical functions of such discourse are cohesion, mobilization, and aligning individual action with a shared timetable (Yan, 2010; Mansour Javidan 2002). Moving metaphors—treating “I/we” as agents moving along a temporal path (moving-ego)—can concretize the abstract “future” as “the front we are heading toward,” and represent history or the past as “what is left behind.” Thus, in registers such as news, party and government discourse, and mobilizing speeches, the moving-ego representation that uses “front” (pointing to the future) and “back” (pointing to the past) has strong communicative utility (as discussed in 4.1). It directly links time to collective goals, routes, and tasks, facilitating calls to action and the temporal coordination of collective activities.

Japan absorbed the Confucian idea of “*wa*” (harmony), which, combined with samurai ethics of “*chū*” (loyalty), formed the core of Japanese groupism (here “*wa*” implies “obedience,” echoing “*chū*”). Examining Japan’s collectivist social organization and value orientations reveals a different set of coercive demands. Modern Japan’s organizational forms, ranging from village mutual aid to corporate groupings, transformed loyalty to leaders into an emphasis on public order and discipline (Takamatsu R, 2024). Consequently, downplaying individual subjectivity became an important communicative signal, and a preference for order reinforced linguistic encoding of sequence positions (for example, when using spatial metaphors for time, self-centered reference frames are less often used).

A precise preference for positional sequencing can also be realized through grammatical tools, especially tense marking. Speakers of languages with tense marking have an advantage in remembering and organizing events sequentially, whereas speakers of languages lacking tense marking perform relatively less well in sequencing tasks (Lera Boroditsky, 2002). Tense, as a grammatical device, provides a low-cost, reusable anchor for “the before-and-after of events” in temporal cognition. In other words, tense converts information that would otherwise need contextual inference or additional contextual cues into syntactic information, thereby reducing reliance on embodied/observer-perspective metaphors (such as “I am moving toward the future”) to order events.

To make this argument more tangible, two example sentences are contrasted and their informational paths explained:

(1) 会社までは三十分ほどで着いた。午後二時前だった。

“It took about thirty minutes to get to the company. It was just before 2:00 p.m.” — In this sentence, the past tense of “arrived” (着いた) clearly marks the first clause as an event that has already occurred; the subsequent use of “before” indicates the point in the temporal sequence rather than relying on the speaker’s movement metaphor to explain order.

(2) 回头看，为了向前走。

“Looking back, in order to move forward.” — This is a typical embodied, subject-centered metaphor, often found in literature or mobilizing discourse. In institutional or procedural contexts, such expressions are ill-suited to substitute for positional markers because they cannot directly convey “which specific point in the procedure” is being referred to. The first example demonstrates the division of labor between syntactic tense and positional words; the second shows the restricted pragmatic domain of embodied metaphors.

The grammaticalization of tense functions as a “direct cue” rather than an “indirect inference.” In real-time language comprehension, listeners rely on immediately extractable syntactic forms to establish temporal relations between events; verbs with explicit tense morphology provide an instant anchor for an event’s position on the timeline when the input arrives, substantially reducing the need for contextual inference and situational simulation (including embodied imagination). Embodied metaphors (“I walk toward the future”) are essentially a strategy that maps motion experience onto time to compensate for absent temporal information: when grammar does not supply sufficient ordering cues, people use bodily motion metaphors to construct sequences. But once tense “automatically” supplies that information, the cognitive payoff of embodied metaphors declines—they become redundant or only add extra value in special rhetorical or emotional contexts.

At the societal level, the above differences are not merely internal linguistic developments but are deeply shaped by each society’s differing expectations regarding “timing” and “efficiency.” Chinese people pay more attention to contextual information (R E Nisbett 1, 2001). Cultural discourse has long emphasized timeliness and adapting to circumstances. Expressions such as “assess the situation and act accordingly” (审时度势), “adapt measures to circumstances” (随时制宜), and “seize the opportune moment” (择机而动) indicate that temporal cognition adjusts according to context and interpersonal relations (Liu, 1974). This context-first view of time is reflected in language as a pattern of flexible switching between expressive modes, rather than merely locating events on an objective timeline. Everyday practice also reflects this tendency: popular observance of lunar festivals and seasonal foods shows that folk temporal rhythms have not been entirely replaced by the Gregorian calendar or clock time; social occasions often tolerate lateness among acquaintances, while business and official affairs rely on punctuality to maintain order. Thus, relationships and context frequently take precedence over temporal precision, making discourse on “timing,” “opportunity,” and “seizing the moment” both common and persuasive.

Japan’s modernization trajectory pushed the symbolic and institutional standardization of time toward a different extreme. Since the Meiji Restoration, Western mechanical notions of time and efficiency were rapidly internalized nationwide through education, railways, and factory management—“time is efficiency” and “punctuality is civilization” became public values. The culture of railroad timetables measured to the second, workplace labor norms bounded by time, and the “overtime culture” all define time as linear, measurable, and not to be casually violated (Tsuiji, 2006). At the same time, Japan’s high demand for synchrony (for example, team coordination that requires members to align tightly in time and rhythm) makes the SEQUENCE AS POSITION metaphor more likely to become the default expression. Arranging events by precedence and

calibrating actions to external standards becomes normal in everyday discourse. These institutional differences then feed back into language use. China exhibits coexistence of “symbolic time and traditional time”: the official and institutional levels widely adopt Gregorian calendars, punch cards, and schedules, whereas folk, religious, and many social practices retain the lunar calendar, seasonal markers, and “seizing the right moment” discourse. This “dual temporal cognition” in language allows multiple time metaphors to coexist and alternate. In Japan, because education and industry fully disseminated symbolic time during modernity, the metaphorical system anchored in linear, institutionalized time is more stable and consistent, which is reflected in corpus data by a high concentration of “front/back” used primarily for sequence positioning.

In sum, the distribution of “front/back” metaphors in language is not only a matter of semantic mapping but also a projection of social institutions, historical choices, and cultural values into discourse. When a society emphasizes “context first and relational flexibility,” its language preserves and develops more agentive and adjustable temporal expressions; when a society prioritizes “efficiency, uniformity, and institutionalization,” its language tends to objectify time as a linear sequence that should not be arbitrarily deviated from. Understanding this helps situate the surface differences observed in corpora within a broader socio-historical context and provides theoretical coordinates for further empirical research—for example, examining the distribution of “front/back” mappings across different registers (official/news/folk discourse) can more clearly reveal the tension between institutionalized time and traditional temporal conceptions in language practice.

7. Conclusion and future considerations

Based on large, reproducible corpora (CCL and BCCWJ), this study applies a multi-step analysis of frequency, collocation, and context to address previous limitations and provide empirically grounded conclusions. During annotation, embodied, action-linked Ego-Perspective and decontextualized Sequence-as-Position reference frames were clearly differentiated. Through the comparison of Chinese and Japanese corpora, combined with lexical genealogy (such as contrasts between Sino-Japanese loanwords and native vocabulary) and register analysis, the research reveals semantic divergence in formally similar words across the two languages. The results indicate a dynamic interaction between observer-centered and event-centered mappings in Chinese, where *qian/hou* flexibly encodes past, present, and future orientations. In Japanese, native *mae/ato* and Sino-Japanese *zen/go* predominantly express objective temporal sequencing, reducing the prominence of ego-centered temporal metaphors in favor of decontextualized event order. These findings emphasize the importance of reference-frame differentiation in resolving semantic ambiguity and underscore the role of lexical stratification in shaping culturally embedded temporal schemas. Both languages share the fundamental TIME-AS-SPACE metaphor (e.g., “future → self → past”) but diverge in realization: Chinese tends to lexicalize embodied mappings through nominalization and positional expressions (e.g., *qiantu*, *qianjing*), whereas Japanese more often retains such mappings within verbal and syntactic constructions, reflecting a stronger sequence-oriented tendency. Religious belief, cultural values, language contact, and social context jointly

contribute to these cross-linguistic differences.

The results support Conceptual Metaphor Theory (CMT) and the distinction between Ego- and Sequence-based reference frames, while proposing a three-dimensional explanatory model integrating lexicalization paths, register choice, and language contact history. This model elucidates how a shared cognitive schema becomes linguistically instantiated in distinct languages. Overall, Chinese exhibits greater referential flexibility, whereas Japanese favors a more sequence-based lexicalization of temporal concepts. Integration of large-scale corpus evidence with behavioral and neurocognitive approaches, multilingual comparison, and diachronic analysis is expected to further clarify how language, cognition, and sociocultural context collectively construct temporal experience.

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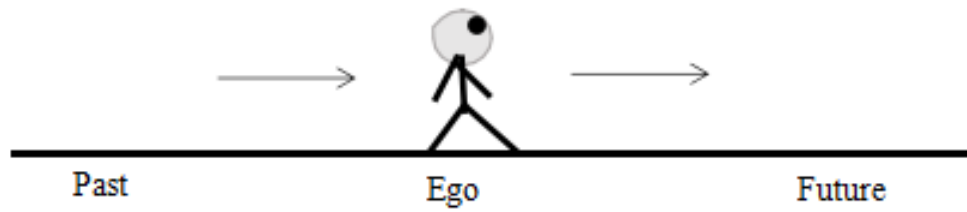


Figure1: the Moving Ego mapping



Figure2: the Moving Time mapping

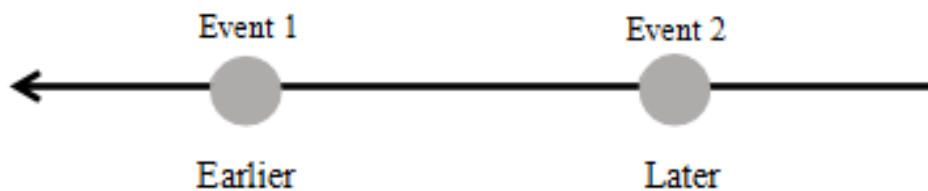


Figure3: SEQUENCE AS POSITION mapping

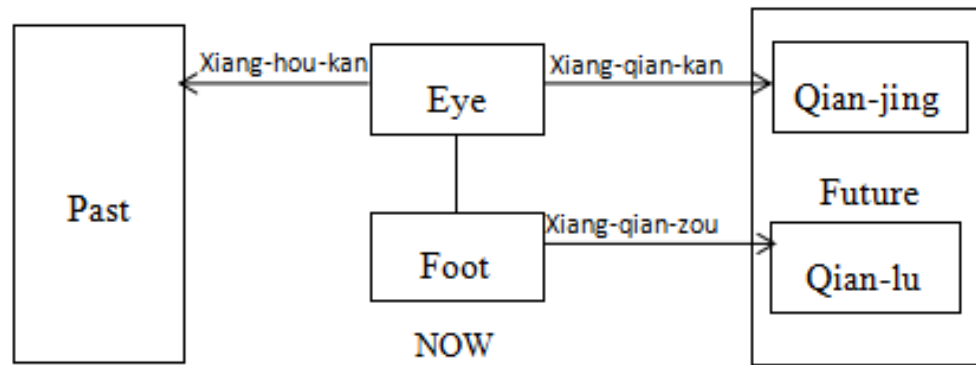


Figure4: the moving ego mapping of qian&hou”

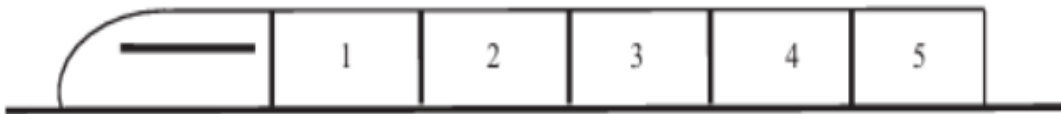


Figure5: Times conceived of as a moving train

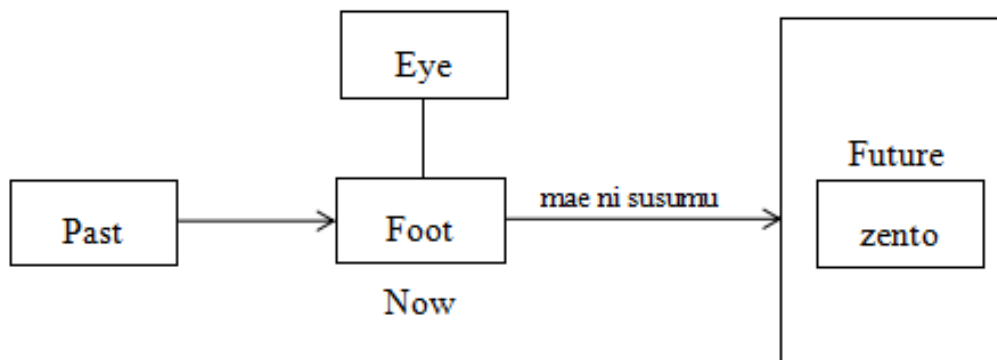


Figure6: the moving ego mapping of mae

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Ethical approval

Ethical approval was not required for this study, as all data were obtained from publicly available corpora and the research did not involve human subjects.

Informed consent

This article does not contain any studies requiring informed consent from human participants.

Competing interests

The author declare no competing interests.

Author Contributions

The author was solely responsible for the conception, design, execution, and analysis of the study, as well as the drafting and revision of the manuscript.

Data Availability

The raw data used in this study were obtained from publicly accessible corpora, including the Center for Chinese Linguistics PKU (http://ccl.pku.edu.cn:8080/ccl_corpus/index.jsp) corpus and the Balanced Corpus of Contemporary Written Japanese (<https://chunagon.ninjal.ac.jp/bccwj-nt/search>), which can be accessed through their respective official websites. The datasets generated and analyzed in the course of this study, including extracted samples and annotated data, are not publicly available at this stage, as they will be used in the author's ongoing and future research. Upon reasonable academic request, the data can be made available in a manner that does not compromise subsequent research.