

Research article

Parallelisms in lexical changes across languages: Analogical changes in Chinese and French time words

IWATA, Ray
Komatsu University

Abstract: This paper highlights a methodology featured in a larger study called contrastive geo-linguistics, which aims to improve the interpretation of linguistic maps in a way that is unique and distinct from typical methods used in previous research. This study illuminates the observable parallelisms between Chinese and French (Gallo-Romance) time words, focusing on the historical development of words, such as “daytime,” “noon,” “every day,” the days of the week (Tuesday, etc.), and day-specific indicators such as “today” or “tomorrow,” etc. It also distinguishes the nature of lexical changes specific to each language. We analyzed four maps: three of them being from our larger previous study on Chinese dialects and the other being based on the ALF (*L’Atlas Linguistique de la France*). Observation and comparison of these maps lead us to assume that a common condition for change was the reduction of the head part of words meaning “day,” *-di* in French, and *-ri* in Chinese, and the resultant crisis of losing their lexical identities. This condition motivated two types of changes. One is referred to as “synonymic substitution type,” which is characterized by the replacement of the heads of words with autonomous free forms, such as *-jour* in French and *-tian* in Chinese. This type is confirmed in the vocabulary of each language. Another type is referred to as the “analogy type.” Our analyses have revealed that the function of analogy yielded different effects between French and Chinese. In Northern French dialects, it contributed to preserving *-di*. Meanwhile, in Northern China, it resulted in radical changes, by which time words such as “today” and “morning” came to reconstruct their forms by acquiring any bound morpheme that semantically would have no direct connection with the notion of time. We interpret this phenomenon using a new notion titled “analogical attraction.”*

Keywords: Lexical change; Time words; Parallelism; Analogy; Analogical attraction; Synonymic substitution

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1. Introduction

This paper illuminates the observable parallelisms between Chinese and French (Gallo-Romance) time words and studies the specific changes that occur in one language while referring to what occurs in the other language. This investigation was informed by the results of a previous project titled *The reexamination of geolinguistic interpretation in the reconstruction of linguistic history*.¹ One of the objectives of this project was to improve the method of interpreting linguistic maps in a way that is unique and distinct from the typical methods of interpretation in previous research. The lexical maps of Japanese, Chinese, and French were compared and analyzed through a method named “contrastive geo-linguistics” (Iwata 2017). We expect that a contrastive study of genetically unrelated and geographically remote languages would heighten the certitude of map interpretation by examining whether one interpretation applied to one language can be justified in another. While the results from this study revealed parallel changes among the lexical data of the languages, it also brought to light the conditions and motivations that gave rise to these parallelisms, thereby distinguishing language-universal and language-specific phenomena.

This paper furthers this investigation along by analyzing lexical items in Chinese and French (Gallo-Romance).² It focuses on and compares the process of lexical change occurring in the Chinese and French time words (such as words that describe the time of day, the days of the week, etc.) First, this paper will point out parallelisms between the two languages regarding the conditions and motivations for changes. Then, it will discuss the peculiar changes of Northern Chinese time words, which were triggered by a factor we refer to as “analogical attraction.”

2. Words for comparison

The target words for comparison are those representing “day” and its related time concepts. The standard forms of French and Chinese are given here, with the latter spelled in Pinyin Romanization.

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² Professor Thibault, on the occasion of the Conference, recommended the use of the term “Gallo-Romance,” instead of “French,” in reference to ALF maps. However, this paper adopts the popular name “French” unless the distinction of the two terms is necessary.

	French	Chinese
“day”	jour	rizi
“daytime” ³	jour	baitian
“everyday”	chaque jour	meitian, tiantian
“always”	tou jours	(zongshi)
“noon”	midi	(zhongwu)
“Tuesday”	mardi	(xingqi er)
“Sunday”	dimanche	xingqi ri , xingqi tian
“today”	(au jour 'hui)	jintian
“tomorrow”	(demain)	ming tian
“yesterday”	(hier)	zu tian

We focus on the usage of the forms *jour* and *di* for French and *ri* 日 and *tian* 天 for Chinese, indicated in bold. Some forms that do not contain these elements are irrelevant to the present study and are therefore presented in parentheses.

Jour in standard French can be used as an autonomous free morpheme, while *di* is used either as an ending of an unanalyzable form (*midi*, *mardi*) or a prepositional element (*Dimanche*). *Jour* also appears in the agglutinated form *aujourd'hui* (< à+le+jour+de+hui).⁴ However, this *jour* is excluded from the present consideration because, unlike the forms representing the days of the week (*lundi*, *mardi*, etc.), it is not shared by the forms for “tomorrow” and “yesterday,” i.e., *demain* and *hier*.

In standard Chinese, while both *ri* and *tian* are used as free morphemes in the word for “Sunday” (*xingqi ri*, *xingqi tian*),⁵ they are bound in other words. In the word *rizi* for “day,” *ri* is used as a stem with obligatory noun suffix *-zi*.⁶

3. History of the words representing the concepts “day” and “daytime”

There are two important points to take note of. One, unlike Japanese, which is divided into Western and Eastern groups by a North-South dialectal boundary, French and Chinese share a similar Northern vs. Southern dialectal contrast, thereby facilitating a contrastive consideration. Two, Chinese dialects can roughly be divided into Northern

³ Time from sunrise to sunset.

⁴ Refer to ALF72 for the forms representing “Sunday.” An interpretative map for this notion appears in Brun-Trigaud (2005:53, Carte 18), for which authors posit the Northern origin of the form *aujourd'hui*, which has, then, been propagated to the southern area through Paris and along the rivers such as Loire.

⁵ In Chinese, there are two words meaning “week”: *xingqi* and *libai*. The use of *ri* and *tian* is confined to “Sunday,” while when referring to Monday to Saturday, the respective number from one to six is added to *xingqi*, namely *xingqi yi* (1) “Monday,” *xingqi liu* (6) “Saturday” etc.

⁶ In Northern Chinese, the single use of the monosyllabic form *ri* strongly tended to be avoided because it clashed with a homophonous verb meaning “to enter,” and it eventually became a taboo word relating to sex.

and Southern dialects with two boundaries, the *Yangtze River* and the *River Huai*. However, the Southwestern area, including Yun’nan, Guizhou, and South Sichuan, came under Chinese rule in 14 c. AD and generally share linguistic features with Northern dialects.

3.1. French

In French, the synonymous words *di* and *jour*, which originate from Latin *dies* and *diurnum*, have long coexisted and have always been in mutual competition. According to Gilliéron and Roques (1912), Chapter XI (Japanese translation, Okawa et al. 1996),⁷ these two words were not precise synonyms: *di* represented an abstract meaning of “day,” and *jour* represented a concrete meaning of “brilliance” and “daytime” (the time from sunrise to sunset). However, Wartburg’s etymological dictionary of Gallo-Romance languages (*Französisches etymologisches Wörterbuch. Eine Darstellung des galloromanischen Sprachschatzes*, hereafter referred to as FEW) commented that since the 4th century these two words equally represented the two meanings, i.e., “day” and “daytime”.⁸ ALF (Carte 727) indicates that *jour* has overwhelmed *di*, and that the *di* type forms, as an autonomous free form, have only survived in three mutually isolated Southern areas of France: Hautes-Pyrénées and its adjacent area, Pyrénées-Orientales, and in one locality of the Alpes-Maritimes Prefecture.

3.2. Chinese

In Chinese, the monosyllabic word *ri*, which originally represented “sun,” appeared as early as the oracle bone inscriptions of 11–12 c. BC. It represents both the concepts of “day” and “daytime.” In other words, the two concepts “day” and “daytime” were not originally distinguished by their word form. However, in the later history of the Chinese language, the forms differentiated as mentioned below.

For the abstract concept “day” (e.g., choosing a suitable day for a wedding), the form *ri* has prevailed throughout the Chinese-speaking territory. In Southern dialects, the device for differentiating the two concepts under consideration is to add a suffix while sharing a common stem *ri*. Some examples are shown here in Pinyin Romanization, instead of the phonetic transcription of the local dialect, which is irrelevant to the present discussion.

⁷ For our reading of the works by Gilliéron and his followers, we are indebted to the Japanese translations by Y. Okawa, W. A. Grootaers & H. Sasaki, which appeared serially on the Conference Proceedings of Dialectological Circle of Japan, no. 47–66, 1988–1998.

⁸ My sincere thanks to Professor Thibault, who translated those FEW articles relevant to the present study.

	“day”	“daytime”
Wenzhou (Zhejiang)	<i>rizi</i>	<i>rili</i>
Nanchang (Jiangxi)	<i>rizi</i>	<i>rishang</i>
Fuzhou (Fujian)	<i>rizi</i>	<i>rizhong</i>

Note here that *-li* and *-shang* in *rili* and *rishang* are the suffixes that originally meant “in” and “upper,” respectively. How the notion of time became associated with that of location or direction will be discussed later in Section 6. The form *rizhong*, somewhat resembling French *midi*, literally means “day-mid.”⁹

In Northern China, a form *bairi*, which had a “non-head + head” construction (literally, *bai*, meaning “white” or “brilliant” + *ri* “day”), extended its semantic range from “sunshine” to “daytime” (from sunrise to sunset), so that it was distinguished from *rizi*, which denoted “day.” This extended usage of *bairi* has been attested in the literature of Early Middle Chinese (4th–5th century).¹⁰ As a matter of fact, this change was not simply semantic, but more significant was that *bairi*, meaning “daytime,” was incorporated into the word group of time concepts, such as *jinri* for “today,” *mingri* for “tomorrow,” *zuori* for “yesterday” and *meiri* for “everyday,” by sharing the head morpheme *ri*.

Later, in Northern China, the stem *ri* underwent a reductive process and ultimately changed to the diminutive suffix *-r* in a number of dialects. Phonetically, this change was due to the development of trochaic stress, which in Northern Chinese generated the final syllables of a number of bisyllabic colloquial words as toneless during the past millennium. As for *bairi*, its head *ri* fused with the preceding non-head *bai* through the intermediate stage of *er*. Note the following:

bairi (2 syllables) → *bai'er* (2 syllables) → *bair* (1 syllable, phonetically [par])

Fig. 1 represents the distribution of the forms for “daytime.” On this map, word forms are classified into three major types: the *ri* type (red symbols), *tian* type (black symbols), and others (green symbols).

⁹ This form, distributed in the Min area, is attested in the literature of Old Chinese (*Xunzi, Yibing Chapter* 荀子·議兵篇). However, it is used with the meaning of “from morning to noon.”

¹⁰ For example, such a description as *Bairi sha ren* “kill him in daytime” appeared in the official history record *Houhanshu* (後漢書).

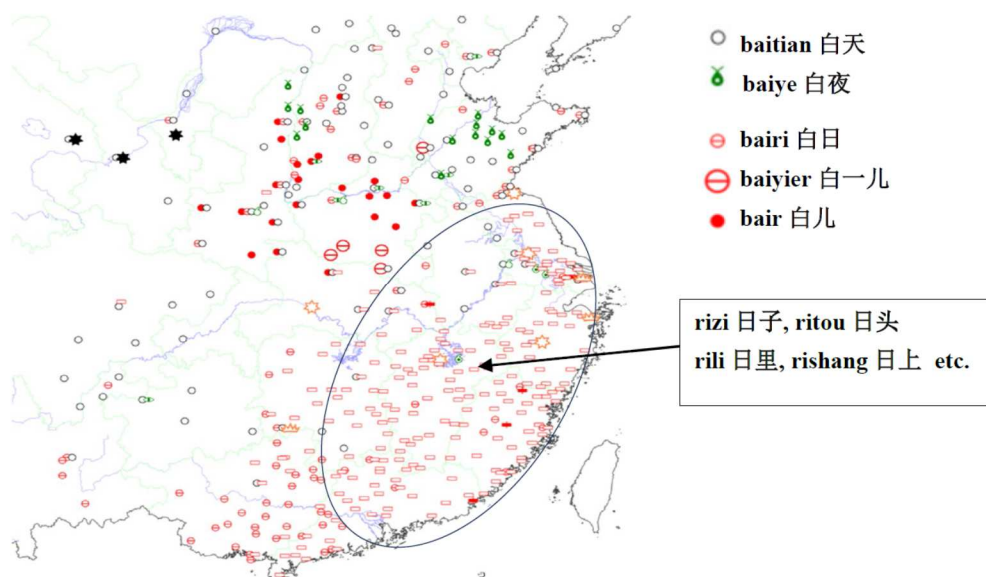


Fig. 1 Chinese words for “daytime”

The *ri* type includes the form with the diminutive suffix *-r*, which is indicated by the filled red circular symbol. It is seen that the use of *ri* prevails throughout China, especially in the Southeastern area, either as the stem (e.g., *rili*) or as the head (e.g., *bairi*). Meanwhile, in the Northern and Southwestern areas, the use of *baitian*, which is indicated by the small black circular symbol, is in the process of expansion, while the use of *bairi* is diminishing. Along with this trend, the present status in the standard language, namely *rizi* “day” vs. *baitian* “daytime,” is very recent. It reflects the replacement of the original head *-ri* by *-tian* for the word representing the notion “daytime.”

Reduction of the head *-ri* in the form *bairi* is also reflected in the emergence of a seemingly strange form *baiye*, which literally means “white night,” in Northern China. Fig. 1 indicates this with green symbols. This form must have changed from *bairi* by analogy to the word *heiye*, which literally means “black night” and is widespread in Northern China as the form for “night.” From the result of these changes, “daytime” and “night” have come to share a common head *ye*: *baiye* vs. *heiye*. This analogy would not have been possible without the phonetic and semantic reduction of *ri* in the form of *bairi* as well as that of *-ye* in the form *heiye*. These two heads must have been weakened to such an extent as to merely represent an abstract sense of “time.”

3.3. Short summary

The overall trend of changes common in French and Chinese time words was the reduction of the heads *di* and *ri*, which then tended to be replaced by *jour* and *tian*. However, there is a fundamental difference between these two languages. In French, the two forms *di* and *jour* have long been competitive as synonymous words representing both “day” and “daytime.” In Chinese, the use of *tian* in time expressions is recent, and it can still be used autonomously with its original meaning “sky,” e.g., *Tian hei le* “It’s dark now.” In addition, in Southern China, the dialects came to distinguish these two concepts with the same stem *ri*, but using a variety of different morphological devices.

4. The destinies of French *di* and Chinese *ri* reflected in other time words

In this section, we will observe the maps of other time words. Since French and Chinese do not share any common lexical item reflecting the tendency of head reduction, alternatively, we compare maps that exhibit similar patterns of geographical distribution.

For French, we choose the concept “noon” (ALF 1629), which exhibits the Northern vs. Southern contrast of the word forms, namely the Northern *midi* vs. the Southern *mijour*. In addition, we also refer to the words denoting “always” (ALF 1318) and “Tuesday” (ALF0813). The latter represents any specific day within a week, such as Monday and Wednesday.¹¹

For Chinese, we choose the concepts “everyday” and “today,” which both exhibit the Northern vs. Southern contrast of the forms. The concept “today” actually represents those days preceding or following “today,” such as “tomorrow” or “yesterday.”¹²

4.1. French “noon” and “Tuesday”

Fig. 2 is a remake of the map of Gilliéron and Roques (1912), which appeared in its Japanese translation by Okawa et al. (1996-7).¹³

¹¹ Refer to Brun-Trigaud (2005:206, Carte 274) for the distribution of the forms representing “Wednesday.”

¹² Maps for “tomorrow,” “yesterday,” and their preceding and following days appeared in *Interpretative Maps of Chinese Dialects* (Iwata ed. 2009).

¹³ Gilliéron and Roques (1912) also referred to the maps of “deux fois par jour” (ALF 728), “il y a huit jours” (ALF 729), “tous les jours” (ALF 1320), and “l’après-midi” (ALF B1437).

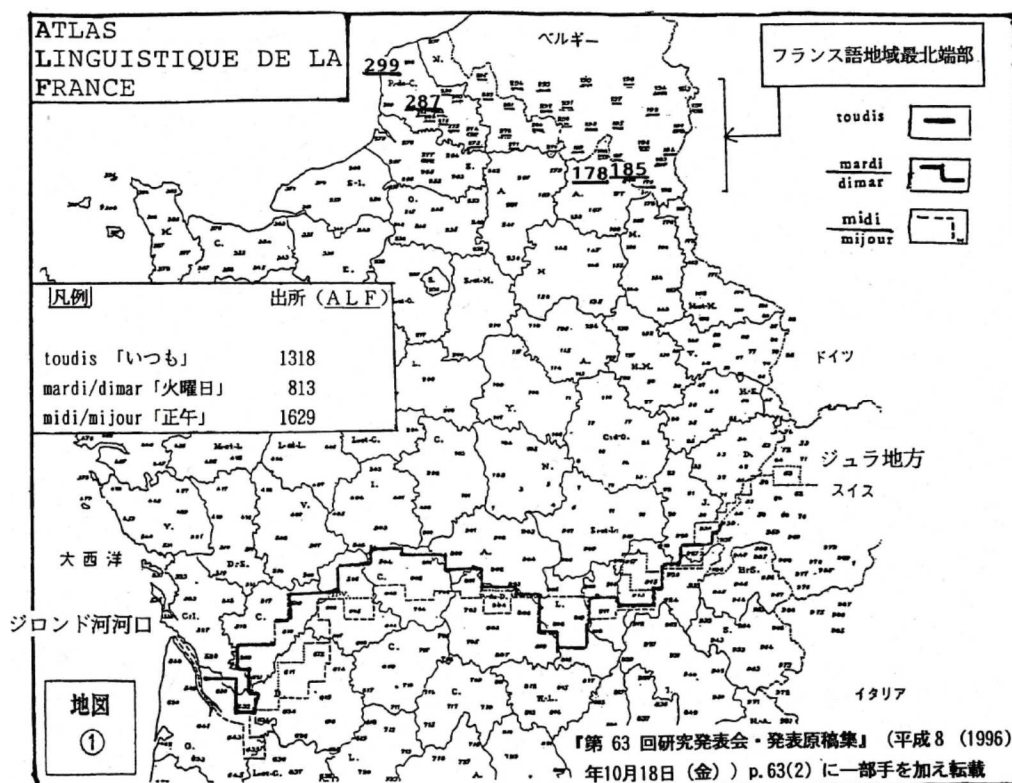


Fig. 2 A remake of the ALF maps for “noon,” “Tuesday,” and “always” (Gilliéron and Roques 1912; Okawa et al. 1996-7)

It is seen on Fig. 2 that the two isoglosses *midi* vs. *mijour* for “noon” and *mardi* vs. *dimar* for “Tuesday” almost coincide with each other. An important fact not reflected in this map is that the form *midi* has secured its territory, though limited in sphere, in Southern France, in the Pyrénées and Alpes-Maritimes regions (Refer to Map 3 appearing in Okawa et al. 1996-7:19). Note that in this area, *di* and its variants have been preserved as the form for “day.” This evidence may suggest that *midi* is older than *mijour*, once covering the entire Gallo-Romance speaking area. If this were the case, then the question arises as to why the form *midi* changed to *mijour* only in the area where the prepositional *di-* is used to denote the specific day within a week, namely *dimars*, *dimècres*, etc. In other words, why has the form *midi* been preserved in Northern France where postpositional *-di* is used?

Concerning the forms denoting the specific day of the week, Gilliéron and Roques (1912, Chapter II; Okawa et al. 1991) mentioned that the form introduced from Latin into France contained postpositional *-die*, that is, *Martis die*, instead of the one with prepositional *die*, that is, *Die martis*. However, in South France (i.e., in the area south

of the isogloss shown in Fig. 2), when this element *die* was still understood as meaning “day,” and thus analyzable for speakers, the word order was reversed to conform to a common Romance word formation, namely “head + non-head.” Later on, this prepositional *die* fused with the following element *martis*, and this change caused speakers in South France lose conscious awareness of the meaning of *di-* in *dimars*, making it unanalyzable. For this reason, *di-* was not replaced by *jour*, so the form **jourmars* was not created (Gilliéron and Roques 1912; Okawa et al. 1991). Meanwhile, in Northern France, the word order of a *Martis die* type has generally been maintained, as it is now realized as *mardi*. However, this form was no longer analyzable for speakers, and eventually *-di* came to serve as a marker indicating any specific day of the week: *lundi, mardi, mercredi, jeudi, vendredi, samedi*.

A note here is that the *dimars* type form survived at the very beginning of the 20th century in the extreme north of the Gallo-Romance area (Southern Belgium). Gilliéron and Roques (1912) were aware of this evidence, and it was philologically attested by Henri (1960, Okawa et al. 1997). Gilliéron’s insightful assumption was that this *dimars* was a retention of an older form, and therefore is different from the southern *dimars*, which is the result of innovation. It is pointed out in this connection that the form *dimanche* for “Sunday,” which contains the prepositional *di-* and is heterogeneous among the forms representing any specific day within a week, extends throughout the Gallo-Romance area (refer to ALF 405 and Brun-Trigaud et al. 2005: 93, Carte 49).

Regarding the word *midi* “noon,” FEW (Vol. 3 105) mentioned that the form *mijour* appeared in South France at a time when *di* was still understood as meaning “day,” and therefore analyzable, hence, eventually the *-di* of *midi* was replaced by *jour*, whereas in Northern France it was impossible to replace *-di* by *-jour* once the word *midi* became unanalyzable. Tentatively, this explanation is referred to as “synonymic substitution theory.” This may sound persuasive to most linguists. From the opposite point of view, however, we can say that the form *midi* was successfully preserved in Northern France owing to the function of analogy, that is, it shared the element *-di* with the *mardi* word group, and that the replacement of *-di* in *midi* by *-jour* became possible in Southern France due to the reversed word order of *dimar*, which had no phonetic association with *midi* and was thus free from the constraint of analogy. This explanation is referred to as “analogy theory.”

Fig. 2 also shows the distribution of the form *toudis*, which ends in *-di*. It is concentrated in the extreme north of the Gallo-Romance speaking zone, including Southern Belgium. The numbers with underbars indicate the localities in which both *toudis* and *toujours* are attested. The former is older than the latter. According to FEW (Vol. 3, 104), the element *-dis* in *toudis* no longer had an independent meaning when

toujours appeared as a competitor, and therefore it could not be replaced by *jour*. To this interpretation, we again add the function of analogy, which might have caused *toudis* to be associated with the words such as *midi* and *mardi*.

4.2. Chinese forms for “everyday”: From *ri* to *tian*

Fig. 3 shows the distribution of the Chinese forms for “everyday.” Word forms are mostly of a bisyllabic structure, which is either “non-head + head,” e.g., *mei* “every” + *ri* “day,” or of reduplication, for example, *riri*.¹⁴

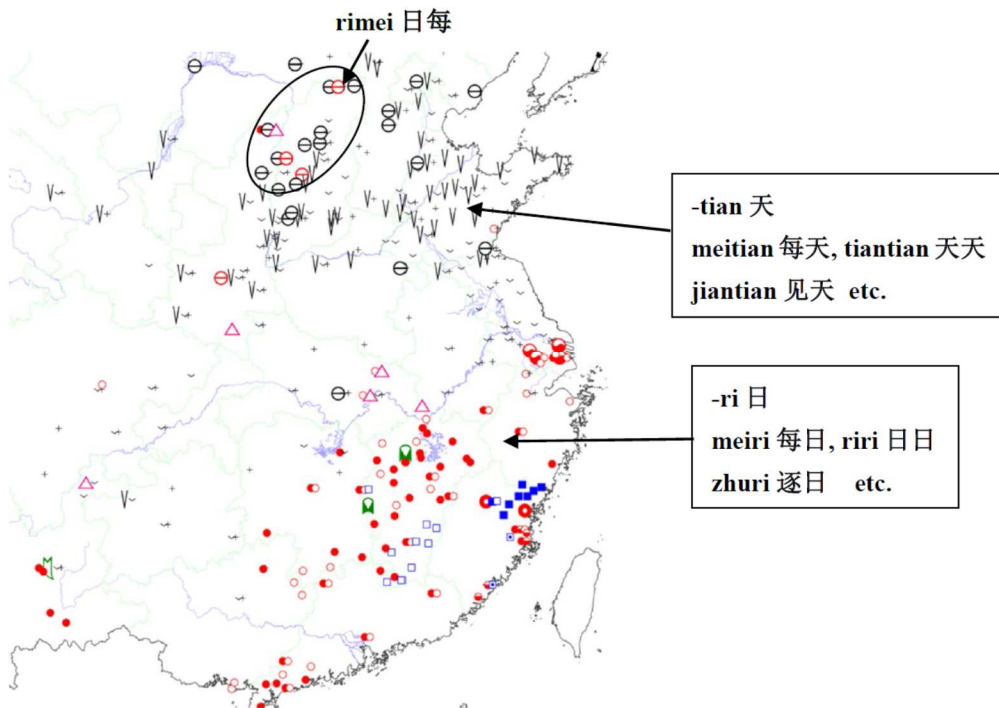


Fig. 3 Chinese forms for “everyday”

This map parallels the French word for “noon” (Fig. 2), showing a Northern vs. Southern contrast with an East-West boundary dividing forms with *-tian* and *-ri*. However, the two maps are different in that the lexical innovation for French “noon” (*midi* > *mijour*) took place in the South of the dialectal boundary, but the innovation for Chinese “everyday” (*meiri* > *meitian*, *riri* > *tiantian*) took place in Northern China.

¹⁴ Readers who are familiar with standard Chinese may argue for a difference of usage between *meitian* and *tiantian*. However, many dialect reports published in China cite these two forms as synonyms. This issue is irrelevant to the present discussion.

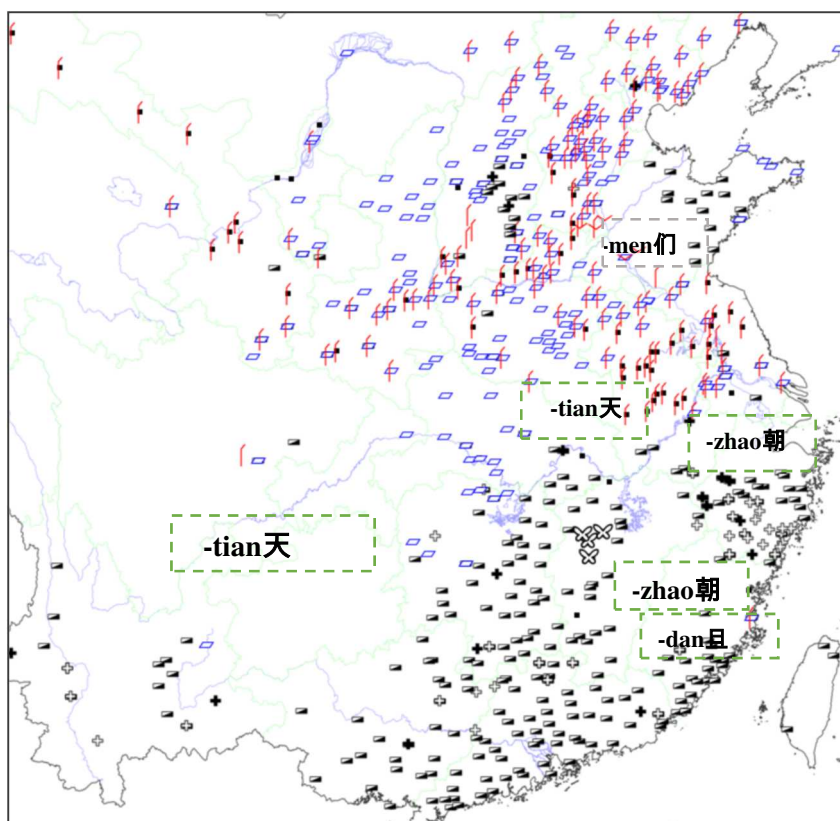
Comparison of Fig. 3 “everyday” with Fig. 1 “daytime” reveals the expansion of *-tian* in the former, in which nearly the whole Northern area is covered with the forms containing *-tian* (indicated by black symbols). A significant fact here is that there are no forms that indicate the reductive status of *-ri* as is observable for the forms for “daytime,” namely either *-er* or *-r*. Presumably, this may indicate the direct substitution of *-ri* with *-tian*, i.e., *meiri* > *meitian*, *riri* > *tiantian*. For this change, involvement of a semantic factor should be considered, that is, the earlier existence of such words as denoting four seasons and weather, all of which used *-tian* as their heads, e.g., *chuntian* “spring,” *qingtian* “fine day.” Analogical association with these forms must have motivated the replacement of *-ri* by *-tian* in the forms for “everyday” as well as other time words.

One note for Fig. 3 is the emergence of the form *rimei* (indicated by the red circular symbol with a horizontal bar). This form is unusual as a Northern one, not only in the sense that it has a head *-ri* but also in the sense that, similar to Southern French form *dimars*, it has a reversed word order of head *ri* “day” and non-head *mei* “every.” One plausible explanation for this is that it was a direct descendant of the older form *meiri*, which is widely distributed in Southern China. However, this interpretation may not hold. Rather more plausible is that the reversal of word order, *meitian* > *tianmei*, occurred first, and then the head part *-tian* was replaced by *ri* due to analogy with the word *rizi* meaning “day,” *tianmei* > *rimei*. The evidence of the form *rimei* being surrounded by the form *tianmei* (indicated by the black circular symbol) supports our assumption that *rimei* may be newer than *tianmei* in this area.

5. Analogical attraction in Northern Chinese

Two types of changes may have occurred with Northern Chinese *-ri*. One is the substitution of *-ri* with *-tian*, which we suppose in the previous section to have taken place in the word for “everyday.” What we discuss in this section is another type of change, which should be accounted for in terms of analogy theory.

Certain time words in Northern Chinese, notably those representing “today” and any one of its preceding/following days, evolved differently from “daytime” and “everyday” through the addition of the general classifier *-ge* to the original form, e.g., *jinri* “today” and *yelai* “yesterday,” thereby producing such forms as *jinrige* and *yelaige*. These forms frequently appeared in the Northern colloquial literature written during 12c.–14c., and their usage is still prevalent all over Northern China (North of the Yangtze River).



A. 今日 jinri, X+日 ri (X: demonstrative)

- ▣ A-1 今日 jinri ("日"自成音节 /syllabic "ri")
- ⊕ A-2 今日 jinri ("今"音不规则 /irregular "jin")
- ⊕ A-3 指示代词 (demonstrative)+日 ri

B. 今儿 jin'er, jinr

- ▣ B-1 今儿 jin'er ("儿"自成音节 /syllabic -er)
 - ◇ B-2 今儿 jinr (儿化 /non-syllabic -r)
- | -个 ge

Fig. 4 Chinese forms of "today"

Fig. 4 exhibits the distribution of word forms denoting "today."¹⁵ Here, the use of the symbols is restricted to indicating forms that preserve the head *-ri* or its remnants (diminutive suffix *-r* in particular), and the distribution area of forms with other kinds of heads, such as *-tian* and *-zhao*, are indicated by letters. Each form having suffixed *-ge* is indicated by a red vertical line overlapping the other symbol, which represents the

¹⁵ This map (Fig. 4) is the reproduction of Map 6 included in Iwata ed. (2009), with the details being simplified.

preceding parts of the given form. For example, the Beijing dialect, besides the newest standard form [tɛin tʰien] (*jintian* in Pinyin Romanization), has an older local form [tɛiər kə], and on the map, this form is indicated by overlapping blue rectangular symbols representing [tɛiər] with a red vertical line representing [kə].

The reason why the time word came to take the general classifier *-ge* as a suffix should be considered in two respects. First, this change must have been motivated by the phonetic reduction of the head *-ri*. This is evidenced by the following examples of dialectal forms denoting “today.” For reference, the reconstructed phonetic value of *-ri* is *ziət in Late Middle Chinese (9c.–12c.).

- (1) Preservation of the regular form in Southern dialects
[tɛin zɿ] (Changsha, Hunan Province)
- (2) The irregular form *er* with an accentless neutral tone
[tɛin əɾ] (Yichang, Hubei Province) cf. the regular form for *ri* is [zɿ].
- (3) Syllable fusion, diminutive suffix *-r*
[tɛiər] (Xi’an, Shaanxi Province) cf. “daytime” [pai ə] (lit. white day)
- (4) Syllable fusion, deletion of the diminutive suffix *-r*
[tɛiə] or [tɛiər kə] (Yinchuan, Ningxia Province)
- (5) Complete loss of the head *ri*
[tɛin kə] (Hefei, Anhui Province)

In Southern dialects (South of the Yangtze River), the regular form for *-ri*, corresponding to Late-Middle Chinese *ziət, is generally preserved and identified as the morpheme representing “day.” An example is provided in (1). Meanwhile, *-ri* in Northern dialects has undergone a weakening process, as sketched in stages (2)–(5). In (2), *-ri* is realized in an irregular form [əɾ], which is distinct from the regular form [zɿ] denoting “day.” This particular form, which is represented in Fig. 4 by the same symbol as the regular form found in Southern dialects, is not numerous in Northern China. Instead, the head *-ri* in the majority of Northern dialects evolved into the diminutive suffix *-r* through the process of syllable fusion in stages (3), namely tɛin+ər→tɛiər. One form in (4) has lost the diminutive suffix *-r*, and in stage (5), the trace of *-ri* eventually disappears. In this last stage (5), the addition of the general classifier *-ge* is obligatory, presumably because the original non-head [tɛin] “present” was reanalyzed as the head, and in the end, the whole word form was reanalyzed as a “stem + suffix” structure. On the other hand, as the addition of *-ge* is optional in the dialects that have remained at

stages (3) and (4), both forms [tɕiər] and [tɕiər kə] coexist in a number of dialects, as they do in Beijing.

Notably, the use of *-ge* was also optional in Northern China when the time words with *-ge* began to appear in the literature of the 12c.–14c. At that time, the head *-ri* must not yet have changed into a diminutive suffix, and presumably, it remained in the status of (2), i.e., [ər], or at least it had a reduced form somewhat different from the regular form representing “day.” Due to this, the head part of the form representing “today” might have lost its lexical identity. At this moment, a sort of analogy allowed the speakers to evoke an association of time words with the two pronouns *zhe (yi) ge* and *na (yi) ge* meaning “this” and “that.”¹⁶ That is, “today” was recognized as “this day” while “tomorrow” and “yesterday” are recognized as “that day.” This assumption is justified by the usage of words representing weeks and months.

zhe (ge) xingqi “this week” / *shang (ge) xingqi* “last week” / *xia (ge) xingqi*
“next week”

zhe (ge) yue “this month” / *shang (ge) yue* “last month” / *xia (ge) yue* “next
month”

Here, *shang* and *xia* literally mean “upper” and “lower,” respectively, indicating that notions of time and space have much in common in Chinese.

Moreover, speakers’ analysis of “today” as “this day” is found in Southern dialects, as indicated with cross symbols in Fig. 4. The following forms all represent the meaning of “today” in these Southern dialects.

[ki ne] “this day” (Wenzhou, Zhejiang Province)

[kə ɲuət] “this day” (Lienshan, Guangdong Province)

[tɕɿ ʒɿ] “this day” (Mengzi, Yunnan Province)

The association of time words with pronouns is deemed the product of a sort of analogy. However, this phenomenon is different from a typical analogical change, which is usually found in a closed lexical system. For example, the form for “today” *jinzhao*, which must have changed from *jinri*, was the product of a simple analogy with the form *mingzhao* for “tomorrow.” The form *-zhao* originally meant “morning,” and this notion was associated with that of “tomorrow,” a universal phenomenon prevailing in European and Japanese languages (Buck 1949). This form *mingzhao* for “tomorrow”

¹⁶ The morpheme *yi* in *zhe (yi) ge* and *na (yi) ge* means “one,” and philological evidence indicates that forms with and without *yi* were coexistent in Northern dialects of 10c.–12c. Forms with *yi* eventually changed to *zheige* and *neige*, as found in the contemporary Beijing dialect.

is attested in the literature of Middle Chinese (4c–6c), indicating a competitive coexistence of two heads, *-ri* and *-zhao*, in the history of Chinese time words. Later on, the function of analogy made the form for “today” as well as those time words for “the day after tomorrow” etc., take the element *-zhao* as its head, e.g., *jinzhao*, *mingzhao*, *houzhao*. The necessary condition for motivating this analogical change was that the morpheme *zhao* lost the substantial meaning of “morning.” The same mechanism of analogy was mentioned in Section 3 above with respect to the change from *bairi* to *baiye*.

As shown in Fig. 4, the dialects using this form *jinzhao* are distributed from the lower reaches of the Yangtze River southward, spreading into Fujian Province, where *-zhao* gives way to *-dan*. Both *-zhao* and *-dan* originally mean “morning.” Note that this is exactly the case of synonymic substitution, indicating that speakers were still conscious of the meaning of the head *-zhao* when it reached Fujian through its transmission.

Time words such as *jinri* for “today,” *mingri* for “tomorrow,” and *yelai* for “yesterday” took the general classifier *-ge* as a suffix due to its association with specific pronouns. We refer to this type of change as “analogical attraction.” Though it is a sort of analogy, it is distinguished from usual analogical change in the sense that the two word groups involved in this incident belong to different semantic categories that have semantically no direct concern with each other. The notion of analogical attraction as defined herein was first proposed by Iwata (2007).

Attraction is one of the key notions in Gilliéron’s work, in which he argued for the tendency of the phonetically and semantically weakened word to be attracted by the other word (Dauzat 1922, 59–66). A universally recognized type of attraction is referred to as “paronymic attraction,” which occurs in multiple words that do not necessarily belong to the same semantic category but share partial phonetic forms. Triggering this type of attraction could make the given words homophonous, whereupon the language would provide a device to avoid a homonymic collision. An analogical attraction could result in the formation of a new word class that shares a common bound morpheme. As for the case of Northern Chinese time words, as attested in the literature of the 12c–14c, the use of the specific morpheme *-ge* was extended to such words as *jinniange* “this year” and *jinchunge* “this spring.”

As shown in Fig. 4, time words with *-ge* are still vital, and the new form *-tian*, that is, *jintian*, does not form a massed and cohesive distribution except in the area of the Yangtze Basin, Sichuan in particular. Philological evidence indicates that *jintian* began to be used in Beijing in the late 19th century (Okochi 2001), suggesting the recent introduction of this form from other prestigious areas. The most probable candidate for its birthplace is the area called Jianghuai, which is situated between the lower reaches

of the Yangtze River and the Huai River, where the old capital Nanjing and commercial center Yangzhou are situated. In Jianghuai, the older form *jinge* and the newer *jintian* have coexisted and competed, and presumably, since speakers were unconscious of the semantics of *jinge*, in which the trace of the original head *-ri* completely disappeared, the morpheme *-ge* was likely to be replaced by *-tian* to clarify the meaning of this word. Significantly, this interpretation implies that the synonymic substitution theory is invalid in this case.

6. Another case of analogical attraction: Chinese forms of “morning” and “evening”

Iwata (2020) argued for another case of analogical attraction in Chinese words representing the notions “morning” and “evening,” hypothesizing the origin of two standard forms that share a morpheme *-shang*. This morpheme, literally meaning “upper,” is generally bound, but is used in various ways. Among them, one of the highest frequencies is the directional suffix, which simply indicates an abstract sense of location, for example, *Feijishang you wushige ren* “There are 50 passengers on the airplane.”

“morning”	<i>zao X</i>	>	<i>zaoshang</i>
“evening”	<i>wan Y</i>	>	<i>wanshang</i>

It is assumed that earlier forms representing these two notions must have taken a “non-head + head” structure, where *zao* and *wan* mean “early” and “late,” respectively, and X and Y represent any noun meaning “morning” and “evening.”¹⁷ Notably, unlike the change of “today,” which resulted in the addition of *-ge* to the original form (e.g., *jinri*), the result of this change was the replacement of original heads (X and Y) by *-shang*. However, the motivation for the change was essentially the same in “today” and “morning, evening.” It was the phonetic and semantic reduction of the head X and Y that motivated this change, and in the end these forms (*zao X* and *wan Y*) were attracted by a lexical group which shares the element *-shang* in their final positions, e.g., *shanshang* “on the mountain,” *qiangshang* “on the wall.”

However, a crucial problem still unsolved here is how attraction became possible between time words and the *shang*-lexical group. Regarding this question, Iwata (2020: 22–24) posited that analogical association in this case may have been invoked by the

¹⁷ Plausible candidates for X and Y are *chen* “morning” and *xi* “evening.” The form *zaochen* is attested in the literature of Early Middle Chinese, and *wanxi* is attested in the literature of Late Middle Chinese. (Iwata 2020: 21)

existence of such words as *shangyue* “preceding month” and *xiayue* “following month.”¹⁸ That is, “morning” precedes “evening” along the vertical time axis within one day. Presumably, speakers were conscious of the derivative meanings of *-shang* “preceding” and *-xia* “following,” that is, they were analyzable, at a time when the particular change occurred. Logically, then, the notion “evening” is expected to be expressed by the form *wanxia* instead of *wanshang*. Fortunately, the form *wanxia* is attested in a poem of the Tang Dynasty (Iwata 2020: 22). However, it did not exist for long, presumably because the analogical association of this form with *zaoshang* saw the element *-shang* replace *-xia*.

7. Concluding remarks

As a feature of a newly proposed method called contrastive geo-linguistics, this paper focuses on and compares the process of lexical changes occurring in Chinese and French time words. Through observation and comparison of four maps, we assume that a common condition for change was the reduction of the head part of words meaning “day,” *-di* in French, and *-ri* in Chinese. This condition motivated two types of changes. One is referred to as a “synonymic substitution type,” which is characterized by the replacement of heads with the autonomous free forms, *-jour* in French and *-tian* in Chinese. This type is confirmed in the vocabulary of each language. The other type is referred to as an “analogy type.” Our analyses have revealed that the function of analogy resulted in different effects between French and Chinese. In Northern French, it contributed to preserving *-di*. Meanwhile, in Northern Chinese, it resulted in radical changes which were triggered by a factor referred to as “analogical attraction.” As a result, such time words as “today” and “morning” have reconstructed their forms by acquiring such suffixes as *-ge* and *-shang*, which semantically have no direct connection with the notion of time.

Theoretically, the proposed notion of “analogical attraction” awaits refinement through further research of various languages. On the one hand, the function of “analogy” has long been discussed in the field of comparative historical linguistics for explaining irregular sound changes. On the other hand, studies in dialects, especially those in the field of linguistic geography, have revealed the function of “paronymic attraction” for European, Japanese, and Chinese dialects (Dauzat 1922, Mase 1992, Iwata ed. 2009). As for this latter factor, a universally recognized tendency is that a

¹⁸ This usage of *shang* and *xia* is attested in the literature of the Tang Dynasty (Late Middle Chinese), indicating the early origin of association between the notions of time and space (Iwata 2020:26).

phonetically and semantically weakened word is likely to be attracted by another word, and thereby share a specific element. The function of “analogical attraction” is actually the same in the sense that the result of the change is the formation of one specific word class which shares a particular morpheme. However, the word class created by paronymic attraction merely consists of two or three words. Meanwhile, the evidence found in Chinese time words, such as the association of the forms for “today” and “morning,” with demonstrative pronouns and directional words, is more systematic and similar to morphological changes, and therefore can be deemed as belonging to the category of analogy. As is well known, Chinese generally lacks morphological devices for identifying the word class. From this, a purely theoretical hypothesis posited here is that triggering the factor of “analogical attraction” motivates a potential trend within this language to create a large-scale word class specific to Chinese, and thus is a language-specific phenomenon. Naturally, whether or not this hypothesis is justified needs further extensive research that may compare Chinese with various other languages.

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