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The Role of Geography in the Northwest China Linguistic Area

Dan Xu

Abstract The frontier regions between Gansu and Qinghai provinces in China form a linguistic area in which Sinitic languages and non-Sinitic languages share similar syntactic features. Geographic factors have undoubtedly played a significant role in causing these neighboring languages to develop parallel characteristics. A phonological feature attested in the Gansu-Qinghai area is the reduced tone system. However cities and surrounding regions show two distinctive patterns in tone evolution. Important cities in Northwestern China form a network which is not necessarily following the spread of tone simplification, while peripheral regions are undergoing a tone reduction process. Sociocultural factors work together with geospatial factors in forming linguistic areas.

Keywords Linguistic area • Geographic distance • City model • Peripheral region model

1 Introduction

Languages are closely linked to space since their distribution depends heavily on human migration over the globe. Languages and human genes show a correlation (Cavalli-Sforza 1988; Cavalli-Sforza 2000) even though they do not match up in some cases (Xu et al. 2012). Linguistic and genetic diversity can spread thanks to space. Do geographic factors play a role in language evolution? The answer is unambiguously positive, since we now know that language contact constitutes an external motivation for language change, and certain geographic conditions are necessary for language contact which favor the formation of linguistic areas.

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These areas cannot exist without space. Some linguistic areas are famous, such as the Balkans Area, which includes a confederation of languages that share linguistic features: Modern Greek (Hellenic Branch), Bulgarian (Slavic Branch), Romanian (Latin branch), and Albanian (Illyric Branch). The Vaupez-Içana basin (Northeast Amazonia) is another well-known linguistic area (Aikhenvald 2002; Aikhenvald and Dixon 2006). Works on linguistic areas include those by Thomason and Kauffman (1988), Enfield (2005), Heine and Kuteva (2005), Bisang (2010) among others. The linguistic area around the borders between Gansu and Qinghai provinces in China[1] is currently less popular, because most works are written in Chinese. In fact, language contact in China is as significant as in other areas, since different language families have coexisted for centuries and have interacted intensely. Keith W. Slater (2003), who works on Monguor (Mangghuer) in this region, uses the term "Qinghai-Gansu *Sprachbund*"[2] while Janhunen (2004) chooses the term "Amdo *Sprachbund*" (Amdo dialects form an important group of dialects among Tibetan dialects, see Tournadre 2005: 17).

In the Gansu-Qinghai linguistic area, Han (varieties of Chinese) and non-Han languages are spoken. The region is inhabited by different ethnic groups including people who speak Santa, Bao'an, Monguor and Eastern Yugur, which belong to the Mongolic group of the Altaic family; while others speak Western Yugur, Salar and Kazakh, which are part of the Turkic group in the same family; and finally, some speak Amdo dialects which are classified within the Tibeto-Burman group in the Sino-Tibetan family. The Chinese language spoken next to or surrounded by them has undergone dramatic changes. This area offers rich samples of language contact for language typology, anthropology and genetic studies. The Hezhou area[3] presents a smaller linguistic area inside the Gansu-Qinghai area. We will observe the major features found in this region (the Hezhou area), try to understand and analyze why these features are common to this area, and finally we will consider how geographic factors work together with linguistic and sociocultural factors.

2 Gansu-Qinghai *Sprachbund*

Linguistic classification is generally based on three different types of criteria: genealogical (similar to biological classification), typological, and linguistic area. Genealogy was used first in biology and then in linguistics. Encouraged by Darwin's

[1] See Li Charles N. (1983), Ma Shujun (1982, 1984), Li Keyu (1987), Ringdzin Wangmo (1991), Dwyer, Arienne M. (1992), Lanzhou Daxue zhongwenxi Linxia fangyan diaocha yanjiuzu (1996), Zhu Yongzhong et al. (1997), Dede (2003, 2007), Luo Peng (2004), Peyraube (2009) and Xu Dan (2011a, b) among others.

[2] According to Slater (2003:7), the term of the Gang-Qing *Sprachbund* was first proposed by Dwyer (1995).

[3] The Hezhou area has clear boundaries in which Sinitic and non-Sinitic languages are spoken. However, the term Hezhou Dialect conventionally refers to Sinitic varieties.

theory of evolution (1859), Schleicher (1861) discovered that the evolution of species is similar to that of languages. Nineteenth century linguists successfully applied genealogical methods to the comparison of historic Indo-European languages. Typological studies have developed substantially since Greenberg's works in the 1960s. Today typological methods are a popular approach in linguistic research. Over the past few decades, linguistic areas have drawn the attention of scholars, who have noted that in a given region, languages having unrelated origins often share similar lexical and grammatical features. This approach, i.e. the linguistic area, is used where genealogy and typology fail to analyze unrelated languages which geographically are neighbors in a given region. It is evident that this cannot replace the other two approaches, since all three are complementary rather than exclusive methods.

The definition of linguistic area varies according to scholars. Emeneau (1956) thinks that a linguistic area is an "area which includes languages belonging to more than one family but showing traits in common which are found not to belong to the other members of (at least) one of the families" Thomason (2001: 99), Aikhenvald (2002: 7), Enfiel (2005: 182), Heine and Kuteva (2005: 172) have also defined this notion. Their main view converges onto the point that in a geographical region, some languages which genetically belong to different families share some common features. However these authors ask the same question: how many features are minimally required to define one linguistic area? The answers they propose are not unanimous. Thomason (2001: 101) has suggested that only one feature is enough to distinguish a linguistic area from other regions. This point of view seems difficult to adopt, even though theoretically it is logical and correct. It is generally understood that none of the criteria proposed so far are able to adequately explain the data. Bisang (2010: 428) indicates that "such criteria [number of languages and minimal number of features] are meaningless as long as one cannot prove that there is a significant correlation between the exact quantification of languages, families or features and either a certain linguistic structure or a certain social pattern present in several linguistic areas." Here we use Aikhenvald's (2002: 7) definition of linguistic area:

> A linguistic area (or *Sprachbund*) is generally taken to be a geographically delimited area including languages from two or more language families, sharing significant traits (most of which are not found in languages from these families spoken outside the area).

As Heine and Kuteva (2005: 177) point out, a linguistic area is a macro-area in which smaller areas could exist. In Thomason and Kaufman's (1988) terms, a given area is considered to have "multilateral sprachbund situations". According to Heine and Kuteva, in an ideal linguistic area, languages use different forms but "each form has an exact structural equivalent in other languages".

In our target region, the Gansu-Qinghai linguistic area (hereafter Gan-Qing), languages show similar (but not identical) structures which play equivalent grammatical roles, although these structures are the result of replication from different model languages. It is now known that the zone between Gansu and Qinghai has been inhabited by different ethnic groups for centuries. With the victory and control by Genghis Khan in the thirteenth century in this region, numerous ethnic groups merged, including people from Central Asia. Continuous migrations caused the

language situation to become more complicated. As presented in the Introduction, languages belonging to the Altaic and Sino-Tibetan families have coexisted and interacted. Though all linguists do not agree with the term "Altaic family", the term is popular and has been adopted in linguistic research. As Norman (1988: 6) remarks, "A few European Turkologists remain skeptical about the Altaic theory, but among Mongolian and Tungusic specialists, the Altaic affinity is routinely accepted." It is clear that the term has been conventionally accepted by default because they cannot convince each other. From work by the biologist Wei Lanhai (2011), we know that the major paternal lineages, as well as the maternal lineages, are quite heterogeneous in Altaic populations. This shows that they have very different genetic origins. Linguistic data, however, presents very regular patterns in morphology and syntax. Moreover, the basic vocabulary is consistently attested in the three subgroups of the Altaic family. How can we deal with these two realities? From my point of view, two datings are in conflict. For biologists (and some linguists), the origin can go back to prehistory, while for most linguists, the time scale cannot go beyond the limits of vocabulary reconstruction. The giant ruler used by biologists has units of 10,000 years, while that of linguists is often limited to hundreds of years. It all heavily depends, in fact, on the period of formation of the "Altaic family". Even if the three subgroups formed due to language contact and borrowing from each other, today the family has been building up for long enough to constitute a unified family for linguistic studies. We cannot ignore the fact that the ancestors of today's Altaic populations were biologically very different. No one can deny the unity of the Chinese language, though it is well known that the genetic origins of the Chinese people are very diverse. Several languages in our target area formed relatively recently (between the thirteenth and seventeenth centuries AD) and the populations' origins are quite heterogeneous. As for the Sino-Tibetan family, it is perhaps more reasonable to take the terms used by Jahunen (2004): "Sinitic sphere" and "Bodic sphere" (Amdo Tibetan and variants), in order to account for diachronic elements.

In this paper, we will focus on the Hezhou area, which is a smaller linguistic area inside the larger Gan-Qing linguistic area. Geographically the boundaries of Hezhou are clear; it includes Linxia city, Linxia, Hezheng, Guanghe, and Yongjing counties in Gansu province, and Xunhua, Minhe, Ledu, Tongren and Datong counties in Qinghai province. Hezhou dialect is clearly a Sinitic variety, however scholars have different opinions on the classifications[4] of Wutun (spoken at Jianzha county in Qinghai province) and Gangou (found in the Minhe county of Qinghai) dialects. The crucial question is what language the people originally spoke. In other words, have these languages been sinicized, altaicized, tibetanicized, or several of these one after another[5]?

[4] Jahunen (2004: 72) indicates that Sinitic languages in this region include "Hezhou, Tangwang, Gangou, Wutun". The same author in the same paper however shows some doubts about his classification citing Gangou and Wutun with question mark after Sinitic on page 73.

[5] Cf. the monograph on Tangwang (Xu Dan 2014a, Chap. 5) which is thought to be a Sinitic variety heavily colored by Santa (or Dongxiang), a Mongolic language.

Geographically speaking, the Hezhou area contains the zone situated west of the Tao River including several counties in Linxia Hui Autonomous Prefecture, Gansu. Xu Dan (2014a) thinks that the Tangwang language, which was heavily influenced by Santa (Dongxiang), should also be included in Hezhou dialect even though some syntactic features are only attested in Tangwang. Hezhou dialect varieties share the following syntactic and phonological features:

1. The most frequent word order is OV[6] while in Mandarin and other dialects the word order is VO.
2. Case marking is attested in Hezhou dialect. In the pronoun system, nominative and accusative are distinct. Nominative is not marked while accusative is marked (See Xu Dan 2008; Xu Dan and Peyraube 2009). The case marking is systematic and full-fledged with accusative, ablative and instrumental markings. These markings are completely alien to Mandarin and other Sinitic varieties.
3. The plural marking is also different from other Sinitic varieties. It can mark nouns with the **human** feature (as in other Chinese dialects), as well as nouns with the **non-animate** feature (including abstract meanings).[7]
4. A morpheme [tʂə][8] is often used to mark the linking of two clauses; the first verb can contain an object, giving the structure VO tʂə V, which is prohibited in Standard Mandarin.[9]
5. In Hezhou as in the Gan-Qing area, the verb 'to say' goes at the end of reported speech instead of preceding it. This use is also attested in Mongolic and Amdo languages but is unknown in Mandarin.
6. In phonology, the sound change shows regular patterns. Some words display similar sound changes which are not common in other zones (see details in Zhang Chengcai 2006, Xu Dan (2014a, Chap. 2).
7. Another important phonological feature found in the area is the progressive loss of tones. Dialects and Sinitic varieties with two or three tones are concentrated in this area.[10] Outside the area, some three-tone languages are also found in other locations, but most two-tone languages have been found in this region.[11] Concrete examples will be given in Sect. 3.

We are aware of the constant influences of Turkic and Mongolic languages from one side and the Amdo language and its varieties from the other side upon the Chinese languages in this area. Some traces of these languages can be identified in

[6] VO order is acceptable in some expressions.

[7] This syntactic and semantic feature can be also found in a few counties in Hebei and Shandong (see Xu 2011b) but remains a common marking in the Gan-Qing area.

[8] The pronunciation varied slightly in the Gan-Qing area.

[9] Mandarin has the word order V tʂə V, but the meaning does not necessarily match with Hezhou dialect.

[10] In Xinjiang and Ningxia, three tone dialects are numerous, but they do not share other features seen in the Gan-Qing area.

[11] Some Sinitic varieties have even lost tones, such as Wutun (see Janhunen et al. 2008), in Tangwang, monosyllabic words have begun losing their tone among younger generations (see Xu Dan 2014a, Chap. 2).

Sinitic languages, which do not possess the same inheritance; these non-Han languages belong to different families and were diachronically unrelated. However they share some typological similarities, such as OV word order and postpositions. Slater (2003: 7–8) remarks that in the Gan-Qing area, "an overall process of structural convergence is affecting all of the regional languages"; that "verb-final word order and other head-final morphosyntax (postposition, suffixes, etc.) spread into Sinitic from neighboring languages". According to him, Mongolic languages in the Gan-Qing area "now have essentially Sinitic phonological systems" (though without full-fledged tone systems). In addition to our own field data in this region, we have noted that language contacts are not unidirectional; both sides, Han languages and non-Han languages, have undergone profound changes over several centuries at the phonological and morpho-syntactic levels. In the next section, we will try to understand why this phenomenon exists.

3 Why Are Several Features Common in the Area?

As we have mentioned, several syntactic and phonological features in the area are quite common within Han (Sinitic) languages. Let us compare the main features of Han and non-Han languages in the Hezhou area, in which regular patterns can be found.

The Table 1 suggests that Altaic languages have exerted a stronger influence upon Sinitic languages while Bodic languages show less influence at least in this set of features. Janhunen (2004: 72) indicates that "Features representing the Altaic sphere (as understood in the typological sense only) are mainly manifested as a general substratum, uniformly present in all the languages of the *Sprachbund*, while features representing the Sinitic and Bodic spheres are often, though not necessarily,

Table 1 Comparison of features in the Hezhou area

	Sinitic languages	Mongolic languages	Amdo languages
Word order	OV	OV	OV
Genitive+Adj+N	Yes	Yes	No
Genitive+N+Adj	No	No	Yes
Case marking	Yes	Yes	Yes
Ergative marking	No	No	Yes
Accusative	Yes	Yes	No
Plural marking is possible when N[–Animate]	Yes	Yes	No
'Say' verb must go after speech	Yes	Yes	Yes
Tones	Loss of tones attested	No	No[a]

[a]But in Standard Tibetan the loss of the voiced and invoiced distinction is converted into high and low tones

mutually exclusive. Thus, the Sinitic and Bodic languages of the *Sprachbund* may be said to share a basic Altaic typological orientation with their Turkic and Mongolic partners". It is clear that in this area, Sinitic languages have adopted accusative marking, an Altaic language means which is not obligatory when objects are not definite. In Amdo as well as in Standard Tibetan, the agent is marked by ergative case instead of the object being marked. Even in Sinitic languages in Qinghai which have been strongly influenced by Amdo, it is the object which is marked by an accusative marker [xa] (see Cheng Xianghui (1980), Jia Xiru (1991, 1994), Dede (2007), Xu Dan (2014b), among others). The morpheme was not phonetically loaned from Altaic languages, but its function is similar. Xu Dan (2014b) supposes that the accusative marker [xa] came from the Chinese language. Few cases have been reported of ergative marking in Sinitic languages which have intense contact with Amdo. Yixiweisa Acuo (2004) indicates that Daohua is a mixed language (spoken in the west of Sichuan Province) and has ergative marking like Tibetan. However, Wutun (spoken at Jianzha County in Qinghai Province), a language which was originally a Sinitic variety and has undergone Tibetan language influence, has accusative marking rather than ergative (Xu Dan 2014b).

How can we explain the phenomenon that Sinitic languages present the same result no matter whether they experience Altaic or Bodic language influences? In fact these similar features are due to at least three situations: (a) Language universals, (b) Language contact and (c) Chance or coincidence. These factors have already been studied in previous work on language contact. Here we can perhaps add another factor which was less commonly mentioned, (d) Spatial or geographic factors.

The OV-postposition pattern can be considered as a universal in human languages, as Greenberg (1963) and Dryer (1992)'s investigations indicate. Their research shows that languages with VO word order tend to use prepositions while those with OV word order prefer postpositions. In this case, either Altaic or Bodic languages could have influenced Sinitic varieties which use VO word order. When the shift to OV word order begins, postposition use follows. It is worth noting that the Chinese language employs a few postpositions even though the main word order remains VO (see Peyraube 1997; Xu 2006). Case marking in Sinitic varieties in this area must be due to language contact. It seems that case marking is mainly influenced by Altaic languages, because it is quite different from the case marking strategy seen in Amdo and Standard Tibetan, even though the function is similar. As for plural marking, we (Xu 2011b) have already studied it in this area, indicating that its use is a mixed result: it is due to both internal evolution in the Chinese language, which is supported by Chinese diachronic documents; and to external factors, in particular the influence of Mongolic languages since the thirteenth century, which is also attested in historical documents. The syntactic position of the verb 'to say' is also not the product of chance. In this area, all non-Han languages display this phenomenon, i.e. placing the verb 'to say' after reported speech. Note however that the language influence is mutual: the typical Chinese model of putting the 'say' verb before reported speech is starting to appear in non-Han languages (see Liu Zhaoxiong 1981). The fact that Sinitic languages which have begun to lose tones are concentrated in this

area is also due to language contact, but we cannot say that this is the single factor which is causing the loss of tones. In Hebei and Shandong provinces, located more than one thousand kilometers from Gansu (Hebei is around 1,000 km while Shandong is around 1,247 km from Gansu province), simplification of the tone system has been reported by some scholars (Zhang Shifang 2000; Liu Junyi 2000 among others).

If some phonological and morpho-syntactic changes in languages of this region have converged into similar features, what has been the contribution of spatial and geographic factors? Here we would like to refer to scientific domains other than linguistics to explore the phenomenon. According to Tobler's (1970) First Law of Geography, "everything is related to everything else, but near things are more related than distant". With this fundamental law, everything over the globe should be related, especially things which are geographically nearby. This can also help us to understand linguistic areas in which languages from different families can be linked to each other through neighboring languages. Anything in space can be isolated and its spatial distribution is correlated with its various features. Shen Li (in this volume) shows us how to apply a GIS (Geographic Information System) to linguistic studies. His work with other scholars (2010 and this volume) indicates that linguistic change in a region always exhibits a continuous chain or continuum even though languages in the region can have different degrees of change. In other words, the quantifiable degree of change is progressive, continuous, and determined by geographic conditions; the two extreme poles are almost never located between two adjacent sites. This means that inside a linguistic area, which could be composed of several smaller areas (see Heine and Kuteva 2005), changes are linked to one another from a macroscopic point of view. As has been mentioned, languages (Sinitic or non-Han languages) in the Hezhou area (as well in the Gan-Qing area) show numerous convergent features which started out as historically separate features. People of different ethnicities have lived together for several centuries, and their languages have been affected by other languages. We cannot deny the geographic factors in these changes. However languages always present multiple faces or aspects, and we cannot remove social and cultural factors from languages when we study them. In fact, social and political influence is as significant as geographic distance. Taking account of different factors including geographic ones, we will now observe various patterns of language evolution in which one should distinguish the city model from the peripheral region model. Geographic aspects present different issues in analysis.

4 Different Patterns of Language Evolution

As we have mentioned, two- and three-tone systems are mainly found in the Gan-Qing area. However, Lanzhou, the capital of Gansu province, and Xining, the capital of Qinghai province have maintained a four-tone system like Mandarin spoken in Beijing (see Zhang Chengcai (2006) for Xining and Zhang Wenxuan and Mo Chao (2009) for Lanzhou). It has to be noted that these two cities' speech belong to the Gan-Qing area but not to the Hezhou area. What is interesting is that these two big cities are immediately adjacent to regions where a three-tone system is commonly attested. From Zhang Jiazhuang, Zhuanglang situated to the east of Gansu traveling west, more and more three-tone dialects are found. In Ledu, Xunhua, and Tongren located at the Gan-Qing frontiers, which belonging to the Hezhou dialect zone, a three-tone situation is also found.[12] Other scholars (Luo Peng 1999; Mo Chao and Zhu Fulin 2009; Zhang Jianjun 2009; Xu Dan 2014a, among others) have found two-tone dialects in this area. Let us observe the following table summarizing the distribution of tones in the Gan-Qing area.

A good sketch is often better than a long speech. The above table inventories previous studies by other scholars. The authors of the *Gansu fangyan gaikuang* (1960) investigated 42 sites in Gansu Province while the authors of the *Hanyu fangyan dituji* (Cao et al. 2008) studied 15 locations in Gansu and 5 locations in Qinghai. The statistics in this table are drawn from these collective works and statistics by scholars. The authors of the *GFGK* (1960) had already noticed 22 dialects using three tones and 20 dialects keeping four tones. We can only find three dialects in which the tone number varies according to different authors and periods. In Yuzhong, four tones were reported in 1960 by the *GFGK,* while three tones were noted in 2003 by Zhang Yanlai. In Tianzhu, the authors of the *GFGK* (1960) note 4 tones while Deng (2009) counts 3. Zhang (2003) however notes the loss of tone (1 tone means no tone). Again in Wuwei, the authors of the *GFGK* (1960) and Deng (2009) note 3 tones while Zhang (2003) and Cao et al. (2008) note only two tones. These facts reveal that tones may have evolved, or the locations within a county investigated by previous scholars were not exactly the same. The main tendency is that the tone systems are simplified rather than extended. Three-tone languages have been and continue to be very common in the Gan-Qing area and even four tone dialects have held up very well. In the Hezhou area we investigate in the present paper (Linxia City and Linxia, Hezheng, Guanghe, and Yongjing Counties in Gansu Province and Xunhua, Minhe, Ledu, and Tongren in Qinghai[13]), this phenomenon is omnipresent and no exception is found.

It is very interesting to note that Lanzhou, the capital of Gansu, and Xining, the capital of Qinghai, do not follow this tone reduction, even though they are encircled by three-tone dialects. It is clear that here geographic distance plays less of a role than social, political and cultural influences. Larger cities tend to evolve at their own speed and in their own way. Thus we can assume that cities and peripheral regions present two distinct patterns of tonal evolution. While tone reduction is the general tendency of tone change in Northern China, it seems that peripheral zones show

[12] For the moment three-tone dialects are mostly concentrated in Xinjiang. According to Deng Wenjing (2009), 74 locations have been identified in previous studies, while according to Zhang Shifang (2000), 66 have been reported. Their statistics are also slightly different for Gansu: Deng counts 35 while Zhang's statistics are up to 40. Their statistics are much higher than those provided by Cao et al. (2008) since 20 sites were investigated in Gansu and Qinghai in Cao Zhiyun *et al.*.

[13] We do not possess data from Datong in Qinghai.

more regular change than cities, which are bound to undergo changes which are less regular due to the presence of dialects or languages spoken by diverse ethnic groups, and due to migrations of several strata from different periods. The spoken language situation is much more complex in cities, which is caused by continuously moving people with different origins and linguistic, cultural, and religious backgrounds etcetera. That change in cities could be different from its bordering zones seems to be a trivial assumption, while the notion that change in cities is less regular than in peripheral regions may surprise readers. However, this is what we observe in the Gan-Qing area. Other examples can be found in Hebei and Shandong provinces. Beijing, the capital of China, undoubtedly presents an important city in Hebei, and even in the whole country. It is well known that Beijing uses four tones, but it is less well known that 17 dialects in Hebei (Zhang Shifang 2000) use a three-tone system. In the province of Shandong, the same thing happens again: Jinan, the capital of Shandong uses 4 tones while 22 locations have a three-tone system (see Zhang Shifang's statistics). It is clear that the three-tone system has not affected the four-tone system, which has been well maintained in big cities like Beijing, Jinan, Lanzhou and Xining while their peripheral zones have begun to reduce tones.

Chambers and Trudgillt (1980: 187–189) described how uvular *r* which first appeared in Parisian French spread through Europe. Wardhaugh 2010 [1986] cited these authors (1998: 170–175) who say that some sound spread in cities and in the countryside surrounding cities presents different rates and modes.[14] Starting in the seventeenth century, uvular *r* began to spread from Paris to replace the apical, trilled/flap *r* in other cities in Europe. "What you find, though, when you plot the progress of uvular *r*, is the importance of cities in its spread. Uvular *r* seems to be adopted initially by city dwellers, e.g., residents of Bergen and Kristiansand in Norway, The Hague in the Netherlands, Cologne and Berlin in Germany, and Copenhagen in Denmark, and then the new use diffuses outwards. Therefore, the strong internal links in the uvular *r* area are those between cities, which form a kind of network." Wardhaugh (2010 [1986]: 199). This shows that uvular *r* spread from city to city and the path of extension could be different for zones outside of cities. Chambers and Trudgillt (1980: 189) indicated that "the diffusion has taken the form of 'jumping' from one urban centre to another". In the north and northwest of China, we observe a similar phenomenon in which cities form a network which is different from their peripheral zones. According to Wardhaugh (2010 [1986]: 199), the uvular *r* spread "late into the countryside surrounding each city". However what we can see in Northwestern China is the opposite situation. Zhang Shifang (2000: 55) indicates that in Lanzhou and Yuzhong, *yang* level tone (that is, level tone originating from a voiced initial consonant) and rising tone show "a fusion tendency". This suggests that the three-tone system attested in surrounding regions could affect the city's four-tone system. A decade has passed since this article, and tone fusion in Lanzhou has not yet been reported, but it has occurred in Yuzhong, which is in the suburbs of Lanzhou (see Zhang Yanlai (2003) in Table 2 below). This means that the three-tone system in regions surrounding cities in Northwestern China could influ-

[14] Many thanks to Jingqi Fu who has provided me with this reference.

Table 2 Distribution of tones in Gan-Qing area[a]

Locations in Gansu	Tones	Sources
兰州 Lanzhou	4	Gansu Fangyan Gaikuang (1960) (hereafter GFGK), Zhang Wenxuan and Mo Chao (2009)
白银 Baiyin	4	GFGK (1960)
榆中县 Yuzhongxian	4	GFGK (1960)
	3	Zhang Yanlai (2003)
靖远 Jingyuan	4	GFGK (1960)
平凉 Pingliang	4	GFGK (1960)
泾川 Jingchuan	4	GFGK (1960)
镇原 (庆阳) Zhenyuan	4	GFGK (1960)
宁县 Ningxian	4	GFGK (1960)
庆阳 Qingyang	4	GFGK (1960)
环县 Huanxian	4	GFGK (1960)
岷县 Minxian	4	GFGK (1960)
临潭 Litan	4	GFGK (1960)
陇西 Longxi	4	GFGK (1960)
武山 Wushan	4	GFGK (1960)
徽成(县)Huichang (xian)	4	GFGK (1960)
西礼 Xili	4	GFGK (1960)
武都 Wudu	4	GFGK (1960)
文县 Wenxian	4	GFGK (1960)
龙迭 Longdie	4	GFGK (1960)
天祝 Tianzhu	4	GFGK (1960)
	3	Deng Wenjing (2009) (hereafter Deng WJ)
	1	Zhang Yanlai (2003) (hereafter Zhang YL)
民勤 Minqin	3	GFGK (1960), Zhang YL (2003)
永昌 Yongchang	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
山丹 Shandan	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
张掖 Zhangye	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
高台 Gaotai	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
酒泉 Jiuquan	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
嘉峪关 Jiayuguan	3	GFGK (1960, Deng WJ (2009)
玉门 Yumen	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
金塔 Jinta	3	Zhang YL (2003), Deng WJ (2009)
民乐 Minle	3	Zhang YL (2003), Deng WJ (2009)
临泽 Linze	3	Zhang YL (2003), Deng WJ (2009)
肃南 Sunan	3	Zhang YL (2003), Deng WJ (2009)
安西 Anxi	3	GFGK (1960), Zhang YL (2003), Deng WJ (2009)
敦煌 Dunhuang	3	GFGK (1960), Deng Wenjing (2009)
金昌 Jinchang	3	Deng Wenjing (2009)
古浪 Gulang	3	Zhang YL (2003), Deng WJ (2009)
临洮 Litao	3	GFGK (1960), Deng WJ (2009)
定西 Dingxi	3	GFGK (1960), Deng WJ (2009)
会宁 Huining	3	GFGK (1960), Deng WJ (2009)
通渭 Tongwei	3	GFGK (1960), Deng WJ (2009)

(continued)

Table 2 (continued)

Locations in Gansu	Tones	Sources
静宁 Jingning	3	GFGK (1960), Deng WJ (2009)
秦安 Tai'an	3	GFGK (1960), Deng WJ (2009)
清水 Qingshui	3	GFGK (1960), Deng WJ (2009)
天水 Tianshui	3	GFGK (1960), Deng WJ (2009)
临夏市 Linxiashi	3	GFGK (1960), Deng WJ (2009)
临夏县 Linxiaxian	3	Deng WJ (2009)
和政 Hezheng	3	GFGK (1960), Deng WJ (2009)
东乡 Dongxiang	3	GFGK (1960)
德乌鲁 De'wulu	3	GFGK (1960)
广河 Guanghe	3	GFGK (1960), Deng WJ (2009)
永靖 Yongjing	3	GFGK (1960), Deng WJ (2009)
张家庄 Zhangjiazhuang	3	Deng WJ (2009)
庄浪 Zhuanglang	3	Deng WJ (2009)
康乐 Kangle	3	Deng WJ (2009)
永登 Yongdeng	3	Zhang YL (2003), Deng WJ (2009)
皋兰 Gaolan	3	Deng WJ (2009)
会川 Huichuan	3	Mo Chao and Zhu Fulin (2009)
附城 Fucheng	3	Mo Chao and Zhu Fulin (2009)
洮阳 Taoyang	3	Mo Chao and Zhu Fulin (2009)
康家崖 Kangjiaya	3	Mo Chao and Zhu Fulin (2009)
武威 Wuwei	3	GFGK (1960), Deng WJ (2009)
	2	Zhang YL (2003), Cao Zhiyun et al. (2008)
西固区马家山 Xiguqu Majiashan	2	Zhang YL (2003)
红古话 Hongguhua	2	Luo Peng (1999), Zhang YL (2003)
海石湾镇 Haishiwanzhen	2	Luo Peng (1999)
河嘴乡 Hezuixiang	2	Luo Peng (1999)
花庄镇 Huazhuangzhen	2	Luo Peng (1999)
平安乡 Pinganxiang	2	Luo Peng (1999)
三甲集 Sanjiaji	2	Mo Chao and Zhu Fulin (2009)
永靖县(红泉) Yongjingxian (Hongquan)	2	Zhang Jianjun (2009)
唐汪[b] Tangwang	2	Xu Dan (2014a)
西宁 Xining	4	Zhang Chengcai (2006)
门源 Menyuan	3	Cao Zhiyun et al. (2008)
湟源 Huangyuan	3	Cao Zhiyun et al. (2008)
乐都 Ledu	3	Cao ZY et al. (2008), Deng WJ (2009)
同仁 Tongren	3	Cao Zhiyun et al. (2008), Deng WJ (2009)
民和 Minhe	3	Deng WJ (2009)
	1	Zhang YL (2003)
循化 Xunhua	3	Deng WJ (2009)
贵德 Guide	3	Deng WJ (2009)

[a]The four-tone dialects are not comprehensive here

[b]In Tangwang, Han people use two or three tones while Hui people employ high and low tone/pitch to distinguish meaning

ence cities but not the inverse situation as observed in Europe by the scholar we mentioned. Does tone reduction present a tendency for Northwestern Sinitic languages in the future? Will other dialects or Sinitic languages follow this path? It is too early to predict anything for the moment.[15]

Another fact worth noting is the two-tone system found in Honggu County and Xigu County (Zhang Yanlai 2003), which are part of the suburbs of Lanzhou. Luo Peng (1999) was the first person to note that in Honggu and Huazhuangzhen, suburbs of Lanzhou, people use only two tones. Ten years later, Mo Chao and Zhu Fulin reported that in Sanjiaji, two tones are attested. Separately Zhang Jianjun (2009) indicated that in Hongquan within Yongjing County, which normally uses a three-tone system, two tones are also found. Xu Dan (2014a) indicates that in Tangwang, located in Dongxiang County, Han people also use two (and three) tones. The map shown in Fig. 1 clearly indicates that some two-tone use is found in a zone geographically close to Dongxiang Autonomous County in Gansu and to Hui and Tu Autonomous Counties in Minhe, Qinghai province. Slater (2003: 8, 75) indicates that the Tu language (See also Zhaonasitu 1981) has a stress system but not a tone system.[16] We understand then that the tone reduction in Honggu is parallel to what has happened in other places near Dongxiang County. These dialects have been profoundly influenced by non-Han languages, i.e. Mongolic or Tibetan languages which do not possess tones.

5 Concluding Remarks

In this paper, we have used the linguistic area approach to study a frontier zone between Gansu and Qinghai provinces. The Gan-Qing area is less studied and merits more attention in language contact research. This area includes smaller linguistic areas such as the Hezhou area which have clear geographic limits and salient linguistic features. Geographic factors have played a primordial role in linguistic area formation, since nearby things have more of a chance to be in contact. Different ethnic groups speaking various languages show a tendency to develop similar linguistic features over hundreds of years. The situation we can observe today in the Gan-Qing area shows a strong Mongolic influence upon Sinitic languages. Although Sinitic languages exert influence on non-Han languages through lexical borrowing, the influence of non-Han languages upon Sinitic languages is much more profound and fundamental: it has begun to affect the syntactic system in Sinitic varieties, even though the borrowing from non-Han languages at the lexical level is not significant (see Chen Naixiong (1989) and Xu Dan (2014a, Chap. 5)).

[15]Most languages investigated by Cao et al. (2008) possess multi-tone system and in the South the tone system is much more complex than that in the North.

[16]Slater observes that the stress in Tu does not play a phonemic role since its position does not distinguish meanings of words and Chinese tone begins to influence Tu in borrowing words from Chinese, but it does not affect the phonological system in this language.

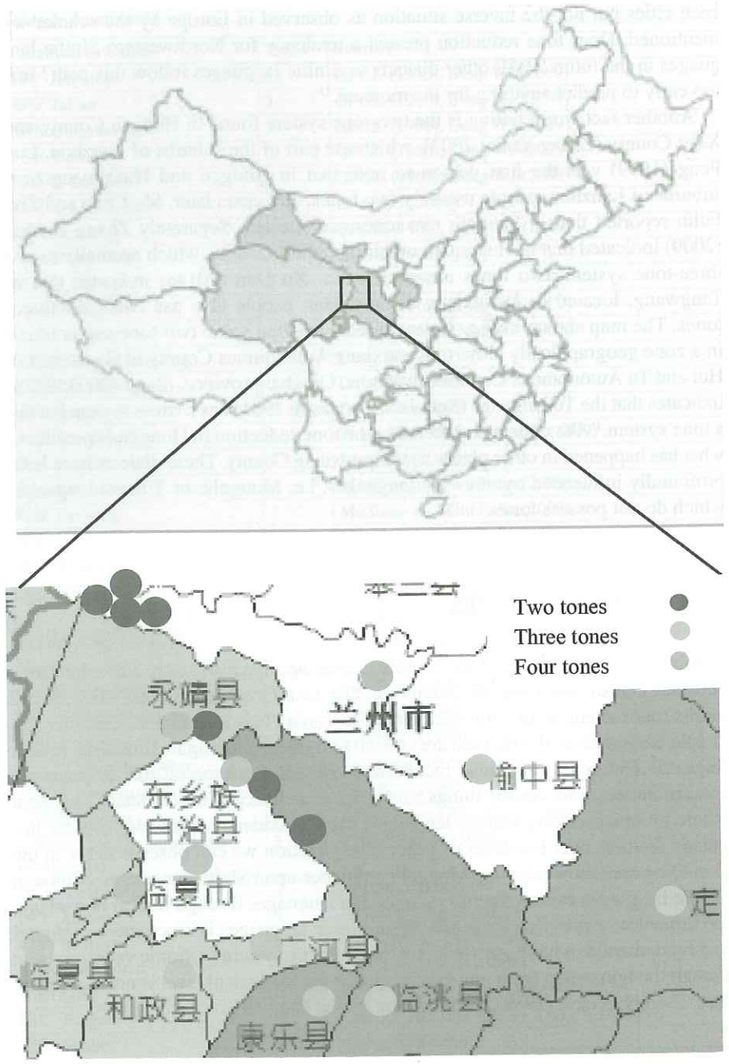


Fig. 1 Map of China and distribution of tones close to Lanzhou

In our study we have also shown that geographic factors have to be taken into account in different ways with respect to cities and peripheral regions. Cities with a significant size form an internal network crossing language boundaries for tone system spread, even though the distance between cities is much bigger than that between them and their surrounding counties. It is shown that cities are sometimes not subject to the same changes undergone by neighboring regions. The neighboring regions show another evolution pattern in which space plays a crucial role. In the past, people thought that constant migration caused languages to evolve more quickly in cities than in the surrounding regions, but the tone simplification attested in Northwestern China presents a counterexample and a challenge.

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