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Social network structure and language change in Amdo Tibetan

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Abstract: This article discusses dialectal diversity in Amdo Tibetan using a sociohistorical linguistic framework in which typological variation in related speech varieties is explained as a function of social network structure. It is argued that morphosyntactic and phonological complexity are functions of the complexity of network ties that characterize the community in which languages are spoken. Social network structure influences linguistic development in three ways: a network's size and constituency determine the synchronic variation that members of the network are exposed to as a whole and that are available to become sources of diachronic change. The nature of the relationships characterizing different network types contributes to the context in which communication takes place, influencing the content of linguistic exchanges. Over time, biases in the interactional functions that linguistic expressions are used to perform favor the selection and development of some features over others. Finally, different social network types are associated with different language attitudes, including awareness and enforcement of linguistic norms. Network type interacts with other social factors to influence the direction of language change.

Keywords: Tibetic, Amdo Tibetan, sociohistorical linguistics, language variation, social networks

1 Introduction

This article explores the connection between social network structure and linguistic diversity by comparing phonological and morphosyntactic examples from different communities of Amdo Tibetan (AT) speakers: high-altitude pastoralists and valley-dwelling farmers. The speech varieties spoken by these two community types display different structural properties and are labeled, respectively, *endoteric* and *exoteric*, following Thurston (1987, 1989). It is argued that the structural complexity and conservative patterns of change displayed by endoteric AT dialects are the product of characteristic interactions that emerge

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from a small, dense and multiplex network structure, while the reduced complexity and innovative patterns of change displayed by exoteric AT dialects are associated with a looser, larger and more uniplex network structure. Endoteric social networks also tend to be linguistically homogeneous while exoteric networks tend to be more heterogeneous, because the latter's larger number of participants and less intimate connections are more accommodating of participants with linguistically heterogeneous backgrounds, including speakers of varying proficiency levels. This difference further contributes to diverging patterns of synchronic variation and diachronic change. Establishing linguistic correlates of specific social organization traits enriches the theory of sociohistorical linguistics while also providing insight into the language ecology of the Amdo region of Western China.

A social network model of language change offers insight into a central problem of both typology and historical linguistics: taxonomic types do not always correspond to phylogenetic classification of languages. In other words, languages that are genetically related sometimes display very different structural properties while unrelated languages may be structurally similar. An adequate explanation of language change must confront this problem in order to account not only for synchronic linguistic diversity but also for diversity in patterns of linguistic change. In cases of cross-genetic structural similarity, when the languages in question have proximate geographic distributions, the similarities are explained as a consequence of contact-driven morphosyntactic and phonological convergence. But this does not account for variation in cases in which language contact is not involved nor does it explain how or why language contact triggers change. Appealing to differences in the social organization of speech communities as an explanatory factor in the development of linguistic structure can account for typological divergence in cases where cross-linguistic contact does not play an obvious role, as well as explain how cross-linguistic contact spurs language change.

The sociolinguistic conditions of western China's Amdo region present an opportunity to test aspects of this theory *in situ*. Investigations of dialectal diversity can provide insight into universal principles of language change because the same processes that cause distinct, mutually unintelligible languages to split off from a common ancestor are at play in the emergence of dialects, but at a shallower timescale, which makes it possible to identify and isolate mechanisms of change that are not apparent at greater time depths. What's more, comparing dialects within a language helps to control for language-internal variables, such as inherited typological tendencies. Dialectal comparisons of Amdo Tibetan benefit from a documented history dating back hundreds of years that provides valuable insight into previous stages of the

language[1] as well as information about the region's social history. Finally, modern AT is notable for the diverse social structures of its communities, presenting opportunities for observing possible correspondences between linguistic and social network structures. In particular, AT speakers encompass two quite distinct modes of social organization: small, economically and culturally isolated pastoralist communities and large, economically and culturally integrated sedentary communities. In other words, AT speakers live in both endoteric and exoteric communities, presenting an excellent opportunity for investigating a possible correlation between community type and certain structural features. Exoteric speech varieties should structurally differ from endoteric varieties because they have developed under the cumulative effect of slightly different communicative contexts. These differences should influence all levels of linguistic structure.

Both conservative and innovative AT dialects have undergone change, but innovative dialects have experienced more changes, overall, and the innovations in question tend to have had the result of simplifying linguistic structures. In contrast, conservative dialects have undergone fewer changes overall, but among the changes that they have undergone, are innovations that have maintained or increased structural complexity. It is hypothesized that dialects of Amdo Tibetan will display structural traits that correspond to a distinction between exoteric and endoteric community types. Respectively, exoteric dialects will display higher incidences of innovation, overall, and also a bias toward simplifying innovations, while endoteric dialects will display fewer innovations with a bias toward complexifications.

This article is organized as follows. Section 2 introduces the theoretical background of the article. It defines parameters of synchronic complexity and diachronic innovation that are considered in this article, as well as outlining a social network theory of language change. Section 3 briefly introduces the sociolinguistic history of the Amdo region in the context of the theories described in Section 2. Section 4 introduces three Amdo Tibetan dialects. Section 5 looks at evidence of socially driven phonetic variation across these

1 Amdo Tibetan shares a common orthography, Written Tibetan, with other Tibetic languages. Written Tibetan (WT) is organized around phonemic principles originally based on one or more spoken Tibetan varieties, but most of its spelling conventions date back to its founding in the seventh century and the first major standardization effort undertaken in the ninth century (Simonsson 1982). While not a perfect record, it provides considerable information about earlier stages of Tibetic and also serves as an important point of comparison for languages across the Trans-Himalayan family.

dialects. Section 6 examines morphosyntactic variation, and Section 7 concludes this article.

2 Theoretical background

Social network structure alone does not determine the direction of linguistic development. It interacts with other social factors such as prestige and solidarity (Croft 2000: 181–183) as well as non-social factors, such as languages' inherited structural patterns and universal cognitive functions and, ultimately, the random nature of change in all dynamic systems. But the social network provides the platform on which language unfolds as a group behavior, and it is in the context of the social network that the collective influence of individual behaviors gives rise to large-scale (both temporally and demographically) patterns that we think of when we think of language as an ontological entity. It is useful, then, to examine what if any correlations exist between linguistic patterns and structural differences of social networks.

2.1 Synchronic diversity and diachronic patterns of change

Speakers of both exoteric and endoteric languages continuously produce innovations as a consequence of the need to perform unique and ever changing communicative tasks (Coseriu 1956). What is different is the collective linguistic behavior of communities. The internal structure of speech communities restricts the quantity and type of innovations circulating through the community and which are ultimately available to fuel future changes. This article explores diversity from two angles: synchronic variation and patterns of diachronic change. The synchronic parameter of interest here is the relative complexity of systems as well as individual structures within a speech variety. The notion of absolute complexity, that languages might be more or less complex, remains controversial (see, for example, DeGraff 2001; Farquharson 2007; Dahl 2004). But relative complexity, confined to the level of linguistic subsystem, is a useful parameter for comparing structural variation. Complexity is thus narrowly defined in two ways, informed by views expressed in Trudgill (1986) and Kusters (2003).

First, complexity is defined as an overall property of a given system of structures. Complexity in this sense is measured by the amount of unpredictable information that must be memorized by a speaker in order to master the systems in question. Systems with large numbers of contrasts are considered more complex than equivalent systems with fewer contrasts because contrasts are

unpredictable and must therefore be memorized. In other words, the greater the memory load of a given system, the more complex it is.

Second, complexity is understood to be a property of individual structures, and is defined as a function of acquisition difficulty, meaning the difficulty adult learners have in acquiring a given structure. Dahl (2004: 39–40) points out that "difficulty", or cognitive cost, is not inherently synonymous with complexity, as adult learners are more likely to acquire a structure in the target speech variety if there is an analogous structure in their native language(s). This is true regardless of how typologically complex the structure in question is.[2] Nonetheless, when the linguistic backgrounds of a specific set of adult learners is taken into account and acquisition difficulty is defined according to such language-specific parameters, it is also a function of memory load because an adult learner does not need to increase their memory load to acquire target structures that closely resemble structures they already know. In this sense, structural complexity is defined in similar terms to systemic complexity.

Both senses of complexity are based on language-specific criteria, rather than the notion of universal markedness, which present problems for categorizing changes that result in typologically marked structures that also happen to resemble structures in neighboring languages (see Section 5.3 for a description of such a change in Gro tshang). If we define complexity in the terms given above – memory load and acquisition difficulty – then we have grounded the notion of complexity in the experience of individual speakers, whose knowledge of a language is not informed by previous historical stages but which is informed by whatever knowledge they have of other languages, dialects and idiolects (Joseph and Janda 2003). Furthermore, the above definitions restrict our measurement of complexity to subsections of a speech variety – specific systems and individual structures – rather than its entirety. This strategy allows us to forgo the trouble of comparing complexity across different levels of linguistic structure, such as phonology and syntax.

This article compares innovative versus conservative diachronic tendencies. A dialect is classified as innovative or conservative on the basis of the amount of innovations it exhibits relative to other dialects of the same language. Both conservative and innovative AT dialects change, of course, but innovative dialects have undergone more changes relative to conservative dialects. The notion of variable diachronic conservatism is related to the notion of synchronic

2 Note that both definitions of linguistic complexity presented here assume the existence of non-native speakers (McWhorter 2007). What seems like a complexification in light of a speech variety's internal history may be a simplification when considered from the perspective of language contact if the innovation in question results in a structural convergence.

complexity. Innovations can result in structures that are either more or less complex, according to the parameter of acquisition difficulty. Individual innovations can also affect the overall complexity of systems by either reducing or increasing the number of features that must be memorized to master them. As stated in Section 2.2, one factor determining a language's rate of innovation is the relative linguistic heterogeneity of its speakers. Highly heterogeneous speech communities not only experience a high degree of structural variation, which has a flattening effect on language's systems and also on individual structures within those systems. Consequently, a strong diachronic tendency toward innovation is associated with reduced synchronic complexity.

Conservative dialects, in contrast, have not only undergone fewer structural changes, but what changes they have undergone include a proportionately larger number of complexifications compared with innovative dialects (Dahl 2004; McWhorter 2007). In other words, a higher rate of change (in the sense of a cumulative effect, rather than the speed with which individual changes occur) is associated with less complexity.

2.2 Social network structure and divergent patterns of change

A speech community is defined as a group of people who share a set of linguistic norms and expectations, regardless of whether or not they identify themselves as members of such a community (Labov 1972). The speech community in turn is comprised of social networks – groups whose members participate in a communicative exchange with a central member, or anchor. Ideally, a single speech community shares a single variety of speech but will be interconnected with other speech communities through the overlapping communicative activities of their respective members. Social networks, therefore, can extend across multiple communities. Mufwene (2003: 337, footnote 11) refers to speech communities that are so connected as meta-communities.

For the purposes of this article, a social network is defined as a totality of individuals with whom a central actor, or anchor, engages in communicative acts (Milroy 1980; Milroy and Milroy 1985). It is not necessary for all the non-anchor participants of a network to directly interact with one another, but the extent to which they do determines the network's density. The relational content of a network determines its multiplexity and is a function of the kinds of interactions the anchor has with each of the participants. A highly multiplex network is one where the anchor is affiliated to the average participant in multiple ways, as a relative, co-worker, friend, neighbor, etc. Interactions that take place in the context of multiplex relationships typically encompass a

diversity of communicative functions. A less multiplex, or uniplex, network is one where the average participant is affiliated with the anchor in only one way, as just a neighbor, or just a co-worker, for example. We would expect interactions that occur over the course of such relationships to be characterized by a narrower range of communicative functions.

Network size, density and multiplexity influence linguistic behavior by shaping the context in which communication occurs. In multiplex networks, a significant percentage of social interactions take place between participants who are well known to each other. In dense networks, there is also the added impact of the high likelihood that participants in a social interaction are both familiar with any third persons they might discuss. In a small network, the effects of density and multiplicity are magnified. It follows that speech varieties, influenced by the patterns of linguistic behaviors that their characteristic social network structure engenders, change in ways that result in characteristic morphosyntactic and phonetic properties.

Social network type also influences language development in indirect ways. Small, dense, multiplex social networks are characterized by limited exposure to other speech varieties as well as more internally-focused language attitudes, which, according to Andersen (1988), correspond to high levels of community solidarity expressed through a strong adherence to linguistic norms (1988: 43). Such network structure minimizes the exposure members have to outside speech varieties, thus reducing the overall number of linguistic innovations to which they are exposed, and also creates strong social motivations to not adopt any new innovations, regardless of their origin. In contrast, large, loose and uniplex networks provide ample opportunity for outside contact. They are also characterized by decentralized identities and attitudes toward language.

3 Sociolinguistic profile of Amdo Tibetan

Amdo is the traditional Tibetan name[3] for the northeastern quadrant of the Tibetan cultural zone, covering approximately 350,000km^2 (Green 2010). Its boundaries contain much of modern Qinghai Province together with parts of southwest Gansu Province and northwest Sichuan Province. Amdo is

3 It may not be an official designation, but "Amdo" is still often used in government-sponsored materials (Chinese *ānduō*) promoting tourism, discussing language policy or differentiating Tibetan sub-groups. It is also worth noting that there is some controversy as to its exact geographic boundaries, at least among Tibetans themselves. This is especially true of the western and southern borders, where Amdo connects with the Khams Tibetan region.

linguistically diverse, with several subgroups representing three language families: Trans-Himalayan (represented by Sinitic and Tibetic),[4] Turkic, and Mongolic. In terms of population size as well as geographic distribution, Tibetic and Sinitic speakers predominate, but there are also sizeable communities representing the Southeast and Northeast branches of Turkic, and at least three distantly related branches of Mongolic (Nugteren 2011, 2014). Generally speaking, genetic diversity gives way to (Tibetic) homogeneity the further west one goes, with some areas such as Mgo log Prefecture being almost entirely Amdo Tibetan-speaking. The region has been called a *Sprachbund* (Dwyer 1995, 2013; Slater 2003), meaning that its languages exhibit a high degree of grammatical and phonological convergence.

The sociolinguistic profile of Amdo fits several criteria for being a historical spread zone, as identified by Nichols (1992). As stated above, the region has the characteristic low structural diversity of a classic *Sprachbund*. Additionally, with the exception of Mongolic, which appears to consist of distinct populations of genetically distant sub-groups established by independent migrations from different areas of Mongolia and Siberia (Slater 2003; Janhunen 2003, 2004; Nugteren 2011), the depth of the language families spoken in the Amdo region is quite shallow.[5] In multilingual parts of Amdo, one language dominates: both Amdo Tibetan and Qinghai Chinese have long histories serving the role of lingua franca (Janhunen 2004). Finally, although Qinghai Chinese (and now Mandarin Chinese) has become the dominant language, AT is still learned by speakers of other languages for the purposes of trade and religious education.

4 For the purposes of linguistic analysis, this article follows Tournadre's (2008, 2014) categorization of Tibetan "dialects" and other speech varieties believe to descend from Old Tibetan into the Tibetic sub-branch of Trans-Himalayan. Trans-Himalayan is what van Driem (2011) has proposed as a less confusing name for Sino-Tibetan. My use of "Tibetic" in this article corresponds to Janhunen and Norbu (1999), Slater (2003), Janhunen (2003, *inter alia*) and others' use of "Bodic" when referring to languages spoken in Amdo. For the purposes of linguistic analysis, Amdo Tibetan is here classified as a language, separate from other varieties spoken within Amdo and elsewhere, such as Cone Tibetan (Jacques 2014).

5 Qinghai Chinese and Gansu Chinese are classified as dialects of Central Plains Mandarin, which is believed to have originated in modern day Shaanxi, Henan and Shandong Provinces (Dang et al. 2006). Large populations of Chinese-speakers did not appear in the area until the Early Ming era, after 1370 CE (Dede 2003). The Salar population traces its origins to northern Xinjiang (Ma and Stuart 1996; Dwyer 2007). The various Mongolic-speaking communities seem to have migrated to the area at different points during the expansion of the Mongol Empire starting in the thirteenth century (Schram 1954; Slater 2003). The origins of Tibetic speakers in the area is somewhat murkier, largely in part because their presence predates the other groups. (For more information on Tibetan linguistic prehistory see van Driem 1998; Aldenderfer and Zhang 2004).

Like other spread zone languages, AT is spoken by communities with different social network structures. This sociolinguistic diversity is reflected in traditional descriptions of variation within Amdo Tibetan. Chinese and Tibetan scholars in particular have focused on a dichotomy between *'brog skad* 'nomad' (i. e., pastoralist) dialects, and *rong skad*, 'farmer' dialects.[6] More recently, these labels have been abandoned in favor of more linguistically descriptive terms, 'archaic/conservative' and 'innovative' (Green 2010; Hua 2002; Haller 2000), which are based on phonological characteristics. While it is an overgeneralization to say that all dialects spoken by pastoralists are conservative and all those spoken by farmers are innovative, there are noticeable typological patterns that correspond to a distinction between these different socioeconomic groups, one of which is a strong tendency toward retaining archaic phonological features in pastoralists' dialects and an equally strong tendency toward innovating sound changes in farmers' dialects (Hua 2002; Wang 2010). To date, linguistic descriptions of AT internal variation have largely focused on phonology. As will be shown, however, there is evidence that this divergence into innovative and conservative types extends to other levels of language structure. Differentiated change in pastoralist and farmer dialects can be understood as a product of the respective communities' exposure to other speech varieties as well as their attitude toward their own and other speech varieties. These interconnected domains are reflected in the structure of the social networks of the speech communities in question.

The above analysis also explains a puzzling aspect of nomad dialects: their relative homogeneity as a group compared with the relative heterogeneity of farmer dialects, because the speech of endoteric communities changes more slowly than that of exoteric communities. We would expect, then, that the speech of widely separated endoteric nomadic communities has changed little since the communities diverged from one another. In contrast, the speech varieties of innovative exoteric communities have undergone considerable change resulting in high levels of structural divergence. Conservatism in and of itself does not entail complexity (defined in terms of formal opacity and memory burden), since if a conservative language was "simple" to begin with, it will retain this simplicity in its conservativeness, but because the social structure of endoteric communities is conducive to complexification, we should expect to see signs that nomad dialects are also more complex than farmer dialects.

In as much as any particular community corresponds to a prototype, farmer communities tend to be large and located in multi-ethnic economic centers, a situation conducive to the development of large and loose social networks. In contrast,

6 Green (2010) discusses various scholars' classifications in detail.

pastoralist communities are by necessity located in sparsely populated, peripheral areas with little outside contact, resulting in small, dense social networks. This article primarily examines three dialects of Amdo Tibetan: Mgo log, Rdo sbis and Gro tshang.[7] Mgo log is spoken by pastoralists in Mgo log Autonomous Tibetan Prefecture, Qinghai. Rdo sbis is spoken by sedentary farmers living in Xunhua Salar Autonomous County, Gansu. Gro tshang is spoken by sedentary farmers in Ledu District, Qinghai. I will argue that Mgo log represents an endoteric dialect and Rdo sbis and Gro tshang, exoteric dialects. As will be shown, preliminary analysis of these three dialects indicates structural features suggestive of simplifying changes for the former and complexifying changes for the latter two varieties.

Unless otherwise noted, phonetic and other information on Mgo log is based on my personal fieldwork conducted between 2008 and 2012 in Gcig sgril County. Data for Gro tshang comes from my own fieldwork, conducted in 2010 in Ledu County (now District, as of 2013) and Xining City, and from work by Wang (2010) and Xu (2014). Information for Rdo sbis is based on work by Janhunen and Norbu (1999), Janhunen (2003) and Hua (2002), as well as my own fieldwork, conducted in 2010 and 2012 in Xunhua County and Xining City. All Rdo sbis sources used data produced by speakers from Daobei (Rdo sbis) Township. Information for all other dialects comes from other sources.

4 Amdo Tibetan speech communities

This section describes the different social ecologies in which the three AT dialects this article focuses on are spoken. The social profile (endoteric to exoteric) of a speech community emerges from the average structural features of all the social networks its speakers participate in.

4.1 Rdo sbis: an exoteric dialect

The Rdo sbis speech community is located in modern-day Xunhua, an autonomous county of the Salar ethnic group in eastern Qinghai Province. All Rdo sbis

7 "Mgo log", "Rdo sbis" and "Gro tshang" are used in reference to specific dialects of Amdo Tibetan, as well as to speech communities. Xunhua and Ledu refer to the places where Rdo sbis and Gro tshang are spoken. These are the official Chinese names for geographic boundaries that do not have traditional Tibetan names. Both Xunhua and Ledu are home to large numbers of non-Tibetans. Thus, Rdo sbis and Gro tshang are used in this article to refer to speech varieties, while Xunhua and Ledu refer to the larger locations where these varieties are spoken. Mgo log refers to both the dialect and the place where it is spoken.

data presented in this article were produced by speakers from Daobei Township. According to the 2011 Chinese Census, the population of Xunhua County is 126,900 in an area of 2,100km$^{2.}$ The majority (62%) of residents are Salars, a Turkic-speaking ethnic group that practices Islam. Ethnic Tibetans comprise the next largest group (23%), followed by ethnic Hui (Chinese or Tibetan-speaking Muslims) at 8.3% and ethnic Han, at 5.9%. There are also small populations of ethnic Mongolians, Bonan, Yugurs and Tu, all of whom speak different Mongolic languages (Nugteren 2011). Of the counties' nine administrative districts, three are designated Tibetan, of which Daobei Township, with 27 villages, in the largest. The county is located close to or along several historical trade and pilgrimage routes established during the Silk Route period. It acts as a regional transportation hub connecting the cities of Xining in the west and Lanzhou in the east to other parts of Amdo. The climate is suitable for farming and the county is an important center for commercial agriculture in the region. Especially in Hui and Salar communities, men often seek employment as drivers or long distance traders. In particular, Xunhua has a reputation as a major distribution center for the caterpillar fungus trade.

Nietupski (1999) and Dwyer (1995, 2007) describe pre-1949 Xunhua as a dynamic frontier in which a multiplicity of ethnic, linguistic and religious groups came into heavy contact with one another. The ethnolinguistic and religious affiliations of communities overlapped and, in some cases, frequently changed over time (Nietupski 1999: 69–72). The political infrastructure was correspondingly complex. During the Qing and Nationalist eras, Xunhua was an administrative district of Hezhou Prefecture, but in practice, political power was often shared with religious authorities. Various Islamic institutions have exerted considerable political and cultural influence, but the Tibetan Buddhist monastery *Blab rang dgon chen*, located in a neighboring district, was and remains a singularly important institution in the region. Religious institutions not only provide super-ordinating structure in a social hierarchy, they also serve as centers of education and culture. Mosques, monasteries and temples host large-scale community events that attract participants from throughout Xunhua and other outside areas. Nietupski describes a multilingual sociocultural climate persisting into the present in which Buddhist monasteries provide "religious, ideological and political structures to Tibetans, Chinese and all local peoples, and at the same time Chinese language, culture and the outer limit of Chinese political jurisdiction are noticeable local features (1999: 71)". Amdo Tibetan and Qinghai Chinese both function as local lingua francas.

Though Xunhua County contains the largest concentration of Salars in the country, they are relative newcomers to the area. According to their oral history, they first arrived in 1370 CE (Rockhill 1894: 36). Encroachment has been a

gradual and apparently peaceful process, accomplished in part by intermarriage between Salar men and Tibetan women. This practice continues today among Salar and Tibetan-speaking Muslim communities.[8] Consequently, while villages are officially designated as Salar, Tibetan or Hui, in reality, many communities are ethnically heterogeneous and there has been extensive inter-adoption of cultural practices (Dwyer 2007). According to Salar and Tibetan informants in Xunhua, it is more common for Salars to speak Amdo Tibetan than for Tibetans to speak Salar, even though Salars are numerically dominant. This suggests that AT is more prestigious than Salar. Multilingualism in Chinese, both the Qinghai dialect and Standard Chinese, is also quite common, although not universal (Janhunen and Norbu 1999).

The dynamic and highly complex socioeconomic ecology described above suggests an exoteric social network structure. Xunhua is a hub of transportation, culture and trade, so many of its residents come into frequent contact with people from outside the area. There is also a high level of interactions between members of different communities within Xunhua, forming a large and diverse meta-community from the complex pattern of cultural, political and economic ties that cross ethnic and religious lines. Moreover, due to Xunhua's highly diverse ethnolinguistic make-up, these social networks often contain members from more than one speech community. This multilingual meta-community is sustained by a typical social network structure that is both large and not very dense, meaning that multilingual network anchors speak their respective languages in different contexts, without much overlap between, say, the acquaintances with whom they speak Salar and those with whom they speak Rdo sbis. The net result of this kind of structure on the linguistic output of such social structures should be a strong diachronic tendency toward innovation, manifested in the presence of structures that did not exist in earlier stages of AT. Moreover, we would expect Rdo sbis to display signs of structural simplification as defined in Section 2.1 in by having systems that are less complex overall relative to earlier stages of the language and also by having individual structures

8 For example, one Tibetan-speaking Hui community, Lamucun 拉目村, located in neighboring Hualong County, "exchanges" (in community members' words) wives with two or three Salar villages in Xunhua with whom they have a long-standing relationship. Salar women from Xunhua who marry into Lamucun are expected to learn Tibetan and their children are expected to speak Tibetan. The reverse holds for women from Lamucun who marry into the Salar villages in Xunhua. The government classifies Lamucun villagers as Tibetan, not Hui. They also self-identify as Tibetan and individuals with whom I've brought up the matter rejected the notion that they or their community were ethnically or culturally mixed. The official ethnic classification of the children born from these marriages follows that of the father.

that closely resemble those found in other languages spoken in Xunhua, most importantly Qinghai Chinese and Salar.

4.2 Gro tshang: an exoteric dialect

Gro tshang is also spoken in Haidong Prefecture, in the southern half of Ledu District. Gro tshang speakers are separated from the Rdo sbis speech community by mountains and the Huangshui River, which is a major tributary of the Yellow River. Upgraded from "county" to "district" in 2013 because of its size, Ledu is the second most populous administrative area in Qinghai Province after Xining Municipality. According to Xu (2014), the population is 290,341, inhabiting an area of 2,820km^2. Half of the population lives in urban areas, specifically Ledu City. The vast majority of residents (approximately 230,000, according to the 2011 Chinese Census) are ethnic Han. 17,517, or 6 %, are ethnic Tibetans. Gro tshang speakers are concentrated in Xiaying Township in the south of the district in two villages Xiaxiaying and Shangying (Xu 2014: 8). With the exception of a handful of government workers who tend not to stay permanently, both villages are entirely Tibetan. Agriculture is the primary economic activity.

Although Ledu's current size and demographic makeup are relatively recent developments (according to Xu (2014: 13), the area has been an economic and cultural center for thousands of years, as evidenced by a rich archeological record, most notably the discovery of hundreds of gravesites containing technically advanced pottery dating from 2300-1500 BCE in Liuwan Township (Underhill 2013). Like Xunhua, Ledu has long been an ethnic and linguistic frontier in which members of multiple ethnolinguistic communities interact in the context of a larger multilingual meta-community. In 414 CE, the area was conquered by the Southern Liang Dynasty, whose rulers, the Xianbei, are believed to have started out as Mongolic speakers (Chen 1996), but who gave the area the Chinese name that it bears today: Ledu 乐都. The area subsequently remained at least nominally under Chinese (or Mongolian) control until 757 CE, when the Tibetan emperor Srong btsan sgam po established a military garrison in nearby Shanzhou (now Ping'an) as part of an aggressive eastward expansion against the Tang Dynasty (Guo 2015). Most Ledu Tibetans trace their origins in the area to this period and some family, or 'bone' names (*rus pa*) names are said to derive from military themes, such as *dong*, meaning 'spear'. The Tibetan-settled part became known as Gro tshang, meaning 'wheat field' in Amdo Tibetan. This name refers not only to parts of modern Ledu District, but also well as parts of neighboring Ping'an County.

The Huangshui River valley, which makes the area especially suitable to agriculture, also connects Ledu to other major population centers in the region, in particular Lanzhou and Xining. Though currently a small minority in the district as a whole, Tibetans historically had a high degree of cultural influence in the area, most notably in the form of a network of monasteries, including Qutan Monastery, built in 1392 and said to be the oldest surviving monastery in Amdo. However, more recently their position relative to other ethno-linguistic groups in the larger meta-community of Ledu differs from that of Tibetans in Xunhua. AT has not enjoyed the same level of prestige in Ledu that it has in Xunhua, even before 1949, and Qinghai Chinese is the lingua franca used for communication between members of different ethnolinguistic groups. While Ledu Tibetan villagers engage in economic trade with other communities within Ledu – selling hay to Hui villages that commercially raise goats, for example – they are not particularly economically influential relative to other communities. As a small minority, they are not politically and culturally influential, either. Moreover, according to my consultants, intermarriage with other ethnic groups and even outside Tibetan groups was strongly discouraged until fairly recently. Gro tshang speakers thus live in small homogeneous communities that are required through economic necessity to engage in high levels of interaction with neighboring communities of Chinese speakers.

There is also strong indication that, until recently, the typical Gro tshang speaker's social network did not include speakers of other AT dialects. Evidence for Gro tshang's isolation from other Tibetan communities is found in the language itself. For example, Xu notes that Gro tshang has preserved certain archaic pronunciations that have been lost in neighboring dialects, including varieties spoken by pastoralists. Gro tshang has, instead, undergone its own unique set of changes (Sections 5.3 and 6).

This is not to say that Tibetans in Ledu never travel to places like *Blab rang dgon chen*, Rebgong, or other centers of Tibetan culture and religion. In fact, since 1949, anyone wishing to learn Written Tibetan or to receive advanced instruction in Tibetan Buddhism had little choice but to seek an education elsewhere, as the monasteries largely stopped operating as religious institutions and monastic residences for several decades. Spending any amount of time in other parts of Amdo requires adapting to different speech norms both in order to communicate effectively and also to avoid the social stigma of speaking a highly divergent dialect. Nonetheless, at least among the Ledu Tibetans I have met, such travels are quite common. Ledu Tibetans identify strongly as Tibetan, and are also quite proud of their unique history, which they trace back to a much-celebrated period of the Tibetan Empire. However, strong pride in a Tibetan identity coexists with the realities of being a small, culturally marginal group in

the sociocultural context of Ledu District and being geographically and economically disconnected from other Tibetan communities.

The above description suggests a social network structure that is very similar to that of Rdo sbis in terms of participant size and the kinds and level of density and multiplexity of their relationships. But Gro tshang differs from Rdo sbis in the linguistic backgrounds and behaviors of its community members. Like Rdo sbis, prior to 1949, the Gro tshang speech community was highly, though not universally, multilingual. However, because AT was not a lingua franca in Ledu and Ledu Tibetans were traditionally ethnically endogamous, Gro tshang has almost no non-native speakers.[9] As we will see in Section 5.3, it is possible that this difference between Gro tshang and Rdo sbis, both exoteric speech communities, has had consequences for their diachronic development.

Today Gro tshang is highly endangered. According to my consultants, people who continue to farm in Xiaxiaying and Shangying villages still use Gro tshang as their primary means of communication, and I was told that the dialect is spoken in class in the Xiaying Township elementary school, although not, strictly speaking, as the language of instruction. Xu reports that most young people have difficulty speaking AT and many are not able to understand it. I also found this to be the case during my visits to the area. Several of my Ledu consultants mentioned a "mixed" language of Gro tshang dialect and Qinghai Chinese spoken among Tibetans living in urban townships. Not all Ledu Tibetans regret this situation and many of those who do, accept the loss of their native language as inevitable. But many individuals actively resist

9 Xu apparently reached the opposite conclusion, as he attributes much of Gro tshang's phonetic changes, in particular the apical shift of the vowel system (Section 5.3), to the influence of ethnic Han second language speakers (see, for example, Xu 2007: 157). He does not, however, go into detail as to why he thinks this beyond the fact that Gro tshang's phonology displays considerable structural convergence with the Ledu dialect of Qinghai Chinese. My own fieldwork has thus far turned up no evidence of a large number of Gro tshang-speaking Hans in Ledu, at least over the past century. Ledu Tibetans whom I've asked report not having heard of any local Han people learning the local dialect, although Hans who travel to other areas of Amdo sometimes acquire other dialects of AT. Furthermore, they insist very strongly that intermarriage between Tibetans and Hans was virtually unheard of until recent decades. Instances of Ledu Hans acquiring Gro tshang would therefore seem to have been sporadic and relatively rare. Moreover, if Gro tshang's phonetic changes were driven by L1 interference from non-native speakers, we would expect to see effects in other levels of the language, such as the morphology and lexicon, which I have not found any evidence for. Nonetheless, it should be noted that Dr. Xu, who is Han, is a native of Ledu and his assumption of Gro tshang-speaking Hans in the area may well be based on other evidence of which I am not aware.

language shift. However, they do so by seeking to adopt norms from other dialects. Gro tshang is thus threatened by other dialects of AT as well as by Chinese.

4.3 Mgo log

In contrast to the Tibetan communities in Xunhua and Ledu, the small, isolated communities of Mgo log Prefecture exemplify the endoteric community type. Mgo log Prefecture has an area of 76,000km^2 with a population of 155,000 (2010 Chinese Census), making it one of the least densely populated regions in China. The vast majority of the population (over 90 %) are Tibetan "nomads", actually pastoralists who follow a regular rotation schedule, moving with their animals to the same seasonal grazing lands two, or sometimes three, times a year.

Given the high elevation (averaging 4,000 m) and the natural constraints of pasturing as a way of feeding livestock, the land cannot support dense populations of pastoralists. Traditionally, Mgo log society dealt with the reality of limited natural resources by practicing a migratory settlement pattern and creating a sociopolitical environment that allowed for communities to splinter and separate into different geographical areas without sacrificing economic and social ties (Yeh 2003). For the past thirty years, the prefecture has been the recipient of targeted economic and cultural development campaigns (Horlemann 2013). Even so, compared with other areas in China, many residents continue to follow traditional modes of living. Prior to 1957,[10] political power in the area was divided among three large clans, comprised of allied smaller clans, which were directly governed by their own leaders but who together formed a political and economic unit. These sub-clans controlled access to specific grazing lands for their own members but they also shared access to other grazing lands with other allied sub-clans. It seems to have been very common for the amount of territory controlled by clans and sub-clans to fluctuate as a result of peaceful negotiations and occasional conflicts. Also, depending on the size of their territory and herds, clans were more or less tolerant of outside grazers. Nonetheless, interaction between clans and sub-clans was highly regulated. When conflict broke out, social rules dictated that affiliated clans must provide material support and even engage in fighting, as needed.

Complicated clan politics seems to have played a role in Mgo log nomads' isolationist reputation, but in fact the reality of life in a harsh and remote

10 The timing of Mgo log's incorporation into the modern political structure of the People's Republic of China happened several years later than other parts of the country.

mountain region was probably the most significant factor in isolating Mgo log speakers from other communities. Political structure coupled with environmental restraints on population density and a highly developed level of economic self-sufficiency resulted in a highly endoteric social network structure.[11] As Skal bang skyid et al. (2011) report for neighboring nomadic areas, by and large the family was the most relevant social unit until well after the 1950s. For people living in this social environment, communicative activities consisted almost entirely of interactions with people who were highly familiar to one another and with whom they were affiliated by multiple different social roles. Interactions with stranger were relatively rare and, even then, the people involved were likely to share common acquaintances.

5 Phonological variation

The present section examines the correlation between social network type, diachronic tendencies and structural complexity of AT phonological systems. Based on the descriptions of their respective social networks given in Section 4, Rdo sbis, Gro tshang and Mgo log should have divergent phonological systems that exhibit varying degrees of innovation and complexity. We would expect the phonology of Mgo log, spoken by the endoteric community, to display conservative change tendencies and have preserved archaic features lost from the other two dialects. In addition to seeing fewer changes overall, we would also expect a larger proportion of the changes Mgo log has undergone to either be complexifications, as defined in Section 2.1, or else to have had no impact on the overall complexity of the phonological system. In contrast, the two exoteric communities, Rdo sbis and Gro tshang, should have phonological systems that have not only undergone considerable change, but to have specifically undergone changes that resulted in structural simplifications. As will be apparent, other social factors, such as prestige and identity, interact with network structure.

11 In reality, of course, the picture is not so complicated. Highly mobile anyway, Mgo log nomads (and nomads in general, it would seem) frequently migrate to other nomad areas. Based on accounts I have heard from older acquaintances, long-distance trades in things like salt that spanned the whole of Tibet also seem to have been dominated by individuals from nomad backgrounds. Nonetheless, the typical Mgo log speaker was, and in many cases still is, confined to a small social network with rare access to outsiders.

5.1 Phonetic conservatism and innovation in fricative onsets

The diachronic parameter considered in this article is variable conservatism, or tendency toward change, displayed by different dialects. We expect innovative dialects to have undergone relatively more phonetic changes resulting in phonological changes, such as altering the phonemic inventory, but innovative dialects also have undergone more phonetic changes that did not alter the phonological system. Consequently, one way to determine an AT dialect's relative conservatism is the compare how well it has preserved archaic pronunciations.

Differences in overall diachronic tendencies are especially apparent in the phonologies of these three dialects. All varieties of AT have undergone phonological changes since Written Tibetan (WT) was codified in the ninth century (see footnote 2, Section 1), but some dialects appear to have undergone more changes than others. While there is some doubt as to whether or not the Tibetan spoken at that time actually possessed all of the contrastive segments that WT represents (e. g., Green 2012), it nonetheless provides a valuable starting point for comparing phonologies across AT dialects and determining variable patterns of change. Because spelling conventions have been mostly maintained over the centuries, WT makes it possible to measure a dialect's phonological conservatism by determining the extent to which speakers' pronunciation of certain words conforms to the orthography. A dialect is considered conservative if it maintains not only the contrastive function of a WT segment, but also preserves what is believed to be the segment's original phonetic realization.

Table 1 compares pronunciations of reflexes of two sets of fricatives in bare initial[12] onsets for five AT dialects. Mgo log, Rdo sbis and Gro tshang are compared against each other. Two additional dialects are included to provide points of comparison. Rka khog, spoken southeast of Mgo log in Sichuan Province, and Them chen, spoken in northern Qinghai Province, are both nomad dialects and thus should also have relatively archaic, and therefore larger, phonemic inventories compared to Gro tshang and Rdo sbis. Previous stages of Amdo Tibetan are believed to have had four fricatives, a set of voiced

12 "Bare initial" refers to orthographically represented onsets that consist of a single consonant letter (with the exception of the digraph, *lha*), in other words, the onset of an orthographical CV (CC) syllable. "Pre-initial" refers to an orthographical consonant position before the initial consonant in syllables that are orthographically represented as having more than one consonant – an orthographical CCV(CC), CCCV(CC) or CCCCV(CC) syllable. Many orthographically complex onsets are not pronounced as consonant clusters in any modern AT dialect. Moreover, segments that do not occur as reflexes of bare initials occur as simplex consonants in the reflexes of syllables with pre-initials.

Table 1: Reflexes of Written Tibetan (WT) simplex onsets in AT dialects.

Proto onset	WT form	Mgo log	Them chen	Rka khog	Rdo sbis	Gro tshang
*s-	ས *sa* 'earth'	/sa/	/s^{h}a/	/sa/	/s^{h}a/	/s^{h}a /
*z-	ཟ ***za* 'eat'**	**/za/**	**/sa/**	**/za/**	**/sa/**	**/sa/**
*ɕ-	ཤ *sha* 'meat'	/ɕa/, /ça/	/ça/	/ça/	/ɕ^{h}a/	/ɕ^{h}a/
*ʑ-	ཞ *zho* 'yogurt'	/ʑo/	/ɕo/	/ʑo/	/ɕo/	/ɕu/

Note: Reconstructed proto forms in Figure 1 are based on Hua (1983) and Hill (2010). Hill transcribes the second set of onsets as post-alveolars, *ʒ- and *ʃ-. WT forms are transliterated using Wylie's (1959) system. Data for Mgo log and Gro tshang was recorded in the field by the author. Data for Them chen was taken from Haller (2000). Data for Rdo sbis was taken from Janhunen and Norbu (1999). Data for Rka khog was taken from Hua (2002). Where appropriate, adjustments have been made to the transcriptions of different sources for the sake of consistency. /x/ in Hua (2002) has been changed to /ç/, as used by Haller (2000), since the two transcripts appear to refer to the same phone. Aspiration is only included in the forms of dialects for which it is a contrastive feature of fricatives.

and voiceless alveolar sibilants and a set of voiced and voiceless post-alveolar or palatal sibilants (Hill 2010). These proto phonemes are represented in the first column. Lexical items are presented in the second column.

As Table 1 shows, all five dialects have undergone some degree of innovation in the phonetic realization of fricative bare initials. All the dialects have maintained a four-way contrast in the pronunciation of fricative bare initials, but have done so while undergoing changes to the phonetic values of some of the phonemes. Three of the dialects have undergone a shift in the primary phonetic cue differentiating the two members of the aveolar set. Likely this was a single change that simultaneously effected the phonetic realization of two phonemes. What was previously a contrast between voiced and voiceless variants shifted to a contrast between *fortis*, or strongly aspirated, and *lenis*, or unaspirated, pronunciations of two voiceless segments. The same contrast-preserving phonetic shift is also evident in the palatal series of Rdo sbis. Xu (2014: 41) records the same shift in Gro tshang, but the three speakers from Xiaying whom I consulted produced no noticeable difference between their pronunciation of orthographic *z* and *s* in the words 'yogurt' and 'meat' and also claimed not to hear a difference, themselves.

Regarding the three nomad dialects, Them chen appears to be as innovative as the two farmer dialects in its bare initial fricative series. In fact, based on the descriptions provided in Hua (2002), it appears that Mgo log and Rka khog stand out among farmer and nomad dialects alike in preserving the original voicing distinction of bare initial palatal fricatives. Based on Table 1, it looks like Mgo

log is slightly more conservative than Rka khog, because speakers have also preserved the sibilant manner of articulation /ɕ/ as an allophone that exists in free distribution with /ç/, but the same may also be true of Rka khog. During the course of my fieldwork in Gcig sgril County, I recorded both pronunciations of 'meat' given in Table 1 in the natural speech of young adults as well as older adults, but speakers under the age of 50 seem to use the archaic form /ɕ/ more frequently than older speakers. This is counterintuitive until one considers the influence of education, in which case it is possible that this occurrence of /ɕ/ reflects the adoption of a literary pronunciation into daily speech.

Note that /ç/ is only present as a reflex of orthographic *sh* in the three nomad dialects, which thus appear to be more innovative in this particular area of their phonologies than the two farmer dialects. However, /ɕ/ also occurs in Qinghai Chinese, Salar and Bonan, spoken in the meta-communities in which Gro tshang and Rdo sbis speakers live. /ç/ is present in Bonan (Fried 2010), but has not been described in Qinghai Chinese or Salar. Because the same structure is found in neighboring speech varieties, this may have contributed to selectional pressure against its loss.

All five AT dialects presented in Table 1 have undergone several phonetic changes in the reflexes of bare initial fricatives. Mgo log has experienced the most minimal amount of change, followed closely by Rka khog. The other three dialects, including nomadic Them chen, have undergone about the same amount phonetic change in this area of their phonologies, but Rdo sbis and Gro tshang have ended up being less complex than any of the three nomad dialects. While both endoteric and exoteric dialects experience change, exoteric varieties tend to change in ways that result in structural simplification.

According the hypothesis stated in Section 2.2, phonological conservatism should be associated with larger phonemic inventories, either because the systems of conservative dialects have not undergone many simplifications that would reduce the number of contrastive segments.

5.2 Relative complexity of onset inventories

Measuring the relative systemic complexity, as defined in Section 2.1, for the entire phonology of a speech variety is difficult because simplifications in one area are often associated with compensatory adjustments in other areas. Nonetheless, useful information can still be learned from comparing complexity within sub-areas of the phonological system. As we saw in Section 5.1, changes to the phonetic realization of individual phonemes do not necessarily result in changes to a dialect's phonology, but over time phonetic changes have a

collective simplifying effect. More innovative exoteric dialects should therefore have display less complexity than more conservative endoteric dialect in certain phonological levels. This can be seen in comparisons between the inventories of consonantal onsets of Mgo log, Rdo sbis and Gro tshang.

5.2.1 Innovative systems

Tibetic onsets are traditionally analyzed in terms that reference the phonemic structures represented in WT. As noted in footnote 10, above, the structure of WT onsets consist of an initial, up to two positions of pre-initial and a so-called medial, which follows the initial. (WT also represents a zero onset [see Hill 2010], which has been included in the onset inventories given below.) Such complexity is not present in modern AT. Many reflexes of WT compound initials[13] are realized as simplex segments. In some cases, the phonetic value of the new simplex onsets still preserve phonemic contrast. In order to make these diachronic processes clear, the onset inventories of the three AT dialects have been divided into reflexes of WT bare initials and WT consonant clusters. Only phonemes that can occur in the onset position of the first syllable of lexical polysyllables are included. In other words, the phonemes in Figure 1 are restricted to the environment #_V(V)(C), in which # represents a boundary between prosodic words. /ʱ/ indicates pre-voicing. In some cases it is phonetically realized as a voiced glottal fricative.

Phonemes that occur as reflexes of both WT bare initials and compound initials are presented in bold. Almost all of the reflexes of bare initials also occur as reflexes of compound initials. These are far from the only cases of historical mergers, but they are especially apparent in the context of Figure 1. Altogether, data from Xu (2014) indicates Gro tshang distinguishing 59 unique phonemic contrasts (including zero) in the onset position of first syllables.

The inventory presented in Figure 1 for Gro tshang is based on Xu (2014), but the list excludes onsets that only occur in the final syllable of a multisyllabic lexical item or in monosyllabic, phonologically dependent grammatical morphemes. Figure 1 also excludes any of the labial affricates Xu lists, such as /pf/ and /bv/, because when such forms are found in first syllables, they always

13 There is some debate as to whether or not WT compound initials (i. e., orthographical consonant clusters) historically represented multiple segments, as their forms indicate, or if they were a creative use of a limited source orthography, Sanskrit, to represent complex subphonemic features of single segments. It is clear that not all WT compound initials represent historical segmental clusters. For example, the digraph *lha* ལྷ seems to have only ever been intended to represent a single segment, *ɬ.

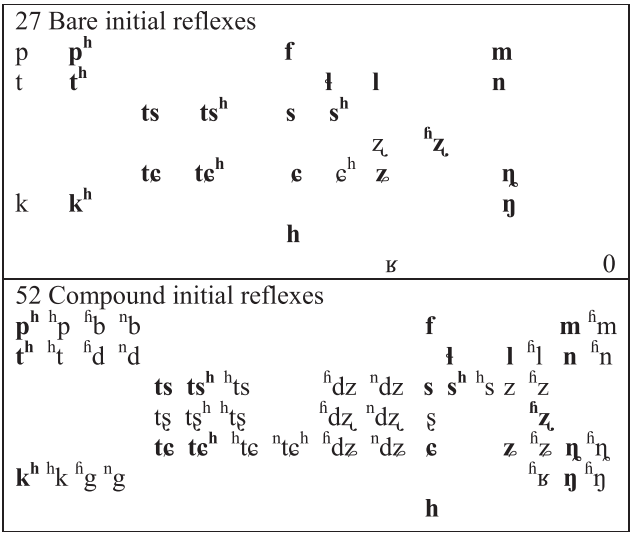

Figure 1: Gro tshang onsets.

occur before an apicalized vowel and the spirantized acoustic properties that are observed in the final portion of the onset in these syllables is a non-contrastive, predictable effect of the phonetic environment.

The voiced palatal /ʐ/ is present in the bare initial series as a reflex of WT *y*, not *zh*. It is present in the compound initial series as a reflex of WT *bzh* and also *phy*, although in a restricted number of lexemes. Otherwise the Gro tshang reflex of WT *phy* is /ɕ/, which is also the reflex of *zh* and *by*. This is illustrated in examples (1–4), taken from Xu (2014: 19–20).

(1) *yag pa* 'beautiful'→ /ʐex ki/

(2) *phyogs* 'direction' → /ɕox/

(3) *phyug po* 'rich' → /ʐox po/

(4) *bya ba* 'work, situation' → /ɕa ua/

Figure 2 presents the inventory of onsets in Rdo sbis with the same distributional constraints as Figure 1.

The onset inventory presented in Figure 2 is based on Hua (2002: 32) and informed by Janhunen and Kalsang Norbu with adjustments made to the

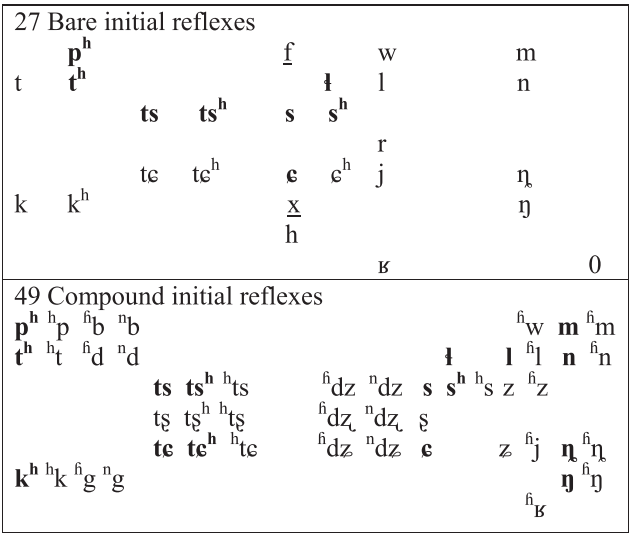

Figure 2: Rdo sbis onsets.

transcription to conform to the rest of this article. For the sake of an easier comparison, I have also left off a series of post-labialized obstruents and nasals included in Hua because Xu does not include any analogous phonemes in his consonantal inventory for Gro tshang, instead analyzing the lip-rounding feature as a /u/ /μ/ or vowel in a VV nucleus. According to Janhunen and Kalsang, /f/ and /x/ are not reflexes of any WT initial, but have become indigenized due to their appearance in numerous words of Chinese and Mongolic origin which have become core lexical items. Janhunen and Kalsang thus include /f/ and /x/ in their analysis (1999: 255). These phonemes, however, are not included in Hua's (2002) account, presumably because they are still confined to non-Tibetan loan words. Excluding /f/ and /x/ yields a total of 59 onsets, or the same number of contrasts as is found in Figure 1.

The superficially similar level of innovativeness and systemic simplicity of these two dialects is a product of many individual structural changes that proceeded along different paths. For example, of four WT initials, *y, g.y* (which is orthographically distinct from *gy*), *bzh* and *gzh*, Rdo sbis has preserved three phonologically contrastive onsets and Gro tshang has preserved two, yet these simplifications are the product of different mergers. Rdo sbis maintains *y*, /j/ and *g.y*, /ɦj/, as distinct onsets and merged *bzh* and *gzh* into a single onset, /ʑ/ Gro tshang maintains *bzh* as a distinct onset, /ɦʑ/, but has merged *gzh, y* and *g.y* into /ʑ/. Examples (5–12) illustrate these different developments. The odd-numbered

Gro tshang examples are presented above the even numbered Rdo sbis examples.

(5) *bzhogs* 'to peel'→ /^{ɦ}ʑok/
(Xu 2014: 206)

(6) *bzhogs* 'to peel'→ /^{ɦ}ʑok/
(Hua 2002: 263)

(7) *gzhes ning lo* 'year before last' → /ʑɯ nɔ̃Þ no/
(Xu 2014: 71)

(8) *gzhes ning lo* 'year before last' → /ʑə na ŋ/
(Hua 2002: 155)

(9) *g.yar ma* 'Sichuan pepper' → /ʑer ma/
(Xu 2014: 65)

(10) *g.yar ma* 'Sichuan pepper' → /^{ɦ}je ma/
(Hua 2002: 101)

(11) *yar* 'above'→ /ʑa ka/
(Xu 2014: 65)

(12) *yar* 'above' → /ja ra/
(Hua 2002: 149)

If the above examples make it seem like Gro tshang is more innovative than Rdo sbis, this is not necessarily true in all areas. As mentioned in Section 4.3, Gro tshang became isolated from Tibetan communities before certain sound changes occurred in other AT dialects. In the varieties described in Hua (2002), for example, WT *p* is typically pronounced as /w/ or /h/, but Gro tshang has preserved the pronunciation /p/ in many lexical items (Xu 2014: 26). In both Mgo log and Rdo sbis, /w/ is the most common reflex of WT *p* and *b*. This is illustrated in the cognate forms for 'knee', given below. (13) is Gro tshang, (14) is Rdo sbis and (15), which is from my own data, is Mgo log.

(13) *pus mo* 'knee' → /pin ko/
(Xu 2014: 26)

(14) *pus mo* 'knee' → /wi ^{n}go/
(Hua 2002: 55)

(15) *pus mo* 'knee' → /wɨ mo/

All of this is to say that the similar typological profiles of Rdo sbis and Gro tshang were produced by different language-internal pathways of change. However, similar social network profiles created environments in which the overall patterns of development and complexity have converged in these two disconnected communities.

5.2.2 A complex, conservative system

The onset system in Mgo log developed under very different social conditions than the Gro tshang and Rdo sbis systems with consequences for the structures of its sub-systems. In contrast to the two endoteric dialects, Mgo log marks considerably more contrasts in first syllable onsets and therefore is burdensome on the memory and thus more complex. A preliminary analysis of the onset system is presented in Figure 3.

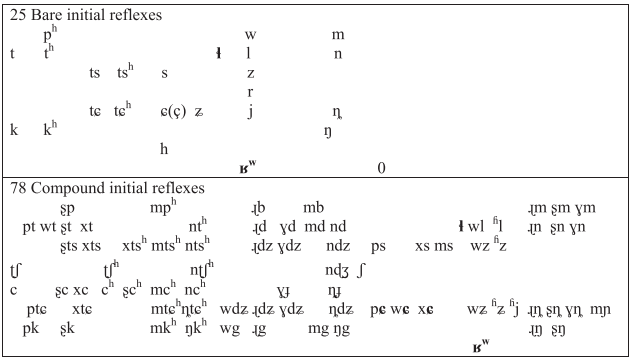

Figure 3: Mgo log onsets.

In Mgo log, the WT bare initials *p* and *b* have merged into one category, /w/. /p/ therefore does not occur as a first syllable onset, except in a handful of fossilized forms.[14] Otherwise, Mgo log has maintained a large number of the onset-level

14 Only one counterexample comes to mind: The name *pad ma*, the pronunciation of which is the basis of an interesting isogloss. According to Padma (2009), *pad ma* is pronounced /wa ma/,

contrasts represented in WT. Of the 78 compound initial reflexes presented in Figure 3, only two – /ɬ/ and /ʁ^{w}/ – also occur as reflexes of bare initials, giving a total of 101 possible onsets for first syllables. So few overlaps is indicative of the degree to which Mgo log has resisted phonological innovation. Thus, the size of this inventory is a function of the dialect's relative conservatism.

5.2.3 Compensatory complexification in adjacent systems

If we measure relative complexity only by comparing the number of possible onsets in first syllables, then Mgo log is clearly more complex than either Rdo sbis or Gro tshang. But when we look at other areas of the phonology, the picture is not so clear. One reason why Mgo log's onset inventory is so much larger (and more complex) than that of Rdo sbis and Gro tshang is that Mgo log has preserved many of the historical onsets that in WT have *b-* and *m-* pre-initials. What's more, many of these reflexes have retained archaic pronunciations and are phonetically realized as consonant clusters. As Figures 1 and 2 show, consonant clusters are absent in Gro tshang and Rdo sbis first syllables.

In Rdo sbis, most historical labial pre-initials have merged with other onsets (Janhunen and Norbu 1999: 268), resulting in a true simplification in the sense of reduced memory load. In Gro tshang, however, the loss of labial pre-initials made for a simpler onset system, but also produced a corresponding complexification of the rime system by triggering diphthongization and other sound changes in the vowels. In environments where this labial place shift resulted in diphthongization, it also contributed to complexification of the phonotactic system by creating a new syllable structure, (C)(V)V(C).[15] The following examples illustrate the different innovations that resulted in the loss of labial pre-initials in Gro tshang. Example (16) shows a reflex from Mgo log for the purpose of comparison. (17–20) are examples from Gro tshang.

(16) *bla ma* 'Lama'→ /bla ma/

/wan ma/ or /wad ma/ in northern Amdo, but only in communities distributed along the west bank of the Yellow River. Everywhere else in Amdo, the onset of the first syllable is pronounced with a plain labial stop, /p/. This includes Mgo log.

15 No AT dialect has been identified as having contrastive vowel length, therefore it can be argued that the nuclei of (19) and (20) do not represent a true VV sequence. Wang (2004), for example, describes such forms as "false diphthongs". Nonetheless, such structures represent a phonotactic change by permitting previously illegal vowel clusters and thus represent a complexification of the rime system.

(17) *bla ma* 'Lama'→ /la ma/
(Xu 2014: 37)

(18) *mtshe ma* 'twin'→ /ts^{h}i ma/
(Xu 2014: 28)

(19) *mgar ba* 'ironsmith'→ /^{n}gua za̧/
(Xu 2014: 28)

(20) *btson khang* 'prison'→/tsuæ̃ khɔ̃/
(Xu 2014: 39)

As we can see from (16), Mgo log has preserved the archaic pronunciation of the pre-initial *b-* in the word 'Lama'. The Gro tshang cognate (17) displays no evidence of the historical presence of a pre-initial. Likewise, there is no evidence of a pre-initial *m-* in the Gro tshang cognate of 'twin' (18). In (19), the initial segment of the historical cluster, *mg*, has been lost but it is reflected in the phonetic realization of the remaining segment, /g/, which is voiced and also pre-nasalized. The labial feature of **m* is also reflected in the quality of the vowel. The historical impact of WT *b-* on Gro tshang onsets appears to be limited to vowel quality, as shown in (20).

While Rdo sbis also has diphthongs, they appear to be result of changes to the coda inventory (Janhunen and Norbu 1999: 268). Nonetheless, Rdo sbis, like Gro tshang, also permits (C)V(V)(C) syllables. In addition to having diphthongs, both exoteric dialects have vowel inventories that are more complex in other ways than that of endoteric Mgo log, as will be shown in the next section. It would seem, then, that simplification in one system has been "balanced" by complexification in another, related system. This state of affairs necessarily complicates the issue variable complexity. One problem that it raises is how to compare complexity of consonants or onsets against complexity of rimes. Rather than attempting an answer to this, I would instead like to bring up the second definition of complexity employed in this article, that of structure-specific acquisition difficulty. The next section examines this issue in greater detail, but I will close this section by noting that, regardless of the exact phonological changes that produced them, Gro tshang and Rdo sbis diphthongs resemble diphthongs in surrounding dialects of Qinghai Chinese as described in Dang et al. (2006). When considered from the perspective of language contact, the expansion of rime-level contrasts in Gro tshang and Rdo sbis can be said to represent a phonological simplification because, by virtue of their convergence

with rimes in Qinghai Chinese, they have reduced the memory load of bilingual speakers of Chinese and AT.

5.3 Interaction between social network type and prestige

Mgo log's conservatism is evident throughout its phonology. An indirect effect of this is that it closely resembles the phonologies of other conservative AT dialects. Since conservative diachronic tendencies are associated with endoteric communities, this means that Mgo log is quite close to all AT varieties spoken by traditional nomads, regardless of their geographic proximity. In contrast, although Xunhua and Ledu are geographically proximate, Rdo sbis and Gro tshang display significant phonological differences. This is a natural consequence of their innovativeness – having undergone so many changes, and given the inherently unpredictable nature of change, many of those changes have been in different directions. So we are not surprised by the linguistic homogeneity of geographically disconnected endoteric pastoral communities nor by the linguistic heterogeneity of exoteric farmer communities. Having considered this, it is still apparent that some of the differences between Gro tshang and Rdo sbis are due not just to the inherent randomness of change but to specific sociolinguistic differences of their respective communities.

As described in Section 4, Gro tshang has a larger population of speakers (circa 17,500) than Rdo sbis (circa 8,000, according to Janhunen and Kalsang), but it is virtually surrounded by a large population of Qinghai Chinese speakers. Furthermore, the Rdo sbis meta-community also includes significant numbers of speakers of a third language, Salar. The meta-community in Ledu is mainly made up of speakers of two languages. The political status of AT in Ledu and Gro tshang is different, as well: in addition to several large monastic communities, Xunhua also has several Tibetan-medium schools. In contrast, Ledu's monasteries are understaffed and there are no Tibetan-medium schools (although, as noted in Section 4.3, I have observed Gro tshang being used in the classroom to communicate between teachers and very young, monolingual students). This asymmetry in political status is indicative of a social asymmetry as well. In Xunhua AT is a prestigious language; in Ledu it is not.

AT's less prestigious status in the Ledu meta-community, bilingualism with Qinghai Chinese and Ledu Tibetans' isolation from other Tibetan communities have conspired to produce a very dramatic phonological innovation – one that has effectively severed Gro tshang speakers from communication with speakers of other AT dialects unless they resort to using another speech variety. Gro tshang underwent a chain shift that has dramatically altered the phonetic

system of the dialect with the result that the dialect is unintelligible to speakers in other AT communities. The chain shift is most noticeable in the vowels, but affects the entire syllable and can be characterized as a fronting of the place of articulation for all segments in a syllable with originally [-LOW] vowels (Xu 2014). The acoustic consequences of the shift is relatively small in the syllables with lower vowels, but in syllables that originally had high front vowels to begin with, the shift resulted in a set of highly fronted closed (or apicalized) vowels and their consonantal counterparts. Table 2 illustrates the dramatic consequences of this change by comparing a list of Gro tshang words to their Written Tibetan and Mgo log counterparts.

Table 2: Apicalization in Gro tshang.

	Gro tshang	Mgo log	Written Tibetan	Gloss
21	ʱguã	ɻkɔŋ-wa	*sgong-ba*	'egg'
22	ⁿde	ndə	*ndi*	'this'
23	ʱɲe	ɣɲiʝ	*mig*	'eye'
24	ⁿgu	mgo	*mgo*	'head'
25	ʱgu	ʂko	*sko*	'door'
26	ʰta	ʂta	*rta*	'horse'
27	tsʰɻ	tɕʰə	*chu*	'water'
28	mɪ	ɲə	*mi*	'person'
29	mi	mɲe	*me*	'fire'
30	kʰa	kʰa	*kha*	'mouth'
31	ʱɲi̯	ɣɲi	*gnyis*	'two'
32	tsʰɿ	cʰə	*khyi*	'dog'

It is possible to understand apicalization as the same kind of change as the additive complexification that Trudgill described as happening in situations of heavy and sustained language contact. This is because, unlike the onset mergers or diphthongization described above, apicalization represents a move away from phonotactic naturalness. The phonetic symbols that I used to represent apicalized vowels in Figure 1 are either listed as consonants in the IPA system (ʝ) or else they are not recognized IPA symbols at all (ɪ, ɻ). The obstruent-like phonetic quality of apicals is due to the way they are articulated: closely positioning the apex of the tongue to the roof of the mouth to create actual frication. These apicalized vowels are voiced, but as a class, these vowels are less sonorant than their un-spirantized counterparts. Their inclusion as acceptable syllable nuclei in Gro tshang thus represents a move away from a "natural" sonority hierarchy.

As Xu proposes, the presence of apicalized vowels in Gro tshang is almost certainly due to contact with Chinese. This is apparent from the examples in Table 3, excerpted from Wang (2010: 359), comparing syllables in two dialects of Qinghai Chinese spoken Xining and Ledu, respectively, and Standard Mandarin Chinese, as spoken in Beijing.

Table 3: Apicalization of syllables in Qinghai Chinese.

	Xining	Ledu	Beijing	Gloss
33	tɕj^{55}	tsɿ^{13}	tɕi^{55}	'chicken'
34	j^{44}	ɿ^{13}	i^{55}	'one'
35	ts^{h}ɿ^{44}	ts^{h}ɿ^{13}	t^{h}i^{55}	'ladder'
36	lɿ^{53}	lɿ^{53}	li^{214}	'ceremony'
37	p^{h}j^{24}	p^{h}ɿ^{13}	p^{h}i^{35}	'skin'

Xu attributes this sound change to L2 Han speakers of AT, but this process seems to have happened without the introduction of high numbers of Chinese lexical items or with any attendant increase in phonological categories, as we saw in the case of /f/ and /x/ in Rdo sbis. Rather, it seems possible that, as the political and economic power of Chinese speakers in Gro tshang grew, bilingual Tibetans speakers introduced an apicalized pronunciation of high vowel syllables into AT. While economic and social necessity encouraged bilingualism in Chinese, a strong Tibetan identity precluded language shift, or even much lexical borrowing. At some point, the apical variants simply replaced their non-apical counterparts and became phonologized, triggering a chain shift that affected all [-LOW] syllables. The fact that other levels of Gro tshang, such as the lexicon and morphology, were not affected by similar changes suggests the influence of a significant number of monolingual speakers, for whom innovations based on lexical or grammatical L2 transference have rejected or simply been misunderstood without a knowledge of Chinese. That Rdo sbis has not undergone a similar change is likely due to the presence of other AT speakers in the Xunhua meta-community, and possibly a developed educational infrastructure encourage Tibetan literacy, as well.

6 Morphological and syntactic change

This section introduces some examples of morphosyntactic variation in Mgo log, Gro tshang and Rdo sbis. We would expect to see similar patterns of variable

conservatism and complexity in the grammatical systems of these three dialects as were observed in their phonological systems. One way that grammatical systems become less complex is through regularization, or the loss of formally idiosyncratic members of a morphosyntactic paradigm and the innovation of structures that behave more predictably in line with other members of the paradigm.

6.1 Conservatism and innovation in verb stems

Amdo Tibetan has a set of "strong verbs" – verb roots that have multiple stem forms expressing different tenses or moods. This system was inherited from Old Tibetan (circa seventh to eleventh centuries) and is present in variably reduced states in all described Tibetic varieties. Written Tibetan continues to distinguish a maximum of four stems, traditionally labeled "past", "present", "future" and "exhortative" (imperative), although the exact number of stems varies from root to root. AT has merged "future" and "present" stems in all roots, but has otherwise maintained the strong root system in a fairly intact state. Without a more systematic analysis of data for other varieties of AT, it is difficult to determine the extent to which dialects vary in this area of their morphology. However, it is evident from currently available data, such as it is, that differences do exist. It should be noted that even in WT only some verbs are strong roots.

Given that in WT many stems are differentiated solely by pre-initial, we would expect innovative dialects which have undergone phonological mergers in their onset inventories to have also merged some of their stems. Examples of this are found sporadically throughout Hua (2002). Table 4 compares present and past tense forms of three cognate verb roots in Rdo sbis and the two nomad dialects also featured in Table 1, in Section 5.1, Them chen and Rka khog. The latter is spoken in an area close to, but not contiguous with, Mgo log.

Table 4: Stem mergers in Rdo sbis.

Written Tibetan	Rdo sbis	Them chen	Rka khog
–'thread a needle'	ʱdʑən	rɟən (present) wɟən (past)	rdʑən (present) wdʑən (past)
རྡུང་ *rdung* (present)	ʱdoŋ	rdoŋ (present)	rdoŋ (present)
བརྡུང་ brdung (past)'beat; thump'		wdoŋ (past)	wdoŋ (past)
སྒུག *sgug* (present)	ʱgək	rgək (present)	rgək (present)
བསྒུགས bsgugs (past)'wait'		wgək (past)	wgək (past)

As we can see from Table 4, Rdo sbis has lost the distinction between "past" and "present" stems for the verbs 'thread', 'beat' and 'wait'. In contrast, Them chen and Rka khog have maintained separate stems for all three verbs. In terms of quantity of unpredictable information, Rdo sbis's verb system is simpler than the others'. We know that the different forms are simplifications in Rdo sbis rather than complexifications in the other two because the Them chen and Rka khog stems closely resemble the given WT forms[16] and can thus be assumed to be inherited.

Unfortunately, comparable data to that presented in Table 4 is not available for Mgo log or Gro tshang at this time. Given how homogeneous nomad dialects are at other levels of their linguistic structure, we would expect Mgo log data to closely resemble that of Rka khog or Them chen. It is harder to make such predictions about Gro tshang, however, because innovative dialects are heterogeneous. I do, however, have data indicating the existence of an apparent stem innovation in a verb that does not seem to have historically been a strong root.

According to the Written Tibetan dictionary, *Dag yig gsar bsgrigs* (2009: 508), the verb 'fly' has only one stem for past, present, future and imperative contexts. I have confirmed that this is true of Mgo log, and it is true of the AT dialects in Hua (2002), including Rdo sbis. Exceptionally, Gro tshang has two stems for this root: a past stem /fʊ˗/ and a non-past stem /fʊ/. This is illustrated in examples (38) and (39), below.

(38) *kʰahtsʊ̃ ʂl̥.tsɪ -te fʊ˗ -tʰa*
yesterday bird -DET fly.PAST -TEST.PAST
'The bird flew yesterday.' (Speaker witnessed the event.)

(39) *fʊ -kogi*
fly.PRES -PROG.TEST
'(The bird) is flying.' (Speaker is witnessing the event.)

Given the evidence from WT and the rest of AT, it is possible that the two stems are actually an inherited feature, possibly one that only existed in the Tibetic variety spoken by Ledu Tibetans' Chamdo forbears. Since Gro tshang is otherwise very clearly a variety of AT, this seems unlikely. Another scenario is that, isolated from other varieties of AT, Gro tshang had the time and environment to generate a complex and mature structure: the creation of separate stems for past and present tense.

16 Hua gives a WT form for 'thread', *brgyus* that appears to not be cognate with the Rdo sbis, Them chen and Rka khog forms (2002: 204).

Mgo log has also undergone morphological complexification, having innovated a new stem form, the hortative, for at least two verbs. The verb 'eat' is a strong root that has preserved past, present and imperative stems in Mgo log. The past and imperative stems are homophonous.[17] The verb 'do', however, is not a historical strong verb. For both verbs, the hortative is used in preference to the imperative to express an extra degree of politeness and also to encourage the interlocutor to do or eat something after they have already expressed reluctance. These forms are illustrated in (40–44), below.

(40) *zui*
eat.HOR
'Go ahead and eat!'

(41) *zu*
eat.IMP
'Eat!'

(42) *ŋə ta zu*
1s.ERG now eat.PAST
'I already ate.'

(43) *ŋə li*
1S.ERG do
'I (will) do it.'

(44) *lui*
do.HOR
'Go ahead and do it!'

I have yet to encounter such forms in other AT dialects, nor am I aware of any specifically hortative stems in WT.

6.2 Simplification of the case system

If 'fly' represents an instance of morphological complexification, Gro tshang has also undergone simplification in other areas of its morphology. AT generally

17 The past/imperative stem in Mgo log happens to match the imperative stem in most Amdo dialects, which then have different past stems. It's possible that the homophony of the two stems resulted in the creation of a phonologically distinct new form in Mgo log.

displays a strict ergative pattern, in which subjects of intransitive clauses are always morphologically distinct from the agents of transitive clauses. There are two different forms of ergative marker, whose distribution is phonologically determined. In Mgo log, for example, a suffix *-kə* occurs on closed syllables, while open syllables undergo vowel-raising. This is shown in examples (45), (46) and (47).

(45) *ŋə mə -ɕi*
1S.ERG NEG -know
'I don't know (it).'

(46) *da ŋa ɲo*
now 1S go.IPF
'I'm going now.'

(47) *tʊnʤip -kə ɕa mə- za -kə*
Dondrub -ERG meat NEG- eat.IPF -TEST
'Dondrub doesn't eat meat.'

This is a fairly regular system, following predictable phonological rules. Gro tshang speakers, however, have regularized the system further. With the exception of the first person pronoun, has dispensed with the vowel-raising allomorph and simply attaches *-ki* to every ergative subject, as illustrated by (48) and (49), below.

(48) *kʰuzu -gi sa -gi*
3P -ERG eat -TEST
'He eats (it).'

(49) *kʰuzu fʊ -kogi*
3P fly.PRES -PROG.TEST
'He (a person) is flying.'

7 Conclusion

Linguistic interactions that occur in endoteric communities are likely to involve interlocutors who are not only known to the speaker, but with whom they have long personal histories. Any communicative exchange between such close associates occurs in a context saturated with memories of shared experiences and common reference points. More importantly, communicative strategies are

formulated with expectations of an expansive, shared background between interlocutors. Close-knit relationships create a linguistic environment that is strongly norm-enforcing. In contrast, interactions that occur in exoteric communities commonly involve interlocutors who are not well known to one another or are perhaps even complete strangers. They may also have varying degrees of proficiency in the speech variety in which the interaction takes place. In fact, the interaction may well involve code switching between multiple varieties. But even when both interlocutors are native speakers, if they are not close associates they cannot assume a common background of values and experiences. Consequently, their communication must be able to fill any resulting contextual gaps. Speakers operating in an endoteric social structure can be expected to employ different kinds of linguistic strategies, equipped to deal with different kinds of communicative challenges, than those employed by speakers operating within an exoteric social structure.

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