



Proceedings of the 3rd
Conference on Central Asian
Languages and Linguistics

(ConCALL -3)

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Bloomington, Indiana



Edited by
Öner Özçelik and
Amber Kennedy Kent

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Proceedings of the 3rd Conference on Central Asian Languages and Linguistics (ConCALL-3)

Volume 3/edited by Dr. Öner Özçelik and Amber Kennedy Kent

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1. Central Asian Languages - Congresses

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History of ConCALL

The Conference on Central Asian Languages and Linguistics (ConCALL) was founded in 2014 at Indiana University by the Center for Languages of the Central Asian Region (CeLCAR) under the leadership of Dr. Öner Özçelik, the residing director, with grants and contributions from the U.S. Department of Education (DOE) and several units at Indiana University, including the Ostrom Grant Programs, College of Arts and Humanities Center (CAHI), Inner Asian and Uralic National Resource (IAUNRC), College of Arts and Sciences, Sinor Research Institute for Inner Asian Studies (SRIFIAS), Department of Central Eurasian Studies (CEUS), and Department of Linguistics. To date, ConCALL's main sponsors are the DOE, CeLCAR, IAUNRC, and IU's Center for the Study of the Middle East (CSME).

As the nation's sole U.S. Department of Education funded Language Resource Center focusing on the languages of the Central Asian Region, CeLCAR's main mission is to strengthen and improve the nation's capacity for teaching and learning Central Asian languages through teacher training, research, materials development projects, and dissemination. As part of this mission, CeLCAR has an ultimate goal to unify and fortify the Central Asian language community by facilitating networking between linguists and language educators working on Central Asian languages, encouraging research projects that will inform language instruction, and provide opportunities for professionals in the field to both showcase their work and receive feedback from their peers.

Thus, ConCALL was established to be the first international academic conference to bring together linguists and language educators working on the languages of the Central Asian region, focusing primarily on Altaic (Turkic, Mongolic, Tungusic) and Eastern Indo-European languages, as well as Eurasian Uralic and Tibetic languages, among others, with the aim of encouraging research into how these specific languages are (i) represented formally, (ii) acquired by second/foreign language learners, and (iii) best taught given research driven teaching methods.

ConCALL represents all languages spoken in Central Asia and the surrounding areas, as well as languages that are genetically related to Central Asian languages. Languages represented in ConCALL-3 included, Armenian, Azerbaijani, Buryat, Daylami, Dari, Farsi, Gilaki, Kazakh, Kurdish, Kyrgyz, Mongolian, Pashto, Persian, Scythian, Shughni, Tajiki, Tati, Tibetan, Turkish, Turkmen, Uyghur, Uzbek, and Yugur.

Conference Proceedings

Conference presenters were selected via an anonymous peer-review process. All conference invited speakers and accepted presenters were invited to publish their papers as part of the conference proceedings.

CONTENTS OF VOLUME 3

	<i>History of ConCALL</i>	iii
	<i>Contents</i>	v
	<i>Editor's Introduction</i>	vii
	<i>Acknowledgements</i>	viii
PART 1. PLENARY SPEAKERS		
1	YAVAŞ, Mehmet, Florida International University Cluster Repair in Language Contact: Turkish response to #sC clusters	3
2	SAMVELIAN, Pollet, Université Sorbonne Nouvelle, Paris, France The Issue of (in)separability in Persian Complex Predicates	5
3	ROTHMAN, Jason, University of Reading, UK The Experience-to-Outcomes Hypothesis: Charting the source of comparative difference in Minority/Heritage Language Bilingualism	7
4	GRIBANOVA, Vera, Stanford University Case, agreement and differential subject marking across Uzbek nonfinite clause types	9
5	SPROUSE, Rex, Indiana University Languages of Central Asia and Nonnative Language Acquisition: The Sky is the Limit	11
PART 2. FORMAL LINGUISTICS AND RESEARCH		
1	ABUDUSHALAMU, Xiayimaierdan, Michigan State University <i>Study of Phonological Processes and Phoneme Inventory in Uyghur Children: Autosegmental Account</i>	15
2	BABRAKZAI, Farooq, Institute Foreign Language Center <i>Unified Account of the Subjunctive in Persian</i>	33
3	GAO, Feier and AKSU, Mustafa, Indiana University <i>The Acquisition of Mandarin Tones by L1 Uyghur Speakers: A Preliminary Report</i>	41
4	LEONGUE, Vitor, Indiana University <i>Typological Variation In The Synchronic Treatment Of Historical Palatalized Onsets In Tibetan</i>	47
5	MAMAYEVA, Gulnar and SULTANBEKOVA, Sagima, L.N. Gumilyev Eurasian National University <i>Kazakh neologisms: diachronic aspects and productive patterns in present-day language</i>	59
6	SUGAR, Alexander, University of Washington and ABDILIM, Chughluk, Yale University and Indy Translations and Language Center <i>The Double Life of Negation in Uyghur</i>	65

7	TAHERKHANI, Neda, Purdue University <i>Agentivity in Tati Motion Events</i>	77
8	VOZNESENSKAIA, Anastasiia, Lomonosov Moscow State University <i>Buryat Question Particles and Where to Find Them</i>	95
PART 3. PEDAGOGY AND TEACHING		
1	ARMAN, Rahman and KENT, Amber Kennedy, Indiana University SEXTON, Sophia, Northern Virginia Community College <i>Designing an Afghan Heritage Language Program for Community Colleges</i>	107
2	ZHONG, Yarjis Xueqing, The Australian National University <i>School-based language teaching and challenges for maintenance of the endangered languages, Western and Eastern Yugur, in China</i>	115

Editors' Introduction

On March 2nd, 3rd, and 4th, 2018, the Center for Languages of the Central Asian Region (CeLCAR) hosted the Third Conference on Central Asian Languages and Linguistics (ConCALL-3) at Indiana University in Bloomington, Indiana as the third occurrence of this biannual academic conference. ConCALL was established in May 2014 to bring together linguists and language educators specializing in the languages of the Central Asian region, including Turkic, Iranian, Mongolic, Tungusic and Tibetan languages spoken in the region, among others.

This year's conference built on the success of our previous conferences and is consistent with our goals to create a stronger network of Central and Western Asian language experts and to provide a unique opportunity for researchers, pedagogists, linguists, and educators in the field to present their work to an audience of their peers in the same language field.

Once again, we were pleased at the overall success of the conference. We had nearly 100 registered attendees that came from all over the globe, not only from the Central Eurasian region, including Afghanistan, Iran, Kazakhstan, and Kyrgyzstan, but also attendees from Australia, Canada, China, France, Germany, India, Israel, the Netherlands, Russia, and the United Kingdom! Additionally, we had attendees from 24 different American universities, as well as faculty and students from Indiana University. Our illustrious guest speakers included **Jason Rothman** (Professor of Literacy and Multilingualism from the University of Reading in the UK), **Pollet Samvelian** (Professor of Linguistics from Université Sorbonne Nouvelle in Paris, France), **Mehmet Yavaş** (Professor of Linguistics from Florida International University), **Vera Gribanova** (Assistant Professor of Linguistics from Stanford University), and IU's own **Rex Sprouse**, Professor of Second Language Studies.

Once again, we were impressed and inspired by the high level of quality abstract submissions. Out of an astounding 131 presentation proposals received, 36 were accepted for oral presentation (an acceptance rate of 27%) and 17 were selected for poster presentations (an acceptance rate of 13%), with an overall acceptance rate of 40% total for both oral and poster presentations. The selected presentations and posters covered an assortment of research topics, including syntax, semantics, phonetics, phonology, language acquisition, and pedagogy, related to an assortment of language families, including Turkic, Iranian, Mongolic, Tibetan, and even the Caucasian languages Armenian and Georgian. As a result, we can say with confidence that this competitive acceptance rate resulted in the highest quality selection of presentations at ConCALL yet!

We cannot express enough our gratitude to all of those who continue to support this unique conference, which we genuinely believe is making a difference to strengthen and unite our greater Central Asian language learning community, as well as increase both the quantity and quality of teaching these less commonly taught languages across the world.

And finally, we would like to once again thank the conference's founding organization, Indiana University's Center for Languages of the Central Asian Region (CeLCAR), as well as our other 2018 conference sponsors: IU's Inner Asian & Uralic National Resource Center (IAUNRC) and Center for the Study of the Middle East (CSME). Additionally, special thanks to the IU's Hamilton Lugar School of Global and International Studies, College of Arts and Sciences, Central Eurasian Studies Department, and Department of Linguistics for their continued support and contributions. We look forward to seeing everyone again in Spring 2020, and hopefully some new faces as well.

Sincerely,



Öner Özçelik, Director
Amber Kennedy Kent, ConCALL Coordinator

ACKNOWLEDGEMENTS

The Third Conference on Central Asian Languages and Linguistics held at Indiana University on 2-4 March 2018 was made possible through the generosity of our sponsors as well as the help from the CeLCAR staff and several IU faculty and student volunteers whose diligence and hard work contributed to the successful organization and execution of the first ever ConCALL.

Major sponsors of ConCALL-3 include:

Center for Languages of the Central Asian Region (CeLCAR)

Inner Asian and Uralic National Resource Center (IAUNRC)

Center for the Study of the Middle East (CSME)

The conference would not have been as successful without their generous contributions.

Other partners we would like to acknowledge include:

Hamilton Lugar School of Global and International Studies (HLS)

College of Arts and Sciences

Department of Central Eurasian Studies (CEUS)

Department of Second Language Studies (SLS)

Additionally, we would like to thank this year's reviewers who donated their time and expertise reviewing the conference proposals, ensuring once again the highest quality presentations possible:

Jennifer Cabrelli Amaro	Sherman Charles	Selcuk Issever	Moti Lieberman	Farid Saydee
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Margit Bowler	Vera Gribanova	Tania Leal	Charles Reiss	Yucel Yilmaz
Malgorzata Cavar	Ayse Gurel	Tserenchunt Legden	Yagmur Sag	

We would also like to thank all of the conference volunteers for their time helping to plan, organize, and execute the conference:

Öner Özçelik	Mustafa Aksu	Azamat Dokturbekov	Malik Hodjaev	Vitor Leongue
Dave Baer	Rahman Arman	Mustafa Durmaz	Saltanat Karimsattar	Temuujin Nyamdavaa
Amber Kennedy Kent	Sibel Crum	Meaghan Gallegos	Alisher Khamidov	Gulnisa Nazarova
Sukhrob Karimov	Shahyar Daneshgar	Feier Gao	Yilmaz Koynu	Hajra Sadaqat
Froozan Safi	Yagmur Demir	Rabsal Gedun	Tserenchunt Legden	

Furthermore, we are eternally grateful for all of the conference presenters and participants who came from all over the globe to attend the conference and make it a huge success.

Finally, special thanks to all of the contributors of the ConCALL-3 Proceedings for their submissions.



Part I: Plenary Speakers

Cluster Repair in Language Contact: Turkish response to #sC clusters

Mehmet Yavaş
Florida International University

Abstract

This presentation looks at specific cluster repairs via epenthesis by Turkish speakers in language contact situations. The focus is specifically incoming foreign unacceptable word-initial #sC clusters. Data from loanword adaptation and interlanguage phonologies are examined to see if certain subgroups of #sC clusters ('s+stop', 's+nasal', 's+lateral) are treated differently. To repair an input that does not meet the language's phonotactic requirements, Turkish, historically employed 'prothesis' for sibilant + stop clusters (#sCV → Vs.CV, e.g. [iskelet] 'skeleton', from French 'squelette'), while 'anaptyxis' was used for others (e.g. [tirafik] 'traffic'). Modern Turkish, however, uses across-the-board anaptyxis for all loanwords with clusters, a pattern which repeats itself in interlanguage phonologies. Data from interlanguage phonologies from different languages show that phonotactically driven production errors made by non-native speakers point to different degrees of success / failure with respect to different subgroups of #sC clusters. Sonority Sequencing Principle (SSP) and Obligatory Contour Principle (OCP) have been offered as possible explanations for these differences. This presentation reports on the results of a study with data coming from 25 L1 Turkish speakers' productions of English #sC clusters. The focus is on the duration of the anaptyctic vowels between the members of the #sC clusters. Research questions include 'do in/correct productions reveal differential treatment of targets with respect to varying C2?', 'is the binary categorization 'negative sonority' vs. 'rising sonority', or '/s/ + [-continuant]' vs '/s/+ [+continuant]' of the targets relevant?', 'is homorganicity of the cluster and / or frequency an influential factor?' Results point to the clusters with a [-continuant, +coronal] C2 as being the most favorable in the productions.

The Issue of (in)separability in Persian Complex Predicates

Pollet Samvelian
Université Sorbonne Nouvelle
Paris, France

Pegah Faghirim
University of Cologne

Abstract

Due to its limited number of simplex verbs – a total of around 250 – the verbal lexicon of Persian is mainly formed of complex predicates (CPs), that is, syntactic combinations, including a verb and a non-verbal element, mainly a noun, such as *bāzi kardan* ‘to play (play do)’, *qadam zadan* ‘to walk (step hit)’, also known as *light verb constructions*. Persian CPs have been a focus of interest since 1990s. Their formation (i.e. morphological/lexical vs. phrasal/syntactic) and their interpretation (compositional vs. idiomatic) have been thoroughly investigated and various syntactic analyses have been proposed to account for their properties (e.g. Mohammad and Karimi, 1992; Dabir-Moghaddam, 1997; Family, 2006; Folli et al., 2005; Goldberg, 1996; Karimi, 1997; Karimi-Doostan, 1997; Megerdooomian, 2012; Müller, 2010). However, most of these studies are mainly concerned with theoretical issues and only explore a limited set of data. As a consequence, their generalizations turn out to be inaccurate when a larger set of data is taken into account (see e.g. Samvelian 2012; Samvelian and Faghiri 2014).

The separability of the component of a CP is one much debated issue. More precisely, while it is uncontroversial that the non-verbal element (the nominal element to simplify) can be separated from the verb by verbal inflection, clitics and auxiliary, it is controversial that truly syntactic constituents can also separate the components of a CP. Most studies claim that the latter can only be separated in a limited fashion and account for the (in)separability in syntactic terms (e.g. Dabir-Moghaddam, 1997; Goldberg, 1996; Karimi-Doostan, 1997; Karimi, 2005). On the other hand, Samvelian (2012), providing a set of attested examples, argues that the separability of CP components is a matter of tendency, due to their semantic relatedness, rather than syntactic constraints. If the issue of separability is not a matter of syntactic (or hard) constraints, one should be able to identify the soft constraints (or preferences) involved. In this respect, the issue of separability of the components of a CP can be discussed from the point of view of word order preferences. Indeed, studies on word order variations across languages have identified a number of (functional) factors that may influence the relative order of constituents, where the order is not constrained by the grammar. Semantic relatedness and collocational relation are two factors that are known to favor adjacency (cf. e.g. Hawkins, 2001; Wasow, 2002). Hence, the tendency for the components of a CP to appear adjacent to each other is not surprising. Other functional factors such as heaviness and animacy are shown to intervene in word order preferences as well. Adopting a quantitative approach in line with studies on word order variation (see e.g. Faghiri, 2016), the goal of this study is to provide a better understanding of the issue at stake by identifying the factors that (dis)favor (non)adjacency.

The Experience-to-Outcomes Hypothesis: Charting the source of comparative difference in Minority/Heritage Language Bilingualism

Jason Rothman
University of Reading, UK

Abstract

In this talk, I will problematize both the concept of what a heritage language bilingual is and the literature that has studied their competence outcomes in adulthood understanding differences in their outcomes as compared to monolinguals as deficits. Heritage speakers are native—often child L1 or 2L1—speakers of a minority “home” language who usually become dominant speakers starting at school-age in the external societal majority language of the national community in which they grow up and are educated. Typically, heritage speakers show interesting differences in their knowledge and performance in the heritage language as compared to age-matched monolinguals. Often, such differences have been labelled as instances of incomplete acquisition (e.g. Montrul 2008, 2016) or attrition (Polinsky 2011). I will propose that many differences, alternatively, could have only developed the way we see them in heritage grammars for reasons related to qualitative differences in the input heritage speakers receive, differences in literacy exposure to the heritage language and other experience-based variables (see e.g., Rothman 2007, 2009 Kupisch and Rothman 2016; Bayram et al. 2017 for review). In doing so, I will go over a new hypothesis, The Experience-to-Outcomes Hypothesis (Llyod-Smith, Bayram, Kupisch and Rothman, in prep), which endeavors to show how various experience-based variables conspire to explain the gamut of outcomes in heritage language bilingualism without appealing to a perspective of deficits. I will review empirical work I have done with colleagues over the past 15 years from Romance languages and most recently Turkish as a heritage language that strongly suggest that HS differences reflect complete acquisition of emerging varieties in their own right.

Case, agreement and differential subject marking across Uzbek nonfinite clause types

Vera Gribanova
Stanford University

Abstract

This talk presents the results of ongoing work on the distribution of differential subject case and subject agreement in nonfinite clause types in Uzbek, an under-explored Turkic language spoken primarily in Uzbekistan. These patterns persist across a diverse range of constructions, including nominalized clausal arguments, propositional adjuncts, relative clauses, and complex noun phrases. Subject case (nominative vs. genitive) and the presence/absence of subject agreement vary across these constructions. The analysis leads to a number of consequences for two competing theories of both case and agreement --- head-licensing via AGREE (Chomsky 2000) vs. configurational case assignment (Yip et al. 1987, Marantz 1991, Bobaljik 2008, Preminger 2014, Baker 2015, inter alia). I discuss two case studies which, taken together, demonstrate that specific analytical commitments of both systems must be adopted.

First, I demonstrate that genitive marking on the subject of these clauses is made available by the presence of a functional head with a particular featural specification (but not by that same functional head when it has a slightly different featural makeup), consistent with the AGREE approach but not the configurational approach. Second, evidence from agreement in copular clauses demonstrates that the nominal that is agreed-with is not always the nominal that is assigned genitive case, even though Uzbek is generally a subject agreement language. Such patterns arise because Uzbek copular clause agreement comes with a person hierarchy effect in which second and first person are preferred over third (similar to Bejar and Kahnemuyipour's (2017) findings for Eastern Armenian); this preference can result in genitive being assigned to a third person nominal (if it is in the designated position), while a first/second person nominal is agreed with. The result is that a head may target distinct nominals in the structure for feature valuation: agreement and case assignment are not symmetric, contra the AGREE approach.

Languages of Central Asia and Nonnative Language Acquisition: The Sky is the Limit

Rex Sprouse
Indiana University

Abstract

This talk reviews the emerging field of nonnative language acquisition focused on Turkic and Iranian languages. The first part of the talk offers a selective overview of contributions to nonnative language acquisition research based in Turkic or Iranian languages as either the native language or the target language. The second part proposes several research projects based in these languages that have the potential to shed significant light on classic and current issues in the study of nonnative language acquisition. I hope to show that the languages of the Central Asian Region represent a rich, but seriously under-utilized laboratory for linguistically sophisticated and theoretically motivated nonnative language acquisition research.

A map of a region, possibly a country or a large administrative area, divided into several colored areas. The colors include orange, blue, yellow, light blue, and green. The map is tilted slightly to the right. The text "Part II: Formal Linguistics and Research" is overlaid on the map.

Part II: Formal Linguistics and Research

Study of Phonological Acquisition in Uyghur Children: Autosegmental Account

Xiayimaierdan Abudushalamu
Michigan State University

Abstract

This study explores Uyghur children's phonological processes as well as their phoneme inventory. Four Uyghur children (from 3;2 to 6;5 years old)'s natural speech recordings in terms of phonological processes and phoneme inventory are analyzed, and the results are compared to the same type of study done in three other different languages (Chinese, English and Turkish) to find out which part of the processes (and phonemes) tend to be idiosyncratic for Uyghur children and which part of them tend to be universal. The outcome of the comparison shows that some processes, namely, Post-nasal Devoicing of Obstruent, Affrication, Spirantization and Uvular Fronting are found only in the Uyghur children. Autosegmental phonology theory is used to analyze and uncover the phonetic and phonological nature of these processes.

Keywords: child phonological processes, phoneme inventory, Uyghur language, autosegmental phonology

1. Introduction

Uyghur phonological acquisition has not been much studied systematically, neither in China nor in other parts of the world, which makes it necessary for present study to try to explore the possibility of providing a systematic description of Uyghur child's phonological system. This main goal of this study is pursued by analyzing four Uyghur children (from 3;2 to 6;5 years old)'s natural speech recordings in terms of phonological processes and phoneme inventory. Furthermore, apart from lack of Uyghur phonological acquisition study, comparative studies between Uyghur phonological acquisition and other languages are even less conducted. Therefore, to compare Uyghur phonological acquisition with phonological acquisition of other three languages, namely, English, Turkish and Chinese, the phonological processes and phoneme inventory of these three language speaking children will be discussed before giving a brief introduction of Uyghur language.

1.1 Acquisition of phonology across languages

Before introducing the Uyghur language and analyzing the participants' phonological system, it is necessary to discuss phonological acquisition in other languages so that the result of the present study can be compared to these languages. Three languages will be discussed in this section in terms of acquisition of the phonological inventory and child phonological processes, namely English, Turkish and Chinese Mandarin.

1.1.1 Acquisition of English phonology

There is large number of studies about phonological acquisition of English. As the most studied language in the world in terms of child phonology, English can be the most valuable target for doing comparison with Uyghur.

Table 1 summaries the average age of acquisition of English consonants reported in Prather et al.'s study (1975).

Age	Phonemes
2;0-2;6	n, p, m, h
2;6-3;0	t, j, w, ŋ, k, d, b, f
3;0-3;6	g, s, r, l
3;6-4;0	ʃ, tʃ
4;0-4;6	ð, ʒ
>4;6	dʒ, θ, v, z

Table 1. Age of Acquisition of Consonant Phoneme in English Speaking Children

From the Table 1, it can be seen that mainly plosives, nasal and glides are acquired first in early age of English speaking children. Then fricatives and trills are acquired, and the most difficult ones are affricates (e.g., [tʃ] and [dʒ]). Also, dental fricatives are difficult to acquire for English speaking children.

Table 2 summarizes the main phonological processes in the speech of English speaking children, which was identified by Weiner (1979), Shriberg and Kwiatkowski (1980), Hodson (1980), Ingram (1981), Grunwell (1987) and Dean et al. (1990).

Error pattern	Example
Weak syllable deletion	/bə'nana/→[nana]
Final consonant deletion	/præm/→[præ]
Assimilation/consonant harmony	/dʌk/→[gʌk]
Consonant cluster reduction	/trein/→[tein]
Stopping	/ʃip/→[tip]
Deaffrication	/tʃips/→[tips]
Velar fronting	/kʌp/→[tʌp]
Alveolization of palatal	/ʃip/→[sip]
Dentalization of alveolar	/si:/→[θi:]
Labialization of interdental fricatives	/θæʃks/→[fæʃks]
Gliding	/rag/→[wæg]
Devoicing of Final Consonant	/dɒg/→[dɒk]
Voicing of Initial Consonants	/piʃ/→[biʃ]

Table 2. Phonological Processes of English Speaking Children

1.1.2 Acquisition of Chinese phonology

There is large Mandarin-Uyghur population in China. As the official language of China, Mandarin is very important for the children growing up in China, because usually those children whose native languages are not Mandarin will be exposed to Mandarin even before they enter school. For the Uyghur children participating in this study, Mandarin is their second language. So, this comparison has its own special value.

The Table 3 below lists the age of acquisition for the phonemes acquired by Mandarin speaking children (based on the study of Zhu Hua, 2002).

Age	Phonemes
1;6-2;0	ɛ, s, t, m, n, x, t ^h , k, tɛ, p, p ^h , tɛ ^h
2;1-2;6	f, ts, tɕ, k ^h
2;7-3;0	l
3;1-3;6	ʮ, ts ^h
3;7-4;0	ɕ
4;1-4;6	tɕ ^h
>4;6	tɕ ^h , ts, tɕ

Table 3. Age of Acquisition for the Consonant Phonemes in Chinese Children

Unlike English speaking children, acquisition of fricatives is very early in Chinese children. Also, some sounds can be acquired in different ages in Chinese, e.g., ‘tɕ^h, ts, tɕ’.

The following table is the generalization of phonological processes produced by Chinese children. The Table 4 is formed based on the study of Zhu Hua (2002).

Error pattern	Example
Assimilation	/ei.lien/ → [ei.nien]
Initial C deletion	/tɛh yn/ → [yn]
Fronting of retroflex	/tɕ ^h ɤ/ → [ts ^h ɤ]
Palatalization of alveolar	/sɛn/ → [ʃɛn/]
Velarization	/ɕu/ → [xu]
Stopping	/ts ^h ai/ → [t ^h ai]
Affrication	/sun/ → [ʃun]
Deaspiration	/tɛ ^h iŋ/ → [tʃ iŋ]
Aspiration	/ta/ → [t ^h a]
Gliding	/ɰɛn/ → [jen]

Table 4. Phonological Processes of Chinese Children

It can be seen from the Chinese child phonological processes listed above that there are some language specific processes comparing to English speaking children. For instance, fronting of retroflex, velarization and aspiration are language specific for Chinese children, which may be interesting to see whether those Uyghur children will produce same kinds of processes since Chinese is their second language.

1.1.3 Acquisition of Turkish phonology

Turkish and Uyghur are both Turkic languages, and they both belong to the Altaic language family, so they share many language features with each other, which makes this comparison highly valuable.

Table 5 and Table 6 are based on the study of Topbas (1997):

Age	Phonemes
1;0-1;6	b, d, m, k
1;6-2;0	t, n, j, ʃ, ʒ, p
2;0-2;6	ɟ, g, v, l
2;6-3;0	s, ʒ, f, z, h, r, ɣ

Table 5. Age of Acquisition for the Consonant Phonemes in Turkish Children

It can be seen from the table listed above that like English speaking children, generally, plosives, nasals and glides are acquired very early by Turkish children. But the difference is that affricates are also acquired early comparing to other consonants by Turkish children.

Error pattern	Example
Velar assimilation	/pamak/ → [kʌmʌk]
Labial assimilation	/kartopu/ → [kʌpəpə]
Alveolar assimilation	/koltuk/ → [tətək]
Nasal assimilation	/mavi/ → [mʌml]
Initial consonant deletion	/yok/ → [ək]
Final consonant deletion	/koy/ → [kə]
Cluster reduction	/oldu/ → [ədə]
Vowel lengthening before clusters	/terlik/ → [te:lɪk]
Velar fronting	/gel/ → [dɛ]
Backing of palatal allophone of /k/	/kofte/ → [kəptɛ]
Stopping	/fare/ → [pʌj]
Affrication	/şu/ → [ʃu]
Palatalization as backing	/çiçek/ → [sɪsek]
Gliding	/kar/ → [kʌj]

Table 6. Phonological Processes of Turkish Children

As the same type of language, Turkish is similar to Uyghur in terms of adult language, but how about child language? The answer to this question will be discussed in the following section.

1.2 Phonological structure of Uyghur

The Uyghur is a Turkic language with 8 to 11 million speakers, spoken primarily by Uyghur people in the Xinjiang Uyghur Autonomous Region of Western China. Uyghur is an official language of the Xinjiang Uyghur Autonomous Region and is widely used in both social and official spheres, as well as in print, radio, and television in Xinjiang.

Uyghur belongs to the Karluk branch of the Turkic language family. Like many other Turkic languages, Uyghur displays vowel harmony and agglutination, lacks noun classes or grammatical gender, and is a left-branching language with subject–object–verb word order. In addition to the influence of other Turkic languages,

Uyghur has historically been influenced strongly by Persian and Arabic, and more recently by Mandarin Chinese and Russian.

There are 8 vowels and 24 consonants in Uyghur, which will be showed in detail in the next section.

1.2.1 Vowels and consonants

The vowels of the Uyghur are presented below. There are no diphthongs in Uyghur:

	Front		Back	
	Unrounded	Rounded	Unrounded	Rounded
Hi	i	y		u
Mid	e	ø		o
	ε			
Low			a	

Table 7. Uyghur Vowels

Table 8 below shows the 24 Uyghur consonants by manner and place of articulation.

	Bilabial	Labialdental	Alveolar	Postalveolar	Palatal	Velar	Uvular	Glottal
Plosive	p ^h b		t ^h d			k ^h g	q ^h	
Nasal	m		n			ŋ		
Trill			r					
Fricative		f v	s z	ʃ ʒ	ç		χ ʁ	h
Affricate				tʃ dʒ				
Approximant					j			
Lateral Approximant			l					

Table 8. Uyghur Consonant

(Note: symbols to the right in a cell are voiced, to the left are voiceless.)

1.2.2 Syllable structure

The predominant type of syllable of Uyghur language is CV (CC). There are syllable-coda clusters (CVCC) in Uyghur. Also, in Uyghur, any consonant phoneme can occur as the syllable onset or coda and the [ŋ] sound will never occur word initially (Hahn, 1991).

1.3 Aims and hypothesis

There are three aims in present study in response to these facts: 1) To explore the phonological acquisition of Uyghur children and describe different aspects of the phonological system in child Uyghur; 2) To compare the results of present analysis with existing finding of phonological acquisition in other languages, including English, Chinese and Turkish, and determine which processes may be universal and which are language specific for Uyghur; 3) If there are language specific phonological processes or acquisition patterns in Uyghur children, autosegmental phonology (Goldsmith, 1976) will be used as a tool to analyze them.

2. Methods

2.1 Participants

Speech samples were collected from four Uyghur children: Child A, Child B, Child C and Child D. Their ages, respectively, are 3;2, 3;6, 5;3, 6;5, and they are all native speakers of Uyghur. An analysis of intelligibility was conducted revealing that one out of 50 utterances of each child were unintelligible. Thus, each child's speech is 98.0% intelligible and on target for her/his age. To assess the children's morphosyntactic skills, MLU was calculated by dividing the total number of morphemes in the sample by the total number of C-Units (Communication Units). To evaluate the children's lexical development, Type Token Ratio (TTR) was calculated by dividing the number of different words used by the children in the first 50 words of the sample. The result of these tests is showed in the Table 9:

Children	Age	Gender	MLU	Intelligibility	TTR
Child A	3;2	Female	7.32	98%	0.50
Child B	3;6	Female	7.40	98%	0.52
Child C	5;3	Female	7.38	98%	0.58
Child D	6;5	Female	7.42	98%	0.58

Table 9. Speech Samples from Uyghur Children

The result suggests that all four children's speech is highly intelligible. They have high morphosyntactic skills and their lexical development meets age expectations. This indicates that all four children are typically developing and exhibit no evidence of language delay.

2.2 Procedure

The wordless picture book from Edmonton Narrative Norms Instrument (Giraffe/Elephant Stories and Rabbit Dog Stories) was used to elicit the sample. Each child's mother and the child were in a quiet room in the child's home seated at a table. The samples were recorded and transcribed prior to the analysis. The children's mothers told the story in Uyghur for the children before asking them to retell the story. The children were attentive and cooperative throughout the session and required little prompting. The mean number of the utterances produced by the children is 50 (range from 47 to 53) and they were analyzed primarily with respect to the children's phonological inventory and phonological processes, focusing on sound substitution and omission errors.

3. Analysis - Aim 1

The first aim of this study is to explore the phonological acquisition of Uyghur children and describe different aspects (phonological patterns and phoneme inventory) of the phonological system in child Uyghur. If children produce certain sounds at least twice, then it will be marked as a part of children's phoneme inventory. Phonological pattern analysis was performed to compare child productions with adult targets to record all substitutions and omission errors.

3.1 Sound inventory

The Tables 10 and 11 below report vowel and consonant inventories of the children, which are the sounds used by the children spontaneously (at least twice per sample).

Note: Phones must occur at least 2 times in any context whether correct or not, to be counted as part of a phonemic inventory.

Children	Vowel Inventory
Child A	/ɑ/, /ɛ/, /e/, /i/, /o/, /u/, /ø/, /y/
Child B	/ɑ/, /ɛ/, /i/, /o/, /u/, /ø/, /y/
Child C	/ɑ/, /ɛ/, /e/, /i/, /o/, /u/, /ø/, /y/
Child D	/ɑ/, /ɛ/, /e/, /i/, /o/, /u/, /ø/, /y/

Table 10. Vowel Inventory

From the chart above, we can see that almost all vowels in Uyghur have been acquired by the children, except [e] for Child B, which is always replaced by other vowels, and which will be discussed later.

Note: Here I showed the consonants that are missing from their speech. Phones must occur at least 2 times in any context whether correct or not, to be counted as part of a phonemic inventory.

Children	Missing Consonant
INITIAL	
Child A	/f/, /ʒ/
Child B	/f/, /ʒ/, /r/, /s/
Child C	/f/, /ʒ/
Child D	/f/, /ʒ/
FINAL	
Child A	/b/, /d/, /tʃ/, /dʒ/, /g/, /k/, /z/, /v/, /h/, /f/, /ʒ/
Child B	/b/, /d/, /tʃ/, /dʒ/, /r/, /ŋ/, /g/, /k/, /ʁ/, /s/, /z/, /v/, /h/, /f/, /ʒ/
Child C	/b/, /d/, /dʒ/, /g/, /v/, /h/, /f/, /ʒ/
Child D	/b/, /p/, /d/, /ʁ/, /v/, /f/, /ʒ/

Table 11. Consonant Inventory

First, from the chart above, it could be seen that the labiodental fricative [f] and postalveolar fricative [ʒ] were not used by any of the children in any word position, and the alveolar fricative [s] and the liquid [r] were not used by one of the younger children. This may indicate that these phonemes might have low frequency in Uyghur children’s ambient language. Also, one could see that more consonants were acquired at the syllable initial position compared to the syllable final position, such as voiced stops (b, d, g), and voiced fricative [v] were not used by all children word finally. Furthermore, the voiced affricate [dʒ] was not used by three children (Child A, B and C), and the voiceless affricate [tʃ] and the voiced alveolar fricative [z] were not used by Child A and B.

On the other hand, sounds like glides, nasals (except [ŋ]), some plosives ([p], [t], [k] and [q]), palatal fricative [ç] and uvular fricative [χ] were used by all children in both initial and final word positions, which might indicate that these sounds were easy to produce for Uyghur children.

This result is partially consistent with the proposal by some researchers like Jakobson (1968), which is that fricatives are universally acquired later than stops, and voiced stops are universally acquired later than voiceless ones. Also, it also provides some evidence for the claim that some sounds are universally unmarked, like glides and some stops (e.g., bilabial stops and velar stops), therefore they should be acquired earlier than other sounds.

3.2 Phonological accuracy

Note: Substitutions must occur at least 2 times in any context whether correct or not so that they can be counted as a phonemic substitution.

INITIAL					
		Frequency (times)			
Substitution	Examples	Child A	Child B	Child C	Child D
/d/→[dʒ]	said: /dɛptu/→[dʒɛptu]	2	NA	NA	NA
/d/→[t]	after that: /ɑndinkijin/→[ɑntindʒin]	26	6	3	3
/t/→[tʃ]	ball: /top/→[tʃop]	11	NA	NA	NA
/k/→[ç]	two: /ikki/→[içti]	4	NA	NA	NA
/k/→[tʃ]	pool: /køltʃɛk/→[tʃøltʃɛk]	9	NA	NA	NA
/k/→[t]	two: /ikki/→[içti]	5	NA	NA	NA
/k/→[dʒ]	after that: /ɑndinkijin/→[ɑntindʒin]	26	6	NA	NA
/z/→[dʒ]	alone: /jɑkuz/→[jɑkudʒ]	2	NA	NA	NA
/q/→[k]	horse: /tɑjʃɛq/→[tɑjʃɛk]	4	NA	NA	NA
/s/→[ç]	you: /sɛn/→[çɛn]	24	11	2	2
/ʋ/→[g]	suggest: /vɑʃin/→[vɑgin]	4	NA	NA	NA
/l/→[j]	hand: /qoli/→[qoji]	4	NA	12	3
/r/→[j]	gave: /berip/→[bejip]	15	15	18	2
/r/→[l]	encounter: /utʃrɑp/→[utʃlɑp]	2	NA	NA	NA
FINAL					
		Frequency (times)			
Substitution	Example	Child A	Child B	Child C	Child D
/q/→[χ]	have done: /duq/→[duχ]	5	14	NA	NA
/z/→[ç]	you: /siz/→[çiç]	NA	7	NA	NA
/s/→[ç]	tablecloth: /dɑstixɑn/→[dɑçtiqɑn]	3	5	2	2
/r/→[j]	one: /bir/→[bij]	5	31	4	3

Table 12. Consonant Phoneme Substitutions

The result listed in Table 12 showed that the children made a large number of phonological substitutions, especially substituting [t] for [d], [dʒ] for [k], [ç] for [s] and [j] for [r]. These are the most common substitutions in Uyghur child phonology based on this analysis. Also, it can be seen that most of the substitutions are made by Child A and B, who are the youngest children among the participants, and most of the substitutions did not occur in the phonological systems of Child C and Child D. This shows that as children’s phonological system develops, the outputs will become more and more faithful. Moreover, the accuracy is not equal for the acquisition of final consonants and initial consonants, the amount of substitutions made by the children in initial consonants is greater than for final consonants.

In addition to the consonant substitutions, Child B substituted [i] or [ɑ] for [e] in stressed position during the story telling process. I assume that the reason why this kind of substitutions occurs is because the vowel [i] and [ɑ] are primary vowels, which are commonly used in lots of languages all over the world. In the survey done by Maddieson (1984), they showed that 91.5% of the world’s languages had the vowel [i] and 88.0% of the world’s languages had [ɑ], but only 37.2% of the world’s languages had the vowel [e], which to some extent explained the phenomenon observed from Child B.

3.3 Phonological patterns

The sound substitutions were analyzed as phonological processes in order to capture the nature of the change in terms of place, manner, or voicing.

Note: Processes must occur at least 2 times in any context whether correct or not so that they can be counted as a phonological process.

Processes		Frequency (times)			
Process Type	Examples	Child A	Child B	Child C	Child D
Affrication	/d/→[dʒ]: said: /dɛptu/→[dʒɛptu]	50	6	NA	NA
Post-sonorant Devoicing of Obstruents	/d/→[t]: after that: /ɑndinkijin/→[ɑntindʒin]	26	6	3	3
Palatalization	/s/→[ç]: you: /sɛn/→[çɛn]	31	23	4	4
Assimilation	/z/→[ç]: you: /siz/→[çiç]	NA	7	NA	NA
Uvular Fronting	/q/→[k]: horse: /tɑjʃɛq/→[tɑjʃɛk]	7	NA	NA	NA
Velar Fronting	/k/→[t]: two: /ikkisi/→[içtisi]	5	NA	NA	NA
Stopping	/ʁ/→[g]: suggest: /vɑʁin/→[vɑgin]	4	NA	NA	NA
Gliding	/r/→[j]: /berip/→[bejip]	26	46	34	8
Spirantization	/q/→[χ]: have done: /-duq/→[-duχ]	5	14	NA	NA
Final Consonant Deletion	me: /mɛn/→[mɛ]	29	15	7	3
Initial Consonant Deletion	cart: /harvi/→[ɑrvi]	5	3	3	NA
Weak Syllable Deletion	airplane: / ^ˈ ɑi.ro.pi ^ˈ .lɑn/→[ɑi.pi.lɑn]	7	NA	NA	NA

Table 13. Phonological Processes

From the analysis in the Table 13, it can be seen that most of the phonological processes are performed by Child A and Child B, which indicates that the phonological templates of Child C and D become more and more adult-like. Also, processes like spirantization, assimilation and affrication might occur only before the age of 4 in Uyghur children according to the result of this analysis. In addition, the analysis shows that the phonological processes of post-sonorant devoicing of obstruent, palatalization, gliding and final consonant deletion are common for all Uyghur children. This indicates that these processes are helping Uyghur children to avoid those highly marked sounds in (e.g., liquids).

4. Cross-linguistic Comparison - Aim 2

In this section, the second aim of the present study will be discussed, which is to compare the results of present analysis with existing finding of phonological acquisition in other languages, including English, Chinese and Turkish, and determine which processes may be universal and which are language specific for Uyghur.

4.1 Comparison with other languages

In this section, I will compare the result of the analysis with other researchers' studies of phonological processes in English, Chinese and Turkish children. Through comparisons, we will see the differences and similarities between them. It should be noted that this section will mainly focus on the differences of phonological processes acquired by children ages from 2 to 6, and specific age comparison among children from different language backgrounds will not be made.

4.2 Phoneme inventory comparison

To compare consonant inventories across the 4 languages of interest (Uyghur, English, Chinese and Turkish) of interest, I will first focus on those sounds that occur in all four languages. It may be reasonable to claim that some phonemes are universally acquired early by all children from different language backgrounds all around the world (e.g., bilabial and alveolar stops, nasals, glides and glottal fricative [h]). However, there are also some later acquired phonemes that come in earlier in some languages compared to others. For example, the voiceless labiodental fricative [f] and postalveolar fricative [ʃ] were not found in child Uyghur, but the former occurs in child Turkish, Chinese and English, the latter in child Turkish. This may reflect different frequency of these sounds in these languages, different functional load (it being used in fewer words) or its being restricted to specific word classes or phonological environments. That [f] is late acquiring in Uyghur is also consistent with the statement made by Gamkrelidze (1975), that in some languages the voiceless fricative [f] is a marked consonant (Gamkrelidze, 1975).

On the other hand, it is notable that even younger children seem to acquire alveolar fricatives (e.g., [z]) and postalveolar affricates (e.g., [tʃ]) relatively early, even though these sounds can be expected to be complex. In comparison, alveolar fricatives and postalveolar affricates are relatively late acquired in English (Prather et al., 1975).

4.3 Phonological processes comparison

In addition to the phoneme acquisition comparison, I will compare the error patterns across the four languages. The summary of phonological processes comparison is listed in Table 14:

Process Type	Uyghur	English	Chinese	Turkish
Uvula Fronting	✓	NA	NA	
Post-sonorant Devoicing of Obstruent	✓			
Spirantization	✓			
Assimilation	✓	✓	✓	✓
Stopping	✓	✓	✓	✓
Gliding	✓	✓	✓	✓
Final Consonant Deletion	✓	✓	✓	✓
Affrication	✓		✓	✓
Velar Fronting	✓	✓		✓
Palatalization	✓	✓		✓
Syllable-Initial Consonant Deletion	✓		✓	✓
Weak Syllable Deletion	✓	✓	NA	
Postvocalic Devoicing of Obstruent		✓		

Table 14. Phonological Processes Comparison

From the results of the comparisons listed above, it can easily be seen that the phonological processes of assimilation, gliding, stopping (of fricatives) and final consonant deletion are common for all children in these four languages.

Apart from the similarities, the result also shows some language specific phonological processes for Uyghur children. These processes are post-sonorant devoicing of obstruents, uvular fronting and spirantization. The aim of the present study is to find out the language specific phonological processes acquired by Uyghur children and explain the reason why these processes are language specific in Uyghur child phonology. Thus, in the following sections, these processes (except Uvular Fronting because of its low frequency and its uniqueness to only one child) will be analyzed by autosegmental phonology to discuss whether they are language specific or not.

In addition, even though the phonological process of affrication was found not only in Uyghur, but also in Turkish and Chinese children, according to the survey made by Locke (1983), it was common to replace affricates by stops, but it was not common to do it in the opposite way cross-linguistically. Also, many studies in the field of language acquisition showed that the occurrence of affricates was much later than occurrence of stops in child language (Locke, 1983; Velleman, 2016), which indicated that it was not common to substitute stops for affricates.

5. Theoretical Account - Aim 3

Since there are language specific phonological processes existing in Uyghur children’s phonology, the third aim of the present study is to use autosegmental phonology as a tool to demonstrate that most of these phonological processes are not idiosyncratic but conform to the patterns found in child phonology in other languages.

5.1 Post-sonorant devoicing of obstruent

According to the Locke's analysis, voiced stops were acquired before voiceless stops in child language, which might indicate that it was common for children to substitute voiced stops for voiceless stops (e.g., /k/→[g]) in the world's languages (Locke, 1983). But on the other hand, he also mentioned that tendency toward devoicing of postvocalic obstruent was exceptionally common in child phonological acquisition (Locke, 1983). However, the result of the analysis in the present study showed that there was a devoicing of post-sonorant consonant (/an.din-/→[an.tin-]) occurring in the Uyghur children's languages, which was contrary to Locke's observation. This indicated that this process was language specific for Uyghur children.

Since the consonant ([n]) preceding [t] is voiced, this substitution (/d/→[t]) cannot be viewed as assimilation. But if one looks at the other similar examples produced by Uyghur children, like 'after that': /an.din.ki.jin/→[an.tin.ki.jin], 'we came': /kɛl.duq/ →[kɛl.tuq], 'the fact': /kɛn.duq/ →[kɛn.tuq], it can be seen that all the consonants before the obstruents are alveolars. When voiced obstruents, which are also alveolars, come after an alveolar, then they become voiceless. Therefore, I assume that this process of devoicing of post-sonorant obstruent actually is a process of dissimilation of [+voice] feature.

5.1.1 Dissimilation of [+voice]

It has been suggested that dissimilation should be analyzed as delinking followed by default fill-in rule (Odden, 1987; Poser, 1987; McCarthy, 1988; Yip, 1988). This approach is depicted as the following process:

(2) Dissimilation as Delinking:



Missing value filled in by default: [\emptyset F] → [-F].

One can see that phonological process of dissimilation consists of two independent processes, delinking and default fill in. In the case of two tier-adjacent identical feature specifications, one of the specifications is delinked. The missing value then is filled in by a default rule.

However, to find out this default rule, one may have to look at the evidence from the frequency of Uyghur children's using voiceless obstruents and voiced obstruents. From the phonemic substitutions performed by the Uyghur children (Table 12), it was calculated that the frequency of substitution of a voiceless obstruent for a voiced consonant was 46% syllable initially and 46.9% syllable finally. While the frequency of substitution of a voiced obstruent for a consonant was only 17.9% syllable initially and 0.0% syllable finally, which was significantly lower than voiceless obstruents (Table 15):

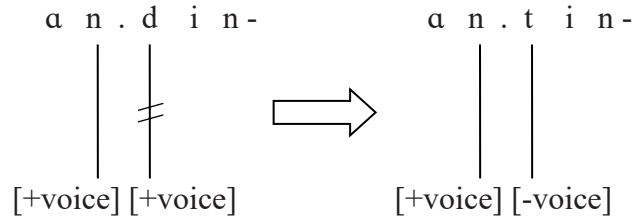
Syllable Initial					
/C/→[Voiceless Obstruent]	Total	Frequency(%)	/C/→[Voiced Obstruent]	Total	Frequency(%)
103	224	46%	40	224	17.9%
Syllable Final					
/C/→[Voiceless Obstruent]	Total	Frequency(%)	/C/→[Voiced Obstruent]	Total	Frequency(%)
38	81	46.9%	0	81	0.0%

Table 15. Frequency of voicing Substitutions

These significant differences show the Uyghur children’s preference to voiceless obstruent, both syllable initially and syllable finally. This result has demonstrated that Uyghur children have a strong tendency to produce voiceless obstruents over voiced ones. Therefore, one can state that the default value mentioned above in Uyghur children’s phonology is the feature of [-voice]: Missing value filled in by default rule: [øvoice] → [-voice].

Hence, the overall dissimilation process will be delinking of [+voice] feature of the voiced obstruent and being filled in by the default feature [-voice]:

(3) Dissimilation of [+voice]:



From the autosegmental phonology analysis given above, it can be seen that the reason why there is a phonological process of dissimilation of [+voice] alveolar in Uyghur children’s phonology is because the [+voice] feature of the voiced alveolar is delinked when it comes after a voiced alveolar, and the default feature [-voice] is filled in, which makes the voiced alveolar (e.g., [d]) become voiceless (e.g., [t]). These two processes trigger the phonological process of post-sonorant devoicing of obstruent performed by Uyghur children, which matches the actual pattern observed from the data.

5.1.2 Similar process in other languages

Same type of phonological process was also found in other adult languages. For instance, dissimilation of [-voice] consonants were found in classical Tibetan language: ‘array’ → ‘arrayed’: /bgods/ → [bkod] (Beyer, 1992). Here it can be seen when two voiced plosives come together, the second plosive is dissimilated and becomes voiceless plosive. A similar phonological process is also found in Bade (Chadic Family) language. Voiced plosives will be dissimilated and become voiceless if they come before a voiced plosive. For example: ‘you spoke’: /gə.bà:sú/ → [kə.bà:sú] (Schuh, 2002). However, one can see that these examples are all in the adult language, which needs further research on child data.

5.2 Spirantization

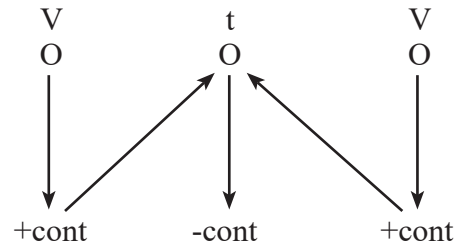
Spirantization is phonological process by which a stop becomes a fricative in the same place of articulation (/ -duq/ → [-duχ]). This is a language specific phonological process for the Uyghur children based on the comparison made above. Spirantization is a type of lenition. Lenition, as defined by Kirchner (2013), referred to synchronic alternations, as well as diachronic sound changes, whereby a sound became ‘weaker’ or where a ‘weaker’ sound bore an allophonic relation to a ‘stronger’ sound (Kirchner, 2013). It suggested phonological processes of degemination, flapping, spirantization, complete elision, and etc. Historically, it can be characterized as a series changes of consonants: voiceless stops → voiced stops → voiced fricatives → approximants or glides → ø (complete deletion).

There were mainly four different phonological approaches being used to explain the process of lenition: the generative phonological approach, natural phonology, the autosegmental approach and Optimality Theory (Kirchner, 2013). In generative phonology, lenition was simply characterized as ‘laziness’, and spirantization was generalized as a phonological rule (Hock, 1991): [-nas] → [+con]/V__V. Apparently, the process of lenition is far more complex than physiological ‘laziness’, and the process of spirantization is far more complex than a single phonological rule. In natural phonology, Stampe (1972) and Donegan & Stampe (1979) attacked the

phonetic arbitrariness of classic generative phonology. They characterized lenition, from the perspective of effort-based approach, as a cause of ease of articulation and ease of perception. However, Stampe and his colleagues did not develop a restrictive, unified formal characterization of lenition processes. In Optimality Theory, researchers try to find a universal constraint to account for the process of lenition (Kirchner, 2013). However, I want to argue that lenition is a type of phonological process in which sounds go through serial changes, one type of universal constraint may not be enough to account for the whole sound changes.

In autosegmental phonology, lenition was characterized as feature spreading. Harris (1984) accounts for Spanish spirantization in terms of a rule that spreads [+continuant] from adjacent segment (Harris, 1984):

(4) Spreading of [+con]:



In addition to these classical phonological approaches, some researchers (e.g., Clements, 1990) proposed that lenition could be characterized as scalar promotion:

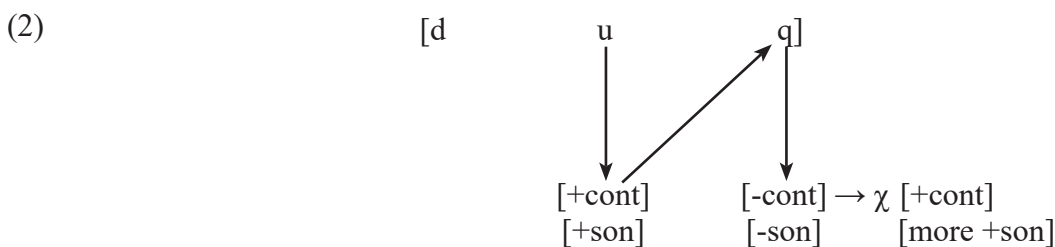
Sonority scale (Dell & Elmedlaoui, 1985):

stops < voiceless fricatives < voiced fricatives < nasals < liquids < high vowels/glides < low vowels.

Strength scale (Hock, 1991; Lavoie, 1996):

geminate stops > voiceless stops > voiced stops > voiceless fricatives > voiced fricatives > liquids > laryngeals > glides > \emptyset .

From the scale, it can be seen that the spirantization performed by the Uyghur children matches the sonority scale ($/q/ \rightarrow [\chi]: /-duq/ \rightarrow [-du\chi]$), which indicates that the voiceless uvular fricative $[\chi]$ has a higher sonority than the voiceless uvular stop $[q]$. Hence, from the perspective of feature spreading process, the voiceless uvular stop $[q]$ got some degree of sonority and the continuity ([+continuant]) from the adjacent vowel $[u]$ which spread the sonority and continuant features to it:



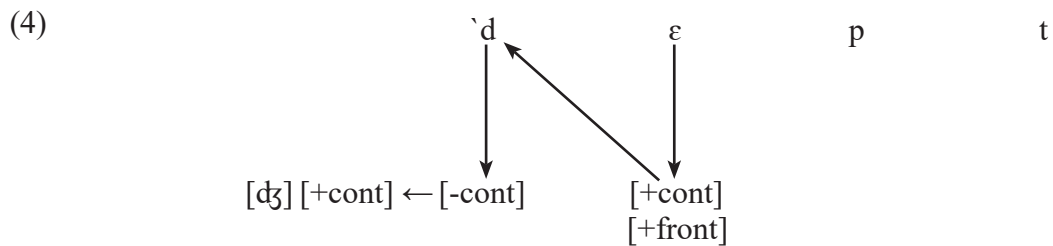
From the autosegmental phonology analysis given above, it can be seen that the reason why there is a phonological process of spirantization in Uyghur children's phonology is because the high back vowel's features of [+continuant] and [+sonorant] are spread to the following consonant, which makes the consonant (e.g., $[q]$) become more continuant and obtain more sonority and become a [+continuant], [+sonorant] consonant (e.g., $[\chi]$). This feature spreading process triggers the phonological process of spirantization performed by Uyghur children, which matches the actual pattern observed from the data.

5.2.1 Similar process in other languages

The same phenomenon was also found in Spanish (Hualde, 1989; Mascaró, 1991; Marta, 2003). In Spanish, lenition of voiced stops has been interpreted as a case of assimilation where the spirantized consonant acquired the [+continuant] feature from adjacent vowels (Hualde, 1989; Mascaró, 1991). Also, from an experiment, Marta (2003) observed that [b] and [g] were most lenited in trochee words, and that [g] was most spirantized when flanked by [i] and [u] vowels. This is similar to the process of spirantization in the Uyghur child language observed (/duq/→[duχ]). Marta (2003) proposed that the phonetic factors of stress and vowel context had similar effects in the lenition of intervocalic [b] and [g] in Spanish, and consonants were more spirantized when followed by a non-stressed vowel. This is also like the process of spirantization in Uyghur children’s phonology because the morpheme [-duq] is on the unstressed position of the word [ˈkɛn.duq], the vowel [u] is not stressed in this situation.

5.3 Affrication

As it was mentioned before, affrication is not a common process in child languages around the world (Locke, 1983). It is common to substitute stops for affricates but not the other way around cross-linguistically. Affrication is generally assumed to be triggered in the continuity of front vowels (Johnstone, 1978; Matar 1969, 1985). Although affricate is [+continuant], if one compare affricates with fricatives and stops in terms of continuity, affricates will be placed between stops and fricatives (continuity hierarchy: stops < affricates < fricatives). Therefore, affricates are more continuant than stops, which makes it reasonable that stops can receive the continuant feature from the adjacent feature. Also, many researchers found that affrication occurred before front vowels (e.g., [i, e, ε]) (Johnstone, 1967; Mustafawi, 2006), which was consistent with the observation of the present study (/d/→[dʒ]: said: /dɛptu/→[dʒɛptu]). Furthermore, a series studies showed that affrication’s occurrence was associated with strong syllabic-prosodic environments (stressed syllable) (Honeybone 2001, 2005; Se’ge’ral & Scheer, 2008; Watson, 2007b). This also matches the observation of the present study (/ˈdɛp.tu/). Thus, I formulate the phonological process of affrication as a process of feature spreading shown below:



It can be seen from the process given above that the spreading of the continuant feature forces the alveolar stop to become alveolar affricate. Based on these studies and the feature spreading observation given above, one can see that the reason why there is a phonological process of affrication in Uyghur children’s phonology is because low front vowel’s features of [+front] and [+continuant] are spread to the consonant which comes before it. This makes the consonant (e.g., [d]) become more continuant and become a [+continuant] consonant (e.g., [dʒ]). This feature spreading process triggers the phonological process of affrication performed by Uyghur children, which matches the actual pattern observed from the data.

5.3.1 Similar process in other languages

Same type of phonological process was also found in other languages. For instance, it was found that Chinese children usually substituted alveolar fricative [s] for the affricate [ʃ]: /sun/→[ʃun] (Zhu Hua, 2002). Also, it was found Turkish children usually replace affricate [tʃ] with retroflex fricative [ʂ]: /ʂu/→[ʃʊ] (Topbas, 1997). Thus, these similarities show that the phonological process of affrication produced by Uyghur children is not idiosyncratic but in line with patterns found in child phonology in other languages.

5.4 Summary

After analyzing the phonological processes of devoicing of initial consonants, spirantization, and affrication observed in the Uyghur children's phonological systems by using autosegmental phonology approach, it was found that there were several phonological processes of feature spreading occurring in Uyghur child phonology. Feature spreading of continuant and sonority from the high back vowel to the uvular voiced stop triggers the spirantization; Feature spreading of continuant from low front vowel to the voiced alveolar stop triggers the affrication; Dissimilation of [+voice] alveolars triggers the post-sonorant devoicing of voiced obstruent. Furthermore, some of these phonological processes were also found in other child languages, which indicated that these processes were not idiosyncratic for Uyghur children but in line with patterns found in child phonology in other languages. But there is also one phonological process that seems to be rare cross-linguistically, which is the post-sonorant devoicing of obstruent, comparing to other processes.

6. Conclusion

In present study, the phonological inventories and phonological processes of four Uyghur children (Child A, B, C and D) were analyzed. After the analysis, it was found that the labiodental fricative [f] and postalveolar fricative [ʒ] were not used by any of the children in any word position, which indicated that these phonemes might be low-frequency in Uyghur, therefore they were acquired late by children. Also, it was found that more consonants were acquired at the syllable initial position compared to the syllable final position, such as voiced stops and voiced fricative were not used by all children word finally. Furthermore, sounds like affricates and alveolar fricatives were hard to produce word finally for the Uyghur children. While on the other hand, sounds like glides, nasals and some plosives were used by all children in both initial and final word positions, which might indicate that these sounds were easy to produce for Uyghur children, which partially support the universal proposal.

In addition to consonant inventory, it was found that Child B could not produce the front vowel [e] in any word positions. The reason why the front vowel [e] was not acquired by the Child B may be because [e] is not a primary vowel cross-linguistically, which made it difficult to acquire.

As for the observation of phonological processes acquired by the Uyghur children, it was found that the phonological processes of devoicing, palatalization, gliding and final consonant deletion were performed by all four Uyghur children. This indicated that these processes were very common for Uyghur children.

Furthermore, the result of the comparison between Uyghur and other language speaking children in terms of sound inventory showed that the voiced postalveolar fricative [ʒ] and the voiceless labiodental fricative [f] were acquired relatively late by Uyghur children comparing to the other languages. While on the other hand, with respect to sounds that are language-specific to Uyghur, it is notable that even younger children seem to be able to acquire some complex sounds like alveolar fricatives and postalveolar affricates. But in comparison, these sounds are relatively late acquired in English.

Also, it was found that the phonological processes of assimilation, gliding, stopping (of fricatives) and final consonant deletion were common for all children in these four languages. In addition to the similarities, the result also showed that the phonological processes of post-sonorant devoicing of obstruent, uvular fronting and spirantization were language specific for Uyghur children. To find out the factors which trigger these language specific phonological processes and to understand whether these processes are idiosyncratic for Uyghur children or not, autosegmental phonology approach was performed. Apart from these processes, affrication was also added to be accounted by autosegmental phonology.

The analysis revealed that although those four phonological processes seemed to be unique, the same kind of processes were also found in other languages (e.g., dissimilation in Tibetan language, spirantization in Spanish, affrication in Cantonese). However, one of them (Post-nasal devoicing of obstruent) were only found

in adult languages, which needs further investigation.

In summary, present study exhibited the possible phonological system of Uyghur children in terms of phonological processes and phoneme inventory, including their uniqueness. Although Uyghur is a Turkic language, but the Uyghur children perform differently in terms of those two aspects, which is surprising but reasonable. It indicated that cross-linguistic and individual differences, which refer to language specific part of child's phonological systems in the world's language, are equally important to be considered, even within the same language family.

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The Subjunctive In Contemporary Persian

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Abstract

This article attempts to explain the variation in the use of subjunctive in Persian, arguing that in many cases it is the speaker's perspective on the proposition, not the matrix verb, or the modal, that determines the choice of subjunctive. Self-impact verbs like *want*, *intend*, and other-impact verbs such as *order*, *allow* (Givon, 1984) require subjunctive in the subordinate clause, verbs in the non-manipulative category like *think* may also take subjunctive. It also claims that the subjunctive and the imperative are related because both are included in the broad category *irrealis* (Givon, 1984). Third, that both the subjunctive and the imperative exhibit similar syntactic behavior in Classical Persian and in the Tajiki dialect of Persian. In Classical Persian, the subjunctive *be-* also marked the perfective aspect in the past tense as opposed to simple past tense.

Keywords: Persian, Subjunctive, Control Verbs, Imperative, Tajiki

1. Introduction

Contemporary Persian uses a binary distinction to mark the indicative and the subjunctive. The indicative in the present tense is marked by verbal prefix *mi-*, which also marks the habitual / progressive in the past tense. The prefix *be-* is used to mark the subjunctive and the imperative. Since both the subjunctive and the imperative are future-oriented, verbs with *be-* are syntactically tense-less. Indicative sentences fall under the category of *realis* indicated by the verbal prefix *mi-* as the “marker of imperfectivity” used with both the present and the past tense. “As such it may express habitual action, progressive-ingressive action” (Windfuhr 1990, p. 536). The indicative *mi-* and the subjunctive *be-* are thus mutually exclusive:

- (1) *ali imroz nāma mi-navis-ad*
ali today letter IND-write-3sg
Ali is writing a letter today.
- (2) *ahmad diroz nāma mi-navišt*
ahmad yesterday letter IND-write-past-3sg
Ahmad was writing letter yesterday.

The subjunctive, marked by the prefix *be-* is typically used in subordinate clauses when the matrix verb is telic or manipulative, whether ‘self-impact’ or ‘other-impact’ (Givon 1984).

- (3) *mi-xāh-am fardā šahr be- rav-am*
IND-want-1sg tomorrow town SUB-go-1sg
I want to go to town tomorrow.
- (4) *ali mi- xāst kitāb-rā az man be- gir- ad*
Ali IMP-want-past-3sg book-DO from-I SUB-take-pres-3sg
Ali wanted to take the book from me.

- (5) *ustād amar dād ki bača-hā kitāb be-xwān-and*
 teacher order gave-3sg that child-pl book SUB-read-3pl
 The teacher ordered that children read the book.

In simple sentences, it is used with certain epistemic modals (Palmer 2006), such as *šāyad* ‘may’ and *bāyad* ‘should’.

- (6) *ali bāyad nāma be-navis-ad*
 ali should letter SUB-write-3sg
 Ali should write the letter.
- (7) *ali šāyad nāma be-navis-ad*
 ali may letter SUB-write-3sg
 Ali may write the letter.
- (8) * *ali šāyad nāma mi-be-navis-ad*
 Ali perhaps letter IND-SUB write-3sg
 *Ali is /perhaps writing the letter.
- (9) * *mi-xāh-am šomā nāma mi-navis-ed*
 IND-want-1sg you-pl letter SUB-write-2pl
 *I want you are writing the letter.

2. Characteristics of the Subjunctive in Persian

The subjunctive in Persian has been studied both from theoretical perspective (Nematollahi 2017, Taleghani 2006), descriptive perspective (Lazard 1992; Thackston 1993), and for teaching Persian subjunctive to non-Persian students (Silakhori and Abbasi 2012). This article is mainly concerned with the variations observed in use of subjunctive and therefore a theory-neutral approach is adopted here in order to accommodate variety of data. It also shows that the subjunctive is not only used in subordinate clauses but also the imperative sentences.

Three essential characteristics of the subjunctive clause are:

- It is syntactically a tense-less clause and that is why it occurs with control verbs, modals, and in the imperative.
- It is a future-oriented clause as the tense or its time reference is controlled by the matrix verb or the modal.
- Selecting subjunctive or indicative depends on the speaker’s perspective on the proposition. A speaker may use the same matrix verb or a modal with two different perspectives on the proposition.

As the subjunctive clause is tense-less, it can occur with the matrix verb in either the present or the past tense because the intended meaning is future-oriented. Sentence (4) is repeated here to illustrate the points above.

- (10) *ali mi- xāst [kitāb-rā az man be- gir- ad]*
 Ali IMP-want-past-3sg book-DO from-I SUB-take-pres-3sg
 Ali wanted to take the book from me.
- (11) *ali mi- xāhad [kitāb-rā az man be- gir- ad]*
 Ali IMP-want-past-3sg book-DO from-I SUB-take-pres-3sg
 Ali wants to take the book from me.

Similarly, in the use of modals, where *bāyad* ‘should’ points to manipulative, *šāyad* ‘may’ depends on the speaker’s perspective on the proposition.

- (12) *ali šāyad nāma be-navis-ad*
ali may letter SUB-write-3sg
Ali may write the letter.
- (13) *ali šāyad nāma mi-navis-ed*
ali may letter IND-write-2sg
Ali is perhaps writing a/the letter.

The third characteristic is the speaker's perspective, or the degree of illocutionary force, which determines the choice of either the subjunctive or the indicative. Neematollahi (2017, p. 5) considers complement of matrix verbs such as 'think, doubt, say, wish' as propositions that "can be true or false" and are marked with the indicative prefix *mi-*. However, with verbs like *think* and *say*, it is the intent of the speaker that determines whether the subjunctive is used in the subordinate clause. Higher degree of illocutionary force will select the subjunctive.

- (14) *fekr mi-kon-am ke hasan dars mi-xān-ad*
think IND-do-1sg that Hasan lesson IND-study-3sg
I think Hasan is studying (his) lesson.
- (15) *fekr mi-kon-am ke ahmad dars be-xān-ad*
think IND-do-1sg that Ahmad lesson SUB-study-3sg
I think Ahmad should study (his) lesson.

Here in sentence (14) *fekr mi-kon-am* 'I think' is non-manipulative, similar to 'know and promise', therefore the verb in subordinate clause is in the indicative. However, the verb in sentence (15) 'I think' expresses an opinion and therefore the subjunctive is selected in the subordinate clause.

3. Variation in other Contexts

Speaker's perspective is also observed in conditional and other sentences where there is no control verb.

- (16) *tā dāktar be-rasad mariz xāhad murd*
until doctor SUB- arrive-3sg patient future dead
The patient will die by the time the doctor arrives.
- (17) *tā dāktar mi-rasad mariz xāhad murd*
until doctor IND- arrive-3sg patient future dead
The patient will die by the time the doctor arrives.
- (18) *agar ānjā be-šinam polis mi-āyad*
if there SUB-sit-1sg police IND-come-3
If I sit there, police will come.
- (19) *agar ānjā mi-šin-am polis mi-āyad*
if there IND-sit-1sg police IND-come-3
If I sit there, police will come.

Compound verbs where the second element is *kon/kardan* 'do' show greater variation in the use of subjunctive.

- (20) *xeli mi-xāh-am ba šomā sohbat kun-am*
much IND-want-1sg with you-pl talk do-1sg
I very much want to talk to you.

- (21) *xeli mi-xāh-am ba šomā sohat bo-kun-am*
 much IND-want-1sg with you-pl talk SUB- do-1sg
 I very much want to talk to you.
- (22) *mi-twān-ed ān darwāza rā bāz kon-ed*
 IND can-2pl that door DO open-do-2pl
 You can open that door.
- (23) *mi-twān-ed ān darwāza rā bāz bo-kon-ed*
 IND can-2pl that door DO open SUB-do-2pl
 You can open that door.
- (24) *Inyadr kār bo-kon-ed ki kāmyāb šaw-ed*
 so much work SUB-do-2pl that success become-2pl
 Work so much that you succeed.
- (25) *Inyadr kār kon-ed ki kāmyāb šaw-ed*
 so much work do-2pl that success become-2pl
 Work so much that you succeed.

Some speakers may find sentences with *be-* either odd or with stronger emphasis on the event, but this is points to the variation.

4. The Subjunctive and the Imperative in Persian

There are parallels between the imperative and the subjunctive in Persian, which hitherto have not been explored. “Imperatives and subjunctives are related in that there are languages in which one form serves both for commands and for marking subordination” (Bybee, 1985:192). Imperatives are also included in the broad category of *irrealis* under the ‘other impact’ (Givon 1984:318-19), as imperatives are typically directed at the second person. The prefix *be-* is also used to mark the imperative.

- (26) *xāna-rā be-froš-ed*
 home DO IMP-sell-2pl
 Sell the house!
- (27) *ānjā be-šin-ed*
 there IMP-sit-2pl
 Sit down there!

The above sentences remain unchanged when they occur as subjunctive in complement clauses:

- (28) *man ba-šomā goft-am ki [xāna-rā be-froš-ed]*
 I to you-pl said-1sg that house-DO SUB sell-2pl
 I told you to sell the house.
- (29) *ba-šomā mi-g-am ki [ānjā be-šin-ed]*
 to you-pl IND-say-1sg that there SUB-sit-2pl
 I tell you to sit there!

Further evidence that supports this view comes from the Persian dialect spoken in Tajikistan. In Tajiki the definition of the subjunctive is similar to those given in the literature. “The subjunctive is used to indicate that an action is not actual but rather potential, projected, expected, desired, necessary, possible, or contingent on another action. An appropriate subjunctive auxiliary is used to express most of these modifications of the main action.” (Khojayori and Thompson, 2009, p. 127). However, the prefix *be-* is lost in Tajiki and instead the simple form of the main verb is used with both modals and control verbs. Phrases like *lāzem ast* “it is

necessary” and *mumken ast* “it is possible” have modal functions in Tajiki, but do not require the prefix *be-*. (data from Khojayori and Thompson, 2009, p. 128)

- (30) *fekr karda estāda bud ke in xorāk rā xorad yā na-xor-ad*
 think doing standing was that this food DO eat-3sg or not-eat-3sg
 He was uncertain whether to eat or not to eat.
- (31) *man majbur budam ba doktor raw-am*
 I compelled was-1sg to doctor go-1sg
 I was compelled to go to the doctor.
- (32) *dilbar majbur šod māšin-aš-rā foroš-ad*
 dilbar compelled became-3sg car-her-DO sell-3sg
 Dilbar was compelled to sell her car.
- (33) *lazem ast man raw-am*
 necessary is I go-1sg
 It is necessary that I go.
- (34) *mumken ast raw-i*
 possible is go-2sg
 You may go.

5. Subjunctive and Perfective Aspect

This section briefly discusses the nature of subjunctive clauses in Persian which will help in understanding its use in Classical Persian. In this article, it is assumed that the subjunctive is in *perfective* aspect in contrast to imperfective. Perfective views the event as a single act, without internal temporal complexity (Comrie, 1993, pp. 16-40), whereas imperfective has internal temporal complexity. Thus the prefix *be-* indicates perfective and *mi-* indicates imperfective. This distinction is crucial to explain the nature of subjunctive because the matrix verb is marked for the feature [+tense] but not the subjunctive. Consider the meaning of the subjunctive in the following pair of sentences:

- (35) *agar xāna-rā be-froš-am*
 if home-DO SUB-sell-1sg
 If I sell the house.
- (36) *agar xāna-rā mi-froš-am*
 if home-DO IND-sell-1sg
 If I sell the house.

The subjunctive in (35), *be-froš-am* ‘I sell’ views the event as single act, but in (36), *mi-froš-am* ‘I sell’ it has temporal complexity. This distinction is a key to understand the two different functions of *be-* in Classical Persian.

6. Classical Persian

Classical Persian is a dialect-neutral language that was acquired through education, and was not used for communication on the streets or market place. Classical Persian, like the contemporary Persian, shows variations in the use of the subjunctive *be-*. However, unlike contemporary Persian, *be-* was used with verbs both in the present and the past tense. When the sentence was addressed directly to someone and an action was expected, *be-* had subjunctive reading.

- (37) *helāku xān rā čun baydād mosaxar šod, jami?i rā*
 halaku khan - to as baghdad conquered became, group –DO
ke az šamšer bāz mānda bud be-farmud tā hāzer kard-and
 that from sword remained was SUB-ordered until present – did 3pl
 When Baghdad was conquered, Halaku Khan ordered to present the group [of people] who were spared the sword (and they were presented).
- (38) *qārun bo-mord ki čel xāna-e ganj dāšt*
 kora PRF-died that forty house-EZ treasure had
nošerwān be-mānd ki nām-e neku gozāšt
 nausherwān PRF-remained that name-EZ good left
 Kora died who had forty houses [full of] treasures
 [But] Nausherwān is still remembered [because] he left a good name
 (Kuliāt-e Obeid Zākāni)

In (37), *be-* indicates the subjunctive use because the matrix has control verb ‘ordered’ which was obeyed. In (37), the two intransitive verbs with the prefix *be-* are in perfective aspect.

- (39) *zāy in fasl bo-goft wa ārzuda wa nomid be-raft*
 crow this story PRF-said-2sg and sad and hopeless PRF-went-3sg
 The crow said told this story and, being sad and desperate, went.
- (40) *āworda-and ki zāhid-e gāo be-xarid wa su-e xāna mi-raft,*
 brought-3pl that holy-man-a cow PRF-bought-3sg and to-EZ home IND-go-past-3sg
duzd-e be-did dar aqab āmad tā gāo be-bar-ad
 thief-a PRF saw in behind came-3sg so cow SUB take 3sg
 It is said that a holy man bought a cow and was going home. A thief saw (him and) came from behind to steal it. (Kalila wa Damna)

In sentence (40) *be-* has both the perfective and subjunctive function. *be-xarid* ‘bought’ and *be-did* ‘saw’ are in perfective, but *be-bar-ad* ‘take away’ is subjunctive.

Similarly, when an imperative sentence is uttered as a general proclamation, *be-* does not appear with the verb, because the statement is not directed at a particular person and does not carry strong illocutionary force.

- (41) *ay aziz-ān umr ʔanimat šomār-ed*
 oh dear-pl life gift count-2pl
 Oh dears, consider life as a gift.
- (42) *mast-ān rā dast gir-ed*
 drunk-pl DO hand hold-2pl
 Hold the hand of drunks [spiritual]. (Kuliāt-e Obeid Zākāni)

7 . Classical Persian

Though the subjunctive has been explored from a variety of theoretical and descriptive perspectives, but the researches have focused mainly on control verbs and epistemic modals. This leaves out the underlying similarities between subjunctive and other related constructions such as the imperative. This article has focused on two areas: One, that in some instances, it is the speaker’s perspective on the proposition that determines whether to select subjunctive or indicative in the subordinate clause. Two, that subjunctive and imperative are related in their semantic properties and syntactic behavior. For example, in Tajiki, both constructions are used without the prefix *be-*. This article is a first approximation on the subject and further studies are needed to fully understand the phenomenon.

Abbreviations

IND	Indicative
SUB	Subjunctive
IMP	Imperative
PRF	Perfective
SG	Singular
PL	Plural
EZ	Ezafe
DO	Direct Object

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The Acquisition of Mandarin Tones by L1 Uyghur Speakers: A Preliminary Report

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Abstract

This preliminary study documents the acquisition of Mandarin tones by L1 Uyghur speakers, examining the error distributions among each tonal pair in Mandarin. Twelve L1 Uyghur speakers participated in the research, which consisted of two experiments: a perception experiment and a production experiment. The accuracy rate in the perception task was generally high, however, a prominent T2-T3 confusion was exhibited in the results. The production accuracy was relatively much lower than the perception accuracy, and besides the T2-T3 confusion, the participants showed an additional difficulty producing the contrast between T1 and T4. We also have observed a tendency of overapplication of T1 in the production task. The neutralized distinction between T2-T3, triggered by acoustic similarity and the tone sandhi alternation rule, helps to explain the confusion between the two tones. The overapplication of T1, however, may be very likely explained by the default nature in Mandarin, whereby T1, characterized as a high flat tone without any contour, is produced as a default tone when the participants were uncertain of the tonal category. Moreover, we observed a split of the error patterns with respect to age—that speakers over 30 showed relatively lower accuracy rates and more prominent tonal confusions than younger speakers.

Keywords: Uyghur, Mandarin tones, second language acquisition, confusion matrix

1. Introduction

Modern Uyghur is a Turkic language of the Eastern or Chaghatay branch, serving as an official and first-learned language by between six and seven million Uyghurs in the Xinjiang Uyghur Autonomous Region of Northwestern China (Hahn 1991). Since 1949, the massive influx of Chinese migrants to Xinjiang has given rise to intense language contact between the speakers of Uyghur and Standard Mandarin. Standard Mandarin not only has been established as the official language in China, it also has become a mandatory language taught in schools in the Xinjiang Uyghur Autonomous Region. As a result of this, most of the Uyghur first language (L1) speakers use Mandarin as the second language (L2). Despite of the large number of L2 Mandarin speakers in the Uyghur region, studies on Uyghur-Mandarin L2 acquisition is insufficient to a great extent. Uyghur, compared with other members in the Turkic family, is an understudied language, and the research on the acquisition of Mandarin by Uyghur L1 speakers is even sparser, as opposed to other languages that have intense contact with Mandarin, e.g., Cantonese, English, and Korean. The effect of the socio-factors, such as age, level of education, and language attitudes, etc., remains unknown in the acquisition process.

Uyghur and Mandarin are characterized by distinctive prosodic systems: Mandarin is a typical tonal language while Uyghur is considered to be a language where words are accented. Standard Mandarin has a system of four phonemic tones whereby the pitch contour over a full syllable can distinguish word meanings

(Chao 1948). The Mandarin tonal system is given in (1), in which the numbers indicate the pitch value of each tone on a 1-5 numeric scale, with 1 referring to the lowest pitch and 5 referring to the highest pitch. Uyghur, on the other hand, is a duration-sensitive language and the effect of fundamental frequency is not robust (Jiang et al. 2010, Yakup & Sereno 2016). For the Uyghur L1 speakers who acquire Standard Mandarin as L2, the question arises as to how they discriminate and produce the non-native Mandarin tones, given that their L1 is a non-tonal language. Does the non-tonal L1 background hinder or facilitate the acquisition of the Mandarin tones? It has been previously illustrated that acquiring suprasegmental features (e.g., tones) is distinct from acquiring segmental features (e.g., consonant types) of the non-native languages. For segmental acquisition, the major difficulty that learners encounter is perceiving and producing the relevant contrasts; however, regarding suprasegmental acquisition, in addition to acquiring the contrast in the non-native languages, learners have to overtly categorize such contrasts, e.g., associating pitch qualities with tonal labels in Mandarin (Hao 2012). In this study, we conducted a perception and a production experiment to investigate the tonal acquisition pattern of the L1 Uyghur speakers, which is explained in depth in the following section.

Tone1 (T1)	Tone 2 (T2)	Tone 3 (T3)	Tone 4 (T4)
55	35	214	51
high level	high-rising	low-dipping	high-falling

Table 1. Mandarin tonal system (Chao 1948)

2. The Present Study

2.1 Participants

The present study investigated the acquisition of L2 Mandarin tones by L1 Uyghur speakers. In this research, we conducted two experiments focusing on the perception and production of the tones on Mandarin monosyllabic words. Twelve Uyghur speakers participated in this experiment. All participants were born and raised in Xinjiang Uyghur Autonomous Region in China, speak Uyghur as their L1 and have been learning Standard Mandarin since early elementary school. Six participants range in age between 20 to 29 years old and the other six participants between 30 to 40; six of them are from Urumqi, the capital city of Xinjiang Uyghur Autonomous Region, where Standard Mandarin is widely spoken and saliently more dominant than Uyghur, whereas the other six participants are from Aksu, Kashgar, and Korla where there is a dominant Uyghur-speaking population. All the participants either have finished university education or were still in-progress at the time of the experiments. All of them were living in the United States (Bloomington, Indiana and Washington D.C.) and speak fluent Mandarin in their daily life. However, we did not conduct a standardized exam to test their specific level of Mandarin proficiency.

2.2 Stimuli & procedures

In the perception experiment, twenty monosyllabic words were presented to the participants in audio form (e.g., /mai/ 214 买 ‘buy’). Each monosyllabic target was followed by two written Chinese characters which were minimal pairs that contrast in tones only (e.g., /mai/ 51 卖 ‘sell’, /mai/ 214 买 ‘buy’). On each perception trial, the participants heard a monosyllabic word and then were presented with two visual characters. The participants were asked to make a forced binary choice of which word they thought they just heard. Their responses were manually recorded: they obtained 1 point for providing the correct response and 0 point for the wrong answer. On each production trial, the participant was visually presented with a Chinese character first (e.g., 雪 ‘snow’), and then they were asked to pronounce that character. There were twenty monosyllabic trials in total in the production task. The participants’ productions were recorded using Praat (Boersma & Weenink 2013). The production data were first transcribed impressionistically by the first author, who is a native speaker of Standard Mandarin. As for the results which were hard to transcribe based on native speaker’s intuition, we

checked the F0 by tracking the pitches in Praat. Like the perception response, the correct response was graded 1 point and the wrong response 0 point. All the audio stimuli were read by a female native speaker of Standard Mandarin speaker.

2.3 General results

Two confusion matrixes were constructed for the participants’ general performances on the tonal perception and production, as given in (2) and (3), respectively. In (2), each column indicates the tonal category of the acoustic input, and each row indicates the tone perceived by the participants. In (3), each column indicates the tone of the written stimulus which was visually presented, and each row indicates the actual tonal category produced by the participants. For instance, 4.2% in the first column in (2) indicates that 4.2% of the T1 acoustic input were perceived as T3 by the participants; 20% in the second column in (3) indicates that 20% of the T2 visual input were produced as T1 by the participants.

		Input Tones			
		Tone	1	2	3
Output Tones	1	87.5%	0	3.6%	4.2%
	2	0	76.7%	14.3%	6.9%
	3	4.2%	18.3%	77.4%	9.7%
	4	8.3%	5%	4.8%	79.2%
	Percentage	100%	100%	100%	100%

Table 2. Confusion matrix in perception task: general performance

		Input Tones			
		Tone	1	2	3
Output Tones	1	58.3%	20%	17.8%	15.3%
	2	0	32%	10.7%	4.2%
	3	8.4%	38%	60.8%	11.1%
	4	33.3%	10%	10.7%	69.4%
	Percentage	100%	100%	100%	100%

Table 3. Confusion matrix in production task: general performance

In the perception task, the twelve participants’ accuracy was generally high, given that the perception accuracy rate for each tonal input, which was 87.5% for T1, 76.7% for T2, 77.4% for T3 and 79.2% for T4, was all above 50%. Among the confusion pairs, T2-T3 and T3-T2 exhibited the most uncertainty as opposed to the other pairs: 18.3% of T2 stimuli were perceived as T3, and 14.3% of T3 stimuli were perceived as T2. Compared with the T1-T4 and T4-T1 confusion pairs, which were 8.3% and 4.2%, the confusion between T2 and T3 was the most prominent.

The production results in (3) were more diffused than the perception results in (2). The production accuracy of each input tone was much lower than that in the perception task: 58.3% for T1, 32% for T2, 60.8% for T3, and 69.4% for T4. In addition to the T2-T3 (38%) and T3-T2 (10.7%) confusion pairs, which were prominent in the perception task, the participants struggled with T1-T4 (33.3%) and T4-T1 (15.3%) tonal pairs in their production. In the production task, the error distributions of the input T2 and T3 were much more

diffused than that of the input T1 and T4.

We also found that for the twelve participants, the general results of perception and production split with respect to age. In the following two sections, we further investigate the age variation among the participants by dividing them into two groups: (1) age ≥ 30 ; (2) age < 30 . There were six participants in each group, and the perception results of each group are presented in 2.4 and the production results in 2.5.

2.4 Perception results

Both the two groups of speakers showed high-accuracy performances in the perception task, with the younger speakers under 30 achieving higher accuracy rates—approximately 80%-90% accuracy. In addition, the elder group had a certain amount of confusion between the T2-T3 and T3-T2 pairs, showing that 26.7% of the T2 input were wrongly perceived as T3 and 19% of the T3 input as T2. However, such tonal confusions were greatly reduced among the younger speakers under 30, with only around 10% of each input tone being wrongly perceived.

		Input Tones			
		Tone	1	2	3
Output Tones	1	83.3%	0	4.8%	2.8%
	2	0	63.3%	19%	8.3%
	3	8.3%	26.7%	69%	11.1%
	4	8.3%	10%	7.1%	77.8%
	Percentage	100%	100%	100%	100%

Table 4. Confusion matrix in perception task: age ≥ 30

		Input Tones			
		Tone	1	2	3
Output Tones	1	91.7%	0	2.4%	5.6%
	2	0	90%	9.5%	5.6%
	3	0	10%	85.7%	8.3%
	4	8.3%	0	2.4%	80.6%
	Percentage	100%	100%	100%	100%

Table 5. Confusion matrix in perception task: age < 30

In general, the confusion between T2 and T3 input was the most noticeable pair in the perception task, however, it was mostly prominent among the speakers older than 30. The production results were distinct from the perception results, which are analyzed in the next section.

2.5 Production results

Compared to the perception results, the production results showed a large decrease on the general accuracy rates in both age groups. For the speakers over 30, the accuracy rate for T1, T2, T3 and T4 input was 50%, 26.7%, 45.2%, and 58.3%, respectively. Although the younger group under 30 achieved much higher

accuracy for each input category, their production results—which were 66.7% accuracy for T1 input, 40% for T2, 76.2% for T3, and 80.6% for T4, still dropped compared with the high accuracy rates in the perception task.

		Input Tones			
		Tone	1	2	3
Output Tones	1	50%	30%	28.6%	25%
	2	0	26.7%	14.3%	5.6%
	3	8.3%	40%	45.2%	11.1%
	4	41.6%	3.3%	11.9%	58.3%
	Percentage	100%	100%	100%	100%

Table 6. Confusion matrix in production task: age >=30

		Input Tones			
		Tone	1	2	3
Output Tones	1	66.7%	5%	7.1%	5.6%
	2	0	40%	7.1%	2.8%
	3	8.3%	35%	76.2%	11.1%
	4	25%	20%	9.5%	80.6%
	Percentage	100%	100%	100%	100%

Table 7. Confusion matrix in production task: age <30

In addition to the confusion between T2 and T3 in the production, the confusion between T1 and T4 among elder speakers was also prominent, which was not evident among young speakers, however. Also, it is shown in (6) that there was a large proportion of input tones produced as T1 in the output: 30% of the T2 input, 28.6% of the T3 input, and 25% of the T4 input were produced as T1, which was very prominent as opposed to the other error distributions. However, such a dominant T1 error was only crucial among elder participants.

3. General discussion and conclusion

The present study provides a preliminary report of the perception and production of Mandarin tones by L1 Uyghur speakers. The main goals of this research are to 1) document the general error pattern exhibited by Uyghur speakers in the acquisition of the Mandarin tones; and 2) investigate the social factors that contribute to the variation. The perception and the production experiments showed different error patterns, leading us to hypothesize that the L1 Uyghur speakers exhibited a mismatch between the Mandarin tonal perception and production. For the tonal perception, the most prominent confusion pair is between T2 and T3, especially among the elder Uyghur speakers who are older than 30. The dominant confusion between T2 and T3 can most likely be attributed to the acoustic similarity shared by these two tones. Much previous research has demonstrated that Mandarin T2 and T3 share a rising contour and a similar F0 onset on a mid-level pitch (Moore & Jongman 1997). The intrinsic similarity is enhanced by the phonological alternation whereby Mandarin T3 changes to T2 when followed by another T3. The tone sandhi rule further blurs the distinction between the two tones and causes difficulty for differentiation. For instance, the Mandarin T2-T3 error was found to be significant for learners from both tonal and non-tonal L1s (Hao 2012), showing that the T2-T3 differentiation is more likely to be intrinsically difficult rather than the result of interference from L1s.

In addition to the commonly confused T2-T3 pair, the participants, especially the elder group, also displayed a struggle with the Mandarin T1 and T4 tones in the production task, by producing a large proportion of the T1 input as T4 and T4 input as T1. Although less commonly discussed than T2-T3 error, the T1-T4 error pattern has also been demonstrated in previous studies. The L1 Cantonese speakers at the intermediate level of Mandarin showed a certain level of confusion between T1 and T4 in their production, which was rarely exhibited by the English participants (Hao 2012). Our present research corroborates the findings of Hao (2012) that Mandarin T2-T3 is the most prominent confusion pair among the second language learners, and in addition to that, the T1-T4 confusion is the second most crucial pair in the production. We also observed a tendency of T1 overapplication in the production task, which has not been sufficiently discovered in the previous studies. This error pattern, as far as we are concerned, may be owing to the T1's default tone nature in Mandarin. The Mandarin T1 is a high flat tone which does not contain any pitch change (e.g., rising or falling contour), as opposed to the other three contour tones in Mandarin. As a result, we predict that T1 contains the "unmarked" nature and may be very likely to be treated as the default tone among all the Mandarin tones. In the production task, when the Uyghur participants were uncertain about the tonal category of the visual stimulus, they would just produce the default T1 instead.

This study constitutes a preliminary report on the acquisition of Mandarin tones by L1 Uyghur speakers. Due to time constraints, we did not conduct an additional perception task where there would be a four-way minimal contrast, and hence the above-chance accuracy in our research may be as a result of the forced-binary choice in the perception task. Future work should consider such a four-way minimal contrast to see if results would be different.

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Typological Variation in the Diachronic Treatment of Palatalized Stops in Tibetan Onsets¹

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Abstract

Old Tibetan allows palatalized stops to occur in onset position either on their own or after an obstruent or a nasal in a cluster. These palatalized segments have undergone varying degrees of historical reduction. The present paper focuses on the diachronic development of singleton palatalized labials and velars. Data from dialects belonging to seven different contemporary Tibetic language groups are examined. Palatalized velars tend to become (alveolo-) palatal stops or affricates except in conservative dialects, where they are retained without any modifications. Palatalized labials appear to undergo similar changes, where they become alveolo-palatal affricates in innovative dialects but are preserved faithfully in conservative dialects. In addition, the glide tends to be eliminated from both palatalized labials and palatalized velars when they precede a front vowel in western varieties. Based on these observations, three specific issues are discussed in further detail. First, it is argued that unlike their velar counterparts, palatalized labials evolve into different alveolo-palatal segments through glide hardening followed by labial deletion rather than coalescence of the two elements, as evidenced by the peculiar labial-palatal sequences preserved in some intermediary dialects. Second, the depalatalization of palatalized onsets before front vowels in western varieties can be understood as a dissimilatory process resulting from hypercorrection on the listener's part or a phonological repair strategy implemented to avoid having two adjacent coronal elements in the structure. Finally, the emergence of aspirated fricatives (which are typologically rare) from palatalized labials in some intermediary dialects may be analyzed as the spreading of the glottal configuration from the aspirated labial stop to the hardened glide before the labial undergoes deletion.

Keywords: Tibetic languages, palatalization, sound change, typological variation, phonetics phonology interface

1. Introduction

The behavior of historical palatalized stops in Tibetan onsets is usually treated as a minor topic in larger grammatical descriptions or phonological profiles of individual dialects or languages.² Many of these accounts only provide correspondences between written forms and their modern pronunciations with little or no explanation for why palatalized onsets changed the way they did. Additionally, their typological coverage is limited to only a single dialect at a time or a small handful of dialects belonging to one or two major groups. The few studies that actually discuss palatalization at length (e.g. von Koerber, 1935; Simon, 1975; Gong,

¹ This paper is based on Section 6.1.2 from my doctoral dissertation titled *Structural Evolution of the Tibetan Syllable: A Cross-Dialectal Study* (Leongue, 2018).

² Some examples include Miller (1956) for Leh (Western Archaic), Roerich (1933) for Lahul (Western Innovative), Roerich (1931) for Lhasa (Central), van Driem (1992) for Dzongkha (Southern), Gesang (1989) for Batang (Khams), and Hua (2002) for various Amdo dialects, among many others.

1977; Hill, 2010; Jacques, 2013) are more concerned with its potential origins or the phonemic status of the glide when occurring after another consonant. This paper investigates the variation in how historical palatalized stops are realized in onset position³ across dialects from seven contemporary Tibetic language groups. It also considers both phonetic and phonological motivations for the different changes these palatalized segments have undergone. The rest of the paper is organized as follows: Section 2 describes the source of the data and the criteria for data selection. Section 3 provides a brief overview of the distribution of palatalization in Old Tibetan (henceforth OTIB) and examines the development of palatalized labials and velars. Section 4 proposes some potential explanations for three specific issues involving these segments: (i) full palatalization of velars but not labials (despite appearances); (ii) glide deletion before front vowels in western varieties; (iii) the emergence of aspirated fricatives from palatalized labials in intermediary dialects. Section 5 summarizes the major findings of this paper.

2. Source of data and criteria for selection

2.1 Participants

The data examined in this paper are taken from the Comparative Dictionary of Tibetan Dialects (Bielmeier et al., 2008). The genetic classification of the different Tibetic language groups proposed in this dictionary volume is adopted. The dialects considered in this paper and the language groups they belong to are presented in Table 1 and will be referred to by their abbreviations from here on:

Group		Dialect	
WAT	Western Archaic Tibetan	TSHA	Tshangra
		LEH	Leh
WAT	Western Innovative Tibetan	TABO	Tabo
		THOL	Tholing
CT	Central Tibetan	LHA	Lhasa
ST	Southern Tibetan	DZO	Dzongkha
NT	Northern Khams Tibetan	NA	Nangchen
EKT	Eastern Khams Tibetan	DE	Derge
EAT	Eastern Amdo Tibetan	THE	Themchen

Table 1. Tibetic dialects examined in this paper

In terms of syllable structure, WAT and EAT dialects are generally among the most conservative, while dialects from the other varieties show varying degrees of simplification in comparison to OTIB (Leongue, 2018). In this paper, modern pronunciations of different lexical items from the above dialects are compared to their OTIB forms as preserved in the orthography. The occurrence of these items (or syllables containing the same string of sounds) in OTIB is 3 Palatalized stops are also found after an obstruent or a nasal in initial clusters. These cases are omitted from the present paper because their development follow more or less the same pattern as their singleton counterparts. See Chapter 3 in Leongue (2018) for more discussion on initial clusters

³ Palatalized stops are also found after an obstruent or a nasal in initial clusters. These cases are omitted from the present paper because their development follow more or less the same pattern as their singleton counterparts. See Chapter 3 in Leongue (2018) for more discussion on initial clusters involving palatalized stops.

involving palatalized stops. verified using the *Old Tibetan Documents Online* corpus.⁴ When data permit, the behavior of historical palatalized onsets is examined in all possible vowel contexts. Greyed-out cells indicate when no data is available for a particular word. OTIB forms presented in this paper are transliterated in italics using the Wylie system (Wylie, 1959).

3. Palatalization in relation to place of articulation

Most segments in the OTIB consonant inventory can freely occur as singleton onsets.⁵ However, not all of them have plain and palatalized variants. Consider the distribution of palatalization on initial stops and affricates in Table 2:⁶

	Plain	Palatalized
Labial	<i>p(h), b</i>	<i>p(h)y, by</i>
Dental	<i>t(h), d</i>	---
Palatal	<i>c(h), j</i>	---
Velar	<i>k(h), g</i>	<i>k(h)y, gy</i>

Table 2. Plain and palatalized stops and affricates in OTIB

Out of the four major places of articulation, only labial and velar segments can undergo palatalization, although it has been argued that the palatal affricates should be treated as palatalized dentals (e.g. von Koerber, 1935; Miller, 1970; Simon, 1975; Beyer, 1992; Hill, 2010). Regardless of whether the palatal segments are derived from dentals, they have remained unchanged for the most part since the time of OTIB; therefore, the focus of the following discussion will be on palatalized labials and velars.

The feature of palatalization is argued to have originated from verbal morphology (von Koerber, 1935) and the formation of honorifics (Gong, 1977) in Pre-Tibetan. But it is clear that it had become phonologized long before OTIB, as evidenced by the existence of minimal pairs involving plain and palatalized stops in contrastive distribution. Consider some examples in Table 3:

	Plain		Palatalized	
Labial	<i>phag</i>	‘pig’	<i>phyag</i>	‘hand’ (h.)
	<i>ba</i>	‘cow’	<i>bya</i>	‘bird’
Velar	<i>khab</i>	‘needle’	<i>khyab</i>	‘spread-PRS’
	<i>gang</i>	‘one, full’	<i>gyang</i>	‘wall’

Table 3. Contrastive palatalization on labial and velar stops in onset position

As OTIB branches out into its modern descendants, the realization of palatalized stop onsets changes along with the overall simplification of syllable structure. The modern reflexes of palatalized labials are given in Tables 4 and 5. The labial element is preserved consistently in WAT, ST, and EAT but only before a front vowel

⁴ Retrieved from <https://otdo.aa-ken.jp/>. Also, the documents compiled in the corpus represent different periods of OTIB, which exhibit certain morphophonological differences. See Leongue (2018) and the references therein for more detail.

⁵ For a more in-depth discussion of the OTIB phonemic inventory, see Hill (2010) and Leongue (2018).

⁶ Even though palatalized nasals do exist in OTIB, they will not be included in the following discussion. This is because *my* has mostly merged with *m* or *ny* other than in some EAT dialects (e.g. *myi* ‘human’: CT-LHA [mi]; EKT-DE [ne]; EAT-THE [mɲə]), while **ngy* is not actually attested in any existing OTIB documents and only appears as a reflex in some conservative WAT dialects (e.g. *nya* [ɲja] ‘fish’ in WAT-BAL).

in WIT; in CT, NT, and EKT, the labial stop is always deleted. The glide generally hardens to either [ɕ]/[ɕʰ] or [tɕ]/[tɕʰ] with two exceptions: in NT-NA, [ɕ] further depalatalizes to [s]; in WAT, the glide is deleted before a front vowel (which also happens in WIT) but is retained before a back vowel. These observations differ from previous accounts, which suggest that the change of palatalized labials into a fricative or an affricate results from coalescence of the labial stop and the glide (e.g. Roerich, 1931; von Koerber, 1935; Shafer, 1974; Sun, 1986; Beyer, 1992; Baertsch, 1999).

Word	OTIB	WAT	WIT	CT	ST	NT	EKT	EAT
		TSHA	TABO	LHA	DZO	NA	DE	THE
a. outside	<i>phyi</i> ⁷	p ^h i	p ^h i	tɛ ^h i	p(t)ɛ ^h i:	si		
b. half	<i>phyed</i>	p ^h et	p ^h et	tɛ ^h e ⁸	p(t)ɛ ^h e:		ɛ ^h e: ⁸	
c. hand	<i>phyag</i>	p ^h jaq	tɛ ^h ak	tɛ ^h aʔ	p(t)ɛ ^h a ⁹		ɛ ^h a: ⁹	φɛaχ
d. side	<i>phyogs</i>	p ^h joqs	tɛ ^h ok	tɛ ^h oʔ		so ¹⁰		φɛoχ
e. rich	<i>phyug-po</i>	p ^h juk.po	tɛ ^h uk.po	tɛ ^h u.pu	p(t)ɛ ^h up	suk.po	ɛ ^h u:.po	φɛi.ku

Table 4. Reflexes of *phy* before front and back vowels

Word	OTIB	WAT	WIT	CT	ST	NT	EKT	EAT
		TSHA	TABO	LHA	DZO	NA	DE	THE
a. coral	<i>byi-ru</i>	bi.ru		tɛ ^h i.ru	ptɛi.ru	su ^h .ru	ɛə.rə	φɛə.rə
b. sand	<i>bye-ma</i>		pe.ma	tɛ ^h e.ma	ptɛim		ɛe.ma	φɛe.ma
c. bird	<i>bya</i>	bja ¹¹	tea	tɛ ^h a	ptea	sa ¹¹	ɛa	φɛa

Table 5. Reflexes of *by* before front and back vowels

The development of palatalized velars is straightforward, as shown in Tables 6 and 7. In all varieties except WAT (and CT-LHA as reported in some previous studies),¹² the velar stop and the glide coalesce into either [c]/[cʰ] or [tɕ]/[tɕʰ]. In WAT, the glide is deleted if the following vowel is front but remains with the velar stop when the following vowel is back. These observations are generally consistent with the previous descriptions of how palatalized velars have changed (e.g. Roerich, 1931; von Koerber, 1935; Shafer, 1974; Sun, 1986; Beyer, 1992; Baertsch, 1999).

⁷ In TSHA *phyi-logs* [p^hi.loq]. In TABO *phyi-ma* [p^hi.ma]. In NA *phyi-na* [si.na].

⁸ Extracted from *phyed-ka* ‘half’: CT-LHA [tɛ^he.ka]; EKT-DE [ɛ^he:.ka].

⁹ Extracted from *phyag-ma* ‘broom’: EKT-DE [ɛa:.ma]; ST-DZO [p(t)ɛa:m].

¹⁰ Extracted from *phyi-phyogs* [si.so] ‘backwards’.

¹¹ Extracted from *bya-po* ‘rooster’: WAT-TSHA [bja.p^ho]; NT-NA [sa.ho].

¹² The glide in palatalized velars remains unchanged in the CT-LHA forms recorded in prominent works such as Chang & Shefts (1964) and Goldstein & Nornang (1978) regardless of vowel context (e.g. *khyi* [k^hhi] ‘dog’, *khyod* [k^hhø:] ‘you (sg.)’, etc.).

Word	OTIB	WAT	WIT	CT	ST	NT	EKT	EAT
		TSHA	TABO	LHA	DZO	NA	DE	THE
a. dog	<i>khyi</i>	k ^h i	c ^h i	c ^h i	tɛ ^h i	tɛ ^h i	tɛ ^h e	tɛ ^h ə
b. you (h.)	<i>khyed</i>	k ^h e ¹³		c ^h e ¹³	tɛ ^h ɛ:	tɛ ^h eʔ	tɛ ^h eʔ	tɛ ^h e
c. difference	<i>khyad-par</i>		c ^h at.par	c ^h e.pa:	k ^h e.ba	tɛ ^h e.par		tɛ ^h a.pər
d. herd	<i>khyu</i>	k ^h ju		c ^h u	tɛ ^h u		tɛ ^h u	tɛ ^h ə
e. you	<i>khyod</i>		c ^h øʔ	c ^h øʔ	tɛ ^h ø:	tɛ ^h oʔ	tɛ ^h ɛʔ	tɛ ^h o

Table 6. Reflexes of khy before front and back vowels

Word	OTIB	WAT	WIT	CT	ST	EKT	EAT
		TSHA	TABO	LHA	DZO	DE	THE
a. up	<i>gyen</i>	gen	cen	c ^h ɛ:		tɛ ^h ɛ:	tɛn
b. wall	<i>gyang</i>	g ^l aŋ	caŋ	cā:	tɛā:	tɛō:	tɛaŋ

 Table 7. Reflexes of gy before front and back vowels¹⁴

4. Discussion

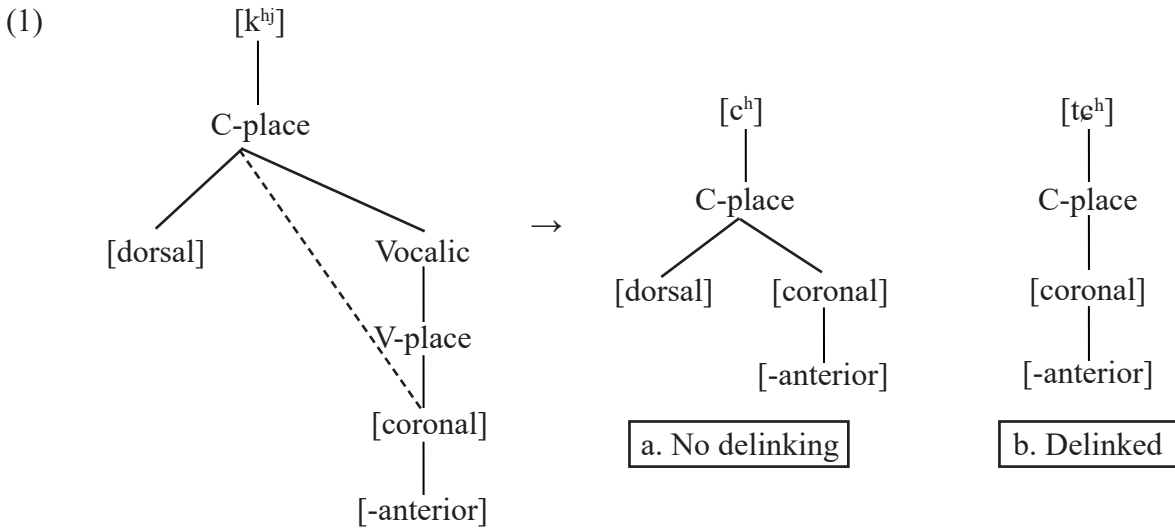
In the following subsections, three specific issues regarding the development of palatalized velars and labials are analyzed from phonetic and phonological perspectives. Section 4.1 provides potential explanations for the diachronic treatment of these segments. Section 4.2 examines the deletion of the glide from palatalized onsets in western varieties. Section 4.3 remarks on the emergence of aspirated fricatives from the reduction of palatalized labials.

4.1 Treatment of palatalized velars and labials

The path of development taken by palatalized velars in Tibetan is typologically common. Both the palatal stop and the alveolo-palatal affricate (and their variants) are frequently attested outputs of velar palatalization in the world's languages (e.g. Bateman 2011). Acoustically, palatalized velars are similar to coronals, often leading them to be misperceived as such (e.g. Guion, 1996, 1998). Assuming that sound change results from misperception (e.g. Ohala, 1981, 1993, etc.), it is not surprising that velars would undergo full palatalization in most Tibetan varieties. In terms of phonological features, this can be understood as the promotion of [coronal] from secondary to primary place of articulation. Following Clements & Hume (1995), a sample feature-geometric derivation of /k^h/ to [c^h] and [tɛ^h] is given in (1):

¹³ Extracted from *khyed-rang* 'you (h.)': WAT-TSHA [k^he.raŋ]; CT-LHA [c^he.rā:].

¹⁴ NT-NA is omitted because of unavailable data.



Both [c^h] and [tɕ^h] result from tier promotion. The secondary [coronal] feature is first promoted from the V- to C-place, gaining major articulation status. If the original [dorsal] feature on the velar stop remains, the palatal stop (bearing complex place features [dorsal, coronal]) is formed, as shown in Figure (1a). If the [dorsal] feature is delinked, [coronal] becomes the sole primary articulation, yielding the alveolo-palatal affricate, as shown in (1b).

The development of palatalized labials, on the other hand, shows considerably more variation. For example, the possible outputs for /p^{hɪ}/ include [p^{hɪ}], [pɕ^h], [ptɕ^h], [ɕɕ], [ɕ^h], [tɕ^h], and [s]. Perceptual accounts akin to those for the palatalization of velars have been proposed for labials as well. In discussing cases of labial palatalization in Bantu languages, Ohala (1978) argues the acoustic similarity between palatalized labials and dentals may cause them to be mistaken as dentals or palatals, which suggests the possibility for labials to undergo full palatalization in one step. As pointed out in Bateman (2010), the misperception view is flawed in that it fails to explain the existence of intermediate forms (e.g. those in which the labial is still fully realized) and why full palatalization of labials is not more common in the world's languages. In light of findings from her typological survey, Bateman (2010) instead argues that cases in which labials seem to undergo a complete shift in place to (alveolo-)palatal in fact arise diachronically from hardening of the glide followed by deletion of the labial. This analysis is also supported by the modern reflexes of historical palatalized labials in various contemporary Tibetan varieties. Based on comparative evidence, I propose the following stages of development for labial palatalization in Tibetan¹⁵ using the word *phyug-po* 'rich' as an example:

Stage	Process	<i>phyug-po</i> 'rich'	Dialect
0	Glide retention	p ^{hɪ} uk.po	WAT-TSHA
1	Glide → fricative	ɕɕi.ku pɕ ^h up	EAT-THE ST-DZO
2	Fricative → affricate	ptɕ ^h up	ST-DZO
3	Labial deletion	ɕ ^h u:.po tɕ ^h uk.po tɕ ^h u.pu	EKT-DE WIT-TABO CT-LHA
4	Depalatalization	suk.po	NT-NA

Table 8. Stages of development for historical palatalized labials

¹⁵ Similar proposals have been made for the historical development of palatalized labials in Cone Tibetan (Jacques, 2011) and labial-palatal stop clusters in the East Bodish language Kurtöp (Hyslop, 2008).

Before any changes occur (Stage 0), the glide surfaces as secondary articulation on the labial stop, as represented by WAT dialects such as TSHA. In Stage 1, the labial remains while the glide hardens to [ɕ], as represented by EAT and ST dialects such as THE and DZO. In Stage 2, the labial is still retained while the glide further hardens to [tɕ], as represented by ST dialects such as DZO. In Stage 3, the labial is eliminated completely, leaving either the fricative or the affricate behind as a singleton onset, as represented by EKT dialects such as DE and WIT and CT dialects such as TABO and LHA. In Stage 4, NT dialects such as NA takes it one step further by turning [ɕ] into [s], ridding any trace of palatalization on the segment.

Similar diachronic evidence supporting the glide hardening account for apparent cases of labial palatalization is found in other languages. For example, intermediate stages where a labial is followed by an alveolo-palatal (or palato-alveolar) fricative are found in Moldavian (Bateman, 2010) and even in the Bantu languages discussed in Ohala (1978). In addition, the manner in which palatalization is realized on palatalized labials in Polish varies across dialects, with forms such as [pʲ], [pj], [pɕ], and [pɛ] all attested synchronically (Kochetov, 1998). Relevant examples from these aforementioned languages are given in Table 9:

Moldavian 'skin'	<i>Process</i> pjele	<i>Muntenia</i> pɛele	<i>Moldavian</i> kieli	
Bantu 'dog'	<i>Tonga</i> m-bja-na	<i>Mvumbo</i> m-bzi	<i>Zulu</i> ɪn-dza	
Polish 'beer'	<i>Type I</i> pʲiwo	<i>Type II</i> pjiwo	<i>Type III</i> pɕiwo	<i>Type IV</i> peiwo

Table 9. Comparative evidence in favor of glide hardening from other languages

Considering the intermediate forms preserved in ST and EAT as well as similar patterns observed cross-linguistically, cases in which labials in Tibetan seem to have undergone full palatalization are better understood as the outcome of a series of diachronic changes as shown in Table 8 rather than a single-step process of coalescence as suggested in previous descriptions (e.g. Roerich, 1931; von Koerber, 1935; Shafer, 1974; Sun, 1986; Beyer, 1992; Baertsch, 1999).

4.2 Glide deletion in western varieties

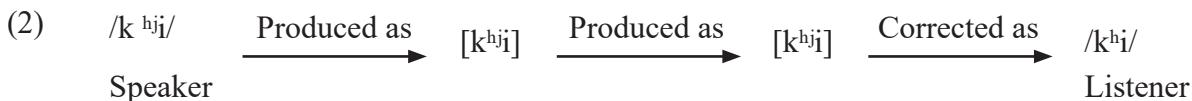
In WAT and WIT, palatalized stops tend to depalatalize when occurring before a front vowel. Some relevant examples from Tables 4 – 7 are reproduced below in Table 10 with corresponding items from additional dialects from each variety:

Word	OTIB	WAT		WIT	
		TSHA	LEH	TABO	THOL
a. felt	<i>phying-pa</i>	p ^h iŋ.ma	p ^h iŋ.pa	p ^h iŋ.pa	p ^h iŋ.pa
b. sand	<i>bye-ma</i>		pe.ma	pe.ma	piã:
c. dog	<i>khyi</i>	k ^h i	k ^h i	c ^h i	c ^h i
d. up	<i>gyen</i>	gen	ken	cen	cen

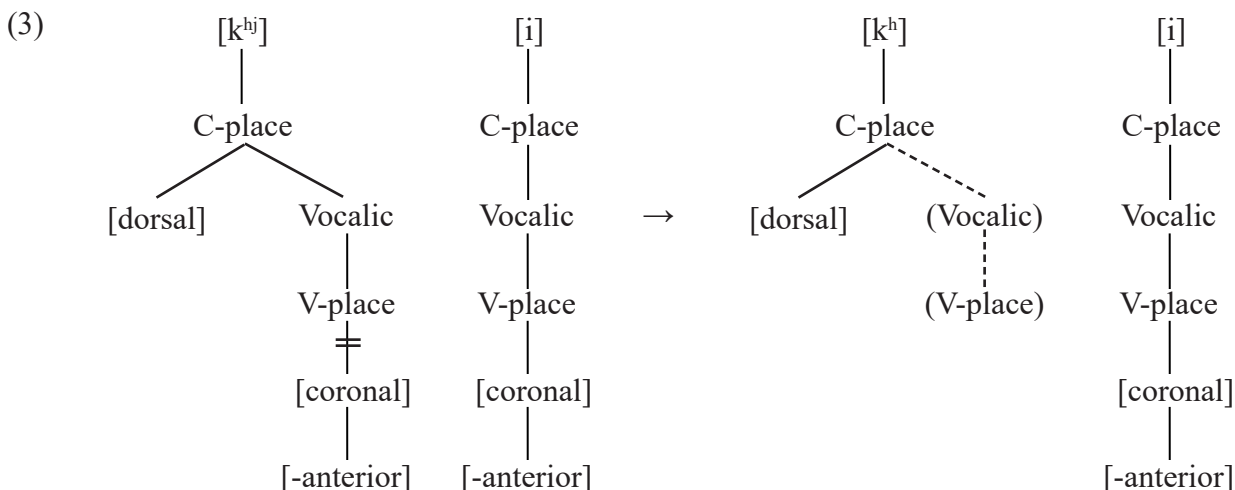
Table 10. Glide deletion before front vowels in WAT and WIT:

The glide is eliminated from palatalized labials fairly consistently in both western varieties, as shown in Table 10a – b. The same pattern of depalatalization is observed for palatalized velars in WAT but not WIT, as shown in Table 10c – d. In WIT, the glide instead coalesces with the preceding velar into a palatal stop (which also happens when palatalized velars occur before a back vowel).

It is clear that glide deletion in these cases is dissimilatory in nature. Previous research (e.g. Ohala 1993) has treated dissimilation as a result of hypercorrection. According to this theory, the palatalized stop in a word like *khyi* ‘dog’, despite being produced and perceived faithfully, is falsely assumed by the listener as a phonetic effect of CV co-articulation and is subsequently “corrected”. This chain of events is schematized in (2):



Phonologically, glide deletion in the above cases can be treated as a repair strategy in response to violations of the Obligatory Contour Principle (e.g. Yip 1988; henceforth OCP), which prohibits the occurrence of certain identical features in adjacent segments. In order to avoid having two consecutive [coronal] features occur on the same tier, one of them is eliminated. A sample feature-geometric derivation of /k^{hi}/ to [k^{hi}] is given in (3):



Since both the palatalized velar and the following front vowel bear the [coronal] feature under the V-place node, the one surfacing under the velar stop is eliminated given its status as a feature for secondary articulation.

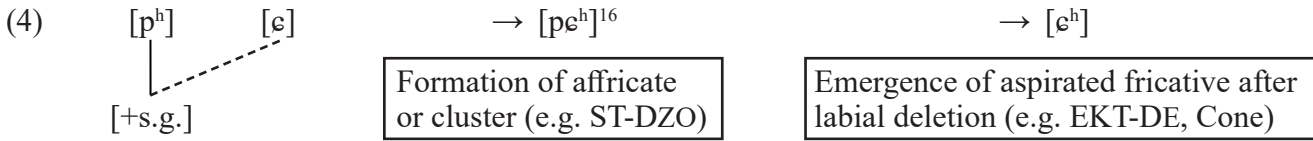
4.3 Emergence of aspirated fricatives from palatalized labials in ST and EKT

Another interesting phenomenon arising from the diachronic change of palatalized stops is the emergence of aspirated fricatives in ST and EKT. The use of contrastive aspiration on fricatives is typologically rare. According to Craioveanu (2013), phonemic aspirated fricatives are only found in 2 – 3% of the languages surveyed in phonological databases such as UPSID (Maddieson & Precoda, 1990) and P-Base (Mielke, 2007). Jacques (2011) describes eight different diachronic paths leading to the creation of aspirated fricatives, one of which involves a sequence consisting of a stop followed by a palatal glide turning into an alveolo-palatal fricative. Perhaps non-coincidentally, the language used to illustrate this change is Cone Tibetan, a dialect spoken in the Gannan Prefecture in Gansu. The following paths of development are proposed for palatalized labials in Cone (adapted from Jacques, 2011):

OTIB		Proto-Cone		Cone Tibetan
p ^{hj}		*pɛ ^h		ɛ ^h
b ^j	→	*pɛ	→	ɛ

Table 11. Historical development of palatalized labials in Cone Tibetan

This analysis is strongly supported by the modern reflexes of palatalized labials in ST and EKT dialects. The reconstructed Proto-Cone forms occur synchronically in ST dialects such as DZO while the contrast in aspiration on the alveolo-palatal fricative is also found in various EKT dialects. Phonetically, aspirated stops are produced with a spread glottal configuration (e.g. Halle & Stevens, 1971), which is represented as [spread glottis] (henceforth [s.g.]) in terms of phonological features. The change from *phy* into [e^h] can therefore be treated as spreading of the feature [+s.g.] from the labial stop to the alveolo-palatal fricative, followed by deletion of the labial, as represented in (4):



This change might also have been motivated by the need to preserve contrast between historical *phy* and *by*, for the latter has undergone parallel changes except for the gain of aspiration on the hardened glide, as shown in the examples in Table 12 (reproduced from Tables 4 – 5; intermediate ST forms included for comparison). The original contrast in voicing between the aspirated and voiced palatalized labials has now become a contrast in aspiration.

Word	OTIB	ST-DZO	EKT-DE
a. half	<i>phyed-ka</i>	p(t)e ^h e:	e ^h e:ka
b. sand	<i>bye-ma</i>	ptɕim	ɕe.ma
c. hand (h.)	<i>phyag</i>	p(t)e ^h a:	e ^h a
d. bird	<i>bya</i>	ptɕa	ɕa

Table 12. Modern reflexes of *phy* and *by* in ST-DZO and EKT-DE

5. Conclusion

This paper presents a more comprehensive look at the evolution of Tibetan palatalized stop onsets through the examination of data from a typologically diverse selection of dialects under the Tibetic language family. Palatalized velars are preserved only in WAT (and some CT dialects) but have mostly fused into a plain stop or an affricate in other varieties. This change can phonetically be attributed to listener misperception and phonologically be conceived as the promotion of palatalization from secondary to primary place of articulation. Palatalized labials seem to have undergone similar changes, but intermediate forms retained in ST and EAT strongly suggest that their synchronic outputs as alveolo-palatal segments result from glide hardening followed by deletion of the labial instead of a single-step process of coalescence. Also, in western dialects that preserve palatalized onsets, the glide tends to be deleted when it precedes a front vowel, which can be understood as a consequence of hypercorrection in a listener-based approach or a structural repair enforced by the phonological grammar to avoid OCP violations of having two adjacent [coronal] features. Finally, aspirated palatalized labials have turned into aspirated fricatives in ST and EKT, which can be analyzed as spreading of the [+s.g.] feature from the stop to the hardened glide.

¹⁶ If treated as a cluster, [+s.g.] would be delinked from the labial. However, this sequence is usually described as an affricate in previous studies (e.g. Mazaudon & Michailovsky, 1988; van Driem, 1992). Considering the overall syllable structure in Dzongkha, which is essentially CVC, the affrication analysis seems preferable. In this case, aspiration is realized on the entire sequence.

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Kazakh neologisms: diachronic aspects and productive patterns in present-day language

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Abstract

The purpose of this research is to have a diachronic insight into Kazakh word-formation development and to define the contemporary Kazakh word-formation tendencies of neologisms. Enough information is available about word-formation in Kazakh, but much less is known about Kazakh neologisms and tendencies of their formation in contemporary Kazakh. The criteria of neologisms and modern word-formative trends remain an important unsettled issue in the Kazakh language. The tendencies of word-formative types can be changing due to the changes of technical, social and political sides of human life. It is tempting to consider the word-formative types in view of new data on neologisms. The following methods were used during our research: word-formative analysis, quantitative and qualitative analyses, and corpus verification. The research has shown that new words are mainly formed mainly through composition and derivational suffixation. These new tendencies of Kazakh word formation suggest further research fields to weigh traditional word formation methods with new non-classical ways. Results of the paper showed definite criteria for identifying Kazakh language neologisms; revision for the periods of divisions of Kazakh language neologisms from the point of deep history; the result of observation the spheres, where neologisms were used, brought us to functional style and literary style, but we chose for statistical analysis neologisms from functional style, namely from Kazakhstani newspaper “Egemen Khazakhstan” – “Independent Kazakhstan” for the last five years.

Keywords: neologism, word-formation, definition, composition, derivation

1. Introduction

Emergence of neologisms is an inevitable part of a language’s dynamic development. Historical period is one of the most important features of a neologism. In the Republic of Kazakhstan the topicality of developing new words in the national language is increasing due to its young Independence. The fact that despite Kazakh linguistics has more than 100 years history, it lacks number of works aiming to consider neologisms as a separate branch, lead us to make multilateral review of neologisms in the Kazakh language.

When new words are introduced into the language for the first time, they do not become public or familiar. New word is used as an “umbrella” word for all newly-emerged words. Neologism is an analogue of the concept “new word”. Difference between new words and neologisms is in their meaning and form. A new word has a totally new meaning and new form. But neologism is a word that is lexicalized and entered the literary norms.

We aimed to make a multilateral review of neologisms in the Kazakh language in this study. Under the multilateral review we specified criteria to neologisms; scrutinized the periods of division of neologisms; examined the neologisms that are formed in traditional Kazakh word-formative types and statistically analyzed productive suffixes of the Kazakh language.

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2. Literature Review

The term neology was first outlined in France in 1759 and then denoted “creating new words aiming to enrich the vocabulary”. It is necessary to highlight the fact that the issue of learning native language, namely its new layers was always acutely discussed in France not only by scientific organizations (CILF – Conseil Internationale de la Langue Francaise), but also on the level of state government. As V.G.Gak (1978) fairly noted it was always inherent to France “linguistic dirigisme”., i.e.active part of state organizations (Ministry of Education, France Academy) in normalization and prestige of French language.

Study of new words in French language has traditional ways moreover, the word “neologism” was borrowed from French into Russian, English and German languages due to works of such French linguists as L.Guilbert (1975), A.Guz (2009), L.Deroy (1971), A.Rey (1995), H. Joly et al. (1996), who influenced the development of neology outside France.

The notion of “neology” lacked coherent explanation in foreign linguistic traditions and is limited as new words without possibly criteria to definition of novelty. For instance in one of etymological dictionaries published in 1936 neology is defined as the process of creating new words and word-combinations. E.Partridge’s Etymological Dictionary did not have the term neology, as neology is considered as a “scientific” word. German lexicology and lexicography unlike English lexicology pays huge amount of attention to the problems of theory of neology and neography, but in accordance with S.I.Alatorceva (1988) even in German linguistics these fields of study were not excreted as special fields .

This was a short overview on the background study of the field of neologism. Further we attempt to give the appropriate definition to the term “neologism” considering the existing approaches. Among the considered attempts to give a definition to neologism the approaches of Russian scientist N. Kotelova (1998) and French scientist A. Rey (1995) seemed the most suitable. To supply the appropriate definition of neologism Kotelova considered focusing first on parameters of concretization. As parameters for concretizing the neologisms she outlines four important aspects:

1. Concretization of “time” – “when?” – when the neologism first appeared as a new potential word;
2. Concretization of language space – “where?” – there can be the following parameters: 1. In languages in general; 2. In the target national language; 3. In the literary language; 4. In the target sublanguage (a term of one sublanguage is introduced into another sublanguage as a neologism, e.g.: an Algebraic term is introduced as a new word into Geometry);
3. Concretization of “novelty” – “what is new?” – concretization of those units which are appreciated as novel.
4. Concretization of novelty in structural peculiarities of a word: which structural features allow considering it as new? (quite often the question is layered: by another word).

Alain Rey (1995) admitted that the concept of neologism should be applied to combined structures lying between the morpheme and the phrase. He wrote: “I have defined a neologism as: “a lexical unit perceived as recent by language users’ which reduces the idea of novelty to psychological and social factor which is therefore no longer objective and chronological’ ... For all immediate and practical purposes, neologisms can be considered as new units in a specific linguistic code. This apparently clear and coherent concept faces us with three questions:

- What sort of linguistic unit is involved?
- What sort of novelty?
- Which definition of the code or system is the most relevant and which are the relationships between neological unit and the system in which they appear?” (Rey 1995).

The scholar explained the novelty in neologisms connected to types of neology (formal, semantic

and pragmatic). He highlighted the rise of formal novelty from discourse, from active language through the complex expression. According to him, formal neology is a kind of neology where one can apply grammar rules in the morphemic structure of the language. Semantic feature of neology is typical to all kinds of neologisms and semantic novelty is total in the system (case of borrowings), partial (creations by affixation, composition, agglutination into complex words or syntagmatic formations into word groups) or very weak (the case of acronyms and abbreviations, because they only express the meanings of the form they abridge...). Rey linked the pragmatic neology with communication. He saw the pragmatic novelty in settings of formal and semantic novelty.

These two approaches suggest that the definitions of neologisms should be always considered in parallel with answering to a line of questions. Both scholars focused more on factors of neologisms that would lead to defining neologisms as properly, rather than the definition itself.

Taking into account the above-mentioned two ways we will try to summarize them in Table 1 that would assist us in identifying and retrieving neologisms of the Kazakh language as one branch of Turkic group of languages (see Table 1).

Above we clarified what is neologism that was the essence of our research and further we will overview the study of neologism in Kazakh diachronically.

It is obvious that the study of new words take its roots from wordformation. But it is worth to note that Kazakh wordformation system as a separate field of Kazakh linguistics is young yet as it has been taught separately from linguistics just since the middle of 80-s of the XX century. Although Kazakh wordformation system is young it is evident that new words emerge in any living language due to social and political events. Studying the new words the outstanding scientist of Kazakh linguistics R.Syzdyk (2009) grouped them diachronically as in the following:

1st period: Second half of the XIX century. New words appeared in this period due to such social factors, as: printing industry, eagerness to get education, flourishing of Muslim religion; e.g.: *sailau* (voting); *nesie* (credit); *ma'sele kitap* (paper-based intellectual propaganda);

2nd period: First decades of the XX century are noted as a distinguished period of neologisms as the result of distinctive development of the previous social factors; e.g.: new terms suggested by Kazakh outstanding enlightener, scholarly linguist Akhmet Baitursunuly: *zat esim* (noun); *syn esim* (adjective); *san esim* (numeral); *bastauysh* (subject); *bayandauysh* (predicate), etc.;

3rd period: The 1920-1930-s: this period is noted for a great amount of neologisms as the Kazakh society started to live in the Socialist system. e.g.: *tonkeris* (revolution); *tendik* (equality); *okil* (representative);

4th period: The 1940-1950s: new words appeared due to technical development, military structure and weaponry during the World War II. e.g.: *zhayunger* (soldier); *kharakhagaz* (a letter telling about death of a soldier);

5th period: The 1970-s. Development of aerospace and world scientific-technical news caused the appearance of new words in the Kazakh language. But there was a tendency during this period to use ready words of the Russian language, whose influence was very crucial on Kazakh. These Russian words were used without alternatives in Kazakh: e.g.: *ostanovka* (bus stop), *morozhenoe* (ice-cream), *dacha* (country house);

6th period: flourishing period of Kazakh neologisms comes to the Independent Period of Kazakhstan, i.e. from the 1990-s up to now. That is the reason why we are interested in revealing word-building tendencies of Kazakh neologisms.

The fact that the date of Kazakh neologisms of the first period comes to the 2nd half of XIX century does not mean that it lacked new words previously, it is undeniable that a language witnesses new words at all its stages, but neologisms before the 1st period are very limited and in fact they are not preserved in Kazakh.

As the third key moment of our paper we will turn to the bases of Kazakh wordformation ways. Although the ways and means of forming new words are no less, there are traditionally considered three ways. They are: 1) synthetic (morphological), 2) analytical, and 3) lexico-semantic means; (Oralbay, N. 1989).

All these three ways are old enough. Synthetic way of forming a word is otherwise called “morphological” as we see from this both terms are used synonymously in wordformation system. They are divided in their turn into affixational and suffixational means of forming words. Analytical way of forming words is an ancient method in wordformation and this way is present in a lot of languages in the world. Analytical way of forming new words is typical to English and German languages as the compound words or composition. There is one more method of forming new words in Kazakh is lexico-semantic way. The words that are formed with this method lose their previous meaning and acquire a new meaning or weaken their first meaning and appear as homonymy to the existed word.

Although it is hard to cover all the new words made by all these three methods we attempted to collect the words that are formed in these three methods as far as possible.

3. Methodology

As for the methodology, with descriptive method we analyzed identification criteria of neologisms. With diachronic method the periods of divisions of Kazakh language neologisms were surveyed, with help of statistical analysis we studied the neologisms that are made mainly in traditional Kazakh word-formative types.

The material for our paper was collected from different contexts in the Kazakhstani official newspaper “Egemen Khazakhstan” – “Independent Kazakhstan” for the last five years. In total we extracted approximately 240 Kazakh neologisms. To define the latest tendencies in Kazakh wordformation we applied word-formative analysis, quantitative and qualitative methods.

4. Results and Discussions

According to the results that we achieved analyzing the formation of Kazakh new words the most productive method is compounding. Here we cannot exclude it as the influence of English and Russian where this way plays crucial role in forming new words in these languages too. Among the extracted 230 neologisms 106 words come to compoundings, e.g.: *aqyrso'z* [ақырсөз] (final speech), *ashyqhat* [ашықхат] (official open letter), *a'dilqazy* [әділқазы] (jury), *aspanserik* [аспансерік] (stewardess), *a'ua'serik* [әуесерік] (air hostess), *qog'amsöz* [қоғамсөз] (public speech), *a'tirsabyn* [әтірсабын] (shower gel), *belgitaqta* [белгітақта] (smartboard), *g'u'myrbayan* [ғұмырбаян] (biopic), *jolserik* [жолсерік] (co-passenger), *zholdorba* [joldorba] (backpack), *a'lemtor* [әлемтор] (Internet), *g'alamtor* [ғаламтор] (Internet), *ba'ssauda* [бәссауда] (auction) and others. Next 112 words are derived with suffixation. Among suffixes -lykh/-lik with its alternative variants -dykh/-dik, -tykh/-tik, that form nouns from nominal words (nouns, adjectives, numerals) demonstrate productiveness compared to others, e.g.: *o'timdi-lik* [өтімділік] (profitability), *belsendi-lik* [белсенділік] (activity), *ystyqqato'zimdi-lik* [ыстыққатөзімділік] (high-temperature strength), *urysty-lyq* [ырыстылық] (luckiness), *eseli-lik* [еселілік] (productiveness), *bastamashyl-dyq* [бастамашылдық] (initiation), *beibitsu'gish-tik* [бейбітсүйгіштік] (peacefulness), *birtekti-lik* [біртектілік] (monotony), *demeushi-lik* [демеушілік] (sponsorship), *elzhandy-lyq* [елжандылық] (patriotism), *ko'shbashy-lyq* [көшбасшылық] (leadership), *qazirgi-lik* [қазіргілік] (modernity), *qoljetim-dik* [қолжетімдік] (availability), *sanatker-lik* [санаткерлік] (respectiveness), *sodyr-lyq* [содырлық] (mischief). All these words are formed from nominal (nouns, adjectives, numerals) Next productive suffix, with which were produced more new words, is -ker/-ger. E.g.: *alau-ger* [алаугер], *a'kim-ger* [әкімгер] (administrator), *baspa-ger* [баспагер] (publisher), *qiyal-ger* [қиялгер] (dreamer), *sahna-ger* [сахнагер] (performer), *tu'zet-ker* [түзеткер] (leveler). Next point that draw our interest

is 5 neologisms-periphrases: *Akhilestin okshesi* [Ахиллестің өкшесі] (Achilles heel), *zhasył ekonomika* [жасыл экономика] (green economics), *khyzghaldakhtar otany* [қызғалдақтар отаны] (Land of Tulips) and 7 borrowed words: *brend* [бренд] (brand), *gadjet* [гаджет] (gadget), *kiberpolicia* [киберполиция] (cyberpolice), *onlain* [онлайн] (online); Relevant statistics on retrieved neologisms are demonstrated in Appendix B (see Appendix B).

The data of our study present that neologisms are mostly created in traditional Kazakh word-formation ways, namely synthetic (morphological) and analytical methods. But in the light of these observations one should not conclude that the lexico-semantic method is not popular with neologisms. To survey that method the newspapers are preferable to be increased in number and kinds.

5. Conclusion and Future Study

Our findings suggest that traditional word-formative types of Kazakh language are essential in forming neologisms. Namely, compositions and suffixational derivations play the key role. Although it is required to detect new untraditional word-formation ways and for that to expand the number of neologisms, the results of this paper clearly show which Kazakh word-formative means are popular in creating neologisms.

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Appendix A

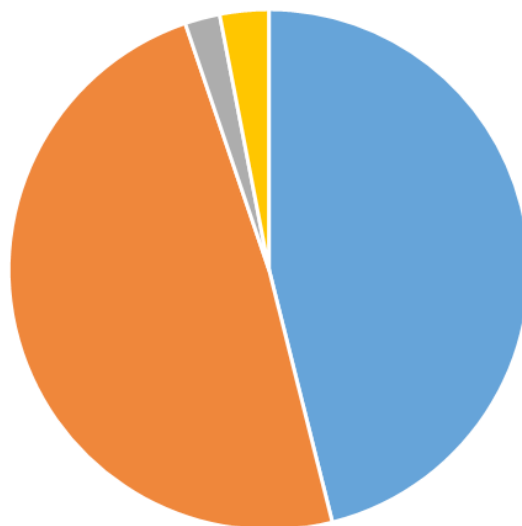
Critical questions for identifying neologisms Kind of linguistic unit as a neologism	When?	Where?	What is new?	Which structural features are new?
A word or combination	time of first appearance	kinds of texts where they merge	the novelty	novelty in structural forms
A morpheme				
A lexeme				
A phraseological expression				

Table 1: Parameters for Identifying Neologisms

This table suggests the parameters that should be taken into consideration while retrieving neologisms from different contexts. As we see from this table a neologism can be as any linguistic unit (a word or combination; a morpheme; a lexeme or a phraseological expression;). In the above line there are given questions that help us to identify the neologisms and differ it from other new words.

Appendix B

230 neologisms retrieved from contexts of "Egemen Kazakhstan - Independent Kazakhstan" for the last five years



- 106 compoundings
- 112 suffixational derivation
- 5 words come to periphrases
- 7 borrowed words

The Double Life of Negation in Uyghur

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Abstract

This paper describes the negation system of the Turkic language Uyghur, focusing on environments in which negative concord and double negation arise. Sentential negation takes the form of postverbal suffix *-ma*, existential negation morpheme *yoq*, or copular negation morpheme *emes*. Negative concord arises between negative concord items, all of which are formed with the *héch-* prefix, and a sentential negation morpheme whose presence is mandatory. Double negation arises when two verbs are negated in the same clause, which we argue can be the case in a multi-verb construction in which the final verb is semantically bleached. To account for the availability of both negative concord and double negation in the language, we propose a modified version of Zeijstra's (2004) negative concord analysis. Negative concord items are merged with uninterpretable negation features that require agreement with an interpretable negation feature. We propose that, rather than being carried by an abstract operator with clausal scope, interpretable negation features are born by negation morphemes. Double negation is the result of interpretable negation features associated with two different predicates canceling each other out to yield a positive meaning.

Keywords: Uyghur, negation, negative concord, double negation, Turkic

1. Introduction

Scholars have considered languages to behave in one of two different ways with regards to negation. In languages like standard American English, two negative elements (or words considered to have a negative meaning) in a sentence are considered to each introduce a separate negation. The two negations cancel each other out to yield an affirmative meaning, as demonstrated in (1). We aimed to make a multilateral review of neologisms in the Kazakh language in this study. Under the multilateral review we specified criteria to neologisms; scrutinized the periods of division of neologisms; examined the neologisms that are formed in traditional Kazakh word-formative types and statistically analyzed productive suffixes of the Kazakh language.

(1) Nobody didn't come. (eng) ==> "Everybody came."

The interaction of two negation markers to yield an affirmative meaning like in (1) is called double negation.

In languages like Spanish, on the other hand, the presence of two negative elements in a sentence can result in a single negative meaning for the sentence.

- (2) No vino nadie.
 NEG came nobody
 "Nobody came."
 *"Everybody came." (spa)

The interaction of two negative elements to yield a single negative meaning like in (2) is called negative concord.

As noted by Zeijlstra (2004), languages of the world generally exhibit either double negation or negative concord, but not both. However, we believe that the Turkic language Uyghur is capable of both negative concord and double negation, depending on the type of negative elements used. Negative concord is achieved when a negative concord item, a word containing the prefix *héch-*, co-occurs with a sentential negation marker as in (3). Double negation is achieved when two verbs appear in a single sentence (in fact a single clause, as we will show in section IV) and both are negated as in (4).^{1,2}

- (3) Héchkim kelmidi.
 Héchkim kel-mA-di-0
 Nobody come-NEG-PST-3
 "Nobody came."
- (4) Ular kelmey qoymaydu.
 Ular kel-mAy qoy-mA-I-du
 3PL come-NEG put-NEG-NPST-3
 "They will definitely come."

The primary goal of this paper is to provide a detailed description of the negation system in Uyghur, focusing on how the language allows for both negative concord and double negation depending on which type of negative elements are used in a sentence. We will also provide a feature-based account of negative concord and double negation in Uyghur.

This paper is organized as follows: in section I, we provide an overview of some basic characteristics of Uyghur grammar that will be crucial to our discussion. In section II, we introduce the negation system of Uyghur, which is the focus of this paper. Section III shows that negative concord arises between negative markers and negative concord elements which contain the *héch-* prefix in Uyghur. Section IV introduces and presents a brief analysis of bleached V2 constructions, and shows how double negation arises when two verbs in this construction are negated separately. In section V, we account for the availability of both negation concord and double negation in Uyghur with a simple modification of Zeijlstra's (2004) analysis: sentential negation markers carry an interpretable negation feature which introduces semantic negation, while negative concord items carry an uninterpretable negation feature which requires checking against an interpretable negation feature. Section VI concludes.

2. Basic Facts about Uyghur Grammar

Uyghur is a Turkic language (of the greater Altaic language family by hypothesis) of the Karluk sub-branch. It is spoken by more than 10 million speakers primarily in Northwest China, as well as by diaspora populations elsewhere in Central Asia, Turkey, Germany, Australia, North America and elsewhere. Typical of Altaic languages, Uyghur displays (Subject-)Object-Verb word order, with the overt subject being optional.

¹ In the interest of theoretical neutrality and descriptive adequacy, we gloss the *-may* suffix as *-mAy*, a variant of *-mA* that occurs in non-finite contexts. See Muzaipai'er (2014) and Sugar (forthcoming) for arguments that *-mAy* is underlying the negative *-ma* suffix plus the *-(i)p* verb juncture suffix.

² In this paper, we use the Latin alphabet orthographic conventions of Engesæth et al (2009).

- (5) (Tursun) kitab oquydu.
 (Tursun) kitab oqu-I-du
 (Tursun) book read-NPST-3
 "Tursun reads books."

Since Uyghur is an agglutinative language, the stem of a word may host a large number of suffixes and some prefixes. In (6), for example, the verb stem *bar* 'to go', is followed by abilitative, negative, tense, relativizing, nominalizing, possessive and case suffixes to form a morphologically complex word meaning 'that you will not be able to go' that acts as the object of the verb *bil* 'to know.'

- (6) Yighingha baralmaydighanliqingizni bilimen.
 Yighin-GA bar-AL-mA-I-dighan-LIK-(i)ngiz-ni bil-I-men
 Meeting-DAT go-ABIL-NEG-NPST-REL-NMLZ-2SG.FORM.POSS-ACC know-NPST-1SG
 "I know you won't be able to go to the meeting."

3. How Negation Works in Uyghur

There are three ways in which sentential negation may be expressed in Uyghur, depending upon the type of predicate which is negated. Namely, there is the verbal negation morpheme *-mA*, the existential negation morpheme *yoq*, and the copular/metalinguistic negation morpheme *emes*. This section will briefly describe all three forms.

3.1 Verbal Negation (-mA)

A typical verbal predicate is negated by the *-mA* suffix. *-mA* always follows the verb stem and precedes any tense and person morphemes. Although the vowel in *-mA* may undergo weakening due to shifting of stress, the same underlying morpheme is used in all tenses and aspects.

- (7) Tursun tamaq yémidi.
 Tursun tamaq ye-mA-di-0
 Tursun food eat-NEG-PST-3
 "Tursun didn't eat (food)."
- (8) Tursun tamaq yémeydu.
 Tursun tamaq ye-mA-I-du
 Tursun food eat-NEG-NPST-3
 "Tursun won't eat (food)."
- (9) Tursun tamaq yémeywatidu.
 Tursun tamaq ye-mA-(i)wat-I-du
 Tursun food eat-NEG-PROG-NPST-3
 "Tursun isn't eating food."
- (10) Tursun tamaq yémigen.
 Tursun tamaq ye-mA-GAn
 Tursun food eat-NEG-PERF
 "Tursun hasn't eaten food."

3.2 Existential Negation (yoq)

The morpheme *yoq* is the negative counterpart of the existential predicate *bar* 'there is/are'. Both *bar* and *yoq* take a nominal argument and do not inflect for tense or person.

- (11) U öyde adem bar.
 U öy-DA adem bar
 DEM home-LOC person exist
 "There are people in that home."
- (12) U öyde adem yoq.
 U öy-DA adem yoq
 DEM home-LOC person NEG
 "There's nobody in that home."

3.3 Copular/Metalinguistic negation (*emes*)

Emes is used to negate copular constructions. It directly follows the locative, adjectival or verbal phrase of which the nominal argument is predicated.

- (13) Tursun öyde.
 Tursun öy-DA
 Tursun home-LOC
 "Tursun is at home."
- (14) Tursun öyde emes.
 Tursun öy-DA emes
 Tursun home-LOC NEG
 "Tursun isn't at home."
- (15) Bu kitab qizil.
 DEM book red
 "This book is red."
- (16) Bu kitab qizil emes.
 DEM book red NEG
 "This book is not red."
- (17) Tursun doxtur.
 Tursun doctor
 "Tursun is a doctor."
- (18) Tursun doxtur emes.
 Tursun doctor NEG
 "Tursun is not a doctor."

Emes can also function as a metalinguistic negator when it selects a finite clause as a complement. When it does so, it reverses the polarity of its complement proposition. Thus the combination of a clause containing sentential negation with metalinguistic negator *emes* is double negation.

- (19) U bizning öyge kelmidi emes, keldi.
 U biz-ning öy-GA kel-mA-di-0 emes kel-di-0
 3SG 1PL-GEN house-DAT come-NEG-PST-3 NEG come-PST-3
 "It's not that (s)he didn't come to our house, (S)he DID come."
- (20) Tursun öyde yoq emes, bar.
 Tursun öy-DA yoq emes bar
 Tursun home-LOC NEG.exist NEG exist
 "It's not that Tursun isn't at home, he IS home."

3.4 Section summary

This section has introduced the three main forms by which a proposition is negated in Uyghur. The *-mA* suffixes attaches to verbs, the predicate *yoq* negates existential propositions, and *emes* negates copular constructions as well as metalinguistically negating finite clauses. In the next section, we will introduce the negative concord system and the class of negative concord items that depend on negation for licensing. In the rest of this article, we focus primarily on *-mA* postverbal negation for clarity of exposition.

4. Negative concord (NC)

A Uyghur has a class of negative concord items (NCIs) which must co-occur with negation in non-elided contexts. The combination of an NCI with a negation marker yields a single negation reading.

- (21) *Héchnéme yédim.
Héchnéme ye-di-m
Nothing eat-PST-1SG
Intended: "I ate nothing."
- (22) Héchnéme yémidim.
Héchnéme ye-mA-di-m
Nothing eat-NEG-PST-1SG
"I didn't eat anything."
- (23) *Bu yerde héchkim bar.
Bu yer-DA héchkim bar
DEM place-LOC nobody exist
Intended: "There's nobody here."
- (24) Bu yerde héchkim yoq.
Bu yer-DA héchkim yoq
DEM place-LOC nobody NEG
"Nobody is here."

NCIs are formed by adding the prefix *héch* to a *wh*-pronoun or some common nouns. A non-exhaustive list of Uyghur NCIs is given in Table 1.

Stem	Translation	Full form	Translation
kim	who	héchkim	nobody/no one
néme	what	héchnéme	nothing
ne	where	héchne	nowhere
qaysi	which	héchqaysi	none of
qandaq	how	héchqandaq	no kind of
qachan	when	héchqachan	never
waqit	time	héchwaqit	no time
zaman	time	héchzaman	no time
bir	one	héchbir	no one (NP)

Table 1. Negative concord items in Uyghur

It is possible for multiple NCIs to co-occur in a single sentence, as long as there is a single negation marker present to license them.

- (25) U héchqachan héchkim bilen héchyerge barmaydu.
 U héchqachan héchkim bilen héchyer-GA bar-mA-I-du
 3SG never nobody with nowhere-DAT go-NEG-NPST-3
 "(S)he will never go anywhere with anybody."

NCIs can be considered part of a broader class of items which are sensitive to the polarity of the context in which they occur. Some polarity-sensitive items, like words with the *any-* prefix in standard English, are considered negative polarity items (NPIs) rather than NCIs because they can be licensed in certain non-negative environments, such as the question in (26). Uyghur NCIs are strong (non-NPIs) in that they require negation to be licensed. Examples (26) and (27) show that while an NPI like *anyone* in English can appear in a non-negative question, Uyghur NCIs cannot.

- (26) Did anyone come? (eng)
 (27) *Héchkim keldimu?
 Héchkim kel-di-0-mu
 Nobody come-PST-3-Q
 Intended: ``Did anyone/nobody come?''

Another characteristic that distinguishes NCIs from NPIs is that only the former can serve as a negative fragment answer to a question. (28) shows that an Uyghur *héch-* NCI can be used as a fragment answer expressing a negative meaning, while (29) shows that English *any-* NPIs cannot express a negative meaning in a fragment answer.³

- (28) Q: Kim keldi?
 Kim kel-di-0
 Who come-PST-3
 "Who came?"
 A: Héchkim
 Nobody
 (29) Q: Who came?
 A: #Anybody.

³ It is worth noting that unlike *anybody*, English *nobody* can be used as a fragment answer expressing a negative meaning.

- i. Q: Who came?
 A: Nobody.

However, *nobody* (as well as other *no-* expressions like *nothing* or *nowhere*) does not behave like an NCI or NPI in standard (American) English in that it does not participate in negative concord. It does not require negation of the verb to express negation, and the combination of a negated verb and *nobody* results in double negation. In many non-standard dialects of English, however, *no-* expressions do participate in negative concord, as indicated in the second interpretation of (iii).

- ii. Nobody liked it.
 iii. Nobody didn't like it.
 ==> Everybody liked it (standard English)
 ==> Nobody liked it (non-standard English, Blanchette 2015: 120)

Since the focus of this paper is negation in the Uyghur language, we do not delve into further discussion of English negative concord or double negation here.

Uyghur is what is known as a strict negative concord language. NCI subjects, which appear preverbally, do not require negation to be licensed in non-strict negative concord languages. Italian is a non-strict NC language. Thus the verb in (30) is not negated because the NCI *nessuno* is the subject. In strict negative concord languages, on the other hand, NCIs in any argument position require negation to be licensed. (31) is an example from strict NC language Czech, in which negation is required to license the NCI subject *nikdo*.

- (30) Nessuno (*non) ha telefonato.
 Nobody (*NEG) has called
 "Nobody called." (ita) (Zeijlstra 2008: 3)
- (31) Dnes nikdo *(ne)volá.
 Today nobody *(NEG).calls
 "Today nobody is called." (ces) (Zeijlstra 2008: 3)

(32) shows that Uyghur patterns with Czech and against Italian in that the NCI subject *héchkim* requires negation of the verb.

- (32) Héchkim tamaq yé*(mi)di.
 Héchkim tamaq ye*(-mA)-di-0
 Nobody food eat*(-NEG)-PST-3
 "Nobody ate food."

Crucially, negative concord between an NCI and a negation marker must take place within a clause. The pair of examples in (33-34) show that an NCI in an embedded clause can only be licensed by negation of the embedded verb, not negation of the matrix verb. This constraint has been proposed in other Altaic languages like Korean and Japanese as the "Clausemate Condition" (Oyakawa 1975, Muraki 1978).

- (33) *Uni [héchneme yazdi] démidim.
 U-ni [héchneme yaz-di-0] de-mA-di-m
 3SG-ACC [nothing write-PST-3] say-NEG-PST-1SG
 Intended: "I didn't say that (s)he wrote anything."
- (34) Uni [héchneme yazmidi] dédim.
 U-ni [héchneme yaz-mA-di-0] de-di-m
 3SG-ACC [nothing write-NEG-PST-3] say-PST-1SG
 "I said that (s)he didn't write anything."

This section has introduced Uyghur NCIs and shown how they participate in negative concord. In the next section, we will turn our attention to double negation between two negated verbs in Uyghur. In order to explain the significance of this phenomenon, however, it will be necessary to first introduce bleached V2 constructions in which double negation can arise.

5. Bleached V2 Constructions in Uyghur

5.1 General Description of Bleached V2s and How to Negate Them

In Uyghur, it is possible for two or more verbs to appear consecutively without any coordination markers used elsewhere in the grammar. Only the final verb has finite (tense and person) inflection, and all non-final verbs are followed by the suffix *-(i)p* in lieu of finite inflection.

There is a limited class of verbs which can become semantically bleached when preceded by *-(i)p*. Instead of contributing a predicate, these bleached verbs express grammatical information about how the event denoted by the non-final verb is carried out. For example, the verb *qoymaq* in (35) no longer means 'to put' but instead means that the action of cooking was done somewhat carelessly and brought to a state of completion.

The verb *turmaq* in (36) no longer means 'to stand' but instead means that the action of writing is habitually recurring or lasts for some significant amount of time.

- (35) Men tamaqni teyyarlap qoydum.
 Men tamaq-ni teyyarla-(I)p qoy-di-m
 1SG food-ACC prepare-(I)P put-PST-1SG
 "I got the food ready."
- (36) Tursun bizning öyge kélip turidu.
 Tursun biz-ning öy-GA kel-(I)p tur-I-du
 Tursun 1PL-GEN home-DAT come-(I)P stand-NPST-3
 "Tursun keeps coming to our home."

Uyghur scholars have suggested that up to 22 verbs display the type of semantic bleaching behavior exhibited in (35) and (36) (Ibrahim 1995, Tömür 2003, Tohti 2012). Because these verbs can only be bleached when they are the second (final) verb in the construction, we will follow Sugar (2017, 2018, forthcoming) in calling them bleached V2s, and call the non-final verb V1 because of its linear ordering. We call the construction a bleached V2 construction.

In a bleached V2 construction, it is possible to negate either V1 or V2, or to negate both verbs in the same construction.

- (37) Tursun bizning öyge kélip turmaydu.
 Tursun biz-ning öy-GA kel-(I)p tur-mA-I-du
 Tursun 1PL-GEN home-DAT come-(I)P stand-NEG-NPST-3
 "Tursun doesn't keep coming to our house." (bleached reading)
 "Tursun will come to our house but won't stay." (lexical reading)
- (38) Tursun bizning öyge (hazirche) kelmey turidu.
 Tursun biz-ning öy-GA (hazir-che) kel-mAy tur-I-du
 Tursun 1PL-GEN home-DAT (now-way) come-NEG stand-NPST-3
 "Tursun isn't coming to our home (for now)."
- (39) Tursun bizning öyge kelmey tur(al)maydu.
 Tursun biz-ning öy-GA kel-mAy tur(-Al)-mA-i-du
 Tursun 1PL-GEN home-DAT come-NEG stand(-ABIL)-NEG-NPST-3
 "Tursun can't stop himself from coming/definitely will come to our house."

As evidenced by the translation, negating both verbs in (39) results in an affirmative reading in which the two negative meanings have canceled each other out. If the two negation markers in (39) are merged in the same clause, then we have an instance of double negation. In the next section, we will review argumentation from Sugar (2017, 2018, forthcoming) that bleached V2 constructions consist of a single clause.

5.2 Motivation for Monoclausality

Tests for monoclausality vary by language, but the essential properties tested for should not. We consider a clause to consist of a verbal domain, a voice domain, and an inflectional domain associated with tense in the case of Uyghur. Certain licensing operations, such as the licensing of an NCI by negation, are restricted to the clausal domain. Finally, a clause is usually taken to express a proposition. The monoclausality diagnostics reviewed in this section will look at the availability of passive morphology, believed to occupy a mid-clausal position, the ability to license an NCI, and whether a single proposition is targeted by negation.

Sugar (2017, 2018, forthcoming) gives arguments for considering constructions like (35) and (36) to consist of only a single clause. One argument is that constructions like (35) exhibit the long passive. In (40), for

example, the passive suffix *-il* attaches to bleached V2 *qoy* rather than to the lexical verb, but the object of the lexical verb is promoted to subject position. The entire sentence has a passive interpretation.

- (40) Tamaq teyyarlap qoyuldi.
 Tamaq teyyarla-(I)p qoy-Il-di-0
 Food prepare-(I)P put-PASS-PST-3
 "Food has been prepared."

In an Uyghur sentence with a clearly embedded clause, embedding the final (matrix) verb does not passivize the non-final (embedded) verb. Examples can be made using embedded nominalized clauses containing the *-liq* morpheme, which are demonstrated by Asarina (2011) to be nominalizations of full clauses. (41-44) show that passivizing the matrix verb or keeping the matrix verb in the active voice is independent of whether or not the embedded verb is passivized.

- (41) [Romanning yézilghanliqi] diyildi.
 [Roman-ning yaz-Il-GAn-IlK-i] de-Il-di-0
 [Novel-GEN write-PASS-REL-NMLZ-3.POSS] say-PASS-PST-3
 "It was said that the novel was written."
- (42) [Romanning yézilghanliqini] didi.
 [Roman-ning yaz-Il-GAn-IlK-i-ni] de-di-0
 [Novel-GEN write-PASS-REL-NMLZ-3.POSS-ACC] say-PST-3
 "(Somebody) said that the novel was written."
- (43) [Tursunning roman yazghanliqi] diyildi.
 [Tursun-ning roman yaz-GAn-IlK-i] de-Il-di-0
 [Tursun-GEN novel write-REL-NMLZ-3.POSS] say-PASS-PST-3
 "It was said that Tursun wrote a novel."
- (44) Abliz [Tursunning roman yazghanliqini] didi.
 Abliz [Tursun-ning roman yaz-GAn-IlK-i-ni] de-di-0
 Abliz [Tursun-GEN novel write-REL-NMLZ-3.POSS-ACC] say-PST-3
 "Abliz said that Tursun wrote a novel."

A second argument for the monoclausality of bleached V2 constructions is that negation of either the lexical verb or the auxiliary licenses an NCI object.

- (45) Yéqindin béri u héchneme yazmay qoydi.
 Yéqin-din béri u héchneme yaz-mAy qoy-di-0
 Recently-ABL since 3SG nothing write-NEG put-PST-3
 "(S)he has stopped writing anything recently."
- (46) Yéqindin béri u héchneme yézip qoymidi.
 Yéqin-din béri u héchneme yaz-(I)p qoy-mA-di-0
 Recently-ABL since 3SG nothing write-(I)P put-NEG-PST-3
 "(S)he hasn't write anything recently."

Once again, the pattern in (45-46) contrasts with sentences containing an unambiguously embedded clause. In such cases, negation of the matrix verb does not license an NCI in the embedded clause.

- (47) * [U héchneme yazdi] démidim.
 [U héchneme yaz-di-0] de-mA-di-m
 [3SG nothing write-PST-3] say-NEG-PST-1SG
 Intended: "I didn't say (s)he wrote anything."

Finally, it is also worth noting that in bleached V2 constructions, negation of either verb can yield a reading in which no event took place. For example, both (45) and (46) mean that the subject did not write

anything. This property also contrasts with that of *-(I)p* constructions with two lexical verbs denoting separate events. Notice that negating V1 in (48) does not negate V2, nor does negating V2 in (49) negate V1.⁴

- (48) Bazardin tamaq almay, qaytip keldim.
 Bazar-Din tamaq al-mAy qayt-(I)p kel-di-m
 Market-ABL food buy-NEG return-(I)P come-PST-1SG
 "I came back from the market without buying food." (adapted from Engesæth et al 2010: 221)
- (49) Bazardin tamaq élip, qaytip kelmidim.
 Bazar-Din tamaq al-(I)p qayt-(I)p kel-mA-di-m
 Market-ABL food buy-(I)P return-(I)P come-NEG-PST-1SG
 "I bought food but/and didn't come back from the market." (adapted from Engesæth et al 2010:

221)

The fact that auxiliary constructions show monoclausal behavior leads Sugar (2017, 2018, forthcoming) to analyze bleached V2 constructions as a single clause with one lexical verb and one bleached verb merged in a higher functional position. Because of the variable passivization behavior, Sugar actually posits that bleached verbs occupy one of two positions, either below or above the Pass(ive) head. *-(I)p* is merged as a Last Resort to satisfy the inflectional requirements of Uyghur verbs when the higher verb blocks the lower verb from entering an inflectional relationship with the Tense head.

For details of this analysis, the reader is referred to the aforementioned references.

The important point in this primarily descriptive paper is that bleached verb constructions consist of a single clause. Negating both verbs is thus a form of double negation which happens within a single clause.

6. Analysis of the Negation System

So far, we have seen have seen that negative items can interact to yield either negative concord or double negation in Uyghur. Negative concord is the result of interaction between one negative marker and one or more NCIs, while double negation is the result of interaction between two negative markers in a single clause. In this section, will develop a simple account for the existence of both negation phenomena in Uyghur.

We account for the availability of both negative concord and double negation in Uyghur using a modified version of Zeijlstra's (2004) analysis of negation. Zeijlstra proposes that NCIs carry an uninterpretable negative feature, [uNeg], that must agree with an interpretable [iNeg] feature in the syntax. The interpretable [iNeg] feature is the source of semantic negation. Being uninterpretable, [uNeg] features do not by themselves express negation, but they require the presence of an [iNeg] feature elsewhere in the clause where negation will be expressed.

Double negation occurs when two negation carry [iNeg] features. The affirmative interpretation of double negation is the result of two [iNeg] features reversing the polarity of a clause twice.

Our analysis requires a slight departure from Zeijlstra's (2014) original proposal. Zeijlstra argues that in strict negative concord languages like Uyghur, the [iNeg] feature is actually introduced by a covert operator with scope over the entire clause. According to Zeijlstra, negative markers in strict negative concord languages only bear a [uNeg] feature, like the NCI. This proposal ensures that negation will always take scope over an entire clause.

⁴ V2 in (49-50) is itself an *-(i)p* construction denoting a single event: *qaytip kel* 'to come back'. For the present purposes, we can regard this construction as a single verb. See Sugar (2017, forthcoming) for discussion of its structural properties.

However, we propose that there is no covert negative operator in Uyghur; it is the negation marker itself that bears [iNeg]. Consider sentence (50). We believe *-la*, a focus marker with the semantics of 'only', attaches to the specific object in its mid-clausal derived position above the verbal domain but below the inflectional domain. In (50), a lexical verb is negated, and followed by the bleached V2 *qoymaq*. Sugar (submitted, forthcoming) analyzes negation in this configuration as selecting vP as its complement. If negation is semantically introduced at a high clausal position, however, then negation should take scope over the specific focused object at a clause-medial position. However, the only possible reading of (50) is one in which 'tea' scopes over negation, as indicated in the translation.

- (50) Ziyapette, chaynila ichmay baqtim.
 Ziyapt-DA chay-ni-la ich-mAy baq-di-m
 Pary-LOC tea-ACC-FOC drink-NEG try-PST-1SG
 "I only tried not to drink tea at the party." (FOC > NEG)
 *"I didn't only try to drink tea at the party." (*NEG > FOC)

A second piece of evidence that Uyghur negation markers are semantically negative is the contrast between (51) and (52). In (51), negation of lexical V1 is followed by *qoymaq*; in (52), negation of lexical V1 is followed by *turmaq*. Both sentences contain a subject NCI, but only (52) is grammatical.

- (51) *Héchkim derske kelelmey qoydighu!
 Héchkim ders-GA kel-Ab-mAy qoy-di-0-Gu
 Nobody class-DAT come-ABIL-NEG put-PST-3-EMPH
 Intended: "Nobody even came to class!"
- (52) Héchkim derske kelelmey turiwatidighu!
 Héchkim ders-GA kel-Ab-mAy tur-(i)wat-i-du-Gu
 Nobody class-DAT come-ABIL-NEG stay-PROG-NPST-3-EMPH
 "Nobody has been coming to class!"

The facts of (51) and (52) can be explained by *qoymaq* and *turmaq* occupying different positions in syntactic structure. Following Sugar (2018, forthcoming) we analyze negation in (51) as selecting vP as its complement, the NegP itself being the complement of VoiceP headed by *qoymaq*. In (52), on the other hand, *turmaq* heads an Auxiliary projection and the lexical V1 presumably moves to VoiceP, with negation selecting VoiceP as its complement. If interpretable negation is introduced by a higher covert operator in Uyghur, then the surface position of negation should not make a difference in terms of NCI licensing. However, if interpretable negation is introduced by the negation marker, then we have an easy explanation for the contrast between (51) and (52): only in (52) does negation c-command the base position of the NCI subject in Spec, VoiceP.

Finally and most importantly for our purposes, proposing that negation markers themselves carry [iNeg] explains the double negation reading of sentences like (39), repeated here as (53).

- (53) Tursun bizning öyge kelmey tur(al)maydu.
 Tursun biz-ning öy-GA kel-mAy tur(-Ab)-mA-i-du
 Tursun 1PL-GEN home-DAT come-NEG stand(-ABIL)-NEG-NPST-3
 "Tursun can't stop himself from coming/definitely will come to our house."

Since we established in the previous section that bleached V2 constructions consist of a single clause, the covert operator approach cannot account for the affirmative reading of (53). Each [uNeg] feature on the two verbs would require the presence of a covert operator introducing [iNeg], but in that case the sentence would have a positive reading, contrary to fact. If negation of each verb carries its own [iNeg], then the double negation reading is a simple matter of two polarity reversals canceling each other out.

We thus propose that NCIs carry the [uNeg] feature, and negation markers carry the [iNeg] feature. The [uNeg] feature will need to Agree with an [iNeg] feature to be properly licensed. In cases of negative concord,

there is a single negation semantically present. Double negation only arises when two negation markers are present, and is due to each negation marker introducing its own semantic negation.

7. Conclusion

The Uyghur language shows us two types of interaction between negative elements: negative concord and double negation. We have argued for two crucial facts that make it possible for both phenomena to occur in the same language: 1) multiple verbal items can occur in one clause, and each verb can be negated separately; and 2) negation markers such as the *-ma* suffix and NCIs bear different types of features, and thus interact differently with each other. Our analysis thus predicts that if a language has verbal concord and also allows negation to merge at more than one position in a clause, it should be possible to find intraclausal double negation between verbs in this language.

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The Agentive Component in the Motion Predicates of Southern Tati: The Takestani Dialect

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Abstract

This study takes a generative-constructivist approach to analyze the syntactic structure of the agentive component in Motion Predicates (MPs). The target of this study is the Takestani dialect of Southern Tati, a “definitely” endangered language of Iran. This study focuses on the motion events expressed through series of verbs known as Serial Verb Constructions (SVCs) in Takestani. Data was collected from three native speakers of Takestani through a series of 175 animation videos made by Benedicto (2017). It is proposed in this study that the agentive component is an add-on structure to the non-agentive structure and that this component introduces an agent into the motion event structure through an agent-introducing functional head (little *v*). This study distinguishes two types of agentive events: (a) initial-contact (i.e. motion events in which an agent establishes contact with an undergoer and breaks off the contact before the undergoer moves along the path by itself), and (b) continuous contact (i.e. events in which an agent takes part together with an undergoer in the undergoer’s motion while maintaining the agent-undergoer contact). Despite the apparent similarities, this study hypothesizes that initial contact is syntactically distinguishable from continuous contact through an intermediate (semi-) grammaticalized functional head in initial contact, labeled as *separation*. This functional head is proposed to prevent the heads of the trajectory, telic, and resultative components to be shared with the agentive component. Evidence is provided for the hypothesis through the different morphological patterns of the verbal heads in initial and continuous contact. Two sub-types of initial contact and four subtypes of continuous contact are detected and exemplified in this study.

Keywords: agentive events, Motion Predicates, Serial Verb Constructions, Southern Tati, Takestani

1. Introduction

Several studies such as Marantz (1984), Kratzer (1996), and Alexiadou et. al (2015) have been conducted on the severity of external arguments from the verbal predicates. However, the role of agents, as a distinct type of external arguments, has not been the main focus of many studies on Motion Predicates (MPs henceforth)¹ and specifically on the MPs expressed through Serial verb Constructions (SVCs henceforth) in non-European languages in the Indo-European language family. In addition, the fine-grained differences

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¹ Note that according to Yarshater (1969a), the Tati dialects spoken in the Caucasus do not belong to the Tati group focused in this study (i.e. Southern Tati).

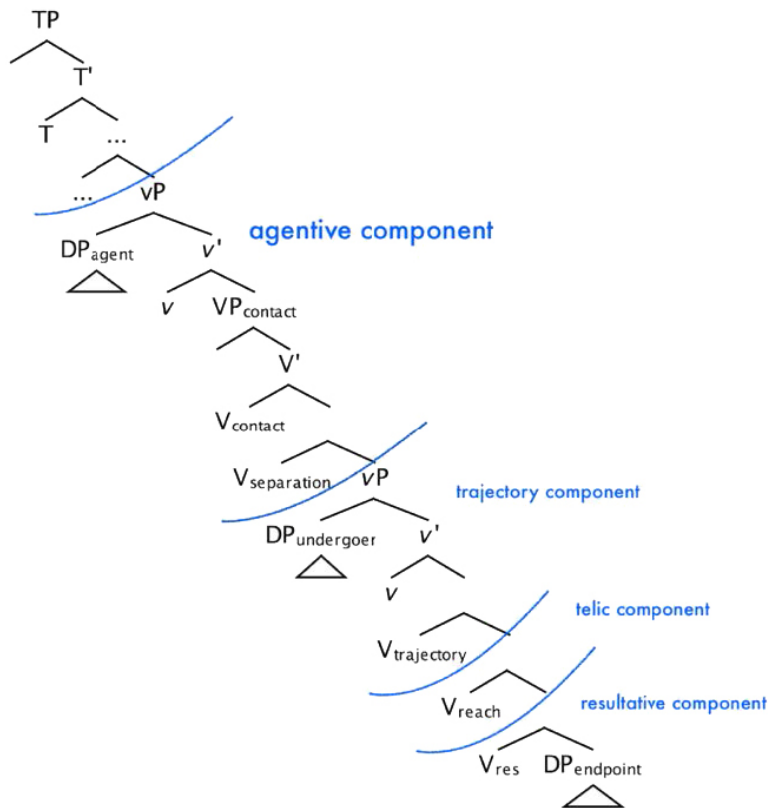
between two types of agentive events (i.e. initial contact and continuous contact) have not been dealt with syntactically.

This study is significant due to dealing with the agentive component, as an add-on substructure to the motion event, in the MPs of the Takestani dialect of Southern Tati (Takestani henceforth) 1. This study also contributes to the understanding of MPs in language as a universal phenomenon through (a) addressing MPs in Tati as a non-European Indo-European language, and (b) dealing with the agentive component in a language with SVCs. This study has a secondary goal of contributing to the documentation of Tati, an undescribed minority language of Iran categorized by UNESCO's "Atlas of the World's Languages in Danger" project as "definitely" endangered. This section includes some background on the structure of MPs in Takestani (1.1), the introduction of agents into structures (1.2), and the Takestani dialect of Southern Tati (1.3).

1.1 Sub-eventive Decomposition of Takestani MPs

The current study is part of a bigger research on the sub-eventive decomposition of MPs in Takestani that provides evidence for the structural hypothesis in (1).

(1) The sub-eventive decomposition of MPs in Takestani



The structure in (1) hypothesizes that Takestani MPs expressed through SVCs are recursively merged in a layered complementation structure proposed by Larson (1991) within a single event boundary. Takestani MPs, according to (1), are made of a 3-D locational trajectory component, which allows merging agentive, telic, and resultative components into event structures.

A simplified characterization of the components in (1) is as follows: The agentive component, which is the focus of this study, introduces an agent bringing about the movement of an undergoer along a physical path. The trajectory component introduces an undergoer of motion and its motion along a three-dimensional locational path including the deictic (X), the horizontal (Y), and the vertical (Z) planes. The telic component verbalizes an undergoer's reaching a goal of motion and gives an *endpoint* interpretation to the goal. The

resultative component characterizes the resting state (e.g. sitting, lying down, etc.) related to an undergoer after reaching an endpoint in telic motion events. Example (2) below shows the type of MPs that we will be deal with in this study (See Appendix A for the list of abbreviations used for glossing).

(2) SR ²	tittije	ʃʃeluf	o ³ go	bv ³ ʃin	boe ³ ʃoe
UR	titie	ʃʃelu-e-ef	o-gor-d	be-ɒʃin-d	be-ʃei-Ø
Gloss	girl.F	sparrow.M-DEF-3S.NOM	PV-pick_up-PST	PV-throw-PST	PV-go.PST-3SM.NOM
Role	agent	undergoer	contact	separation	trajectory
SR	beræ ³ sæs	v ³ nif	deræχte	sær	
UR	be-ræs-æst-Ø	v-nif-t-Ø	deræχt-e	sær	
Gloss	PV-reach-PST-3SM.NOM	PV-sit-PST-3SM.NOM	tree-GEN	top	
Role	telicity	resultative	(endpoint)	
	‘The girl [pick_up] threw the sparrow [go] [reach] [sit] on the tree top.’ ⁴				

In the example above, *tittije* ‘girl’ is the agent (i.e. the external actor initiating the motion of the undergoer of motion *ʃʃelu* ‘the sparrow’). The transitive verbs *o³go* ‘picked up’ and *bv³ʃin* ‘threw’ verbalize the agent-undergoer contact established by the girl with the sparrow and the termination of that contact (separation) successively. The intransitive verbs *boe³ʃoe* ‘went’, *beræ³sæs* ‘reached’, and *v³nif* ‘sat’ express the sparrow’s movement along the path in the space, its reaching the endpoint *deræχte sær* ‘tree top’, and its final state of ‘sitting’ at the endpoint⁵.

1.2 The Introduction of Agents

Several scholars, such as Marantz (1984), Kratzer (1996), Arad (1999), and Alexiadou et. Al (2015), have stated that external arguments are not arguments of the VP predicate. Particularly, according to Kratzer (1996, P.121), external arguments are introduced through a functional head, labeled as VOICE⁶, as shown below in (3) for the sentence ‘Mitte fed the dog’.

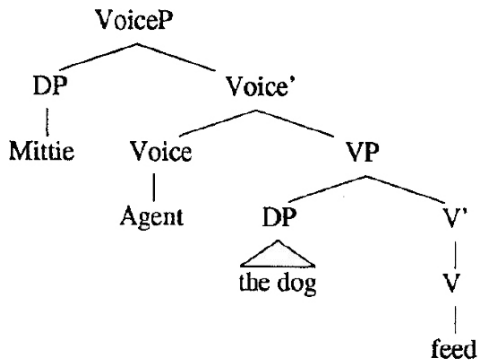
² SR is used for the surface representation of utterances after applying a range of phonological rules, UR shows the underlying representation of morphemes before applying the phonological rules in speech, Gloss includes word translations and morpheme inflections. Role includes conventional specifications about the role of words in MPs

³ Verbs in this study are marked for stress on the onset of their stressed syllable.

⁴ It is difficult to express all the information in the mono-eventive SVCs through a single event in English. Although the translation of the information connoted through seriality is added into English translations through brackets, the free translations assume that all the verbs in Takestani SVCs occur in a single event.

⁵ Tati verbs are by default marked for an agreement morpheme which agrees in person, number, and gender with subject. For example the verbs *boe³ʃoe* ‘went’ *beræ³sæs* ‘reached’ and *v³nif* ‘sat’ in (2) are each marked with a phonologically-null 3rd person-singular-masculine agreement morpheme. Tati transitive verbs marked for the past [PST] tense, on the other hand, are not marked with an agreement morpheme. Instead, agreement morpheme shifts to the internal argument for those verbs. For example, the 3rd person-singular agreement morpheme related to the verb *o³go* ‘picked up’ in (2) has shifted to the internal argument *ʃʃelu* ‘the sparrow’. Note that transitive verbs in Takestani, unlike intransitive verbs, do not agree in gender with their subject. For example, the agreement morpheme *-ef* in (2) marked on the internal argument *ʃʃelu* ‘sparrow’, does not agree in gender with *tittije* ‘the girl’. However, the intransitive verbs *boe³ʃoe* ‘went’ *beræ³sæs* ‘reached’ and *v³nif* ‘sat’ all agree in gender with their subject *ʃʃelu* ‘the sparrow’ as a grammatically masculine noun in Takestani.

(3) Introducing external arguments. Kratzer (1996. P.121).

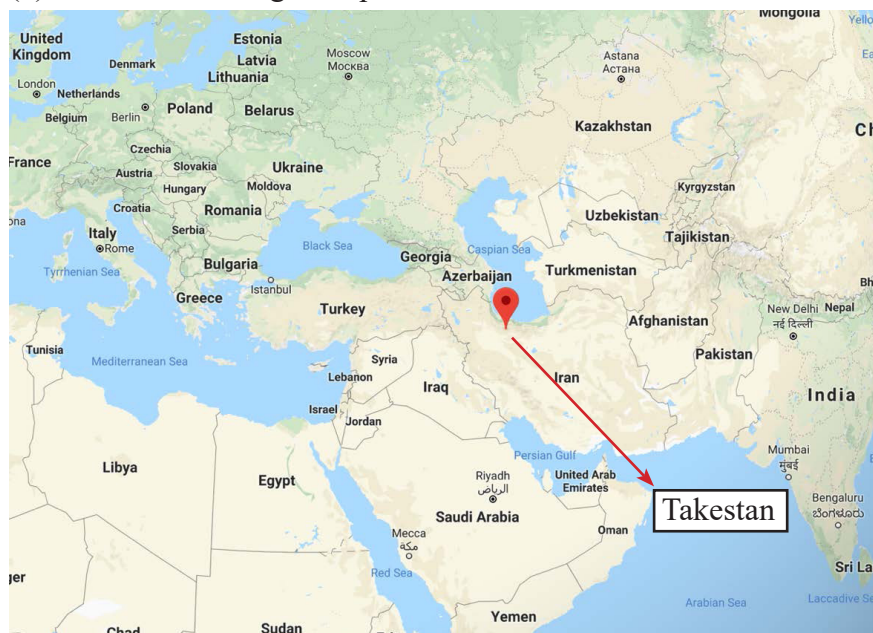


Later, Arad (1999) introduced different types (*flavors*) of little *v*, including *standard* and *unaccusative* flavors. A *standard* flavor of little *v*, according to Arad, has an agentive semantic content, introduces an external argument through Merge, and assigns a structural case to the internal argument through AGREE. An unaccusative flavor of little *v*, on the other hand, lacks an agentive content and cannot introduce an external argument. Following Kratzer (1996) and Arad (1999) among other scholars, this study proposes that agents are introduced into the structure of MPs through an agent-introducing functional head (little *v*), which assigns accusative case to the internal argument (undergoer of motion in MPs). This proposal will be dealt with in section 3 and section 4.

1.3 The Takestani Dialect of Southern Tati

As mentioned earlier, the variety of Southern Tati dealt with in this study is the Takestani dialect (ISO code: tks) which is spoken by Tat people in the city of Takestan [tʰokɛs'tɒn] in Iran. Takestan, known as Siaden [sijɒ'dɛn] by its residents, is located in Qazvin Providence in the northwest of Iran, as shown in (4) below (Google, n.d).

(4) Takestan on Google Map



⁶ This head was later re-analyzed as Chomsky's (1995) little *v*.

2. Methodology

The study data was collected through a series of animations (175 videos altogether) made by Benedicto (2017) with the collaboration of the Envision Center at Purdue University. The animated videos were organized around 19 themes (e.g. a bird, a paper plane, or a goose) and were designed to gather data on the various aspects of motion including telicity, agentivity, path, and boundary crossing. The video clips were presented to the participants through a self-administered application in seven movie blocks, each of which consisted of 25 video clips. The video clips were presented to the participants in a randomized order and each of them was identified by a four-digit code number (e.g. 0302 identifies the clip 02 in the movie block 03).

Data from three participants were used for this study. The participants included three native speakers of Takestani selected from three different areas of the city Takestan in Iran and included two males and one female, ranging in age from 25 to 29 years old in 2016. The participants had bachelor university degrees during the data-collection session and were bilingual speakers of Takestani and Persian.

Regarding agentivity, a contrast was made between agentive and non-agentive events in the video clips. In agentive events, an agent as an external actor (e.g. a man, a girl, or a boy) brings about the movement of an undergoer of motion (e.g. a bird, a goose, or a child) through establishing contact with the undergoer. For example, clip 0705, shown through its still images in (5), represents an agentive event in which a man (as an agent) pushes the child down the slide by tapping on his shoulder.

(5) Clip 0705



On the other hand, clip 0702 in (6) represents the still images related to an atelic event wherein a child goes down a slide by himself (without the involvement of an external actor).

(6) Clip 0702



Within the agentive group, another distinction was made between the clips eliciting data on initial contacts and the ones eliciting on continuous contact. In an initial-contact agentive event, an agent establishes contact with an undergoer and initiates its motion. The agent then breaks off the contact and the undergoer moves along the path without having the agent involved in the motion. On the other hand, in a continuous-contact agentive event, an agent maintains contact with the undergoer after initiating undergoer's motion and hence participates together with the undergoer in the motion along the path. The figure in (5) above, accordingly, represents an initialcontact agentive event since the man only initiates the child's motion without participating in the motion. On the other hand, clip 0707, shown below in (7), shows a continuous contact in which the man initiates the child's motion but does not separate from the child. Consequently, the man participates actively in the motion with the child (i.e. moves with the child).

(7) Clip 0707



The examples in this study include both those originating directly from the recorded data and those created by the researcher as a native speaker of Takestani. The examples originating from the data were coded using a four-digit ID number for the animation video followed by the language initials (i.e., TA for Takestani-Tati), which in turn is followed by the initials for each participant. For instance, the code [0611TAMT] indicates that a given example is an exact copy of what the participant MT has said for the video animation 0611 for Takestani. The examples produced by the researcher, if not related to any video clips, were not coded but were checked for grammaticality with the participants. The examples produced by the research, if related to a specific video clip, were coded using the initials NT. For example, [1105TANT] is the code to identify what the researcher (NT) has said about the video clip 1105 about Takestani.

The rest of this chapter is organized as follows: Section 3 proposes the structural hypothesis about the agentive MPs expressed by SVCs and structurally distinguishes continuous contact from initial contact. Section 4 provides evidence for the hypothesis through examining different heads in the agentive component in 4.1, distinguishing two sub-types of initial contact in 4.2 and distinguishing four sub-types of continuous contact in 4.3. Section 5 includes the implications of this study for future research, and section 6 sums up the discussion of this study in the conclusion.

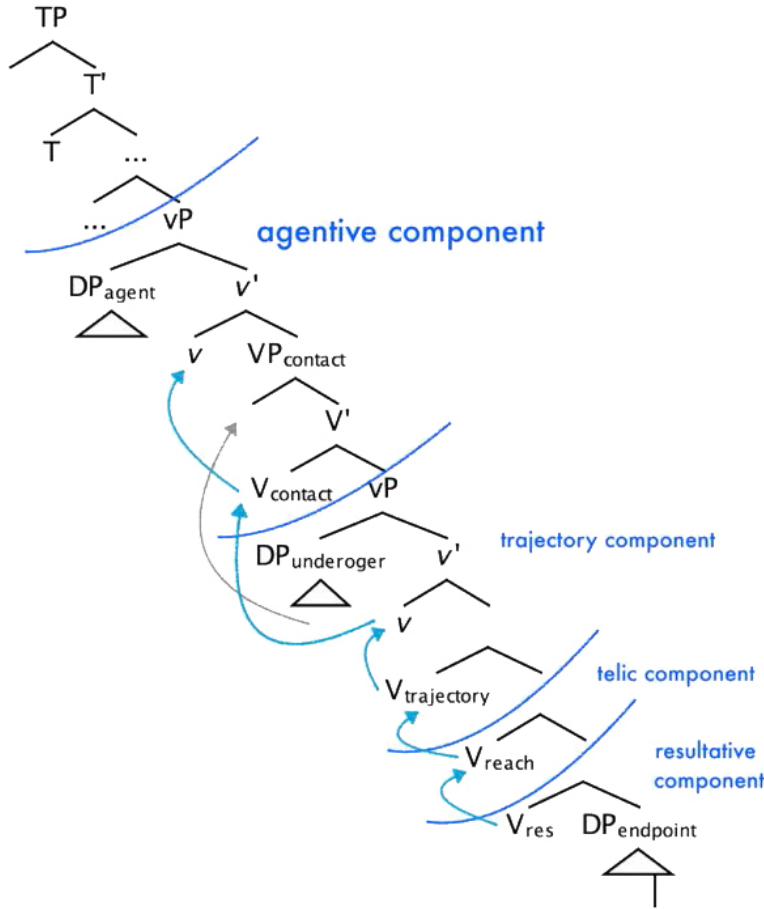
3. Structural Hypothesis

Following the theoretical framework established by scholars such as Borer (2005) and Ramchand (2008), as implemented for MPs in Benedicto & Salomon (2014), this study takes a generative-functionalist approach in terms of the division of labor between lexicon and syntax in analyzing the structure of agentive MPs. Particularly, agents are introduced through *v* to which the verbal stems move. Additionally, the distinction between initial and continuous contact agentive events is explained through different syntactic operations that target verbal stems with bare semantic content rather than through being encoded in the lexicon.

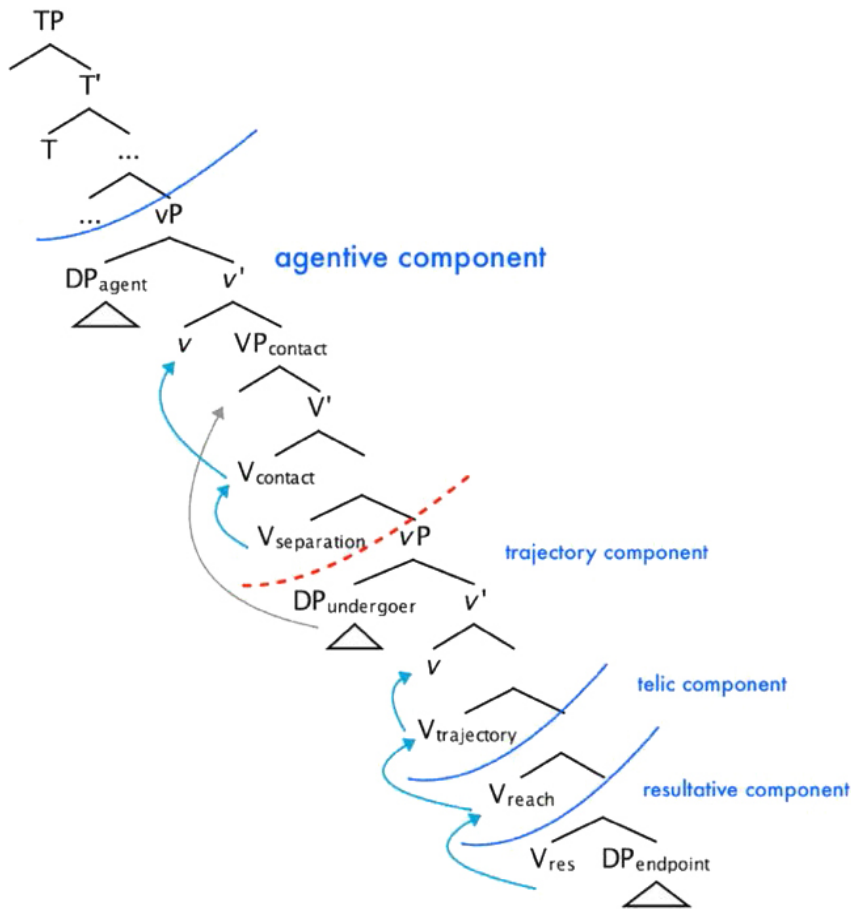
This section provides a fine-grained analysis for the structural differences between initial and continuous contact characterized earlier in section 2. The structure in (8)a below is proposed for the continuous-contact agentive MPs expressed through SVCs and (8)b, including an add-on structure to continuous-contact labeled as separation, is proposed for initial contact.

(8)

a. Continuous-contact agentive events



b. Initial-contact agentive events



As both of the structures in (8) propose, an agent is introduced through an agent-introducing v in the specifier of the higher vP (i.e. the agentive component). The structures in (8) show a split in the v content such that $DP_{\text{undergoer}}$ originates through an undergoer-introducing v lower in the structure in the specifier of the lower vP (i.e. trajectory component). $DP_{\text{undergoer}}$ then moves up, presumably for receiving accusative case, to the specifier of VP_{contact} , that produces the right word order (Subject-Object-Verb) in Takestani⁷.

As proposed by (8), the structures of initial and continuous contact are basically the same such that all of the verb stems in the trajectory, telic, and resultative components in both initial and continuous contact undergo a successive head-to-head movement to the v in the trajectory component, and the verb stems in the agentive component move up to the agent-introducing v higher in the structure. However, the structure of initial contact in (8)b is different from continuous contact in (8)a with regard to a projected intermediate semi-grammaticalized functional head (labeled as *separation*) in initial contact, which is realized as verbs like *bn'fin* 'threw' in (2) and denotes breaking the agent-undergoer contact. This head is proposed in (8)b to prevent the verbal heads in the components below the agentive component to be shared with the agentive component (i.e. to move from the lower v to the higher v). On the other hand, lack of such *separation* head in continuous contact in (8)a, legitimates the components below the agentive component to have access to, and hence to be shared with, the agentive component through cyclic head-to-head movements.

⁷ The split in v content in (8) is along the lines of the event structure proposed by Ramchand (2008), in which *init* introduces external arguments and *proc* introduces undergoers.

4. Evidence for the Hypothesis

In Takestani, as a polysynthetic language, separate morphological patterns, in the form of subject-verb agreements, are identified to distinguish initial contact from continuous contact. These morphological patterns are used in this study as pieces of evidence for the hypothesis in (8)⁸.

4.1 Agentive Component Heads

This section deals with the heads of the agentive component in the agentive MPs expressed by SVCs. These heads, as shown in (8), include: the contact head (4.1.1) and the separation head (4.1.2).

4.1.1 Contact head

Comparing the structures in (8), we see that the agent-undergoer contact is part of both initial and continuous contact agentive events⁹. Based on (8), it is predicted that, whether the type of contact is initial or continuous in an agentive MP in Takestani, the contact verb (a) agrees with the agent as its subject, and (b) appears as a transitive verb taking the undergoer as its in-ternal argument. An example includes the verb *o'GO* ‘picked up’ in (2), which agrees in person and number with the agent *tūtije* ‘the girl’ and is a transitive verb interpreted with the undergoer *ʃelū* ‘the sparrow’ as its internal argument¹⁰.

Agent-undergoer contact can also be phonologically null and recovered from the context, as shown below in (9).

(9)	SR	fere	oerdækɔf	be'be	luni	mon
	UR	fere	oerdæke-e-ef	be-bær-d	lunε-e	mon
	Gloss	boy.M	duck-DEF-3S	PV-carry_away.TR-PST	nest-GEN	inside
	Role	agent	undergoer	trajectory	(endpoint)

‘The boy carried the duck into the nest.’

In the example above, carrying the undergoer *oerdæke* ‘the duck’ implies a previously established contact, which is not expressed in a verb of contact.

4.1.2 Separation head

As proposed in (8), the intermediate separation head differentiates the structure of initial contact in (8) b from continuous contact in (8)a. Therefore, the absence of the separation head is predicted to produce either an ungrammatical or a continuous-contact interpretation. This prediction is confirmed in (10) below, where the exclusion of the separation head *bn'jin* ‘threw’ from the initial contact in (10)a produces (10)b with a continuous-contact interpretation.

⁸ Depending on the type of contact in agentive MPs, verbs can agree with either external or internal arguments in different events. Therefore, *subject* in this study is not limited solely to the arguments with nominative case. Instead, both external arguments in the specifier of the higher vP (which takes nominative case) and internal arguments in the specifier of the lower vP (which take accusative case) are analyzed as *subjects*.

⁹ Contact is of kinetic type in most clips. However, there are clips in which contact is of another type. For example, a group of clips show a girl establishing contact with a kite through a kite cord.

¹⁰ Since *o'GO* ‘picked up’ in (2) is a transitive verb, it does not agree in (feminine) gender with its subject *tūtije* ‘the girl’.

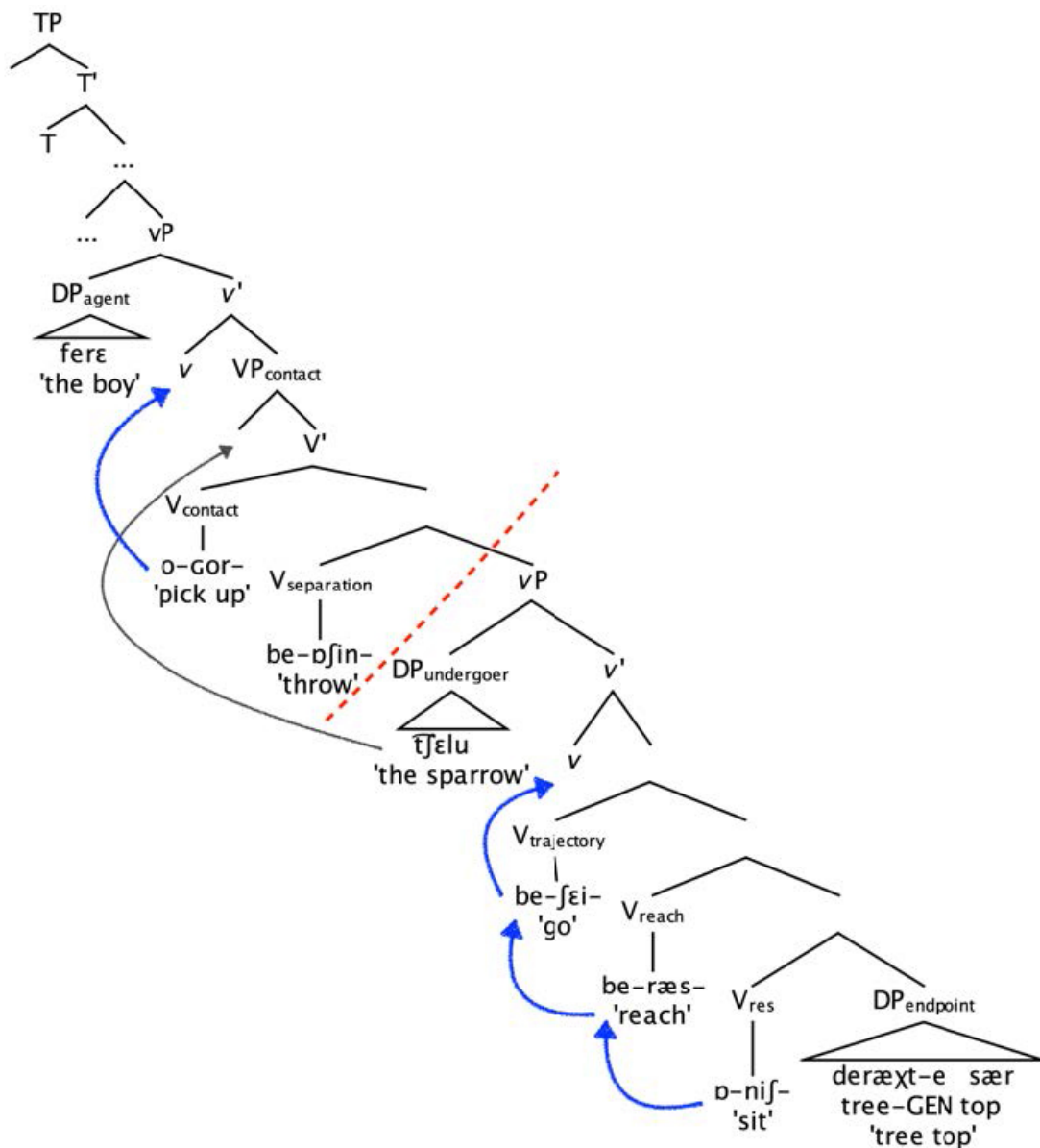
(10)					
SR	ferɛ	ʃʃɛluʃ	o'go	bv'ʃin	boe'ʃoe
UR	ferɛ	ʃʃɛlu-ɛʃ	o-gor-d	be-ɒʃin-d	be-ʃɛi-∅
Gloss	boy.M	sparrow.M-DEF-3S.NOM	PV-pick_up-PST	PV-throw-PST	PV-go.PST-3SM.NOM
Role	agent	undergoer	contact	separation	trajectory
SR	beræ'sæs		v'nif	deræχte	sær
UR	be-ræs-æst-∅		v-nif-t-∅	deræχt-e	sær
Gloss	PV-reach-PST-3SM.NOM		PV-sit-PST-3SM.NOM	tree-GEN	top
Role	telicity		resultative	(endpoint)
	'The boy [pick_up] threw the sparrow [go] [reach] into the bucket.'				

The trajectory, telic, and resultative heads (i.e. *boe'ʃoe* 'went', *beræ'sæs* 'reached', and *v'nift* 'sat') in (10)a agree with the undergoer *ʃʃɛlu* 'the sparrow' and hence give the event in (10)a an initial-contact interpretation (i.e. the sparrow *goes*, *reaches* the tree top, and *sits* there without the involvement of the boy). On the other hand, the same verbal heads agree with the agent *ferɛ* 'the boy' in (10)b, which gives the event a continuous-contact reading (i.e. the boy *goes*, *reaches* the tree top, and *sits* there while maintaining contact with the sparrow)¹¹.

The morphological patterns mentioned above provide evidence for the structural hypothesis in (8)a and (8)b that distinguish continuous contact from initial contact in agentive motion events. Since the trajectory, telic, and resultative heads (i.e. *boe'ʃoe* 'went', *beræ'sæs* 'reached', and *v'nift* 'sat') in (10)a agree with the undergoer *ʃʃɛlu* 'the sparrow' and appear as intransitive verbs, the successive movement of the stems related to these verbs (i.e. *be-ʃɛi-* 'go', *be-ræs-* 'reach', and *v-nif-* 'sit') only up to the undergoer-introducing v for an agreement with the trace of the undergoer *ʃʃɛlu* 'the sparrow' in the specifier of the lower vP is supported (see (11) below). The presence of the separation head *bv'ʃin* 'threw' supports lack of further movements of these stems up to the agent-introducing v, which involves their agreement with the agent. In addition, since the contact verb *o'go* 'picked up' in (10)a agrees with the agent *ferɛ* 'the boy', the movement of its stem (i.e. *o-gor-* 'pick up') up to the agent-introducing v is supported. Because *o'go* 'picked up' is a transitive verb taking the undergoer *ʃʃɛlu* 'the sparrow' as its internal argument, the movement of *ʃʃɛlu* 'the sparrow' up to the specifier V_{contact}, which results in the right SOV word order, is also supported. This analysis is illustrated below in (11).

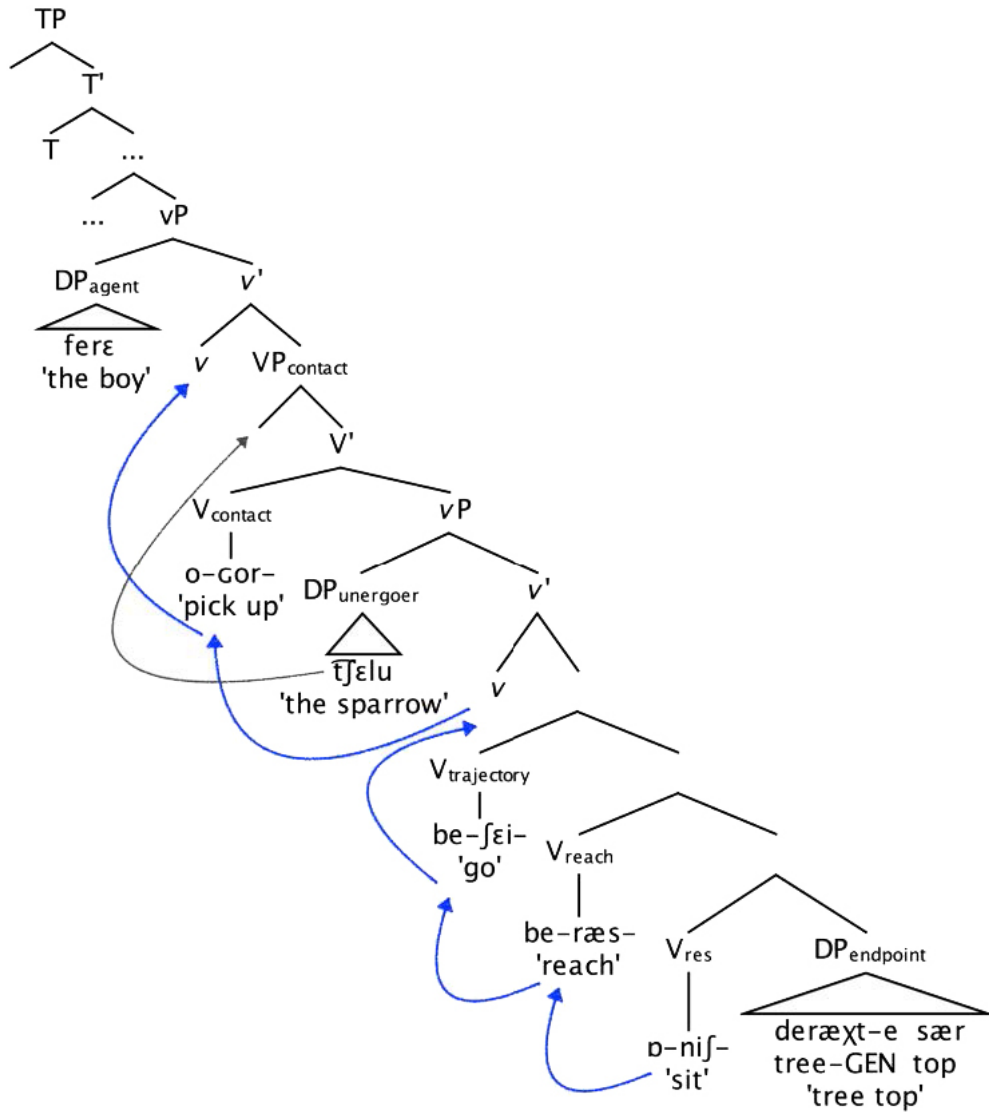
¹¹ Since *ferɛ* 'the boy' and *ʃʃɛlu* 'the sparrow' are both singular masculine nouns in Takestani, the null thirdperson-singular-masculine agreement morphemes on the trajectory, telic, and resultative verbs are interpreted to agree with *ʃʃɛlu* 'the sparrow' in (10)a and with *ferɛ* 'the boy' in (10)b.

(11) The structure of (10)a



With regard to (10)b, in the same vein as (8)a, the stems related to the trajectory, telic, and resultative heads (i.e. *boe'foe* 'went', *beræ'sæs* 'reached', and *v'nift* 'sat') agree with the agent *ferε* 'boy'. Therefore, the successive movement of these stems up to the agent-introducing v is supported. In addition, the lack of a separation head supports the validity of such movements. Although in (10)b *ʃʃelu* 'the sparrow' is interpreted to undergo motion through the medium of the agent *ferε* 'the boy', the morphological nature of the language marks continuous contact through inflecting the trajectory, reaching, and resultative verbs for the agent in continuous contact. This analysis is represented below in (12). As shown by this structure, all the stems move up to the agent-introducing v and agree with the agent *ferε* 'boy'.

(12) The structure of (10)b



4.2 Initial Contact

Two flavors of initial contact were identified based on the video clips used for this study, which are exemplified below in 4.2.1 and 4.2.2 with some details. The structures related to two these subtypes are proposed, based on (8)b, to be basically the same because of the exitance of a separation head in initial contact.

4.2.1 Sub-type 1: agent’s displacement-undergoer’s displacement

In this sub-type, an agent establishes contact with an undergoer and breaks the contact. The undergoer then moves from one place to another by itself and without the involvement of the agent in its motion. An example includes (13) below.

(13)					[0124STAMT]
SR	tittijε	tæppi	sære	ʃʃeluf	'veledɒ
UR	titie	tæppe-e	sær-ε	ʃʃelu-e-εʃ	vel-ε+ɒɒ
Gloss	girl.F	hill-GEN	top-LOC	sparrow.M-DEF-3S.NOM	free-ADJ+give.PST
Role	agent	(adverbial adjunct)		separation
SR	bo'mε		emvæere	roxone	de
UR	b-o'mei-∅		DEM-side-GEN	river	LOC
Gloss	PV-come.PST-3SM.NOM				
Role	trajectory (adverbial adjunct)				
SR	v'nift		nærđi	sær	
UR	v-nif-t-∅		nærđe-e	sær	
Gloss	PV-sit-PST-3SM.NOM fence-GEN top				
Role	resultative (adverbial adjunct)				

'The girl released the sparrow from the top of the hill [come] [sit] to this side of the river'.

As shown in (13), which is an initial-contact agentive event, the verbs in the trajectory and the resultative components (i.e. *bo'mε* 'came' and *v'nift* 'sat' successively) are conjugated as intransitive verbs that agree (in person, number, and gender) with the undergoer *ʃʃelu* 'the sparrow' as a singular masculine noun. On the other hand, the separation head *'veledɒ* 'threw', taking the undergoer *ʃʃelu* 'the sparrow' as its internal argument, appears as a transitive verb which agrees in person and number with the agent *tittije* 'girl' as a singular noun¹².

4.2.2 Sub-type 2: undergoer's change of orientation or positional configuration

In this type of initial contact, like in 4.2.1, an agent breaks its contact with an undergoer after establishing the contact. However, only a part of an undergoer (rather than the whole body of it) undergoes some sort of movement (e.g. a change of orientation or positional configuration)¹³. An example includes (14) below, in which the agent *i næfær* 'a person' changes the orientation of the undergoer *ʃiʃε* 'glass' presumably from vertical into horizontal.

(14)						
SR	i	næfær	be'zæntʃε	ʃiʃε	v'χot	zemin
UR	i	næfær	be-zæn-d-ʃ	ʃiʃε	v-χot-∅	zemin
Gloss	NUM:one	person	PV-hit-PST-3S.NOM	glass.M	PV-lie.PST-3SM.NOM	ground
Role	(agent)	separation	undergoer	orientation change	endpoint

'A person hit the glass [lie] on the ground'.

Note that because the undergoer *ʃiʃε* 'the glass' is not moved from one place to another, a verb of trajectory does not merge in this sub-type of initial contact.

¹² Since *'veledɒ* 'threw' is a transitive verb, it does not agree in gender with its subject (i.e. *tittije* 'girl').

¹³ In a change-of-orientation event, the relative physical position of the whole body of an undergoer changes. An example includes an event wherein a bottle falls on the ground and its orientation changes from Vertical to Horizontal. In a change-of-positional-configuration event, the compositional shape of an undergoer changes. An example includes a person's change of configuration from *sitting* to *standing*.

4.3 Continuous Contact

Four sub-types of continuous contact were identified in this study based on the video clips. The structures related to all of these sub-types are hypothesized, based on the hypothesis in (8)a, to be basically the same due to lack of a separation head in continuous contact and hence the agreement of all of the verbal heads with agent. Below, these four sub-types of continuous contact are exemplified.

4.3.1 Sub-type 1: agent's displacement-undergoer's displacement (the same path)

In this sub-type, an agent establishes contact with an undergoer and moves from one place to another. As a result of the agent's displacement, the undergoer is also displaced. Example (15) below shows this sub-type.

(15)	SR	ferɛ	oerdækɔf	o'go	be'be
	UR	ferɛ	oerdækɛ-e-ɛf	o-gor-d	be-bær-d
	Gloss	boy.M	duck.F-DEF-3S.NOM	PV-pick_up.TR-PST	PV-carry_away.TR-PST
	Role	agent	undergoer	contact	trajectory
	SR	ɒ'no	loni	mon	
	UR	ɒ-n-ɒi	lonɛ-e	inside	
	Gloss	PV-put.TR-PST	nest-3S.GEN	inside	
	Role	resultative	(adverbial adjunct)	

'The boy [pick_up] carried [put] the duck into its nest'.

Since (15) denotes a continuous-contact agentive MP, all the verbs (i.e. *o'go* 'picked up' *be'be* 'carried away', and *ɒ'no* 'put'), are inflected as transitive verbs which agree with the agent *ferɛ* 'boy' as a singular noun in Takestani.

4.3.2 Sub-type 2: agent's displacement-undergoer's displacement (parallel paths)

In this sub-type, like in 4.3.1, an agent's movement from one place to another, while maintaining a continuous contact with an undergoer, brings about an undergoer's movement. This sub-type is different from 4.3.1 in that agent and undergoer in this sub-type move along two separated but parallel paths simultaneously. An example for this sub-type of continuous contact includes (16) below. In the event related to this example, a girl, while holding a kite cord in her hand, moves on the ground (path1), which is different from the path in the air undergone by the kite (path2) but still in a parallel-distance relationship with it.

(16)					[0804TANT]	
	SR	titije	bɔdbɔdækɛf	tɔ	be'ge	bi'fije
	UR	titie	bɔdbɔdæk-e-ɛf	tɔ	be-ger-d	be-ʃei-ɛ
	Gloss	girl.F	kite-DEF-3SM	thread.M	PV-grab-PST	PV-go.PST-3SF
	Role	agent	(undergoer)	contact	trajectory
	SR	bæf'tɔje	deræχte	pælef		
	UR	be-æft-ɒi-ɛ	deræχt-e	pælef		
	Gloss	PV-stand-PST-3SF	tree-GEN	side		
	Role	resultative	(adverbial adjunct)		

'The girl, grabbing the kite cord, went [stand] next to the tree.'

Note that since the agent *titije* ‘the girl’ and the undergoer *bndbndæk* ‘kite’ undergo parallel paths, the verb denoting the result state of ‘standing next to the tree’ agrees with the agent *titije* ‘the girl’ rather than the undergoer *bndbndæk* ‘kite’ in this example. Particularly, only the girl is interpreted to be standing beside the tree.

4.3.3 Sub-type 3: undergoer’s displacement

In this sub-type, a part of an agent (like a hand) moves an undergoer from one place to another through a continuous contact with the undergoer. An example includes (17) below.

(17)					[1103TANT]
SR	inn̄e	zɛjnijɛ	'χolɔmbejɛ	i	dine zɔrine
UR	inn̄e	zɛiniɛ	χol-ɛ+me-be-ɛ	i	dine zɔrin-e
Gloss	one	woman.F	bent-ADJ+IND-become.PRS-3SF.NOM	one	CLF child-ACC
Role	(agent)		(undergoer)
SR	ongo're		ɔni'ɛ		
UR	o-m-gor-iɛ		ɔ-m-n-iɛ		
Gloss	PV-IND-pick_up.PRS-3SF.NOM		PV-IND-put.PRS-3SF.NOM		
Role	contact		resultative		
SR	ʃui		mize	sær	
UR	ʃui-i		mize	sær	
Gloss	PV-sit-PST-3SM.NOM		able-GEN	top	
Role	(destination)		

‘A woman [bend], [pick_up] puts a child on top of the wooden table’.

Since in this sub-type of continuous contact an undergoer is displaced, the first impression is that merging a trajectory verb will produce a grammatical result. However, this prediction proves wrong since the morphological nature of the language requires all verbs to agree with agent in continuous-contact agentive events. As such, verbalizing a trajectory verb agreeing with agent denotes agent’s rather than undergoer’s displacement, which produces an infelicitous interpretation for this sub-type of continuous contact.

4.3.4 Sub-type 4: undergoer’s change of orientation or positional configuration

In this sub-type, neither an agent nor an undergoer moves from one place to another. Instead, an agent only changes the orientation or the positional configuration of the undergoer in a continuous contact with it. An example includes (18) below, in which the agent *mærdæk* ‘the man’ changes the positional configuration of the undergoer *zɔrin* ‘the child’ from sitting into standing.

(18)					[1105TANT]
SR	mærdæk	zɔrine	dæs	mege're	'pɔmijære
UR	mærdæk	zɔrin-e-e	dæst	me-ger-e	pɔ+me-ær-e
Gloss	man.M	child.M-DEF-GEN	hand	IND-grab-3SM.NOM	standing.ADJ+IND-do.TR-3SM.NOM
Role	agent	undergoer	(contact)	change of positional config.

‘The man [grab by hand] helps the child [stand] up’.

5. Implications for future research

As it was discussed in this study, in both sub-types of initial contact, an agent discontinues contact with an undergoer and consequently the undergoer moves along the path without the involvement of the agent. On the other hand, in all four sub-types of continuous contact, an agent maintains contact with the undergoer during the undergoer's motion along the path. However, since different interpretations come from different structures/structural operations, this study predicts that the two sub-types of initial contact, despite sharing the same underlying structure with a separation head, differ in their syntactic operations. In the same vein, different syntactic operations are predicted to distinguish the four-subtypes of continuous contact. Since this study has proposed only one structure (i.e. (8)a) for continuous contact and one structure (i.e. (8)b) for initial contact, the fine-grained distinctions between the subtypes within each contact type (i.e. initial and continuous contact) is suggested to be dealt with in future research.

6. Conclusion

This study examined the structure of agentive Motion Predicates (MPs) expressed through Serial verb Constructions (SVCs) in the Takestani dialect of Southern Tati spoken in Iran. It was argued in this study that agent is introduced into non-agentive MPs through a functional head (i.e. little *v*) in the specifier of *v*P (i.e. the agentive component). This study hypothesized that initial contact agentive events differ structurally from continuous-contact events due to the presence of an intermediate functional head in initial contact that prevents the verbal heads in the components below the agentive component to be shared with the agentive component. The morphological markings on the verbs, which are the result of AGREE operations, were used as evidence for the structural hypothesis in this study. Additionally, two sub-types of initial contact and four sub-types of continuous contact were identified in this study, and the fine-grained structural differences among the subtypes within each contact type (i.e. initial/continuous contact) will be discussed in future research.

Abbreviations

+	the boundary between a nominal/adjectival part and a light verb in compound verbs
-	Morpheme boundary
1	1 person
2	2nd person
3	3rd person
ACC	Accusative case
ADJ	Adjective
D	Determiner
DEF	Definite
F	Feminine
GEN	Genitive case
IND	Indicative modality
NEG	Negative morpheme
NOM	Nominative case
NUM	Numeral
M	Masculine
PRS	Present tense
PST	Past tense
PV	Preverb
SBJV	Subjunctive mood

S Singular
TR Transitive

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Buryat Question Particles and Where to Find Them

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Abstract

This paper explores the distribution of question particles in the Barguzin dialect of Buryat based on the data gathered during fieldwork. It then compares the distribution of Buryat Q(uestion)-particles to that of Japanese and Sinhala: in matrix and embedded clauses, and in indefinite pronouns; intervention effects that appear both in Japanese and Buryat are also discussed. It is then confirmed that it is appropriate to adopt the Q-based analysis of Cable (2007, 2010) for Buryat. This paper also shows the place of Buryat in Cable's Q-based typology. It is shown that question particles are adjoined to some projection under CP.

Keywords: *wh*-questions, Q-particle, *wh*-in-situ, intervention effects

1. Introduction

Buryat is a language of the Altaic language family spoken mostly in the Buryat Republic, Russia by about 200 000 people. This paper deals with data from the Barguzin dialect of Buryat gathered in July – August 2017 during fieldwork with informants from Baraghan village of the Buryat Republic.

This paper deals with two question particles found in Buryat, namely particles *-b*, which is used to form *wh*-questions (1) and *-g(ʉ)*, which is used to form yes/no questions (2).

- | | | | |
|-----|-------------------------------|-------------|--|
| (1) | xən xarʉ: | ol-oo-b? | |
| | who answer | find-PRT-Q1 | |
| | 'Who found the answer?' | | |
| | | | |
| (2) | Darima xarʉ: | ol-oo-g? | |
| | Darima answer | find-PRT-Q1 | |
| | 'Did Darima find the answer?' | | |

In the grammars of Poppe (1938), Sanjeev (1962) these are described as either question suffixes (the former) or particles (the latter). Nevertheless, apart from questions, there is at least one more context where we can find the particle *-b*: indefinite pronouns. An indefinite pronoun is formed in one of the three following ways: i) *wh*-pronoun + *-b* + *-da:*; ii) *wh*-pronoun + *-fjʉ* + *-b*; iii) *wh*-pronoun + *-fjʉ* + *-b* + *-da:*, where *-fjʉ* and *-da:* are also particles whose functions are not exactly clear yet. As I will discuss below, this distribution of *-b* resembles the patterns described for Japanese, Korean and other languages with question particles (Cable, 2007, 2010; Hagstrom, 1998; Kishimoto, 2005).

In this paper, I examine the distribution of Buryat question particles in comparison with the distribution of such particles in other *wh*-in-situ languages, such as Japanese and Sinhala. I mainly follow Cable (2007, 2010) in the analysis of questions and question particles. The paper is structured as follows: in section 2 I present the theoretical background of the study, in section 3 I discuss the Buryat data and compare it to Japanese and Sinhala, section 4 concludes the results of the study.

2. Theoretical Background

Languages such as Japanese, Korean, Sinhala, Tlingit and others all have in common a special morpheme which appears in questions, the so called ‘Q(uestion)-particle’ or Q-morpheme. In Japanese and Korean Q is a question-final particle, while in Sinhala and Tlingit it appears next to the *wh*-word.

Hagstrom (1998) focuses on the structure of questions in *wh*-in-situ languages including Japanese and Sinhala. He views the Q-morpheme as a base-generated adjunct to the *wh*-word which then moves overtly, as in Japanese, or covertly, as in Sinhala, to the clause periphery (driven by the head which contributes the interrogative force to the sentence, e.g. an interrogative complementizer). Hagstrom presents two kinds of evidence of the movement: i) island boundaries and ii) intervention effects further studied in Beck (2006). Hagstrom shows that in Sinhala the *wh*-word can appear inside an island only if the Q-particle is outside the island (3). He also shows that elements like the NPI *-sika* ‘only’ cannot intervene between the *wh*-word and the Q-morpheme (4).

- (3) a. *oyaa [kau də liyəpu potə] kieuwe?
 you who Q wrote book read
 (‘You read the book that who wrote?’)
 b. oyaa[kauru liyəpu potə] də kieuwe?
 you who wrote book Q read
 ‘You read the book that who wrote?’ (Hagstrom, 1998, p. 40)
- (4) a. *Taroo-sika nani-o yoma-nai no?
 Taroo-only what-ACC read-NEG Q
 (‘What did only Taroo read?’)
 b. nani-oi Taroo-sika t_i yoma-nai no?
 what-ACC Taroo-only read-NEG Q
 ‘What did only Taroo read?’ (Hagstrom, 1998, p.52)

It is important to note, however, that Beck (2006) does not take intervention effects to be evidence of movement. She argues that intervention effects are a consequence of the fact that *wh*-questions are interpreted by the same mechanism as focus. Focused phrases are assumed to have a ‘normal-semantic’ and a ‘focus-semantic’ value (Rooth, 1985, 1992). Beck proposes that *wh*-words only have a focus-semantic value and that Q is special in that its semantics lets it ignore the normal-semantic value of its sister. Therefore, if some other focus-sensitive operator intervenes between Q and a *wh*-word, it neutralizes the effect of focus, and since the ‘normal-semantic’ value of *wh*-words is undefined it yields a phrase with undefined ordinary semantics. The Q operator cannot save a structure with neither a defined ‘focus-semantic’ nor ‘normal-semantic’ values, hence, the structure is ill-formed.

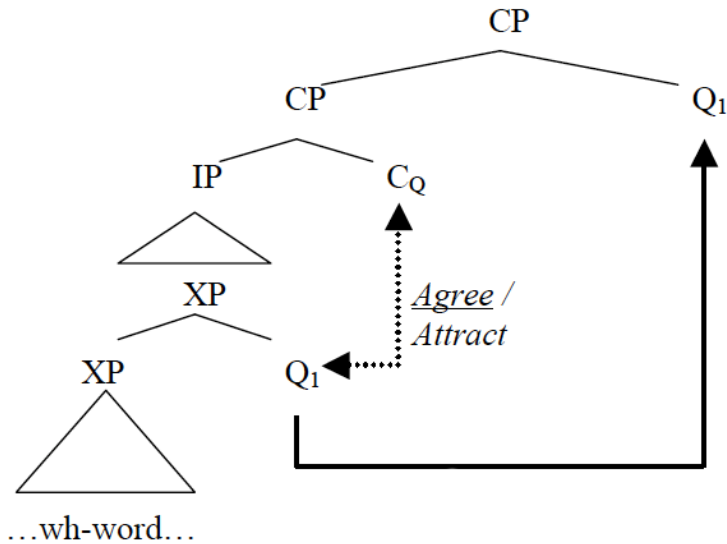
Cable (2007, 2010) bases his ‘Q-based’ analysis of *wh*-questions on Tlingit data. He examines both *wh*-questions and indefinite pronouns in Tlingit, Japanese and Sinhala and generalizes the common properties of Tlingit *sá*, Sinhala *da* and Japanese *-ka*, which are:

- (5) i) Obligatory in *wh*-questions; more generally, required in clauses containing a *wh*-word.
 ii) Must c-command the *wh*-word.
 iii) In matrix *wh*-questions, cannot appear inside islands. If merged outside any islands, can ‘save’ matrix *wh*-questions where the *wh*-word is located inside an island.
 iv) Cannot appear at the right of the matrix clause (does not hold for Japanese *ka*).
 v) May appear at the right of subordinate clauses. (Cable, 2010, p.36)

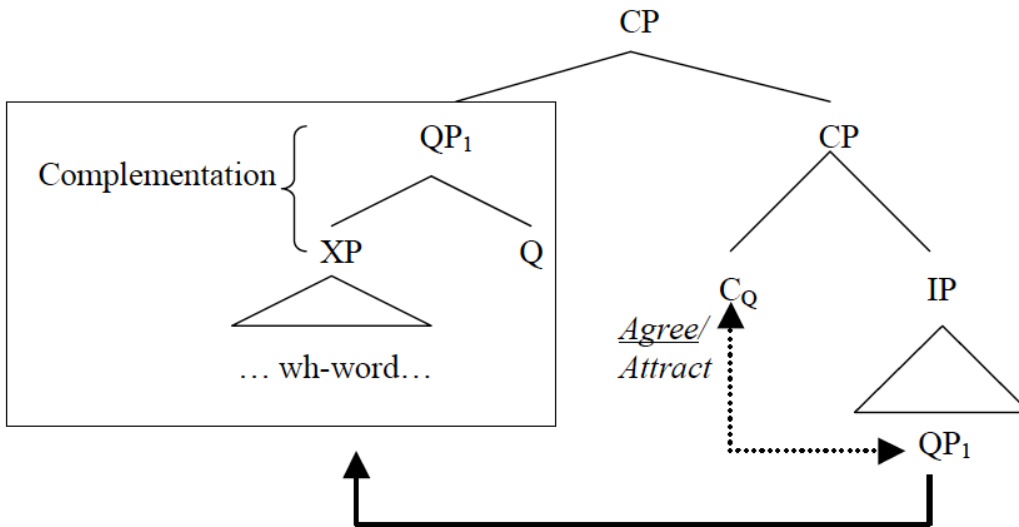
He joins the particles with such properties under the label ‘Q-particle’.

Cable's analysis assumes there to be two alternatives: a Q-particle can either be an adjunct of an XP containing the *wh*-word (6) or head its own projection, the QP, and take the XP as its complement (7).

(6) Q-adjunction



(7) Q-projection

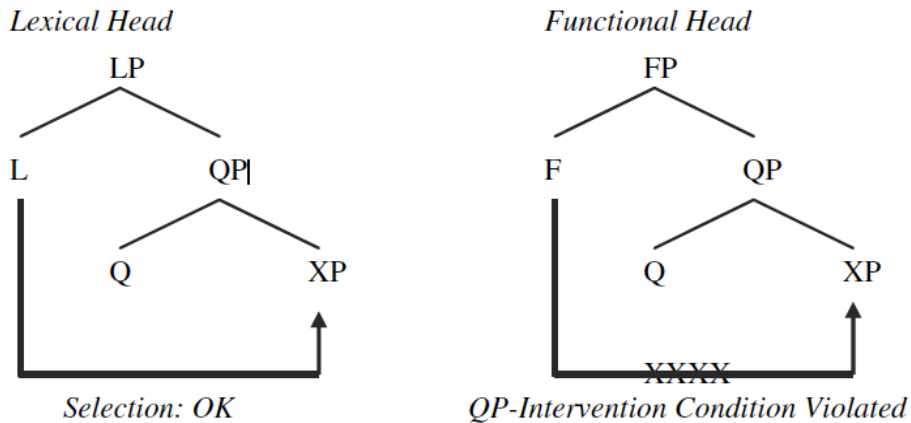


This creates two types of languages: Q-projection and Q-adjunction. If we consider Tlingit to be the former, the *wh*-fronting would then be a direct consequence of the Q-movement postulated in Hagstrom (1998): the QP would be the first node bearing the Q-feature to be probed by the interrogative complementizer. Cable further discovers that in Sinhala and Tlingit, unlike Japanese, Q-particles cannot appear i) between a postposition and its complement; ii) between a possessor and the possessed NP; iii) between a D and its NP complement; iv) at the right edge of a matrix clause. He postulates The QP-Intervention Condition:

(8) The QP-Intervention Condition

A QP cannot intervene between a functional head F and a phrase selected by F.

(Such an intervening QP blocks the selectional relation between F and the lower phrase, as illustrated in the following.)



Based on these data we can draw a typology of Q-languages. There are Q-adjunction and Q-projection languages, the Q-movement can be either overt or covert. Tlingit, being a Q-projection language with overt Q-movement, is a *wh*-fronting language with the Q-particle appearing next to the XP containing Q. Sinhala, being a Q-projection language with covert Q-movement, is a *wh*-in-situ language with the Q-particle appearing next to the XP containing Q. Japanese, being a Q-adjunction language with overt Q-movement, is a *wh*-in-situ language with Q appearing on the right periphery of the clause.

As for yes/no question particles, Cable does not include them in his analysis, while Hagstrom mentions that these particles appear to mark the position of focus, so he assumes them to be base-generated next to the focus.

3. Buryat Question Particles

In this section I will present the distribution of Buryat question particles and compare it in some points to that of the Japanese and Sinhala Q-particles in both questions and indefinite pronouns. I will determine if Buryat *-b* is fit to be labeled a ‘Q-particle’ and find Buryat’s place in Cable’s Q-based typology, which will lead me to the analysis of the structure of questions in Buryat.

3.1 The Distribution

Firstly, the Sinhala *da*, the Japanese *-ka* and the Buryat *-b* appear in *wh*-questions. *-b* is mostly obligatory in finite clauses, but can be omitted in some tenses (e.g. present, second preterite).

(9) WH-QUESTIONS

- | | | | | | |
|----|--|---------------|----------------------|----------------------|----------|
| a. | Siri | mokak | də | keruwe? | SINHALA |
| | Siri | what | Q | did | |
| | ‘What did Siri do?’ (Gair & Sumangala, 1991:93 as cited in Hagstrom, 1998, p.20) | | | | |
| b. | John-ga | nani-o | | kaimasita ka? | JAPANESE |
| | John-NOM | what-ACC | | bought Q | |
| | ‘What did John buy?’ (Hagstrom, 1998, p.36) | | | | |
| c. | xən | pirog | ədj-ə:-(b)/ | ədj-nə-(b)? | BURYAT |
| | who | pie | eat-PRT-Q/ | eat-PRS-Q | |
| | ‘Who ate the pie?’ | | | | |

They can also be found in indefinite pronouns. *-b* is obligatory in this context.

(10) INDEFINITE PRONOUNS

- a. **mokak də** wætuna SINHALA
 what Q fell
 ‘Something fell’. (Hagstrom, 1998, p.36)
- b. **dare-ka-ga** hon-o katta JAPANESE
 who-Q-NOM book-ACC bought
 ‘Someone bought books’. (Hagstrom, 1998, p.36)
- c. Sajana **ju:-fjə-*(b)** unfə-na BURYAT
 Sajana what-PTCL-Q read-PRS
 ‘Sajana reads something’.

Yes/no questions in Sinhala and Japanese are also formed by *da* and *-ka* while Buryat uses a different particle *-g(ʰ)*. The particles appear in the right periphery.

(11) YES/NO QUESTIONS

- a. Chitra ee potə kieuwa **də?** SINHALA
 Chitra this book read Q
 ‘Did Chitra read this book?’ (Hagstrom, 1998, p.36)
- b. Taroo-ga sono hon-o yomimasita **ka?** JAPANESE
 Taroo-NOM this book-ACC read.POL Q
 ‘Did Taroo read this book?’ (Hagstrom, 1998, p.36)
- c. Sajana Badm-i:jə zolg-o: **gu / *b?** BURYAT
 Sajana Badma-ACC meet-PRT Q1/Q
 ‘Did Sajana meet Badma?’

Unlike Japanese *-ka* (12c), Sinhala *da* cannot appear at the right edge of a matrix clause (12a–b). Buryat *-b* appears after negation, but before the agreement markers (12d–e).

(12) MATRIX CLAUSE

- a. Chitra monəwa **də** gatte? SINHALA
 Chitra what Q bought
 ‘What did Chitra buy?’ (Kishimoto, 2005, p.4)
- b. *Chitra monəwa gatta **də?**
 Chitra what bought Q
- c. John-ga nani-o kaimasita **ka?** JAPANESE
 John-NOM what-ACC bought Q
 ‘What did John buy?’ (Hagstrom, 1998, p.36)
- d. fī ju: du:la-xa-**b**-fī/ *du:la-xa-fī-**b?** BURYAT
 you.SG what.ACC sing-POT-Q-2SGV sing-POT -2SGV-Q
 ‘What will you sing?’
- e. ju:ndə Ojuna uila-na-gui-**b**/ *uila-na-**b**-gui
 why Ojuna cry-PRS-NEG-Q cry-PRS-Q-NEG
 ‘Why doesn’t Ojuna cry?’

In yes/no questions, *-g(ʰ)* is also attached after the negation but before the agreement markers.

(13) YES/NO: MATRIX CLAUSE

<i>ʃi</i>	<i>gaza:</i>	<i>xu</i>	<i>xar-a:-gui</i>	gu-ʃ/	<i>*xar-a:-gu</i>	<i>gui-ʃ?</i>
you.SG	outside	man	see-PRT-NEG	Q1-2SGV	see-PRT-Q1	NEG-2SGV

‘Didn’t you see a man outside?’

In case the question contains two clauses and the *wh*-word is in the embedded clause, in Sinhala the particle is located next to the embedded clause; in Japanese, the particle is still at the right edge; and in Buryat the particle is at the same place it would be in a simple clause, however, for some native speakers there can also be a second *-b* particle attached to the embedded verb.

(14) POLYPREDICATIVE: MATRIX CLAUSE

- a. Ranjit [kauru aawa kiyəla] **də** danne? SINHALA
 Ranjit who came that Q knows
 ‘Ranjit knows that who came?’ (Kishimoto, 2005, p.13)
- b. John-ga [Mary-ga nani-o katta to] JAPANESE
 John-NOM Mary-NOM what-ACC bought that
 omotteiru **no?**
 thinks Q
 ‘What does John think that Mary bought?’ (Hagstrom, 1998, p.17)
- c. *ustər* Sajana [*xən xarju: ol-o:(-b) gəʒə*] *xəl-ə:-b* BURYAT
 yeaterday Sajana who answer find-PRT(-Q) COMP say-PRT-Q
 ‘Who did Sajana yesterday say found the answer?’

In case of an indirect question, the Sinhala particle is next to the *wh*-word (15a), the Japanese particle is at the right edge of the embedded clause (15b). As for Buryat, the particle is attached to the verb under the complementizer, *-b* cannot appear at the edge of the clause (15c–d).

(15) INDIRECT QUESTION

- a. Ranjit [kau **də** aawe kiyəla] dannawa. SINHALA
 Ranjit who Q came that knows
 ‘Ranjit knows who came’. (Kishimoto, 2005, p.5)
- b. John-ga [Mary-ga nani-o katta **ka**] sitteiru JAPANESE
 John-NOM Mary-NOM what-ACC bought Q knows
 ‘John knows what Mary bought’. (Hagstrom, 1998, p.16)
- c. *tərə* [*xədi: konfjətə ədj-ə:-b gəʒə*] *mədə-nə-gui* BURYAT
 that how.many bonbon eat-PRT-Q COMP know-PRS-NEG
 ‘He doesn’t know how many bonbons he ate’.
- d. **tərə* [*xədi: konfjətə ədj-ə: gəʒə b*] *mədə-nə-gui*
 that how.many bonbon eat-PRT COMP Q know-PRS-NEG

In indirect yes/no questions *-g(ʰ)* occupies the same position as *-b* in (15c–d).

(16) INDIRECT YES/NO QUESTION

- a. Sajana [Darima xarju: ol-o:-**g** gəʒə] *xəl-ə:*
 Sajana Darima answer find-PRT-Q1 COMP say-PRT
 ‘Sajana said whether Darima found an answer’.
- b. **Sajana* [Darima xarju: ol-o: gəʒə **gu**] *xəl-ə:*
 Sajana Darima answer find-PRT COMP Q1 say-PRT

In case of multiple-*wh*-questions, Japanese and Buryat particles are the same in that they both make use

of one particle. As for Sinhala, there are two possibilities, one of which is to use two particles, one after each *wh*-word (17b).

(17) MULTIPLE-WH

- a. kauru mokak **də** kieuwe? SINHALA
 who what Q read
 ‘Who read what?’ (Hagstrom, 1999, p.65)
- b. kau **də** monəwa **də** kieuwe?
 who Q what Q read
 (Kishimoto, 1997:14, as cited in Hagstrom, 1998, p.66)
- c. Dare-ga nani-o kaimasita-ka? JAPANESE
 who-NOM what-ACC bought.POL-Q
 ‘Who bought what?’ (Hagstrom, 1998, p.65)
- d. xən ju: ab-a:-**b**? BURYAT
 who what.ACC take-PRT-Q
 ‘Who bought what?’

I will now turn to the distribution of the question particles in PPs and possessive NPs. Since in Japanese and Buryat the particles can only appear in such contexts as part of an indefinite pronoun, I will examine the distribution of *-ka* and *-b* in indefinites. However, I do not have data regarding indefinites in Sinhala, but if I assume Cable’s analysis both these contexts are diagnostic of the same thing – the presence of The QP-Intervention Condition. That being said, I will compare the Japanese and Buryat indefinites data to the data from Sinhala questions.

In Sinhala, a question particle cannot intervene between a postposition and its complement (18a–b). In Japanese, it is located exactly between the P and its complement (18c). In Buryat, it can either be attached to the *wh*-pronoun or the postposition (18d–e).

(18) BETWEEN A POSTPOSITION AND ITS COMPLEMENT

- a. Chitra [kauru ekkə] **də** kataa kəlee? SINHALA
 Chitra who with Q talk did
 ‘With whom did Chitra talk?’ (Kishimoto, 2005, p.13)
- b. *Chitra [kauru **də** ekkə] kataa kəlee?
 Chitra kauru Q with talk did
- c. Taroo-wa doko-**ka**-e itta. JAPANESE
 Taro-TOP where-Q-to went
 ‘Taro went somewhere’. (Cable, 2010, p.91)
- d. Sajana [ju:n-**ʃ**ə-**b** tuxai] xələ-nə BURYAT
 Sajana what-PTCL-Q about talk-PRS
 ‘Sajana is talking about something’.
- e. Sajana [ju:n tuxai-**ʃ**ə-**b**] xələ-nə
 Sajana what about-PTCL-Q talk-PRS

In Sinhala, a question particle cannot intervene between a possessor and a possessed NP (19a–b). In Japanese, it is possible and the particle is attached before the genitive marker (19c). In Buryat, it is also possible, but the genitive marker is attached before the particle (19d).

(19) BETWEEN A POSSESSOR AND POSSESSED NP

- a. Chitra [kaa-ge amma] **də** dække? SINHALA
 Chitra who-GEN mother Q saw
 ‘Whose mother did Chitra see?’ (Kishimoto, 2005, p.13)
- b. *Chitra [kaa-ge də amma] dække?
 Chitra who-GEN Q mother saw
- c. Taroo-wa [dare-ka-no oniisan]-ni atta. JAPANESE
 Taro-TOP who-Q-GEN brother -DAT met
 ‘Taro met someone’s brother’. (Cable, 2010, p.91)
- d. xən-əi-ŋjə-b/ *xən-ŋjə-b-əi xu:rtik xana-da ulg-ə:-təi BURYAT
 who-GEN-PTCL-Q/who-PTCL-Q-GEN coat wall-DAT hang-PRT-COM
 ‘Someone’s coat is hanging on the wall’.

Finally, just like Japanese, Buryat shows some intervention effects, particularly with the element ‘only’. Questions (20a) and (21a) are ungrammatical, because the focus-sensitive element ‘only’ is intervening between the *wh*-pronoun and Q.

- (20) a. ?*Taroo-sika nani-o yoma-nai no? JAPANESE
 Taroo-only what-ACC read-NEG Q
 (‘What did only Taroo read?’)
- b. nani-oi Taroo-sika ti yoma-nai no?
 what-ACC Taroo-only read-NEG Q
 ‘What did only Taroo read?’
- c. dare-ga LGB-sika yoma-nai no?
 who-NOM LGB-only read-NEG Q
 ‘Who reads only LGB?’ (Hagstrom, 1998, p.52)
- (21) a. *gansa Sajana ju: unŋ-a:-b?
 only Sajana what read-PRT-Q
 (‘What did only Sajana read?’)
- b. ju:i gansa Sajana ti unŋ-a:-b?
 whatonly Sajana read-PRT-Q
 ‘What did only Sajana read?’
- c. xən gansa Vojna i m’ir unŋ-a:-b?
 who only War and Peace read-PRT-Q
 ‘Who reads only War and Peace?’

4.2 The Results

Firstly, since *-b* is mostly obligatory in clauses containing *wh*-words and it always c-commands the *wh*-word it seems that it can also be labeled a ‘Q-particle’. The Buryat particle *-b* holds most of the properties that other Q-particles do and shows the same intervention effects. Between Japanese and Sinhala, its distribution follows the Japanese pattern.

Since the Q-particle in Buryat can appear in such contexts as: i) between a postposition and its complement [PP *wh* Q P]; ii) between a possessor and possessed NP [wh Q possessum]; iii) between a complementizer and the TP (or the NegP) [TP/NegP Q Comp]; then it can be concluded that The QP-Intervention Condition does not apply to Buryat Q-particles. That, together with the fact that Q does not appear next to the *wh*-word, means that Buryat is a Q-adjoining language with overt Q-movement. Unfortunately, I can

only assume movement here based on Cable's analysis as I do not possess any Buryat-internal evidence of this movement.

However, the distribution of *-b* is a little different from that of the Japanese Q. The fact that *-b* is located before the complementizer and the affix order TAM-NEG-Q-AGREEMENT shows that if *-b* undergoes Q-movement, it is not adjoined to CP, but rather to TP or NegP. So, Q in Buryat is lower than CP.

Cable's theory does not include yes/no particles, but since *-gʰ* is attached with the same affix order and also precedes the complementizer in indirect questions, it can be assumed that it occupies the same position in the structure as does *-b*.

Finally, since the distribution patterns are similar and the Buryat Q also shows intervention effects, it can be assumed that it has the same semantics as proposed for the other Qs by Beck (2006), Cable (2007, 2010), i.e., as stated in Cable (2010, p.97) "the only focus-sensitive operator whose meaning does not also take as input the normal-semantic value of its sister".

5. Conclusion

In this paper, I have examined the distribution and properties of Buryat question particles in comparison to Japanese and Sinhala. Adopting Cable's view of Q-particles, I have established Buryat's place in the Q-based typology. It appeared that Buryat Q occupies a lower position in the clause structure than the Qs in the languages analyzed by Hagstrom and Cable. It has also been assumed that the yes/no question particle occupies the same position, however, its closer examination is left for further research as well as the problem of whether Qs undergo movement.

Abbreviations

ACC	accusative,
COM	comitative,
COMP	complementizer,
DAT	dative,
GEN	genitive,
NEG	negation,
NOM	nominative,
POL	polite,
PRS	present,
PRT	preterite,
Q	Q-particle,
Q1	yes/no question particle,
SG	singular,
PTCL	particle,
2SGV	2 person singular, verbal agreement.

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Part III: Pedagogy and Teaching

Designing an Afghan Heritage Language Program for Community Colleges

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Abstract

This paper details the instructional design and development process of an Afghan Heritage Language Program in a diaspora Afghan community in Northern Virginia, starting with a thorough needs analysis, selecting the heritage language standards of learning, and developing and designing materials based on the defined learner needs and learning standards.

Keywords: instructional design, heritage learners, Pashto, Dari

1. Introduction

There are currently 20,000 Afghans living in Northern Virginia, in the vicinity of the Northern Virginia Community College (NOVA) (“2015 American Community Survey 1-Year Estimates: Afghan). NOVA is a 2-year college composed of six centers: Alexandria, Annandale, Loudoun, Manassas, Medical Education (MEC), and Woodbridge. Additionally, NOVA is part of the 23 college Virginia Community College System (VCCS), governed by the State Board for Community Colleges (“At-A-Glance”).

Our project began with an initial assessment of the need for an Afghan Heritage Language Program for Dari and Pashto heritage speakers in the NOVA community. For the purpose of our study, a heritage learner (HL) is who has “been exposed to a particular language in childhood, did not learn it to full capacity because another language because dominant but can understand it and speak it to a degree” (Kagan 2017). As language educators, we recognize the needs of an HL learner differ from the needs of both a native speaker (L1) and a second language learner (L2) because unlike L1 speakers, HL learners are not fluent in all four language skills (reading, writing, speaking, listening), nor are they coming into the classroom with no significant proficiency in any of the languages skills like their L2 learner peers. Typically HL learners enter the classroom with a higher level of proficiency in speaking and listening, with little to no reading or writing proficiency. Therefore, the distribution of exercises, activities, and tasks in the classroom materials should reflect this. Additionally, L2 learners have a limited knowledge of the target culture, however, HL learners generally already have a significant knowledge of the target culture. Therefore, the focus of content material and themes will differ from most L2 materials, which are designed to teach culture through language activities.

2. Needs Analysis

During our Needs Analysis, we used an online questionnaire to ascertain *Who* the learners are, *Why* they are interested in studying the language (motivation), *What* their existing proficiencies are, as well as *Why* and *How* they intend to study the language. Table 1 summarizes our findings about the Demographics, Geographical Background, Language Background, and Plans for Study of the Heritage Language Learners as ascertained from the Needs Analysis questionnaire.

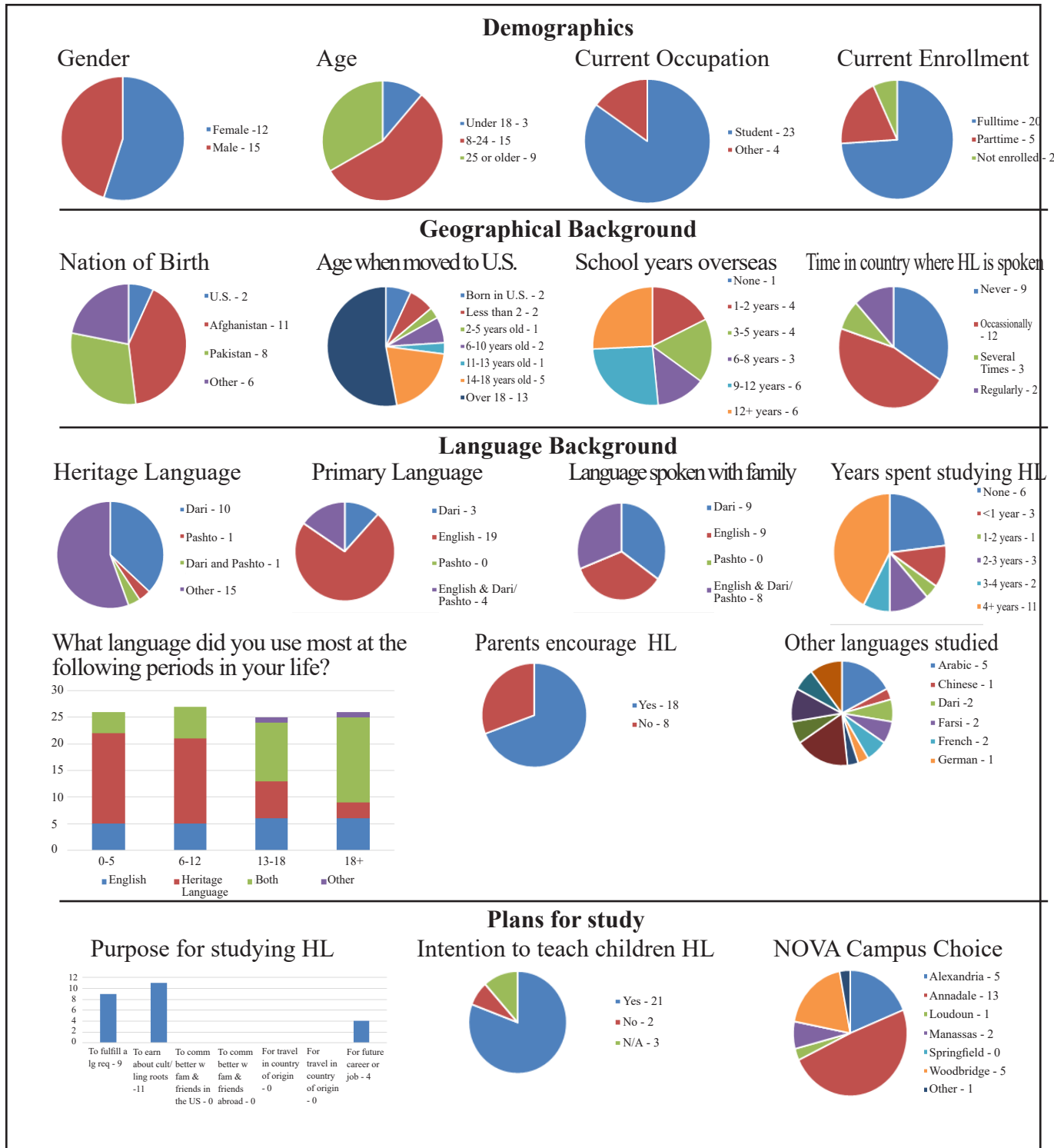


Table 1: Summary of Needs Analysis

3. Proficiency Levels and Pedagogical Implications

In order to align the materials appropriately for the heritage learners, it is important to start with an understanding of their existing proficiencies in both the heritage language and L2 (English).

Heritage learners are often referred to as *ear learners* (Reid 1998), because they are first exposed to their HL aurally, as it is typically the language used most frequently by the adults in their household. They generally grow up learning the language at home through standard Child Language Acquisition methods, but are then schooled in their L2. This leads to most heritage learners being much more proficient in speaking and listening skills, while often nearly or completely illiterate in reading or writing in their HL, especially when the HL uses a different alphabet system from their L2. Table 2 summarizes the surveyed heritage learners' self reported heritage language skills and English language skills.

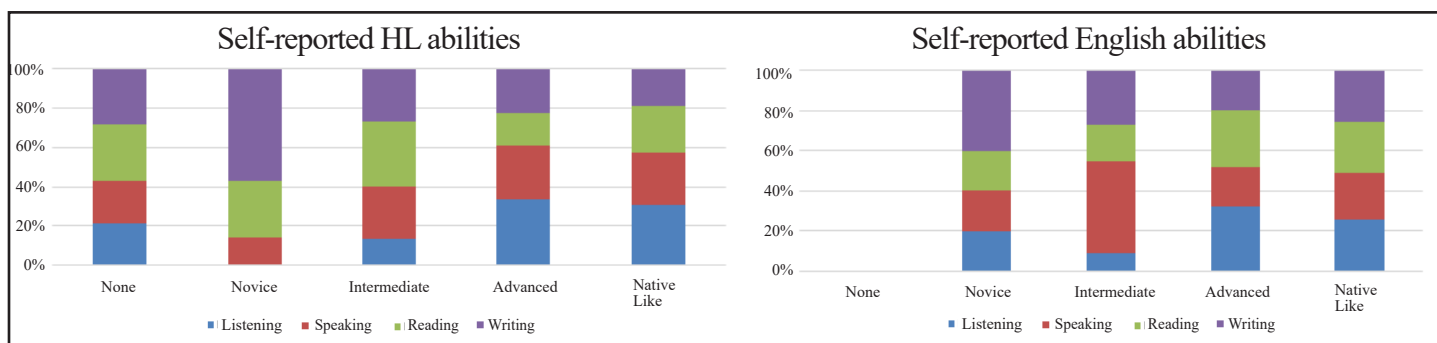


Table 2: Summary of Self-Reported Language Abilities

Speaking and Listening

While HL learners usually have a relatively developed oral and aural proficiency, they are still not typically fluent. They usually perform very well on interpersonal speaking tasks, such as talking with family members or friends, but then the learner struggles with more interpretive and presentational tasks, such as *discussing a book with a teacher* or *debating a political topic in their HL*. As a result, heritage language materials should incorporate an array of activities that present the HL learner opportunities to strengthen those interpretive and presentational communication skills. Table 3 summarizes the surveyed heritage learners' self reported speaking and listening skills in their heritage language and English.

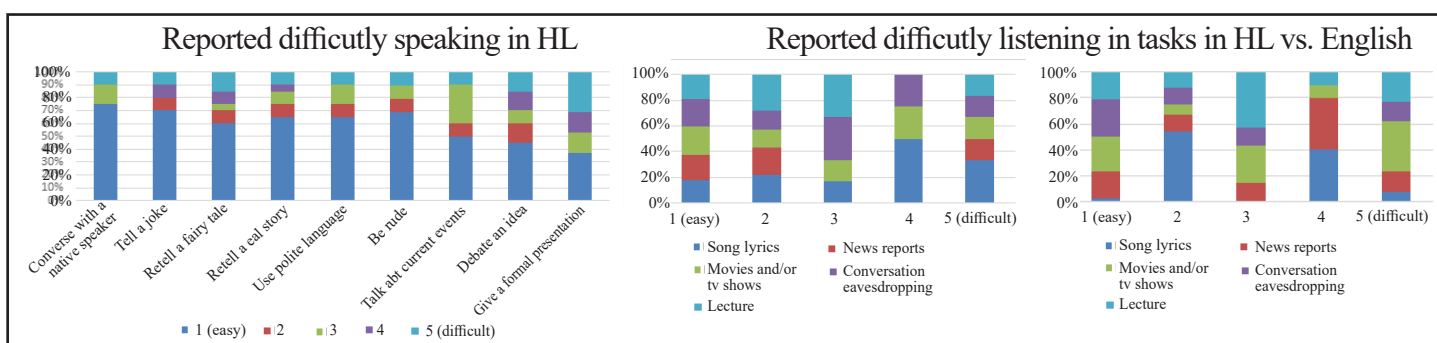


Table 3: Summary of Self-Reported Speaking and Listening Skills

Reading and Writing

As previously mentioned, because HL learners are typically not formally educated in their HL (or have a limited formal education in the HL), they are often nearly or completely illiterate in reading and writing, especially when the HL uses a different alphabet system from their L2 such as the case with Pashto/Dari and

English. Typically, if the HL learner has any reading or writing abilities, they are well below their speaking/ listening proficiency levels. HL learners’ emerging writing skills are typically phonetic and conversational (write like they talk) (Hornberger 1996). They can typically more comfortable reading and writing materials intended for younger L1 speakers and/or social media mediums (which are more conversational in nature). Table 4 summarizes the surveyed heritage learners’ self reported reading and writing skills in their heritage language and English.

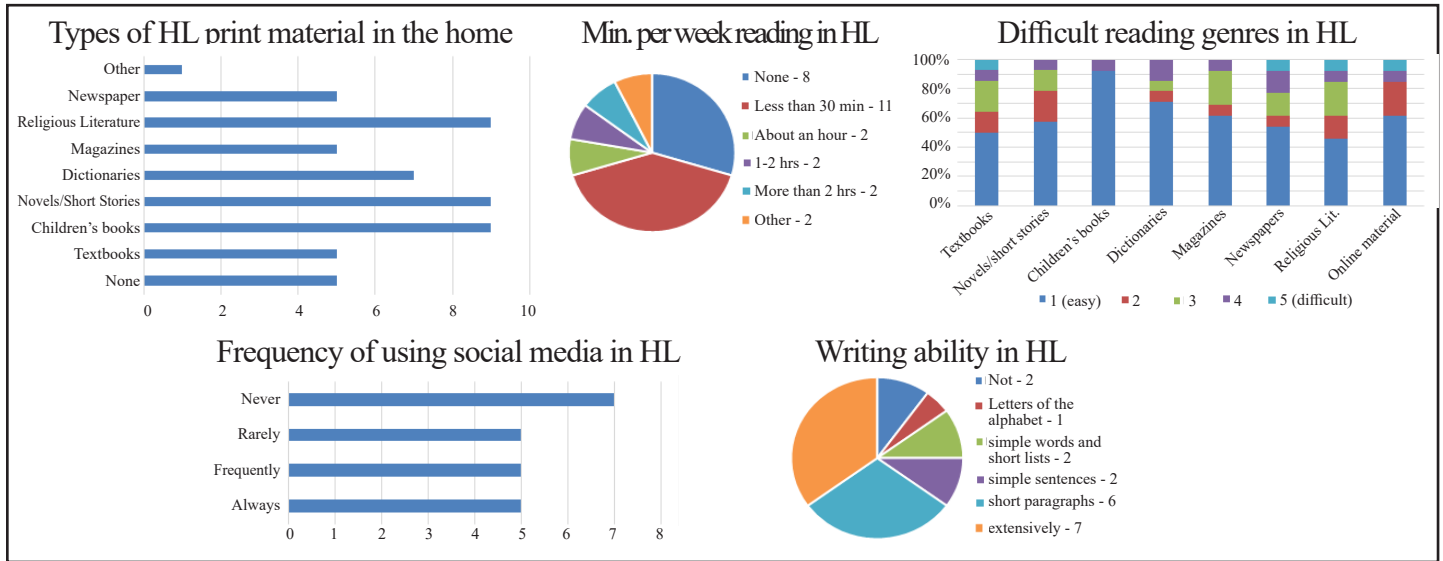


Table 4: Summary of Self-Reported Reading and Writing Skills

4. Survey Findings

Overall, our survey findings supported the research on HL learners. We found our learners were mostly born overseas, with about half moving to the U.S. before they were 18. There was a good assortment of learners who had had some schooling overseas, with about half coming to the U.S. before reaching high school. Most of the learners self-identified English as their primary language used overall, with only 1/3 reporting Dari as their main language spoken at home with their family, 1/3 reporting English, and 1/3 reporting a combination of both Dari and English. Most of the learners indicated that their HL was their primary language before 12 years old. Most of the learners have studied another language other than their HL and English, which is typically a good indication of their meta-linguistic knowledge of languages. Importantly, we found that most of the learners self-reported higher proficiency levers in Speaking and Listening skills vs. Reading and Writing, with most learners indicating that writing was their weakest language area. Armed with this well-developed understanding of our learners’ abilities, we were able to begin developing our HL learning materials.

5. Pedagogical Principles for HL Learning Materials

Most modern L2 materials use the communicative language teaching approach (CLT) and teaching culture through language, but because most HLLs already know the basic interpersonal communication skills, they need to be challenged by alternate instructional approaches (Shrum & Glisan 2009). Examples of teaching approaches that are recommended for use in heritage language curriculms include:

1. **Content Based Instruction (CBI)** teaches language through a subject matter, such as history, science, literature, or even pop culture or current events.

2. **Problem Based Instruction (PBI)** begins by introducing a problem to learners and they must use deduction, reasoning, and other problem solving skills to find a solution.
3. **Project Based Language Learning (PBL)** introduces an intriguing conceptual issue, concerning problem, or challenge to learners that they must work together to solve over the course of a project. (Similar to PBI, but more longitudinal in scope).
4. **Tasked Based Instruction (TBI)** forces learners to complete a meaningful and authentic task using the target language.

Additional pedagogical principles that have been found to be effective in the heritage language classroom include the following:

1. **Use a macro approach** - Most L2 learning materials use a *bottom-up (micro-approach)* to curriculum design, making use of language content as it is presented to the learner. However, because HLLs have substantial language knowledge already, it's best to use a *macro-approach*, which applies *top-down* curriculum design, capitalizing on the HLLs' prior knowledge for understanding meaning and communication of text first, and then having them decode and break down the language to understand deeper meanings of the language (Richards & Schmidt 2010).
2. **Focus on formal registers** - Even HLLs with a perceived fluency often have limited vocabulary, incomplete morphology, impoverished syntax, and an underdeveloped formal register because they are used to speaking "kitchen language" at home with their family members. HL instructors should use these informal register skills as a starting point from which to teach HLLs how to communicate in more varied domains, including public speaking and academic (Polinsky & Kagan 2007).
3. **Explicit teaching of HL rhetoric styles** - Curriculums designed for HLLs should clearly examine what distinguishes spoken discourse from written discourse. HLLs must understand the difference in the mechanics of spoken and written discourse in the HL in order to learn more sophisticated writing styles and develop rhetorical skills (Chevalier 2004).

6. Curriculum Overview

<p>Unit 1: Letters from home Lesson 1: The Dari Alphabet Lesson 2: Letter from Grandma Lesson 3: Email from Cousin Aliya</p>	<p>Unit 2: Where I live Lesson 1: The community center Lesson 2: My Mosque Lesson 3: Being Afghan in the US</p>
<p>Unit 3: The World Around Me Lesson 1: Local News Lesson 2: National News Lesson 3: World News</p>	<p>Unit 4: Sharing my culture Lesson 1: Social media Lesson 2: Afghans in the Media Lesson 3: Trends</p>
<p>Unit 5: Afghan Literature Lesson 1: Children's Literature Lesson 2: Historical Literature Lesson 3: Modern Literature</p>	

Table 5: Summary of Thematic Units and Lessons of the Heritage Language Textbook

DISCUSSION

Each lesson begins with a discussion prompt to activate the learner’s prior knowledge on the topic.

LISTENING

Next, learners are introduced to new vocabulary and more in depth information on the topic via a listening activity. Again, building on their language strengths in the topic before moving to *Reading* or *Writing*.

READING

The Reading section offers several reading assignments incorporating the new vocabulary and grammatical elements from the lesson *Learning Objectives*. This is followed by *comprehension checks*, *exercises* focusing on discrete linguistic elements, and *activities* allowing more creative, but still guided, language use. *Reading* also includes explicit grammar instruction to accompany the exercises and activities.

WRITING

Next, students will process the new information and skills in pre-writing pairs or small groups discussions. All writing assignments are purposely intended to elicit new grammatical elements in addition to knowledge on the lesson content.

INVESTIGATION

Finally, each lesson ends with an extended assignment where learners must work in pairs or small groups to complete a task, solve a problem, or plan a project.

Table 6: Summary of Lesson content

The Dari Heritage Language textbook was designed to be covered over a typical 16-week semester, with 4 contact hours per week, for a total of 64 instructional hours. We split the text into five thematic Units, each divided into three related Lessons. The themes progress from a continuum of basic interpersonal topics (writing about oneself, ones’ family, and one’s community), then moving to more expository language (reading a newspaper article and discussing the content, writing an argumentative paper), and finally moving to more cognitively challenging academic oriented topics (reading and interpreting literature). Table 5 summarizes the thematic units and their related lessons and Table 6 illustrates the content of the lessons.



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6. Results Pending

The first draft of our *Dari Heritage Language* textbook is slated to be piloted in a Workforce Development course at NOVA in Spring 2018, taught by Dari HL instructor Sophia Sexton. We plan for at least one revision of materials based on piloting feedback, with the possibility of a second piloting phase, resulting in one additional revision before submitting for publication.

Based on the success of this piloting and these materials, CeLCAR hopes to expand the program to other significant Central Asian diaspora communities we have identified in the U.S., including Kurdish (Sorani), Uzbek, and Turkmen.

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School-based language teaching and challenges for maintenance of the endangered languages, Western and Eastern Yugur, in China

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Abstract

The Yugur (also known as the Yellow Uyghur) are one of the smallest ethnic minorities in China and have two distinct endangered languages: Western Yugur (a Turkic language) and Eastern Yugur (a Mongolic language). However, many Yugurs can only speak Mandarin Chinese since Yugur languages are in heavy decline. Both Western and Eastern Yugur languages are endangered, and maintaining these languages face challenges. Efforts to preserve the Yugur languages have been in progress for about a decade with many difficulties but also some good outcomes. This paper will discuss one of the significant efforts and approaches, school-based language teaching since the 1980s. Reasons for failure and factors for success of school-based language maintenance are analysed, and some challenges in the maintenance of Yugur languages are discussed.

Keywords: Yugur, endangered language, school-based, language teaching

1. Introduction

The Yugur mostly reside in Sunan Yugur Autonomous County of Zhangye Prefecture, with smaller numbers of Yugur residing in Huangnipu Yugur Township of Jiuquan Prefecture, both within Gansu Province in the northwest of China. According to the 2010 Census (National Bureau of Statistics of China, 2011), there were 14,378 Yugur people. Yugur people mainly speak three distinct languages: Western Yugur (also known as Saryg Yugur), a Turkic language with about 2,600 speakers (Paul, Simons, & Fennig, 2009); Eastern Yugur (also known as Shira Yugur), a Mongolic language with about 3,000 speakers (Paul et al., 2009); while other Yugur people only speak Mandarin Chinese, which is the lingua franca. Eastern and Western Yugur have been oral languages without written languages (although they used Old Uyghur script in the past). Since the 1950s, Chinese characters and Mandarin Chinese have become widely used amongst all Yugur people.

Protection of endangered languages is not only concerned with the disappearance of language itself, but is also connected with the broader issue of cultural inheritance. In the 20th and 21st centuries, globalisation and the concomitant rise in the dominance of national languages have become one of the most powerful challenges to the existence of minority languages around the world. Many organisations and individuals are undertaking various attempts to protect, maintain, rescue and revitalise such languages. Western and Eastern Yugur languages are endangered, and efforts to preserve the Yugur languages have come to the fore during the last decade. There have been many difficulties but also some good outcomes. This paper will introduce one of these approaches, school-based language teaching, with a discussion of the reasons for failure and factors for success. Since the 1950s, Mandarin has gradually become the dominant language in the Yugur community, especially since schools and media use Mandarin as the only medium. In addition, since early 2000, English has been a compulsory subject from grade three in most of the schools. Thus, there is a reduction of the domains in which Yugur people can freely use Yugur languages. School-based language maintenance is one of the major methods for maintaining Yugur languages in the last few decades.

2. School-based language maintenance

Since the early 1980s, at least six Yugur language education experiments have been conducted in some schools in the Yugur community. Some ended in failure or were abandoned, but some are still going. Two recent Yugur language teaching experiments were introduced in 2007 and 2012 to Sunan County Kindergarten and grade one and two students in Hongwan Primary School of the county centre, and both are still continuing. The most recent experiment was in September 2016, Yugur language classes were introduced to some township primary schools and secondary schools. Most relevant published references regarding school-based language maintenance are written by a Yugur scholar, Dr Ba Zhanlong (Ba, 1998, 2005, 2006, 2009, 2010, 2012a, 2012b). Another significant resource is from Dr Stephen Arnold Bahry (2009). While Bahry's and especially Ba's work are extensive and form the basis of the following discussion, I will briefly discuss some pilot programs which they have not discussed, including various teaching experiments.

2.1 November 1983 – July 1985 at Huangnipu School¹

From the 1950s to the late 1970s, the central government strongly promoted Mandarin Chinese as the medium of instruction instead of ethnic minority languages, especially among those ethnic groups whose language lacked a script. After 1978, language policy towards ethnic minority languages became more pluralistic (Bahry, 2009). The first experiment to teach Yugur language in school took place in November 1983 at Huangnipu School, a combined primary and secondary school, in Huangnipu Yugur Township of Jiuquan Prefecture, where Western Yugur had not been spoken for several generations. A main reason for teaching Western Yugur language was that some community people felt they should try to bring back the language.

Students in the school included Yugur and Han students, none of whom could speak Yugur, but were all taught Western Yugur. The school divided the students into three language learning groups: preschool classes² to grade three students, grade four to five students, and first and second year students of the secondary school. Each year about 180 students were involved in the language class activities.

The teacher was An Cuihua, a preschool teacher at this school and a Western Yugur speaker originally from the Minghai region of Sunan County with a high school diploma. However, she was not trained in language teaching. There were no teaching materials or reference materials, so the language teaching was based on oral teaching with some semi-phonetic notation using Chinese characters. The language content included numbers, kinship terms and some everyday language. From November 1983 to July 1984, the teaching occurred for about 45 minutes twice a week for each group. From September 1984 to July 1985, the teaching was reduced to only once a week for each group.

This language teaching achieved some positive results. Students learnt a certain amount of vocabulary, especially the younger ones, since they could pick up the language more easily. However, some parents and teachers thought that for the younger students, learning Western Yugur language would confuse them while they were learning Chinese which was a compulsory subject. In addition, the lack of teaching materials and inadequate language learning environment finally brought to an end the Western Yugur language classroom activities (Ba, 1998). However, the teacher, An Cuihua, continued informal teaching of Yugur from 1985 to 2001, occasionally chatting in Yugur with students during breaks or in classes if there was time.

¹ Most of the information in this section was drawn from personal interviews with the Western Yugur language teacher (from 1983 to present), An Cuihua, with the assistance of her daughter, Lang Wenying, in December 2016 – January 2017, and as well as Ba Zhanlong's publication (1998). There are a few discrepancies between Ba's publication and the interviewees. The interview information will be used as a primary source.

² Preschool classes refer to a one-year class, which is attended by children aged around 6 to 7 before they begin primary school. In the early 1980s, Huangnipu did not have a kindergarten (for children aged around 3 to 6). Later on, kindergarten replaced preschool in Huangnipu.

2.2 September 2002 until present at Huangnipu School³

Around 2002, a group of local Yugur people strongly urged the local Huangnipu Township government and school to set up Western Yugur language classes again. In September 2002, Huangnipu School reopened the Western Yugur language classes, and An Cuihua resumed as a teacher of Western Yugur.

The school divided the students into two groups: all kindergarten children, and grade one to grade three students. Students included Yugur and Han students, none of whom could speak Yugur, but who were all taught Yugur just as in the first teaching experiment. Yugur language classes were not offered for higher grade students because the school and some parents believed that the classes would distract the students from learning the required national curriculum subjects. An Cuihua taught each group once a week for about 40 minutes for the primary school group and 15-20 minutes for the kindergarten group. In the beginning, there were no teaching materials and reference materials. So the language teaching was conducted in the same style as the 1983-1985 teaching. However, the teacher also tried to introduce Yugur songs to the children and found that this was popular among the students. After 2012, An received a copy of the first set of language booklets in Western Yugur language (these are explained in a later section) and used them to facilitate her language teaching.

In September 2010, the school stopped teaching Western Yugur to kindergarten children because of overall decreased student enrolment numbers, which was due to many families only having one child, and many young people leaving to the cities. However, An Cuihua continued some informal teaching of kindergarten students. A major concern is that An will retire in 2019 and she has no obvious successor.

2.3 September 2003 – July 2004 at Hongwan Primary School

The third experiment in teaching Western Yugur language in school began in September 2003, at Hongwan Primary School, Sunan County. The impetus came from a meeting in September 2003 between local Sunan officials, local teachers and some parent representatives. In the meeting, a parent representative proposed the schools should encourage students to learn Yugur and preferably carry this out in the form of optional Yugur language learning as an extracurricular activity. This proposal was immediately agreed to by a couple of local Yugur-speaking officials (Ba, 2006). A few days later, the County Education Department issued an official document which stated that ‘In order to inherit and carry forward ethnic culture, and inherit the ethnic civilisation of the county, [the government] requires all the schools within the living areas of ethnic minorities around the county, to actively carry out their ethnic language optional classroom activities in the form of extracurricular activities’ (2003).

Following this notice, in fact, only Hongwan Primary School implemented the decision and organised a Western Yugur learning class. This language teaching was an extracurricular activity and students voluntarily enrolled in the class, achieving a maximum of 43 students. The teacher was not trained in language teaching. The teaching content included mainly vocabulary: names for common things, kinship terms and some everyday language. There were no teaching materials and only a few reference works including a concise grammar book of Western Yugur (Chen & Lei, 1985) and a Yugur custom and culture book which was written in Chinese (Ba, 2006, 2012a). After two semesters, the effort was discontinued due to low enrolment numbers.

2.4 September 2007 until present at Sunan County Kindergarten

In September 2007, the fourth educational experiment began in Sunan County Kindergarten, and has gradually continued to develop. The kindergarten decided to teach Yugur, beginning with Eastern Yugur, and in March 2008, the kindergarten also started to teach Western Yugur. The school selected three Yugur-speaking

³ The information in this section was also based on interviews with An Cuihua, with the assistance of Lang Wenying, in December 2016 – January 2017.

teachers among the staff, but who were not trained in language teaching (Ba, 2012a). The Yugur language teaching is only open for middle and senior grade students in the kindergarten, since the coordinators believed that junior grade children are too young to learn languages. The kindergarten teaches each language for half an hour twice a week.

When the kindergarten started to teach Yugur languages in 2007 and 2008, the school invited the parents to come and observe both the Eastern and Western Yugur languages classes which tried to raise the parents' language and culture awareness towards their own ethnic languages (J. Zhong, 2013). In March 2009, the kindergarten invited county officials, some parents who could speak Yugur languages fluently and the research officers from the Yugur Culture Research Office for the 1st Yugur Language Teaching Discussion Forum. It was focused on Yugur language teaching, teaching methods and teaching materials development. During this meeting, the kindergarten also selected six parents who were proficient in Yugur to help to support the language classes, where two of them were invited to come to kindergarten each week in rotation. After this meeting, three to four parents or grandparents came to school regularly during the language classes to communicate and interact with children in Yugur languages in groups. However, this activity with parents only continued to July 2009 when the semester finished (Ba, 2010, 2012a). The activity stopped because some parents were busy with other responsibilities and they complained that they were not paid.⁴

The kindergarten did not have teaching materials during the beginning few years, so teachers used oral teaching and body language to demonstrate. The teaching program basically followed the principles of introducing material from simple to complex and from easy to difficult. The content began with basic vocabulary, such as numbers, animal and plant names, kinship terms, and slowly transited to learning some simple sentences (Ba, 2012a).

In the middle of 2012, with the help of the Yugur Culture Research Office (established in 2003) and some local community members, the kindergarten printed the first set of language booklets for both languages (Sunan Yugur Autonomous County Kindergarten, 2012a, 2012b). These were the first teaching materials for Yugur language teaching. Each set of booklets includes four booklets with about 30 pages each, which contain many coloured photos that reflect the local culture, geography, people, and especially lots of photos of kindergarten children dressed in Yugur traditional clothing. The contents of the booklets not only include kinship terms, body parts, colour words, animal and plant words, weather words, some common verbs and adjectives, some basic words for Yugur food, but also contain basic sentences, dialogues, children's songs and tongue twisters.

2.5 September 2012 until present at Hongwan Primary School

In September 2012, Hongwan Primary School decided to re-introduce Yugur classes for grade one and grade two students. The school tried to ensure that every year there are two teachers to teach Eastern and Western Yugur respectively. The teachers were teaching staff from either the same primary school or teachers seconded from other schools. These teachers who taught the extra language classes were temporary volunteers without extra pay and were not trained in language teaching for their own ethnic language.

The teaching takes place once a week for about 40 minutes and there are no teaching resources. The teaching contents included vocabulary: names for common things, kinship terms, and daily language just like the other teaching experiments. The reason the primary school only teaches Yugur for grade one and grade two students is because the school believes that students would be confused learning English and Yugur language together since English is a compulsory subject for primary school students from grade three.

⁴ Some information was gathered from visiting the community in July 2014. I interviewed a couple of kindergarten language teachers, including the main informant, Yang Ailing, who is a native speaker of Western Yugur.

2.6 September 2016 until present at different schools in Sunan

By the end of 2015, the Sunan County government had made an agreement and opened recruitment for ethnic language teachers, which included three Eastern Yugur speakers and two Western Yugur speakers. All the teachers were young university or college graduates and are native speakers of their ethnic languages. They had received more than half a year of training run by the Yugur Education Academy (established in 2014), including on language data collection, some basic transcription, grammar and teaching material development. The local Sunan government and the Yugur Education Academy then assigned them to different schools, where they started teaching from September 2016. Two teachers were assigned to Hongwan Primary School to teach Eastern and Western Yugur respectively. They replaced the two previous temporary language teachers. Other teachers were assigned to regional township schools.

In one case, a teacher was sent to a remote Western Yugur speaking region, new Minghua, to teach at Minghua School. The school divided the students into four groups: middle and senior kindergarten students, grade one to grade three students, grade four to grade six students, and first and second year students of the secondary school. An Ying is the only Western Yugur language teacher for this school.

The kindergarten teaches Western Yugur language for half an hour twice a week.⁵ The two classes of grade one to grade six are taught twice a week for about 40 minutes each class. The secondary school teaches first and second year students for about 40 minutes once a week. According to An's observation, kindergarten and lower grades students were in danger of losing their competence in Western Yugur language. For example, in 2017, there were more than 50 students in the kindergarten including about 30 Western Yugur background students, but only two students were able to speak the Western Yugur language, and about six to seven students could understand the language only. Among the 30 Yugur students in grade one to grade three, between four to five students could speak Western Yugur. Among the 20 Yugur students in grade four to grade six, about half could speak their own ethnic language. A major reason for the decline in children speaking Western Yugur stems from mixed marriages between Yugur and other ethnic groups, especially Han Chinese.

3. Reasons for failure of school-based language maintenance

Drawing on Ba and Bahry's work, and from personal interviews, observation and analysis, it seems that the major reasons for the failure of school-based language maintenance are as follows:

3.1 Lack of community recognition of the value of the languages

Most of the school-based language teaching received little support from community members. Some community members were either against the experiments or were indifferent to them. Wanting the best for their children, many Yugur parents could not see the value of learning their own native languages, but instead considered learning Mandarin and English as more important for their children's future careers. In addition, many families use Mandarin as their spoken language at home, so there was little home reinforcement of Yugur languages for their children.

3.2 Lack of teaching resources

Most of the teaching experiments had a lack of good teaching resources. It was only in 2012 that the county kindergarten and the Yugur Culture Research Office collaboratively printed a set of small picture booklets for kindergarten children in both Western and Eastern Yugur languages. However, for primary school, there are still no teaching resources. The teachers found it very hard to teach Yugur language effectively without a set of well-designed and systematic textbooks that follow a staged curriculum of language learning.

⁵ The information in this paragraph was based on interviews with An Ying in 2016-2017.

3.3 Lack of trained teachers

The community did not have professional language teachers or even non-professional language teachers until 2016. Before 2016, all Yugur language teachers have been teachers who specialised in other subjects (Chinese, physical education, etc.), and their main qualification for teaching Yugur was that they are speakers of Yugur.

3.4 Language as an extra-curricular activity

For some of the teaching experiments, Yugur language classes were only set as an extra-curricular activity in the school, whereas Mandarin and English were compulsory subjects for the local ethnic minority students. Although many of the other experiments were obligatory classes, the schools did not implement any evaluation for the Yugur language classes throughout the semester, unlike other subjects which usually have class evaluations, such as exams and tests, which could then be used to improve the program in the following semester.

Other reasons why extracurricular classes were discontinued were due to some of the students being in the language class because of their parents' wishes, not of their own choice, while some other parents encouraged their children to withdraw and spread negative comments about ethnic languages being not useful (Ba, 2005).

3.5 Lack of county government support

The local Sunan County government did issue some documents about teaching Yugur or other ethnic languages but did not fully implement them, or provide much policy support. In the past, it has provided little funding to support ethnic language teaching. For many years, the local schools had unsuccessfully requested a quota for language teachers, but only at the end of 2015 did they receive a quota of five Yugur language teachers. However, the quota of teachers is not enough, as there are at least thirteen schools with about 1,200 Yugur students in the Sunan region.

3.6 Lack of school support

Ba found that up until 2007 Minghua's schools had not implemented the County Education Department 'notice to carry out the second language classroom activities' (2003). On the contrary, some implicit rules existed such as a 'ban on, or discouraging students using Yugur in the school, and teachers should also try not to use Yugur' (Ba, 2009). Some parents actually urged schools to teach Yugur languages and history. However, the schools have been indifferent to the demands of these parents and the Notification of the County Education Department. The school thought the notice was a soft requirement that could be ignored, in contrast with the government's mandatory reporting requirements such as the percentage of students passing core subjects to assess school performance (Ba, 2012b).

In addition, the class time allocated each week for learning Yugur languages was short and inadequate to have enough language input, whereas English and Mandarin have many hours of classes per week to gain competency and fluency.

4. Factors for success of school-based language maintenance

The major factors for the success of school-based language maintenance programs are as follows:

4.1 Obligatory attendance

Obligatory attendance would seem to be a key factor in ensuring enough student enrolments to keep the classes viable and continuing. As mentioned before, some of the Yugur language teaching experiments are still continuing due to schools requesting that students attend the language classes each week. However, some parents disapproved of Yugur compulsory classes as an undesirable use of time because they believed it would take time away from learning compulsory national curriculum subjects, or thought that learning Yugur would confuse their children when learning Mandarin Chinese or English.

4.2 Parent support for kindergarten

At the beginning of the fourth Yugur language teaching experiment which started in 2007, the kindergarten received a great deal of support from the parents and grandparents. In the first semester, some parents or grandparents came once a week to help the teachers to teach languages and interact with the children. This kind of language interaction and communication stimulated the interest of the children in learning their ethnic languages. It also created a good environment for learning the languages and there were more teaching activities due to the help from the parents and grandparents. However, most family members stopped coming after a few months due to the workload and receiving no payment.

4.3 Strong support from the local community academics, advocates and organisations

Although the Yugur are a small ethnic group in China, they have a relatively large proportion of educated people. These include scholars, researchers and advocates who work in different universities or organisations in China, and in different disciplines including anthropology, ethnology, education, history, linguistics, literature, religious studies and other fields. Those local community academics, advocates and organisations, such as the Yugur Culture Research Office and the Yugur Education Academy, have often contributed to Yugur cultural preservation and revitalisation, which has benefited and supported the community.

4.4 Local Sunan government support and providing a quota of language teachers

There has been some support by the local Sunan government, although as mentioned previously, there was originally not much support for local Yugur language education. For example, the county government has issued a few documents regarding school education of ethnic minority languages. Furthermore, as referred to in the section on the September 2016 scheme, the county government had finally begun recruiting ethnic language teachers.

Apart from school-based efforts, some other significant recent efforts and approaches for the maintenance of Yugur languages include activities from community individuals and organisations, Yugur research collaborations, integration of teaching Yugur culture into the National Basic Education Curriculum System, and use of a smartphone chatting tool as a medium to help maintain the language. A detailed discussion has been addressed in the researcher's doctoral dissertation (X. Zhong, 2019).

5. Discussion and conclusion

The challenges and difficulties in maintaining and revitalising Yugur languages are substantial. Some of the difficulties are those already discussed as reasons for the failure of school-based language teaching. There is a lack of systematic curriculum and instruction for Yugur language teaching. That means there is no connection between early childhood education, primary and secondary education. In addition, there are not enough trained language teachers. Even though at the end of 2015, the Sunan government gave several language teacher quotas

to schools, very few teachers have received professional training as teachers of second languages, or as teachers in mother tongue medium instruction schools. Furthermore, there are few teaching resources in Yugur, and schools lack suitable textbooks, teaching materials, reading materials and other supporting learning materials, such as online materials.

The second challenge for the effective revival of the languages is that community members have a lack of consciousness about Yugur language use, such as passing on their language to children, support for language teaching at schools, and the general desirability and commitment to maintaining their languages. One reason for this lack of consciousness is the rapid economic development which dominates people's lives, overshadowing interest in language maintenance. From the early 1980s to the late 2000s, the demands of rapid economic growth made the local people pay less attention to their own ethnic language and culture. For this reason, many local people did not see the value for passing on or learning their own native languages. Many believed that learning Yugur is useless and that they or their children cannot benefit from learning or maintaining their own languages.

The third challenge is insufficient government support in terms of language education policy and funding. The community needs a comprehensive policy, legal and social support system to promote Yugur language education and revitalisation.

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