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Edited by
Öner Özçelik and
Amber Kennedy Kent
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-4 included, Armenian, Azerbaijani, Baskir, Burmese, Buryat, Dungan Chinese, Karakalpak, Kazakh, Kokinshū, Kyrgyz, Kyrgyz Sign Language, Nivkh, Pashto, Persian, Sakha, Sorani Kurdish, Tibetan, Turkish, Uyghur, and Uzbek.

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.
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Editors' Introduction

On March 9th, 10th, and 11th, 2021, the Center for Languages of the Central Asian Region (CeLCAR) hosted the Fourth Conference on Central Asian Languages and Linguistics (ConCALL-4) at Indiana University in Bloomington, Indiana as the fourth 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. Additionally, the conference included 36 oral talks and 18 posters by faculty and graduate students representing 27 American universities and 26 international institutions.

We had nearly 100 registered attendees that came from all over the globe, not only from the Central Eurasian region (Azerbaijan, Kazakhstan, Kyrgyzstan, and Pakistan), but also attendees from Austria, Canada, France, Germany, Poland, Russia, Turkey, and the United Kingdom! Additionally, we had attendees from 19 of the 50 states, including Arizona, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Massachusetts, Michigan, New York, Ohio, Oregon, Pennsylvania, Texas, Virginia, and Wisconsin, plus Washington DC. Our illustrious guest speakers included William Fierman (Professor Emeritus in IU’s Department of Central Eurasian Studies), Matthew Gordon (Professor of Linguistics at University of California Santa Barbara), Ayşe Gürel (Professor of Foreign Language Education at Bogazici University), Irene Vogel (Professor of Linguistics at University of Delaware), and Karen Baertsch (Associate Professor in Linguistics at Southern Illinois University). And two special guests, Julio C. Rodriguez (Director of both the National Foreign Language Research Center and the Center for Language & Technology at the University of Hawai’i at Mānoa) and Betty Sibongile Dlamini (Senior Lecturer in Indiana University’s African Studies Department), led language learning pedagogy workshops.

Every year since its inception, this international conference has gotten more selective. ConCALL-4 received a record 153 proposals, of which 36 were accepted for oral presentation and 18 were selected for poster presentations, with an overall acceptance rate of 33.9%. The selected presentations covered a range of topics, including syntax, semantics, phonetics, phonology, language acquisition, pedagogy, and historical linguistics related to an assortment of language families, including Turkic, Iranian, Mongolic, Sino-Tibetan, Tungusic, and even Armenian, Kokinshū, Sign Language. 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 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 thank the conference’s founding organization, Indiana University’s Center for Languages of the Central Asian Region (CeLCAR), as well as our 2021 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 2023, and hopefully some new faces as well.

Sincerely,

Öner Özçelik, CeLCAR Director
Amber Kennedy Kent, ConCALL Coordinator
ACKNOWLEDGEMENTS

The Fourth Conference on Central Asian Languages and Linguistics, held virtually during the weekend of 9-11 April 2021, 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-4 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:

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We would also like to thank Cameron Chambers, Jose Celis-Schmidt, Kelsey Daniel, Kurt Dunbar, and Amanda Gilliland of IU Conferences for their help managing the technical aspects of a virtual conference as well as the following conference volunteers for their time helping to plan, organize, and execute the conference:

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Furthermore, we are eternally grateful for all of the conference presenters, as well as all of the conference participants who were patient and understanding with all of the hiccups involved with hosting our first ever virtual iteration of ConCALL during the COVID-19 global pandemic.

Finally, special thanks to all of the contributors of the ConCALL-4 Proceedings for their submissions.
Part I: Plenary Speakers
Sonority-based Segmental Restrictions: Focus on Turkic Languages

Karen Baertsch
Illinois University, Carbondale

Abstract

Often, sonority is called upon to explain restrictions within syllable onsets and codas. For example, in English, we often hear reference to the requirement that onset clusters rise in sonority and we identify a minimum sonority distance that requires such clusters to rise a certain number of steps on the sonority scale. We can calculate the difference in the sonority slope required of onset clusters vs. coda clusters. Yet we rarely invoke the concept of sonority in reference to other aspects of English syllabification.

Turkic languages are interesting in that they do not allow onset clusters and often also lack coda clusters, so we might expect sonority to play little role in the syllabification of these languages. However, this is not the case. The Turkic languages do show a number of phenomena that can be tied to the sonority both within and across syllables. Onset clusters are almost universally banned within the Turkic language family. When word initial consonant clusters are allowed, they must rise in sonority, but they are dispreferred and usually present only in borrowed words. However, there are some sonority restrictions evident in the singleton onsets. High sonority consonants, primarily /r/ and /j/ are often banned in singleton onset word-initial position in these languages. And that onset ban manifests in medial position in interesting ways. In addition, obstruents are clearly the preference in word-initial position, in contrast to the situation in several other language families in which there seems to be little preference for obstruents over sonorants in initial position.

As with most languages, coda position is the structural position with the weakest set of sonority restrictions. In English, the sonority requirement is shallower in codas than it is in onsets. In some Turkic languages, while coda clusters are allowed, in contrast to the almost absolute ban on onset clusters, they are not prevalent and again, are usually present only in borrowings. In most languages, singleton codas include segments from all sonority levels.

Within the nucleus, sonority-based restrictions surface in the patterning of long vowels. For example, in Yakut, all vowels also occur as steady-state long vowels and the diphthong inventory includes all logically possible rising-sonority combinations that adhere to the vowel harmony rules of the language. These are truly complex nuclei, in contrast to the much murkier relationship within the nucleus in, for example, Germanic languages where there seems to be a ban on complex nuclei in favor of a complex rhyme.

In contrast to vowels within the nucleus, Yakut also allows an offglide [j] within the rhyme. This segment is not subject to the vowel harmony rules of the language, appearing after both rounded and back nuclei. The relationship between [i] and [j] in Yakut has been considered by some to be a phonemic distinction. I argue here that these two phones are positional variants of a single phoneme and subject to sonority-based syllabification rules.

Accompanying the severe restrictions on the sonority contours allowed within the syllable (a ban on complex margins in most cases), a number of sonority relationships arise at the juncture of syllables. In the syllable contact environment, rising sonority is often tolerated in languages that also allow onset/coda clusters. But in languages that ban complex margins within the syllable as Turkic does, the same kinds sonority restrictions as are present in languages that allow onset and coda clusters – a requirement for falling sonority across the coda-onset boundary along with requirements for steepness of slope – come into play within the larger prosodic units of the foot and/or the word.

This paper surveys these phenomena, calling upon distributional analyses, indications of historical sound change, and typological evidence for support.
Trajectories of Language Policies and Development in Post-Soviet Central Asia

William Fierman
Professor Emeritus, Indiana University

Abstract

In this presentation I will consider language policies and language-related practices in post-Soviet Central Asia; I will focus on aspects related to language corpus, language status, and language acquisition. After a review of changes in Kazakhstan and Kazakh language in the last 30 years, I will propose a set of seven factors related to the Soviet past and to country-specific developments since 1991 that appear to have shaped language policy and its implementation in Kazakhstan. I will use these same seven factors as a lens to view the contexts of language policy and practices in the other four post-Soviet Central Asian countries, and to contrast them with Kazakhstan and Kazakh.
Secondary and vowel quality-driven stress in Uralic and Northwest Caucasian languages

Matthew Gordon
University of California, Santa Barbara

Abstract

Results of an acoustic study of stress are presented in order to investigate evidence for rhythmic secondary stress in Kabardian and Nganasan and vowel quality-based primary stress in Nganasan. Both types of stress systems are typologically under-verified on the basis of quantitative phonetic data. Data from both languages robustly confirmed the presence of primary stress but evidence for secondary stress was equivocal, suggesting the possibility of secondary stress on the initial syllable but not at regular rhythmic intervals after the first syllable. In addition, little support was found for the role of vowel quality in conditioning primary stress in Nganasan, although its occurrence in a small number of words leaves open the possibility that more extensive investigation might provide more robust confirmation for vowel quality-governed stress.

Keywords: stress, primary stress, secondary stress, rhythmic stress, vowel quality, acoustics

1. Introduction

The study of linguistic stress has long been a fertile area of study among phoneticians and phonologists. Substantial progress has been made in establishing the range of typological variation in stress systems and developing theories that capture this variation. Despite the overall advancements in the study of stress, there are nevertheless certain areas in which results are less secure. Two of these involve rhythmic secondary stress and stress based on vowel quality. Rhythmic stress is illustrated by the alternating pattern of stressed and unstressed syllables in longer words of English, such as ˌApaˌlachiˈcola and ˌconvaˈlescence. Vowel quality-based stress is exemplified by the Uralic language Meadow Mari, in which stress falls on the rightmost peripheral (non-central) vowel in a word, e.g. koŋˈga ‘oven’, puˈʃaŋgə ‘tree’, kɵgɵrˈʧen ‘dove’, ˈjoŋələʃ ‘mistake’, but on the first syllable in a word with only central vowels, e.g. əfkəl ‘step’, ˈlaʃə ‘butterfly’ (Vaysman 2009).

Although many cases of both rhythmic stress and vowel quality-based stress have been described in the literature, it is unclear how widespread either type of system is and, in the case of the latter, whether all of its reported sub-types exist. Rhythmic stress may be either vastly overreported or underreported and quantitative documentation of it is sparse. Only six of 75 languages in Gordon & Roettger’s (2017) survey of acoustic correlates of stress display phonetic evidence for secondary stress and several phonetic studies have failed to verify rhythmic secondary stresses acoustically. For example, Tabain et al. (2014) do not unearth robust exponents of rhythmic stress in their study of the Australian language Pitjantjatjara, while Newlin-Łukowicz (2012) also fails to document rhythmic stress in an acoustic study of Polish. Tabain et al. (2014) suggest that perceived rhythmic stresses may reflect a “stress ghosting” effect whereby researchers might impose rhythmic prominence on the basis of their experience with other languages possessing alternating stress patterns. On the other hand, acoustic cues to rhythmic secondary stresses are often subtle and may differ from the most commonly explored exponents of stress involving vowel duration, intensity, and fundamental frequency.

1 The author gratefully acknowledges feedback from the audience at ConCALL-4 and from Argyro Katsika, Eric Campbell, and attendees of the UCSB Phonetics Circle. A great debt of gratitude is also owed to Ayla Applebaum for her insights into Kabardian and to the Kotimaisten kielten keskus in Helsinki and Lingvodoc for generously making the Nganasan recordings available.
Secondary stress is, for example, most reliably associated with lengthening of consonants in the onset of a stressed syllable in Estonian (Gordon 1995) and Polish (Łukaszewicz 2018). For this reason, secondary stress might be more prevalent than reported in the phonological literature.

Stress that is determined on the basis of vowel quality has also not been corroborated over a broad sample of languages. Vowel quality-sensitive stress all of its reported sub-types based on the distinctions that are relevant for conditioning stress placement. Certain languages, like Meadow Mari (Itkonen 1955, Lehiste et al. 2005), preferentially stress peripheral vowels over non-low central vowels, most commonly schwa but also high central /ɨ/ in a few languages. Other languages draw distinctions based on vowel height, where lower more sonorous vowel qualities attract stress from higher less sonorous vowels. For example, Gujarati is reported by many scholars (see Shih 2018 for an overview) to stress the penultimate syllable of a word unless the final syllable contains /a/ and the penult does not, in which case the final syllable attracts stress. Under this analysis, ˈʤaja ‘let’s go’ receives penultimate stress but ˈhe ɨran ‘distressed’ has final stress (De Lacy 2002). Languages in which the stress system distinguishes between non-low central vowels and peripheral vowels far outnumber those that are sensitive to height-based distinctions. Gordon (2006) identifies 18 of the former class of languages vs. only three of the latter type in his genetically balanced survey of approximately 400 languages. Shih (2018) and Shih & De Lacy (2019), in fact, cast doubt on the existence of vowel quality-based stress systems sensitive to height distinctions, observing that none of them have been subject to instrumental verification. Acoustic studies of Gujarati stress by Shih (2018) and Bowers (2019) fail to uncover phonetic support for variation in stress as a function of vowel quality and instead find support for fixed stress, the penult in Shih’s study of disyllabic words and the initial syllable in Bowers’ investigation of trisyllabic words. More robust, both in terms of typological prevalence and instrumental documentation, are stress systems sensitive to the distinction between central and peripheral vowels. For example, Shih (2019) presents acoustic evidence for such a distinction in the Austronesian language Piuma Paiwan, and within the Central Asia geographic sphere, Gruzov (1960) and Lehiste et al. (2005) provide phonetic documentation for the location of stress being conditioned by vowel quality in Mari (Uralic; Russia).

2. Rhythmic and vowel quality-based stress in Central Asian languages

Languages of Central Asia provide a testing ground for the study of rhythmic stress and stress based on vowel quality. Several languages of the region have been reported to have vowel quality-driven stress. In addition to Meadow Mari (mentioned above) and other varieties of Mari (Itkonen 1955, Lehiste et al. 2005), the closely related Uralic language Moksha Mordvin is reported to shift stress from its dominant position on the first syllable of the word to a second syllable containing a low vowel following an initial syllable with a high vowel (Paasonen 1903), although this latter pattern fluctuates, seemingly in free variation with the dominant initial syllable stress pattern (Aasmäe et al. 2013). Another Finnic language variety of Central Asia, Komi-Zyrian Jaz’va, is also reported to avoid stress on high vowels, at least those that are etymologically high (Itkonen 1955). In the Samoyedic branch of Uralic, Nganasan is further reported to be sensitive to vowel quality in positioning stress (Helimskij 1998, Vaysman 2009); we return in section 4 to Nganasan. Certain languages of the Caucasus region are also reported to have vowel quality-driven stress, including the Indo-European languages Eastern Armenian (Vaux 1998) and Iron Ossetic and the Northeast Caucasian language Archi, the latter two of which are discussed in Borise’s (2020) overview of stress in languages of the Caucasus. At least one of these languages, Eastern Armenian, has been reanalyzed on the basis of acoustic evidence as having consistent final stress independent of vowel quality (Haghverdi 2016). None of the other reported cases of vowel height-based stress descriptions, with the exception of the variation between initial and second syllable stress in Moksha Mordvin documented by Aasmäe et al. (2013), have been the subject of instrumental phonetic investigation to the best of my knowledge.
Languages of Central Asia are also relevant for the study of rhythmic secondary stress but for a different reasons. Many languages of the region display considerable morphological complexity that gives rise to long words, which are conducive to rhythmic stress as a strategy for increasing euphony by eliminating long stress lapses, i.e. sequences of unstressed syllables. Rhythmic stress thus requires words that have a sufficient number of syllables to provide a backdrop for alternating stress; accordingly, languages with a higher proportion of longer words are more likely to possess rhythmic stress than languages with fewer longer words (Gordon & van der Hulst 2020). The tendency toward greater word length, particularly in verbs, is observed throughout Central Asia in languages belonging to several families, including Turkic, Mongolic, Tibetan, Tungusic, Uralic, Northwest Caucasian, Northeast Caucasian, and South Caucasian.

Curiously, however, despite the prevalence of languages with agglutinative and polysynthetic morphological profiles, there are relatively few languages reported to have rhythmic secondary stress in Asia. Most languages that are explicitly described in sources as having alternating stress belong to the Uralic language family, in which rhythmic secondary stress is found even in Balto-Finnic languages spoken in European, suggesting that is an inherited feature of the proto-language (Sammallahti 1988). It is conceivable that the paucity of reported cases of rhythmic stress in languages of Central Asia could reflect a genuine dearth of rhythmic stress due to various factors, including the possibility that many languages in the region previously assumed to have stress instead feature only phrasal intonation and not word-level stress. Intonation-based analysis of prominence have thus been recently proposed for Khalkha Mongolian (Karlsson 2014), Turkish (Kamali 2011, Özçelik 2012), and Uyghur (Özçelik 2015, Major and Mayer 2018). Another interpretation of the apparent rarity of secondary stress, however, is that it has simply remained underdiagnosed given the current nascent stage of prosodic documentation, at least involving instrumental analysis, of languages in the region.

In summary, the typological status of both vowel quality-driven stress, particularly cases involving sensitivity to vowel height, and rhythmic secondary stress is uncertain. In the case of the former system, doubts remain about its existence, while for the latter, questions concern the frequency with which it is attested. By virtue of either previous reports in the literature or their morphological profiles, languages of Central Asia provide an excellent ground for exploring the typological status of vowel quality and rhythm in conditioning stress. In sections 3 and 4, we explore these properties of stress via case studies of languages spoken in Asia, starting with Kabardian in section 3 and turning to Nganasan in section 4.

3. Stress in Kabardian

Kabardian is a Northwest Caucasian language spoken primarily in Russia and Turkey, although diaspora communities reside in many countries, including Syria, Jordan, and the United States. The Kabardian system of primary stress is relatively well described on an impressionistic basis and Gordon & Applebaum (2010) explores its acoustic exponents. This paper summarizes the results of that paper, which focuses on the Turkish variety of Kabardian2, as they relate to secondary stress.

Primary stress in Kabardian is largely predictable on phonological grounds, falling on the final syllable if it contains a coda consonant or a long vowel (underlyingly analyzed as a vowel plus glide sequence) (1a) and otherwise on the penult (1b).

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2 Russian and Turkish Kabardian differ slightly in their phoneme inventories, e.g. most speakers in Turkey neutralize the /ɕ/ vs. /ʃ/ contrast in favor of /ʃ/ and realize /x/ as /ç/.
(1) Kabardian stress

(1a) sɐˈbən
    tepˈʃɐkʲ
    saːˈbaj [saːˈbiː]
    naːˈnəw [naːˈnuː]
    ‘soap’
    ‘plate’
    ‘baby’
    ‘kid’

(1b) ˈsaːbɐ
    ˈwənɐ
    ʔəˈdaːq'ɐ
    χɐrˈzənɐ
    ‘dust’
    ‘house’
    ‘rooster’
    ‘good’

Nominal suffixes reject stress, however, as do certain prefixes. These morphological restrictions produce a small number of minimal pairs for stress, e.g. monomorphemic ‘maʃɐ ‘bear’ vs. mə-ˈʃɐ ‘this milk’ where mə- is the demonstrative prefix. The ergative form containing the same root is ˈmaʃɐ-m, in which the ergative suffix -m is ignored for purposes of stress.

Morphologically, Kabardian displays a high degree of morphological synthesis, particularly in the verbal complex, which creates long polysyllabic words, as in the example in (2).

(2) sə-ʃə-b-də-xʷɐ-lɐˈʒ-aː-m
    1.ABS-when-2.ERG-COM-BEN-work-PRF-OBL
    ‘when I had worked with you, for you’ (Applebaum 2013)

Because the primary stress is near the right edge of a word, there are often a large number of pretonic syllables that could potentially bear secondary stress. Nevertheless, despite the existence of long pretonic stretches in many words, there are no reports to the best of my knowledge of rhythmic secondary stress in the literature. Colarusso (1992) mentions a (non-rhythmic) post-tonic secondary stress on the coordination suffix but this prominence is plausibly attributed to a terminal pitch rise at the end of phrases in which the suffix occurs (Applebaum 2013) and is, in any case, not rhythmically assigned.

The fact that rhythmic secondary stress has not been described previously should not, however, be taken as definitive evidence that secondary stress does not exist in Kabardian. Gordon & Applebaum (2010) explore phonetic evidence for secondary stress in syllables to the left of the primary stress. Their study is based on acoustic analysis of a corpus of words uttered in isolation by seven speakers (six female, one male) of Turkish Kabardian. Words were recorded at a sampling rate of 44.1kHz using a solidstate recorder (Edirol R09) via a unidirectional headworn microphone (Shure SM10). The target words had primary stress on the final syllable and varied in length such that they contained between one and four syllables to the left of the primary stress. The inclusion of vowels four syllables removed from the primary stress would most likely allow for diagnose of secondary stress since rhythmic stresses are cross-linguistically not known to occur at intervals larger than three syllables. The measured pretonic vowels (3) all contained the same phonemic vowel, schwa, to avoid effects of intrinsic acoustic differences between different vowel qualities, e.g. increased duration or intensity for lower vowels and higher fundamental frequency for higher vowels.

(3) Kabardian stress corpus

bəˈsəm  ‘host’
bəsəˈməf’  ‘good host’
məbəsəˈməf’  ‘this good host’
məbəsəməˈfəʒ  ‘this good old host’
məbəsəməf’əˈʒijt’  ‘these two good old hosts’
For each pretonic vowel, several acoustic properties commonly diagnostic for stress (see Gordon & Roettger 2017 on the typology of stress correlates) were logged using a Praat (www.praat.org) script, including vowel duration, mean intensity (RMS), and mean fundamental frequency. In addition, first and second formant values were measured for a larger corpus consisting of syllables with different vowels. The results for duration, intensity, and fundamental frequency are discussed here. The reader is referred to Gordon & Applebaum (2010) for more details, including the formant results, which also failed to differentiate pretonic vowels from each other.

Results for duration, fundamental frequency, and intensity are shown in figures 1, 2, and 3, respectively. As the results show, the primary stressed vowel, the last one in the word, is associated with a combination of longer duration, higher fundamental frequency, and greater intensity than the pretonic vowels. None of the pretonic vowels are reliably differentiated from each other across parameters in a way that would provide evidence of rhythmic secondary stress to the left of the primary stress.

Before concluding discussion of secondary stress in Kabardian, it is worth considering one more source of potential evidence for secondary stresses. As in other languages with stress, certain stressed syllables may be associated with pitch accents in the intonational system of Kabardian. These pitch accents, which are realized with elevated fundamental frequency (H*) in Kabardian, consistently dock on primary stressed syllables. However, there is also an option of a second pitch accent occurring on the initial syllable of a word in addition to the accent on the primary stressed syllable (Applebaum & Gordon 2007). It is unclear exactly what circumstances give rise to the pitch accent on an initial syllable, but the possibility of an accent occurring on the initial syllable is suggestive of secondary stress, parallel to other languages in which a secondary stressed syllable may receive a pitch accent, e.g. English (Shattuck-Hufnagel et al. 1994).

In summary, acoustic investigation of Kabardian does not provide evidence of any rhythmic secondary stress despite the existence of long morphological words that provide the requisite backdrop for multiple stresses in a word. The only support for secondary stress uncovered thus far is the optional pitch accent on an initial syllable of a word. To the extent this secondary stress reflects a genuine metrical prominence, it is either cued by acoustic properties not measured thus far or it reflects an abstract prominence that is phonetically unrealized when not associated with an intonational pitch accent.
We turn now to the stress system of Nganasan, a Uralic language belonging to the Samoyedic branch of the family and spoken on the Taymyr Peninsula of northern Russia. Nganasan has been reported to display both rhythmic stress and vowel quality-sensitive stress, although the specific attributes of the latter property have been described somewhat differently depending on the source.

4. Stress in Nganasan

We turn now to the stress system of Nganasan, a Uralic language belonging to the Samoyedic branch of the family and spoken on the Taymyr Peninsula of northern Russia. Nganasan has been reported to display both rhythmic stress and vowel quality-sensitive stress, although the specific attributes of the latter property have been described somewhat differently depending on the source.
As in Kabardian, primary stress is sensitive to syllable structure and is oriented toward the right edge of the word. Sources are in agreement that primary stress falls on the final syllable if it contains a long vowel (4a) and otherwise on the penult by default (4b). However, stress can retract onto the antepenult if it contains a higher sonority vowel than the penult. Sources differ in the sonority threshold triggering the stress shift and in whether it is obligatory or optional (see De Lacy 2004 for a synthesis of descriptions). According to Helimskij (1998), an antepenultimate syllable with a low or mid vowel /a, e, o/ optionally attracts stress from a penult with a high or non-low central vowel /i, u, y, ɨ, ə/ (4c). Vaysman (2009), on the other hand, reports that an antepenult with any peripheral vowel /a, e, o, u, y/ obligatorily attracts stress from a penult with a non-low central vowel /i, ɨ, ə/ (4d). Sources converge in describing rhythmic secondary stress on odd-numbered syllables counting from the left but not on the syllable immediately before the primary stress (4e). In Vaysman’s description, the rhythmic stress pattern also plays a role in predicting whether the antepenult or penult is stressed when both syllables contain a non-low central vowel, but we will not treat this detail here since it is not central to the analysis that follows.


(4a) kyˈmaː   'knife’
     boˈbəː    ‘replacement’

(4b) huˈtaruʔ   ‘of the houses’
     kaˈceməʔ   ‘examine’

(4c) baˈruʃi or ˈbaruʃi  ‘devil’
     hʲaˈsɨrə or ˈhʲasɨrə  ‘fishing rod’ (Helimskij 1998 pattern)

(4d) saˈðutənu   ‘clay-LOC’
     ˈkontənu   ‘ear-LOC’ (Vaysman 2009 pattern)

(4e) ˌbakuˌnuməˈnumə  ‘my salmon-PROL’
     ˌkaðarməˈnumə  ‘my light-PROL’

In order to examine the empirical basis for the reported rhythmic secondary stresses and the conflicted accounts of the role of vowel quality in predicting stress, a phonetic study of Nganasan stress was conducted for the Avam dialect, the most widely spoken of Nganasan varieties (Helimskij 1998). Data were gleaned from two sources: a three-minute analog recording (digitized at 44.1kHz) of the Nganasan version of a traditional Siberian folk tale collected by Juha Janhunen in 1977 and a set of digitally recorded words (sampled at 44.1kHz) uttered in isolation in a recording housed in the LingV odoc online repository (www.lingvodoc.ru). The first recording contains words in a variety of prosodic contexts arising in a monologic narrative, while the second source consists of words uttered in isolation and belonging to an online dictionary, typically with three repetitions of each word (http://lingvodoc.ispras.ru/dictionary/694/30033/perspective/694/30034/view). The narrative data were analyzed primarily in qualitative fashion with the aid of acoustic displays in order to gain a sense of prosody across larger prosodic contexts, while the dictionary recordings were quantitatively analyzed for a subset of 84 words varying in length from three to six syllables. For the quantitatively analyzed words (those from the dictionary), the duration of each vowel was measured along with its mean intensity and mean fundamental frequency using a Praat script.

Although the consulted recordings differed considerably, they converged in displaying a similar prosodic distinction between domain-final and domain-non-final words. Domain-final words, which will henceforth be termed “phrase-final words”, include those at the end of a large intonational grouping in the narrative data and those that constituted the final repetition (typically the third one) of each word in the wordlist data. Phrase-final words were characterized by terminal falling fundamental frequency in the default case. Domain-non-final
words, henceforth “phrase-non-final words”, are words that are separated from the right edge of a phrase in the narrative data and words that are not the final repetition in the dictionary data. Words in this position, in contrast to those in final position, lack the terminal fundamental frequency fall. It is left to future work to determine the mapping between syntactic units and the prosodic phrases used here to operationalize the distinction between phrase-final and phrase-non-final.

On a coarse impressionistic level, primary stress is quite salient, whereas secondary stress is less obvious. Considering the location of primary stress, a general pattern that emerged for both sources of data is for stress to depend on phrasal position. In phrase-non-final words, stress almost always falls on the final syllable if it contains a long vowel and otherwise on the penult if the final vowel is short, a pattern that accords with published descriptions of Nganasan stress. Impressionistically, stress is realized most saliently as raised fundamental frequency, which characteristically persists through the end of the word. In phrase-final position, the generalizations governing the location of stress follow those of phrase-non-final words, but instead of stress being associated with higher fundamental frequency, it is usually realized with lower fundamental frequency and often with concomitant glottalization. The final syllable continues the downward fall in fundamental frequency. Viewed within an autosegmental-metrical framework (Pierrehumbert 1980) the higher fundamental frequency on the stressed syllable in phrase-non-final words may be treated as a high pitch accent (H*), while the lowered fundamental frequency associated with stress phrase-non-finally may be analyzed as a low pitch accent (L*). The terminal fall in fundamental frequency phrase-finally likely reflects a low boundary tone (L%) linked to the Intonational Phrase. More speculatively, the high fundamental frequency plateau extending to the right of the stressed syllable in phrase-non-final words might reflect a boundary tone, possibly H-, attributed to a domain smaller than the Intonational Phrase, perhaps the prosodic word or intermediate phrase.

Figure 4 contains a representative example of stress and prosodic boundaries for a phrase-non-final token (the second of three repetitions) and a phrase-final token (the third and final repetition) of the same word from the online dictionary. In the non-final repetition on the left, the sharp rise in fundamental frequency on the stressed penult (H*) is evident, while the phrase-final instantiation shows a drop in fundamental frequency on the stressed penult (L*) followed by a more precipitous drop to the end of the word (L%). It is difficult to know whether the post-tonic syllable in the phrase-non-final token has a tonal target so it labelled H-? to capture the fact that it might correspond to a high boundary tone associated with a small phrase unit like the intermediate phrase. Secondary stress, which is notated on the first syllable based on its expected position, is not clearly evident.

![Figure 4](image)

**Figure 4.** Phrase-non-final (left) and phrase-final (right) repetitions of *ñeɾeɾita* ‘be calm’. Fundamental frequency is indicated by a blue dotted line and intensity by a red solid line.

Figure 5 depicts a four-word sentence from the monologic narrative showing similar prosodic patterns with a more global fundamental frequency declination pattern being evident across the larger phrase. Each of the first three words, which are separated by a dashed line, have a fundamental frequency peak (H*) on the stressed syllable, which is the penult in the first and third words and the final syllable on the second word due...
to its word-final long vowel. In the last word, the primary stress on the penult is realized with a fundamental frequency trough. Given the location of the pitch accents near the right edge of non-final words, it is unclear whether there is a following boundary tone in most cases. However, the peak on the final syllable of the third word suggests a phrasal boundary tone (labeled as H-), an analysis that is supported by the slight pause following the end of the word. It is difficult to know, though, whether this boundary tone reflects an intermediate or Intonational Phrase boundary.

There is some acoustic support for the secondary stresses predicted on the initial syllable of all the words in figure 5 with the exception of the third one which has primary stress on the first syllable. The initial secondary stresses are associated with elevated fundamental frequency and intensity that could be regarded as a cue to stress, though it is difficult to exclude the possibility of an initial boundary tone being the source of these properties. Future research involving more discourse data would be necessary to gain an understanding of stress and its relationship to the broader intonational system. There were only two words in the corpus long enough to have a word-medial secondary stress and neither of them showed clear support for such a stress, leaving open the possibility that the initial prominence evident in figure 5 is a boundary tone rather than a stress-linked pitch accent.

Quantitative analysis supports the general observations in figures 4 and 5. Figures 6 and 7 show the results for duration (in leftmost graph), intensity (in middle graph) and fundamental frequency (in rightmost graph) for phrase-non-final (figure 6), i.e. non-final repetitions in the dictionary corpus and phrase-final words (figure 7), i.e. final repetitions in the dictionary corpus. Within each plot, the bar on the left represents primary stressed vowels, the bar in the middle reflects secondary stressed vowels, and the bar on the right shows unstressed vowels. The bars in blue enclose properties distinguishing primary stress from other stress levels, while those in enclosed in red differentiate secondary stress from other stress levels.

Looking first at results for phrase-non-final words in figure 6, vowels with primary stress are distinguished from others through their longer duration and higher fundamental frequency. Secondary stressed vowels are not differentiated acoustically from unstressed vowels along any phonetic dimension in the wordlist data, despite some evidence for an initial secondary stress from the narrative data (see figure 5). Turning to phrase-final words in figure 7, more distinctions are apparent. Primary stressed vowels are still longer than others but they also have lower fundamental frequency, a pattern that was evident in the earlier figures. Secondary stress, on the other hand, is realized with higher fundamental frequency and greater intensity than other stress levels. It should be borne in mind, however, that all the secondary stress data points are from word-initial syllables, which are not probative in diagnosing rhythmic as opposed to edge-based stress.
Turning to the issue of the role of vowel quality in the stress system, the examined data provide virtually no evidence for antepenultimate stress regardless of vowel quality. The strong tendency for the penult to attract stress (when the final syllable contains a short vowel) regardless of vowel sonority is evident even in figure 4, in which the penult carries primary stress despite containing a non-low central vowel preceded by a low vowel in the antepenult, a word structure that is predicted by both Helimskij (1998) and Vaysman (2009) to trigger antepenultimate stress, at least optionally. More broadly, of the 33 words in the 84 targeted word corpus predicted by Helimskij’s (1998) account to allow optionally for stress on a non-high peripheral vowel in the antepenult before a high or central vowel in the penult, only two words showed acoustic evidence of antepenultimate stress, one of which is shown in figure 8. Furthermore, of the 14 words predicted by Vaysman’s (2009) account to have stress obligatorily on a peripheral antepenultimate vowel before a central penultimate vowel, only one displayed evidence of antepenultimate stress. In total, of the 61 words with non-final stress (i.e. those without a final long vowel), 59 had primary stress on the penult, suggesting a strong positional bias in favor of penultimate stress regardless of vowel quality.

In summary, both impressionistic observations and quantitative analysis offer unequivocal support for the primary stresses reported on either the final and penultimate syllable. On the other hand, the attraction of stress from a lower sonority penultimate vowel to a higher sonority antepenultimate vowel does not find strong support in the examined data regardless of the exact triggering conditions, which differ depending on the account. Nevertheless, before drawing any firm conclusions about the role of vowel quality in Nganasan stress,
the limitations of the present study must be acknowledged. First, the corpus of measured words was rather small and, second, it was limited to a single speaker. In addition, Helimskij (1998) characterizes the leftward shift of stress to the antepenult as optional, so it is conceivable that this option was simply virtually never exercised in the examined sample.

**Figure 8.** Stress on the antepenultimate vowel in *kiˈʧɐbtɨtɐ* ‘take a look’. Fundamental frequency is indicated by a blue dotted line and intensity by a red solid line.

### 5. Conclusions

Phonetic studies of Kabardian and Nganasan presented here indicate that primary stress is clearly realized in both languages in terms of multiple acoustic exponents: increased duration and a fundamental frequency excursion (either a rise or fall depending on phrasal context) in Nganasan and greater duration, higher fundamental frequency, and increased intensity in Kabardian. On the other hand, data from neither language yielded compelling evidence for rhythmic secondary stress or stress conditioned by vowel quality.

Despite Kabardian’s high degree of morphological synthesis and correspondingly long words, direct evidence for secondary stress did not emerge. In the case of Nganasan, support was found for a prominence on the initial syllable of words, at least in certain phrasal contexts, although it is unclear whether this prominence reflects word stress or a phrasal boundary tone. Interestingly, indirect evidence for an initial prominence also is observed in Kabardian in the form of a secondary pitch accent that is optionally present on the initial syllable of words.

Vowel quality-driven stress, which has been reported for Nganasan, also proved elusive in the study, as the vast majority of words in the examined corpus either had penultimate or final stress with only a couple of words displaying antepenultimate stress as predicted either optionally or obligatorily in published descriptions. It is nevertheless possible that further study with a larger corpus, more speakers, or words in different contexts, would yield more instances of a higher sonority antepenult attracting stress away from a lower sonority penult. It is hoped that more phonetic research on languages of Central Asia will enrich typological knowledge of word stress and its relationship to other phrase-level prosodic properties.
References


Enriching SLA research with data from less commonly taught languages

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Abstract

The aim of this paper is to call attention to an urgent need for enriching second language acquisition (SLA) research with data from a variety of languages to develop the field even further. Less commonly taught languages (LCTLs) are particularly important in this context, as they have much to contribute to the field of SLA. Many long-standing assumptions regarding SLA might be revisited and many unexplored issues can be addressed on the basis of second language (L2) data from LCTLs. With this in mind, the paper discusses a sample of L2 data from Turkish learners who were tested in two studies on the use of verbal and nominal inflectional morphology. Turkish is one of the languages designated as a LCTL in the United States. With its rich and regular morphological system, it offers a myriad of options for identifying and testing new variables, particularly in the L2 acquisition of morphosyntax.

Keywords: less commonly taught languages, Turkish, second language acquisition of morphology, psycholinguistics

1. SLA research and less commonly taught languages

Second language acquisition (SLA) studies explore how child and adult learners acquire or learn an additional (i.e., nonprimary) language and how they process and use it. More specifically, SLA is the study of what is learned and not learned in an L2 (Gass & Selinker, 2008:1). In its history of over 50 years, the field of SLA has witnessed various theoretical and conceptual changes that have affected its research focus (e.g., Ellis, 2021; Larsen-Freeman, 2018; Rothman & Slabakova, 2018). At this point, the field of SLA needs new crosslinguistic data from LCTLs to grow further. So far, SLA research has focused mainly on Germanic and Romance languages as the first language (L1) or the target language of L2 learners. Many theoretical assumptions have been formulated on the basis of findings from research involving speakers/users of these languages, with English the most frequently explored one. A greater range of L1–L2 pairs with unique linguistic features needs to be studied to identify aspects of L2 acquisition that are still unexplored and to verify long-held assumptions about what is challenging for learners. From this perspective, encouraging the teaching and learning of LCTLs is now more important than ever.

The term “less commonly taught language” typically refers to a language considered critical by a government in consideration of its political priorities.¹ A particular language or languages might be vital to the security, economic, social and political welfare of a country (Gor & Vatz, 2009). In this national interest-based definition of LCTLs, the issue is not really the number of L2 learners of a particular language; two languages might be equally uncommon in foreign language curricula but only one of them might be classified as an LCTL.

1 For example, in the United States, 15 languages have been classified as critical languages. The U.S. Department of State provides support for the teaching of these languages through its Critical Language Scholarship (CLS) Program. The languages include Arabic, Azerbaijani, Bangla, Chinese, Hindi, Indonesian, Japanese, Korean, Persian, Portuguese, Punjabi, Russian, Swahili, Turkish, and Urdu (https://clscholarship.org/).
For example, Persian and Japanese are considered LCTLs in the United States, whereas Dutch, an equally rarely taught language, does not appear in this category (Gor & Vatz, 2009: 235). A language may also be considered critical by some countries but not in others, and the list of LCTLs may be modified from one year to another in response to changing political conjuncture. Classifying certain foreign languages as “less commonly taught critical languages” on the basis of a country’s socio-economic and political interests will also determine how much effort and funding will go into teaching them. It is commonly the case that, once a language is designated as an LCTL, it is likely to be taught systematically as part of the government’s official foreign language policy, thus making it more accessible to individual learners in the country, provided that logistical problems such as a shortage of teachers for LCTL courses are resolved.

From the perspective of theoretical SLA, an LCTL can be defined merely on the basis of the number of its L2 learners across the world. In that sense, in the context of L2 acquisition, any understudied language can be considered “critical” for SLA researchers. Governmental language policies that determine which and how many foreign languages are to be promoted as a critical language are of concern to SLA theoreticians and researchers. This is because fostering the teaching and learning of diverse LCTLs can provide much-needed novel crosslinguistic data for researchers, which will, in turn, provide theoreticians the occasion to revisit and refine long-standing SLA hypotheses that were originally formulated from data garnered from a handful of L2s. Enriching SLA research with data from LCTLs will therefore help us address subtle characteristics of the L2 acquisition process and provide a better understanding of the limits of human language-learning capacity, all of which may ultimately help improve language teaching practices. All in all, encouraging the teaching and learning of LCTLs is not only an investment in a country’s future political interests but also a tool for enhancing research on L2 acquisition and teaching.

In the rest of this paper, I elaborate on this view and discuss how an LCTL can alter the way we look at late L2 learners’ capacity to use L2 morphology. To this end, I discuss data from two L2-Turkish studies that rely on spoken and written data. Before detailing these studies, I provide a background note on the issue of variability in L2 acquisition of morphology.

2. Variability in L2 acquisition of morphology

The acquisition of L2 morphemes has always been a hotly debated topic in the SLA literature. The earlier work in this area goes back to morpheme acquisition order studies, where learners’ problems in the use of L2 inflectional morphology were first reported (e.g., Bailey et al., 1974; Dulay et al., 1982; Krashen, 1977). Subsequent work in the generative framework brought into the discussion an issue of variability, which essentially refers to L2 learners’ inconsistent use of L2 morphology that tends to surface in the form of target morpheme omission (e.g., Gürel, 2000; Haznedar, 2003; Lardiere, 1998; Prévost & White, 2000; White, 2003). It has also been suggested that nonnative-like performance, particularly in the use of inflectional morphemes by late L2 learners, is a persistent phenomenon (Lardiere, 1998; White, 2003). Lardiere (1998) and White (2003) reported persistent problems in morpheme use in two influential longitudinal studies that investigated the development of morphological competence in relation to the acquisition of related syntactic phenomena. L2-English data from Patty, a native speaker of Mandarin and Hokkien Chinese (Lardiere, 1998) and SD, a native speaker of Turkish (White, 2003), indicate that, even after over 10 years of L2 exposure, late L2 learners display variable use of certain morphemes (see also Lardiere, 2008). For example, the omission of past tense morphology in the L1-Chinese learner (Lardiere, 1998) and the omission of (in)definite articles in the L1-Turkish learner linger even after a prolonged stay in their L2 country. The findings of these two studies imply several L1-based differences in the two learners, but inconsistent suppliance of inflectional morphology was prevalent in both. Patty’s accurate production of past tense marking was around 34% even after 18.5 years of stay in the USA; and as for SD, her accurate suppliance of definite articles and indefinite articles stabilized at around 72% and 61%, respectively even after 11.5 years of stay in Canada. It is important to note that the number of bound inflectional morphemes
examined in these L2-English studies was naturally restricted. Indeed, most studies in this body of research are confined to investigations of English, French, German and Spanish. Despite the limited data, numerous proposals have been put forward to account for morphological variability. For example, some accounts link this problem to an impaired representation of functional categories or feature strength (e.g., Eubank, 1993/94; Hawkins & Chan, 1997; Hawkins & Liszka, 2003; Meisel, 1997), whereas others consider it a surface morpheme realization issue as opposed to an impairment in the associated functional projections (e.g., Haznedar & Schwartz, 1997; Prévost & White, 2000). A subsequent reconceptualization of the variability issue under the Feature Assembly Hypothesis relies on a sophisticated characterization of L1–L2 differences and predicts variability when learners fail to reassemble lexical features in the L1 into new feature bundles as required in the L2 (Lardiere, 2008; 2009). More recent views have reiterated the issue under the Bottleneck Hypothesis (Slabakova, 2009, 2014), assuming that L2 learners’ difficulty lies in the domain of functional morphology (the bottleneck of L2 acquisition) rather than core syntax.

As noted above, available data suggests that L2 learners’ difficulty in the use of L2 functional morphology persists over the years, despite lengthy exposure and instruction. In light of this, I will first present some L2 Turkish data, simply to draw attention to the possibility that the extent of L2 learners’ difficulty with morphology may be regulated by the nature of the L2 morphological system. In other words, although L1–L2 typological proximity with respect to morphology might play a role in a learner’s ultimate success, what the L2 grammar offers to the learners is equally important in the successful acquisition of L2 morphemes. Certain characteristics of the L2 morphology such as systematicity, regularity, transparency and saliency may make a difference in the extent of difficulty L2 learners experience in the acquisition of morphemes (cf. DeKeyser, 2005).

3. L2 acquisition of Turkish: two studies

A brief note on Turkish will be useful as background information. Turkish is a highly-inflected agglutinative language, with regular, salient, and transparent morphology. It also has transparent orthography, with a regular spelling-to-sound correspondence. Suffixation is the main word-formation process. Morphemes within a word are easily segmentable and identifiable, having a one-to-one relationship between form and function (Erguvanlı Taylan, 2015:107; see also Göksel & Kerslake, 2005; Kornfilt, 1997). Another interesting feature of Turkish is vowel harmony (fronting and rounding), which applies not only word- Internally but also word-externally spanning across morpheme boundaries. There are two types of suffixes: I-type (i, i, ü, u) and A-type (e, a). When a suffix is attached to a word, the vowel in the suffix changes according to the last vowel of the word (Ketrez, 2012:8). For example, the Accusative Case suffix is represented as –(y)i, as it can surface as –(y)i, –(y)u, –(y)ü, –(y)ü, depending on the preceding vowel, which determines its (frontness and roundedness) feature: ev–i (house-Acc), araba–yu (car-Acc), göz–ü (eye-Acc), havlu–yu (towel-Acc). The vowels of A-type suffixes are unrounded and non-high, but they can be back or front depending on whether the vowel in the syllable preceding it is front or back (Göksel & Kerslake, 2005: 23). For example, the plural suffix, –lAr can surface as either –ler or –lar, depending on the preceding vowel in a word: ev–ler (house-s) or araba–lar (car-s). Some Turkish suffixes also vary in form according to the rules of consonant alternation. For example, when attached to a word, the past tense suffix –DI not only undergoes vowel harmony but also consonantal assimilation in voicing: al–dı (take-Past) versus kaç–tı (escape-Past). These phonological alternations do not pose much of a challenge for L2 learners of Turkish (Ketrez, 2012:1; see also Özçelik & Sprouse, 2016).

Stress assignment in Turkish multimorphemic words is such that when a stressable suffix is added to a root whose final syllable is also stressable, the word stress moves to the new final syllable (Göksel & Kerslake, 2005: 29).
The stress thus shifts to the end of the word, no matter how many new suffixes are attached (Ketrez, 2012: 18). Stressable suffixes include nominal inflections (case markers, possessive suffixes, plural suffix), verbal inflections (tense-aspect-modality suffixes, voice markers), and most noun- and verb-deriving suffixes (Erguvanlı Taylan, 2015:91). The stress on suffixes possibly makes them perceptually more salient for L2 learners, as is the case of child-L1 learners (Aksu-Koç, 2010; Aksu-Koç & Slobin, 1985). Word formation process in Turkish may create very long words that might correspond to whole sentences in English (Göksel & Kerslake, 2005:43). An example of such morphologically complex word would be the 18-morpheme word, “ölümsüzleştirebileceğizdenmişsinizcesine,” which can be parsed as follows (Sak et al., 2011: 251):


“(Behaving) as if you are among those whom we could not cause hastily to become immortal”

According to one estimate, the average number of morphemes per word is 3.06 in Turkish (Hankamer, 1986, 1989). Furthermore, given that a single verb root can have over 2,000 inflected forms, Hankamer estimates that a typical educated speaker of Turkish has a lexicon of about 20,000 noun roots and 10,000 verb roots, which would potentially generate over 200 billion full-form lexical entries. This gives an idea about the richness and complexity of the morphological paradigms in Turkish. With this in mind, one would predict that L2 learners of a morphologically rich and complex language would have more problems than L2 learners of a morphologically impoverished language. Nevertheless, as will be discussed below, this assumption may not necessarily hold for L2 learners of Turkish, a language that provides its learners with a complex yet regular and transparent inflectional paradigms.

For the sake of brevity, I discuss only two L2-Turkish studies. One is based on oral production (Gürel & Kutlay, 2014), and the other provides written production data (Coşkun & Gürel, 2018).

**Study 1. Gürel & Kutlay (2014):** This study focused on elicited oral production data collected via face-to-face conversations of 20–30 minutes on specific topics. Data came from a total of 24 L2 learners of Turkish (14 advanced and 10 at intermediate level). Target morphemes included nominal and verbal inflections (i.e., tense, aspect, case, plural). As Table 1 illustrates, participants with 12 different L1s were tested.

<table>
<thead>
<tr>
<th>Intermediate (n = 10)</th>
<th>Arabic</th>
<th>Albanian</th>
<th>Chinese</th>
<th>English</th>
<th>German</th>
<th>Japanese</th>
<th>Indonesian</th>
<th>Italian</th>
<th>Persian</th>
<th>Russian</th>
<th>Spanish</th>
<th>Uzbek</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced (n = 14)</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1. Participants’ L1

---

2 Morphological complexity and richness are two important notions that are addressed in language acquisition studies (e.g., Xanthos et al. 2011; Wu & Juffs, 2021) and are defined in several ways (e.g., Anderson, 2015). In the current discussion, morphological complexity and richness are not differentiated; they are taken to refer to the overall inventory size of morphological suffixes and the number of suffixes a word can have (Anderson, 2015). There are, however, different views in the literature. For example, Dressler (2004: 47) suggests that morphological complexity contains both productive and unproductive morphological patterns of a language, whereas morphological richness should be calculated only in terms of productive morphological categories, rules and inflectional microclasses.
Participants were adults aged between 22 and 53, and all (except one) had started learning L2-Turkish after the age of 15 (Table 2). They were divided according to proficiency level (intermediate or advanced) based on a cloze test and a self-rating task. The mean length of stay in Turkey ranged from 1 week to 23 years, suggesting that while some participants had started learning Turkish before arriving in Turkey, others had started learning Turkish at a later stage of their stay in the country.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Mean age (range)</th>
<th>Mean age of first L2 Turkish exposure (range)</th>
<th>Mean length of exposure to L2-Turkish (range)</th>
<th>Mean length of stay in Turkey (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate (n = 10)</td>
<td>27.6 (22–42)</td>
<td>21.9 (18–33)</td>
<td>4 yrs (4 months–15 yrs)</td>
<td>3.2 yrs (3 months–15 yrs)</td>
</tr>
<tr>
<td>Advanced (n = 14)</td>
<td>34.6 (22–53)</td>
<td>22.8 (8–35)</td>
<td>8.1 yrs (1.5–18 yrs)</td>
<td>8 yrs (1 week–23 yrs)</td>
</tr>
</tbody>
</table>

Table 2. Biographical information about participants

Recorded oral data were first coded and analyzed. In this particular study, the coding did not take into account vowel or consonantal harmony rule violations (see Özçelik & Sprouse, 2016; 2017 for L2 data that looks specifically at the acquisition of vowel harmony). Accuracy percentages were calculated for each target suffix. Errors were classified as omission or substitution (Table 3).

The analyses revealed a significant difference between the morpheme types ($F = 24.76$. $p < .001$) but not between the advanced and intermediate groups ($F = 4.414$. $p = .030$). Also, the group and morpheme type interaction was not significant ($F = 2.86$. $p = .030$). As Table 3 illustrates, the overall mean accuracy across the target morphemes was very high in both groups (81.19% for intermediate learners and 88.65% for the advanced group). In the intermediate group, the lowest performance was observed in the use of the Accusative Case (38.71%) and of Dative Case morpheme (65.09%). In all others, their accuracy was 70% and above. The advanced group also displayed a similar pattern. Their lowest accuracy score was in the use of the Accusative Case (68.18%). They also had slight difficulty in determining the accurate context for the evidential marker –mIş, as evidenced by the mean accuracy of 73.67%.

It seems that the Accusative Case marking on the direct object is the most challenging aspect for L2 learners of Turkish, possibly because the direct object in Turkish does not always carry the Accusative Case morpheme. The definiteness and specificity dimensions govern the use of Accusative Case in Turkish. Determining contexts that do and do not require Accusative Case is what causes difficulty for learners. In the context of Accusative Case, both groups tend to omit the morpheme rather than substitute. Another point, albeit a minor one, is that both groups experience difficulty distinguishing between –DI and –mIş, the two markers of past tense and perfective aspect. The difference is that, if the event uttered is based on indirect evidence, –mIş is used, whereas –DI is obligatory when there is direct evidence or knowledge (personal experience or observation) about the event (Göksel & Kerslake, 2005: 309; Kornfilt, 1997). In the context of –mIş, for both groups, the number of substitution errors was greater than omission errors.

In sum, for learners, the highest error rate in omission was observed in Accusative Case use. Although it would be interesting to examine these results in detail, this is beyond the scope of the present study. For the purpose of current paper, what is important is that, in both groups, the mean accuracy across all morphemes is above 80%. Even learners with an intermediate level of L2-Turkish displayed high accuracy rates in the nominal and verbal domain. These results suggest that variability in the use of inflectional morphemes is not across-the-board; it is confined to a few morphemes, mostly to the Accusative Case suffix, a morpheme with the most variable contextual distribution that is governed by definiteness and specificity features. Thus, overall these findings imply that morphological fluctuation is not really robust in L2 Turkish data.
Study 2. Coşkun & Gürel (2018): Based on the data presented in Coşkun (2018), this study reports on the use of nominal and verbal inflectional morphemes in L2-Turkish. The data comes from a set of written production tasks that consisted of written diaries and essays on different topics. An average of 7,000 sentences per participant were collected via these tasks. The written data was analyzed with respect to the (in)accurate use of target morphemes. The participants were 46 L1-English learners of L2-Turkish who attended an intensive summer program in Turkey. Background information about participants is presented in Table 4.

<table>
<thead>
<tr>
<th>Intermediate learners (n=10)</th>
<th>Number of obligatory contexts</th>
<th>Number of correct suppliances</th>
<th>Mean accuracy (%)</th>
<th>Mean omission (%)</th>
<th>Mean substitution (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Tense (-DI)</td>
<td>477</td>
<td>472</td>
<td>98.87</td>
<td>0.13</td>
<td>1.00</td>
</tr>
<tr>
<td>Reported/Evidential Past (-mIş)</td>
<td>33</td>
<td>30</td>
<td>79.17</td>
<td>0.00</td>
<td>20.83</td>
</tr>
<tr>
<td>Future Tense (-y)AcAK</td>
<td>46</td>
<td>46</td>
<td>100.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Aorist (-A/Ir)</td>
<td>77</td>
<td>72</td>
<td>92.30</td>
<td>2.59</td>
<td>5.11</td>
</tr>
<tr>
<td>Progressive Aspect (-I)yor</td>
<td>685</td>
<td>662</td>
<td>97.18</td>
<td>0.37</td>
<td>2.45</td>
</tr>
<tr>
<td>Ablative Case (-DA)n</td>
<td>111</td>
<td>90</td>
<td>74.22</td>
<td>21.00</td>
<td>4.78</td>
</tr>
<tr>
<td>Accusative Case (-y)I</td>
<td>241</td>
<td>97</td>
<td>38.71</td>
<td>56.53</td>
<td>4.76</td>
</tr>
<tr>
<td>Dative Case (-y)A</td>
<td>334</td>
<td>224</td>
<td>65.09</td>
<td>27.25</td>
<td>7.65</td>
</tr>
<tr>
<td>Genitive Case (-n)In</td>
<td>215</td>
<td>159</td>
<td>69.71</td>
<td>20.26</td>
<td>10.02</td>
</tr>
<tr>
<td>Possessive (-s)I</td>
<td>591</td>
<td>483</td>
<td>79.18</td>
<td>17.06</td>
<td>3.76</td>
</tr>
<tr>
<td>Locative Case (-DA)</td>
<td>589</td>
<td>526</td>
<td>89.85</td>
<td>8.15</td>
<td>2.00</td>
</tr>
<tr>
<td>Plural (-Iar)</td>
<td>271</td>
<td>248</td>
<td>89.98</td>
<td>10.02</td>
<td>0.00</td>
</tr>
<tr>
<td>Total /mean</td>
<td>3,670</td>
<td>3,109</td>
<td>81.19</td>
<td>13.61</td>
<td>5.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced learners (n=14)</th>
<th>Number of obligatory contexts</th>
<th>Number of correct suppliances</th>
<th>Mean accuracy (%)</th>
<th>Mean omission (%)</th>
<th>Mean substitution (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Tense (-DI)</td>
<td>821</td>
<td>813</td>
<td>99.08</td>
<td>0.25</td>
<td>0.67</td>
</tr>
<tr>
<td>Reported/Evidential Past (-mIş)</td>
<td>59</td>
<td>52</td>
<td>73.67</td>
<td>10.00</td>
<td>16.33</td>
</tr>
<tr>
<td>Future Tense (-y)AcAK</td>
<td>137</td>
<td>134</td>
<td>98.92</td>
<td>0.00</td>
<td>1.08</td>
</tr>
<tr>
<td>Aorist (-A/Ir)</td>
<td>316</td>
<td>307</td>
<td>96.46</td>
<td>2.80</td>
<td>0.75</td>
</tr>
<tr>
<td>Progressive Aspect (-I)yor</td>
<td>1,222</td>
<td>1,216</td>
<td>99.56</td>
<td>0.00</td>
<td>0.44</td>
</tr>
<tr>
<td>Ablative Case (-DA)n</td>
<td>293</td>
<td>272</td>
<td>89.54</td>
<td>5.98</td>
<td>4.48</td>
</tr>
<tr>
<td>Accusative Case (-y)I</td>
<td>592</td>
<td>388</td>
<td>68.18</td>
<td>29.55</td>
<td>2.27</td>
</tr>
<tr>
<td>Dative Case (-y)A</td>
<td>657</td>
<td>550</td>
<td>81.88</td>
<td>11.42</td>
<td>6.71</td>
</tr>
<tr>
<td>Genitive Case (-n)In</td>
<td>356</td>
<td>280</td>
<td>79.30</td>
<td>17.56</td>
<td>3.14</td>
</tr>
<tr>
<td>Possessive (-s)I</td>
<td>1,403</td>
<td>1,249</td>
<td>86.41</td>
<td>11.01</td>
<td>2.58</td>
</tr>
<tr>
<td>Locative Case (-DA)</td>
<td>1,112</td>
<td>1,056</td>
<td>94.26</td>
<td>4.60</td>
<td>1.14</td>
</tr>
<tr>
<td>Plural (-Iar)</td>
<td>569</td>
<td>554</td>
<td>96.52</td>
<td>3.48</td>
<td>0.00</td>
</tr>
<tr>
<td>Total /mean</td>
<td>7,537</td>
<td>6,871</td>
<td>88.65</td>
<td>8.05</td>
<td>3.30</td>
</tr>
</tbody>
</table>

Table 3. Results

Study 2. Coşkun & Gürel (2018): Based on the data presented in Coşkun (2018), this study reports on the use of nominal and verbal inflectional morphemes in L2-Turkish. The data comes from a set of written production tasks that consisted of written diaries and essays on different topics. An average of 7,000 sentences per participant were collected via these tasks. The written data was analyzed with respect to the (in)accurate use of target morphemes. The participants were 46 L1-English learners of L2-Turkish who attended an intensive summer program in Turkey. Background information about participants is presented in Table 4.

<table>
<thead>
<tr>
<th>Participants (n = 46)</th>
<th>Mean age</th>
<th>Mean age of first L2 Turkish exposure (range)</th>
<th>Mean length of exposure to L2-Turkish (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26 (18–38)</td>
<td>21.4 (15–30)</td>
<td>1.68 yrs (2 months–6 years)</td>
</tr>
</tbody>
</table>

Table 4. Biographical information about participants
As can be seen in Table 4, participants were adults aged between 18 and 38, and all of them had started learning L2-Turkish after the age of 15. Their mean length of stay in Turkey ranged from 2 months to 6 years. According to a placement test, they were classified as either intermediate or advanced-level learners. A cloze test that was administered to assess their proficiency revealed no significant differences between the two groups thus their results were merged in Table 5.

<table>
<thead>
<tr>
<th>Suffixes</th>
<th>Number of obligatory contexts</th>
<th>Number of correct suppillances</th>
<th>Mean accuracy (%)</th>
<th>Mean omission (%)</th>
<th>Mean substitution (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past Tense (-DI)</td>
<td>2,232</td>
<td>2,101</td>
<td>94.1</td>
<td>3.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Reported/Evidential Past (-mIş)</td>
<td>308</td>
<td>198</td>
<td>64.2</td>
<td>13.3</td>
<td>22.5</td>
</tr>
<tr>
<td>Future Tense (-y)AcAK</td>
<td>176</td>
<td>167</td>
<td>94.8</td>
<td>1.2</td>
<td>4</td>
</tr>
<tr>
<td>Aorist (-A/Ir)</td>
<td>1,144</td>
<td>896</td>
<td>78.3</td>
<td>4.8</td>
<td>16.9</td>
</tr>
<tr>
<td>Progressive Aspect (-lyor)</td>
<td>1,255</td>
<td>1,021</td>
<td>81.3</td>
<td>6.7</td>
<td>12</td>
</tr>
<tr>
<td>Ablative (-DA)</td>
<td>800</td>
<td>740</td>
<td>92.5</td>
<td>2.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Accusative (-y)I)</td>
<td>1,439</td>
<td>971</td>
<td>67.4</td>
<td>25.6</td>
<td>7</td>
</tr>
<tr>
<td>Dative (-y)A</td>
<td>2,000</td>
<td>1,757</td>
<td>87.8</td>
<td>5.4</td>
<td>6.8</td>
</tr>
<tr>
<td>Genitive -(n)In/-Im</td>
<td>1,552</td>
<td>1,352</td>
<td>87.1</td>
<td>11.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Locative Case (-DA)</td>
<td>2,437</td>
<td>2,285</td>
<td>93.7</td>
<td>3.4</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Total /mean</strong></td>
<td><strong>13,343</strong></td>
<td><strong>11,488</strong></td>
<td><strong>84.12</strong></td>
<td><strong>7.81</strong></td>
<td><strong>8.07</strong></td>
</tr>
</tbody>
</table>

Table 5. Results of the written production tasks

As Table 5 shows, the participants’ mean accuracy across all target morphemes is 84.12%. The number of omission and substitution errors seems to be equal and does not exceed 8.07%. The analyses also showed that L2 learners display problems only with the use of the Accusative Case morpheme (67.4%) in the nominal domain and the Evidential –mIş (64.2%) in the verbal domain. While Accusative Case errors generally appear in the form of omission (25.6%), -mIş is mostly substituted (22.5%). It seems that, as was the case in Study 1 reported above, the Accusative Case and Reported/Evidential morphemes pose a much greater challenge than other inflectional morphemes. Many factors might have played a role here, but the L2 learners’ difficulty with Accusative Case might be due to the fact that direct object NPs in Turkish are sometimes bare and sometimes marked with the Accusative Case morpheme. L2 learners may need more time and exposure to tease apart the contexts where the morpheme is obligatory. Similarly, the –mIş as a past tense marker might be difficult to acquire, as its use is confined to past events that we have not witnessed ourselves (Ketrez, 2012: 103). Learners might have difficulty with the distribution of –DI past and –mIş past. Thus, it seems that subtle distinctions between bare and Accusative-marked direct objects and –DI past and –mIş past contexts pose a challenge for L2 learners, who are otherwise quite accurate in supplying verbal and nominal inflections in Turkish.

It is, of course, necessary to look more closely into potential linguistic determinants of these accurate and inaccurate morpheme use, but within the scope of this paper, what needs to be underlined is the observation that, overall, L2-Turkish learners with L1-English display high accuracy rates in the use of verbal and nominal inflections.

In sum, both studies described above suggest that, in oral and written production, L2-Turkish learners can master verbal and nominal morphology well, despite the high number of morphemes the language has in its inflectional system. Learners’ difficulty seems to be mostly confined to Accusative Case and Reported Evidential past use.
5. Conclusion

The aim of this paper was to point out the fact that it is high time for SLA research to be supported by new data from understudied languages. Fostering less commonly taught/learned languages will be important governmental initiatives across the world, which will also contribute to the development of the field of SLA. Data from a wide range of typologically different languages may provide converging or contrasting evidence for many long-standing assumptions about L2 acquisition and allow us to gain insights into intricate aspects that have so far remained unexplored. To illustrate this view, the paper briefly discussed two L2-Turkish studies to argue that the variable use of inflectional morphemes commonly reported—particularly in the L2 acquisition of English—may not be as widespread in the acquisition of an agglutinative language like Turkish. The remarkably high accuracy rates that late L2-Turkish learners displayed in these two studies imply that the high number of morphemes to be learned does not necessarily bring much cost to L2 learners of Turkish, a language with a highly regular and transparent morphological system. It seems that, despite potential residual L1 effects, even late L2 learners show sensitivity to the typological properties of the L2, and their morphological learning mechanism might be tuned by the characteristics of the morphological paradigms of the L2 they acquire, as in the case of child-L1 learners. It is also important to note that the specific features of the orthography, phonology, and morphology of a language might determine the way it is processed and eventually acquired by its learners (Frost & Grainger, 2000). Indeed, inflected word processing data can also inform us about how inflectional morphemes ultimately determine the speed and accuracy at which they are acquired in the L2 (Gürel & Uygun, 2013). On this note, research should encourage not only traditional oral and written production data but also online morphological processing data from L2s that have a rich morphological structure. Data from multiple research paradigms and from different languages can provide invaluable insights for researchers and theoreticians to reassess certain long-standing assumptions with respect to the ultimate morphological competence L2 learners can acquire.

In sum, the more accurate and less variable patterns of morpheme use observed in the two L2 Turkish studies (versus flawed morpheme acquisition patterns observed in the acquisition of inflectionally more impoverished languages) can be linked to the regular and transparent morpho-phonological and orthographic characteristics of Turkish. One must, of course, acknowledge the limitations of the small set of L2-Turkish data reported here. Future studies need to verify these conclusions by studying larger and different L2 populations. Promoting the teaching and learning of less commonly taught languages is therefore crucial for further exploration of these issues in the field of SLA.

References


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Word and Phrasal Prominence in Uzbek: a typological perspective

Irene Vogel

University of Delaware

Abstract

In this talk, I consider the general properties of prosodic patterns (stress and focus) in Turkic languages, with a focus on Uzbek stress. It is demonstrated that while there are some basic similarities across different Turkic languages, there are also some interesting differences. One similarity, however, is that fact that it seems that the stress patterns may be characterized as rather weak, at least in comparison with the manifestation of stress in languages with contrastive stress such as Spanish. The potential implications of “weak” stress systems are considered in relation to both production and perception, with the Turkic languages serving as a potentially rich resource for our understanding of such stress systems.
Part II: Formal Linguistics and Research
The Imperative Mood in Tajik

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Department of General Linguistics
St. Petersburg State University

Abstract

The study aims to shed light on some problems, both theoretical and practical concerning the imperative mood in Tajik. In the paper a more comprehensive picture of imperatives is provided, as well as the precise nature of imperative paradigms has been elucidated. It should be noted that the study is based on the language data collected from the Tajik National Corpus (TNC). The data analyzed show that in the most typical imperative situation in the Tajik language, the following combinations can be come across, in which the performer(s) coincides with (a) the listener (2Sg-IMP: 2); (b) the listener plus a third party (2Pl-IMP: 2+3); (c) the listener(s) plus the speaker (1Pl-IMP: 1+2; 1+2+3); and (d) the third party (3Sg-IMP; 3Pl-IMP: 3+3….3). The (a) and (b) combinations are formed morphologically: the former is the uninflected present stem, while the latter is derived from the present stem by adding ‘standard’ personal endings –ed/-eton. However, the present subjunctive (i.e. aorist), which is normally preceded by verbal imperative particles bijo(-ed/-eton) ‘come’ or big(u)zor ‘let’, is used to express the (c) and (d) combinations. The data shows that the aforementioned verbal particles have undergone a process of grammaticalization leading from lexemes to grammatical formatives which serve to constitute the analytical forms of imperative. Finally, regarding the negative forms, the positive imperative verb form is preceded by the ‘standard’ negative particle na-; however, an archaic prohibitive marker ma- is also used, but only in the 2nd person singular and plural.

Keywords: imperative, hortative, command, verbal category, Tajik

1. Introduction

Almost all the world languages have a construction used exclusively for directive speech acts (i.e. commands, orders, instructions, requests or suggestions). The typical construction whose primary function is to urge someone to fulfill a certain action is morphologically dedicated form – the imperative mood. Despite the fact that the category of imperative has received considerable scholarly attention in recent years (see Abdurahmonova, 2002; Aikhenvald, 2010), one of the most significant current discussions in the study of this is concerning the issue of imperative paradigms as toward whom may be oriented directive force. In this paper, I attempt to shed some light on the true nature of ‘imperatives’ with reference to Tajik.

2. Tajik imperative clause: a preview

Tajik, which is derived from New Persian, allows a fairly good mutual intelligibility with the other languages of this branch: Farsi of Iran and Dari of Afghanistan, which belong to the western Iranian group. To provide a more comprehensive picture, I supplement the Tajik source material with Farsi grammar books (see, e.g. Elwell-Sutton, 1972; Natel-Khanlari, 1976) published from different periods.

The language data for this study was collected from the Tajik National Corpus (TNC: https://tajik-corpus.org/); however, the quantitative analysis of imperatives based on the TNC is not provided in this research.
What is imperative?

According to Perry (2005), the imperative mood, or imperative, is ‘a specialized form of the verb, by which the speaker commands someone to perform an action’.

3. Grammatical properties in the Tajik imperative

3.1. The positive imperative

The positive imperative has two types of formation. The first type, which is the most common, the pure, uninflected present stem is used in the 2nd person singular, while in the other persons the personal ending is added to the present stem. The paradigm of the verb *raftan* ‘to go’ in the imperative of this type will therefore be as follows (see Table 1):

<table>
<thead>
<tr>
<th>Number person</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>raft-am</em>&lt;br&gt;‘let me go’</td>
<td><em>raft-em</em>&lt;br&gt;‘let’s go’</td>
</tr>
<tr>
<td>2</td>
<td><em>raft-Ø</em>&lt;br&gt;‘go!’</td>
<td><em>raft-Ø</em>&lt;br&gt;‘go!’</td>
</tr>
<tr>
<td>3</td>
<td><em>raft-ad</em>&lt;br&gt;‘let him/her go’</td>
<td><em>raft-and</em>&lt;br&gt;‘let them go’</td>
</tr>
</tbody>
</table>

**-eton** – is used [colloquially] to specify plural addressees (formal or informal), as distinct from a polite plural actually designating a single person *-ed.

Table 1. The positive imperative Type 1

The second type of imperative formation differs from the first by the presence of the prefix *bi-* (see Table 2). This type is considered a bookish style. The predominant sphere of its use is poetry, the language of which is generally characterized by the preservation of many archaic features. Let us cite as a model the paradigms of the verb *hondan* ‘to read’:

<table>
<thead>
<tr>
<th>Number person</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>bi-hond-am</em>&lt;br&gt;let me read.</td>
<td><em>bi-hond-em</em>&lt;br&gt;let’s read</td>
</tr>
<tr>
<td>2</td>
<td><em>bi-hond-Ø</em>&lt;br&gt;read!</td>
<td><em>bi-hond-Ø</em>&lt;br&gt;read!</td>
</tr>
<tr>
<td>3</td>
<td><em>bi-hond-ad</em>&lt;br&gt;let him/her read</td>
<td><em>bi-hond-and</em>&lt;br&gt;let them read</td>
</tr>
</tbody>
</table>

Table 2. The positive imperative Type 2

According to Rastorgueva & Kerimova (1964), in colloquial language, this type is prevalently used in a slightly modified form /b#< bu< bi-/ in almost all vernaculars, spread to the south of the Zerafshan range, whereas Type 1 is used in the northern dialects, e.g. see (1) the verb *giriftan* ‘to take’.

(1) Standard Tajik

Standard Tajik

Southern Dialect (e.g. in Dushanbe, Kulab)  
Northern Dialect (e.g. in Khujand, Asht)
3.2. The Imperative vs. Subjunctive

The imperative or jussive is the same as the present subjunctive (i.e. aorist), except for the 2nd person singular, which has no personal ending /–j/. In the speech, the Subjunctive and Jussive/Imperative are usually distinguished by the stress (See Table 3), which in the former tends to fall on the personal ending, and in the latter on the prefix’ (Elwell-Sutton 1972: p. 68).

<table>
<thead>
<tr>
<th>Mood person</th>
<th>Subjunctive</th>
<th>Imperative/Jussive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Sg</td>
<td>bi-khar’am. – ‘if I buy’</td>
<td>‘bi-khar-am – ‘let me buy’</td>
</tr>
<tr>
<td>2Sg</td>
<td>bi-khar’j’ – ‘if you buy’</td>
<td>‘bi-khar-Ø – ‘buy!’</td>
</tr>
<tr>
<td>3Sg</td>
<td>bi-khar’ad – ‘if s/he buys’</td>
<td>‘bi-khar-ad – ‘let him/her buy’</td>
</tr>
<tr>
<td>1Pl</td>
<td>bi-khar’em – ‘if we buy’</td>
<td>‘bi-khar-em – ‘let’s buy’</td>
</tr>
<tr>
<td>2Pl</td>
<td>bikhar’ed – ‘if you buy’</td>
<td>‘bi-khar-ed – ‘buy!’</td>
</tr>
<tr>
<td>3Pl</td>
<td>bikhar’and – ‘if they buy’</td>
<td>‘bi-khar-and – ‘let them buy’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number person</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>na-rav-am</td>
<td>na-rav-em</td>
</tr>
<tr>
<td>2</td>
<td>na-rav-Ø</td>
<td>rav-ed*/-eton**</td>
</tr>
<tr>
<td>3</td>
<td>na-rav-ad</td>
<td>na-rav-and</td>
</tr>
</tbody>
</table>

Table 3. Subjunctive and imperative/jussive distinctions

3.3. The negative imperative or Prohibitive

A special case of the imperative is the so-called prohibitive, i.e. the explicit command not to do something (Van der Auwera, 2005).

In Tajik, the positive imperative Type 1 is preceded by the ‘standard’ negative particle na-, and the three person values of imperatives are similar in how they are negated (see Table 4):

(2) ma-kun
do.imp.neg-2sg
‘don’t do!’

However, the positive imperative Type 2 is not compatible with negative markers na-/ma-. The prefix bi- is normally omitted, and then the present stem is preceded by the negative particles. Compare (2) to (3)-(4):

(3) *na-bi-rav // *bi-na-rav
‘don’t go!’

(4) *ma-bi-kun // *bi-ma-rav
3.4. The imperative and other verbal categories

Imperatives typically differ from their indicative and subjunctive counterparts as sometimes they have fewer grammatical categories, or totally lack them. Scholars (Rastorgueva & Kerimova 1964; Perry, J. R. 2005; Abdurahmonova 2002; Aikhenvald 2010) often emphasize that the imperative mood does not realize the category of tense due to the absence of opposed tense forms, which follows, obviously, from the very nature of the imperative, as a command or request can always be oriented only towards the future action, although it is made at some point in the present.

However, the Tajik imperative has all the person-number forms [see Tables 1 & 2] expressed via personal endings (see for more Arzumanov S. & Nesterenko S. 1938; Babadzhanova 2013; Samark’andī 1926/2010).

The data analyzed shows that in the most typical imperative situation in Tajik, the following combinations can be come across, in which the performer(s) coincides with:

a) the hearer (2sg-IMP: 2);

b) the hearer plus a third party (2pl-IMP: 2+3);

c) the hearer(s) plus the speaker (1pl-IMP: 1+2; 1+2+3);

d) the third party (3sg-IMP; 3pl-IMP: 3+3…3).

The (a) and (b) combinations are formed morphologically (Tables 1 & 2), while the present subjunctive, which is often preceded by verbal imperative particles bijo(-ed/-eton) ‘come’ or big(u)zor ‘let’, is used to express the (c) and (d) combinations. As in (5), (6) & (7).

(5) Bijo rav-em, deh’aro toza bi-kun-em.
   come.prtcl-2sg go.imp sbjv-1pl village.n-obj.def-sg clean.adv do.imp sbjv-stem-1pl
   ‘Let’s go lean the village’

(6) Bijo-eton, kam-tar and c nishast-a bo
   come.prtcl-2pl little.stem-compar sit.stem-part.pst with.prep
   Tukhtasun aka suh’bat bi-kun-em.
   elder brother.n.hum-sg talk.n-sg do.imp sbjv-stem-1pl
   ‘Let’s sit down and talk to Tukhtasun aka.’

(7) Big(u)zor shinad.
   let.prtcl-2sg sit.stem-imp sbjv.3sg
   ‘Let him sit down’

4. Conclusions

In conclusion, the following should be mentioned:

• The Tajik imperative is prevalently synthetic (formal markers of number and person), i.e. has a morphologically dedicated paradigm.

• It tends to be homogeneous with present subjunctive. The problem of homogeneity of imperatives with present subjunctive (aorist) has been dealt with, revealing the principal differences in both of these forms.

• The Tajik negative imperatives: ‘standard prohibitive’ vs. ‘strong prohibitive’.

• Tendency towards analytic structure in non-second forms (hortative and jussive).
References


Rastorgueva, V. S. & Kerimova, A. A. 1964. *Sistema tadzhikskogo glagola* [The system of Tajik verb].


Perfective Aspect and Verb Classification in Pashto

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Abstract
Verb in Pashto, a morphologically rich language, is the most complex grammatical category which encodes the features of tense, aspect, gender, and agreement. Pashto verbs display binary aspectual distinction between the unmarked imperfective, and the perfective, which is marked in four different ways depending on the semantic and syntactic properties of the verb class. The present work classifies verbs according to transitivity and how they realize perfective aspect. Six classes of verb are identified: Unergative, Unaccusative, Transitive, Light Verbs, Verbs of Motion, and Verbs with Suppletive Stems.

Keywords: Pashto, Transitivity, Perfective Aspect, Verb Classes

1. Introduction

A. This paper attempts to classify Pashto verbs according degree of transitivity, and their selection of the perfective aspect, which is directly related to transitivity and whether the verb is dynamic (+activity) or static (-activity). Together these criteria present better insights into verb classes.

B. Pashto is linguistically an East Iranian language with SOV word order, in which auxiliaries follow the main verb. It is spoken approximately by 40-45 million people in Afghanistan and Pakistan, with other scattered communities in the Middle East, Europe, and the United States. Pashto has split ergativity similar to Hindi-Urdu, that is, transitive verbs in the past tense agree in number and gender with the direct object, which is in absolute case, while the agent-subject is in oblique case.

1. saṛay mana xwr-i
   The man is eating an apple.

2. saṛi mana xwaṛ-a
   The man was eating an apple.

C. Earlier Verb Classifications
Verb in Pashto is the most complex category which encodes a number of grammatical features such as tense, aspect, agreement, gender, and depending on the class of verb, also incorporates nominal, adverbial, and modal clitics (Tegey 1977). Earlier scholars have classified Pashto verbs according to either their morphological forms or syntactic behavior. For example, Raverty (1987:63 (1860)), posits “no less than thirty-seven classes of verbs, the whole of which vary in some way or other in the formation of the different inflections.” Rishtin (1948, 1965) is based on the inflectional endings of verb stems for tense and aspect; and Tegey (1977) classifies them according to clitic placement.

Most Pashto verbs display two different stems in the present and past tenses. The past tense stem is either augmented or phonetically different from the present stem. The past tense stem, called the infinitive, which is grammatically a verbal noun or gerund, is listed in the dictionary. The verbal ending, suffixed to the stem of a transitive verb indicates the subject in the present tense but direct object in the past tense.
Past Stem | Present Stem
---|---
txt-ed-əl | txt-
lwast-əl | lw-
Xwar-əl | Xwr-
wišt-əl | wal-

2. Aspect in Pashto

There are several interrelated definitions of aspect which depend on the goal of the writing. Comrie (1976:3) defines aspect as the “internal temporal constituency of one situation”. Fleishmann defines aspect in more detail terms as the non-deictic properties of the verb such as “duration, instantaneity, completion, repetition, frequency, inception, termination and the like”, (Fleischmann 1982:11). Givon (1984:276) refers to imperfective as ‘durative’/incompletive’ and perfective as ‘completive’. Other terms used are “Durative and Nondurative Aspects of the Verbs as semantic primitives” (Verkuyl 1972:1). In this paper, the more commonly used terms ‘perfective and imperfective’ are used.

Pashto verbs mark binary aspectual distinction between the imperfective, which is unmarked, and the perfective, which is marked in different ways depending on the semantic and syntactic characteristics of the verb and transitivity. Together these two criteria provide a more accurate insight into the verb classes.

A. Imperfective Aspect

Imperfective refers to an activity as ‘ongoing, incomplete’ and without boundaries. Imperfective is frequently used in all tenses and is used for both the habitual and progressive aspects, similar to those in English. Consider these English examples:

3. John studies chemistry every day.
4. John is studying chemistry now.

Pashto uses temporal adverbs to differentiate between the habitual and progressive aspect without any change in verb forms. The imperfective aspect is the equivalent of both the habitual and that of the progressive.

5. ahmad hara wraz kimiyā lwal -i
   ahmad every day chemistry study-3
   Ahmad studies chemistry every day.
6. ahmad os kimiyā lwal-i
   ahmad now chemistry study-3
   Ahmad is studying chemistry now.

B. Perfective Aspect

Perfective aspect views the activity as a single event without any ‘internal temporal constituency’ (Comrie 1976). It is used in the past tense of verbs when reporting an activity as a single, completed event. There are several closely related definitions of the Perfective in the past tense in different languages. For example, in Classical Greek, it is called ‘aorist’; in English it is ‘simple past’, like in John wrote two letters yesterday. Pashto marks the Perfective in more than one way depending on the semantic properties of the verb; the common perfective marker wə- is used with dynamic verbs.
7. ahmad parun Xat-una lik-əl
ahmad-OBL yesterday letter-ABS-pl write-3pl
Ahmad was writing letters yesterday.

8. ahmad parun Xat-una. wə-lik-əl
ahmad-OBL yesterday letter-ABS-pl PRF-write-3pl
Ahmad wrote letters yesterday.

C. Perfective and the Subjunctive in Pashto

In the present and future tenses, the perfective aspect functions as subjunctive. These functions are parallel, in form and meaning, to the subjunctive mood in Persian. The common perfective prefix wə / wa, used with dynamic verbs, is cognate with the Persian subjunctive and imperative prefix be-. However, the subjunctive and perfective functions have merged in Pashto, as evidenced in the imperative and the complements of certain verbs.

The direct imperative is marked by the suffix -a when the addressee is second person singular, and the intended meaning is imperfective. The verb ending changes to 2nd plural -əy when addressing more than one person.

9. Xat-una lik-a
letter-pl write-IMP
Write letter (continue)!

10. Xat-una lik-əy
letter-pl write-2pl
Write letters!

However, when the perfective wə- is used, the intended meaning is a ‘single act, from start to finish’.

11. Xat wə-lik-a
letter PRF-write-IMP
Write a/the letter!

12. Xat-una wə-lik-əy
Letter-pl PRF-write-2pl
Write the letters!

The Perfective aspect also functions as the subjunctive in the complements of control or “manipulative” verbs, such as want, intend, plan (Givon, 1984:318).

13. ahmad ğwār-i če da ketāb wə-lwal-i
Ahmad want-3sg that this book PRF-read-3sg
Ahmad wants to read this book.

14. *ahmad ğwār-i če da ketāb lwal-i
Ahmad want-3sg that this book read-3sg
Ahmad wants to read this book

Perfective aspect is also optionally used in conditional sentences, depending on how the speaker views an event.

15. ka zə da ketāb lwal-əm
if I this book read-1sg
If I read this book. (Imperfective)
3. Verb Classes

In this article verbs are classified primarily according to two interrelated criteria: transitivity and the perfective aspect, and secondarily, the shared semantic and syntactic properties of each verb class.

A. Intransitive-Unergative

These verbs denote activity and take an animate agent as their subject. These mark the perfective aspect by stressed prefix \( \text{wa} \) / \( \text{wa} \).

17. \( \text{zə pa-pārk-ke hara wəz gərz-əm} \)
   I at park in every day stroll-1sg
   I stroll in the park every day.

18. \( \text{zə pa-pārk-ke parun wa-gərz-ed-əm} \)
   1-sg at-park-in yesterday PRF- stroll- DTR-1sg
   I strolled in the park yesterday.

When the transitivizer (TRN) -aw-, is suffixed to these verbs, the unergative verb changes to causative, with higher transitivity than regular transitive verbs.

19. \( \text{zə pa-pārk-ke xpəl zoy gərz-aw-əm} \)
   I-NOM at-park-in own son walk-TRN-1sg
   I am walking my son in the park.

20. \( \text{mā pa-pārk-ke xpəl zoy wa-gərz-aw-ə} \)
   I-OBL at-park-in own son-ABS PRF-walk-TRN-3sg
   I walked my son in the park.

Some examples of unergative and their causative counterparts are:

21. a. gərz-ed-əl walk
     gəg-ed-əl talk
     zgəl-ed-əl run
     zawr-ed-əl suffer

   b. gərz-aw-əl walk someone
     gəga-aw-əl talk someone
     zgəl-aw-əl run someone
     zawr-aw-əl make someone suffer

B. Intransitive-Unaccusative

Most intransitive verbs in Pashto are of the unaccusative type in which the grammatical subject shares certain properties with the direct object of transitive verbs, that is, the subject undergoes change of state. These verbs are derived from adjectival stems with detransitivizer [DTR] -ed-, which in the present tense becomes -eg- in South-Eastern Pashto and -ze- in South-Western dialect. These verbs form perfective with the perfective form \( \text{swəl} \) of the intransitive auxiliary \( \text{kədəl} \), ‘happening’.
22. mez māt-ed-ə
table break-PST-3sg
23. mez māt-eg-i
table break-DTR-3sg
The table is breaking.
24. mez māt -š-ə
table broken-became-3sg
The table broke.

In sentence (22) -ed- has dual function: it both marks the past tense and also indicates that the verb is intransitive. In (23), -ed- changes to -eg- in the present tense; and in (24), its perfective -š- form is used. Verb ending in the present tense indicates person only, but in the past tense, it also indicates number and gender.

25. sanduk-una taš -eg-i
box-pl empty-DTR-3sg
The boxes are being emptied.
26. sanduk-una taš- ŕw- əl
box -pl empty became-3pl
The boxes emptied/became empty.

Since the Unaccusative verbs are derived from adjectival stems, and the subject NP undergoes a change of state in a non-causative action or process, making the construction resultative. This is however different from the direct object of a transitive sentence, in which the change is caused by the agent/subject. Some examples of such resultative constructions are:

27. māt mez
table broken
The broken table.
taš sanduk
empty box
The empty box
paXa korma
cooked-3f stew-3f
The cooked stew.

However, if the verb stem is [+activity], that is, unergative, then it does not form a resultative construction.

28. hawā wa-cal-ed-a
wind PRF-blow-PST-3sf
The wind blew.
29. * cal-ed-əl-i hawā
blown wind
The blown wind.

C. Regular Transitive

These are typical transitive verbs that take an agent-subject and a patient-object. Pashto has relatively a small number of transitive verbs whose stems remain unchanged in the past and present tenses. Rishtin (1965)
lists only (47) verbs as regular transitive as most other verbs are morphological compounds. Like the unergative verbs, these verbs form perfective aspect with the perfective prefix \textit{wə-}.

30. mā parun māzdigər kāli minz-əl
I-OBL yesterday afternoon clothes-ABS wash-3pl
I was washing my clothes yesterday afternoon.

31. mā parun māzdigər kāli \textit{wə-} minz-əl
I-OBL yesterday afternoon clothes-ABS PRF- wash-3pl
I washed my clothes yesterday afternoon.

32. bazgər-ān nən juwār reb-i
farmer-pl today corn harvest-3
Farmers are harvesting corn today.

33. bazgər-ān -o juwār \textit{wə-} reb -əl
farmer-pl-OBL corn-ABS PRF-harvest- 3pl
Farmers harvested corn.

When transitive verbs are causativized, the true agent/subject who acts is put in a prepositional phrase so that a causative sentence has structure NP1-PP-NP2-V, where the first NP is the instigator, the actual agent is in the PP and the direct object is NP2.

34. zə pa-bazgər-ān -o juwār reb-əm
I at-farmer-pl-OBL corn harvest-1sg
I am having the farmers harvest the corn.

35. mā pa-bazgər-ān -o juwār \textit{wə-} reb -əl
I-OBL at-farmer-pl-OBL corn PRF harvest-3mp
I had had the farmers harvest the corn.

\textit{D. Light Verbs}

Light verbs are highly productive in terms of frequency in Indo-Iranian languages such as Urdu/Hindi, Persian and Pashto. In Pashto, most light verbs have the structure N+V, in which the first element is some type of nominal and the most frequent second element is the transitive auxiliary \textit{kawəl} ‘do’ for transitive verbs and \textit{kədəl} ‘become’/ ‘happen’ for intransitives. Where in English, verbs like \textit{think}, \textit{telephone}, \textit{work}, \textit{try} are intransitive, in Pashto these are grammatically transitive. The nominal element functions as the direct object and the auxiliary functions as the main verb:

36. zə pekar kaw-əm
1-NOM sg think do-1sg
I think.

37. mā pekar kāw-ə
I-OBL think-ABS do-3sg
I was thinking

38. zə košəš kaw-əm ce kāmyāb šə -m
I try do-1sg that successful become-1sg
I am trying to be successful.

39. mā košəš \textit{wə-kə} ce kāmyāb šə-m
I-OBL try-ABS PRF-did that successful become-1sg
I tried to become successful.
The imperfective form of *kawəl* is used in (38) but in (39), the perfective aspect is marked by both the perfective marker wə- and -kṛ, which is the perfective form of *kawəl*.

Syntactically, these verbs behave as regular transitive, that is, in the past tense, the verbal element agrees with the nominal element, but semantically have lower transitivity than regular transitive verbs.

40. mā der košəš-una wə-kṛəl ce kāmyāb šə-m
   I-OBL many try-pl-ABS PRF-did-3pl that successful become-1sg
   I made many efforts to become successful

In the Light Verb constructions the original meaning of individual elements is not literally interpreted. Rather the predicates in many instances take on idiomatic meanings.

41. lobe kaw-əl
   play do
   playing
   ġwəg niw-əl
   ear hold/seize
   listening
   cane wah-əl
   bargain hit
   bargaining

Light verbs are further divided into two groups: those made up of a nominal and verbal element N+V, such as in examples [36-39], and those which have two nominal elements N+N+V. Examples of the second type are:

42. istemāl kaw-əl
   use do
   using/to use (something)
   pedā kaw-əl
   evident do
   finding/to find (something)
   muāena kaw-əl
   inspect do
   inspecting/inspect (something)

Verbs in this group form complex transitive predicates in which the verbal element agrees with the first nominal element in the past tense, compared to the first group, where the verb agrees with the only nominal element.

43. mudir wadānəy muāena kaw-əl-a
   director building examine do-past-3sf
   The director was examining the building.

44. mudir wadānəy muāena kṛ-a
   director building inspect PRF-did-3fs
   The director inspected the building.

45. mā pa-amrikā -ke dere pese pedā kaw-əl-e
   I at-America-in much money find do-pl-3fp
   I used to make much money in America.
46. mā pa-amrikā -ke dere pese pedā kṛ -e
I-OBL at-America-in much money find- PRF-did-3fp
I made much money in America.

E. Verbs of Movement

These verbs encode direction + movement and are listed as irregular in Pashto grammars for two reasons: first, because they are made up of two different morphemes, and second, they do not follow a predictable rule-oriented pattern. Their meanings are controlled by the physical contexts and the intent of the speaker. The first morpheme indicates direction and the second indicates movement. Some examples are:

47. ke-xod-əl
   down-put
   put (something) down
   ke-nāst-əl
   down-sit
   sit down
   pre- xod-əl
   away-put
   put (something) and move away
   pre-kawəl
   away-do
   sever/cut

Pashto has lost the generic verb for give, instead it is replaced by different combinations of directional clitic pronouns depending on the person to whom something is given: rā- to 1st, dər- to 2nd, and wər- to 3rd.

48. rā-kaw-əl
   to 1st- do
   give to 1st
   dər-kaw-əl
   2nd  do
   give to 2nd
   wər- kaw-əl
   to 3rd do
   give to 3rd

The perfective aspect in all these verbs is formed by shifting the stress to the first morpheme.

49. zə pa-cawkəy ke-nāst-em
    I at-chair down-sit-1sg
    I was (going to) sit on chair.

50. zə pa-cawkəy ke-nāst-em
    I at-chair down-sit-1sg
    I sat down on chair.

51. Leilā kor-ta nəna-watal-a
    Leila home-to inside-went-out-1sf
    Leila was entering home.
52. Leilā kor-ta  nəna-  watəl-a  
Leila home-to inside-went-out-1sf  
Leila entered home.

In sentences (46 and 47), watəl literally means ‘go out / exit’, but its meaning changes in various contexts depending on the directional morpheme, for example,

53.  pre + watəl  to lie down  
 nəna + watəl  to enter  
 pore + watəl  to go across (something)

Similarly, the high frequency intransitive verb tləl ‘go’ uses different stems in the perfective and also shifts the stress to the first syllable.

54. zmā mor  parun  kor-ta  ra-ğl-a  
my mother yesterday home-to PRF-came-3sf  
My mother came home yesterday.

55. zmā mor  parun  kor-ta  ra-tl-a  
my mother yesterday home-to came-3sf  
My mother was coming home yesterday.

F. Verbs with Suppletive Stems

AA small number of transitive verbs of movement use suppletive forms in their imperfective and perfective aspects, depending on whether the direct object is animate or inanimate, similar to the English verbs take and drive.

54. kəla ce  rātl-əm  no  xpəl  ketāb-me  hum  rā-wṛ  
when that come-1sg then own book-1sg also bring-3sg  
When I was coming, I also brought my book.

55. kəla ce  rātl-am  no  xpəl wror-me  hum  rā-wist  
when that come-1sg then own brother-my also bring-3sg  
When I was coming, I also brought my brother.

3. Summary and Conclusion

Pashto verbs are morphologically versatile and are structurally different from English verbs, which have been the subject of numerous researches. On the transitivity scale, the majority of verbs can be made intransitive or transitive depending on message being delivered. However, where the perfective aspect is concerned, it is the verb stem that requires a particular form of the perfective. Rishtin (1965) lists only 47 regular transitive verbs in Pashto whose stems remain unchanged in the past and present tenses. All others, whether transitive or intransitive, exhibit some form variation in the past and present tenses, in the selection of auxiliary, and choice of aspect.

Unergative verbs are [+activity] and take an animate subject. Unaccusative verbs are formed from adjectival stems and form resultative constructions. However, a large number of both Unergative and Unaccusative verbs are formed with the de-transitivizer [DTR] suffix -ed-, a short form of the intransitive auxiliary kedəl ‘happening’.
56. təxt-ed-əl
   run away
   jang-ed-əl
   fight
   dar-ed-əl
   fear

Since these verbs are derived from [+activity] stems, they select wə- as perfective marker:

57. zə paros kāl  da-kor  -na  wə-  təxt  -ed-əm
   I-sg last year of-home-from PRF-run away-DTR-1sg
   Last year I ran away from home.

When the transivizer [TRN] -aw- is used, the verb changes to a causative one:

58. mā       paros kāl   yaw halak wə-təxt-aw-ə
       I-OBL  last year  one  boy PRF-run away-TRN-3sg
       I kidnapped a boy last year.

Unaccusative verbs select the perfective form šwəl of the intransitive auxiliary kedəl.

   wəc-ed-əl
   dry
   pāk-ed-əl
   clean
   wrān-ed-əl
   destroy

59. pa-bārān-ke der     kor-una   wrān          šw-əl
   at  rain     in many home-pl destroy became-PRF-3pl
   Many homes were destroyed in the rain.

These verbs select the perfective form of kedəl even if the grammatical subject is [+animate] because the verbs have adjectival stems.

60. leilā  Xušāla         šw-a
    leila   happy-3sf became-3sg
    Leila became happy.

61. askar  pa-jang-ke ʐobəl      š-ə
    Soldier at-fight-in wonded became-3sm
    The soldier was wounded in the battle.

The following verb classes are identified in this paper:

Though these verbs take animate subject, and even when these made transitive with the transitivizer -aw-, they select the perfective form of the transitive auxiliary kawəl ‘do’, not wə- which is used with dynamic stems.

62. askar zə  żobl  kr-əm
    soldier I  wound did-1sg
    The soldier wounded me.

This is a preliminary attempt to classify Pashto verbs according to how they realize perfective aspect. An exhaustive classification will take many other criteria into consideration. Further research is needed to fully understand the syntactic and semantic properties of all variatations.
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Preserving of the Buryat language in the “Buddhist basket”

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Abstract

The article is devoted to the process of translation (adaptation) of Buddhist canonical texts from the Tibetan and Mongolian into the Buryat language (in Cyrillic script). The study of the causes and content of this process is relevant, since the research problem is related to the changes in the traditional book culture of the Buryats and the features of preserving the Buryat language in modern conditions. The material for the analysis was the data of field works of the Institute of Mongolian, Buddhist and Tibetan studies SB RAS (2006-2015) as well as a set of Buddhist canonical texts published in Buryatia (the pre-revolutionary period and after 1991). Conclusion. Translation (adaptation) of Buddhist canonical texts from Tibetan and Mongolian into Buryat language was created due to changes in the everyday religious practice of ordinary Buryat Buddhists. Three forms of translation of Mongolian and Tibetan texts into modern Buryat language represent the level of works on the preservation of the Buryat language in the structure of religious culture, as well as the level of the revival of Buddhism in Buryatia. Various forms of translation (adaptation) of Buddhist canonical texts show a competition between two directions of everyday religious reading: the Mongolian letter-by-letter and close to the Buryatian. These forms reflect the modern discussion that arose in the 90s about the role of Mongolian and Buryat language for the development of the Buryat culture.

Keywords: Buryat language, Buddhist canon, everyday book culture, translation

1. Introduction

The area of preserving and studying the Buryat language has many sections. One of the most promising and unexplored section is the actualization of the Buryat language within the Indo-Tibetan Buddhist heritage (Kangyur). This section has several subsections. The most important subsection is the translation (adaptation) of Buddhist canonical texts from Tibetan and Traditional Mongolian to Buryat language (Cyrillic script)1. The studying of the causes and content of this process is a burning issue in contemporary Mongolian studies, since the research area relates to the changes in the traditional book culture of the Buryats and the problem of preserving the Buryat language in modern conditions (beginning from the 90s)2.

The materials for the analysis was the data of fieldworks (Institute of Mongolian, Buddhist and Tibetan studies – Russian Academia of sciences, 2006-2015) as well as a set of Buddhist canonical texts that were published by Buryat publishing houses both in the pre-revolutionary and after the 90s of the 20th century.

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1 This process was discovered in the Republic of Kalmykia (Muzraeva, 2012). A similar process is also noted in Mongolia, the translation of Kangyur and Dangyur into the Cyrillic script of the modern Mongolian language (Kalachakra culture center, 2021).

2 The problem of preserving the Buryat language in Buryatia is considered in the works of modern researchers (Graber, 2012; Dyrkheeva, 2018).
2. What are the reasons for translations (adaptation) of Buddhist canonical texts from Tibetan and Mongolian into Cyrillic “Buryat”? 

Fieldwork showed that the Buddhist book culture of the Buryats did not disappear but is developing now. The traditional cult practice of Buryat Buddhists consists of various forms of religious veneration and storage of books, and all the elements of this practice have been preserved to a certain extent. The books are traditionally kept in an honorary place in the house—the Khaymor (north side). Usually, books are placed on top of the Gungurba (a special cabinet for religious objects), in the highest objective position. The book cult practice also includes various forms of the ritual associated with the books. Takhikha refers to the daily observation of the rules for venerating, storing and worshiping the book; aruyulkha is the daily cleansing the book (removing dust, applying it to the head); hebikhe, or eridekhe refers to flipping through the pages of the book, while counting rosary beads (the book and its pages breathe at this time); dalga khekhe is the act of bringing books to the datsan and placing them on one’s knees during the service (reading by monks is said to the book, and activate its work); goro khekhe involves walking around the village with a book, as the book drives away evil spirits from the village.

However, the most important part of the book’s religious practice is reading. Local pre-revolutionary Buddhist books are written in two languages, Tibetan and Mongolian. During the course of the cultural revolution, the population—in the framework of the “struggle against illiteracy,” refused to use the Tibetan and Old Mongolian languages. Thus, practically no one speaks these languages today. Thus, with Tibetan language literature, Buddhists usually invite monks to read monks’ books. This is often done in June, and sometimes in February during the celebration of the Eastern New Year - Saagaalgan. Outside these calendrical dates, monks can also be invited to read Buddhist books if necessary to preside over funerals and weddings, solve life issues such as trouble at work or conflicts in the family, or bless people when they move to a new place, etc. even though the believers do not understand the meaning of the text read in the Tibetan language. Modern Buddhist monks have a rather poor command of Mongolian (though up until the 1930s most local lamas were competent in the language), while now they are more likely to speak Tibetan. It should be noted that in some regions there are elderly laymen who have preserved the practice of reading Buddhist texts in the Mongolian language, such as Tsyzhip Zhanaeva (born in 1918) in the village of Mozhayka, in the Eravninsky District of the Republic of Buryatia (visited during the expedition of July 2009) and Bimba Purbuev (born in 1924) from the village of Tohoy of Selenginsky District of Buryatia (expedition of 2013). An interesting phenomenon in this direction was recorded in the village of Khuzhir (Tunkinsky District of Buryatia, expedition 2007). In a local Buddhist monastery, the abbot Innokenty Sotnikov initiated the monastic ritual reading of the Yum (Śatasāhasrikāprajñāpāramitāsūtra), using the Buryat pronunciation. Nevertheless, these examples are rare in the modern Buryat book culture.

Despite the importance of the actualizing of Tibetan and Mongolian texts in the daily ritual practice, another direction becomes the main one in the development of the book culture of the Buryat Buddhists. Since the lay believers in Buryatia do not understand the text in Tibetan and Mongolian graphics, the movement for reading in their native language is growing among the Buryats. Accordingly, the number of translations of canonical texts in the modern Buryat language is also growing. Lay Buddhists are increasingly using texts made in Cyrillic graphics and adapted to the modern Buryat literary language. There are now a large number of old pre-revolutionary books (Tibetan and Mongolian) in the collections of Buddhist literature of ordinary Buddhists. However, modern Buddhist editions are gradually replacing them. Much of the region’s Buddhist literature is Buryat texts in Cyrillic script. In the expeditions of 2012-2014, it was noted that for the first time

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3 The radicalism of this event lies in the fact that the tradition in the Buddhist monasteries of Buryatia and Mongolia involves the use of the Tibetan language for the ritual reading of canonical literature.

4 In addition to local publications, modern publications from China, India, Mongolia are also found in the collections; family religious libraries are recreated and replenished with modern Buddhist literature.
3. Analysis of the content of translation activities.


First, where the distance between the translated text and the modern Buryat language is significant. The first version of this adaptation of Mongolian to Cyrillic script of Buryat language is presented in the work “Etigel” (translator Shirap Tsydenezhapov, 1991). This “translation” was an achievement at the time. It is still a “reference book” for many Buddhist laities in Buryatia. The specifics of this translation is a successful trilingual form of presenting the text (simultaneously in Mongolian, Tibetan, Buryat language). This book is an initial “textbook” for local Buddhists because its structure is convenient for the user who does not know Mongolian (Tibetan) and serves as an original “introduction to the language”.

The second version (of this form of translation) is presented in the work “Dorzho Zhodbo II” (translator Mikhail Batoin, 2009). Comparison of the Mongolian original and the translation showed that this text (created about twenty years after the first) could no longer be considered “textbook” and “introduction to the language”. However, it is a continuation of that trend, which was presented in the first version. The form of translation of canonical texts (in its two versions) is a letter-by-letter translation of Mongolian into Cyrillic Buryat. The

Footnotes:
5 On the territory of Buryatia, the bulk of this confessional literature is published by three Buddhist organizations: the Traditional Buddhist Sangha of Russia, the “Green Tara” society of Tinley Teacher, the Buddhist organization, whose spiritual leader is Eloy-Rinpoche.
6 The difficulty of the definition lies in the fact that Mongolian texts often are not translated, but are transliterated in the Cyrillic script.
7 For examples: “bi terigüten eke boluγsan oγtarγui-yin kiǰaγar-luγ-a sačaγu qamuγ amitan arban ǰüg-ün γurban čaγ-un qamuγ tegüčilen iregsed-ün bey-e jarliγ sedkil erdem üyiles-ün mön ğınar boluγsan” (Itigel yabuγulqu-yin yosun orusiba, f. 1v).
8 For examples: “subudi-a tegün-ü tulada sonuʃu masi sayitur sedkil-dür-iyen baridγun, budisadu-a nar-un kölgen-dür ünen mayad oruldusad, kerkiǰü aqui, kerkiǰü bütügeküi kerkiǰü sedkil-iyen sayitur bariqu-yi čimada nomlasuγai bi” (Qutuγ-tu včir-iyar oγtaluyči sudur orusiba, f. 4r–4v).
proposed adaptation (translation) in the Cyrillic interlinear form allows the reader to read the Mongolian text in Cyrillic transcription. Many conservative believers of this region consider the letter-by-letter reading of the Mongolian text as true and traditional. The undoubted achievement of those translations (adaptations) is the direct Buryat Cyrillic presentation of Buddhist canon texts, which is understandable and comfortable in using for modern Buryats.

The second form of translation (adaptation) of Buddhist canonical texts into Cyrillic Buryat relates to those that creatively transform Mongolian into modern “Buryat”. The first version of this adaptation is presented in the work “Dorzhodbo I” (translator Innokenty Sotnikov, 2000). This work reflects the desire of translators to use the dialects in the Buryat language. Due to this desire, the dialectal features of the spoken Buryat language (ignoring the formal rules of modern literary Buryatian) are presented here.

Another version of this adaptation is presented in the work “Manzushiriin nerye yegukhe” (translator Bair Tushinov, 2019)\(^9\). Comparison of Mongolian fragments of texts with their Buryat correlates allows us to assert that these translations are not only their presentation in Cyrillic but phonetic and pragmatic adaptation to the phonetic diversity of modern Buryat language.

The third form of translation (adaptation) can be characterized as ideal, where the canonical text is translated into modern literary Buryat. The first version of this adaptation is presented in the work “Ulgerey Dalai” (translators Gunga Chimitov, Tsypyla Chimitova, 2005)\(^11\). The second option is presented in the work “Altan gerel” (translator Sandam Dashitsyrenova, 2007)\(^12\). These variants represent the maximum morphological and phonetic functionality of the literary Buryat language.

4. The social significance of translations.

The results of interviews with respondents showed the importance of these translations for the Buryats. In one of the interviews, the respondent Zhamasaranzhab Bazarov, practicing daily reading in the native language

\(^9\) For examples: “subudi-a tegün-ü tulada sonusçu masi sayitur sedkil-dür-iyen baridyun, budisadunu nar-un kölgen-dür ünen mayad orulduysad, kerkijü aqii, kerkijü bünüegükii kerkijü sedkil-iyen sayitur bariqu-yi çimada nomlasuyai bi” (Qutuγ-tu včir-iyar oytaluγyci sudur orusiba, f. 4r–4v).
Translation: “Субади, аа, ынгэ ээсийн тулда соносожо, мэсэ хийхээр сэдьхэлдээ баржад, Бодисаданаар ынгээдэн үнэн лаб орольдогшоо яянаа байха, яянаа бүтгэхэс, яянаа сэдьхэлдээ хийхээр бархыа шамда номлолох би” (The Diamond Sūtra, 2000, f.3v).

\(^10\) For examples: “öngge ügei sayin öngge-yin degedü buyu, eldeb öngge-ten sedkil-eče törüyü, öngges-i qamuy-a üjęgülügci چоγту, öngge körög-i qočurli ügei bariγči (Qutuγ-tu mañjuśrī-yi nerye-yi üneker ögülegsen orusiba” F. 10v).
Translation: “Үнгэ үгы һайн үнгэ дээдэ, Элдэб үнгэтэн сэдьхэлээ түрэээ, үнгэнүүдө үмүттэ хамагта үгүүлэхэ сорто, үнгэ хүртэг хөсөрлүүгүй биргүү” (Ārya Mañjuśrī nāma saṃgīti, 2019, p.34).


\(^12\) For examples: “Ijaγurtanu köbegün e adalidqabasu, ked ba ǰarim nigen ečige eke erdeni ed tavar bükü-yi üǰeǰü, tere ed-i tavar ҽγun-u tulada kemebesü, ečige eke-yin tere ed-i nasuda bui kemen sedkikü-yin tulada bolai, tegünčilen ilaǰu tegüs nögčigsen niravan ülü bolun nasuda saγubasu tegün-dür ҽγun-u tulada kemebesü, ečige eke-yin tere ed-i nasuda bolai” (Qutuγ-tu degedü altan gerel-tü sudur orusiba, f.13r).
of canonical literature, expressed the idea that the current situation with the Buryat language is extremely difficult. Language balances between preservation and salvation. The problems of preserving the language are solved by the social policy of the state, which is extremely limited in modern conditions. Therefore, he turned to the problem of language salvation. According to his opinion, this problem is being solved in the space of Buddhist truth and faith. In further interviews, lay Buddhists emphasized that their practice of daily religious reading saved their Buryat language. In this case, there is a clear attempt to solve social problems using soteriological methods.

5. Conclusion.

The translations (adaptations) of Buddhist canon texts in the modern Buryat language are created due to changes in the daily religious practice of ordinary Buddhist Buryats. These changes are primarily associated with the revival of book culture in local Buddhism. Since the reading of religious literature is central for this culture and lay believers do not know the Tibetan and Old Mongolian, the process of translating Buddhist texts into modern Buryat language in Cyrillic graphics is expanding in Buryatia. Although this process began in the 40s and 50s of the last century, its rise is currently taking place.

The three above-mentioned forms of translations of Mongolian and Tibetan texts into modern Buryat show the level and depth of work on the preservation of the Buryat language in the space of religious culture. Professional linguists, writers, Buddhist monks, teachers, ordinary believers take part in these translations. This demonstrates the social significance of these transfers. It should be noted that the process of translating was carried out without state support for the development and preservation of the Buryat language.

The difference in the forms of translation (adaptation) of Buddhist canonical texts reflects not only the competition between two directions of daily religious reading in the Buryat language: letter by letter from Mongolian and literary Buryat language. These forms reflect a contemporary discussion that arose in the 1990s in Buryat society. The discussion is devoted to the issue of the role of the Mongolian and literary Buryat language for the future cultural development of the Buryats. Details of this discussion show that Buddhist laymen of Buryatia want to revive their Buddhist and Mongolian identities while preserving the cultural heritage of the Soviet period in the development of the Buryat language and literature.

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Interface constraints for nuclear stress assignment under broad focus in Western Armenian vs. Turkish and Persian

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Abstract

Western Armenian is an understudied Indo-European language. We document the distribution of nuclear stress under broad focus for Western Armenian, and contrast the data against Turkish and Persian. We capture the distribution and cross-linguistic differences by defining a set of constraints that reference head-complement relations, directionality in ditransitives, and the stressability of manner adverbs and definite objects. These constraints and their ranking allow definite objects to be stressed in Armenian and Turkish, but not in Persian. We argue that the differences in the placement of nuclear stress across the three languages cannot be completely boiled down to just syntactic differences, but must reference arbitrary constraints on the syntax-phonology interface.

Keywords: Armenian, Turkish, Persian, nuclear stress, phonology-syntax interface

1. Introduction

Nuclear stress is the perception of the most prominent prosodic constituent in a sentence. This paper documents the distribution of nuclear stress in Western Armenian. Armenian is an Indo-European language with two standard lects: Western (WA) and Eastern (EA). There is scant documentation on the assignment of nuclear stress in Armenian. This paper focuses on broad focus contexts, meaning sentences where all information is considered new information without narrow focus or contrastive focus. Armenian is an SOV language, and nuclear stress is immediately preverbal for most cases. We look at constructions utilizing simple SOV orders, complex predicates, object dropping, bare vs. definite objects, ditransitives, and low adverbs.

Throughout this paper, I regularly discuss the Armenian data in contrast to Turkish (TU) and Persian (PA), two languages that have been in contact with Armenian. We find that the Western Armenian data is more similar to Turkish than to Persian. For example, like Turkish, Western Armenian assigns stress to the rightmost argument in ditransitive constructions. Armenian likewise distinguishes morphologically simple vs. complex low adverbs, such that only the simple ones can take stress. The simple adverbs likewise have strict restrictions on where they can appear in sentences. In contrast, Persian bans assigns leftmost stress in ditransitives, and it does not distinguish morphologically simple vs. complex adverbs.

The most significant aspect of this paper concerns definite objects. We argue that they can carry nuclear stress in Turkish and Western Armenian, but not Persian. We argue that this cross-linguistic contrast is not due to any differences in the syntax of these languages. All three languages are reported to treat definite objects as higher than bare objects.

For work on the syntax-phonology interface, there is a wealth of formal devices for the assignment of nuclear stress under broad focus. But many of these have been developed based on Romance and Germanic data, which has markedly different syntax from Armenian and thus doesn’t neatly fit with the Armenian data (Adger 2007; Bresnan 1971; Chomsky & Halle 1968; Cinque 1993; Zubizarreta 1998). Furthermore, although there is more cross-linguistic work on using optimality constraints for nuclear stress (Féry 2013; Samek-Lodovici 2005), most work concerns the acoustic and syntactic effects of narrow focus, not broad focus sentences. Thus, I developed my own constraints to describe the various factors that affect the placement of
nuclear stress. The rankings of these constraints can capture subtle variations across Armenian, Turkish, and Persian. These constraints are listed below and they encapsulate parameters on nuclear stress placement, such as parameters on head-argument relations and directionality.

(1) Parameter-like constraints for nuclear stress under broad focus
   a. COMP: Stress is on the complement of the verb.
   b. STR-VP: Stress is within the verb phrase.
   c. *SPEC-DO: Stress is not on definite direct objects.
   d. L-ARG OR R-ARG: Stress is on the leftmost or rightmost argument in VPs with multiple arguments.
   e. MADV: Stress is on manner adverbs.

This paper is organized as follows. §2 provides background information on Armenian syntax and prosody. §3 describes stress assignment in simple SOV sentences, with bare or indefinite objects (§3.1), complex predicates (§3.2), and object dropping (§3.3). §4 discusses definite objects which can be stressed in Western Armenian and Turkish, but not Persian. §5 discusses ditranstives, §6 handles adverbs, and conclusion are in §7.¹

2 Background on Armenian

This section gives overviews of work on Armenian syntax and prosody, both in Western Armenian and Eastern Armenian, with some known contrasts against Persian and Turkish.

On the syntax side, there is some work on Western Armenian (Khanjian 2013; Sigler 1997) and Eastern Armenian (Apresjan & Polinsky 1996; Hodgson 2019b; Megerdoomian 2009; Tamrazian 1994; Yeghiazaryan 2010). For the prosodic system, there is some work on finding the acoustic cues of lexical and sentential prominence in Western (Athanasopoulou, Vogel, & Dolutian 2017) and Eastern Armenian (Hagherdvi 2016). There is likewise work on the acoustics of intonational contours in Western (Toparlak 2019) and Eastern Armenian (Skopeteas 2019; Volska & Grigoryan 1999, 2000). In terms of rhythm, some studies describe Armenian as syllable-timed, both for Eastern Armenian (Bagdasaryan & Vanyan 2015; Mirakyan 2016; Vanyan 2015) and for Western Armenian (Vogel & Athanasopoulou, 2018).

But to my knowledge there is no explicit discussion on the assignment of nuclear stress in different types of syntactic constructions in Western Armenian. Furthermore, the bulk of intonational and prosodic data on Armenian concern constructions which have contrastive or narrow focus (Dum-Tragut 2009; Johnson 1954). Some Soviet grammarians imply that, in broad focus, Armenian lacks sentential stress (Abeyan 1933:23-4). To my knowledge, the largest body of work on nuclear stress in Armenian concerns the correlation between nuclear stress and auxiliary placement in Eastern Armenian (Comrie 1984; Hodgson 2019a, 2019b; Kehmeyipour & Megerdoomian 2011, 2017; Megerdoomian 2009; Tamrazian 1994).

In contrast, there is a wealth of syntactic and prosodic literature on Turkish and Persian. Armenian has had millennia of language contact with both languages, and this has led to many syntactic and prosodic parallels across the three languages (Donabedian & Sitaridou 2021). For instance, all three languages are SOV and

¹ I thank Nazila Shafiei for Persian judgments, and Yāğmur Sağ for Turkish judgments. I thank Arsalan Kahmemuyipour, Beste Kamali, and Omer Ozcelik for discussion. Transcriptions are in IPA for Armenian, orthography for Turkish, and transliterated for Persian. For Armenian, we transcribe the segments /ɑ,ɛ,ɔ,ɾ,χ,ʁ,r/ as a,e,o,r,x,ɣ,ṙ; we do not mark aspiration on consonants. Armenian citations are Romanized based on the ISO 9985 transliteration system.

² There are also some early structuralist grammars which provide juncture-based analysis of Armenian intonation (Fairbanks 1948; Johnson 1954). There is some Soviet literature on Eastern Armenian intonation (T’oxmaxyan 1971, 1975, 1983), surveyed in Dum-Tragut (2009:47ff).
Interface constraints for nuclear stress assignment under broad focus in Western Armenian vs. Turkish and Persian

primarily suffixing. Turkish and Armenian have more similarities because both are agglutinative and have case-marking. In terms of morphological structure, Armenian utilizes an intricate paradigm of possible ways to mark degrees of definiteness on nouns. In object position, the object can be morphologically bare, marked definite, or marked indefinite. The indefinite morpheme is generally restricted to singular nouns; though plurals can take it as long as there’s a sense of the nouns being indistinct (Sigler 1997:104).

(2) a. WA: jes kirk unim
   I book have
   ‘I have books.’

c. WA: jes kirk-mə unim
   I book-INDF have
   ‘I have a book.’

b. WA: jes kirk-ə unim
   I book-DEF have
   ‘I have the book.’

d. WA: jes kirk-er-mə unim
   I book-PL-INDF have
   ‘I have some (random) books.’

As a case of phonologically-conditioned allomorphy, the definite suffix is -ə after consonants, and -n after vowels. Both nominative and accusative are covert, while dative is overt -i or -u. Western Armenian utilizes (variable) differential object marking on human objects by marking them as dative (Nilsenova 2002).

(3) a. WA: jes kirk-ə desa
   I book-DEF saw
   ‘I saw the book.’

b. WA: jes marjam-i-n desa
   I Mariam-DAT-DEF saw
   ‘I saw Mariam.’

In terms of prosodic phonology, all three languages have lexical stress on the final vowel in the general case, but with specific classes of exceptions. In Armenian, stress is on the rightmost non-schwa vowel; final schwas cause stress to appear on the non-final syllable. The morphological word thus forms a single prosodic word (PWord, w) (Dolatian 2020, 2021a). Throughout this paper, I underline the stressed syllable, whether for lexical, phrasal, or sentential stress.

(4) a. TU: (kirmizı)w
   angle measure
   ‘protractor’ (from Kabak and Vogel (2001:337))

b. PA: (qirmızı)w

c. WA: (garmir)w
   ‘red’

d. WA: (garmir-ə)w
   red-DEF
   ‘The red one’

The languages start to diverge though as we go to higher levels of morphosyntactic and prosodic structure. Compounds form single prosodic words in Persian and Armenian, as evidenced by final stress. Morphologically, compounds in Armenian are formed by concatenating stems with a linking vowel (LV) -a- (Dolatian 2021b; Donabédian 2004). In contrast, Turkish treats compounds as two PWords with stress on the left member.

(5) a. TU: (açı)w (olç-er)w
   angle measure-AOR
   ‘protractor’ (from Kabak and Vogel (2001:337))

3 Eastern Armenian also utilizes a combination of both definite and indefinite marking in order to create ‘specific indefinites’. This leads to analyses that treat ‘definite marking’ in Eastern Armenian as actually being specificity marking (Megerdoomian 2009; Scala 2011; Tamrazian 1994).

4 This is a phonological trigger for non-final stress in Armenian. Morphological triggers of non-final stress abound in Turkish and Persian (Inkelas & Orgun 2003; Kabak & Vogel 2001; Kahnemuyipour 2003).
b. PA: \((\text{ketâb-xu})_w\)
   book-house
   ‘library’ (from Kahnemuyipour (2003:340))

c. WA: \((\text{don-a-̄dzar})_w\)
   holiday-LV-tree
   ‘Christmas tree’

At the level of prosodic phrases, both Turkish and Persian are reported to place phrasal stress on the leftmost member.\(^5\) In contrast, there is little work on Armenian phrasal stress. In my judgments, Western Armenian places phrasal stress on the rightmost member in a prosodic phrase.\(^6\)

(6) a. TU: \((\text{bu})_w (\text{kitap})_w\)
   this book
   (from Goad and White (2009:4))

b. PA: \((\text{in})_w (\text{ketâb})_w\)
   this book
   (from Kahnemuyipour (2003:342))

c. WA: \((\text{ajs})_w (\text{kirk-ə})_w\)
   this book-DEF
   ‘This book’

For Armenian, it is often reported that phrasal stress falls on syntactic heads (Abeğiyan 1933:33). Because Armenian is right-headed, this implies that prosodic phrases are generally right-headed (Abeğiyan 1933:25).\(^7\) Stress clash repairs can apply in prosodic phrases (Abeğiyan 1933:28). Fairbanks (1948:24-7) gives fairly detailed descriptions of stress clash resolutions and phrasal stress in Western Armenian. These are summarized in Vaux (1998:59,145).

In terms of sentential or nuclear stress, there are many studies on the assignment of nuclear stress in Turkish (İşsever 2003, 2006; Üntak-Tarhan 2006) and Persian (Kahnemuyipour 2009). There is likewise ample work on the acoustic cues for sentential prominence in Turkish (Güneş 2015; Kamali 2011; Özge & Bozşahin 2010) and Persian (Hosseini 2014; Mahjani 2003; Rahman 2019; Sadat-Tehrani 2007). The same can’t be said for Armenian. However, it seems that Armenian has (generally) preverbal stress like Turkish (Göksel & Özsoy 2000). Like both Turkish and Persian, Armenian also utilizes post-focal compression or deaccenting (Xu 2011) to mark nuclear stress (Western Armenian: Toparlak 2019; Persian: Abolhasanizadeh, Bijankhan, and Gussenhoven 2012; Taheri-Ardali, Rahmani, and Xu 2014; Turkish: Ipek 2011, 2015).

Given that Western Armenian differs from the other two languages in compound and phrasal stress assignment, the next few sections will document how Western Armenian generally matches the other two languages in terms of sentential or nuclear stress assignment, with limited but systematic places of divergences. My judgments are impressionistic judgments of my own speech of Western Armenian as spoken in Beirut.

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\(^5\) Although Kahnemuyipour (2003) reports that prosodic phrases in Persian have initial stress, Rahman (2019:ch3.4) provides counter-evidence.

\(^6\) For Eastern Armenian, Kahnemuyipour (2009:11) and Kahnemuyipour and Megerdoomian (2011:159) provide evidence that phrasal stress is assigned on the leftmost lexical word in Tehrani Eastern Armenian (1a).

\(^7\) However, there are reports of adpositional phrases variably forming left-headed prosodic phrases in Eastern Armenian (Margaryan 1997:78; Bagdasarian and Vanyan 2011). I leave the documenting the larger set of possible prosodic phrases to future work.
Lebanon. To maximize comparability of Armenian to Turkish and Persian, I tried to use the same sentences across the three languages, and I elicited judgments from native speakers. When in doubt, I checked for post-focal compression on Praat.

3 Stress assignment in simple SOV sentences

This section describes preverbal stress in simple SOV sentences with a bare or indefinite object (§3.1). When a complex predicate is used, stress is on the object if present: SQXV, else on the preverbal member of the complex predicate: SXV (§3.2). If a sentence dropped the object, then stress is on the verb: SV (§3.3). I capture these facts using constraints on head-complement relations and on stress placement within the VP.

3.1 Head-complement relations in bare objects

As a basic sentence, consider an SOV sentence with a bare object. The following sentence is elicited in a broad focus context, such as in response to the question “What happened?” Here, the preverbal object lacks any morphological markers for definiteness or specificity. Nuclear stress is on the stress syllable of the object.

(7) S DO V
a. PA: Ali ke tâb xund
    Ali book read
b. TU: Ali kitap okudu
    Ali book read
c. WA: Ali-n kirk gartat
    Ali-DEF book read
   ‘Ali read books.’

Across the three languages, the bare object acts as number-neutral and is interpreted as a generic noun (Persian: Modarresi 2014; Western Armenian: Sigler 1997; Turkish: Aydemir 2004; Kamali 2015). Syntactically, the bare object is argued to be pseudo-incorporated (Massam 2001) in all three languages (Sağ 2019), including Eastern Armenian (Crum 2020; Yeghiazaryan 2010).

A similar construction is using an indefinite object. Here, the object has some indefinite morpheme and it still carries nuclear stress. The object is interpreted as indefinite non-specific for Turkish and Persian. For Armenian, the object is either specific or non-specific indefinite, with larger bias towards a non-specific reading (Sigler 1997:90ff).

(8) S DO V
a. PA: Ali ye ketâb xund
    Ali INDF book read
b. TU: Ali bir kitap okudu
    Ali book INDF read
c. WA: Ali-n kirk-mə gartat
    Ali-DEF book-INDF read
   ‘Ali read a book.’

The placement of nuclear stress on the preverbal object is cross-linguistically expected. As a semantic correlation, it is a common tendency for the verb (as a predicate) to assign stress or prominence on its argument (Schmerling 1973). It is also cross-linguistically common for prominence to be sensitive to head-complement relations (Donati & Nespor 2003; Nespor & Vogel 1986). There is likewise a common syntactic tendency for
the most embedded constituent in the sentence to carry stress, e.g., a bare object in an SOV sentence (Cinque 1993). To recapitulate this generalization, I define the following constraint COMP. This constraint requires that, given some head H, prominence is assigned to the complement of H. I assume that the head of the sentence is the verb.

(9) a. COMP: Assign a violation if the head of the sentence (V) has a complement (argument), but stress is not on the complement (argument).

b. Deriving object stress in the three lects

<table>
<thead>
<tr>
<th>S DO V</th>
<th>COMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. S DO V</td>
<td>*!</td>
</tr>
<tr>
<td>b. S DO V</td>
<td></td>
</tr>
<tr>
<td>c. S DO V</td>
<td>*!</td>
</tr>
</tbody>
</table>

The above constraint is descriptive in that it merely recapitulates this cross-linguistic generalization. However, this constraint is surface-true.

Another instance of this constraint comes from bare locatives which are preverbal in Turkish and Western Armenian, but often postverbal in Persian. They are stressed. The syntax must be assumed to treat these locatives as arguments instead of adjuncts.

(10) a. PA: raftam xu ne
    went home

b. TU: eve gittim
    home went

c. WA: dun kat si
    home went
    ‘I went home.’

3.2 Transitive placements of stress in complex predicates

The effects of head-complement relations are visible in more complex types of constructions, such as in complex predicates. In all three languages, a complex predicate is a construction that combines two elements to create a verbal predicate. When these complex predicate take a bare object, stress is on the object.

(11) S DO X V

a. PA: Ali miz tamiz kard
    Ali table clean made

b. TU: Ali hasta muayene etti
    Ali patient examine did
    ‘Ali examined patients.’ (adapted from Öztürk (2005:57))

c. WA: Ali-n jerk madig orav
    Ali-DEF song listen did
    ‘Ali listened to songs.’

When there is no object, stress on the first element of the predicate.
(12) S X V

a. PA: Ali tamiz kard
   Ali clean made
   ‘Ali cleaned (tables).’

b. TU: Ali muayene etti
   Ali examine did
   ‘Ali examined (patients).’

c. WA: Ali-n mədig arav
   Ali-DEF listen did
   ‘Ali listened (to songs).’

In a complex predicate, the second element is a semantically bleached verb or a light verb. This verb carries all verbal inflection. The first element can be a freely-occurring word in the language, or a word that’s restricted to appear in these complex predicates. For example, the Western Armenian complex predicate mədig anel ‘to listen’ consists of two words: mədig and anel. The second word is the light verb ‘to do’, while the first word is a meaningless word that is only found in this construction.

Complex predicates abound in Persian and are subject to systematic restrictions on their semantics and syntactic cohesion (Megerdoomian 2009, 2012). Complex predicates are likewise found in Turkish, especially in predicates that involve Arabic borrowings as the first element. Complex predicates are rarer in Western Armenian, but they exist. In Armenian, many cases of complex predicates arise from calque formation, such as p(o)rint anel ‘to print’ (literally ‘print do’).

Stress assignment with complex predicates follows from the constraint Head. The head of the sentence is the light verb. I assume its complement is the constituent formed by the object and preverb. The complement of the preverb in turn is the object. Transitivity then places stress on the object if present, else on the preverb.

(13) a. Deriving object stress in the three lects

<table>
<thead>
<tr>
<th></th>
<th>S DO X V</th>
<th>Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>S DO X V</td>
<td>**!</td>
</tr>
<tr>
<td>b.</td>
<td>☛ S DO X V</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>S DO X V</td>
<td>*!</td>
</tr>
<tr>
<td>d.</td>
<td>S DO X V</td>
<td>**!</td>
</tr>
</tbody>
</table>

b. Deriving stress on the complex predicate without objects

<table>
<thead>
<tr>
<th></th>
<th>S X V</th>
<th>Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>S X V</td>
<td>*!</td>
</tr>
<tr>
<td>b.</td>
<td>☛ S X V</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>S X V</td>
<td>*!</td>
</tr>
</tbody>
</table>

3.3 Verb phrase as the domain of stress in object dropping

The languages likewise utilize object dropping. If the context permits, the object of the sentence can be dropped. The dropping happens when the knowledge of the object is already known to the speakers in the discourse. When the object is dropped, stress is placed on the verb, not the subject.
The constraint Head cannot describe why stress is placed on the verb, not the subject. To describe this dichotomy, I define a constraint Str-VP which requires that stress stays within the verb phrase. This constraint recapitulates the common dichotomy between subject as external arguments vs. objects as internal arguments, such that the latter forms a tight syntactic unit with the verb (Kratzer 1996).

(15) a. Str-VP: Assign a violation if stress is outside the verb phrase
b. Deriving verb stress when the object is dropped

<table>
<thead>
<tr>
<th>S (DO) V</th>
<th>Str-VP</th>
<th>Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>S (DO) V</td>
<td>*!</td>
</tr>
<tr>
<td>b.</td>
<td>S (DO) V</td>
<td></td>
</tr>
</tbody>
</table>

The analysis requires that subjects have raised out of VP. This means that subjects that stayed inside the VP should be able to take nuclear stress under broad focus. This is true. Evidence comes from agent pseudo-incorporation in Turkish (Öztürk 2009:335) and Western Armenian, whereby the subject stays inside the VP while the object is raised. The pseudo-incorporated subject is morphologically bare, non-referential, and lacks any overt definiteness or indefiniteness marking. Stress is on the subject (see Özçelik and Nagai 2011 for similar behavior of Turkish indefinite subjects).

(16) DO S V
a. TU: Ali-yi ari soktu
   Ali-ACC bee stung
b. WA: Ali-jı-n meyu xajtet
   Ali-DAT-DEF bee stung
   ‘Ali got bee-stung.’

This requires the ranking of Str-VP over Comp for at least Turkish and Western Armenian. The agent is low in the syntax inside the VP and it is treated as a complement of the verb. The object still is an argument of the verb, but it is not within the VP.\(^8\)

(17) a. Str-VP: Assign a violation if stress is outside the verb phrase
b. Deriving verb stress when the object is dropped

<table>
<thead>
<tr>
<th>DO S V</th>
<th>Str-VP</th>
<th>Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>DO S V</td>
<td>*!</td>
</tr>
<tr>
<td>b.</td>
<td>DO S V</td>
<td>*!</td>
</tr>
<tr>
<td>c.</td>
<td>DO S V</td>
<td>*!</td>
</tr>
</tbody>
</table>

\(^8\)Comp is satisfied as long as one of the complements/arguments of the verb is stressed. Our definition of Comp is based on semantic arguments or complements. If we defined Comp as based solely over the syntactic tree, then the stressed DO here would violate Comp. The object would not be a syntactic complement, only the subject would be.
4 Stress and syntactic structure of definite objects

So far, we have not documented any divergences across the three languages when it comes to nuclear stress. Differences start once we use definite objects. They are stressed in Western Armenian and Turkish, but not Persian (§4.3). The same dichotomy is found in inherently-definite objects (§4.2). We describe this generalization in terms of a superficial constraint (§4.1). We argue that this difference cannot be blamed on the different syntax between the languages (§4.4). All three languages seem to treat definite objects in the same way when it comes to syntactic behavior.

4.1 Stress assignment in definite objects

All three languages utilize special marking to designate an object as definite. This is done via using the accusative marker -İ in Turkish, the -râ clitic in Persian, and the definite suffix -ə/-n in Armenian. For Turkish and Armenian, stress is still on the object. But in Persian, stress is now on the verb. Specific indefinites behave the same; these often have the meaning of a partitive (Enç 1991).

(18) S DO V, or S DO V

<table>
<thead>
<tr>
<th>a. Definite object</th>
<th>b. Specific indefinite object</th>
</tr>
</thead>
</table>

For Persian, it is a systematic fact in the language that objects marked with -râ never receive nuclear stress under broad focus (Kahnemuyipour 2009). The -râ suffix is often considered a specificity marker (Karimi 2003), with quite complex semantics (Ghomeshi 1997; Jasbi 2020). For Turkish, the reported facts are more controversial. Earlier work in Turkish argued that definite objects don’t carry nuclear stress under broad focus (Orgun & Inkelas 2005). But more recent work has reported that these objects can indeed carry stress (Kamali 2011; Nakipoğlu 2009, 2019; Üntak-Tarhan 2006). Similarly for Western Armenian, the little work which exists also reports that definite objects are unstressed (Sigler 1997:86), but I disagree in these judgments.9

For Turkish, the problem is that contexts which can elicit definite objects can often involve treating the object as some type of given constituent. Thus, the main difficulty in eliciting definite objects is to contrive of dialogues or contexts where the definiteness of the object is both new and felicitous. Nakipoğlu (2009) documents a set of such contexts. One such dialogue is presented below, translated from Nakipoğlu (2009:1270)’s case study on Turkish.

(19) Dialogue to elicit definite objects as new information

a. Dialogue
   • A: What is happening? What is this noise?
   • B: Last night it snowed a lot. The municipality is plowing the road.

---

9 For Eastern Armenian, Megerdoomian (2009) and Kahnemuyipour and Megerdoomian (2011) report that definite objects are unstressed in Megerdoomian’s Tehrani lect. Given the paucity of work on this topic, it is possible that definite objects are never stressed in (Tehrani) Eastern Armenian; this would make the Eastern data align with Persian. Or, it is possible that definite objects can be stressed in Eastern Armenian, but that more minute types of contexts are needed (Hodgson 2019a).
b. *Loose translation of the last clause in B*

i. **PA:** Shahrdari dare rah-râ tamiz mikone
    municipality have road-râ clean doing

ii. **TU:** Belediye yol-u açiyor
    municipality road-ACC opening

iii. **WA:** kayabedutjun-ə ʒampa-n ʒam pa-n ɬəmakre=gor
    municipality-DEF road-DEF clean=PROG
    ‘The municipality is plowing/cleaning/opening the road.’

In the dialogue above, the object ‘road’ is definite and is treated as new information. It takes stress in Turkish and Western Armenian, but not Persian. The object is new information, but its definiteness is felicitous because as Nakipoğlu (2009:1270) explains for Turkish:

“A’s question about the noise and B’s reply about heavy snowfall immediately give rise to the construal of snow covered roads and a snowplow pushing snow off a certain road. The activation of such a construal relates the definite object with a specific road; hence the referent of the road becomes identifiable to the hearer during this brief exchange.”

In contrast, consider the dialogue below. Here, the object is given information and it is unstressed in all three lects. The object is treated as given information by B because “A’s sentence presupposes the proposition... [that r]oads may be snow covered due to the heavy snowfall” (Nakipoğlu 2009:1273).

(20) *Dialogue to elicit definite objects as given information*

a. **Dialogue**
   
   *A:* Last night it snowed a lot. Probably I can’t go to work by car.
   *B:* The municipality is cleaning the road. You can go by car.

b. *Loose translation of the first clause in B*

i. **PA:** Shahrdari dare rah-râ tamiz mikone
    municipality have road-râ clean doing

ii. **TU:** Belediye yol-u açiyor
    municipality road-ACC opening

iii. **WA:** kayabedutjun-ə ʒampa-n ɬəmakre=gor
    municipality-DEF road-DEF clean=PROG
    ‘The municipality is plowing/cleaning/opening the road.’

The above dialogues show that definite objects, when new information, are stressed in Armenian and Turkish, but not Persian. Unsurprisingly, deaccenting is found when the object is given information.

4.2 *Inherently-definite objects and datives*

The generalization so far is that, as new information, definite objects are stressed in Turkish and Western Armenian, but unstressed in Persian. This section establishes the two main components to this generalization: 1) the constituent is semantically definite, and 2) it must be syntactically treated as a direct object.

For the first component, the object has to be semantically specific. One could argue that the reason why the languages diverge in their stress patterns is because the definite-marking morphology carries different
nuances of definite semantics across the languages. This would at first make sense, but it has problems with inherently-definite objects. Consider proper nouns or names. These are semantically and inherently definite. They are morphologically marked as definite in all three lects. As before, stress is on the object in Turkish and Armenian, but not in Persian.

(21) Stressability of inherently-definite direct objects

a. PA: Ali Mariam-rå did
   Ali Mariam-rå saw
b. TU: Ali Mariam-i gördü
   Ali Mariam-ACC saw
c. WA: Ali-n marjam-i-n desav
   Ali Mariam-DAT-DEF saw
   ‘Ali saw Mariam.’

The proper noun data thus suggests that, for objects, it is the directly the semantic property of being definite that causes the stress contrast.\(^{10}\)

The second component of the generalization is that the object has to be treated as a direct (accusative) object by the morphosyntax. To understand this point, consider dative objects. In all three languages, the argument of the verb ‘to look at’ takes dative case. The dative is formed via dative suffixes in Turkish and Armenian, while it uses a preposition in Persian. In all three lects, stress is on the dative argument even if it’s definite.

(22) Stress on definite dative arguments

a. PA: Ali be ketāb negah kard
   Ali to book look make
b. TU: Ali kitab-a baktı
   Ali book-DAT look.at
c. WA: Ali kirk-i-n najetsav
   Ali book-DAT-DEF look.at
   ‘Ali looked at the book.’

Thus, the above data suggests that for Persian, the object argument is unstressed when it is both definite and marked accusative. In contrast in Armenian and Turkish, the object argument is stressed as long as its definite.

4.3 Describing the generalization

The generalization so far is that definite objects are stressed in Turkish and Armenian, while they are unstressed in Persian. To capture this dichotomy, I first use a descriptive constraint. I then argue that it is unclear how one can replace this constraint by just using enriched syntactic structures.

For the simple data from §4.3, the constraint HEAD would assign stress on the definite object in all three languages. To capture the difference between Persian and Armenian, I use an additional constraint *SPEC-DO which is violated by a stressed direct object that is morphosyntactically accusative and marked as specific. This constraint is low-ranked in Armenian and Turkish, thus licensing stress on the object. In Persian, this constraint outranks HEAD, thus licensing stress on the verb.

\(^{10}\) The same stress behavior is also found in other inherently-definite objects, like possessed nouns or demonstratives.
(23) a. **Spec-DO**: Assign a violation if the definite object is specific, accusative, and stressed

b. Allowing stress on definite objects in Turkish and Western Armenian

\[
\begin{array}{|c|c|c|}
\hline
& S \text{ Def-DO V} & \text{Str-VP} \quad \text{Comp} \quad *\text{Spec-DO} \\
\hline
a. & S \text{ Def-DO V} & *! & *! & *
\hline
b. & S \text{ Def-DO V} & *! & & *
\hline
c. & S \text{ Def-DO V} & *! & & *
\hline
\end{array}
\]

c. Blocking stress on definite objects in Persian

\[
\begin{array}{|c|c|c|}
\hline
& S \text{ Def-DO V} & \text{Str-VP} \quad *\text{Spec-DO} \quad \text{Comp} \\
\hline
a. & S \text{ Def-DO V} & *! & & *
\hline
b. & S \text{ Def-DO V} & *! & & *
\hline
c. & S \text{ Def-DO V} & *! & & *
\hline
\end{array}
\]

This constraint likewise captures the differences across the three languages when it comes to stressing specific but indefinite objects. This constraint is a surface-true description of the facts. It likewise has cross-linguistic support from discourse transitivity (Hopper & Thompson 1980). Briefly, definite objects tend to correlate with backgrounded information.

4.4 Difficulty in position-based analysis

Based on the data so far, one could alternatively argue that perhaps definite objects in Western Armenian and Turkish have a different position than in Persian. Specifically, one could argue that both bare and definite objects are low in the VP (or phasal vP) for Western Armenian and Turkish. In contrast, the Persian bare object would be low in the VP, while the definite one would be higher, and outside of the syntactic domain of stress assignment.

(24) Syntax-based alternative: two-slots for Persian, one slot for Turkish and Western Armenian

a. Persian
b. Turkish and Western Armenian

This argument has been explicitly argued for Persian because of the strict prosodic difference between bare and definite objects. The two argument-slot has empirical motivation in Persian due to constraints on word order and reference (Kahnemuyipour 2009). A common analysis is to treat the bare object as within the VP in its base position, while the definite object is raised to spec-vP. But the issue here is that the same syntactic differences between bare and definite objects in Persian likewise exist in Turkish and Western Armenian (Enç 1991; Öztürk 2005; Sigler 1997). This means that besides their prosodic differences, it is unclear if there is any systematic and relevant syntactic differences between Persian on the one hand, and with Turkish and Armenian on the other.

For example, earlier work in Turkish and Western Armenian argued that definite objects are always unstressed. As syntactic correlations, there are many reports of syntactic asymmetries between bare and definite
objects in terms of word order, number neutrality, reference, scope, scrambling, telicity, among other properties (Enç 1991, among many others). To capture both these syntactic and (alleged) prosodic differences, earlier models utilized two slots for bare vs. definite objects. The bare object would be in its base position inside the VP while the definite object would raise to a higher position like spec-vP, AgrOP (Sigler 1997), or ThemeP (Öztürk 2005).

\[
\text{vP} \\
\text{DEF-DO} \quad \text{AspP} \\
\text{DEF-DO} \quad \text{DEF-DO} \quad \text{Bare DO} \quad \text{V}
\]

Persian Turk+Arm All 3

However, as described before in this paper, these earlier judgments on stress had confounds, and thus definite objects can be stressed in Turkish and Armenian. This means that if we try to connect the prosodic differences across the three languages to syntax, then we need to argue that definite objects raise to spec-vP in Persian, while they raise to a lower position in Armenian and Turkish, such as a spec-AspP (Kamali 2011; Üntak-Tarhan 2006:49). Bare objects would stay in their base position inside the VP. This analysis would create a set of three possible slots for objects.

(25) **Three-slot analysis with Persian definite objects at spec-vP, while Turkish and Western Armenian at spec-AspP**

But the problem with this analysis is that, to my knowledge, there have not been reports of syntactic differences between definite objects in Persian vs. Turkish and Armenian. For example, if definite objects raise to spec-AspP in Turkish and Armenian, but not in Persian, then this suggests that we should find some telicity differences across the three languages. But to my knowledge, no such contrasts have been discovered so far in the literature. It seems that definite objects can be telic in all three languages. This means that using an intermediate syntactic slot for definite objects in Turkish and Armenian is circular, because the motivation for this slot placement is only prosodic without any syntactic ramifications. See Nakipoğlu 2019:271:f10 for a brief critique along these lines.

As a further demonstration of this problem for the two-slot and three-slot analyses, Tehrani Eastern Armenian is reported to block stress on definite objects. The language likewise utilizes many syntactic contrasts between bare and definite objects, thus meriting a two-slot analysis (Megerdoomian 2009). However, these contrasts are likewise found in Western Armenian (Sigler 1997), even though definite objects can take stress. Furthermore, there is empirical evidence that the two-slot analysis may be too strong of a claim for even Persian (Faghiri 2016). Specifically, the various syntactic diagnostics that distinguish definite vs. bare objects are more likely to be gradient than categorical (Faghiri & Samvelian 2015, 2016, 2020; Faghiri, Samvelian, & Hemforth 2014).

In sum, definite objects are stressed in Armenian and Turkish but not Persian. Based on all the above problems, this difference is likely not due to any syntactic differences, but due to an arbitrary constraint on the syntax-phonology interface.
5 Directionality in ditransitive constructions

So far, the main divergence we have seen so far is for definite objects. Another area of divergence comes from ditransitive constructions which have leftmost stress in Armenian and Turkish, but rightmost stress in Persian.

In ditransitive constructions in the three lects, there is debate over the default ordering over the direct object (DO) and indirect object (IO). The ordering between them depends on information structure and on the definiteness of the arguments (Persian: Faghiri 2016; Turkish: İşsever 2006; Kamali 2015; Nakipoğlu 2019; Eastern Armenian: Polinsky 1996). As a base sentence, consider a ditransitive where both the DO and IO are indefinite. In Persian, the preferred ordering would be DO+IO. Stress is on the leftmost argument (the IO). In contrast for Turkish and Western Armenian, the preferred ordering is IO+DO, but DO+IO ordering is permitted. Regardless of ordering though, Turkish and Western Armenian place stress on the rightmost argument.

(26) S DO IO V, or S DO IO V

<table>
<thead>
<tr>
<th></th>
<th>L-ARG</th>
<th>R-ARG</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. PA: Ali ye ketâb be ye madrase-i dâd</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>b. TU: Ali bir ketap bir okul-a verdi</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>c. WA: Ali kirk-mə təbroğ-i-mə dəvav</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Ali gave a book to a school.’

To capture the above dichotomy, the generalizations seems to be that of directionality (Sato 2012; Shaw 2009). We formulate the following constraints which require stress on either the leftmost-argument (L-ARG) or the rightmost argument (R-ARG). Persian ranks L-ARG above R-ARG, thus licensing leftmost stress. While Turkish and Western Armenian have the reverse ranking, thus licensing rightmost stress.

(27) a. Constraints on directionality

* L-ARG: Assign a violation if the leftmost argument is not stressed
* R-ARG: Assign a violation if the rightmost argument is not stressed

b. Deriving stress on the left argument in Persian ditransitives

L-ARG >> R-ARG

<table>
<thead>
<tr>
<th></th>
<th>Comp</th>
<th>L-ARG</th>
<th>R-ARG</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ✓ S Indf-DO Indf-IO V</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. S Indf-DO Indf-IO V</td>
<td>✓</td>
<td>!</td>
<td></td>
</tr>
<tr>
<td>c. S Indf-DO Indf-IO V</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

c. Deriving stress on the right argument in Turkish and Western Armenian ditransitives

R-ARG >> L-ARG

<table>
<thead>
<tr>
<th></th>
<th>Comp</th>
<th>R-ARG</th>
<th>L-ARG</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. S Indf-DO Indf-IO V</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| b. ✓ S Indf-DO Indf-IO V | ✓ | *
| c. S Indf-DO Indf-IO V | ✓ | ! |

When the IO is definite, while the DO is indefinite, our Persian speaker preferred the order IO+DO with stress on the DO. It seems though that this ordering likewise treated the IO as given information, thus causing deaccenting. We set this nuance aside for future research.
As elaborated by Sato (2012), SOV languages with stress on the rightmost argument (preverbal stress) would correspond to a syntactic analysis based on stressing the deepest constituent within a syntactic domain (Cinque 1993). In contrast, SOV languages with stress on the leftmost argument (like Persian) would correspond to a syntactic analysis where stress is on the highest constituent within that domain (Kahnewmuyipour 2009).

There are of course other potential orderings when one or both of the objects are definite. For Turkish and Western Armenian, any ordering of definite DO and definite IO will cause rightmost stress. For Persian, the ordering DO+IO causes rightmost stress because definite objects are always unstressed. The ordering IO+DO in Persian gives a reading of givenness for both the IO and DO, thus causing stress on the verb.\(^\text{11}\)

(28) a. S Def-DO Def-IO V
   i. PA: Ali ketâb-râ be madrase dâd
       Ali book-râ to school gave
   ii. TU: Ali ketab-ı okul-â verdi
        Ali book-ACC school-DAT gave
   iii. WA: Ali-n kirk-ə təbrots-i-n davav
       Ali-DEF book-DEF school-DAT-DEF gave
       ‘Ali gave the book to the school.’

b. S Def-IO Def-DO V
   i. PA: Ali be madrase ketâb-râ dâd
       Ali to school book-râ gave
   ii. TU: Ali okul-a ketab-ı verdi
        Ali school-DAT book-ACC gave
   iii. WA: Ali-n təbrots-i-n kirk-ə davav
       Ali-DEF book-DEF school-DAT-DEF gave
       ‘Ali gave the book to the school.’

6 Manner adverbs and morphosyntactic complexity

So far, we have seen that Turkish and Western Armenian always pattern together to the exclusion of Persian. This is not surprising because Western Armenian has been in longer and more intense contact with Turkish than with Persian. But one area of divergence between comes from adverbs.

All three lects distinguish between at least two syntactic-semantic categories of adverbs: temporal adverbs (TAdv) vs. manner adverbs (MAdv). Temporal adverbs are TP-level high adverbs, while manner adverbs are VP-level low adverbs. TP-level adverbs like ‘yesterday’ are placed more towards the edges of the sentence, and they do not take nuclear stress.

(29) a. S TAdv DO V
   i. PA: Ali diruz ketâb xund
       Ali yesterday book gave
   ii. TU: Ali dün kitap okudu
       Ali yesterday book read
   iii. WA: Ali-n jereg kirk gartat̟s
       Ali-DEF yesterday book read
       ‘Ali read books yesterday.’
Manner adverbs are however more complicated. In Persian, manner adverbs can precede a rather large VP, one that includes the verb and its arguments. Kahnemuyipour (2009:ch4.6)’s generalization is that Persian manner adverbs are placed at the left-edge of the vP. They take stress.

(30) PA: Ali xub tub be Hassan dâd
Ali well ball to Hassan gave
‘Ali assisted Hassan in the (football) game well.’
(Lit. ‘Ali gave ball to Hassan well.’) from Kahnemuyipour (2009:94)

Manner adverbs in Turkish and Western Armenian though are different. Both languages distinguish between two kinds of manner adverbs. One class of manner adverbs are morphologically simplex. Another class of adverbs are morphologically complex, whether via suffixation or reduplication.

(31) Classes of manner adverbs in Turkish and Western Armenian

<table>
<thead>
<tr>
<th>Simple</th>
<th>Root</th>
<th>Armenian</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complex via:</td>
<td>Reduplication</td>
<td>arak</td>
<td>hızli</td>
</tr>
<tr>
<td></td>
<td>Derivational Suffixation</td>
<td>arâk arak</td>
<td>hızli hızli</td>
</tr>
<tr>
<td></td>
<td>Inflectional Suffixation</td>
<td>arâk-oren</td>
<td>hızli-ca</td>
</tr>
<tr>
<td></td>
<td></td>
<td>arâk-mə</td>
<td>N/A (glossed as fast-INDF)</td>
</tr>
</tbody>
</table>

Simple manner adverbs (S-MAdv) are stressed and generally preverbal. Complex manner adverbs (C-MAdv) are unstressed and have freer word order. They can be placed in any of the same locations as TP-level adverbs.

(32) S Def-DO S-MAdv V
a. PA: Ali (*hızlı) kitap-ı hızlı okudu
Ali (fast) book-ACC fast read
b. TU: Ali (*arak) kirk-ə arak gartats
Ali (fast) book-DEF fast read
‘Ali read the book fast.’

(33) S C-MAdv Def-DO V
a. TU: Ali hızlı-ca kitap-ı okudu
Ali quickly book-ACC read
b. WA: Ali arak-oren kirk-ə gartats
Ali quickly book-DEF read
‘Ali read the book quickly.’

In Turkish, the simple MAdv can be easily placed before the bare object. In Western Armenian though, it is generally difficult to place the simple manner before the bare object. A complex MAdv is preferred instead. Before a bare object, a S-MAdv is licit if the sentence has a habitual or ability reading.

(34) a. TU: Ali hızlı kitap (*hızlı) okudu
Ali fast book (fast) read
b. WA: Ali-n (?arak) kirk (*arak) gartats
Ali-DEF (fast) book (fast) read
‘Ali read books quickly.’

12 In Western Armenian at least, if the simple adverb is not preverbal then it is interpreted with narrow focus, but still feels worse than a complex adverb.
c. WA: Ali-n arak kirk (*arak) gəgarta
   Ali-DEF fast book (fast) reads
   ‘Ali reads books quickly.’

The generalization across the three languages is that manner adverbs take stress. I describe this phenomenon with a constraint $\text{MAdv}$. Persian syntax places them freely at the edge of the vP. The constraint for stressing manner adverbs is high-ranked, and outranks the constraints Comp.

(35) a. $\text{MAdv}$: Assign a violation if a manner adverb is not stressed  
b. Deriving adverb stress in Persian  

\[
\begin{array}{c|c|c}
\text{S MAdv DO V} & \text{MAdv} & \text{Comp} \\
\hline
a. S MAdv DO V & *! & \ast \\
b. \text{��} S MAdv DO V & \ast & \ast \\
\end{array}
\]

Turkish and Armenian however distinguish between morphologically complex vs. simplex adverbs. Only the simplex ones can be stressed. The syntax places them in different syntactic positions. Specifically for Turkish, simplex manner adverbs are VP-internal (Üntak-Tarhan 2006; Kamali 2011:46; Nagai and Özçelik 2012), while complex MAdvVs are VP-external. I argue for the same syntactic structure for Armenian.\(^{13}\)

Prosodically, simplex MAdvVs get stressed instead of the rightmost argument, thus MAdv outranks R-Arg. Complex adverbs can’t get stressed because they are VP-external. High-ranking Str-VP will block stress placement on complex adverbs.

(36) Deriving adverb stress in Turkish and Western Armenian  

\[
\begin{array}{c|c|c|c|c}
\text{Str-VP} & \text{MAdv} & \text{Comp} & \text{R-Arg} \\
\hline
a. S \text{[S-MAdv DO V]}_{\text{VP}} & \ast! & \ast & \ast \\
b. \text{��} S \text{S-MAdv DO V} & \ast & \ast & \ast \\
\end{array}
\]

\[
\begin{array}{c|c|c|c|c}
\text{Str-VP} & \text{MAdv} & \text{Comp} & \text{R-Arg} \\
\hline
a. S C-MAdv [DO V]_{\text{VP}} & \ast & \ast & \ast \\
b. \text{��} S C-MAdv DO V & \ast & \ast & \ast \\
\end{array}
\]

Comp is violated by adverb stress because adverbs are modifier adjuncts, not complement arguments. Note that when the object is definite, the syntax places the adverbs in the right location. The constraint then places stress on the simplex adverb. I do not assume that the definite object has raised out of the VP because of the presence of the simplex adverb.

(37) a. Stressing simplex manner adverbs around definite objects  

\[
\begin{array}{c|c|c|c|c}
\text{Str-VP} & \text{MAdv} & \text{Comp} & \text{R-Arg} \\
\hline
a. S [Def-DO S-MAdv V]_{\text{VP}} & \ast! & \ast & \ast \\
b. \text{��} S Def-DO S-MAdv V & \ast & \ast & \ast \\
\end{array}
\]

\(^{13}\) I am unsure though how complex adverbs are VP-external yet are still able to affect the meaning of the VP as manner adverbs. This might be a syntax-semantics bracketing paradox.
### References


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### 7 Conclusion

This paper documents the distribution on nuclear stress in Western Armenian in contrast to Turkish and Persian. We find that nuclear stress is generally preverbal in Armenian. Definite objects are stressed in Armenian and Turkish, not Persian. This difference isn’t due to diverging syntactic structures, but to an interface constraint against stressed definite objects that’s active in Persian but not Armenian or Turkish. These and other constraints were proposed to handle the placement of nuclear stress in transitive, ditransitive, and adverb constructions.

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#### b. Blocking stress on complex manner adverbs

<table>
<thead>
<tr>
<th>S C-MAdv [Def-DO V]vp</th>
<th>STR-VP</th>
<th>MAdv</th>
<th>COMP</th>
<th>R-Arg</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ☛ S C-MAdv Def-DO V</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. S C-MAdv Def-DO V</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>


Kamali, B. (2015). Caseless direct objects in Turkish revisited. (Universitätsbibliothek Johann Christian Senckenberg)


Intonation and focus marking in Western Armenian

Tabita Toparlak and Hossep Dolutian

Stony Brook University

Abstract

We document the prosodic characteristics and intonation of Western Armenian, an understudied Indo-European language. Primary stress is generally associated with the right most syllable that has a full non-schwa vowel. We elicited and annotated pitch contours with the autosegmental-metrical and ToBi frameworks. For declarative sentences, we analyze three types of focus: broad focus, object focus, and subject focus. In an SOV sentence, broad focus triggers a word-final H* tone in each element except the final V. These sentences have an L% tone on the rightmost boundary of the intonational phrase. For object and subject focus, Western Armenian uses a sharp rise on the narrow focused constituent, frequently followed by post-focal deaccenting. For interrogatives, we elicited wh-questions, yes-no (polar) questions, multiple wh-questions. For polar questions, the question is marked with a final rise H% on the last syllable of the intonational phrase. If the polar question is asked for a specific syntactic constituent (i.e., narrow focus) then the pitch rise is detected on that constituent followed by a high-plateau and a L% tone. In wh-questions, however, the sentence includes a wh-word with a nuclear stress, followed by post-focal compression and then a final H% tone. For multiple wh-questions, while acoustically two of the wh-words have a rise, the pitch of the first wh-word is significantly higher than that of the second. These questions have H% at the intonational phrase.

Keywords: Armenian, intonation, ToBi, focus, post-focal deaccenting

1. Introduction

Armenian is an under-studied Indo-European language with two standard varieties: Western (WA) and Eastern (EA). This paper documents the intonation contours of Western Armenian over a small corpus of elicited dialogues. WA is considered an agglutinative SOV language with significant syntactic and prosodic similarities to Turkish and Persian, thanks to a mix of areal and language contact effects.¹

Our corpus consists of polar questions, wh-questions, multiple wh-questions, choice questions, and their corresponding answers. The purpose of this corpus was to elicit different possible types of information structure, specifically different types of broad focus and narrow focus contexts.

We annotated our corpus with the autosegmental-metrical (AM) and ToBI systems (Jun 2007; Ladd 2008). In SOV sentences, nuclear stress under broad focus falls on the object. The verb has post-focal deaccenting. For narrow focus context, we find post-focal deaccenting after the focused word. Most types of polar questions and wh-questions use a sentence-final pitch-rise. Some cases displayed a high plateau and a final pitch-drop.

This paper is organized as follows. In §2 we give an overview of Armenian prosody. §3 describes our methodology for conducting our elicitations. The data is organized in subsequent sections based on polar questions §4, wh-questions §5, choice questions §6, and multiple wh-questions §7. We summarize our findings in §8, and draw some parallels with Turkish and Persian. We conclude in §9.²

¹ We thank our informants, the conference attendees, Didier Demolin, Anaïd Donabédian, and Stavros Skopeteas.
² We use a simplified glossing of D or DEF for Definite, INDF for Indefinite, NEG for Negation. The transcription is in IPA. Aspiration is not contrastive in Western Armenian so we don’t transcribe it. For ease, we transcribe the segments /ɑ,ɛ,ɔ,ɾ,χ,ʁ/ as a,e,o,r,x,ɣ.
2. Lexical and sentence stress

There is little work on the prosodic structure of Armenian. Vaux (1998:ch4) describes the basics of primary stress assignment in Armenian, and some types of irregular stress in Eastern Armenian. Western Armenian however has more complications in irregular stress.

Primary stress is on the final non-schwa vowel in the word (1a). If a word ends in a non-schwa vowel followed by a schwa final, then stress is on the penultimate non-schwa (1b). Clitics and clitic clusters are not stressed (1c). Some suffixes are morphologically idiosyncratic and are prestressing (1d). Some prefixes attract prominent secondary stress (1e). Some prefixes like negation attract primary stress, even if it causes a stressed schwa (1f).

(1) a. .badasxán   ‘answer’
    badasxanavór   ‘responsible’
b. badasxán-ə   ‘answer-DEF’ or ‘answer-D’
c. badasxanavór=al=e  ‘is also responsible’
d. hínk    ‘five’
    hínk-erort   ‘fifth’
e. sahmán   ‘border’
    ân-sahmán   ‘boundless’
f. gartáts  ‘he read (past)’
    tʃə-garats   ‘he didn’t read’

Acoustically, stress is marked by a slight f0 rise (Athanasopoulou, Vogel, & Dolatian 2017). This rise starts in the stressed syllable. There are some reports that final schwas can take their own pitch rise (Haghverdi 2016), but this might be due to phrase-final tones (Skopeteas 2019). In our corpus, we find that for words with penultimate stress because of a final schwa, the rise of the stressed syllable can either continue into the final schwa or start falling in the schwa.

Grammars report that Armenian has initial secondary stress. However, it is unclear what are the acoustic cues for initial secondary stress. In our own data, the first syllable in WA tends to have a low tone, so initial secondary stress (if it exists) is unlikely to be cued by f0. Furthermore, some sources also report multiple secondary stresses in compounds (T’oxmaxyan 1971). But we were unable to confirm this; such judgments are largely impressionistic with substantial methodological problems.

In terms of basic syntax, both WA and EA can utilize SOV and SVO word orders. SOV is however more common in WA, while SVO is more common in EA. Moving on to sentential prominence, a sentence is in broad focus if all the information in the sentence is new information. Broad focus sentences can be elicited by using sentences such as ‘What happened?’.

(2) a. Q: intʃ jeyav  ‘What happened’
    b. A: marja-n nabastag uni
        Maria-D rabbit has
        ‘Maria has a rabbit.’

In the WA sentence above, nuclear stress is on the pre-verbal object nabastag ‘rabbit’. The basic sentence order is SOV. Acoustically, nuclear stress on the object is marked by deaccenting the verb. Both the subject and object have their own final H* tone that marks lexical stress. Only the verb lacks its own H*. There is a steep fall from the object to the verb. The sentence has a final L% boundary tone. We shall see this basic intonational construction throughout this report.

---

3 In our previous elicitations for EA, the first syllable in EA tends to have a slight rise and a longer duration than in WA. It is possible that secondary stress is cued by such a rise for EA.
Although the above description is based on Western Armenian, it seems that Eastern Armenian does use some similar prosodic cues. For example, Eastern Armenian is likewise SOV with a preference for preverbal focus (Comrie 1984; Megerdoomian 2009; Tamrazian 1994). Focus however is more often marked by auxiliary movements in Eastern Armenian (Kahnemuyipour & Megerdoomian 2011, 2017).

For intonation, there is scant information on Western Armenian (Fairbanks 1948:27ff). There is some work on the accentual patterns of evidential constructions with clitics (Bonnot & Donabédian 1997). There is also relatively little acoustic work on Eastern Armenian intonation (Johnson 1954:14ff; Gowkasyan 1990; Dum-Tragut 2009:ch1.4; Haghverdi 2016; Skopeteas 2019).

3 Methodology

The first author used a corpus of 16 questions, first reported in Toparlak (2019). The questions were based on the Questionnaire on information structure from the University of Postdam (Skopeteas et al. 2006). We used materials from chapter 3, section 17 “Focus Cards (Selective, Restrictive, Additive, Rejective Focus)” and section 18 “Who does What (Answers to Multiple Constituent Questions)”. The set of questions were designed to elicit different types of information structure, including broad focus, narrow focus, wh-questions, polar questions, choice questions, and multiple wh-questions.

A question was presented to a speaker along with a drawing of a situation. The informant had to read the question, and then produce an answer. Most of the questions involved the use of the light verb uni ‘have’. Recordings were made with a microphone and a sound card (Edirol) borrowed from the LPP laboratory. For data recording and analysis we used Praat (Boersma 2001).

We used two informants for WA. At the time of recording, the first informant F1 was female, 25 years old, and born and raised in Beirut. We also had a male informant M2 from Beirut, 24 years old. All recordings were done in Paris. As a supplement, we also had an EA informant who was 21 years and from Yerevan. Although we don’t report on her data, we do give some footnotes on her productions, whenever they differed from the WA data.

This paper primarily focuses on providing an autosegmental notation for the intonation contours produced by our speakers. We adopt the autosegmental-metrical and the ToBI frameworks to describe the Armenian intonation system (Jun 2007; Ladd 2008; Pierrehumbert 1980). We try to use a rather bare set of transcription symbols because our work is preliminary. We use H* to represent the high pitch on stressed syllables, and L% and H% for sentence-final falls or rises. We do not represent the pitch falls that occur after the H* on stressed syllables.

The entire corpus was annotated. The name of each dialogue has the template ‘speaker-number’, e.g., F1-26 means that the dialogue was uttered by F1 and is number 26. The current report only shows a representative subset of those recordings. The footnotes include information on any recordings that were not shown. We don’t have the consent of our informants to make their elicitations public.

We did not have complex morphosyntactic constructions that needed case-marking. We use ↗ to transcribe pitch-rises in polar questions, because pitch is the only overt cue for polar questions in standard Armenian.4

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4 Colloquial Western Armenian can also utilize a question participle =mə, borrowed from Turkish mı, but this is restricted to colloquial speech and is stigmatized.
4 Polar questions and their answers

We first report data on polar questions. The simplest type of polar questions is marked by placing a rising intonation on the sentence-final verb (§4.1). Such polar questions end in a H% tone. If the answer to the polar question is positive, then we find nuclear stress on the object, followed by post-focal deaccenting. If the answer is negative, then we find nuclear stress on the negated verb.

More complex types of polar questions can place narrow focus on the subject (§4.2). The pitch-rise would start on the subject, and continue onto the final low-toned syllable. Such polar questions end in a L% tone.

4.1 Rising intonation in polar questions

Standard Armenian does not have any morphological or syntactic strategies to mark polar questions. Instead, the only strategy is intonation. Polar questions have a sharp rise on the verb. Usually, the verb is sentence-final.

(3) a. i. Q: marja-n teɣin bəɣbeɣ uni↗ ii. A: ajo maria-n teɣin bəɣbeɣ uni
Maria-D yellow pepper has yes Maria-D yellow pepper has
‘Does Maria have a yellow pepper?’ ‘Yes, Maria has a yellow pepper.’

b. F1-26

In the question, the pitch-rise is visible on the verb. We mark the pitch-rise with a sentence-final H% boundary. If the answer to this question is in the positive, then the answer sentence has broad focus. The dialogue involves a branching object, and nuclear stress is on the object. Nuclear stress is marked by post-focal deaccenting of the subsequent verb. A more exact transcription can be placing L on the syllable after the object H*, such as H*)(L ... L%).

One could annotate prosodic words as consisting of a L tone on the first syllable, and a LH* on the stressed syllable. Thus a sequence of two sentence-medial prosodic words would be annotated as: (L ... LH*) (L ... LH*). We try to be simpler in our annotation and just mark the H* tones.

We find many different possible intonational contours for the words ájo or ajo ‘yes’ and vé̆ff ‘no’. In the above dialogue, the word ájo ‘yes’ forms its own intonational phrase. It can also optionally have stress on the first vowel, thus why we see a steep rise H* and steep fall L%.

Negation has markedly different prosodic effects. Given a polar question, if the answer sentence is in the negative, then the verb takes the negation prefix š-. Lexical stress is on the first syllable of the negated V. Nuclear stress is perceived on the negated verb, not the object. The placement of primary stress on the initial

---

5 Other example dialogues also include M2-28. Furthermore, Eastern Armenian allows the above structures, but our informant also produced an SVO sentence as the answer to a polar question.

6 Example dialogues also include M2-39.2. F1-29 has clearer prominence on a negated verb in the answer, while the question has subject focus.
syllable of a negation prefix is likewise reported in Persian (Kahnemuyipour 2003). The ‘no’ word \textit{votʃ} form its own intonational phrase, thus it sometimes has its own steep rise and steep fall.\(^6\)

\begin{align*}
\text{(4) a. i. Q: } & \text{gin}-\circ \ təkal \ uni \uparrow \quad \text{ii. A: } \textit{votʃ} \text{gin}-\circ \ təkal \ tfj-uni \\
\text{woman-D spoon has} & \quad \text{no \ woman-D spoon \ NEG-has} \\
\text{‘Does the woman have a spoon?’} & \quad \text{‘No, the woman doesn’t have a spoon.’}
\end{align*}

b. F1-26

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Intonational contours for (4) a. i. and ii.}
\end{figure}

\subsection*{4.2 Focus in polar questions}

In a typical polar question or yes-no question, the pitch rise is on the verb. The meaning is that the general truth of the sentence is being questioned. However, polar questions can be formed by questioning a specific constituent in the sentence. For example, in the dialogue below, the pitch rise is on the subject in the question. This pitch rise is interpreted as contrastive focus on the subject.\(^7\)

\begin{align*}
\text{(5) a. i. Q: } & \text{amanda-}n \uparrow \text{ nabastag \ uni} \quad \text{ii. A: } \textit{votʃ} \text{marja-}n \ \text{ nabastag \ uni} \\
\text{Amanda-D \ rabbit \ has} & \quad \text{no \ Maria-D \ rabbit \ has} \\
\text{‘Does AMANDA have a rabbit?’} & \quad \text{‘No, MARIA has a rabbit.’}
\end{align*}

b. F1-26

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Intonational contours for (5) a. i. and ii.}
\end{figure}

In the question, there is a pitch-rise on the subject which continues throughout the sentence up until the sentence-final L\%. This contour constitutes a high plateau. The verb in these questions is perceived as having a L\% because the fall starts somewhere before the midpoint of the final vowel. In contrast, for typical polar questions with a final H\% (§4.1), there is a perceived rise on the verb because the eventual pitch-fall happens much later in the final vowel. Based on similar high plateaus in English (Ueyama & Jun 1996), a more exact transcription for the above high plateau can be to place H- after the H*, and then place H at the beginning of the sentence-final syllable before the L\%: H*)(H- .... H L\%).

In the answer, a different subject is provided. So there is a pitch rise on the focused subject in the answer, and subsequent deaccenting.

If the answer did not provide a different subject, there wouldn’t be a pitch-rise on the answer’s subject. For example, in the dialog below, the answer is in the positive. The object takes nuclear stress under broad focus.\(^8\)

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Intonational contours for another polar question.}
\end{figure}

\footnotesize
\(^{7}\) Other dialogues include F1-29 with subject focus in the question, and stress on a negated verb in the answer. F1-29.2 and F1-29.3 have subject focus in the question, while object focus in the answer.

\(^{8}\) Another similar dialogue is F1-27, with narrow focus on the subject in both the question and answer.
5 Wh-questions and narrow focus

This section reports on wh-questions. A wh-question includes a wh-word which carries nuclear stress. Armenian allows in-situ wh-words. The question ends in a rising intonation: H%. In the answer sentence, narrow focus is placed on the new information, i.e., the constituent which replaces the wh-word. We find post-focal deaccenting. These patterns are found both for object focus (§5.1) and subject focus (§5.2).

5.1 Object focus

In a typical wh-question with object focus, the wh-word is in a preverbal position. Movement to a sentence-initial position is not required. In the answer to this question, narrow focus is on the object. The object stays preverbal.9

(7) a. i. Q: ɡin-ə ʃuni  ii. A: ɡin-ə tanaɡ uni
    woman-D what has
    ‘What does the woman have?’
    ‘The woman has a knife.’

b. F1-31

Perceptually, nuclear stress is on the wh-word object. Acoustically, it has a pitch rise in both the question and the answer. The subsequent verb is deaccented and there is a steep fall from the O to the V. In the question, there is additionally a pitch rise at the end of the sentence, on the verb. Post-focal deaccenting of the verb can be transcribed with a L tone at the beginning of the verb, after the object’s H*, e.g., as H*)(L ... H%) for the question and H*)(L ... L%) for the answer.

Note that the subject in the above dialogue has stress on the penultimate vowel, before a schwa: ɡinə ‘the woman’. The rise starts in the stressed syllable, and it seems to continue onto the schwa.

As before, if the focused object is branching, then the intonation contours are essentially the same. Focus is on the preverbal noun.10

9 Other example dialogues include M2-21, F1-21.2, and F1-31.2.
10 In a comparable dialogue, M2-27 for some reason places narrow focus on the adjective in the answer, with subsequent deaccenting.
(8) a. i. Q: marja-n intʃ has Maria-D what has ‘What does Maria have?’
   ii. A: marja-n teyin baybey-mo uni Maria-D yellow pepper-INDF has ‘Maria has a yellow pepper.’

b. F1-25

However, word order can be freer in these wh-questions. For example, the wh-word and verb can together move to the sentence-initial position, while the subject is in a post-verbal position.\(^{11}\)

(9) a. i. Q: intʃ uni gin-ə what has woman-D ‘What does the woman have?’
   ii. A: gin-ə tanaq uni woman-D knife has ‘The woman has a knife.’

b. F1-30

In the above dialog, the question is OVS while the answer is SOV. In the question, there’s a pitch rise on the focused object, and the VS sequence is deaccented. There is a pitch-rise on the final syllable of the question. We again see the effects of a schwa after penultimate stress in the subject gınə ‘the woman’

Alternatively, in the synonymous dialogue below, the answer can use OVS order. The object keeps narrow focus on it. As before, the focused material has a pitch-rise, and we find subsequent deaccenting. The question has a final pitch rise.\(^{12}\)

(10) a. i. Q: intʃ uni gin-ə what has woman-D ‘What does the woman have?’
   ii. A: tanaq uni gin-ə knife has woman-D ‘The woman has a knife.’

b. F1-30.2

A much more marked alternative is to use SVO order in the answer. The object is still perceived as the most prominent constituent with a H* tone followed by sentence-final L%. The SV sequence can be interpreted as somewhat topicalized.\(^{13}\)

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\(^{11}\) Other example dialogues include M2-22, M2-32.

\(^{12}\) Other example dialogues include F2-22.

\(^{13}\) Our Eastern Armenian informant produced OVS and SOV questions. She did produce SOV answers, but she more often produced SVO answers.
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(11) a. i. Q: ɡin-ə intʃ uni
t[193x715]ʃ
woman-D what has
‘What does the woman have?’
b. M2-34.2

ii. A: ɡin-ə uni tanag
woman-D has knife
‘The woman has a knife.’

What is unattested however is a question or answer with OSV or VSO order. That is, the focused object must stay adjacent to the verb.

5.2 Subject focus

The above data concerned wh-questions where the object is the wh-word. Here, we consider wh-questions where the subject is the wh-word. In the wh-question below, the subject is a wh-word and it has narrow focus. The default sentence order is SOV. In the answer, focus is again on the subject, and the word order is SOV.14

(12) a. i. Q: ov tutag-mə uni
who parrot-INDF has
‘Who has a parrot?’
b. F1-23

ii. A: samwelə tutag-mə uni
Samuel parrot-INDF has
‘Samuel has a parrot.’

Perceptually, nuclear stress is on the subject in both the question and answer. Acoustically, there is a pitch rise on the subject. The subsequent OV sequence is deaccented in both the question and answer. In the question, there is a final pitch-rise on the sentence-final syllable.

If object is branching, the same intonational contours are found. Focus stays on the subject, and the word order stays SOV.15

(13) a. i. Q: ov gərmir bəγbey-mə uni
who red pepper-INDF has
‘What does the woman have?’
b. F1-24

ii. A: amanda-n gərmir bəγbey-mə uni
Amanda-DEF red pepper-INDF has
‘Amanda has a red pepper.’

14 Other example dialogues include M2-24.
15 Other example dialogues include M2-26 and M2-26.2.
6 Choice or alternative questions

This section reports on choice questions or alternative questions, whereby some constituent in the question is part of a disjunction. The answer has to pick one of the two disjuncts. As before, we find that narrow focus in the question and answer is marked by a pitch-rise, and then post-focal deaccenting.

In the dialogue below, the question asks which of the two objects is correct. The objects are coordinated with the disjunctive morpheme *te*. The *te* morpheme induces the meaning of a choice question.\(^{16}\)

(14) a. i. Q: marja-n nabastag te tutag uni ii. A: marja-n nabastag uni
Maria-D rabbit or parrot has Maria-D rabbit has
‘Does Maria have a rabbit or a parrot?’ ‘Maria has a rabbit?’

b. F1-24

In the question, there is a rise on both objects, and the verb is deaccented. The first object has a significantly higher rise than the second object. There is a final rise on the sentence-final syllable. In the answer, the object has a rise, and there is subsequent deaccenting.\(^{17}\)

A choice question also can provide alternatives for the subject. In the dialogue below, both the question and answer are SOV. In the question, the subject is a disjunction of two items.

(15) a. i. Q: gin-ə te mart-ə tanag uni ii. A: gin-ə tanag uni
woman-D or man-D knife has woman-D knife has
‘Is it the woman or the man who has a knife?’ ‘The woman has a knife.’

b. F1-24

In the question, the two subjects each have a pitch-rise. The first subject has a higher pitch rise than the second. There is subsequent deaccenting, and then a H% tone on the final syllable. In the answer, the subject has focus and a pitch-rise, followed by deaccenting.\(^{18}\)

When the object is branching, our female speaker preferred to place the branching object before the subject in both the question and answer.\(^{19}\)

(16) a. i. Q: garmir bəybeɣ-ə amanda-n te marja-n uni ii. A: garmir bəybeɣ-ə amanda-n uni
red pepper-D Amanda-D or Maria-D has red pepper-D Amanda-D has
‘Is it Amanda or Maria who has the red pepper?’ ‘Amanda has the red pepper.’

\(^{16}\) Other example dialogues include M2-38.

\(^{17}\) Our EA informant produced the answer with SVO ordering.

\(^{18}\) Other dialogues include F1-33.2 and M2-36.

\(^{19}\) Our EA informant also used OSV ordering in the question and answer.
The initial branching object can be considered topicalized. It has a slight pitch rise on the two stressed syllables, due to lexical stress. As before, the question has a rise on both subjects, more so on the first subject. The verb is deaccented, and there is a final rise on the sentence-final verb.

Our male informant also placed the branching object before the subject in the question form. But in the answer, he used default SOV ordering. The subject is focused, and the rest of the sentence is deaccented. The question is SOV. But in the answer, the informant produced two SOV clauses in a sequence.

(17) a. i. Q: garmir bəɣbeɣ-ə amanda-n te marja-n uni
   red pepper-D Amanda-D or Maria-D has
   ‘Is it Amanda or Maria who has the red pepper?’

   ii. A: amanda-n garmir bəɣbeɣ-ə uni
       Amanda-D red pepper-D has
       ‘Amanda has the red pepper.’

b. M2-30

Acoustically, there is a rise on both wh-words in the question. There is a sentence-final rise on the verb. In the answer, there is a rise on the two subjects and the two objects. The first clause’s verb has a rise to indicate that the sentence will continue onto the next clause. The second clause’s verb is deaccented.

7 Multiple wh-question

Multiple wh-questions are rather simple to construct. In the question form, both the subject and object are wh-words that are in-situ with a pitch-rise. But the answer to a multiple wh-question can have different structures.

For example, in the dialogue below, the question is SOV. But in the answer, the informant produced two SOV clauses in a sequence.

(18) a. i. Q: ov inʃ uni
    who what has
    ‘Who has what?’

   ii. A: gin-ə tanq uni mart-ə təkal uni
       woman-D knife has man-D spoon has
       ‘The woman has a knife; the man has a spoon.’

b. F1-32

Acoustically, there is a rise on both wh-words in the question. There is a sentence-final rise on the verb. In the answer, there is a rise on the two subjects and the two objects. The first clause’s verb has a rise to indicate that the sentence will continue onto the next clause. The second clause’s verb is deaccented.

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20 Another example dialog is M2-30.2.
21 Another example dialogue is F1-34, F1-32.2, and M2-37.
Intonation and focus marking in Western Armenian

Alternatively, the answer can use an SVO clause, followed by an SO clause with an elided verb. The first VO clause would have no accent on the verb, while there’s a clause-final H% on the object. The second clause’s SO construction would have a rise on the subject, but the conjunction of a rise H* and sentence-final fall L% on the object.\(^{22}\)

\begin{align*}
(19) & \text{a. I: Q: ov inf}\ddagger\text{ uni} & \text{ii. A: gin-ə uni tanag mart-ə təkal} \\
& \text{who what has} & \text{woman-D has knife man-D spoon} \\
& \text{‘Who has what?’} & \text{‘The woman has a knife; the man a spoon.’} \\
\end{align*}

b. M2-30

\begin{align*}
\text{i.} & \text{ov} & \text{H*} & \text{inf}\ddagger & \text{uni} & \text{H%} \\
\text{ii.} & \text{gin-ə unı tanag marto təkal} & \text{H*} & \text{H%} & \text{H*} & \text{H*L%} \\
\end{align*}

8 Generalizations and summary

In this section, we summarize the various data points on lexical stress, broad focus, narrow focus, and word order.

Lexical stress is cued by a H* rise on the stressed syllable. For example, amandán ‘Amanda’ can be broadly transcribed as having an H* on the syllable [dán]. In a narrow transcription, we could alternatively transcribe this word as a (L ... LH*) sequence where the L is on the first syllable [a], and the LH* is on the stressed final syllable [dán]. The LH* would have L anchored to the beginning of the stressed syllable while H* anchored to the end of the stressed syllable.

If the word ends in a schwa like ginə ‘the woman’, it seems that the rise tends to start on the stressed syllable and continue onto the schwa. We annotate this by placing H* on the stressed penultimate syllable [gi´].

In terms of sentential stress, broad focus is cued by the H* from lexical stress, followed by post-focal deaccenting. Similarly, narrow focus is marked by a H*, followed by post-focal deaccenting. Thus, a significant role is played by post-focal deaccenting or compression (Xu 2011). Similar facts are reported for Turkish (Ipek 2011; İpek & Jun 2013, 2014; Kamali 2011) and Persian (Rahmani 2019; Sadat-Tehrani 2007; Taheri-Ardali, Rahmani, & Xu 2014). These similarities are not surprising because Western Armenian syntax has been heavily affected by Turkish contact (Adjarian 1909; Donabédian 2018; Khanjian 2013; Sigler 1997), and to some extent Iranian contact (Donabedian & Sitaridou 2021).

Essentially all types of questions end in a H% tone, including polar questions, wh-questions, choice questions, and multiple wh-questions. The data is partially similar to both Turkish (Göksel, Kelepir, & Üntak-Tarhan 2009; Kamali 2014) and Persian (Sadat-Tehrani 2007). Polar questions have H% in both Western Armenian and Persian, but not Turkish (which uses L%). Wh-questions have H% in both Western Armenian and Turkish, but not Persian (which uses L%). Furthermore, wh-words carry nuclear stress in wh-questions in Armenian, as well as in Persian and Turkish.

For polar questions in Armenian, the final H% is on the verb in SOV orders, but it can also be on the subject in OVS orders. The only type of interrogative that doesn’t have a H% tone is a SOV polar question with focus on a subject; instead, such a question has a rise that continues from the subject until the sentence-final

\(^{22}\) Our EA informant would often utilize SVO ordering in her answers, such as SVO-SVO.
L%, i.e., a high plateau. To our knowledge, high plateaus have not been reported for contrastive focus in polar questions in Turkish (Kamali 2014) or Persian (Sadat-Tehrani 2011:125).

Furthermore, nearly all types of declarative sentences end in a L% tone. The exception is a sequence of two clauses in an answer to a multiple wh-question. There, the first clause would end in a H% tone to mark continuation.

In terms of word order, the basic word order for WA questions and answers was SOV, similar to Turkish (Göksel & Özsoy 2000). SOV order was found for broad focus, object focus, and subject focus. Some alternations to SOV order were found, usually due to topicalizing either the object or the subject. The sentence-final position was often used for placing topicalized elements in WA. Similar behavior is reported for EA (Giorgi & Haroutyunian 2016; Tamrazian 1994) and Turkish (İşsever 2003).

Under object focus, OVS orders were likewise sometimes found for object focus, and very rarely SVO order. The subject in OVS order in this situation was treated as backgrounded. As for subject focus, sometimes we found OSV order when the object is branching. The initial object in this position can be considered topicalized.

This paper is however preliminary and we open up a set of viable future research questions. These questions require a larger corpus of speakers and data.

(20) Open questions for Western Armenian
   a. What are the actual acoustic values for the different types of pitch rises?
   b. What is the intonational structure of multi-word phrases?
   c. Is there evidence for systematic declination either within phrases or across a sentence?
   d. What is the intonational structure of polar questions where the verb is sentence-medial?
   e. What is the intonational structure of polar questions with narrow focus on objects or verbs?
   f. What is the intonational structure of topics, whether sentence-initial or sentence-final?
   g. What is the intonational structure of words with non-final stress?
   h. What is the intonational structure of sentences with clitics?
   i. What is the intonational structure of sentences with exclamations or vocatives?

One analytical issue that the authors disagree on is how to interpret the intonational structure of nuclear stress under broad focus. In an SOV sentence under broad focus, the second author interprets the stressed object as having a slight but perceivable rise: \([L \ldots H^*]_w\). The slightness is due to phonetic declination. The first author instead interprets the object as being a flat contour: \([L\ldots L^*]_w\). This second interpretation would make the Armenian data align more with Turkish for nuclear stress under broad focus, such that the Turkish equivalent would have a flat f0 contour over the stressed object, but a steep rise on the preceding subject (a boost) (Ipek 2015; Ipek & Jun 2013). But under this interpretation, Armenian would still differ from Turkish because Armenian would use rises for nuclear stress under narrow focus in declaratives, unlike Turkish which uses flat contours for nuclear stress in any type of declarative. A larger corpus is needed to distinguish these two interpretations.

Another open question concerns intonational differences between Western and Eastern Armenian. For example, although wh-questions take a sentence-final rise H% in Western Armenian, it is reported that they take a sentence-final fall L% in Eastern Armenian (Johnson 1954:15; Gowkasyan 1990). Some Eastern sources likewise report no high plateaus and a L% for polar questions with focus on a sentence-medial word (Gowkasyan 1999). Verifying and discovering more of such divergences is left for future work.
9 Conclusion

Armenian is an Indo-European language with two standard varieties: Western (WA) and Eastern (EA). In this paper, we documented the prosodic characteristics of Western Armenian. Primary stress is generally associated with the final syllable with a full vowel, i.e., a non-schwa.

So far, we have analysed lexical stress, broad focus, narrow focus, question-formation and their relation with word order. Both polar questions wh-questions are categorized by a final H%. Post-focal deaccenting is a common strategy after the focused item.

Taking into account the various data on Western Armenian (from this work) and on Eastern Armenian from previous research, we have concluded that Western Armenian follows a different strategy for focus projection than Eastern Armenian. Further work should be held to answer the questions above and to conduct comparative research on intonation for both dialects.

References


Variation in a bracketing paradox: A case study in Armenian compounds

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Abstract

A morphology-phonology bracketing paradox is a case where the morphological and phonological structures of a word are not isomorphic. Armenian compounds display such a paradox in their pluralized forms. The plural suffix displays phonologically-conditioned allomorphy based on syllable-count. Endocentric compounds are paradoxically pluralized as monosyllabic if their head is monosyllabic. This paper documents the extent to which such a paradox shows exceptions and variation. These factors range from phonological restrictions on bisyllabic minimality, semantic change, the loss of morphological structure via grammaticalization, and the emergence of morphological structure via reanalysis.

Keywords: Armenian, compound, bracketing paradox, variation, grammaticalization

1. Introduction

Bracketing paradoxes are cases where a word has multiple contradictory hidden structures. In the case of Armenian, compound plurals display a bracketing paradox between their phonological structure (syllable count) and their morphological structure (syllable-counting allomorphy). Briefly put, compounds are polysyllabic. The plural suffix is -er for monosyllabic bases, -ner for polysyllabic ones. If a compound is exocentric, then it transparently takes the plural suffix -ner. But if a compound is endocentric and has a monosyllabic second-stem (the head), then the compound paradoxically takes the -er suffix.

The basics of this bracketing paradox have been described in depth in the philological and generative literature (§2) (Dolatian 2020, 2021b). In this paper, I go through exceptions and variations on the bracketing paradox in Armenian (cf. variation in English: Kang 1993; Spencer 1988; Sproat 1992). These are cases where an exocentric compound unexpectedly triggers the bracketing paradox, or when an endocentric compound does not undergo the bracketing paradox. These exceptions involve factors ranging from bisyllabic minimality (§3), semantic opacity (§4), morphologization (§5), to loanword adaptation (Avetisyan 2007; Marowt’yan 2003; Sargsyan 1979, 1984, 1987). The end-result is to document how much inter-modular information can be gleaned thanks to the bracketing paradox.  

2. Overview of compounds and the bracketing paradox

In Armenian, compounds are formed by concatenating two stems (STEM1 and STEM2) with the linking vowel -a-. Both simplex and compound words are prosodically parsed as single prosodic works, marked by final stress. We often find the reduction of destressed high vowels in STEM1 (Dolatian 2021a). 

1 In terms of transcription, we transcribe the segments /a,ɛ,ɔ,χ,ʁ,r/ as a,e,o,r,ɣ,ṙ. For Western Armenian, we do not mark aspiration on consonants because it is not contrastive in Western Armenian. Armenian citations are Romanized based on the ISO 9985 transliteration system. I transcribe the Eastern trill /r/ as ṙ. Unless specified otherwise, data is transcribed based on the Western Armenian pronunciation.
The linking vowel is semantically vacuous (Mxit’aryan 2017). Diachronically, it developed from the case system of Classical Armenian (Abeğyan 1965:190-194; Sevak 2009:146; Mxit’aryan 2017:187).

The main theoretical curiosity of compounds is that they display a bracketing paradox in the plural. Briefly put, the plural suffix displays two phonologically-conditioned allomorphs based on syllable count: -er after monosyllabic bases, -ner after polysyllabic bases.

Compounds show a split in how they are pluralized when Stem2 is monosyllabic. I underline the counted syllables. In exocentric compounds, we unsurprisingly see that the -ner form is used because the compound is polysyllabic. Exocentric compounds include possessive compounds and deverbal compounds. In contrast in endocentric compounds, the -er form is paradoxically used when Stem2 is a monosyllabic head. Endocentric compounds include nominal compounds and adjectival compounds.

(3) Bracketing paradox in compounds

<table>
<thead>
<tr>
<th>Exocentric Possessive</th>
<th>Deverbal</th>
</tr>
</thead>
<tbody>
<tr>
<td>kankr + hér</td>
<td>sagav + xos-il</td>
</tr>
<tr>
<td>kankr-a-hér</td>
<td>sagav-a-xos</td>
</tr>
<tr>
<td>kankr-a-her-nér (PL)</td>
<td>sagav-a-xos-nér  (PL)</td>
</tr>
<tr>
<td>Endocentric Nominal</td>
<td>Deverbal</td>
</tr>
<tr>
<td>dzóv + márd</td>
<td>dzár + xíd</td>
</tr>
<tr>
<td>dzov-márd</td>
<td>dzar-a-xid</td>
</tr>
<tr>
<td>dzov-márd-ér (PL)</td>
<td>dzar-a-xid-ér    (PL)</td>
</tr>
</tbody>
</table>

The above data is a bracketing paradox (Newell 2019; Pesetsky 1985). For illustration, when a compound undergoes the bracketing paradox and takes the -er plural form, we say it got paradoxically pluralized. When the non-paradoxical -ner is used, we say the compound got transparently pluralized.

In the generative literature, the above bracketing paradox was first tackled in Vaux (1998) using morpho-logical rebracketing. Dolatian (2020, 2021b) discusses in depth the synchronic nature of this bracketing paradox. He argues that the interaction between the bracketing paradox and cyclic phonology is evidence against morphological rebracketing. He analyzes the paradox by allowing realization rules to reference morphological heads (h) within a cyclic framework (cf. head-operation rules in: Aronoff 1988; Hoeksema 1985; Rainer 1993).

(4) Realization rules for the plural suffix

\[
\begin{align*}
\text{PL} & \rightarrow \text{ -er} / \sigma_h \\
& \rightarrow \text{ -ner} / \text{elsewhere}
\end{align*}
\]

The generalization on headedness is robust in contemporary Armenian. But this has not always been the case. In a study of compounding in early modern Armenian, Sargsyan (1979, 1987) notes that 19th century Armenian had relatively few compounds with a monosyllabic Stem2 (Sargsyan 1987:201). Once such compounds became more productive and widespread, speakers had varying judgments on how to pluralize them. Both transparent and paradoxical plurals for the same compound can be found in early literature, grammars, and dictionaries. For the same compound, variant plurals could be found in the works of the same author or the same lexicographer (Sargsyan 1979:35-6).

For example, in early modern Armenian, the endocentric compound foke-náv ‘steam-boat’ (5a) could either be paradoxically pluralized with -er in foke-náv-er or transparently pluralized with -ner in foke-náv-ner. Currently only the paradoxical plural is grammatical.
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(5) Optional transparent and paradoxical plurals in early Armenian (Sargsyan 1979:35-6)

| a. ʃokí + náv  | ‘steam + boat’  | b. gərág + géd  | ‘fire + point’  |
| ʃoke-náv       | ‘steam-boat’    | gərag-a-géd     | ‘shooting point’ |
| ʃoke-nav-nér   | ‘steam boats’   | gərag-a-ged-nér | ‘shooting-points’ |
| ʃoke-nav-ér    |                  | gərag-a-ged-ér  |                  |

In the face of this widespread variation within and across authors, early native grammarians could not yet state a generalization on the distribution of the bracketing paradox (Marowt’yan 2003:54-5). Eventually inter- and intra-speaker variation was levelled out (Sargsyan 1987:202) and the current generalization developed: endocentric compounds display the bracketing paradox.

The next few sections go through residual cases in contemporary Armenian where the bracketing paradox is exceptionally triggered in exocentric compounds or exceptionally blocked in endocentric compounds.

3 Phonological factors on the bracketing paradox

In terms of phonological factors, Dolatian (2020, 2021b) documents a circumscribed set of data which seem to contradict the simple analysis on the bracketing paradoxes. In the previous cases, a linking vowel was present, rendering the compound at least trisyllabic. But a linking vowel is not used in all types of compounds. For example, a linking vowel is not used if the second stem, Stem2, is V-initial: *pa.j-imášt* (6a). In that case, the two stems are syllabified together without a linking vowel.³

(6) a. páj + imást  ‘verb + meaning’  d. vórs + arád  ‘prey + abundant’
| pa.j-imášt      | ‘verbal meaning’ | vor.s-arád     | ‘full of game’ |
| b. sird + uráx  ‘heart + happy’  e. torám + ožíd  ‘money + dowry’
| sər.d-uráx      | ‘having a happy heart’ | təra.m-oʒíd   | ‘monetary dowry’ |
| c. tás + əngér  ‘class + friend’  f. bár + jérk  ‘dance + song’
| ta.s-əngér      | ‘classmate’       | ba.r-ék       | ‘dance song’ |
| d. ʒam-géd      | ‘flower + bunch’  | haʃiv + dún   | ‘calculation + house’ |
| dʒamg-e-pýntf   | ‘bouquet’         | haʃv-e-dún    | ‘clearing house’ |
| c. ʒázyg + taɣár ‘flower + pot’  | haʃv-a-senjág   | accounting room |
| dzáyg-a-taɣár  | ‘flower pot’      |  | |

In some compounds, the linking vowel is absent for arbitrary lexical reasons. Some compounds surface without any linking vowel at all even though Stem2 is C-initial: *ʒam-géd* (8). There are pairs of stems which

³ For some roots, root-initial e generally triggers glide-epenthesis when it is word-initial: jérk from orthographic <erk> ‘song’. Prescriptively, this glide does not appear when a stem-initial e is word-medial because of compounding: ba.r-érk. I use the term ‘prescriptively’ because colloquial speech tends to preserve the glide (Dum-Tragut 2009:14-5). More data is needed to confirm any statistical tendencies on the presence vs. absence of the glide inside compounds.

⁴ Other possible but rare linking vowels exist. Geworgyan (2007:172) notes the use of a linking vowel -i- in a handful of compounds. Ŗloyan (1972:80) and Mxit’aryan (2017:182) note that recent borrowed compounds use a linking vowel -o-.
can form a compound either with or without the linking vowel: sal-(a)-kár (9a). The two compounds can be synonymous (9a) or not (9b). These un-linked compounds are less common than linked compounds. Éloyan (1972) argues that they arise from collocation, dialectal borrowings, loanwords, or sporadic diachronic syncope of the linking vowel -a-.

(8) a. ʒám + géd ‘time + dot’  
  ʒam-géd ‘period, term’  
  b. ŧfúr + védʒ ‘water + fall’  
  ŧór-védʒ ‘waterfall’

(9) a. sál + kár ‘anvil + rock’  
  sal-kár ‘flagstone, paving’  
  b. ŧfúr + džayig ‘water + flower’  
  ŧór-džayig ‘water pox’

The theoretical significance of the linking vowel comes from cases where the absence of the linking vowel renders the compound bisyllabic. For un-linked and endocentric bisyllabic compounds, we find variation in the type of plural suffix. Either the suffix is -er because we count the head, or it is -ner because we count the entire compound.

(10) a. xátʃ + kár ‘cross + stone’  
  xatʃ-kár ‘cross-stone’  
  aɣves + xod  ‘fox + grass’  
  aɣves-a-xod  ‘foxtail’  
  aɣves-a-xod-ér ‘foxtails’

Dolatian (2020, 2021b) formalizes the above variation by mapping semantic heads to the prosodic stem as a sublexical prosodic constituent (PStems Downing 1999). Monosyllabic PStems in bisyllabic endocentric compounds can undergo optional prosodic restructuring. For space, I refer readers to Dolatian (2021b) for the analysis. These bisyllabic compounds are thus a case of having prosodic structure trigger the bracketing paradox.

4 Semantic factors and opacity

In terms of semantic factors, there are relatively few cases where we can see that semantic change affected a compound’s plural form. I document three such semantically-induced cases: semantic opacity, gradual semantic opacity, and the interaction between metaphoricity and fauna/flora names.

First, very rarely, language change can cause a nominal compound to become semantically opaque. Semantic opacity removes hyponymy, thus removing endocentricity and the bracketing paradox. To illustrate, consider compounds where Stem2 is the word xod ‘grass’. This stem is used to name many types of grass-like plants and weeds. Most of these compounds are interpreted as endocentric and undergo the bracketing paradox (11a). One exception though is the word for ‘tobacco’ dəzəx-a-xod, literally ‘smoke-grass’ (11b). Although tobacco is a type of plant, the connection between its etymology and usage is rather opaque. The concept of tobacco has now become less plant-like, owing to its widespread use in cigars and cigarettes. This disconnect between tobacco as a plant vs. a recreational substance has rendered this compound as exocentric. It is transparently pluralized.

(10) a. ayves + xod  ‘fox + grass’  
  ayves-a-xod ‘foxtail’  
  ayves-a-xod-ér ‘foxtails’  
  b. dzux + xod  ‘smoke + grass’  
  dzəx-a-xod ‘tobacco’  
  dzəx-a-xod-nér ‘tobaccos’

Second, in some words, semantic opacity is gradual and on a cline. The word for airplane is a compound (12a) consisting of ‘air’ and ‘ship’, i.e. ‘a ship in/for the air, an airship’. Donabédian (2004:19) notes that this word used to have a clear hyponymic relationship, i.e. ‘an airship’, and thus should take only the paradoxical -er. However, it no longer has a clear hyponymic relationship. It is thus grammatical to pluralize this word either paradoxically with -er or transparently with -ner. Contrast ‘airplanes’ with the hyponymic ‘airfields’ which is only paradoxically pluralized: ot-a-taft-er (12b).
Metaphoric interpretations likewise interact with endocentricity and the bracketing paradox. The names of many aquatic animals and plants are compounds where Stem1 is ‘water’ or ‘sea’, while Stem2 is a noun which resembles the animal or plant. In some cases, the metaphoric link is pretty transparent and cross-linguistically common like ‘manatees’ as ‘water-cows’. But in other compounds, the metaphorical connection is unclear: ‘sea-mother’ for ‘jellyfish’. But regardless, these metaphorically-based compounds are grammatically treated as endocentric and trigger the bracketing paradox.

<table>
<thead>
<tr>
<th>Stem 1</th>
<th>Stem 2</th>
<th>Compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>jûr</td>
<td>gov</td>
<td>‘water + cow’</td>
</tr>
<tr>
<td>jûr-a-gov</td>
<td>‘manatee’</td>
<td></td>
</tr>
<tr>
<td>jûr-a-gov-ér</td>
<td>‘manatees’</td>
<td></td>
</tr>
<tr>
<td>dzov</td>
<td>majr</td>
<td>‘sea + mother’</td>
</tr>
<tr>
<td>dzov-a-majr</td>
<td>‘jellyfish’</td>
<td></td>
</tr>
<tr>
<td>dzov-a-majr-ér</td>
<td>‘jellyfishes’</td>
<td></td>
</tr>
</tbody>
</table>

It is unclear how to formalize the contrast between these metaphoric meanings which trigger the bracketing paradox vs. those in (11b) which cannot. It seems that Armenian has grammaticalized a compounding construction for naming plants and animals, such that these are treated as morphologically endocentric despite the (biologically) non-transparent semantics.

In sum, the above cases show how semantic factors can trigger or remove the bracketing paradox.

5 Morphological changes around the bracketing paradox

In order for the compound to show a bracketing paradox, the compound has to be treated as endocentric. A necessary morphological condition for endocentricity is that Stem2 and the compound share the same part of speech. An additional condition is that Stem2 is treated as a morphologically complex stem, i.e., not an affix. All previously discussed compounds satisfied this additional morphological condition.

In section §5.1, I go through compounds where Stem2 was originally parsed as a complex stem, but has now been demoted to a suffix. These words lost their status as endocentric compounds and can’t trigger the bracketing paradox anymore. Then in section §5.2, I go through words which have become reanalyzed as endocentric compounds, and thus now trigger the bracketing paradox.

5.1 Loss of the paradoxical plural

The conditions which lead to the loss of the bracketing paradox ultimately involve weakening the morphological complexity of Stem2, whether by grammaticalization (§5.1.1), lexicalization (§5.1.2), or a complex interaction of multiple factors (frequency, bleaching) across dialects (§5.1.3). When a compound undergoes these changes, it is no longer parsed as endocentric, and it no longer triggers the bracketing paradox.
5.1.1 Gradual grammaticalization: from stem to suffix

Some compounds have Stem2 diachronically get reanalyzed as a suffix through a gradual process of grammaticalization. For example, a common Stem2 in compounding is the morpheme bed (14a). It can surface as a free-standing stem that means ‘leader’. It is often used in compounds to mean any type of leader: xəmp-a-bed ‘group leader’. Although these words look like hyponymic and endocentric compounds, they do not trigger the bracketing paradox. They are not pluralized as monosyllables with -er. Instead, they are transparently pluralized with -ner: xəmp-a-bed-ner.

(14) a. xúmp + béd  ‘group + leader’  b. náv + béd  ‘ship + leader’
   xəmp-a-béd  ‘group leader’  nav-a-béd  ‘captain, ship-leader’
   xəmp-a-bed-néř  ‘group leaders’  nav-a-béd-néř  ‘captains’

Impressionistically, the morpheme bed is being used less and less as a free-standing root. Instead, its appearance in compounds is becoming more common. These factors are causing the morpheme bed to be reinterpreted as a suffix. By not being its own stem anymore, these ‘compounds’ are being reanalyzed as simple root-suffix combinations.

This reanalysis or grammaticalization is gradual and incomplete. It is gradual because some dictionaries and sources still indicate both a paradoxical and transparent plural for some -bed final compounds: kjuɣ-a-bed-nér (15a) (Marowt’yan 2003:53). Some paradoxical plurals are found even in neologisms: terasan-a-bed-nér ‘lead-actors’ (15b) (Sargsyan 1979:37-9).

(15) a. kújɣ + béd  ‘village + leader’  b. terasán + béd  ‘actor + leader’
   kjuɣ-a-béd  ‘village leader’  terasan-a-béd  ‘lead actor’
   kjuɣ-a-bed-ér  ‘village leaders’  terasan-a-bed-nér  ‘lead actor’
   kjuɣ-a-bed-nér  ‘village leaders’

But in general, the transparent plural is largely the norm now (Sargsyan 1979:37-9). There are likewise signs that this morpheme is getting bleached (Marowt’yan 2003:61).

The same process of grammaticalization is observed with other morphemes. A partial list of them is provided below, compiled from multiple sources (Sargsyan 1987:203; Avetisyan 2007:43). For the different morphemes in (16), their free-standing nominal form is rarely used. Some are farther along the grammaticalization cline than others. They are increasingly taking only transparent plurals. For some, a paradoxical plural either is obsolete or optional.

(16) Gradually grammaticalized morphemes and their transparent plurals (Sargsyan 1987:203)

<table>
<thead>
<tr>
<th>Stem1</th>
<th>Rare Stem2</th>
<th>Compound</th>
<th>Transparent plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>vért</td>
<td>pán</td>
<td>vert-[a-pán]</td>
<td>vert-[a-pan-ner]</td>
</tr>
<tr>
<td>kórdz</td>
<td>tůl</td>
<td>kordz-a-túl</td>
<td>kordz-a-tul-ner</td>
</tr>
<tr>
<td>ajki</td>
<td>bání</td>
<td>ajke-bání</td>
<td>ajke-ban-ner</td>
</tr>
<tr>
<td>namág</td>
<td>níf</td>
<td>namag-a-níf</td>
<td>namag-a-níf-ner</td>
</tr>
<tr>
<td>hedzéľ</td>
<td>zór</td>
<td>hedzel-a-zór</td>
<td>hedzel-a-zor-ner</td>
</tr>
<tr>
<td>hav</td>
<td>git</td>
<td>hav-git</td>
<td>hav-git-ner</td>
</tr>
</tbody>
</table>

More sporadic cases of gradual grammaticalization have been observed by Marowt’yan (2003) and Sargsyan (1979, 1987). I leave investigating the prevalence of the paradoxical vs. transparent plural to future corpus work.
5.1.2 Lexicalization and bleaching

The bracketing paradox can likewise be lost via a combination of semantic bleaching, morphological frequency, and lexicalization. A simple case study is the morpheme *ged* (17). It can form a free-standing root that means ‘point’. It is used to form many punctuation-based compounds.

(17) Compounds with STEM2 *ged*

<table>
<thead>
<tr>
<th>Stem1</th>
<th>Stem2</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>əstör ‘bottom’</td>
<td>géd ‘point’</td>
<td>əstör-a-géd ‘comma’</td>
</tr>
<tr>
<td>mét ’inside’</td>
<td>géd ‘point’</td>
<td>mét-a-géd ‘semi-colon’</td>
</tr>
<tr>
<td>vért ’end’</td>
<td>géd ‘point’</td>
<td>vért-a-géd ‘period’</td>
</tr>
<tr>
<td>pazm- ‘multi-’</td>
<td>géd ‘point’</td>
<td>pazm-a-géd ‘ellipis’</td>
</tr>
</tbody>
</table>

The above compounds look hyponymic and look like endocentric compounds. One would think that they should trigger the bracketing paradox and get pluralized with -er. But based on a corpus study, Sargsyan (1979:37-9) reports that all of the above compounds can be optionally pluralized with either -er or -ner. In my own speech and in Marowt’yan (2003:60)’s judgments, only the -ner form sounds grammatical. Thus, these words have lost or are losing their morphological structure as endocentric compounds.

I suspect that this change is because of frequency and lexicalization. The above words are well-established enough that they are no longer parsed as being actively derived as hyponymic compounds. We see the effect of frequency in two synonymous compounds that do not refer to punctuation: *des-a-ged* (18a) and *hajets-a-ged* ‘point-of-view’ (18b).

(18) a. des-nél + géd ‘to see + point’ b. hajets-k + géd ‘glance + point’
    des-a-géd ‘point of view’     hajets-a-géd ‘point of view’
    *des-a-géd-ér ‘point of views’    hajets-a-géd-ér ‘point of views’
    des-a-géd-nér     *hajets-a-géd-nér

The compound *des-a-ged* (18a) is the most frequent word to denote ‘point-of-view’. It appears to be hyponymic. But Sargsyan (1979:37-9) reports that it never triggers the bracketing paradox: *des-a-ged-ner*. I agree with her judgments. In contrast, the synonymous compound *hajets-a-ged* (18b) is infrequent and restricted to higher registers. It always triggers the bracketing paradox: *hajets-a-ged-er*.

In sum, lexicalization and frequency can cause an endocentric compound to lose its morphological structure and no longer trigger the bracketing paradox.

5.1.3 Semantic bleaching and grammaticalization across dialects

This section discusses similar effects in lexicalization and grammaticalization. A twist is that these effects cause the loss of the bracketing paradox in Western Armenian, but not Eastern Armenian.

Consider the two highly frequent morphemes: *kír* (19a) and *níʃ* (19b). The words have many senses. The underspecified meaning of *kír* is ‘writing’ while that of *níʃ* is ‘sign’. Their most frequent narrow meaning is ‘handwriting’ and ‘grade’ respectively. Each likewise forms a frequent verb: kər-él ‘to write’ (19a-ii) and nəʃ-él ‘to signal, mark’ (19b-ii).

(19) a. i. kír ‘writing’ b. i. níʃ ‘sign’
    ‘handwriting’        ‘grade’
    ii. kər-él ‘to write’ ii. nəʃ-él ‘to signal, mark’

5 The stem hajets-k truncates its nominalizer -k. The behavior of -k. The diphthong ja undergoes destressed reduction to e. This is a fossilized rule from Classical Armenian, discussed in Dolatian (2020:ch2).
But compounds formed with these morphemes show dialectal, lexical, and diachronic differences in how they are pluralized. In Eastern Armenian, the morpheme kír is pronounced as gir (19a). It can form either endocentric nominal compounds or exocentric deverbal compounds: deɣ-a-gir ‘prescription’ vs. ‘prescription writer’ (20a). In contemporary Eastern Armenian (Sargsyan 1979:36), the former are paradoxically pluralized with -er, while the latter are transparently pluralized with -ner: deɣ-a-gir-er ‘prescriptions’ vs. deɣ-a-gir-ner ‘prescription writers’.6

(20) Eastern Armenian

<table>
<thead>
<tr>
<th>Stem1</th>
<th>Compound with Stem2 kír</th>
<th>Western Plural</th>
<th>Eastern Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>herú ‘far’</td>
<td>hera-a-kír ‘telegraph’</td>
<td>her-a-kir-nér</td>
<td>her-a-gir-ér</td>
</tr>
<tr>
<td>dzír ‘contour, edge’</td>
<td>dzor-a-kír ‘plan, outline’</td>
<td>dzor-a-kir-nér</td>
<td>tsor-a-gir-ér</td>
</tr>
<tr>
<td>hájd ‘clear’</td>
<td>hajd-a-kír ‘program’</td>
<td>hajd-a-kir-nér</td>
<td>hajt-a-gir-ér</td>
</tr>
<tr>
<td>kalux ‘head’</td>
<td>kəlx-a-kír ‘capital letter’</td>
<td>kəlx-a-kir-nér</td>
<td>gəlx-a-gir-ér</td>
</tr>
<tr>
<td>nagar ‘picture’</td>
<td>nagar-a-kír ‘description’</td>
<td>nagar-a-kir-nér</td>
<td>nakar-a-gir-ér</td>
</tr>
</tbody>
</table>

The above data is as expected. Because the morpheme kír/gir can form either a noun (19a-i) or a verb (19a-ii), then it can form either hyponymic nominal or non-hyponymic deverbal compounds.

But the pluralization of these compounds has been unstable, both diachronically and cross-dialectally. In Western Armenian, both hyponymic and non-hyponymic readings of ambiguous kír/gir-final compounds (20a) tend to be transparently pluralized with -ner: teɣ-a-kír-ner can mean both ‘prescription’ and ‘prescription writer’ in Western Armenian.

(21) Western Armenian

<table>
<thead>
<tr>
<th>Stem1</th>
<th>Compound with Stem2 kír</th>
<th>Western Plural</th>
<th>Eastern Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>herú ‘far’</td>
<td>hera-a-kír ‘telegraph’</td>
<td>her-a-kir-nér</td>
<td>her-a-gir-ér</td>
</tr>
<tr>
<td>dzír ‘contour, edge’</td>
<td>dzor-a-kír ‘plan, outline’</td>
<td>dzor-a-kir-nér</td>
<td>tsor-a-gir-ér</td>
</tr>
<tr>
<td>hájd ‘clear’</td>
<td>hajd-a-kír ‘program’</td>
<td>hajd-a-kir-nér</td>
<td>hajt-a-gir-ér</td>
</tr>
<tr>
<td>kalux ‘head’</td>
<td>kəlx-a-kír ‘capital letter’</td>
<td>kəlx-a-kir-nér</td>
<td>gəlx-a-gir-ér</td>
</tr>
<tr>
<td>nagar ‘picture’</td>
<td>nagar-a-kír ‘description’</td>
<td>nagar-a-kir-nér</td>
<td>nakar-a-gir-ér</td>
</tr>
</tbody>
</table>

The tendency is so strong in Western Armenian that one comparative grammar found that all compounds with final -kir take a transparent plural even if the compound only has a single hyponymic meaning (Avetisyan 2007:43).7 A partial list of these compounds is below. In contemporary Western Armenian, the compounds in (22) seem hyponymic and endocentric but they are transparently pluralized with -ner: her-a-kir-ner ‘telegraphs’. They do not trigger the bracketing paradox.

(22) Hyponymic compounds with kir ‘writing (n.)’ (19a-i) which are transparently pluralized in Western Armenian (Avetisyan 2007:43)

In contemporary Eastern Armenian, these compounds only receive a paradoxical plural: her-a-gir-ér ‘telegraphs’. This is expected. But historically in early modern Eastern Armenian, both transparent and paradoxical plurals were possible for the strictly endocentric nominal compounds in (22) and other endocentric nominals with -kir/gir (Sargsyan 1979:37-9).

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6 Eastern Armenian has destressed high vowel reduction in deɣ-a-gor-er (20a). I abstract from this here.

7 Given this data, Avetisyan (2007:43) argued that the bracketing paradox is blocked in Western Armenian when Stem2 is a closed syllable with i: CIC. I think this is incorrect and that the right generalization is morphology, not phonological.
In the case of նիշ ‘sign’ (19b), we see even more instability in (23). Some endocentric nominal compounds with նիշ show both transparent and paradoxical plurals in Eastern Armenian: աստղ-անիշ (n)եր ‘asterisks’. Others only allow the transparent plural: հատկ-ա-նիշ (n)եր ‘characteristics’.

(23) Hyponymic compounds with նիշ which are variably pluralized in Eastern Armenian

<table>
<thead>
<tr>
<th>Group</th>
<th>STEM1</th>
<th>nominal STEM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doublet</td>
<td>namak</td>
<td>namak-ա-նիշ</td>
</tr>
<tr>
<td></td>
<td>post</td>
<td>post-ա-նիշ</td>
</tr>
<tr>
<td></td>
<td>‘write’</td>
<td>‘write’</td>
</tr>
<tr>
<td></td>
<td>‘signal’</td>
<td>‘signal’</td>
</tr>
<tr>
<td></td>
<td>‘postmark’</td>
<td>‘postmark’</td>
</tr>
<tr>
<td></td>
<td>‘road’</td>
<td>‘road’</td>
</tr>
<tr>
<td></td>
<td>‘money’</td>
<td>‘money’</td>
</tr>
<tr>
<td></td>
<td>‘disease’</td>
<td>‘disease’</td>
</tr>
<tr>
<td></td>
<td>‘thought’</td>
<td>‘thought’</td>
</tr>
<tr>
<td></td>
<td>‘class’</td>
<td>‘class’</td>
</tr>
<tr>
<td></td>
<td>‘star’</td>
<td>‘star’</td>
</tr>
<tr>
<td>Transparent</td>
<td>hatuk</td>
<td>hatk-ա-նիշ</td>
</tr>
<tr>
<td></td>
<td>‘special’</td>
<td>‘special’</td>
</tr>
<tr>
<td></td>
<td>‘measure’</td>
<td>‘measure’</td>
</tr>
<tr>
<td></td>
<td>‘demonstration’</td>
<td>‘demonstration’</td>
</tr>
</tbody>
</table>

The compounds in the Transparent Group can only be transparently pluralized in early modern and contemporary Eastern Armenian (Sargsyan 1979:37-9; Marowt’yan 2003:59). Based on my own judgments, this is the case for Western Armenian as well.

But for the compounds in Doublet Group, they could form either transparent or paradoxical plurals in early modern Eastern Armenian (Sargsyan 1979:37-9). Sargsyan reports that they still do (circa 1979). But Marowt’yan (2003:59) reports that many of the compounds in the Doublet Group only form transparent plurals in contemporary Eastern Armenian (circa 2003). My judgment is that Western Armenian also only allows the transparent plural.

I speculate that there are three reasons for the diachronic and cross-dialectal instability of these compounds with կիր/գիր and նիշ: semantic shift, frequency, and bleaching. First, the free-standing bases of կիր (24a-i) and նիշ are frequent (24b-i), but their meanings have semantically narrowed down. The word կիր generally refers to a person’s handwriting and not just any piece of text. Similarly, նիշ generally refers to a person’s school-grades or points, and not just any symbol.

(24) a.  i. kir ‘writing (abstract)’  b. i. kir ‘sign (abstract)’
    ‘handwriting (common)’  ‘grade, point (common)’
    ii. kər-էլ ‘to write’  ii. kər-էլ ‘to signal, mark’
    iii. kəɾ-ութջուն ‘writing (common)’  iii. naʃan ‘sign (common)’

The ‘simpler’ meanings of these two roots is often expressed by other derivatives: կար-ութչուն (24a-iii) and նաʃան (24b-iii).8

Second and third, the two morphemes frequently form many compounds. The morpheme կիր is analogous to the neoclassical bound root -graph used throughout English. It is used to form any text-related compound word, as demonstrated in (22). As for նիշ, it is often used to form any compound that is abstractly related to ‘measuring’ or ‘signaling’, as demonstrated in (23). Some consider it bleached (Marowt’yan 2003:59).

With these three factors (semantic shift, frequency, bleaching), the fact that a transparent plural is frequent in Western Armenian is explainable. The above factors conspire to weaken the semantic salience of

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8Both նիշ and նաʃան were borrowed from Iranian (A.čaɾean 1971). One is derived from the other in the source language, but not in Armenian.
kír and nìʃ. This weakening predicts that the rate in which these compounds are reanalyzed as suffixed words should be more likely in Western Armenian (Avetisyan 2007) and in old Eastern Armenian (Sargsyan 1979).

To explain why Eastern Armenian currently prefers to form paradoxical plurals for some of these compounds (Sargsyan 1979), it is ultimately because speakers still parse these compounds as endocentric nominals derived from a free-standing noun kír and nìʃ. It is an arbitrary fact of the Eastern Armenian lexicon.

5.2 Creation of the paradoxical plural

In contrast to the above diachronic loss of a bracketing paradox due to morphological reanalysis, there are likewise cases where a bracketing paradox is created because of reanalysis. I discuss two such cases. One involves loanword adaptation (§5.2.1), the other is the recent creation of a new hyponymic subcategory (§5.2.2).

5.2.1 Loanword borrowing

One simple case involves borrowed words. If some borrowed word was a compound in a source language, it is no longer interpreted as a compound in Armenian. This is simply because the individual stems which make up the original compound do not exist in Armenian. Common examples are scientific terminology. These compounds are transparently pluralized with -ner: karom-o-söm-ner (25a). (Sargsyan 1979:41-2).

(25) a. karom-o-söm  ‘chromosome’ b. eritr-o-sít  ‘erythrocyte’
    karom-o-söm-nér  ‘chromosomes’ eritr-o-sít-nér  ‘erythrocytes’

But sometimes the Stem2 in the compound enters the lexicon as a free-standing stem. This causes the word to be reanalyzed as a hyponymous compound. A common example is the borrowed word film (26a). Given some borrowed compound like mikr-o-film, the word is interpreted as a hyponymous compound. It is paradoxically pluralized with -er: mikr-o-film-ér.

(26) a. film ~ filím  ‘film’ b. film ~ filím  ‘film’
    mikr-o-film  ‘microfilm’ mult-film  ‘animated movie
    mikr-o-film-ér  ‘microfilms’ mult-o-film-ér  ‘animated movies’

Besides the now borrowed stem film, Sargsyan (1979:41-2, 1987:209-10) notes that reanalysis of borrowed compounds is more common in higher registers or scientific jargon. It varies by speaker and by the speaker’s personal vocabulary. To illustrate, consider the scientific compounds in (27). A compound like hip-o-tez ‘hypothesis’ (27a) cannot be decomposed by a lay speaker as being multi-morphemic. They would not be aware of what any of these sub-parts mean. Instead, it is analyzed as a whole chunk and transparently pluralized with -ner: hip-o-tez-nér ‘hypotheses’.

(27) a. hip-o-téz  ‘hypothesis’ c. bakteria-fág  ‘bacteriophage’
    hip-o-tez-nér  PL (lay speaker) bakteria-fág-nér  PL (lay)
    hip-o-tez-ér  PL (expert) bakteria-fág-ér  PL (expert)

b. anti-téz  ‘antithesis’ d. mono-fág  ‘monophage’
    anti-téz-nér  PL (lay) mono-fág-nér  PL (expert)
    anti-téz-ér  PL (expert) mono-fág-ér  PL (lay)

However, in scientific circles, this compound is analyzable because a relevant specialist would know the meaning of the Stem2 tez ‘-thesis’. Because of this, the specialist can create a hyponymy relationship between

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9 Many of these borrowed compounds include the linking vowel -o-. Although -o- is not a native linking vowel, it is parsed as a normal linking vowel just like the native -a-.
STEM2 and the compound: a ‘hypothesis’ is a type of ‘thesis’. A bracketing paradox ensues and the compound is paradoxically pluralized with -er: hip-o-tez-ér.

Another example comes from the names of dinosaurs. The borrowed word tinozav(ə)r ‘dinosaur’ has been reanalyzed as an endocentric compound. It is paradoxically pluralized with -er. What likely facilitates this endocentric parse is that the substring zav(ə)r is likewise used to name other dinosaurs like ‘tyrannosaurs’.

(28) a. tin-o-zav(ə)r ‘dinosaur’ b. diran-o-zav(ə)r ‘tyrannosaur’

tin-o-zavr-ér PL diran-o-zavr-ér PL

In sum, loanwords can develop a compound-like morphological structure. If this structure merits a hyponymic interpretation, then the bracketing paradox is triggered.

5.2.2 Emergence of nominal instruments from deverbals

A similar reanalysis is observed with some deverbal compounds. In general, deverbal compounds are non-hyponymic: kork-a-kordz ‘carpet maker’ (29a). They do not trigger a bracketing paradox. They are transparently pluralized with the polysyllabic-selecting -ner: kork-a-kordz-ner.

(29) a. kórk + kórdz-el ‘carpet + to work’ b. xúmp + var-él ‘group + to lead’
kork-a-kórdz ‘carpet maker’ xómp-a-vár ‘group leader’
kork-a-kórdz-nér ‘carpet makers’ xómp-a-var-nér ‘group leader’
cf. kórdz ‘work’ cf. vár non-existent

In the above compounds, STEM1 is interpreted as an internal argument for the deverbal STEM2 while the entire compounded is interpreted as the external argument. These compounds must be deverbal because of their verbal semantics. Some aren’t transparently related to the meaning of a nominal STEM2: a carpet-maker kork-a-kordz (29a) works on carpets, but isn’t a type of work. Other compounds lack a nominal STEM2: there’s no noun var that forms xómp-a-var (29b).

The external argument or referent of these deverbal compounds can either be animate (29a) or an inanimate instrument: kaz-a-mux ‘gas-pipe’ (30a). But regardless, the compound is transparently pluralized with -ner because there is no hyponymy: kaz-a-mux-ner ‘gas pipes’.

(30) a. káz + máx-él ‘gas + to push’ b. kúnt + tśar-él ‘ball + to scatter’
kaz-a-múx ‘gas pipe’ kənt-a-tśir ‘machine gun’
kaz-a-mux-nér ‘gas pipes’ kənt-a-tśir-nér ‘machine guns’
cf. mux non-existent cf. vár non-existent

But Sargsyan (1979:43) and Sargsyan (1987:211-2) observe the following recent trend. If a deverbal compound is interpreted as an animate person, then the compound is always transparently pluralized with -ner: kork-a-kordz-nér (31a-i). This is expected because the compound is non-hyponymic. But if the compound is interpreted as an instrument, then it can be pluralized either transparently with -ner or paradoxically with -er: kaz-a-mux-(n)er (31b-i).

(31) a. i. kork-a-kórdz ‘carpet maker’ ii. xómp-a-vár ‘group leader’
  (= person) (= person)
kork-a-kórdz-nér ‘carpet makers’ xómp-a-var-nér ‘group leaders’
 b. i. kaz-a-mux ‘gas pipe’ ii. kənt-a-tśir ‘machine gun’
  (= instrument) (= instrument)
kaz-a-mux-nér ‘gas pipes’ kənt-a-tśir-nér ‘machine guns’
kaz-a-mux-ér kənt-a-tśir-ér
Sargsyan postulates that this change is because speakers are reinterpreting deverbal instrument compounds as an *endocentric nominal* compound where $\text{STEM2}$ denotes the instrument. With this morphological reanalysis, the compound is now endocentric with $\text{STEM2}$.

Curiously outside of compounding, this reanalyzed $\text{STEM2}$ does not exist as a free-standing noun. That is, although the compound $\text{kaz-a-mux}$ ‘gas pipe’ (31b-i) exists, there is no noun $*\text{mux}$ ‘pipe’. Sargsyan’s postulated reanalysis in fact means that speakers are creating a new sense for the morpheme $\text{mux}$ that denotes the instrument. But crucially for these speakers, the new sense for nominal $\text{mux}$ can only be found inside compounds.

Sargsyan (1987:211-2) notes that this reanalysis and the subsequent paradoxical plurals did not exist in the 19th century. They have been recently popping up around the middle of the 20th century. It is unclear how pervasive this new emergent process or construction will become in the current generation. She finds that some stems show this reanalysis more often others (Sargsyan 1979:43). Future corpus and experimental work would be useful here.

6 Conclusion

Bracketing paradoxes provide a window into the internal abstract structure of a word’s phonology and morphology. In the case of Armenian, compound plurals show that phonologically-conditioned allomorphy can be sensitive to semantic heads. In the base case, an endocentric or hyponymic compounds is pluralized based on counting the syllables of its head. To my knowledge, there is limited information on the variability of bracketing paradoxes cross-linguistically. This paper documents such variability for Armenian. Throughout the modern history of Armenian, there has been intra-speaker, inter-speaker, and dialectal variation in how some endocentric compounds can lose their hyponymic structure, and thus block the bracketing paradox. Conversely, a word can gain a hyponymic structure and thus trigger the paradox. Relevant factors for such changes can range from sporadic semantic changes, to grammaticalization, and to loanword adaptation.

References


The grammaticalization cline of the Uyghur converb: Syntax, morphology, and prosody

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Abstract

In this paper, I describe a grammaticalization path in Uyghur that produces tense-aspect-modality suffixes from auxiliary verb constructions. I identify five stages in the path, starting from a syntactic clause-joining structure and ending with fully integrated verb suffix. I comment briefly on when the constructions might have begun fusing into suffixes in Uyghur, pointing roughly to the latter part of the Chaghatay period. I then shift focus to prosody and show how this diachronic insight provides an explanation for the “stress-attracting” and “pre-stressed” suffixes. Using acoustic data from radio news articles and YouTube videos, I show that there is indeed an optional pitch rise on these suffixes as described by Hahn (1991) and Engesæth et al. (2009). I then propose that what is synchronically analyzed as stress on these suffixes comes from a pitch rise that was used to mark the end of prosodic words or accentual phrases in the intonational system (Major & Mayer, 2018).

Keywords: grammaticalization, prosody, morphosyntax, auxiliary verbs, Uyghur

1. Introduction

The Turkic languages are among the classic examples of agglutinative morphology, which refers to the way in which affixes are added to roots to form longer words. However, we can also think of agglutination as a diachronic process in which formerly independent words are “glued” together, leading to the formation of affixes (Haspelmath, 2011). Logic tells us, and research has shown, that affixes and paradigms do not suddenly materialize out of nowhere—they emerge out of use, as high-frequency constructions undergo semantic shift, fuse together, and become bound grammatical morphemes. In Bybee’s classic formulation, “items that are used together fuse together” (Bybee, 2002, p.112).

Turkic verbal morphology is a prime example of this cyclical process of grammaticalization and coalescence. Auxiliary verb constructions (AVC) are an important part of the verb systems in all Turkic languages, serving in functions diverse as tense, aspect, modality, direction, and voice/version (Anderson, 2004; Erdal, 2004). This much is stated clearly in any reference grammar or pedagogical resource. What is less often emphasized is that AVCs are also the historical source of many, if not most, of the many agglutinative verbal suffixes in the Turkic verb system (Anderson, 2004, 2006; Nadzhip 1971; Rentzsch 2008).

This paper focuses on a set of five verb suffixes in Modern Uyghur that seem to have more recently made the transition from AVC to suffix. I begin by describing the diachronic developments from a functional-typological perspective through the lens of grammaticalization theory (e.g. Meillet, 1912; Givón, 1971; Bybee et al., 1994), demonstrating yet again how—to borrow Givón’s words—today’s morphology is yesterday’s syntax, and today’s syntax may be turning into tomorrow’s morphology. I then shift focus to prosody and show how this diachronic insight provides an explanation for the prosody of the so-called “stress-attracting” and “pre-stressed” suffixes. I present acoustic data from radio news articles and YouTube videos showing that there

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is indeed an optional pitch rise on these suffixes as mentioned in the descriptive literature. Finally, I propose that what is synchronically analyzed as stress on these suffixes comes from a pitch rise that was used to mark the end of prosodic words or accentual phrases in the intonational system (Major & Mayer, 2018)—in other words, today’s stress may come from yesterday’s intonation.

2. Grammaticalization: AVC → Suffix

Grammaticalization is the process by which a morpheme’s function shifts from “less grammatical” to “more grammatical” in the sense of signaling more grammatical function than lexical meaning. The grammaticalization path content word > function word > clitic > affix is commonly attested cross-linguistically (cf. Hopper & Traugott, 2003, p.7). The process of grammaticalization typically involves semantic bleaching, decategorialization, phonetic reduction (Heine, 1993; Bybee et al., 1994). In brief, a lexical item loses its concrete meaning and shifts to a more abstract or “grammatical” meaning, its morphosyntactic behavior ceases to follow the expectations for its original syntactic category, and it often loses phonetic material by reduction, deletion, or coalescence.

This process has happened repeatedly in the history of Turkic verbs. In terms of structural analysis, the transitions involve a sequence of two clauses being reinterpreted as a single clause with the second verb modifying the action of the first as an auxiliary (the content word > function word step), and the fusion of the auxiliary into a suffix (the function word > clitic > affix steps). For the speakers, of course, these changes must have occurred slowly and with a considerable amount of overlap and/or ambiguity at different stages.

The starting point for all of the structures described here is the converb clause. Turkic converbs are non-finite verb forms that do not mark tense or subject. Typical use involves one or more dependent clauses with the verb in converb form followed by a fully inflected verb for the final clause. Old Turkic had a variety of converbs, but two have survived in common use in most modern Turkic languages. These are the converb in -(I)p, and the so-called ‘vowel converb.’ Example (1) shows a sequence of four sequential clauses in Uyghur, with the first three employing the -(I)p converb.


‘I should fly to the field, find food, eat, and then return.’ (Uyghur; Dwyer et al., 2014)

At the other end of the grammaticalization path are TAM suffixes. This discussion focuses on the abilitative -(y)AIA, present continuous -(I)wat, self-benefactive/subject version -(I)wal, intensifying -(I)wet, and marker of unrestrained action -(I)wer. How did such suffixes emerge from converb clauses? The crucial intermediate step, as we will see below, is the auxiliary verb construction.

2.1 Stages in the Path

As mentioned above, a grammaticalization path is a series of gradient changes that diffuse over time and space; there are no sudden, categorical leaps. With that in mind, however, in this case we can identify at least five stages along the path that have significant structural implications, whether semantic, syntactic, or prosodic. Stage 1 is the kind of construction illustrated in (1), where each verb expresses a separate predication. This stage can be seen in Old Turkic, as in (2), where ‘lifting the stone’ and ‘throwing it into the well’ are two distinct sequential actions.

Following the convention in the literature on Turkic languages, capital letters indicate archiphonemes that are underspecified for one or more features, e.g. I is a high vowel that may be either front or back, round or unround.

Parentheses indicate segments that are present in certain phonological environments but not others (e.g. following stem-final vowel vs consonant).
The grammaticalization cline of the Uyghur converb: Syntax, morphology, and prosody

(2) Ol taš-íg kötür-üp ol kudug ičin-tä kämišt-i-lär
    they stone-ACC lift-CV well inside-LOC throw-PST-3-PL
    ‘They lifted that stone and threw it into the well’ (Old Turkic; Erdal, 2004, p. 460)

Stage 2 involves two verbs describing a single event in a serial-like construction. This stage is also attested in Old Turkic. In (3), ‘breaking the precept’ and ‘sinning’ are not separate events; it is the breaking of the precept that constitutes the sin. Likewise in (4), ‘flying’ and ‘going’ are two parts of the same event. Here we are very close to an auxiliary construction with one verb modifying the action of the other—flying could be the manner of going, or (as is actually the case) ‘go’ could express the direction of flying, namely away from the speaker.

(3) Karmaput-ug sî-p tsuy kîl-t-îmîz ār-sâ-r…
    precept-ACC break-CV sin do-PST-1PL AUX-COND-AOR
    ‘If we have broken the precept and sinned…’ (Old Turkic; Erdal, 2004, p. 459-60)

(4) Ögür kaz ... uč-up bar-îr ār-d-i
    flock goose fly-CV go-AOR AUX-PST-3
    ‘A flock of geese was ... and flying away’ (Old Turkic; Erdal, 2004, p. 247)

Stage 3 is a proper AVC. In (5), the second verb has lost its lexical semantic meaning of ‘take’ and now serves to express ‘self-benefactive’ (or ‘subject version’). About a dozen verbs grammaticalized to auxiliaries in the Old Turkic period (more in Old Uygur than in Orkhon Turkic; see Erdal, 2004, p. 246ff). This process continued over the history of Turkic; Modern Uyghur has 19 auxiliaries, and some Altai-Sayan varieties have well over 20.

(5) Tokuz Oguz terä kovrat-u al-t-îm
    Tokuz Oguz nation gather-CV take-PST-1SG
    ‘I gathered and organised my Tokuz Oguz nation.’ (Old Turkic; Erdal, 2004, p. 261)

With frequent use, some of the AVCs began to fuse. Stage 4 represents the beginning of fusion, where speakers may still recognize the form as an auxiliary construction, or it may alternate with the non-fused version. In (6), the auxiliary al- ‘take’ has fused with the -(I)p converb form; the p undergoes lenition to w and the result is treated as a single word in the orthography. In Old Turkic, fusion only occurred for one auxiliary (as far as the written record shows), namely a negative form of the auxiliary u- ‘to be able’ which indicated impossibility (Erdal, 2004, p. 248). The five suffixes discussed in this paper all fused much later.

(6) u bala derya boy-i-din bir paqi-ni tép-iw-a-pt-u. (< tépip éliptu)
    that boy river side-3-ABL one frog-ACC find-CV-take-NARR-PST-3
    ‘The boy found a frog by the river.’ (Uyghur; Dwyer et al., 2014)

Anderson offers some useful insight on the relationship between semantics, syntax, and prosody in this step of grammaticalization: “That the auxiliary becomes fused to the lexical verb as a functional affix rather than the reverse most typically argues for a parallel path of development of the semantic and prosodic phrasal heads of the constructions, separate from both the syntactic/structural phrasal head and the inflectional head, or indeed, in spite of the fact that this latter type of head is the auxiliary verb in many instances” (2006: 373-74).

Finally, in Stage 5, the fused auxiliary is treated as just another verb suffix. Its origins in an auxiliary construction may not be obvious, and in some suffixes (e.g. -(y)AlA ‘ABIL’) the suffix vowel participates in vowel harmony. The suffix -(i)wat ‘CONT’ in (7), a fused form of an auxiliary verb that originally meant ‘lie (down),’ marks continuous aspect and is part of the normal present continuous tense.

(7) ushsh, gep qil-ma, hazir bu yer-de paqi-lar kokira-wat-i-du. (< kokirapatyatidu)
    shh word do-NEG.IMP now this place-LOC frog-PL croak-CONT-PRES-3
    ‘Shh...don’t say a word! Frogs are croaking here.’ (Uyghur; Dwyer et al., 2014)
As the new structures developed, the old ones did not disappear, so all five stages can be observed in the modern Turkic languages. Converb chains are still used to express sequential or related predications, many non-fused AVCs are still in use, and some have fused into suffixes.

Table 1 shows the source constructions for the five forms of interest in this paper. All are formed from the -(l)p converb except the abilitative, which used the vowel converb.

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Gloss</th>
<th>Source construction</th>
<th>Meaning of auxiliary verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>-(y)AlA</td>
<td>abilitative</td>
<td>-A + al-</td>
<td>‘take’</td>
</tr>
<tr>
<td>-(l)wat</td>
<td>present continuous</td>
<td>-(l)p + yat-</td>
<td>‘lie (down)’</td>
</tr>
<tr>
<td>-(l)wal</td>
<td>self-benefactive/subject version</td>
<td>-(l)p + al-</td>
<td>‘take’</td>
</tr>
<tr>
<td>-(l)wet</td>
<td>intensifying</td>
<td>-(l)p + et-</td>
<td>‘make’</td>
</tr>
<tr>
<td>-(l)wer</td>
<td>unrestrained action</td>
<td>-(l)p + yiwer-</td>
<td>‘send’^a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(-l)p + ber-</td>
<td>‘give’^b</td>
</tr>
</tbody>
</table>

^a following Johanson (2004); cf. Muhamedowa (2016) on Kazakh


Table 1. Five Uyghur Verb Suffixes and their AVC Sources

2.2 Timeline

It is not clear exactly when these AVCs began to fuse. The main stage of the language between Old Turkic and Modern Uyghur is known as Chaghatay (spoken from roughly 1400-1950 AD). Schluessel’s (2018) Chaghatay textbook does not mention any of the fused forms from Table 1, and in fact does not even describe non-fused auxiliary constructions for any of them except the abilitative. Neither Schluessel (personal communication, March 27, 2021) nor Chaghatay scholar Gülnar Eziz (personal communication, March 23, 2021) are aware of any precise timespan from which the fusion started, but sometime in the later Chaghatay period seems reasonable. As is always the case when working with written records of historical varieties, absence of evidence is not clear evidence of absence. Written language typically lags behind spoken language in recording the kind of phonetic/phonological changes involved in AVC fusion, and it may be that at least some of the constructions (e.g. markers of intensified or unrestrained action) would simply not have been used often in the types of genres that warranted written recording. Positive evidence, though, can establish a date by which the fused forms definitely did exist. The oral texts transcribed by Jarring and Tenishev in the 1930-1950s (Dwyer et al., 2014) include fused forms of all five of the above constructions in both Uyghur and Uzbek. Earlier texts transcribed by Jarring and Katanov (circa 1890-1905; Dwyer et al., 2014) include fused abilitative forms, but none of the others.

2.3 Additional Outcomes

AVC fusion is the source of many other verb suffixes in Modern Uyghur (Rentzsch, 2008; Nadzhip, 1971), which I will not discuss due to limits of time and space, but are worth at least listing here. Anderson (2004, 2006) also details many similar forms in other Turkic languages.
One final point that is worth mentioning in some detail is a slight fork in the grammaticalization path that led to what are sometimes called ‘compound verbs,’ namely forms like *aparmaq* ‘take away’ (< élip barmaq), *ekelmek* ‘bring’ (< élip kelmek), *ekirmek* ‘bring in’ (< élip kirmek), *eketmek* ‘take away’ (< élip ketmek), *ewetmek* ‘send’ (< élip yiwermek), and *achiqmaq/echiqmaq* ‘take out’ (< élip chiqmaq). These forms all involve the verb *al-* ‘take’ as the first verb in the construction. As the constructions crystallized in Stage 3, the motion verbs *bar-, kel-, kir-, ket-, chiq-,* etc. did not become general auxiliaries that could combine with a range of other main verbs (with the exception of the directional function of *bar-* and *kel-* as in (4)), but instead developed specific collocations with *al-* ‘take.’ In Uyghur, these constructions appear to have fused in the late Chaghatay period, as Schlüssel (2018) gives the unfused *alip kel-* rather than the fused *ekel-* of Modern Uyghur. Interestingly, instead of the second verb becoming the reduced affix-like morpheme and its vowels harmonizing to the first, it was *al-* that reduced in form and harmonized to the following motion verbs (cf. the back vowel in *aparmaq* but front in *ekirmek*). This seems consistent with Anderson’s observation that the semantically prominent element is less likely to reduce, regardless of syntactic/inflectional headship.

As a final note, the anticipatory harmony here could support an analysis of the fused form *al-* as a derivational prefix *A-*. Uyghur vowel harmony does not apply to other compounds (e.g. *ot-chöp* ‘grass and weeds’), only affixes, and while harmony is otherwise always progressive/perseveratory, there are very few other prefixes in the language to which harmony could conceivably apply. Two similar phenomena exist in Kazakh, where fused forms of demonstrative + *et-* ‘do’ involve anticipatory fronting. The vowel in *et-* is reduced to a glide, but the originally back vowels in the demonstratives fronted to yield *söyt-, öyt-, büyt-* (Muhamedowa 2016).

### 3. Prosody

Wichmann (2011) argues that it is loss of prosodic prominence and loss of independence in intonational structure that are the primary effects of frequency and habituation; the segmental erosion of forms that often occurs in the process of grammaticalization is merely a consequence of the reduction at the prosodic level. Wichmann’s discussion focused on discourse markers, but it applies well to Turkic auxiliary verb fusion. As syntactic structures developed in which the final element with the inflected verb was not an entire clause but just a single word modifying the action of the preceding converb and a small set of high-frequency verbs emerged as auxiliaries, it would make sense for that final element to lose prosodic prominence, especially given the general prosodic and articulatory weakness of sentence-final position. That loss of prosodic prominence led to the fusion and reduction of auxiliaries into suffixes. In this section I discuss how in some of these fused constructions a certain amount of prominence appears to have remained at the position that was historically the final syllable of the converb, and is now analyzed as a lexically-specified stress accent associated with the resulting suffixes.

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2 Bunin (n.d.) lists only four prefixes, three adjective-forming and one noun-forming. They are all borrowed from Persian, and none of them participate in vowel harmony. If my analysis of *A-* as a derivational verb prefix is accepted, it could even be used as evidence to categorize Uyghur palatal harmony as stem-controlled and bidirectional rather than strictly progressive.
3.1 Uyghur Stress and Intonation

The nature of stress and prominence in Uyghur has been the subject of some debate. Impressionistic descriptions have noted a general trend towards final prominence (Nadzhip, 1971; Zakir, 2007; Engesæth et al., 2009), but also a tendency for heavy syllables to attract stress (Hahn, 1991; Engesæth et al., 2009). Most have also noted that a number of so-called “stress-attracting” or “pre-stressed” verb suffixes can attract prominence either to the suffix vowel or the preceding vowel suffixes (Nadzhip, 1971; Engesæth et al., 2009; Özçelik, 2015). These authors have tended to identify pitch rise as signaling prominence (Hahn, 1991; Engesæth et al., 2009), and possibly also duration and intensity (Hahn, 1991). More recent instrumental analysis has seemed to overturn these descriptions, though, identifying duration as the only reliable cue for lexical stress and F0 rises as signaling only intonational phrase boundaries (Yakup, 2013; Major & Mayer, 2018).

3.2 Complex Verb Forms in Naturalistic Data

Contrary to the predictions of Major and Mayer (2018, in press), my own work with naturalistic data that includes morphologically complex verb forms, such as the five suffixes in question here, indicates that F0 does in fact play a role in signaling some type of prominence on certain suffixes, not only in marking phrasal boundaries. In this section, I present evidence for the F0 peaks on the “stress-attracting” and “pre-stressed” suffixes and propose that an understanding of the historical sources of the suffixes derived from fused AVCs can help explain their unique prosodic patterns.

The figures below illustrate the pitch contours of these suffixes. As Özçelik (2015) and Engesæth et al. (2009) have noted, the addition of -(I)wer ‘UNRESTR’ places prominence on the vowel before wer (Figure 1), and verbs with -(I)wat ‘CONT’ may have prominence on either wat or the syllable before it (Figure 2). From my own observations, I would add that -(y)AlA ‘ABIL’ can attract prominence to its first A vowel (Figure 3), and -(I)wal ‘SELF.BEN’ to either of its vowels (Figure 4).

Note. Audio from Radio Free Asia’s Uyghur news

Figure 1: F0 peak on -(I)wer ‘UNRESTR’

Note. Audio from YouTube

Figure 2: F0 peak on -(I)wat ‘CONT’

3In Turkmen, the fused ‘unrestrained’ form can also carry prosodic prominence, as it induces vowel lengthening when added to a vowel-final verb root, often in contexts of negation (Clark 1998: 317).
All of these figures show distinct F0 peaks on the suffixes, just as the descriptions in the literature predict. The question then is, why should there be pitch peaks (or “stress”) on these suffixes? My proposed explanation combines the historical grammaticalization of suffixes from converb constructions with synchronic patterns of phrasal intonation. Major and Mayer’s (2018, 2019, in press) research on Uyghur intonation has shown that most intonational phrases end with a pitch rise. Their autosegmental-metrical model includes prosodic word, accentual phrase, and intermediate phrase, all of which end with a high F0 target. (Intonational Phrases may end with high, low, rising, or falling F0 contours.) Looking back to Stage 1 and Stage 2 of the grammaticalization path described above, assuming the intonation patterns we see today were similar to those of older varieties, the constructions with two clear clauses would most likely have had an F0 rise on the converb at the end of the first clause. In example (3), repeated here as (8), there would be a rise on sīp signaling the end of an intermediate phrase.

(8) Karmaput-ug sī-p tsuy kīl-t-īmīz ār-sā-r…
    precept-ACC break-CV sin do-PST-1PL AUX-COND-AOR
    ‘If we have broken the precept and sinned…’ (Old Turkic; Erdal, 2004, p. 459-60)

As the auxiliary verb constructions developed, putting the converb directly adjacent to the auxiliary, the F0 rise might have remained, such that a construction like in (5), repeated here as (9), would have had a pitch peak at the end of kovratu.

(9) Tokuz Oguz terā kovrat-u al-t-īm
    Tokuz Oguz nation gather-CV take-PST-1-SG
    ‘I gathered and organized my Tokuz Oguz nation.’ (Old Turkic; Erdal, 2004, p. 261)

Finally, as the auxiliary fused onto the converb and became a suffix, the F0 peak that used to signal an intonational phrase boundary ended up in the middle of the word, and became a prosodic feature of the suffix, which we analyze now as morphological stress. Thus something like toqiwatqan in Figure 2 would have undergone a transition like this:

\[
\begin{align*}
L & H & L & H/L\% \\
\rightarrow & L & H & L & H/L\% \\
^{*}toqip & yatqan & toqiwatqan
\end{align*}
\]

Özçelik (2015) has also noted that -(A)m ‘INT’ tends to attract stress, and the word-final interrogative suffix -mu tends to push stress onto the immediately preceding syllable (see also Major & Mayer in press, Figure 6.26). The naturalistic audio data I have examined shows evidence for these pitch peaks as well, as in Figure 5.
The interrogative suffixes were also once separate particles that fused onto converb forms just like the auxiliaries did (Rentzsch, 2008). Thus yögüshemdu in Figure 5 would have come from *yögüshe mu turur > *yögüshe mu dur, and the high F0 tone on the end of the converb yögüshe would have historically marked an intonational boundary.

What this means is that in addition to morphosyntactic grammaticalization involving the development of inflectional/derivational suffixes from auxiliary verbs, we also have prosodic grammaticalization involving the development of morphological stress from intonational tone. The morphological stress on these suffixes may become permanent, or it may be a temporary stage in the grammaticalization path. The pitch peak on -(I)wer ‘UNRESTR’ is the most noticeable and consistent; most of the others vary considerably. The sentence in Figure 2, for example, is repeated verbatim eight times in the children’s story from which it comes. Three of the instances have a pitch peak on -wat as in Figure 2, one has a peak on -qan, and the remaining instances have a peak on tor followed by a general downdrift toward the end of the sentence with no particular prominence on any part of toqiwatqan. I have observed similar variation with -(y)ALA ‘ABIL’ and -(I)wal ‘SELF.BEN.’

In my analysis, the absence of distinct prosody on some tokens can be interpreted as fuller integration as suffix with no trace of auxiliary verb origins. In the future, some of these suffixes may come to have no particular prosodic prominence, just as the 3rd person present/future suffixes like the -du in baridu, which came from the auxiliary construction *bara turur, have no distinct prosody. The complete grammaticalization path can thus be schematized as follows:

- Stage 1: combining sequential clauses or related events
- Stage 2: two verbs describing a single event
- Stage 3: auxiliary verb construction
- Stage 4: auxiliary begins to fuse
- Stage 5: fusion but with distinct prosody and/or non-harmonizing vowel
- Stage 6: full integration as harmonizing suffix with no distinct prosody

**Figure 4:** F0 peak on -Am ‘INT’
4. Conclusion

To sum up, in this paper I have described the grammaticalization path that has produced (and will probably continue producing) verb suffixes from converb-based auxiliary verb constructions in Turkic languages. I have provided acoustic evidence of F0 peaks on the “stress-attracting” and “pre-stressed” suffixes and proposed an account of these peaks based on intonational boundary-marking tones that remained associated with their segmental material even when the word or phrase boundaries disappeared due to fusion or coalescence of the converb and auxiliary verb. I describe this phenomenon as prosodic grammaticalization, in which word-level prominences now analyzed as stress developed from what were historically intonational prominences.

Looking ahead, more work remains to be done to validate this analysis for Uyghur, and detailed work on the prosody of verbs in other Turkic languages with attention to the grammaticalization processes should be conducted as well, as the processes described here have happened throughout the Turkic family. Fenger’s (2020) dissertation includes some insightful analysis of the variable stress placement in Turkish verb constructions. However, the explanations appeal only to synchronic syntax; the discussion could almost certainly be enriched and the explanations deepened by including diachrony and grammaticalization. As the place of prosody in linguistic analysis continues to grow, it is hoped that relevant diachronic developments will also receive appropriate attention.

Glossing conventions

<table>
<thead>
<tr>
<th>1SG</th>
<th>first person singular</th>
<th>DAT</th>
<th>dative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1PL</td>
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<td>GER</td>
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Semantics of the Sociative Suffix -lsa in Barguzin Buryat

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Abstract
The paper is based on evidence collected from Barguzin speakers during the author’s field trips to Baraghan Village, Kurumkan Region, Republic of Buryatia in August 2015, 2016, and 2017.

This study addresses invariant semantics of the suffix -lsa in Barguzin Buryat. This suffix can express either reciprocal or sociative meaning. The reciprocal denotes simultaneous mutual action by two or more participants, each performing more than one semantic role, e.g.: badma darimatai ta:lalsa: ‘Badma and Darima kissed each other’. The sociative transforms the diathesis, adding to the basic event structure a subevent with a different argument (for example, dugar badmatai enje:lsene ‘Dugar laughs with Badma (supporting Badma’s laugh)’), and/or with different descriptive characteristics (in the latter case the sociative construction expresses some sort of “attendant action”, see Nedjalkov, Geniusiene & Guentchéva (2007)). However, the time and place of the subevents must coincide.

I also argue that the semantics of -lsa can be regarded as an ‘also’-presupposition on plural events, and that the reciprocal meaning arises for pragmatical reasons.

Keywords: Buryat, Mongolic languages, sociative, reciprocal, semantics

Semantics of the Sociative Suffix -lsa in Barguzin Buryat

This paper addresses semantics of the suffix -lsa in Barguzin Buryat: its meanings, the semantic invariant of the suffix and the event structure of -lsa-derivates. In this idiom, -lsa is a sociative and reciprocal marker.

The data for the work was collected by questioning Barguzin speakers during the expeditions to Baraghan village in Kurumkan region of the Republic of Buryatia in August 2015, 2016 and 2017. The informants were presented with Russian and Buryat stimuli to elicit Buryat sentences and acceptability judgments accordingly. The participants of the survey are mainly middle-aged and older teachers working in the local school. Several students born and raised in Baraghan were also questioned during the expeditions.

In the next section I give general information about the meanings of the suffix, the changes of the diathesis that -lsa causes, and ways of expressing the plurality of the argument of -lsa-derivates. After that, I look further into the verbal plurality of the suffix in question. The paper will conclude with a suggestion about the invariant semantics of -lsa.

1 The study has been supported by RFBR, projects #17-04-18036е “Syntax-semantics interface in Uralic and Altaic languages” and #16-06-00536а “Expedition for gathering Uralic and Altaic languages data” at the Lomonosov Moscow State University.
Meanings of the Suffix -lsa in Barguzin Buryat

Poppe (1938), Sanžeev (1941), Poppe (1960) and Sanžeev, Bertagaev & Tsidendambaev (1962) claim that the meaning of the suffix in question is ‘joint action’, or ‘sociative voice’. Sanžeev also mentions that -lsa can also express ‘reciprocal voice’. Nedjalkov, Skribnik, Kuzmenkov & Yakhontova (2007) addresses reciprocal, sociative, comitative and assistive constructions in Buryat and Khalkha-Mongol including the ones with -lsa derivates.

Two regular meanings of the suffix were elicited in Barguzin Buryat: reciprocal and sociative.

Reciprocal

Reciprocal denotes simultaneous mutual action by two or more participants, each performing more than one semantic role. In prototypical reciprocal clause two arguments of the verb are coreferential. One of the arguments (I will call it the plural argument) is a full NP or a combination of two NPs denoting a plural participant (the content of square brackets in (1b)). The second argument can be either omitted in the surface structure or expressed by the reciprocal pronoun bɘjɘ bɘj-ɘ: ‘each other’ (2).

(1) shows the base example of the original diathesis where the nominative argument is the NP badma and the accusative argument is the NP darʲim-i:jɘ:

(1) a. [badma] [darʲim-i:jɘ] ta:l-a:
   Badma Darima-ACC kiss-PRT1
   Badma kissed Darima.

b. [badma darʲima-tai] ta:la-ls3-a:
   Badma Darima-COM kiss-SOC-PRT1
   Badma and Darima kissed (each other).

In (1b) after the reciprocal transformation of the diathesis instead of the simple nominative argument we see the plural argument consisting of two NPs: nominative (badma) and comitative (darʲima-tai). Such a combination is one of the ways of expressing the plurality of the first argument. The accusative argument is not realized overtly in (1b).

(2) [badma darⁱma-tai] [bɘjɘ bɘjɘ-dɘ-nʲ] ɘlʲgɘ:-ls-ɘ:
   Badma Darima-COM body body-DAT-3 send-SOC-PRT1
   Dugar sent the boys to each other.

In (2) the accusative participant slot is filled by the aforementioned bɘjɘ bɘj-ɘ: (as opposed to (1b)). Reciprocal meaning in -lsa clauses can arise with or without the reciprocal pronoun.

Object-oriented reciprocal is also possible in -lsa-clauses in Barguzin Buryat but only in the presence of the overt reciprocal pronoun:

(3) dugar [xʉbʉ:-d-i:jɘ] [bɘjɘ bɘj-ɘ-dɘ-nʲ] ɘlʲgɘ:-ls-ɘ:
    Dugar boy-PL-ACC body body-DAT-3 send-SOC-PRT1
    Dugar sent the boys to each other.

2The comitative marker can look like -tai, -tɘi or -toi due to the vowel harmony principle.
3 The short vowel of the suffix -lsa is elided before the affix starting with a long vowel according to the general rule: [+syll, -long] → Ø / _+[+syll, +long] (Tatevosov, Podobryayev, Bondarenko et al. (eds.) In print).
4 The author did not investigate in detail the plurality of the object in reciprocal clauses.
There are five ways of expressing the plurality of the subject (in square brackets):

1 with a comitative construction:

(4) [dugar səsəg-təi] xara-ls-a:
   Dugar  Seseg-COM see-SOC-PRT₁
   Dugar met with Seseg.

2 with help of a numeral conjunction:

(5) [badma darʲima xojo] xara-ls-a:
   Badma  Darima two see-SOC-PRT₁
   Badma and Darima met.

3 with a plural NP:

(6) [nʉxɘ-d] xara-ls-a:
   friend-PL see-SOC-PRT₁
   Friends met (with each other).

4 with help of the conjunction ba ‘and’:

(7) [badma ba darímə] xara-ls-a:
   Badma and Darima see-SOC-PRT₁
   Badma and Darima met.

5 with a combination of a nominative NP and a phonologically empty pronoun:

(8) [badma] Ø xara-ls-a:
   Badma PRON see-SOC-PRT₁
   Badma met with somebody.

Sociative

According to Sanžeev, Bertagaev & Tsidendambaev (1962), sociative is a ‘joint action’ (p. 238–244). I suggest that sociative is a transformation of the diathesis that adds one more subevent to the original event structure. The new subevent is different from the first one in an argument (9–11) and/or descriptive characteristics (12-13). I call the former case type I and the latter one type II.

(9) a. [dugar] ənə:-nə
   Dugar laugh-PRS
   Dugar laughs.

   b. [dugar badma-tai] ənə:-lsə-nə
   Dugar Badma-COM laugh-SOC-PRS
   Dugar is laughing with Badma (supporting his laughter⁶).

(9) shows the sociative transformation of the diathesis where the two subevents (‘Dugar is laughing’ and ‘Badma is laughing’) differ in subjects. In other words, the event plurality here is achieved via the plurality of the subject, and the latter is satisfied by the combination of the nominative NP and the comitative NP.

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⁵ Other numerals can also be used in this type of conjunction:

(i) [dugar badma darimə gurban] xara-ls-a:
   Dugar Badma Darima three
   Dugar, Badma and Darima met.

⁶ In the plural subject type of sociative the optional meaning of help or support sometimes arises.
(10) a. ʊsəgəldər [dugar] ənə stul-da xu:-ga:
yesterday Dugar this chair-DAT sit-PRT1
Yesterday Dugar sat on this chair.
b. ʊsəgəldər [dugar darʲima xoʒor] ənə stul-da xu:-ls-a:
yesterday Dugar Darima two this chair-DAT sit-SOC-PRT1
Yesterday Dugar and Darima sat on this chair together.

In (10) we can see the same transformation as in (9) except that the plurality of the subject here is realized with help of a numeral conjunction.

(11) a. [dugar] ʃʉlɘg unʃ-a:
Dugar poem.ACC read-PRT1
Dugar read a poem.
b. [dugar] ʃʉlɘg rasskaz-tai unʃa-ls-a:
Dugar poem.ACC story-COM read-SOC-PRT1
Dugar read a poem along with a story.

(11) shows an example of a sociative with a plural object: the two subevents (Dugar’s reading of a poem and Dugar’s reading of a story) differ in direct objects.

(12) a. dugar jabloka ab-a:
Dugar apple.ACC take-PRT1
Dugar bought apples.
b. dugar gər-t-ə:
ofo-30 bai-xa-d-a:
Dugar house-DAT-REFL walk-CONV1 be-POT-DAT-REFL
jabloka aba-ls-a:
apple.ACC take-SOC-PRT1
On his way home (lit.: While walking home), Dugar also bought apples.

(12) demonstrates the type II sociative that adds a new subevent different from the first one in its descriptive characteristics. The subevents in this case are realized as clauses with different predicates and sometimes different arguments as well. In this case, the semantics of the sentence could be laid down in the following way: ‘Dugar walked home’ + ‘Dugar bought apples (in addition to the action of walking home)’.

As opposed to the plurality of the argument in reciprocal -lsa clauses, the plural argument of a sociative derivate can only be expressed in three ways:

1 with a comitative construction:

(13) [darʲima marʲina-tai] nom unʃa-lsa-xa
Darima Marina-COM book.ACC read-SOC-POT
Darima and Marina will read a book together.

2 with help of a numeral conjunction (although not all speakers allow this) — (10b) = (14):

(14) ʊsəgəldər [dugar darʲima xoʒor] ənə stul-da xu:-ls-a:
yesterday Dugar Darima two this chair-DAT sit-SOC-PRT1
Yesterday Dugar and Darima sat on this chair together.

3 with a combination of a nominative NP and a zero-pronoun (at least on the semantic level):

(15) [uxʲibʉ:-d] əʒi: ta:la-ls-a:
child-PL mother.ACC kiss-SOC-PRT1
The children also started kissing the mother (with someone else).
The plural argument in sociative -lsa clauses cannot be expressed with a plural NP (16) or the conjunction *ba* (17), which is to say that a plural NP or NPs coordinated with the conjunction *ba* cannot satisfy the restriction of -lsa on plurality of the argument in sociative clauses. Such a plural referent is perceived by the speakers as one inseparable participant that is not plural in a sense the sociative event needs it.

(16) ʉxʲibʉ:-d *(Ø) nom bɘdɘr-ɘlsɘ-nɘ
child-PL PRON book.ACC look.for-SOC-PRS
1. The children are helping somebody look for a book.

(17) dugar ba badma *(Ø) xudɘl-ɘlsɘ-nɘ
Dugar and Badma PRON work-SOC-PRS
1. Dugar and Badma help somebody work.
2. *Dugar and Badma work together.

### Plural Argument vs. Plural Event (in Sociative Clauses)

The type II examples like (12) make it possible to assume that sociative denotes plural event and that sociative plurality cannot simply be reduced to the plurality of an argument. But there are certain limitations on how different and how similar the sociative subevents must be.

**Distributivity**

One of the limitations concerns distributivity.

Only collective interpretation is possible without the distributive marker both in non-sociative (18) and sociative clauses (19):

(18) badma dugar-tai taban xarxᵃːg ol-o:
Badma Dugar-COM five mushroom.ACC find-PRT₁
1. Badma and Dugar together found 5 mushrooms.
2. *Badma and Dugar found 5 mushrooms each.

(19) badma dugar-tai taban xarxᵃːg olo-ls-o:
Badma Dugar-COM five mushroom.ACC find-SOC-PRT₁
1. Badma helped Dugar find 5 mushrooms.
2. *Badma and Dugar found 5 mushrooms each.

The distributive marker in Buryat is a:d and it is attached to numerals. Non-sociative clauses with the distributive marker only have a distributive interpretation and lose the collective one:

(20) badma dugar-tai tab-a:d xarxᵃːg ol-o:
Badma Dugar-COM five-DISTR mushroom.ACC find-PRT₁
1. *Badma and Dugar together found 5 mushrooms
2. Badma and Dugar found 5 mushrooms each.

Subject-oriented sociative clauses with the distributive marker, however, have neither collective nor expected subject-distributive interpretations:
Badma Dugar-tai tab-a:d xarxᵃː:g olo-ls-o:
Badma Dugar-COM five-DISTR mushroom.ACC find-SOC-PRT₁

1. Badma helped Dugar find 5 mushrooms of each kind (5 champignons, 5 milk mushrooms...).
2. *Badma and Dugar find 5 mushrooms each.
3. *Badma and Dugar together found 5 mushrooms.

This shows that the subjects cannot act separately in sociative clauses, even in the presence of the distributive marker. This fact seems to conflict with the idea of event plurality, but it makes much more sense if we take into consideration the collective nature of sociativity: -lsa denotes collective plurality as opposed to distributive plurality (uniting vs. dividing).

How Different the Subevents Can Be and How Similar They Must Be

Subevents can differ in arguments (9–11), descriptive characteristics (12, 23-24), and both (22, 25–28), and they do not even have to be expressed in one sentence (23–25) but they cannot occur in different time or in different locations.

(22) badma pomʲido:r xɘrʃ-xɘ-dɘ, dugar hong/i:no jara-ls-a:
Badma tomato.ACC cut-POT-DAT Dugar onion.ACC fry-SOC-PRT₁

When Badma cut the tomato, Dugar fried the onion.

The situation in (22) (as speakers commented it) is the following: Dugar saw that Badma was doing something and fried the onion in addition to Badma’s action. According to the informants, it is important that both actions take place in the same location, e. g. on the same kitchen.

(23) dugar gor-t-ɘ: of-o:.
Dugar go-PRT₁

Dugar went home. He bought an apple (in addition to going home).

(24) — dugar usgoldtør gor-t-ɘ: of-o:.
Dugar yesterday go-PRT₁

— jabloka aba-ls-a:
apple.ACC take-SOC-PRT₁

— Dugar went home yesterday.
— He bought an apple on his way there.

(25) — badma pomʲido:r xɘrʃ-ɘ:.
Badma tomato.ACC cut-PRT₁

— dugar julё jana-ls-a:
Dugar soup.ACC boil-SOC-PRT₁

— Badma was cutting a tomato.
— And Dugar was cooking a soup at the same time.

The speakers also point out that both actions in such clauses must happen at some points during the same period of time:

(26) dugar-ai julё jana-xa-da, badma xił:\mɘ oto-lol-s-o:
Dugar-CNT₁ soup.ACC boil-POT-DAT Badma bread.ACC cut-SOC-PRT₁

When Badma started cooking soup, Badma started cutting bread (at the same time).
In (24) this period of time is approximately one day:

(27) ɘrt-a:n     xu:     buru:     bol-o::
     morning-ABL everything wrong become-PRT

dugar stul    dɘrɘ-xɘ:     un-a:;
Dugar chair on-ABL fall-PRT

badma tʉlxʲʉ:r-ɘ:    arʲilg-a:;
Badma key-REFL lose-PRT

bajar aʒal-d-a:     xoʒomdo-ls-o:
Bayar work-DAT-REFL be.late-SOC-PRT

Since the morning everything went wrong: Dugar fell off a chair, Badma lost his keys, and also Bajar was late for work.

It is also possible to use more than one -lsa-derivate in sentences like (24):

(28) ɘrt-a:n     xu:     buru:     bol-o::
     morning-ABL everything wrong become-PRT

dugar stul    dɘrɘ-xɘ:     un-a:;
Dugar chair on-ABL fall-PRT

badma tʉlxʲʉ:r-ɘ:    arʲilga-ls-a:,
Badma key-REFL lose-SOC-PRT

bajar aʒal-d-a:     xoʒomdo-ls-o:
Bayar work-DAT-REFL be.late-SOC-PRT

Since the morning everything went wrong: Dugar fell off a chair, also Badma lost his keys, and also Bajar was late for work.

Time plurality (26) and place plurality (27) cannot satisfy the event plurality requirement of the suffix -lsa:

(29) ʉsɘgɘldɘr     ba     urʒadɘr     dugar    tʲɘlʲɘvʲizor
     yesterday and the.day.before.yesterday     Dugar TV

xara-ls-a:     gɘr-t-ɘ:
     watch-SOC-PRT     house-DAT-REFL

1. *Yesterday and the day before yesterday Dugar watched TV at home.
2. Yesterday and the day before yesterday Dugar watched TV with somebody at home.

(30) ʉsɘgɘldɘr     dugar    ɘldɘb    taxalga-nu:d    so:    tʲɘlʲɘvʲizor     xara-ls-a:
     yesterday     Dugar various room-PL in TV.ACC watch-SOC-PRT

1. *Yesterday Dugar watched TV in various rooms.
2. Yesterday Dugar watched TV with somebody in various rooms.

Examples (28) and (29) confirm that the subevents of the sociative event cannot take place in different periods of time or different places, see also Nedjalkov, Skribnik, Kuzmenkov & Yakhontova (2007): “… sociativity presupposes spatial and temporal proximity or a kind of concerted interaction between the subject referents, a kind of relatedness or common reason for their actions” (p. 1303).
Expected: Dugar and Darima watched TV in different moments.

Yesterday Dugar and Darima watched TV in different moments.

1. *Yesterday Dugar and Darima watched TV in different moments (separately).

It is also not possible to only modify one of the subevents with temporal adjuncts (33–35) and adjuncts of place (36–38), which is exactly what we expect given the restriction on time and space unity in sociative clauses.

Example (33) is a type I sociative clause where the adverbial modifier must refer to both of the subjects, i.e. in (33) *usəgələr ‘yesterday’ relates to both events: ‘Badma went through the forest’ and ‘Dugar went through the forest’.

(34) is also a type I sociative clause but with a plural object. The temporal adjunct here modifies both events: Dugar’s seeing of the sun and Dugar’s seeing of the rainbow.

(35) is a type II sociative clause where the modifier *usəgələr can only refer to both subevents: Dugar’s walking home and Dugar’s singing of a song.

(36) is a type I sociative clause with a plural subject where the adjunct of place can only refer to both subevents: ‘Badma read books’ and ‘Dugar read books’.

(31) *dugar darima-tai tələvəzor gər-t-s: əldəb
Dugar Darima-COM TV.ACC house-DAT-REFL different
sag so: xara-ls-a:
hour in watch-SOC-PRS

1. Yesterday Dugar and Darima watched TV together in various rooms.

2. *Yesterday Dugar and Darima watched TV in different rooms (separately).

1. *Only Badma went through the forest yesterday, and we do not know when Dugar did.

2. *Only Dugar went through the forest yesterday, and we do not know when Badma did.

3. Badma and Dugar both went through the forest yesterday.

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Dugar Darima-COM TV.ACC house-DAT-REFL different
sag so: xara-ls-a:
hour in watch-SOC-PRS

1. Yesterday Dugar and Darima watched TV together in various rooms.

2. *Yesterday Dugar and Darima watched TV in different rooms (separately).

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(36) is a type I sociative clause with a plural subject where the adjunct of place can only refer to both subevents: ‘Badma read books’ and ‘Dugar read books’.
(37) dugar gər-t-ə:  xatəi  xaja:-tai  ʃərdə-ls-ə:  
Dugar house-DAT-REFL  ceiling.ACC  wall-COM  paint-SOC-PRT
1. *Dugar painted the ceiling at home, and we do not know where he painted the walls.
2. *Dugar painted the walls at home, and we do not know where he painted the ceiling.
3. Dugar painted both the ceiling and the walls at home.

(37) is a type I sociative clause with a plural object where the adjunct of place can only refer to both subevents: Dugar’s painting the ceiling and Dugar’s painting the walls.

(38) du:  du:la-xa-d-a:,  dugar  oi-do  holongo  xara-.ls-a:  
song.ACC  sing-POT-DAT-REFL  Dugar  forest-DAT  rainbow.ACC  see-SOC-PRT
1. *Dugar was singing a song in the forest, and we do not know where he saw a rainbow.
2. *Dugar saw a rainbow in the forest, and we do not know where he was singing a song.
3. Singing a song in the forest, Dugar saw a rainbow there.

(38) is a type II sociative clause where oi-do ‘in the forest’ can only modify both subevents at once: Dugar’s singing a song and Dugar’s seeing the rainbow.

Adding an adverbial modifier of manner, however, leads many speakers to multiple interpretations (39–41).

(39) dugar  badma-tai  tʊrgө:r  xudɘl-əlsɘ-nɘ  
Dugar Badma- COM  quickly  work-SOC-PRS
1. Dugar works quickly, and we do not know if Badma does it quickly as well.
2. *Badma works quickly, and we do not know if Dugar does it quickly as well.
3. Both Badma and Dugar work quickly (together).

In (39), which is a type I sociative clause with a plural subject, the adjunct of manner can modify either the subevent with the nominative subject (Dugar’s working) or both subevents: Dugar’s working and Badma’s working.

(40) dugar  tʊrgө:r  ʃułɘg  rasskaz-tai  unʃa-ls-a:  
Dugar quickly  poem.ACC  story-COM  read-SOC-PRT
1. Dugar quickly read the poem, the speed of reading the story is unknown.
2. *Dugar quickly read the story, the speed of reading the poem is unknown.
3. Dugar quickly read both the poem and the story.

(40) is a type I sociative clause with a plural object where the adjunct of manner can refer either to the first subevent (Dugar’s reading the poem) or to both subevents: Dugar’s reading the poem and Dugar’s reading the story.

(41) divan dʋər  xəbə:xə-d-ə:,  dugar  zərxəgui-gə:r  du:  du:la-ls-a:  
sofa on lie-POT-DAT-REFL  Dugar lazy-INSTR  song.ACC  see-SOC-PRT
1. *Dugar was was lying on a sofa and singing a song (not lazily).
2. Dugar was lying on the sofa (not lazily) and singing a song lazily.
3. Dugar was lying on the sofa lazily and singing a song lazily.

(41) is a type II sociative clause where the adjunct of manner can modify either the subevent of the main clause or both subevents expressed by the sentence.

All the data given above leads me to presume that the suffix -lsa adds an ‘also’-presupposition on events that says that there is another subevent B that is similar to some subevent A (at least in time and place). In other words, the semantics of -lsa clauses can be described in the following way: ‘someone does something, and also something else is happening there and then’. This presupposition needs to be satisfied with either an argument or a whole clause.
Semantic Invariant

I believe it is safe to assume that sociative is the semantic invariant of the suffix -lsa in Barguzin Buryat.

First of all, sociative is a much more regular meaning of the suffix than reciprocal: all -lsa-derivates from all verb classes elicited from Barguzin speakers can have sociative interpretations (except for the stative tan'ixa ‘know’). This is not the case for reciprocal readings.

Secondly, it is always possible to add the lexical reciprocal (pronoun bəjə bəj-ə:) to the -lsa-reciprocal:

(42) badma dar'ima-tai (bəjə bəj-ə:) ta:la-ls-a:
Badma Darima-COM body body-ACC.REFL kiss-SOC-PRT1
Badma and Darima kissed each other.

Perhaps it could be stated that reciprocal clauses always contain the lexical reciprocal but the pronoun is not always phonologically expressed. The other possibility is that the reciprocal meaning arises in -lsa-clauses for pragmatically reasons.

And last but not least, sociative semantics includes reciprocal semantics: sociative is a plural event, reciprocal is a mutual plural event. Reciprocal action implies sociative action of a specific kind. If sociative semantics can be described as ‘A happened, and also B happened at the same time and in the same place’, then reciprocal semantics further specifies that A is ‘X did C to Y’ and B is ‘Y did C to X’ (where C is an action, X and Y are participants).

Conclusion

This paper has provided an examination of semantics of the suffix -lsa in Barguzin Buryat. It has reciprocal and sociative meanings. Sociative is the invariant meaning of the suffix -lsa, it adds a new subevent to the event structure of a verb that must differ from the old one in argument, descriptive characteristics or both. This results in a new complex plural event. The subevents must occur in the same place and in the same period of time. Reciprocal meaning is encoded by the lexical reciprocal or arises for pragmatically reasons.

Glossing conventions

<table>
<thead>
<tr>
<th>ABL</th>
<th>ablative</th>
<th>POT</th>
<th>potentialis (future tense)</th>
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<tr>
<td>ACC</td>
<td>accusative</td>
<td>PRON</td>
<td>pronoun</td>
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<tr>
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<td>connective</td>
<td>PRS</td>
<td>presens (present tense)</td>
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<tr>
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<td>PRT1</td>
<td>preterite (past tense)</td>
</tr>
<tr>
<td>CONV1</td>
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<td>REFL</td>
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<td>3</td>
<td>3rd person possessive</td>
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<tr>
<td>PL</td>
<td>plural</td>
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</table>
References


Progress & Prospect in Nivkh Historical Linguistics: Rendezvous with Tungusic Studies

Robert Halm* and Jay Slater
Independent Scholars

Abstract

Recent work has achieved significant advances in the understanding of the history of the Nivkh (or Gilyak) languages spoken on Sakhalin Island and the adjacent lower Amur river basin of northeast Asia, using both the comparative method (Fortescue 2016; Halm 2017; 2019; Halm & Slater 2018), internal reconstruction (Halm 2019), and “external reconstruction” (Janhunen 2016), whereby sound changes are examined via the means of identified loanwords, and further work utilizing these methods is forthcoming. These exciting advances give us unanticipated insights into a protolanguage (and a pre-protolanguage) which may be more distinct from its daughter lects and more typologically atypical in some features than expected.

However, as reconstruction efforts push on to earlier language stages and greater degrees of completeness and precision, progress based upon Nivkh data alone becomes increasingly difficult. Heavy contact between Nivkh and unrelated languages, especially Ainu and Tungusic lects, has been an indisputable fact of the history of Nivkh, leading to extensive borrowing of lexical and morphological material, structure, and perhaps even pronouns and other core vocabulary. Understanding of this contact is not only necessary in order to allow the unimpeded application of the comparative method, but is the fuel for external reconstruction.

Keywords: Nivkh, Tungusic, Ainu, language contact, loanwords

1. Introduction

Nivkh (or Gilyak) is a small and highly endangered language family of northeast Asia, comprising between four and seven distinguishable attested varieties reflecting probably less than 2,000 years of divergence, spoken on Sakhalin Island and areas along the coast and lower Amur drainage of the adjacent mainland. Despite its much smaller geographical and historical footprint, it shares not only a history of intense contact with the Tungusic (and to a lesser extent Mongolic and Turkic) language families, as well as with Ainu to its South, but also a similar combination of difficulties and obstacles to historical linguistic research: a relatively shallow time depth among the attested lects which limits the scope and power (though certainly not the importance) of the comparative method; obstacles to internal reconstruction in the form of many strata of lexical (and sometimes morphological or syntactic) borrowings; and the impacts of language endangerment and extinction.

Yet, the history of intense contact between Nivkh and its neighbors can provide not only obstacles to the study of this language family, but also materials which allow those obstacles to be overcome, and earlier stages of the language(s) — both subsequent and prior to the protolanguage — to be understood more clearly and with much greater certainty. These materials enable several separate and distinct methodological approaches, which we will discuss below and which we hope to give a small demonstration of as applied to the case of Nivkh and its neighbors (especially Tungusic and Ainu), but in order for any of these to be utilized, it is prerequisite that a large corpus of loans between Nivkh and its neighboring unrelated language families must exist in the lexicons

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of these families, and furthermore that these loans must be correctly identified and collected together for analysis. The primary thrust of this contribution will be to make a very modest first foray into the collection of these loans in the Nivkh lexicon, in order to give an impression of just how pervasive they are — Nivkh shares pronouns, bound grammatical markers, many kin terms, body part terms, terms for basic natural phenomena, and many other items of core vocabulary, not to mention technical, cultural, agricultural, and other more readily transmissible vocabulary, with Tungusic and Ainu (and again, to a lesser extent with Mongolic, Turkic, and other farther-removed language groups). We hope that by illustrating the character of some of these surprising core borrowings, we may give an impression of just how extensive are the materials available for the methods which we are about to describe — not only for the study of Nivkh, but potentially also for Ainu, Tungusic, and other nearby language families.

The time is ripe for these methods to be applied, since not only has the application of the standard comparative method to Nivkh recently advanced significantly (Fortescue 2016; Halm 2017; 2019; forthcoming; Halm & Slater 2018; 2020), but similar work uncovering and cataloguing the borrowed lexical (Alonso de la Fuente 2007; Janhunen 2016; Pevnov 2016; Hölzl 2017) and grammatical (Pevnov 2009; 2016; Gusev 2015; Alonso de la Fuente 2017) material in Nivkh, as well as in other regional language families such as Yeniseian (Khabtagaeva 2015; 2018; 2019), Yukaghir(ic) (Piispanen 2013; 2018a; 2019a; 2019b), and others (Piispanen 2018b;¹ 2020) has recently accelerated.² These recent advances have uncovered interesting and surprising characteristics in Proto-Nivkh which are not directly attested in any of its modern descendants, including a rich inventory of vocoid sequences (such as /*ju ≠ *iu ≠ *iw/, /*wi ≠ *ui ≠ *uj/, /*au ≠ *aw/, and /*ai ≠ *aj/) and a very complex system of morphophonemic contrasts in final nasals, in which surface-level final [∗m], [∗n], and [∗ŋ] each represent at least two contrastive underlying morphophonemes, and [∗ŋ] represents three (see Halm, 2017; and Halm & Slater 2020).

The first application to which this storehouse of loanwords can be put has certainly been used by linguists on a case-by-case basis for centuries, but Janhunen, in his recent (2016) demonstration of the concerted application of the method to Nivkh conveniently coins the designation “external reconstruction.” The method is simply to use solidly identifiable loans between the language (group) of interest and an external language (group) to discover, confirm, or refute sound changes which are difficult to decisively demonstrate or disprove on the basis of the comparative method and internal reconstruction alone, especially those which predate the protolanguage. For example, if English were an isolated language without known relatives, and the change /*a:/ > /oʊ/ were suspected on the basis of internal reconstruction, it could be confirmed through “external reconstruction” via examples of loans such as Modern English «boat» corresponding to Irish «bád» and French «bateau», where the forms in Irish and French reflecting loans prior to this change attest a low unrounded vowel, rather than a mid back rounded one.

A second application of identified loanwords between Nivkh and its neighbors is to refine conventional internal reconstruction, by separating the stock of lexical material which occurs only within Nivkh, and is therefore likely to have been subject to Nivkh-internal phonological developments since a relatively early stage, from the body of words which are shared with neighboring unrelated languages, and therefore may be loans into Nivkh which entered late enough to escape earlier regular sound changes. Such an approach has been used recently with great effect for the Quechuan and Aymaran language families of Andean South America (which share a huge number of loans with one another, even at the stage of their respective protolanguages) by Emlen (2017), allowing the reconstruction of phonological patterns and phenomena typical of each of these two language families prior to their initial contact (Emlen & Dellert 2020).

Finally, a thorough catalogue of loanwords can provide a valuable connection between linguistic data

¹ Which, incidentally, proposes a Nivkh origin for a northeast Asian wanderword.
² Furthermore, loanwords are also being used to discover or clarify historical developments in the phonology of languages and language families in other parts of the globe, such as by Pincott (2020) with the Salishan languages.
and models of divergence from the initial protolanguage, on the one hand, and absolute chronologies and archaeological or historical context, on the other. This can be achieved through the identification of loans which must have entered in a specific historical or archaeological context or period (for example, terms for ‘tobacco’, for various domesticates, or for metallurgical referents) with a specific stage of the language family’s development as established by the relative dating of known phonological developments (e.g., before or after the protolanguage).

In the present paper, we will first provide a background on the attested varieties of Nivkh and their phonological development, including the results of recent work on the sound changes which are shared by these varieties or distinguish them from one another (Section 2); then briefly survey a few highlights of loanwords which can be identified between Nivkh and its neighbors, working our way through several distinct layers or strata based upon the neighboring non-Nivkh language family(ies) involved and the apparent time depth (Section 3); before demonstrating an example of the use of identifiable loanwords to clarify a detail of historical phonology (in this case, using loans between Nivkh and Ainu to show that a contrast between two distinct mid front vowels */ɛ ≠ *e/ which has previously been posited for Proto-Ainu is spurious — Section 4) and offering conclusions and comments on the possibilities for future research (Section 5).

2. Background

The Nivkh family of languages comprises between three and seven distinguishable varieties or lects. Of the seven possibly distinguishable varieties, four are geographical dialects historically distributed across Sakhalin Island, identified by the cardinal directions: North Sakhalin Nivkh (NSN), East Sakhalin Nivkh (ESN), West Sakhalin Nivkh (WSN), and South Sakhalin Nivkh (SSN). On the mainland, the varieties of Lower Amur Nivkh and Amur Liman Nivkh — often grouped together as Amur Nivkh (AN) — are spoken. We use the term “Nogliki Nivkh” (NgN) to describe a seventh possible lect, attested especially in the data collected in the city of Nogliki by Tangiku et al. (2008), which appears to reflect language mixture between several (and perhaps all) the other Nivkh varieties. It is difficult to determine with certainty whether these data reflect a koiné which has ever had any significant degree of stability, or perhaps predominantly the result of collecting data from a mixed community of speakers of different varieties, relocated to the city under Soviet resettlement policies, together with the effects of inter-speaker accommodation and language obsolescence, in which case this variety might be more of a docuslect than a stable variety used among its own community of speakers. Some authors have considered West Sakhalin and Amur Nivkh as a single variety, although there are at least some subtle syntactic and morphophonological differences; and some have even gone so far as to reduce the entire family to two “languages”, with Amur + West Sakhalin + North Sakhalin identified as one, and East Sakhalin + South Sakhalin identified as the other, although it is not clear that North Sakhalin and Amur + West Sakhalin are highly mutually intelligible with one another, nor that East and South Sakhalin were with each other. Nowadays, all Nivkh varieties are at best highly endangered. The South Sakhalin variety appears to be entirely extinct, and speaker estimates for all the remaining varieties together range from under 200 (Gruzdeva 2015) to a mere handful.

Building upon earlier work by Austerlitz, Gruzdeva, Shiraishi, Luukkonen, and others, and especially upon Fortescue’s (2016) comparative dictionary, we have recently worked to reconstruct elements of Proto-Nivkh (PN) and pre-Proto-Nivkh (pPN), using the standard comparative method, internal reconstruction, and external reconstruction. The use of the standard comparative method especially has previously been somewhat neglected on the assumption that the attested lects are too closely related for this to be more than a trivial exercise, but the availability of better data have allowed this method to be applied productively to the family. The remainder of this section will survey (and in some details slightly update) these results, as a necessary ground upon which to base the identification of loans, as well as the determination of the direction and relative dating of their borrowing.
2.1 The Nivkh Phonemic Inventory

In addition to the consonant phonemes given in Table 1, all Nivkh varieties have a six vowel inventory which we transcribe phonemically as /a, e, i, o, u, ǝ/, although the phonetic realization of these may be closer to [æ, ɪɛ, ɪ, o, u, ɤ] in at least some lects. Proto-Nivkh did not feature a vowel length contrast, but Amur and West

<table>
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<tr>
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<th>Bilabial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Postvelar</th>
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<tr>
<td><strong>Fortis Stop</strong></td>
<td>pʰ</td>
<td>tʰ</td>
<td>cʰ</td>
<td>kʰ</td>
<td>qʰ</td>
</tr>
<tr>
<td><strong>Lenis Stop (Non-</strong></td>
<td>[p]</td>
<td>[t]</td>
<td>[c]</td>
<td>[k]</td>
<td>[q]</td>
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<tr>
<td><strong>Contrastive in</strong></td>
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<td><strong>SSN</strong></td>
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<tr>
<td><strong>Voiceless Fricative</strong></td>
<td>φ</td>
<td>r</td>
<td>ŝ</td>
<td>x</td>
<td>χ</td>
</tr>
<tr>
<td><strong>Voiced Fricative</strong></td>
<td>β̂</td>
<td>r̆</td>
<td>ẑ</td>
<td>γ̂</td>
<td>Ø̂</td>
</tr>
<tr>
<td><strong>Voiced Stop</strong></td>
<td>b</td>
<td>d</td>
<td>ĵ</td>
<td>g</td>
<td>G</td>
</tr>
<tr>
<td><strong>Nasal</strong></td>
<td>m̃</td>
<td>ñ</td>
<td>ñ</td>
<td>ñ</td>
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<tr>
<td><strong>Approximant</strong></td>
<td>[w]</td>
<td></td>
<td>j̃</td>
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<tr>
<td><strong>Lateral</strong></td>
<td></td>
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<td></td>
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<td>h</td>
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<tr>
<td><strong>Voiceless Onset</strong></td>
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</table>

Table 1. Transcription of the (maximal) contemporary Nivkh consonant inventory. All unbracketed phonemes are reconstructed for Proto-Nivkh and attested in all modern varieties, while /w/ is reconstructed for PN but has been merged phonetically (but not morphophonemically) into [β] in the syllable onset in AN, WSN, NSN, and NgN. The contrastive lenis (i.e. voiceless unaspirated) stops /p, t, c, k, q/ are present in all varieties except SSN.

Sakhalin Nivkh (and perhaps NgN) have developed a marginal length contrast as a reflex of the optional elision of /γ/ and /ʁ/ in the coda when followed by another consonant /*VγC, *VʁC/ > /V:C/.

In morpheme-final position, the various lects expand the inventory of nasal phonemes in various ways (e.g., Amur and West Sakhalin Nivkh feature a phoneme with zero phonetic surface realization, but which is still present morphophonemically, reflecting some Proto-Nivkh alveolar and velar nasals — we transcribe this phoneme as /Øw/ — while South Sakhalin Nivkh featured a contrast between a strong final velar nasal /ŋ/ and a weak one /ŋw/, which were differentiated by separate allophony patterns and morphophonemic impact on following morphemes). As we will describe in Section 2.4 below, we have recently argued (Halm & Slater 2020) that these varying systems of morpheme-final nasals reflect differing simplifications of a reconstructable Proto-Nivkh inventory with either a two- or a three-way contrast among phonetically similar or identical nasals at each locus (e.g., Proto-Nivkh velar /*ŋ̆ ≠ *ŋ:/ ≠ *ŋs:/), most likely reflecting earlier homorganic clusters (e.g. /*ŋ/ > PN /*ŋ̆/, /*ŋx/ > PN /*ŋs:/, and /*ŋk/ > PN /*ŋs:/).
2.2 (Proto-)Nivkh Vocoid Sequences

In our first effort (Halm 2017), we viewed clusters of vocoids (vowels and semivowels) in Nivkh through the lens of the standard comparative method. We posit a merger of Proto-Nivkh /*a, i, u/ > Amur, West Sakhalin, and North Sakhalin Nivkh /ə/ immediately before a glide (ESN and SSN retain the PN contrast). There appear to be only a few documented exceptions to this correspondence, which can be explained (in most cases) by borrowing, either internecine or in parallel from outside sources, such as Ainu and Turkic. This merger does not extend to the Proto-Nivkh sequences /*ow/, /*oj/, /*ew/, /*ej/, /*V/, or /*Vu/, which appear to be retained in all modern varieties.

2.3 Initial Obstruent Clusters in Nivkh

Perhaps the feature of Nivkh most remarked upon is the behavior of morpheme-initial consonants: they alternate in elaborate fashion under the influence of the preceding morpheme in certain morpho-syntactic complexes, such as object-verb complexes, attribute-noun complexes, and certain others. In these alternations, the alternating initial consonant of the following morpheme is referred to as the target, while the final phoneme of the preceding morpheme, which determines the surface form of the target, is referred to as the trigger. When an underlying plosive target follows a vowel, glide, plosive, or certain nasals as the trigger (including some historical vowels and nasals which are now elided at the surface level) across morpheme juncture in these complexes, it surfaces as a fricative, with aspirated plosives surfacing as voiceless fricatives and unaspirated plosives surfacing as voiced fricatives. Following a fricative or certain other nasals as the trigger, the same target phoneme will instead surface as a plosive — following the nasals especially, this plosive may be realized as voiced if it is ultimately unaspirated (see, e.g., Mattissen 2003).


In these complexes, the alternating target consonant is strictly limited to the initial position. There are, however, other alternations: for instance, oral obstruents in the second position of a morpheme-initial consonant cluster also display an alternating behavior. We must first qualify the documented restriction upon such second consonants — namely that they must be voiceless fricatives — by observing that the restriction only holds for forms in morphological isolation. In nouns with possessive prefixes or verbs with object prefixes, we see two flavors of obstruent in the second position of the root’s initial consonant cluster: those which remain fricatives, as in isolation, and those which convert to plosives in this environment.

Comparison across modern Nivkh lects (Halm 2019) indicates that this is clearly reconstructable to Proto-Nivkh. Each etymon appears to be uniform in its behavior across the modern lects: each either shows an invariant fricative in all lects, or shows the conditioned alternation to a plosive in all lects. We posit that the most economical explanation for this contrast is a phonemic contrast in pre-Proto-Nivkh, eliminated by a regular sound change in word-initial position, leniting the plosive to a fricative in initial-cluster-second position in forms without a bound prefix: /*#CP, *#CF/ > */#CF/, but leaving forms with bound prefixes unaffected, resulting in the observed synchronic alternation.
2.4 Nivkh Final Nasals

The Nivkh final nasals have posed a challenge for previous diachronic analyses: AN, WSN, and NSN have historically elided some original velar and alveolar nasals to /Øw/, while at least SSN displays two different velar nasal morphophonemes in final position: a “weak” final velar nasal which assimilates its locus to that of following plosives in certain environments and patterns with the other nasals as a trigger of initial consonant alternation; and a “strong” final velar nasal, which shows no assimilation and patterns with the plosives as a trigger of initial consonant alternation. The status of final nasals in all lects has in general been underdocumented, and the question of whether a single conditioning factor could explain both deletion in the Northwestern lects and the strong-weak contrast in SSN had not been satisfactorily answered (Hattori 1962b; 1962c; Gruzdeva 1997).

Our most recent work (Halm & Slater 2020), with the benefit of new data — in particular fieldwork by Shiraishi, Lok, & Liutova on West and North Sakhalin Nivkh (the Sound Materials of the Nivkh Language), and Luukkonen’s consonant alternation database — finds (a) that the strong-weak contrast is also attested in West Sakhalin Nivkh (and less straightforwardly in Amur Nivkh), and (b) that historical elision in the Northwestern group is conditioned by another feature (which we provisionally identify as consonant length in Proto-Nivkh), distinct from but interactive with the strong-weak contrast: the existence of short strong nasals is not supported by the evidence. We find also that the length contrast existed for /*ŋ̆ ≠ *ŋ:/ as well as /*ŋ̆ ≠ *ŋ:/ and *ŋw ≠ *ŋw/, accounting for the continued presence of this contrast in WSN up to the present day.

Thus, we propose a three-way contrast of velar nasals in morpheme-final position in Proto-Nivkh: long strong velar nasals /*ŋs/, corresponding to /ŋs/ in modern SSN and unelided /ŋ/ in AN, WSN, and NSN; long weak velar nasals /*ŋw/ reflected as unelided weak velar nasals /ŋ/ present in AN, WSN, and NSN corresponding to weak velar nasals /ŋw/ in SSN; and short velar nasals /*ŋ̆/, elided in AN, WSN, and NSN and present as weak /ŋw/ in SSN. Tentatively, the same set of contrasts may have existed for the alveolar nasal, /*n̆ ≠ *n:/ and /*n̆ ≠ *n:/, long weak/ and accounting for the continued presence of this contrast in WSN up to the present day.

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<thead>
<tr>
<th></th>
<th>labial</th>
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<th>velar</th>
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<tr>
<td>weak</td>
<td>*m̆</td>
<td>*n̆</td>
<td>*n̆</td>
<td>*ŋ̆</td>
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<td>*ŋ̆</td>
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<td>short (weak)</td>
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<tr>
<td>strong</td>
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<td>*n</td>
<td>*n</td>
<td>*ŋ</td>
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<td></td>
<td>*ŋ</td>
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<tr>
<td>long weak</td>
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<tr>
<td>long strong</td>
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Thus, we propose a three-way contrast of velar nasals in morpheme-final position in Proto-Nivkh:

Data taken from all Nivkh lects suggest strongly that the elision /*ŋ̆/ > /Øw/ is a regular sound change in Amur, West Sakhalin, and North Sakhalin Nivkh, while the similar elision of /*ŋ̆/ > /Øw/ is regular for only for the Amur and West Sakhalin varieties. South Sakhalin Nivkh appears to have merged the long weak velar nasal with the short one /*ŋ̆, *n̆w/ > /ŋw/, and also collapsed both the length and strong-weak contrasts at the labial, palatal, and alveolar loci. The development of this system in NSN is not completely understood due to lack of data, and its development in ESN is essentially unknown, except that none of the phonemes appears to have undergone elision in that variety.

Our current working hypothesis is that this elaborate system of contrasts reflects the loss of yet earlier homorganic nasal-obstruent clusters: we suspect that the long-short contrast goes back to the contrast between nasals with versus without an elided following oral obstruent, while the strong-weak contrast reflects whether the elided oral obstruent was a stop or a fricative, i.e. /*ŋ̆/ > PN/*ŋ̆/, /*ŋ̆x/ > PN/*ŋ̆x/, /*ŋ̆k/ > PN/*ŋ̆k/, however the evidence for this hypothesis, based on both internal reconstruction and on loanwords, remains to be explored in a future effort (Halm forthcoming).
2.5 Other Regular Intra-Nivkh Sound Correspondences

In (Halm & Slater 2018), we attempt to survey as many of the relatively straightforward sound correspondences between the modern Nivkh lects as possible. These sound changes are summarized in Table 3, and briefly described below.

<table>
<thead>
<tr>
<th>AN</th>
<th>WSN</th>
<th>NSN</th>
<th>ESN</th>
<th>SSN</th>
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<td>? ←</td>
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<tr>
<td>• Centering */a, *i, *u/ &gt; /ə/ before a glide (but not in VV sequences)</td>
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<tr>
<td>• Raising */a/ &gt; /ə/ before (or after?) a velar</td>
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<tr>
<td>• Surface (but not morphonemic) elision of final short velar nasals /*ŋw/</td>
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<tr>
<td>• Phonetic (but not morphonemic) merger of */w/ into [β] (in onset?)</td>
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<tr>
<td>• Palatal-alveolar cluster assimilation</td>
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<tr>
<td>• /*al/ &gt; /al/ ? (We are currently investigating this sound change)</td>
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<td>• Loss of strong-weak final nasal contrast in attributives</td>
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<tr>
<td>• /*ɾ, *ʁ/ &gt; /ɾ, ɣ/</td>
<td>o(C)_</td>
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<tr>
<td>• /*i/ &gt; /ta/ word-finally</td>
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<tr>
<td>• /*VɾC, *VɣC/ optionally &gt; /V:C/</td>
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<td>• Merger of /*NW/ into /0w/</td>
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<tr>
<td>• (1) /*mx, mɣ/ &gt; /*nx, *ŋx/</td>
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<tr>
<td>• (2) /*nx, *ŋx/ &gt; /*nk, *ŋk/</td>
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<td>• (3) /*ŋq/ &gt; /ŋk/</td>
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<tr>
<td>• Merger of strong, long weak, and short non-velar final nasals</td>
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<td>• Merger of strong and long weak velar final nasals</td>
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<tr>
<td>• /*ɲ, *n/ &gt; /ɲ/ before /i, e/</td>
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<tr>
<td>• Fortition assimilation in initial clusters</td>
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<tr>
<td>• /*x/ &gt; /*χ/</td>
<td>#[tʰ,cʰ][a,o]</td>
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<tr>
<td>• /*tʰ, *t, *d/ &gt; /ch, c, j/ before /i, e/</td>
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Table 3. Current working hypotheses of sound changes from Proto-Nivkh to the attested Nivkh varieties.

Amur, West Sakhalin, and sometimes North Sakhalin seem to share several innovations, for which reason we use the terms “Western Nivkh” (WN) for the Amur + West Sakhalin group (clade?), and “Northwestern Nivkh” (NWN) for Western + North Sakhalin. (1) The first of these shared innovations is a merger in Western Nivkh of */#w/ and */#β/ in the morpheme-initial position, well documented in the literature (Shiraishi 2007, Mattissen 2003, Gruzdeva 1998), which we suggest has also affected NSN regularly. (2) Another sound change which can be observed is velarization of PN */o(C)[ɾ,ɣ]/ > WN /o(C)[ɾ,ɣ]/, that is, postvelar fricatives shifting to the corresponding velar after /o/, even across intervening consonants. This shift can be seen in a number of etyma, although it has not spread to plosives, and appears not to have affected NSN. (3) The WN group seems to have also merged PN */mx , mɣ, *ŋq/ > WN /ŋk ~ ŋg/ in morpheme-final position, and perhaps in all environments. Tentative evidence suggests NSN may not possess this WN innovation, either. (4) WN and NSN also appear to share a vocalic innovation: vowel raising. ESN and SSN /a/ corresponds to AN, WSN, and NSN /ə/ where the vowel is adjacent to or tautosyllabic with a velar stop or plosive, except where it is also adjacent to or consyllabic with a postvelar, lowered subject to vowel harmony, or in a recent borrowing.⁴

We next look to three innovations in South Sakhalin Nivkh, one of which is shared by ESN, and all of which appear in Nogliki Nivkh (perhaps best understood as koineized ESN, as mentioned above and in Halm

⁴Although this change is presented rather categorically in (Halm & Slater 2018), we have subsequently discovered that there may be a cross-cutting sound change of */ə/ > /a/ in ESN and SSN in the environment of alveolars which complicates the clear determination of the environment of this raising in NWN. At present, the sorting out of these details remains for future work.
2.6 Internal Classification of Nivkh Varieties

Increasing familiarity with the innovations attributable to each of the Nivkh lects has led us to argue in favor of a grouping of North Sakhalin Nivkh with Western Nivkh (i.e., the West Sakhalin and Amur lects), and a grouping of South Sakhalin Nivkh most likely with East Sakhalin Nivkh. However, the diachronic situation may not be as simple as a cut-and-dried family tree of sequential branchings: all the Nivkh lects remained in a nearly contiguous geographic bloc throughout their attested history, and some changes, such as palatal-alveolar assimilation, very recent palatalization of alveolars before a front vowel (probably under the influence of Russian), and perhaps even some of the changes involving the final nasals, may have spread across multiple lects or even the entire family significantly after divergence had already set in. The exact history of the divergence (and perhaps parallel development or convergence) of the Nivkh varieties will remain imperfectly known until other methods beyond phylogenetic bracketing (such as analysis of loanwords shared with non-Nivkh lects) can be brought to bear on establishing the chronology and history of the (morpho)phonological, morphological, lexical, and syntactic changes involved.

3 Layers of Contact Between Nivkh and Neighboring Language Groups

Having established our current understanding and working hypotheses of the history of Nivkh phonological change as a background, we can now discuss the various layers of loanwords and corresponding historical contact shared between Nivkh and other language families. We will attempt only a very brief survey, but we hope to show that this contact with several families, especially Tungusic and Ainu, must have been very intense, and has apparently left copious evidence which should be of great use to historical linguists working to reconstruct the trajectories of any of the families involved.

3.1 Influence from Russian

The most recent layer of major influence on Nivkh is due to contact with Russian. Some of the forms of influence have been on levels other than the lexicon (such as phonology and syntax), in part due to processes of language shift and loss (Shiraishi 2007, pp. 23-24; Gruzdeva 2015; Gruzdeva et al. 2016), but there has also been significant lexical borrowing, many examples of which have already been pointed out in

5 While at the time of writing (Halm & Slater 2018) we had not come across any evidence that this change affects NSN, subsequently some data (e.g., Bessonova, Liutova, et al. 2018) have come to our attention which suggest that NSN does share this change, at least partially, though its exact status and regularity in that variety remain to be thoroughly investigated.
the literature. This borrowing has included not only copious terms for modern concepts and objects which were not lexicalized in Nivkh prior to contact with Russian (Savel’eva & Taksami 1965; 1970), but also loans which have complemented or displaced existing Nivkh etyma, such as /sole/ ‘(to) salt’ and /bocʰka/ ‘barrel’ in place of AN, NSN /taφ/ <> ESN /taφciŋ/ <> SSN /dɑɾciŋ/ ‘salt’ and ESN /sidux/ <> NgN /sintuχ/ ‘barrel’, both of which, incidentally, are earlier loans shared with Tungusic (Tangiku et al. 2008; Gruzdeva 2015, pp. 162-163; Fortescue 2016). As Gruzdeva (ibid.) points out, this latter sort of lexical replacement may be at least partly reflective of processes of language shift.

Loans of the first type — reflecting referents which are new or of new importance to Nivkh speakers in the 19ᵗʰ through 21ˢᵗ centuries — are far more common, and make up a significant fraction of at least some of the lexical documentary sources on Nivkh. Savel’eva & Taksami (1965; 1970), for instance, include hundreds if not thousands of such recent and transparent loans.

Although Russian loans in Nivkh may sometimes show some adaptation to Nivkh phonology (for instance, insertion of epenthetic vowels or consonant deletion in order to avoid prohibited initial clusters, Shiraishi 2007, p. 30), such adaptation is often minimal and in some discourse contexts may blur into code switching or code mixing (see, e.g., Gruzdeva 2015, p. 162, but see also SMNL for copious examples), since all present Nivkh speakers are fluent in Russian. An observation highly important to our topic of interest in this paper — the use of loanwords to conduct “external reconstruction” of the historical phonology or other historical language subsystems of Nivkh or neighboring languages — is that to the best of our knowledge, Russian loanwords in Nivkh appear to form too recent a stratum to reflect any of the regular sound changes which differentiate the attested Nivkh lects from one another. That is to say that all the regular sound changes which have been identified up to this point as operating subsequent to Proto-Nivkh and involved in the diversification of this small language family had either already run their course prior to the adoption of Russian loanwords; are never applicable to such loanwords due to the phonological or phonotactic differences between Nivkh and Russian (e.g., Russian has no final contrastive velar nasals /ŋ/ which could be subject to regular deletion); or simply are not applied in the nativization of Russian lexical material for non-chronological reasons. The sole possible exception to this may be the suffix marking a standard of comparison (similar in usage to English «as» or «than» in comparative constructions), AN /-ək ~ -k/ <> ESN, NgN /-ak/, which could conceivably be borrowed from Russian «аки», showing regular /*a/ > AN /ə/ in the environment of a velar consonant (see Halm & Slater 2018, p. 28; and see SMNL XI, text 6, line 113 for an example of usage in AN).

3.2 Recent Loans Shared with Tungusic and Ainu

There are a number of loans which can confidently be identified as dialectal (i.e., post-Proto-Nivkh) loans into Nivkh both from Ainu and from Tungusic lects; these may be tentatively identified by a narrow attestation within Nivkh coupled with a highly certain etymology within the donor language family, but this status can be confirmed on phonological grounds (cf. Thomason 2009; Urban 2018 for these criteria). Specifically, an item can be phonologically confirmed as a post-PN loan into Nivkh either when the suspect forms display a positive failure to undergo sound changes which are highly regular within the definitely inherited Nivkh lexicon, or when it shows irregular correspondences or variation of any kind within the Nivkh lects which do attest the form. So, for instance, AN /laβ(-)r/, NSN /law(-)r/ ‘floor’ (Fortescue 2016) can be suspected as a loan from Ainu since it is unattested within East or South Sakhalin Nivkh (at least within our sources), and seems to be comparable to Raichiska Sakhalin Ainu /raw/, /rawta/, Kurile Ainu /rawta/, and Soya Hokkaido Ainu /rawa/ ‘down’, all of which are derived from Proto-Ainu */ra/ ‘down’ — an etymon robustly attested across the Ainu language area and reconstructed already to Proto-Ainu (Vovin 1993). We can confirm this as a post-PN loan from Ainu into Nivkh on phonological grounds, since AN and NSN regularly show PN */aw/ > AN, NSN /σw/ (Halm 2017), which has failed to apply in this etymon — if these forms were inherited.
from Proto-Nivkh, we would expect /**rəwr/**, which is not attested. Another example would be AN, WSN /ajɨ/, ESN /ajɨn/, NgN /ajɨn ≈ ajɨn/, SSN /aiʃan/ 'gold', which appears to be loaned from Tungusic (cf. Cincius 1977 I, pp. 22-23, under «аjсин»). Although this etymon is attested broadly across Nivkh, it shows multiple irregularities in its intra-Nivkh correspondences: the final correspondence of alveolar /n/ in SSN to velar /ŋ/ in ESN and NgN and true (i.e., morphophonological as well as phonetic) zero in AN and WSN is highly irregular (see Gruzdeva 1997; Halm & Slater 2020), since alveolar final /n/ in SSN should correspond to ESN and NgN /n/, and either /n/ or /ø/ in AN and WSN, while true zero in AN and WSN should never correspond to any nasal in any other variety (cf. Section 2.4 above).

This layer of contact, with Ainu and especially with Tungusic, appears to have been quite intense, since identifiable loans belonging to the post-Proto-Nivkh period include not only cultural and technological items as well as terms for natural objects and phenomena, but also core vocabulary such as body part terms (such as AN, NSN /təβɨk/ ‘shoulder blade’ ← dialectal Ainu /tap-sut/ ‘shoulder, upper arm’, derived from Proto-Ainu */tap/ ‘shoulder, upper arm’, see Vovin 1993), kin terms (such as AN /aκan ≈ aκa/ <> NSN /aκoκan ≈ aκa/ <> ESN /aκi ≈ aκa(n)d/ <> SSN /aκan/ ‘older brother’ probably from Tungusic as has already been pointed out, see Cincius 1977 I, pp. 23-24; Fortescue 2016, p. 10), and even pronouns. In fact, while all Nivkh lects have an inclusive-exclusive distinction in their first-person plural pronouns, the inclusive forms show both highly irregular phonological correspondences between lects, and irregular variation within lects: AN /mɛr ≈ mɪr/ <> WSN /mɛɾ/ <> NSN /mɪɾ/ <> ESN /mɛɾn ≈ mɪɾn ≈ mɪɾn/ <> SSN /mɪɾn ≈ mɪɾn/ (Gruzdeva 1998, pp. 25-26; Mattissen 2003, p. 13; Fortescue 2016, p. 105). These irregularities and variations probably reflect multiple post-PN borrowings into the different Nivkh lects from separate Tungusic sources, such as Ewenki /mit, mitin/, Udihe /miti, munti/, and so on (see Cincius 1977 I, p. 539).

Moreover, in addition to such core lexical loans, Nivkh has also borrowed at least one bound grammatical morpheme as a part of this layer of loans, and possibly more. Gusev (2015) has already identified the Amur Nivkh morpheme /-kta ~ -xta/, used to construct the first-person singular imperative or hortivative, which has no cognate in ESN or SSN, as borrowed from Negidal or Ewenki /-kta/ of the same meaning, and also pointed out some possible structural influences or calques from Negidal into AN. More tentatively, the AN locative suffix /-uine ~ -uin ~ -in ~ -in ~ -n/ (Fortescue 2016, p. 168; Gruzdeva 1998, p. 18), which also lacks a cognate in ESN and SSN, could be borrowed from the Ainu allative case suffix /-un/ (Refsing 1986, pp. 158, 160-161, 165-166, et alibi), although the status or reconstructability of this suffix in Proto-Ainu is still unclear to us, so the direction and validity of this borrowing are currently uncertain. Conversely, Pevnov (2016) identifies among the numerous probable borrowings from Nivkh into Ul’ta at least one bound grammatical morpheme which has been transmitted in this reverse direction, namely the Ul’ta second-person imperative suffix /-ja/, corresponding to Nivkh second-person singular imperative /-ja/ (ibid, pp. 58-59). Interestingly, while observing that Ul’ta has also acquired a structural pattern of question marking from Nivkh, he fails to recognize that the phonological substance of the polar-question-marking suffix which is used in Ul’ta to instantiate this structural pattern is also a loan from Nivkh, namely Northern Ul’ta polar interrogative suffix /-i ~ -j/, which appears to be borrowed from Nivkh /-i ~ -j/ of the same meaning (Austerlitz 1956, p. 262; Fortescue 2016, p. 79).

While we believe we have identified a few dozen such definitely post-PN loans into Nivkh from Ainu and Tungusic (many of which had previously been identified in the literature as loans, without regard to relative

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6 The final rhotic segment in these forms may be related to the alveolar /t/ in some of the Ainu forms, but more likely, it is simply the well-attested nominalizing suffix (Savel’eva & Taksami 1970, p. 531; Fortescue 2016, p. 175; see also Halm & Slater 2018, pp. 27-28), which is sometimes applied redundantly to roots which are already nominal.

7 Gruzdeva (1997, p. 87) provides attestation that this etymon is truly underlyingly /ajɨ/ in Amur, with no elided final nasal, since it triggers a voiceless rather than voiced following lenis plosive to surface in [ajs-kujβa] ‘gold bracelet’, rather than [ajɨs-gujβa] as would be expected with a phonetically elided final nasal /ajɨsø/.

8 Note that Cincius (1977 I, p. 293) finds a form related to this Ul’ta form only in Oroch, and no other Tungusic lect, whereas it is reflected widely across Nivkh.
dating), there are likely to be, at a minimum, dozens more which can be identified with confidence on the basis of existing lexical (and grammatical) descriptive resources on Nivkh and its neighbors (and those neighbors’ more geographically distant relatives, such as Manchu, Ewen, etc.). These strata of loans promise to be a highly valuable resource in clarifying the historical phonology of Nivkh, Tungusic, and Ainu.

3.3 Regional Loanwords

In addition to the wealth of loans shared between Nivkh, Tungusic, and Ainu, there is also a much more sparing quantity of confidently identifiable loanwords that have come to Nivkh from other languages in the region, in many (or perhaps all) cases indirectly by means of transmission through a Tungusic or Ainu lect which was the immediate donor to Nivkh. We may point out for example AN, NSN /kəj/ <> ESN /kaj ≈ qaj/ <> SSN /Gaj/ ‘sail’, which has probably been borrowed by way of Ainu /kaja/ ‘sail’ (Vovin 1993), probably in turn from Japanese /kōkai/ «航海» ‘sailing voyage’ and ultimately from Chinese hánghǎi «航海» ‘sailing voyage; to sail’. Likewise ultimately from Chinese, but transmitted to Nivkh instead via Tungusic are terms for ‘steel’ and ‘tent’. AN /qʰa/ <> SSN /ga/ ‘steel’ (Savel’eva & Taksami 1965; Hattori 1962a, pp. 88-89) can be compared to Chinese gāng «鋼» ‘steel’, most likely via Tungusic, cf. Oroch /ga/ ‘steel’, as has already been pointed out in the literature (Hattori 1962a, pp. 88-89; Cincius 1977). AN /camba/ ‘tent’ <> NgN /caŋban/ ‘tent, mosquito net, pandal’ can similarly be compared to Mandarin zhàngpéng «帳篷» ‘tent’, and likely transmitted through Tungusic (cf. Ul’ch /jampa/ ‘tent’, as pointed out by Fortescue, 2016, p. 50). More enigmatic is the resemblance between Nivkh (NgN) /oṡq/ ‘hare, rabbit’ and Japanese /usagi/ «兎» «うさぎ» ‘hare’ (and Eastern Old Japanese /wosagi₁/), since there does not appear to be a plausible intermediary form in Ainu or elsewhere (Hepburn 1867; Tangiku et al. 2008; Pellard 2008, p. 147).

There are likewise loans from other regional languages, such as Sakha and Manchu. AN, NSN /apak/ ‘uncle’ is formally similar to related etyma in Ainu, Tungusic, Mongolic, and Turkic, but Sakha /abaγa/ ‘uncle’ (Sleptsova 1972) is perhaps most likely to be the immediate source, since other forms attested in our sources in lects in direct contact with Nivkh have less precise formal or semantic matches — Negidal /apa/ is glossed instead as ‘grandfather [дед ]’, for instance (Cincius 1977 I, p. 47) — although this attribution is of course somewhat tentative, and Written Mongol /abag-a/ ‘paternal uncle’ also provides a good match (cf. Fortescue 2016). The etymon AN /qan[Oₜ]/ <> NSN /qan[Oₜ]/ <> ESN /qanŋ/ <> SSN /Ganŋₜ/ ‘dog’ can be compared to Manchu /xjan/ ‘dog’ (and ultimately Chinese xiǎn «犭」 ‘id.’; see Cincius 1977 I, p. 461), although this appears to be another case where the intermediary between Manchu and Nivkh (if any) is unclear — since Manchu was spoken fairly far down the course of the Amur as a trade language, direct transmission from Manchu to Nivkh cannot be completely ruled out.

There may possibly be loans shared between Nivkh and Chukotko-Kamchatskian languages, but we have not yet been able to adduce any unambiguous examples. There are also a number of cases in which a lexeme in Nivkh and one in Yukaghir seem to be clearly related, but in all such cases which we have so far uncovered, the Yukaghir item is a securely identifiable recent loan from Ewen or Sakha. An example is provided by SSN /ašq/ ‘spider’ (Austerlitz 1982, p. 82) and Kolyma Yukaghir /ataqi: ≈ ataxi:/ ‘spider’ (Nikolaeva 2006, p. 114), which Nikolaeva identifies as a loan from Ewen /ataqi/ ‘spider’, a form with comparanda in Ewenki and Ulch (Cincius 1977 I, p. 57). In this case, as in the others which we have been able to confidently identify, we see evidence for a recent borrowing event from Ewen (or in other cases Sakha) into Yukaghir, and a separate (probably older) borrowing event between Tungusic (or in other cases Mongolic or Turkic) and Nivkh, without any evidence for direct contact between Nivkh and Yukaghir apparent.
Nivkh also attests at least an interesting handful of Asian wanderwords or long-distance borrowings, including several which can be traced to Persian or Arabic. One such etymon, the spread of which across Central and Northeast Asian languages has been much discussed (e.g., Vovin 2018), but the presence of which in Nivkh has received little comment (only a passing mention in Fortescue 2016, p. 25, to the best of our knowledge) is AN, NSN /pʰoś/ <> SSN /pʰoś/ ‘cloth, textile’; this term has its origin in Western Asia, probably in the region around the Eastern Mediterranean, whence it has spread into Turkic, Mongolic, Tungusic, and from this last group (probably Nanai or Negidal, on phonological and geographic grounds) into Nivkh. The irregular correspondence of initial fortis /pʰ/ in SSN to lenis /p/ in the other lects suggests a post-Proto-Nivkh spread, which would also account for the irregular vowel of ESN /pʰoś-lat-/ ‘to weave’ for expected */pʰoś-lat-/: the attested ESN form could reflect an internecine borrowing into ESN from AN, where /lət-/ is attested as a free lexical verb ‘to make’, cf. ESN /lat-/ ‘id.’ (Savel’eva & Taksami 1970).

Another well-studied wanderword which has made its way into the Nivkh lexicon is AN, NSN /mur[ø]/ <> ESN, NgN /murŋ/ <> SSN /murŋ/ ‘horse’ (Tangiku et al. 2008; Fortescue 2016). As Fortescue has pointed out (2016), this is is certainly related to Oroch /muri(n-)/ ‘horse’, Ulch and Uil’ta /mor(n-)/ ‘horse’, and the wealth of other Tungusic forms to which they are in turn related (Cincius 1977 I, pp. 558-559), as well as Written Mongol «≈» /mori ≈ morin/ ‘horse’ (Lessing et al. 1982).

More enigmatic is AN /mem/ ‘monkey’ (Savel’eva & Taksami 1970) — a word which seemingly must be a loan from some source, since no non-human primates are present in Sakhalin or the Amur basin, but the immediate source of which is unclear. There are widespread Tungusic forms similar or identical to /moɲo ≈ boɲo/ in this meaning (Cincius 1977 I, pp. 94, 545), but the Nivkh form actually seems to be a better fit for Arabic /majmun/ «نوميم» ‘baboon, monkey’ and the numerous loaned forms in Iranian and Turkic languages. This, however, raises the issue of what historical circumstance could have directly exposed Nivkh speakers to this lexeme, since Sakha, the only Turkic lect known to have been in direct contact with Nivkh, is not among the Turkic lects with a reflex of this term (at least as far as our sources can show). A similar trouble arises with AN, NSN, ESN /caqo/ <> SSN /jaqo/ ‘knife’: Persian /čâqu/ «وقاچ» ‘knife’ seems very likely to be the ultimate source for this Nivkh form, especially since it has become a widely attested wanderword across Central and South Asia, but we have not been able to locate the form which would constitute a plausible immediate source for Nivkh, such as any attestation of this etymon in Sakha or Tungusic.

3.5 Loans in Nivkh Directly from (Middle) Mongolic

Tentatively, we can also identify at least a very small number of loans in Nivkh which have been taken directly from Mongolic, without having been transmitted through any Tungusic (or any other) intermediary. The most likely examples which we have uncovered to date are as follows.

AN /χota(ø)/ ≈ xota(ø)/ ; NSN /χota(ø)/ ; ESN /χotan/ ≈ xotan/ ; NgN /χoton/ ; and SSN /xoton/, all with the sense ‘town [город; городской]’ (Savel’eva & Taksami 1965; 1970; Fortescue 2016), are clearly connected to Written Mongol /χota(n)/ «о»; Modern Khalkh Mongol /χot/; Buryat Mongol /χoto(n)/; Yakut /xoton/; and a wealth of Tungusic forms, attested in almost every documented lect of the family, with forms like Udihe /xoto(n-)/; Negidal /xoton-/; Uil’ta, Ulch, and Bikinskij Nanai /χoto(n-)/; Kur-Urmi and Najxinskij Nanai /χotø/, and so on. The original Mongol forms have a range of meanings centering around the notion of ‘enclosure’, and including such senses as ‘city wall’, ‘city rampart’, ‘fortified city or town’, ‘fence, paddock’, and ‘shed, barn’, while Sakha and the various Tungusic lects have generally narrowed the semantic range of their respective forms somewhat (Sleptsova 1972; Cincius 1977; Lessing et al. 1982). While Written Mongol attests /a/ in the second syllable as a retention from Middle Mongol, dialectological changes which were already beginning to take effect in the Middle Mongol period converted the second syllable vowel to /o/
in some geographic regions, and eventually in some relatively distinct Mongolic lects such as Buryat, and it appears that it is these later Mongolic forms which were the sources for borrowing into Tungusic and Sakha, since we have not been able to find any Tungusic or Sakha form which attests a vowel /a/ in the second syllable (Sleptsova 1972; Cincius 1977). Thus, the phonological shape of the Nivkh form is best explained by a direct loan from Mongolic, not mediated by any attested Tungusic intermediary.

Similar arguments can be adduced for two other Nivkh etyma: Amur Nivkh /χorga/ ‘полка для посуды [shelf for dishes]’ (Savel’eva & Taksami 1970) appears to be related to Written Mongol /χori/- ‘to shut in, confine, imprison, enclose; to prevent, prohibit; to hold back, dissuade’; and /χori(-)g-a(n)/ ‘prohibition, forbidding; imprisonment’ (Lessing et al. 1982), and AN, ESN /myγal/- ‘to tow a boat along shore’ (Fortescue 2016) appears to be a compound formed from native Nivkh /mu/ ‘boat’ and /*γal-/, an apparent borrowing of Written Mongol /köl/- ‘to harness, hitch to a vehicle’ (or perhaps /kölle/- ‘to harness or hitch (as a horse to a cart); to stand on, be supported by’) (Lessing et al. 1982). While both of these two lexemes do have Tungusic comparanda, there are again various phonetic details which point towards a direct loan from Mongol into Nivkh, rather than one mediated by transmission through any Tungusic lect.

Such loans might be considered plausible a priori in the context of direct Mongol military intervention in the Lower Amur and on Sakhalin in the 13th and 14th centuries, but a larger sample of such loans would be desirable in order to elaborate the details of this contact scenario. Especially interesting is the possibility of using such loans to tie an absolute date range to relatively dated phonological changes within Nivkh.

3.6 Loans Shared by (Proto-)Nivkh and Proto-Ainu

In addition to the later, dialectally restricted loans between Nivkh and Ainu described above, there are also a number of loans which either may or seemingly must be shared between Nivkh and Ainu at the protolanguage level. The former — lexemes which may have already been absorbed into Nivkh from Proto-Ainu or from Ainu into Proto-Nivkh — are those which have a wide distribution across the recipient family, and show no irregular sound correspondences. The latter — lexemes which we can state on a positive basis had already been absorbed at this stage — are those which meet the former criteria, and also show the action of regular sound changes in the recipient family.

Examples of the former type could include, e.g., Proto-Nivkh /*ŋojeq/ ‘testicle, egg’ ↔ Proto-Ainu /*nok/ ‘id. (both senses)’ or PN /*qʰor/- ‘to be rich’ ↔ PA /*kor/- ‘to have’, or PN /*ut/ ‘body, torso, trunk’ ↔ PA /*ut/ ‘rib’ (Vovin 1993; Fortescue 2016).

Examples of the stronger type, which show the action of regular sound changes in the recipient family — whether this relies upon some line of evidence to identify which is the donor and which is the recipient, or instead relies on the fact that such results of expected regular sound change are observable in both families — might include, e.g., PN /*nu/- ‘to watch’ → PA /*nu:/ ‘eye’, /*nu-kar/- ‘to see, look at’; or PN /*lu-f/ ‘ice’ → PA /*ru:-/ ‘to melt’, /*ru-p/ ‘ice’ (as well as /ru/- ‘ice’ in some fossilized compounds). To delve into the details of all such loans is beyond the scope of this survey, but it does not seem too early to say that the evidence for such Proto-Nivkh and Proto-Ainu loans is quite promising, especially in the light of recent advances in our understanding of Nivkh historical phonology.

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9 Note that the shift from PM /CoC(C)a(C)/ to dialectal (including Buryat) /CoC(C)o(C)/ is described as a regular change (Janhunen et al. 2005, pp. 62, 107, 368), and as already incipient or variably present in Proto-Mongolic (ibid., p. 8) and Middle Mongol (p. 62), but that this shift has not affected all modern lects, and is notably “frequently absent” in Middle Mongol, especially in the Western part of its geographic range (p. 62).

10 These might also be analyzed as applicative derivational morphemes in Ainu.
Finally, it also bears mention under this heading that Proto-Nivkh and Proto-Ainu may also have shared some loans of bound grammatical morphemes with one another. Particularly conspicuous with respect to this possibility are the suffixes or preclitics /*i-/ and /*u-/, which are used to mark indefinite or unspecified object of verbs and reciprocal object of verbs, respectively, in both language families (Refsing 1986, pp. 179-181, 213; Majewicz & Majewicz 1986; Bugaeva 2012, pp. 477-480, 486-489; Fortescue 2016, p. 169). We hope to explore the evidence for a wider sample of such Proto-Nivkh and Proto-Ainu loans in much greater detail in future works.

3.7 Loans Shared by Proto-Nivkh and Proto-Tungusic (and Occasionally Proto-Mongolic)

Finally, we can also now tentatively identify several loans — again including very basic elements of the lexicon like verbs and possibly kin terms, as well as potentially pronouns and bound morphemes — which appear to be shared at the protolanguage level between Nivkh and Tungusic (and in some cases, also possibly Mongolic).

An example of such a loan in the technological domain may be Proto-Nivkh /*tʰu/ 'dogsled'. This item is straightforwardly reconstructable from /tʰu/ ‘id.’ in AN, ESN, and SSN. This may be a native Nivkh lexical item, since it appears to be related to the verb PN /*tʰu-/ 'to chase or trudge behind', likewise attested widely within the family and easily reconstructable to Proto-Nivkh (Fortescue 2016, p. 151, citing Jakobson), and also appears in compounds or derived forms such as AN /tʰurš/ ‘настил нарты [floor of a sled]’ and AN /tʰužr/ ‘доска для сидения на нарте [board for sitting on a sled; sled board]’. Cincius (1977 II, p. 220), however, cites forms in Ewen, Oroch, Udibe, Ulch, Uil’ta, and Nanai, all of which according to her regularly reflect Proto-Tungusic /*tʊrkɪ/ via the application of regular sound changes (along with slightly deviant Ewenki /turku/), all in the sense ‘dogsled’. It would seem that both Proto-Nivkh and Proto-Tungusic already had the respective forms PN /*tʰu/ and PT /*tʊrkɪ/ in this sense, probably related via borrowing. Although Cincius suggests that the Nivkh form is borrowed from Tungusic, the opposite may be the case, in view of the fact that the related verb in Nivkh is unattested to the best of our knowledge in Tungusic, along with the attractiveness of the conjecture that the PT form might represent a loan from a derived Nivkh form, accounting for the additional segments, especially the consonants, which do not correspond to segments in the basic Nivkh form.

An example of a verb shared at this level might be provided by the comparison between Proto-Nivkh /*wa-/ ‘to fight, to battle’ and Proto-Tungusic /*βa:-/ ‘убить [to kill]’ (Cincius 1977 I, pp. 127-129; Fortescue 2016, p. 158), which can perhaps be extended to PN /*wa/ ‘sword’. Another verb which looks to have already been shared between PN and PT also has a comparandum in Mongolic: PN /pʰi-/ ‘to be (in a place)’ is very similar formally and semantically to PT /*bi[:]-/ ‘быть [to be]’, for which Cincius adduces reflexes in Ewenki, Solon, Ewen, Negidal, Oroch, Udibe, Ulch, Uil’ta, Nanai, and Manchu which are all identical formally (except for varying in vowel quantity) and all glossed as ‘быть [to be]’, plus a reflex in Jurchen (which is difficult to pin down with equal phonetic precision, due to the writing system in which that language is preserved). This etymon certainly looks well-entrenched in both language families (it may also historically underlie the locative nominal derivational suffix /*-q/ in Nivkh, itself reconstructable to the protolanguage), and Cincius makes a comparison between the Tungusic etymon and Written Mongol defective verb /buj- ≈ büj-/ « есть, имеется [there is, there exists]’ (Cincius 1977 I, pp. 79-80; Lessing et al. 1982; Fortescue 2016, pp. 134, 175).

In addition to lexical roots, we can observe some grammatical morphemes shared between Tungusic and Nivkh at the protolanguage level in examples such as PN /*pʰi ~ pʰi- ~ pʰ-/, a prefix or proclitic which may be attached to either nouns to indicate reflexive possession (i.e., ‘one’s own [NOUN]’, in context interpretable as ‘my own…’, ‘your own…’, ‘his/her own…’, etc.), or to verbs to indicate reflexivity. This can be compared to Ewenki /-vi ~ -mi/, Ewen /-j ~ -(j)i: ~ -mi: ~ -bi:/, Oroch /-ji ~ -bi ~ -βi ~ -i ~ -mi:/, Uil’ta /-bi ~ -(j)i:/, and Nanai /-(j)i ~ -bi/, all with similar functions (Cincius & Rishes 1952, pp. 712, 715; Avrorin 1959 I, pp. 146-147; Petrova 1967, p. 37; Nedjalkov 1997, p. 143; Gruzdeva 1998, p. 27; Avrorin & Boldyre 2001, pp.
The reconstruction of the correct Proto-Tungusic form here (with its likely allomorphy) is well beyond our expertise, but a connection looks likely.

Another such very promising comparison could be made between Nivkh /*-nə/ — which occurs simplex as the AN future tense suffix of verbs, and in the intentional mood or aktionsart suffix chain /-i-na/ in AN, WSN, and ESN, as well as in the AN hortative suffix chain /-na-tə/ (Mattissen 2003, p. 21; Shiraishi 2007, p. 35; Fortescue 2016, p. 171) — and the intentional aktionsart suffix /-na/ in Tungusic, which occurs at least in Ewenki, Ewen, Oroqen, Udihe, and Manchu, and according to Whaley can be reconstructed to Proto-Tungusic (2012, p. 405 et alibi).

Finally, a comparison might be ventured between Nivkh /*cʰi/, the second-person singular pronoun, and its counterparts in Tungusic and Mongolic, although again, the reconstruction of a specific protoform, especially in Tungusic, is controversial (Vovin 2011), and we would be well out of our depth if we ventured to suggest a specific reconstruction for the forms involved, or make a pronouncement on the validity — much less the detailed directionality and periodization — of borrowing. Nonetheless, attention ought to be drawn to the very likely involvement of Nivkh in intense borrowing with these families, probably even prior to their respective protolanguages, and the great promise of clarifications and insights which can be gleaned toward improved reconstructions through the investigations of these ties. It is our hope that we will be able to contribute to these investigations, although they will certainly be a task which requires the combination of expertise on Nivkh with equally deep knowledge of the other language families involved.

4 An Example of the Application of Loanwords to Phonological “External” Reconstruction: No contrast of /*ɛ ≠ *e/ should be reconstructed in Proto-Ainu

An example of loanwords providing the means to improve and clarify the reconstruction of a protolanguage is offered by a pair of loans from Nivkh into Ainu. Vovin’s Proto-Ainu reconstruction (1993) posits a contrast between an open-mid unrounded front vowel and a close-mid counterpart /*ɛ ≠ *e/, or in Vovin’s own notation /°E ≠ °e/ (Vovin 1993, pp. 58-59 et alibi). /°E/ is reconstructed where all documented Ainu lects attest /e/, while /°e/ is reconstructed where the Soya lect, spoken at the extreme northwestern tip of Hokkaido nearest to Sakhalin, attests an /i/ corresponding to /e/ in the remaining lects; in one etymon reconstructed with /°e/, the Raichiska lect of Sakhalin also attests /i/.

Vovin admits, however, that this reconstructed contrast is “somehow doubtful” (ibid.), because there is a major discrepancy between the frequency of his /°E/ and /°e/. His /°E/ is perfectly common in the reconstructed lexicon, and has, according to Vovin, a long counterpart, as well as a (more properly pre-Proto-Ainu) counterpart with back harmony, /°ə/. Open-mid /°E/ occurs frequently in his roughly 500 reconstructed Proto-Ainu etyma: for instance, there are 25 etyma reconstructed with /°E/ as their initial phoneme, and /°E/ with its long and back-harmonic counterparts occurs roughly 70 times in the reconstructed lexicon. By contrast, Vovin’s hypothetical close-mid /°e/ has no long counterpart, no back-harmonic counterpart, and occurs in a total of only two instances in the entire reconstructed lexicon: in /°kem/ ‘needle’ > Soya /kim/ and /kem/ elsewhere; and /°ker/ ‘footwear’ > Soya and Raichiska /kiro/ and /ker/ elsewhere. Although Vovin is right to insist on the principle of regularity, there is clearly a problem here. Happily, that problem is solved by the identification of these two etyma as loans from Nivkh.

‘Footwear’ /kiro ≈ ker/ probably reflects Amur Nivkh /kiu-ɾ/ <> North Sakhalin, East Sakhalin, /kiu-š/ <> South Sakhalin /giw-š/ ‘insole, sock, dry grass for padding boots’ (Fortescue 2016). This is certainly a loan from Nivkh into Ainu and not vice-versa, because it has a clear Nivkh etymology: from /*ki/ ‘footwear’ and /*(j)uy-/ ‘go into’ (Fortescue 2016). The second etymon, /kim ≈ kem/ ‘needle’ is also attested in Nivkh, although in this case only in Amur Nivkh within the scope of our sources, as /kʰemafx/ (possibly an error for /kʰemαχ/) ‘деревянная прищепка, используемая при вязании сетей [wooden pin used for knitting nets]’ (Savel’eva & Taksami 1970). Despite the narrow attestation, there is again at least a partial Nivkh etymology which strongly
suggests that the direction of borrowing is from Nivkh to Ainu, namely a relation to amply attested /kʰe/ ‘net’, which is reconstructable to Proto-Nivkh without any irregularity (Fortescue 2016).

Hence, by identifying these two etyma as loans from Nivkh into Ainu, presumably borrowed separately by multiple Ainu lects after the Ainu protolanguage had already broken up, we can not only explain the other irregularities they display (/o/ <> /ø/, and the split attestation of the problematic vowel in Raichiska), but also eliminate the problematic contrast /°E ≠ °e/ from the reconstruction of Proto-Ainu without invoking any irregularity in reflexes.

5 Conclusions and Prospects

Nivkh is a profoundly endangered language grouping — unless extraordinary efforts by both linguists, speakers, and learners coincide with extraordinary good fortune, it will cease to be spoken as a native language in the immediate future — but thanks in large part to the valiant efforts of figures such as Shiraishi, Tangiku, Lok, Liutova, Bessonova, and Sangi, as well as to the generations of linguists and speakers preceding them, and to those such as Fortescue and Luukkonen who have built upon their work, posterity has been gifted the data with which the history of these languages can be reconstructed in much finer detail than was possible just one or two decades ago.

While we have worked to make incremental contributions to this clearer understanding, it is our hope that the near future will see the blossoming of studies surrounding the loanwords and other contact linguistic phenomena which reflect the multifaceted and intense history of interactions between Nivkh and its neighboring language groups. This fruition will require bringing expertise in the language groups on both (or all) sides of these contact episodes — Tungusic and Nivkh; Nivkh and Ainu; Mongolic, Turkic, Tungusic, and Nivkh; and so on — to bear upon the elucidation of how these traces of contact were formed, and exactly what this shows or refutes regarding the separate but intertwined histories of these language groups and their speakers.

We hope to be a part of this effort. To this end, we are working on an ongoing basis to catalog as many Nivkh etyma which can be identified as loans shared with these and other neighboring and distant language groups as possible. We have already begun to apply these data to clarifying our understanding of both the purely linguistic and the sociolinguistic history of Nivkh, but it is without doubt that collaboration with experts in Tungusic, Ainu, Mongolic, and other language families of the broader region will be required to achieve the most copious, most carefully rigorous, and most reliable results from this philological raw material.
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Progress & Prospect in Nivkh Historical Linguistics: Rendezvous with Tungusic Studies


The Ablative Case in Pashto

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Abstract

This paper aims to give an overview of the Pashto ablative case from a diachronic and synchronic perspective. The existence of an ablative in Pashto is not a new idea; however, it is not accepted in every analysis of the language, and much of the attention focuses on the ablative singular morpheme -a which is characteristic of (many) masculine noun classes. Because the ablative is formally identical with the oblique in most feminine noun classes and always in the plural, the ablative is considered a “minor” case. However, this formal identity should not prevent us from analyzing forms which previously have been thought as oblique (feminine -e, plural -o) as partially ablative. In the second part of the paper, I focus on a historical analysis and show that the ablative -a has cognates in other Iranian languages, and that it goes back to the Old Iranian ablative and instrumental singulars of the a-stem nouns. Likewise, the formal identity of the ablative with other cases is nothing unique to Pashto, and is in fact in many noun classes inherited from Old and Middle Iranian.

Keywords: Pashto, Bactrian, ablative, ablative-instrumental, Pashto morphology

Abbreviations, Transcription and Sources

The linguistic abbreviations used in this paper follow the Leipzig Glossing Rules. For the transcription of Pashto and other Indo-Iranian languages I use the established transcription systems for the respective languages. Unless noted otherwise, the Pashto examples in this paper come from my own studies and fieldwork with native speakers (see also Kreidl 2021, and Kreidl, Arman (draft)).

Introduction

Like many other parts of Pashto grammar, the exact number of cases is not universally agreed upon among linguists and other specialists. One (but not the only) of these issues is the ablative, which is treated by some scholars as a proper case, and by others as a morphemic variant of other cases or postpositions. The most characteristic suffix of the Pashto ablative is -a, but this is only common with nouns ending in a consonant (thus, mostly masculine nouns), while nouns of other noun classes have other, including zero, endings.

The Pashto noun classes and cases

In Kreidl 2021: 160f, I suppose the following masculine noun classes. Pashto nouns can be declined according to four cases: nominative (or direct), oblique, ablative and vocative. As can be seen, the Pashto nominal morphology is characterized by a high degree of case syncretism; formal identity is common. The ablative singular of many masculine noun classes is characterized by the morpheme -a. The ablative = oblique = vocative plural suffix is -o.

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### Masculine noun classes

<table>
<thead>
<tr>
<th>Class</th>
<th>Dictionary form</th>
<th>Nom.sg</th>
<th>Obl.sg</th>
<th>Abl.sg</th>
<th>Voc.sg</th>
<th>Nom.pl</th>
<th>Obl.abl.voc. pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>afγān ‘Afghan’</td>
<td>afγān</td>
<td>afγān</td>
<td>afγānã</td>
<td>afγānã</td>
<td>afγānã</td>
<td>afγǎnãno</td>
</tr>
<tr>
<td>Ia</td>
<td>lewó ‘wolf’</td>
<td>lewó</td>
<td>lewó</td>
<td>lewó</td>
<td>lewó</td>
<td>lewó</td>
<td>lewáno</td>
</tr>
<tr>
<td>Ib</td>
<td>bāzú ‘arm’</td>
<td>bāzú</td>
<td>bāzú</td>
<td>bāzú</td>
<td>bāzú</td>
<td>bāzugān</td>
<td>bāzugān</td>
</tr>
<tr>
<td>Ic</td>
<td>mulā ‘mullah’</td>
<td>mulā</td>
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<td>mulā</td>
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<td>mulāyāno</td>
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<tr>
<td>II</td>
<td>mez ‘table’</td>
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<td>méza</td>
<td>mezúna</td>
<td>mezúno mézo</td>
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<td>IIa</td>
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<td>meró</td>
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<td>meró</td>
<td>merúna</td>
<td>merúno meró</td>
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<tr>
<td>III</td>
<td>sařáy ‘man’</td>
<td>sařáy</td>
<td>saří</td>
<td>saráya</td>
<td>saráya</td>
<td>sarí</td>
<td>saró sario</td>
</tr>
<tr>
<td>IIIa</td>
<td>mrayáy ‘slave’</td>
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<td>mrayí</td>
<td>mrayáy</td>
<td>mrayáy</td>
<td>mrayáy</td>
<td>mrayáy no</td>
</tr>
<tr>
<td>IV</td>
<td>stóray ‘star’</td>
<td>stóray</td>
<td>stóri</td>
<td>stóraya</td>
<td>stóre</td>
<td>stóro</td>
<td>stóro stóre</td>
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<td>V</td>
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<td>prāng</td>
<td>prāng</td>
<td>prânga</td>
<td>prângā</td>
<td>prângān</td>
<td>prângâno</td>
</tr>
<tr>
<td>VI</td>
<td>plār ‘father’</td>
<td>plār</td>
<td>plār</td>
<td>plára</td>
<td>plára</td>
<td>plarúna</td>
<td>plarúno plaró</td>
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<tr>
<td>VIa</td>
<td>wādó ‘wedding’</td>
<td>wādó</td>
<td>wādó</td>
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<td>wādó</td>
<td>wadúna</td>
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<td>VIb</td>
<td>wror ‘brother’</td>
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<td>wróra</td>
<td>wróra</td>
<td>wrúna</td>
<td>wrúno wriño</td>
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<td>VII</td>
<td>xar ‘donkey’</td>
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<td>xřə</td>
<td>xára</td>
<td>xára</td>
<td>xro</td>
<td>xro</td>
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<td>γar ‘mountain’</td>
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<td>γrə</td>
<td>γára</td>
<td>γára</td>
<td>γro</td>
<td>γro γrəno</td>
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<td>sxar ‘stone’</td>
<td>sxar</td>
<td>sxər</td>
<td>sxára</td>
<td>sxára</td>
<td>sxro</td>
<td>sxro</td>
</tr>
<tr>
<td>IX</td>
<td>dušmán ‘enemy’</td>
<td>dušmán</td>
<td>dušmón</td>
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<td>dušmón</td>
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<td>IXa</td>
<td>bazgár ‘farmer’</td>
<td>bazgár</td>
<td>bazgör</td>
<td>bazgára</td>
<td>bazgára</td>
<td>bazgorán</td>
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<tr>
<td>X</td>
<td>paštun ‘Pashtun’</td>
<td>paštún</td>
<td>paštānó</td>
<td>paštúna</td>
<td>paštúna</td>
<td>paštánó</td>
<td>paštanó</td>
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<tr>
<td>Xa</td>
<td>xató ‘rise’</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>xató</td>
<td>xató</td>
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<tr>
<td>XI</td>
<td>melmá ‘guest’</td>
<td>melmá</td>
<td>melmānó</td>
<td>melmó</td>
<td>melmá</td>
<td>melmá</td>
<td>melmanó melmó</td>
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<tr>
<td>XII</td>
<td>zangún ‘knee’</td>
<td>zangún</td>
<td>zangânó</td>
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<td>zangúna</td>
<td>zanganó</td>
<td>zanganûn to zanganó</td>
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<tr>
<td>XIIa</td>
<td>num ‘name’</td>
<td>num</td>
<td>námó</td>
<td>núma</td>
<td>núma</td>
<td>numúna</td>
<td>numúno numúno</td>
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<td>XIII</td>
<td>polís ‘police officer’</td>
<td>polís</td>
<td>polís</td>
<td>polisa</td>
<td>polisa</td>
<td>polís</td>
<td>polís</td>
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The Ablative Case in Pashto

Feminine noun classes

In the feminine noun classes (Kreidl 2021: 161f), the ablative singular is usually formally identical to the oblique singular. Exceptions are found in what I call classes VII and VIII, which contain kinship terminology. Nouns of classes VII and VIII can take the ablative singular morpheme -a which is otherwise typical for the ablative singular of masculine nouns.

The ablative = oblique = vocative plural morpheme of the feminine nouns is the same as that of the masculine nouns, namely -o.

<table>
<thead>
<tr>
<th>Class</th>
<th>Dictionary Form</th>
<th>Nom.sg</th>
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<th>Voc.sg</th>
<th>Nom.pl</th>
<th>Obl.abl.voc. pl</th>
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<tr>
<td>I</td>
<td>žača 'woman'</td>
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<td>žače</td>
<td>žače</td>
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<td>wraj 'day'</td>
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<td>wráje</td>
<td>wráje</td>
<td>wráje</td>
<td>wrájo</td>
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<td>nāwe 'bride'</td>
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<td>nāwe</td>
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<td>nāwe</td>
<td>nāwe</td>
<td>nāwo</td>
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<td>II</td>
<td>koṭá 'room'</td>
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<td>koṭé</td>
<td>koṭé</td>
<td>koṭé</td>
<td>koṭé</td>
<td>koṭó</td>
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<td>Iia</td>
<td>xwarzə 'niece'</td>
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<td>xwarzé</td>
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<td>xwarzé</td>
<td>xwarzé</td>
<td>xwarzó</td>
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<td>maṇəy 'palace'</td>
<td>maṇəy</td>
<td>maṇəy</td>
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<td>maṇəy</td>
<td>maṇəyo</td>
</tr>
<tr>
<td>IV</td>
<td>bāzí 'game'</td>
<td>bāzí</td>
<td>bāzý</td>
<td>bāzý</td>
<td>bāzí</td>
<td>bāzó</td>
<td>bazío</td>
</tr>
<tr>
<td>V</td>
<td>γwā 'cow'</td>
<td>γwā</td>
<td>γwā</td>
<td>γwā</td>
<td>γwā</td>
<td>γwā</td>
<td>γwā [northeastern] γwāγāne γwāγāno</td>
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<tr>
<td>Va</td>
<td>dāyí 'nurse'</td>
<td>dāyí</td>
<td>dāyí</td>
<td>dāyí</td>
<td>dāyí</td>
<td>dāyí</td>
<td>dāyigáno</td>
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<tr>
<td>VI</td>
<td>piši 'cat'</td>
<td>piši</td>
<td>piši</td>
<td>piši</td>
<td>piši</td>
<td>piši</td>
<td>pišiáno</td>
</tr>
<tr>
<td>Vla</td>
<td>močəy 'shoemaker’s wife'</td>
<td>močəy</td>
<td>močəy</td>
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<td>Vib</td>
<td>rōwe 'witch'</td>
<td>rōwe</td>
<td>rōwe</td>
<td>rōwe</td>
<td>rōwe</td>
<td>rōwe</td>
<td>rōwiáno</td>
</tr>
<tr>
<td>VII</td>
<td>mor 'mother'</td>
<td>mor</td>
<td>mor</td>
<td>mor</td>
<td>more</td>
<td>máynde</td>
<td>máyndo</td>
</tr>
<tr>
<td>VIII</td>
<td>lur 'daughter'</td>
<td>lur</td>
<td>lur</td>
<td>lur</td>
<td>lúre</td>
<td>lúne</td>
<td>lūno</td>
</tr>
<tr>
<td>X</td>
<td>obó 'water'</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>obó</td>
<td>obó</td>
</tr>
</tbody>
</table>
Previous explanations of -a

Morpheme is not a case ending

Penzl 1950: 72 and Tegey, Robson 1996 are among those who have denied the existence of a special ablative case, but their theories differ from each other. Penzl ibid states the ablative suffix -a is a mere morphemic variant of the oblique (which normally has a zero ending or -ə in masculine noun classes). This analysis may have been encouraged by the fact that Penzl, at that time, focused mostly on the Kandahari dialect. In the Kandahari dialect, any unstressed a, and therefore also the ablative morpheme -a, is pronounced like a schwa. It therefore sounds like the oblique ending -ə, which, however, is a schwa also in other dialects which do not reduce unstressed a to ə. According to Penzl 1950: 72, the Pashto oblique thus would have three variants: zero ending, -ə, -ə́. Additionally, in the plural, Penzl ibid correctly points out that there is no special ablative morpheme; the same prepositions which would trigger -a-forms in the singular, simply require the oblique plural in -ə.

However, the issue is that while the zero ending and -ə́ forms are complementary to each other (some masculine noun classes have a zero oblique, some have -ə, with a number of words oscillating between several noun classes), unstressed -ə (other dialects -a) has additional functions (see further below for the usage of the ablative). Leaving aside the etymological origin of Kandahari -ə (other dialects -a), which clearly speaks for the theory that we are dealing with distinct case suffix here, but which is irrelevant for a purely synchronic approach, we still have to explain the different semantics of -ə as opposed to Ø/-ə́ (the proper oblique endings). Note that Penzl later modifies his view and seems to accept that -a/(Kandahari)-ə is a case on its own (Penzl 1955: 64f, see also below).

Tegey, Robson 1996: 156f explain -a as a variant of the postposition na ‘from’. This idea comes from the juxtaposition of phrases like la Kandahār na and la Kandahāra ‘from Kandahar’. However, this is an ad-hoc explanation for the lack of a better alternative. For instance, how could we explain the fact that -a is also triggered by prepositions which do not have a circumpositional variant with na, for example tar ‘on, onto’, e.g. tar šāra ‘to the city’ (never †tar šār na), tar ósa póre ‘until now’ (never †tar ós na póre)?

Additionally, I am not aware of any sandhi processes which would lead to the deletion of an initial consonant in Pashto, so the assumption that this should have happened with na seems implausible also from a purely phonological perspective. Even more so, Tegey, Robson ibid only try to explain the origin; even if their assumption would have been correct, the fact that this -a is now grammaticalized as a distinct morpheme would not per se speak against the idea that this is in fact an ablative case morpheme.

Morpheme is a case ending

The majority of scholars who have touched on Pashto nominal morphology have considered the ending -a a case morpheme. However, how this case should be called has still been a matter of debate. Most have opted for the term “ablative”, but “prepositional”, “oblique II” have been used too. Coming from a classical Latin-Greek tradition, Trumpp 1873: 85-86, while himself acknowledging that not all of the cases are cases stricto sensu, lists also an ablative case. Morgenstierne 1942b: 101f explicitly refers to Trumpp 1873 and accepts the idea that -a is an ablative case morpheme. David 2014: 45 states that Pashto has four cases including an ablative; the same four cases have also been proposed in Kreidl 2021: 163. Penzl 1955: 64f retreats from his previous position in Penzl 1950 (see above) and opts to call the case in question “oblique II” because of both its minor status and its formal identity with the oblique (“oblique I”) in the plural. This terminology is also used by Lorenz 1982: 55 (“Obliquus II”). In his description of the Waneci dialect, Elfenbein 1967: 570 uses the term “prepositional”. The latter term obviously stems from the fact that the case in question is commonly used with
prepositions, although not all prepositions trigger it and the case can in fact also stand alone, albeit rarely (see examples further below).

Rištin 1327 [1948/49]: 76, a native speaker of Pashto, employs the term sūrat-i fatha ‘fatha form’. In the Arabic orthographical tradition, the fatha is a diacritic line placed above a letter and represents a short /a/. The terminology is thus based on a phonological idiosyncracy of the case, and does not refer to the semantic properties or functions of the case. As a consequence, Rištin ibid subsumes the vocative and the ablative in his sūrat-i fatha, because both have the ending -a in many masculine noun classes (and are therefore often formally identical). It goes without saying that this subsumption of both cases into one overlooks their radically different syntactic properties. Additionally, the term sūrat-i fatha fails to describe the situation in the feminine noun classes, because feminine nouns don’t have a vocative in -a and only two noun classes have an ablative in -a.

Contemporary usage

In the following section, I want to give an overview of the contemporary usage of the ablative case. In the contemporary language, the ablative is usually triggered by a preposition, such as be ‘without’, par ‘on’, tar ‘to, onto’, da ‘from’, la ‘from’ and pa ‘with, by’. The use of the ablative with post- and circumpositions is rarer. Because the idiosyncratic function of the ablative is to describe movements away from someone or something, its usage with par ‘on’, tar ‘to, onto’ may look counterintuitive. However, we can point out that in languages which do not have a separate locative case, the ablative often takes over locative functions in the broader sense. In Latin, too, not only sine ‘without’ and de ‘from’ trigger the ablative, but also in ‘in, at, on’ and cum ‘with’. The Pashto use of tar with the ablative has a good parallel in Sanskrit a ṣoḍaśāt ‘until the sixteenth year’, ā pradānāt ‘till marriage’, where ablative forms are used despite the meaning ‘until, till’.

Usage with adpositions to indicate spatial and temporal relations

be ‘without’

be is a preposition loaned from Persian with the meaning ‘without’. It is quite productive and can be combined with almost any noun in Pashto: be awlāda ‘childless’, be pardé ‘unveiled, uncovered’, be hadūko ‘boneless’. be regularly triggers the ablative; when the nominal is apparently not in the ablative, the formation as a whole could be considered Persian, e.g. be tarāf in contrast to be tarāfa ‘neutral’. Note that these adjectives belong to the invariable adjectives and only have one form regardless of number, case and gender of the noun they modify, e.g. be awlāda šāje ‘childless women’.

be la ‘without’

be la is obviously a combination of the prepositions be ‘without’ and la ‘from’. This construction is insofar interesting as two prepositions are rarely combined (while it is very common to combine a pre- and a postposition to create a circumposition). It could be that the borrowed morpheme be was “strengthened” in its semantics by means of the native la. be la is in any case less common than the simple be. Like be, be la generally triggers the ablative. Examples include: be la plāra ‘without (the) father’, be la buṭūno ‘without shoes’.
pa 'by; on'

pa is a genuine Pashto preposition with the meaning ‘by; on’. Although it is not always easy to draw a neat line, it seems that pa, when expressing a location, tends to require the nominative or oblique, and when expressing ‘by’ or an instrument, tends to trigger the ablative (David 2014: 319-323). For example: *pa asāna ‘easily’ and the fixed phrase *paxpōla ‘on one’s own’ (*paxpōl does exist, however). When indicating temporal or spatial location, the ablative is rare: *pa yāwa wrāje ‘on one day’ must be nominative. *pa yāwe wrāje, which could be either oblique or ablative, is rarer, although it does exist. In my material, the nominative *pa zangūn ‘on the knee’ is more common than the oblique *pa zangānə, while the ablative *pa zangūna is quite rare.1 In the plural, the oblique-ablative *pa zanganó ‘on the knees’ is definitely preferred, as I have never heard the nominative *fpa zanganūna. An interesting case is lās pa lās ‘hand by hand, from hand to hand’, which could be nominative or oblique (speaking for a spatial interpretation), while lās pa lāsa is quite rare.

Note that in the circumposition *pa ... kše (and other circumpositions containing *pa), the ablative is not used; instead, the oblique is usually employed, e.g. *pa yrə kše ‘in the mountain’.2

par ‘on’

par is a preposition with the meaning ‘on’. Like *pa in the sense ‘on’, with which it is often interchangeable, it rarely triggers the ablative; usually, it governs the oblique. Constructions like *par mez ‘on the table’, *par zangānə are heard, but they are far less common than *par mez, *par zangūn.3

tar ‘to’

*tar generally requires the ablative: *tar šāra ‘to the city’, *tar wrāje ‘to the day’. Phrases like wraj *tar wrāja instead of wraj *tar wrāje ‘day-to-day’ (the latter seems slightly more common) are interesting and unexpected. Despite wraj ‘day’ being a feminine noun ending in a consonant, it generally does not form its ablative in -a (something which can be observed with feminine kinship terms ending in a consonant). Instead, wraj forms its abl.sg with -e like most feminine nouns. The form wrāja is also not triggered by other prepositions which govern the ablative, e.g. *la ‘from’; it is *la wrāje ‘from the day’, not *fla wrāja. My preliminary explanation for the peculiar wraj *tar wrāja is that it has been modeled (rather recently) after the many masculine nouns which take -a after tar. So far, the *a-ablative in the feminine noun class 1a does not seem to be productive, but this could change with the ongoing collapse and simplification of the case system, which results in case mixing and hypercorrections.

tar ... póre ‘until’

The circumposition *tar ... póre is insofar noteworthy as it is one of the few circumpositions which regularly trigger the ablative. For example: *tar ósa póre ‘until now’, *tar Kandahāra póre ‘until Kandahar’.

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1 I am not able to see a clear locational (thus, nominative or oblique) vs instrumental (thus ablative) difference in the examples involving zangūn ‘knee’, although it is of course possible that native speakers saw it.

2 The nominal in examples like *pa Afγānistān kše ‘in Afghanistan’ does not necessarily need to be analyzed as nominative; this could also be due to the formal identity between nom.sg and obl.sg in the respective noun classes.

3 Forms like *par zangūn appear especially in those varieties where the obl.sg zangānə is receding in favor of nom.sg (= obl.sg in those varieties) zangūn.
da ‘from’

The preposition da in the sense ‘from’ governs the ablative; it thus differs from the genitive preposition da which requires the oblique. da ‘from’ is more or less interchangeable with la ‘from’. For example: da Pešawára ‘from Peshawar’, da kóra ‘from the house, from home’. da does not trigger the ablative when it is part of a circumposition, thus: da kor na ‘from the house’.

la ‘from’

la ‘from’ requires the ablative. Examples include la báda mòrya (lit. ‘from bad luck’) ‘unfortunately’, la paštanó ‘from the Pashtuns’, la šóje ‘from the woman’. Also note la múža ‘from us’ (not not řla múžo although múž is of course a 1pl pronoun). Like da, la does not govern the ablative when it is part of a circumposition, for example la paštanó sará ‘with the Pashtun’, la múž sará (although I have once heard la múnž sará).

ta ‘to, for’

All adpositions mentioned so far have been prepositions and circumpositions. The use of the ablative with postpositions is rare, as they generally take the nominative or oblique. David 2014: 326 mentions the example jān ta ‘for oneself’, in which ta governs the ablative. Usually, however, ta does not trigger the ablative (jān ta is far more common).

To sum up, we can point out that the Pashto ablative is not only triggered by prepositions which denote a movement from something, but also towards something, and even locative positions. The following examples illustrates the broad usage of the Pashto ablative:

1. la Kābəla tar Kandahāra
   from Kabul-ABL.SG.M until Kandahar-ABL.SG.M
   ‘from Kabul to Kandahar’

Usage without adpositions to indicate spatial and temporal relations

Especially in poetry and some dialects like Waneci, the ablative can also be used without any adpositions; in such situations, the ablative always indicates something or someone ‘(away) from’ someone or something else. For example:

2. tyārē da jahālāt watána lōre γwāru (General Pashto)
darkness-NOM.PL.F of ignorance-OBL.SG.M country-ABL.SG.M far PRES-are-wanting-1PL
   ‘We wish away the darkness of ignorance from the country.’

3. aγə aflatuna swal wukər (Waṇeci, Elfenbein 1984a: 71)
   he-OBL Plat-ABL.SG.M question-NOM.SG.M PRET-did-3SG.M
   ‘He asked Plato a question.’

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4 The sentence is from a propagandistic song (watán raṇā kawú ‘We illuminate the country’) from the time of the Democratic Republic of Afghanistan.
Usage to indicate the agent of a transitive past verb

For the sake of completeness, it should be pointed out that in Pashto, unlike in some other Indo-Iranian languages which have been spoken in the greater Hindukush area (see further below), the ablative can not be used to indicate the ergative agent of a transitive past verb. This is solely the domain of the oblique case, and confusions between the oblique and ablative do not happen.

Diachronic Analysis

On the following pages, I want to approach the Pashto ablative from a diachronic perspective. The first section talks about the (mostly masculine) ablative morpheme -a, because it is the most idiosyncratic of all ablative morphemes. The second part focuses on the feminine ablative morpheme -e and the masculine and feminine plural -o. As will be shown, the classification of the case in question as “ablative” is also justified from a viewpoint of historical linguistics. Many details are still unclear, so the following points should be seen as first remarks about a topic which relevant for many Middle and New Iranian languages with an ablative (-instrumental) in -a and which needs a more thorough investigation.

-a

Pashto itself is only attested in written form for a couple of centuries, but various other Iranian languages have been attested for about three millennia. The ablative of the thematic nominals in Avestan is -āt, corresponding to Sanskrit -āt, e.g. Avestan dūrāt, Sanskrit dūrāt, both ‘from afar’. The instrumental is *-ā, e.g. Avestan ahurā ‘from the lord’ (in Sanskrit, a new instr.sg -ena was introduced); in Old Persian, the ablative has already merged with the instrumental (into -ā in the class of the a-stems), something which we also see in Sogdian and probably also Bactrian (see further below). It is therefore likely that a similar merger happened in Pashto, which is phonologically and semantically possible. Although the noun classes of contemporary Pashto cannot be traced back straightforwardly to one or the other old Indo-Iranian noun class because of intensive mixing and collapse of the old system, we can point out that it is no coincidence that the idiosyncratic ablative singular morpheme of the Pashto masculine noun classes is -a. In Kreidl 2021: 159, I have pointed out that the Old Iranian declension of the masculine a-stems is probably best preserved in noun class VII: Nom.sg xar ‘donkey’ (< nom.sg *xarah or, in light of the Bactrian parallel, probably acc.sg *xaram), obl.sg xrə (< gen.sg *xarahya), abl.sg xāra (< abl.sg *xarat and instr.sg *xarā), voc.sg xāra (< voc.sg *xara), nom.pl xrə (< nom.pl *xarāh or secondary **xarawah) and obl.pl xro (< dat.abl.pl *xaraibyah).

There are still uncertainties as regards the derivation of one or the case other case ending (e.g. the oblique -ə, see Kreidl 2021: 172f, and Thordarson 2009: 132f for Ossetic, which is also relevant for Pashto). And in only very few cases, a contemporary form is actually a direct continuant of the Old Iranian form: For instance, the abl.sg of kor ‘house’ is kōra, although the Old Iranian abl.sg *kārāt should give karā. karā does indeed exist, but it has been lexicalized as an adverb and means ‘at home’ in the contemporary language; synchronically, it has nothing to do with kor ‘house’. The contemporary abl.sg of kor, kōra, is therefore a secondary form which was introduced to due paradigmatic levelling.

Despite these caveats, I think it is not too audacious to connect the various case endings of contemporary Pashto with Old Iranian counterparts, among them the Pashto abl.sg.m -a with Old Iranian abl.sg *-āt and instr.

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5 If we assume that *-āy > *ā > -a, even the dative of the thematic nouns could have merged into the “ablative” or “ablative-instrumental” case of Sogdian, Bactrian and Pashto. It is unclear however, if this is phonologically possible. Peyrot 2018: 123 suggests that the gen.sg *-āyāh could yield -α in Bactrian; if this is true, it would not be far-fetched to assume that same outcome for the dat.sg *-āy.
sg *-ā, just like in the case of Sogdian -a and Bactrian -α. Because of the geographical proximity and the similar case system, the Kushan Bactrian ablative-instrumental is especially interesting as a comparison. The status of the ablative-instrumental as a case on its own is still controversial, but in my opinion there can be no doubt that we have to assume the existence of an ablative-instrumental to explain some previously unclear forms. Sims-Williams 2015: 258 mentions that as regards the oldest form of Bactrian, “a third case, possibly derived from a combination of Old Iranian cases” could account for the Kushan Bactrian masculine nominals ending in -α. But other scholars who have touched upon the topic of case morphology in Bactrian (Gholami 2014, Jügel 2015, Durkin-Meisterernst 2021) only assume the existence of direct and oblique. Of the many examples from Kushan Bactrian inscriptions, I shall present only a couple:

(4) πιδο* ι ωγα χϸονα (on a silver plate, lines 2f, Sims-Williams 2015: 257)
in ART one-ABL.SG.M year-ABL.SG.M
‘in the year one’
(5) ασο μο υνδα (same silver plate, line 4, Sims-Williams 2015: 257)
from ART India-ABL.SG.M
‘from India’

Already in the Kushan period, these prepositions which seem to have triggered the ablative-instrumental in earliest Kushan Bactrian, are frequently combined with the oblique or the direct case; this is reminiscent of the situation in contemporary Pashto.7 The Kushan Bactrian ablative has another function which is not attested for Pashto, as was already mentioned further above: It can mark the ergative agent in a transitive past tense sentence.

(6) οτι ειμο μιηροζαδα νιβιχτο (Airtam, 6)
and this-NOM Mihirzad-ABL.SG.M wrote-PST-3rd
‘And Mihirzad wrote this.’

Both the direct (-o) as well as the oblique (-ε, -ι) case of the masculine nouns in Bactrian very likely have the same origin as their Pashto counterparts (nom.sg -Ø, obl.sg -α). This means that the Bactrian main masculine declension in the singular is astonishingly close to that of the Pashto masculine noun class VII, about which I have said further above that it continues by and large the Old Iranian thematic a-stem declension. The only case which is absent from Kushan Bactrian so far is the vocative case; however, I think that this is rather a coincidence due to the small corpus.

Furthermore, I want to draw our attention to an interesting parallel in the Nuristani language Prasun. The Nuristani languages form their own subbranch of Indo-Iranian and are thus not especially closely related to Pashto and Bactrian. We see that the current Prasun case system with its four cases is diachronically quite similar to that of Bactrian and Pashto. While closer Pashto-Prasun contact only dates to the recent period since the Islamization of Nuristan, I suspect that there might have been Bactrian-Prasun contact in the first millennium CE. However, with the below comparison, I do not want to argue for the theory that the Prasun case system has necessarily emerged due to Iranian influence, nor do I argue that the Iranian and Nuristani languages go back to a common subgroup which excludes Indo-Aryan.8 Instead, the Prasun data can be seen as an interesting parallel to the Pashto case system and, probably, the Kushan Bactrian case system, in which the ablative, let alone the vocative which is speculative and unattested so far, are still controversial.

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6 Note that Bactrian πιὸ ‘in, on, by’ has the same origin as Pashto pa ‘by, on’ (see further above): Old Iranian *pati (Sims-Williams 2007: 254).
7 I would not exclude the possibility, however, that under this seemingly bewildering oscillation a systematic order is hiding - at least regarding some prepositions. For instance, it could be that Kushan Bactrian πιο, like its Pashto cognate pa, requires either the ablative(-instrumental) or the direct case depending on the semantics.
8 In fact, the opposite may be true, namely that Nuristani and Indo-Aryan go back to a common ancestor excluding Iranian, cf Buddrus 1977: 33, Degener 2002: 116.
-e is the most common abl.sg morpheme of feminine noun classes (see table further above). This means the ablative is formally identical to the oblique in all these declensions. This is not surprising, as already in Proto-Indo-Iranian and even Proto-Indo-European, there is a high degree of formal identity between the ablative and the genitive (from which the Pashto oblique derives). In fact, the Old Iranian masculine a-stem nouns are quite exceptional in this respect because they have distinct forms for the ablative and genitive (see further above).

In Old Avestan, the abl.sg and gen.sg of the feminine ā-stem nouns is -aiiā (< Proto-Iranian *-āyāh). In Younger Avestan, the idiosyncratic dental ending of the abl.sg of the a-stems also entered the ā-stem nouns, differentiating the abl.sg in -aiiāt from the gen.sg in -aiiā (Martínez, de Vaan 2014: 57). In Kreidl 2021: 205, I assume that the Pashto gen.sg.f -e stems from *-āyāh, while the abl.sg.f -e could come from either *-āyāh or the secondary *-āyat, if we assume that the ancestor of Pashto followed the way of Younger Avestan. However, if we think that *-āyāh could phonologically not yield -e, because it would give -a (see footnote 5 and Peyrot 2018: 123 for Bactrian), it follows that both the genitive and ablative -e need to have a different origin.

Note that for Bactrian, only the ablative singular of masculine nouns, -a, is attested so far. We do not know what the abl.sg of feminine nouns looked like, and the same goes for the abl.pl.

-o

In the plural of both masculine and feminine nominals, the oblique, ablative and vocative are always without exception formally identical and are characterized by the ending -o. As with many Pashto case suffixes, the origin of -o is controversial. A derivation from the Old Iranian gen.pl *-ām (proposed by Tedesco 1926: 157) is rather unlikely, because *-ām was already getting obsolete in Old Iranian languages, and the data in various Middle Iranian languages speaks for a different source. I do not want to reiterate the whole debate in detail (see Kreidl 2021: 190-194), but it seems the most likely origin of -o is the Old Iranian dat.abl.pl.m *-ābyah of the a-stems (Old Avestan -ōibiō, Younger Avestan -āēibiō, compare Sanskrit -ēbhyaś), together with its feminine ā-stem counterpart *-ābyah (OAv -ābiōh, YA -āuuiōh, Skt -ābhyaś). Both Old Iranian endings would phonologically yield -o in modern Pashto, so the derivation is neither in this respect nor semantically a problem. We can even add the instr.pl *-ābiś as a source, although the deletion of the final sibilant could probably not happen on purely phonological grounds.

In any case, there can be no doubt that Pashto -o is related to the endings of the Khotanese instrumental-ablative -yau, and the oblique Munji -af, Yidgha -əf, -ef, -af, Wakhī -əv, Sarikoli -ef. Note that already in

<table>
<thead>
<tr>
<th>Case in the contemporary languages</th>
<th>Kushan Bactrian (masculine noun class VII)</th>
<th>Proto-Iranian</th>
<th>Prasun (Buddruss, Degener 2017: 77)</th>
<th>Proto-Nuristani9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom/dir.sg</td>
<td>-o</td>
<td>ø</td>
<td>Acc.sg *-am (?)</td>
<td>Acc.sg *-am (?)</td>
</tr>
<tr>
<td>Obl.sg</td>
<td>-e, -t</td>
<td>-o</td>
<td>Gen.sg *-ahya (?)</td>
<td>Gen.sg *-asya</td>
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<td>Abl.sg</td>
<td>-a</td>
<td>-a</td>
<td>Abl.sg *-at</td>
<td>Abl.sg *-at</td>
</tr>
<tr>
<td>Voc.sg</td>
<td>*-a</td>
<td>*-a</td>
<td>Voc.sg *-a</td>
<td>Voc.sg *-a</td>
</tr>
</tbody>
</table>

9 With “Proto-Nuristani”, I refer to the putative stage of Nuristani as a contemporary of Proto-Iranian and Proto-Indo-Aryan, not necessarily to the reconstructable protolanguage of all modern Nuristani languages.
Khotanese, the vocative plural, which in Old Iranian (e.g. Avestan) was formally identical to the nominative, has acquired the endings of the instrumental-ablative (Emmerick 2009: 385). All this implies that -o, commonly called the “oblique plural” in descriptions of Pashto, is in origin just the ablative-vocative plural. There is no Old Iranian genitive plural from which -o could be realistically derived, so this very -o can, at an earlier stage, not have been an oblique plural. It could be that the earlier oblique plural was -una < gen.pl *-ānām (for the possibility of *-ānam see Peyrot 2015), which was then reanalyzed as a nom.pl, and the earlier ablative-vocative -o was organized as an oblique-ablative-vocative. But the motivation behind this development is far from clear yet.

Conclusion

The purpose of the paper was to present the ablative case in Pashto from both a synchronic and diachronic approach. From both viewpoints, not only the existence of the case as such, but also the term “ablative” is justified. Note that the term “ablative-instrumental” could be considered appropriate for the Pashto case in question, especially given the etymological origin of the involved case morphemes but also its usage with the preposition pa ‘by’ mentioned further above. However, it does not seem advantageous to make the terminology clumsier than it is.

Many issues I have addressed here require further research; this is true for both the contemporary varieties of Pashto, and the mostly unwritten, but, as I hope, reconstructable, history of Pashto.

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10 Like in other Iranian languages, the oblique continues the old genitive(-dative); also the obl.sg.m -ā and the obl.sg.f -e go back to Old Iranian genitives.
On the Etymology of the Hungarian Comitative-Instrumental Case Marker -val/-vel and the Postposition vele

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Abstract

This article elaborates on the problem of the etymology of the Hungarian comitative and instrumental marker -val/-vel ‘with’ and the postposition vele ‘with him/her/it’ in a cross-linguistic context. This topic is justified by the fact that the majority of linguists consider the Hungarian language to be the member of the so-called ‘Uralic’ or sometimes ‘Uralo-Yukaghir language family’, yet its case system significantly differs from those of the hypothetical Uralic, as well as (Kolyma and Tundra) Yukaghir languages. Therefore, this paper argues for a unit-based approach instead of a monolithic (essentialist) concept of human languages falsely considered as physical (biological) members of a metaphorical and thus illusory ‘family’. Accordingly, the origins and evolution of single natural languages (e.g., Hungarian) should be regarded as multi-linear processes. Since languages are acquired and transmitted culturally, i.e., they are learned, the relationship between them cannot be genetic. Nevertheless, the comitative-instrumental marker of Hungarian, just like the entire Hungarian case system with its eighteen different case markers, has no etymological or structural parallel with the so-called Uralic languages. In this paper, I propose an etymological link between the polysemous and syncretic grammatical unit of Hungarian, viz. the postposition vele and its grammaticalized form as case affix and the Old Turkic birlâ ‘with’, as well as its variations in the modern Turkic languages (ile, -la/-le, bile/bilen, men/ben/pen, -vele, pirge, pîrle, vile, etc.). To do this, I analyze, compare and contrast diachronic and synchronic cross-linguistic data with the methods of comparative and historical linguistics and also case-marking typology.

Keywords: case-marking typology, Hungarian, Turkic languages, historical linguistics, grammaticalization, comitative-instrumental polysemy

Introduction

The Hungarian language is generally considered to be the member of the so-called ‘Finno-Ugric’ branch (e.g., Collinder, 1960; Sinor, 1988; Abondolo, 1998, 428; Kenesei et al., 1998, xxxii; etc.) of the so-called ‘Uralic’ or ‘Uralo-Yukaghir language family’ (e.g., Collinder 1940; Comrie, 1981; Harms 1977; Nikolaeva 1988; Pusztay 2004; Fortescue 2017). However, there are also linguists who give voice to serious criticism – in whole or partially – on the methodology and classification of the main proponents of the ‘Uralic language family’ theory (e.g., Künnap, 1998; Marcatantionio, 2002; Pusztay, 1987, 1995, 2001; etc.). The structure of Hungarian grammar, especially its case system is so divergent from all other so-called ‘Uralic’ languages that Björn Collinder, the late renowned Swedish linguist, Professor of Finno-Ugric Languages and researcher of the comparative grammar of the Uralic languages claimed, “In Hungarian, a new case system has been formed by agglutination” (Collinder, 1960: 293). Still, nobody has detected this old case system arbitrarily expected
by Collinder since the Hungarian case system seems to have been well-developed and well-integrated into language usage since as early as the very first written sources containing coherent Hungarian texts in the 12-13th centuries. Nota bene, a spoken language is not a monolithic being that has evolved from a single origin. A language is always spoken by a heterogeneous group of often bi- or multilingual speakers who speak an individual variation of that specific language.

**Diachronic data of the Hungarian Comitative and Instrumental**

The earliest extant record of a coherent text in Old Hungarian that employs the comitative-instrumental case marker -val/-vel (COM-INS) is the “Funeral Sermon and Prayer” dated to 1192-1195.

1. *Latiatuć feleym zumtuchel [...] mic vogmuc.*

Let us see the first sentence above in Modern Hungarian interpretation:

`Lát-já-tok fél-e-i-m, szem-e-tek-kel, mi-k vagy-unk.`

Behold, my friends, with your own eyes, what we are.

I want to point out briefly that the completely grammaticalized comitative-instrumental marker (as INS) shows here not only both of its allomorphs (-val and -vel) conforming to vowel harmony (a trait of the Hungarian language), but also consonant assimilation (*zumtuch* + *vel* > *zumptuchel*; -k + -v > -kk-) that is not the case with any other affix, not even in modern Hungarian (e.g., -ért, -ig, -ként, -kor). It should be understood as evidence that the grammaticalization process had been finished in the spoken language by the time this sermon was written.

The earliest remaining example of the postposition *vale* in the comitative semantic domain dates back to the middle 14th century (c. 1350).

`vr te veled wagun (KTSz.) (=The Königsberg Fragment and Ribbons; Benkő, 1976: 1110)`

`vr te vel-e-d wagon`  
Lord you with-POSS.2.SG be-3.SG.PRES (COP)  
‘Lord is with you’

In modern Hungarian: ‘Az Úr, (te)veled vagyon/van.’

This sample sentence demonstrates that the postposition *velle* has been able to bear possessive suffixes since its first appearance in an Old Hungarian record just like it can today: a feature of great relevance in cross-linguistic comparison.

**The Hungarian Postposition *velle* and the Comitative-Instrumental Case Marker**

Several linguists (both structuralists and typologists) have discussed the usage and structural characteristics of comitative-instrumental in Hungarian in the last six decades (e.g., Antal, 1961; Kiefer, 1987, [1998] 2003; Stolz, 1996, 1997; Stolz et al., 2005, 2006, etc.), so there is no need for a detailed description.

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1 The orthography of both sentences reflects the state of (mostly ecclesiastical) Latin script writing culture in the 12th c. Kingdom of Hungary, however it does not represent accurately any phonetic features.

2 The phonetically correct forms would probably be the following: IPA: [sʏmtykːɛl]; [hlalːa:vʊl]; Unified international Turkological transcription: [sümtükkel]; [halalaːval]; Simplified transcription for Hungarian: [sümtükkel]; [hålalāvål].

3 The first three are case affixes: causalis-finalis, terminative and essivus-formalis; the last one is temporalis, which is not a real case suffix (see Kiefer [1998] 2003).
here. However, there are a few somewhat misleading contributions that should be mentioned for further implications. Sang-Hyup Lee discussed the Hungarian affix -stUl (-stul/stül) as an ‘accompaniment’ case marker (Lee, 1990: 68, 127-129), but this claim is not correct for several reasons (see Kiefer, [1998] 2003). Unfortunately, the author misunderstood and misinterpreted this affix and therefore incorrectly translated the Hungarian sample sentences into German. The Hungarian -val/-vel comitative-instrumental marker and the -stUl sociativus-like affix are not interchangeable at all because of the significant differences in their semantic domains. Nevertheless, the semantic difference is not the only trouble with the interpretation of Lee. There is a bigger problem, viz. the applicability of -stUl is quite limited; it is applicable in only a few fixed phrases (e.g., szőröstül-bőröstül, mindenestül, ajtóstül, etc.). A further difficulty—and the most serious probably—is that the -stUl sociativus affix, in contrast with the -val/-vel comitative-instrumental marker, cannot be associated with a pronoun, adjective, numeral, time-mark, plural mark, possessive suffix, or with comparative and superlative constructions (*kevesebbestül; *mienkestül, *magastul, *hatostul, *emberekestül; Kiefer, [1998] 2003). It is also important to know that only real case affixes can be attributed to all these word classes, marks, and other categories in Hungarian (e.g., kevesebbel, mienkkel, magassal, hatossal, emberekkel, etc.). Besides Ferenc Kiefer, István Fekete, another Hungarian linguist made the differentiation clearer between the meaning and usage of comitative-instrumental case marker and sociative suffix:

The paper analyzes the various uses of the Hungarian -stUl (‘together with’, ‘along with’) sociative (associative) suffix […], as in the example gyerekestül. As opposed to its comitative-instrumental suffix -vAl (‘with’), the -stUl suffix cannot express instrumentality. […] It is argued on the basis of Antal (1960) and Kiefer (2003) that -stUl cannot be analyzed as an inflectional case suffix (such as the -vAl suffix, or -ed, -ing, or the plural in English), but should rather be categorized as a derivational suffix (such as English dis-, re-, in-, -ance, -able, -ish, -like, etc.). (Fekete 2013)

Because of these aforementioned aspects—and others, of course—there are not twenty-one grammatical cases in Hungarian as Iggesen stated (Iggesen, 2005: 202-203) following Tompa’s somewhat outdated description (Tompa, 1968: 206-209), but eighteen whereas the sociativus -stUl is not included. It was necessary to explain all of these in detail because other linguists have used this misleading interpretation of Lee as the basis for the typology of the Hungarian case system in a cross-linguistic context. Thomas Stolz and his associates contributed to this problem in question with several papers in the framework of case typology (e.g., Stolz, 1996, 1997; Stolz et al. 2005, 2006). In the Appendix of his paper on the “WITH-relators and the pertinent syncretisms”, Stolz classified the Hungarian -stul (he indicated erroneously as “COM”) as part of a mixed system together with -val (COM/INS) (Stolz, 1997: 186). As we have seen above, the sociative -stUl, whose usage is mostly restricted to some fixed phrases, is categorically not an alternative for the comitative-instrumental -val/-vel, whose frequency is very high in Hungarian. In order to make an unbiased thorough statistical analysis in 64 European languages on the occurrences of WITH-relations, Thomas Stolz and his colleagues have also dealt with the translations of the book The Little Prince (Le petit prince) written by Antoine de Saint-Exupéry (Stolz & Gugeler, 2000). I have checked the occurrence of -stUl in its Hungarian translation; it occurs once (mindenestül ‘completely’, ‘in all’). To compare, the comitative-instrumental -val/-vel occurs 149 times, while the postposition vele 17 times; thus, altogether 166 times.

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4 The three categories excluded by Kiefer’s thorough morphological analysis ([1998] 2003) are formal (-képp), essive-formal (-ként), and sociative (-stUl).

5 He indicated just the back vowel variants of -stul/stül as well as -val/-vel and omitted the postposition vele.

6 “The little prince looked everywhere to find a place to sit down; but the entire planet was crammed and obstructed by the king’s magnificent ermine robe. So he remained standing upright, and, since he was tired, he yawned.” [italic mine - A.M.] (Exupéry, 1995: 69). Its Hungarian translation is as follows: “A kis herceg körülnézett, hová ülhetnek le, de a bolygót mindenestül beboríttotta a pompás hermelin palást.”
None of them can be replaced with the sociative -stUl. Another approach is to test the meaning of both, when one tries to translate a short sentence including the COM/INS construction from a foreign language and test if it can be translated with the Hungarian sociative -stUl construction. My choice is the title of a Tom Waits song: ‘I Hope That I Don’t Fall in Love with You’ (Closing Time LP, 1973). Its Hungarian translation is as follows:

Remél-em, hogy nem es-em szerelem-be vele-d.
Hope-1.SG.PRES that not fall-1.SG-PRES love: ILL with-POSS.2.SG
I hope that I don’t fall in love with you.

This sentence cannot be translated into a sociative construction (‘together with her/ his/its [something]’, ‘along with her/ his/its [something]’; *testül; *stüled).

A decade later, Stolz and his other associates still considered the sociative -stUl (naming it as associative) in Hungarian as a comitative case marker, so they classified the Hungarian comitative strategies as a ‘Mixed’ group (“a mixture of features of identity and differentiation in one and the same language”), comparing it to the Estonian (Identity: “Accompaniment and instrument receive the same coding”) and the Finnish (Differentiation: “comitative-instrumental differentiation”). They wrote after the COM/INS sample sentences the so-called Associative sample as well as the following explanation to this grouping:

c. Accompaniment: “Associative”

Csónak-ház-ak sport-és játszóter-ek vár-ják
boat-house-PL sport-ADJ playground-PL wait-3PL
család-ostul gyerek-estül z ember-ek-et.
family-WITH child-WITH DEF man-PL-ACC
‘Boat-houses and sports grounds are waiting for the people with family and children.’

In Hungarian, two inflectional case suffixes in the noun paradigm partially compete with each other when it comes to encoding comitatives. First, there is the so-called comitative-instrumental suffix -val/-vál ‘with’. This suffix is polysemous because it may either have a comitative reading marking the companion (e.g. barátjával ‘with his friend’ in (4b)), or it may mark an instrument (e.g. tollal (< toll + -val) ‘with a pen’). Thus, -val/-vál reflects the familiar pattern of identity. In addition, there is the so-called associative case marked by -stul/-stül ‘with’. The functional domain of this suffix is restricted to the comitative proper, i.e. it marks companions (e.g. családostul ‘with family’, gyerekestül ‘with child’ in (4c)). Put differently,

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These forms come off due to the full assimilation to the final consonants of the stem; e.g., csillag + -val → csillaggal ‘with star’.

It is erroneously written as an adjective. Hungarian és means ‘and’; it is not a suffix but a separate word (conjunction).
-stul/-stül has the typical traits of a morpheme showing differentiation. It is important to note that the associative can never be used with an instrumental reading. However, -stul/-stül and -val/-vál can be substituted for one another if a comitative reading is intended. Note that Hungarian is a member of the same genealogical group as Finnish and Estonian, though more distantly related to them. Notwithstanding these genealogical ties, Hungarian prefers a third solution which is different from both of those found in Finnish and Estonian. (Stolz et al., 2005: 215)

In the above citation almost every statement is incorrect. We can begin with the translation of the sample sentence: családstul and gyerekestül cannot be translated as ‘with family’ and ‘with children,’ that would be családdal and gyerekkel. The correct translation of sociative -stUl is ‘together with’, ‘along with’, which would be in this sentence ‘together with their family and children.’ It is a fixed phrase in Hungarian and the sociative –as it has already been mentioned– cannot be used as an alternative for the single COM/INS -val/-vel. That means that there is no competition in the noun paradigm at all; the only COM/INS marker is -val/-vel.

The so-called comitative-instrumental suffix is not “-val/-vál”, as the authors erroneously state three times, but -val/-vel, whichever front and back vowel forms fit the Hungarian vowel harmony. It is right that the -val/-vel is polysemous, therefore the correct typological classification of the Hungarian comitative-instrumental marker is not Mixed, but Identical. The associative -stUl is not a case marker, but a derivational suffix as Kiefer ([1998] 2003) and after the publication of Stolz et al. (2005) Fekete (2013) assessed. It has also been falsely stated that the sociative would mark a companion. In the fixed phrases like ajtóstul, csőstül, fenekestül, mindenestül, szóröstül-bőröstül, ruhástul, etc. these do not mark companion at all (see also Fekete, 2013). They are adverbial phrases and uniformly express some negative or unusual action by the agent. The most erroneous statement of Stolz et al. (2005) is that -stul/-stül and -val/-vál (sic) could be substituted for each other if a comitative reading is intended. As I have demonstrated above, the semantic domain of the Hungarian COM/INS is much larger than those of the sociative, and it falls far enough from the latter. Contrary to the traditional essentialist view in linguistics that “Hungarian is a member of the same genealogical group as Finnish and Estonian” (Stolz et al., 2005: 215), the “languages are not organisms”, as N.J. Enfield remarked neatly and thus they do not constitute genealogical groups.

In an item-based account, pieces of a language can change independently from other pieces, and they can be plucked out and borrowed from one system to another, as for example when we borrow a word. Of course, the notion of ‘item’ is an abstraction. An item is always defined by sets of relations. And all sets of relations are embedded in further such sets, and again in further such sets, and so on seemingly without limit, as any grammarian well knows. This is why an item-based account must also ultimately be linked to higher-level linguistic systems. But we must avoid a temptation to think of these coherent systems as organisms with bodies. Languages are not organisms. (Enfield, 2014: 326)

Although I know fairly well that according to the essentialist view, Hungarian is related “genetically” to its linguistic “relatives,” I also know that all these terms are highly metaphoric. The languages are not organisms with bodies, therefore Hungarian cannot be a member of a genealogical group of languages. The Hungarian case system, as well as its single grammatical cases, such as the polysemous comitative-instrumental, should be investigated without any input preconceptions. “The same genealogical group” and the “genealogical ties” are clear biases, since up to now no linguist or geneticist has established genetic (i.e., biological) correspondences with natural languages. As the Hungarian language has no genes, the most that a typologist can do is to compare its items and structures carefully and without any bias in a cross-linguistic context. Let me quote again István Fekete:

The analysis of the -stUl suffix as a derivational suffix runs counter to the conception of Stolz et al. (2005, 2006) who attribute the same grammatical status to the -vAl and the -stUl suffixes. (Fekete, 2013: 12)
Therefore, Hungarian has only one syncretic and polysemous comitative-instrumental case marker: -val/-vel. The negation of COM/INS is nélkül ‘without’ (see also Stolz, 1996: 34). It is a correct claim by Stolz et al. (2005) that the Hungarian solution is different from both of those found in Finnish and Estonian, but not correct in respect of grouping it as ‘Mixed’. The Hungarian solution is an identical COM/INS marker -val/-vel and postposition vele, both of whom have been omitted from the list ‘(22) Morphological Indistinction of Comitative = Instrumental’ (i.e., Identity) (Stolz, 1996: 17-18). The Turkish -la/-le COM/INS marker has also been omitted since the author indicated only the postposition ile on the list. However, the latter is the issue of one of the following sections of the recent paper. For this section, I cite at last a somewhat more appropriate claim about the Hungarian COM/INS marker.

[...]. In contradistinction to the languages discussed above,9 Hungarian employs bound morphology to encode cases and various categories. The suffix -vel/ -val is used for ACCOMPANIMENT and INSTRUMENT relations alike. Its vowel changes according to Hungarian vowel harmony, and the initial consonantal segment usually assimilates to the final consonant of the (morphologically simple or complex) stem to which the suffix is attached. [...]

(Stolz et al., 2006: 10-11)

However, I must state here that I do not share the opinion of the authors that the -val/-vel in Hungarian is just a marginal possibility for MANNER relations (Lee, 1990: 69; Stolz et al., 2006: 10), since the Hungarian translation of the Swedish sample sentence on MANNER (‘Over everything, said the king with majestic calmness.’; Stolz et al., 2006: 7) is as follows: Mindenekfelett, mondta a király felséges nyugalommal. In Hungarian, other fixed phrases employ INS, e.g., nagy sebbel-lobbal érkezett, (‘he/she arrived in a hurry’), sietős léptekkel jött (‘she/he came with rapid strides’), csodálattal bámulta (‘he/she looked at her/him admiringly’), nagy garral vitázik (‘to go at it hammer and tongs’), etc. and it is not marginal at all, although in some phrases it is somewhat archaic. So, if the typologist has a preconception, she or he can find a way to express it; one needs just the appropriate sample sentences for it. Nevertheless, calque plays an important role in every contact situation, in areal correlations or the cases of bilingualism and multilingualism. Still, for the expression of MANNER, the adverbial phrase is the main strategy in modern Hungarian and not the instrumental.

The Cross-Linguistic Data

Since the Hungarian postposition vele that expresses accompaniment and instrumentality and its grammaticalized comitative-instrumental marker -val/-vel have no widely accepted etymology, it is reasonable to make a cross-linguistic survey of the relevant grammatical constructions and strategies in order to avoid hidden or explicit biases. As has been mentioned in this paper, language is not a static and unchanging phenomenon. It is acquired and transmitted culturally and therefore searching for socio-historical and areal contacts seems to be a more efficient method than adopting the concept of a ‘language family’, a concept never proven with scientific rigor. Naturally one should not exclude any language from this unbiased and systematic research. At the starting point of our investigation, it has no significance which historical or modern language is the first subject of the survey, and which one is to be the last since every relevant linguistic data has the same level of importance.

As we have seen, Björn Collinder considered the Hungarian case system as a new one (1960: 293), because its structure and form differ remarkably from those languages that are spoken in Northeastern Europe, Western, Central, or even in Eastern Siberia and have been labeled as ‘Finno-Ugric’, ‘Uralic’ or ‘Uralo-Yukaghir’ in the last two centuries. However, the Hungarian case system has not changed significantly since its first records at the end of the 12th century until our times, so how could it have undergone a complete

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9 German, Swedish, Baka (an Ubangi language spoken in Cameroon), etc.
replacement without a centralized language command? Language systems are not distinct and coherent units, thus how could have been a new case system transmitted by individual speakers? This idea sounds unnatural. There is no need to mention that Hungarian lacks completely the traces of such a former case system that could confirm Collinder’s expectations based on the hypothetical language family concept.

The long-term typological research of Thomas Stolz and his associates is based on the shared paradigm of such hypothetical language families. Instead of using available diachronic data, they adopt the uncontrolled set of a hypothetical language family—understood as monolithic and with one single origin—and then try to draw a diachronic conclusion from the synchronic data alone. Their superficial examination in question is based on some contemporary Estonian, Finnish, and Hungarian data with which they were not familiar, but tried to draw ambiguous historical conclusions from it. They made it as follows:

The three Finno-Ugric languages from which the above examples are drawn probably differ in their organization of the relation between comitative and instrumental precisely because two of them—Estonian and Hungarian—have been subject to contact influence by Indo-European languages (most prominently German in both cases), where identity is the established pattern. (Stolz et al., 2005: 215)

It is hard to imagine a sloppier assumption than the one above based on some contemporary data that they mostly misunderstood (e.g., -stUl) or erroneously copied even three times from the source material (e.g., *-vál). The authors seem to have no idea about the early socio-historical and linguistic contacts of the Hungarians between the 6-10th centuries (or even before) in the Eurasian steppe zone and the Caucasus Mountains (probably not just in the northern slopes), nor about the structural and typological features of those languages whose speakers the Hungarian speakers contacted intensively in those times (Alans, various Turkic groups, Slavs, etc.). Since the comitative-instrumental identity or syncretism is not a privileged characteristic of German and the Indo-European languages (see Stolz, 1997: 184-200), and Hungarian is characterized by this syncretism since its very first written records from the late 12th century, furthermore the postposition vele and the grammaticalized COM/INS marker -val/-vel is the only one strategy to express comitativity and instrumentality in Hungarian, it is hard to imagine how the Germans could have affected the Hungarian case system between 881/895 (Hungarian settlement/conquest of the Carpathian Basin) and the end of 12th century that a not-syncretic, unrevealed comitative or instrumental marker as hypothesized by Stolz et al. (2005) could just vanish from the language into thin air. According to the above assumption, it should have happened in that period, since already in the very first written records the initial consonant of the Hungarian -val/-vel assimilates fully to the final consonant of the stem to which the affix is attached. Such morphophonological assimilation during the grammaticalization process cannot undergo so completely in a short time, considering that this process has still not proceeded in the eastern, viz. the Moldavian Csango (Csángó [ča:ngo:];) dialect of Hungarian (e.g., embervel ‘with the man’ instead of emberrel). Five essential Hungarian idioms including the assimilated form of -val/-vel marker also existed in relatively early times: éjjel (éj+vel; 1364 CE; Benkő, 1967, I: 730) ‘at night’, nappal (nap+val; after 1372/around 1448; Benkő 1970, II: 997) ‘by day’, reggel (reg+vel; after 1372/around 1448; Benkő 1976, III: 363) ‘in the morning’, tavasszal (tavasz+val; 1492 CE; Benkő, 1976, III: 867) ‘in the spring’, összel (ősz+vel; after 1416/around 1450 CE; Benkő, 1976, III: 41-42) ‘in autumn’. Based on the solid diachronic linguistic evidence, this immature idea of a German contact influence on the Hungarian COM/INS syncretism based on the solid diachronic linguistic evidence can be easily rejected.

One year later, Bern Heine and Tania Kuteva were more careful than Stolz and his associates when they wrote the following sentences:

Hungarian appears to have had a comitative–instrumental polysemy since the twelfth century. As Stolz et al. (forthc.; fn. 320) note, in the first piece of written Hungarian, a late twelfth-century funeral speech, there was an inflectional case marker that covered both functions. And this polysemy is also found in modern Hungarian […]
While Hungarian has a long history of language contact with German, we are not aware of any information to the effect that the presence of this polysemy is contact-induced. (Heine & Kuteva, 2006: 196)

After this critical introduction, let us survey the cross-linguistic data on COM/INS. In the Appendix created by Stolz (1997: 184-200), one can find the data under three categories (1. Coherent = Syncretistic/Identity; 2. Mixed; 3. Incoherent = Differentiation) and the languages from the five continents. He listed 223 languages, including six historical languages (Sanskrit, Latin, Accadian, Tokharian I & II, and Ugaritic). There are thirteen so-called ‘Uralo-Yukaghir’ (UY) and ten ‘Altaic’ languages on the list (and just three Turkic: Turkish, Khalaaj, Yakut), but this made the list quite unbalanced since there are more than thirty modern and about a dozen relatively well-documented historical Turkic languages, including Old Turkic (henceforth OT) and Chagatay (see Radloff, 1897: 84; Bodrogligeti, 2001: 47-48).

Let us begin with the so-called Uralo-Yukaghir languages. They are found in all three categories.

The ones in the syncretistic COM/INS system are the following five: Estonian [-ga/-ka], Saami [SG-na; PL -in], Udmurt [-en], Khanty [-n(ā/a)ti(i)], Kamas [-ze']. It is important to mention that Saami COM/INS differs in singular and plural. Stolz indicated just the plural form -in, while the singular one is -na (Viitso, 1998: 70-71). Stolz indicated only one form for Udmurt COM/INS, albeit it can vary conforming to the situation (singular, plural, possessive, etc.; -en, -jen, -in, -eni; Winkler, 2001: 16, 18, 24-25).

Stolz considered Hungarian as a Uralic language and therefore it should have been listed among the above-mentioned five languages, since -stUl does not constitute a grammatical case but a derivational suffix, as we have seen above. So, Hungarian is clearly syncretistic [COM = INS; -val/-vel; vele].

Stolz listed Hungarian erroneously as one of the five Mixed ‘UY’ languages, just as Komi [-en COM/INS; -ked COM], Votic [-kā COM/INS; -lla INS, LOC, POS], Mansi [-VI COM/INS; jot COM], and Nenets [-ha)na COM; -(mb/p)oi COM/INS].

In the Votic, the comitative marker is added to the genitive stem in the singular, while in the plural, it is added to the genitive plural or to the plural stem, which is the short form of the plural genitive, e. g. jałgākā ‘with foot’ (COM; it is actually an INS unmentioned by Ariste), jałkoikā ‘with feet’ (COM), tütärēkā ‘with daughter’ (COM), tuttärīkā ‘with daughters’ (COM). Vowel harmony does not apply to the comitative marker which retains its back vowel even in front vowel words (Ariste, 1968: 33). As Ariste described the Votic case system, there is no instrumental mentioned, but an instructive and a comitative II added to the plural stem (with a few dozen words; -nā/-nā), which are rudimentary cases functioning as adverbs (Ariste, 1968: 17, 36).

There are three Incoherent (Differentiation) UY languages on the list: Finnish [-ine COM; kanssa COM; -lla INS/LOC], Mari [-den COM; -(k/)e INS/LOC], and Yukaghir [ney COM; -lek INS].

Although Stolz indicated Mansi as a Mixed- (COM/INS & COM) and Khanty as a Coherent (COM/INS) language, this classification seems incorrect again. Gregory D. S. Anderson discussed the instrumental vs. comitative case strategies in the Siberian languages with great expertise (2004: 45-48; after Honti, 1998: 344), where the Eastern Khanty and Tavda Mansi show up in clear functional opposition in this respect.

**Instrumental vs. comitative in Ob-Ugric (Honti 1998: 344)**

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<th>E. Khanty</th>
<th>Tavda Mansi</th>
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<tr>
<td><strong>COM</strong></td>
<td>-naat/-nāät</td>
<td>-naat/-nāät</td>
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<tr>
<td><strong>INS</strong></td>
<td>-(t)ə/ə</td>
<td>-(t)əl</td>
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As he interpreted the Ob-Ugric situation in detail, he informed us that the COM/INS opposition has been indexed by formal markers. In the Sherkal Khanty (a Western Khanty variety), a postpositional construction has been employed for the COM with pronouns, just like maα naataaγeem ‘with me’, whose first syllable is identical with the COM suffix of the eastern Khanty and southern Mansi (ibid.). He then continued the discussion with the Selkup dialects.
Various Selkup dialects use of an instrumental-comitative opposition. The comitative may sometimes attach to a genitive, not a nominative, form of the stem, suggesting a possible recent origin in a particular postpositional or auxiliary noun formation.

(53) Instrumental vs. comitative in Selkup dialects (Bekker 1978: 136; 139)

i. Ust'-Ozyornoe  
golaj üːda-ntobə-n  
‘with bare hands’

ii. Tjukhterevo  
tobə-n  
leg/foot-INS  
‘with his foot’

iii. Karelino  
tobe-t  
leg/foot-INS  
‘with his foot’

iv. Laskino  
ad i-n-opti  
father son- GEN-COMIT  
‘the father together with this son’

v. Ust'-Ozyornoe  
tan-opti  
YOU-COM  
‘(together) with you’

The historical situation is significantly more complicated than it would first appear. To begin, the instrumental has the appearance of the genitive, and it is not clear whether these case forms are to be considered historically separate or connected. Secondly, Nenets has a postposition/adverb ƞōbt ‘together’ (Bekker 1978: 140) which appears cognate with the Selkup element. Thirdly, most Selkup dialects have innovated a new instrumental/comitative case form, possibly from a fusing of another, different adverb/postposition that might historically derive from a non-finite form of ‘be’, i.e. ‘being’ > INS > INS/COM. This may in fact be a common Southern Samoyedic innovation, as a cognate element seems to have existed in the extinct Kamas (Künnap 1971). […] (Anderson, 2004: 46-47)

Then he continues his detailed explanation that there is no INS-COM opposition otherwise in the Samoyedic languages, e.g., Nganasan has COM but no INS, and Kamas has an INS but no COM (Simoncsics, 1998; Künnap, 1971). The INS is not overly common in Uralic languages. In contrast with Stolz, Anderson remarks that Udmurt lacks a COM (Csúcs, 1998). In fact, Csúcs indicates just one INS [-j(j)en, -în] (Csúcs, 1998: 282) in his Table 9.2, but also its usage for accompaniment: Pedor-en uža-mī ‘we worked with Pedor’ (Csúcs, 1998: 298; conf. Winkler, 2001: 24). It seems to be a genuine COM. The Yâź’va dialect of Komi lacks an INS, while according to Riese Udmurt lacks a COM (Riese, 1998: 268). As reported by Riese, the Permian instrumental probably continues the ‘proto-Uralic’ genitival/adjectival suffix *-n [Zyrian = Udmurt -ën; Komi = Votyak -j(j)en] but this historical reconstruction seems highly speculative. The Yukaghir is undoubtedly related to the group of languages that employ differentiated COM and INS markers [neŋ COM; -lek INS].

In the Mansi language (Mixed group) whose case system should be the nearest to Hungarian according to the Uralic paradigm, one can find an extremely different structure than in Hungarian.

[…] Apart from nominative they have separate forms for accusative, dative, ablative, and comitative-instrumental; other cases are formed by means of postpositions with possessive suffixes.

A construction with the postposition jot is much more usual than the comitative-instrumental: am jot m ‘with me’, nan jotom ‘with you’, taw jote ‘with him’, etc. Further examples of constructions with postpositions: mān pāltuw ‘with us’, […]

<table>
<thead>
<tr>
<th>Number</th>
<th>Case</th>
<th>1st Person</th>
<th>2nd Person</th>
<th>3rd Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singular</td>
<td>Comitative</td>
<td>ān̂ mtöl</td>
<td>naŋmtöl</td>
<td>tawetöl</td>
</tr>
<tr>
<td>Dual</td>
<td>Comitative</td>
<td>mēnmentöl</td>
<td>nēnantöl</td>
<td>tēntentöl</td>
</tr>
<tr>
<td>Plural</td>
<td>Comitative</td>
<td>mānawtöl</td>
<td>nānantöl</td>
<td>tānanawtöl</td>
</tr>
</tbody>
</table>

(Kálmán, 1965: 42-43)
The instrumental expresses the agent and the instrument or an accompanying person. It has the ending –I; it is joined to consonant stems with a linking vowel: kātǝl ‘by hand’, sālil ‘with the reindeer’ (sāli ‘reindeer’). After possessive suffixes the instrumental suffix is –tal e.g. ńēlmǝntał ‘with your tongue’ [...]. (Kálmán, 1965: 35)

To conclude this section, there is an intense morphological diversity among the so-called ‘Uralic’ or ‘Uralo-Yukaghir’ languages. Just three languages have coherency or identity among their comitative-instrumental markers, viz. the Estonian (-ga; Viitso, 1998: 128), the Saami (-in), and the Udmurt [-(j)en], but only the latter is related to this group according to Stolz. All these three strategies differ significantly from those of Hungarian, although it also has a syncretistic comitative-instrumental structure. The Hungarian has a postposition (adverb) vele whose grammaticalized allophones are -val/-vel in accordance with the vowel harmony. No similar structure can be found among the so-called Uralo-Yukaghir languages. The Mongolic languages have divergent (incoherent) strategies for comitative as well as for instrumental. Stolz included just Khalkha (labeled as ‘Mongolian’), Monguor and Daur under ‘ASIA incoherent’ into his list (Stolz, 1997: 195-196). According to the renowned late Altaicist Talat Tekin (and accepting this idea by Erdal, 2004: 30–31), the Middle Mongolian -luγa/-luγe (Secret History of the Mongols: -lu’a/-lu’e; Muqaddimat al-Adab: -lā/-lē) is etymologically connected with the Old Turkic (OT) -luγun/-lugün comitative marker (Tekin 1990: 358). This is reflected in written Oirat (Western Mongolic) as -luγā/-luγē (traditional written Oirat) and in Modern colloquial Oirat (e.g., Kalmyk in Eastern Europe, as well as Dörbet, Bayat, etc. dialects in Western-Mongolia) as -lā/-lē (Rákos, 2002: 17). It is important to mention that between the colloquial Oirat comitative -lā/-lē and Modern (Anatolian) Turkish syncretistic comitative-instrumental -la/-le, there is no historical-etymological relationship. The resemblance between their forms is due to convergent development by chance (1. Written Oirat -luγa/-luγe > Coll. Oirat -lā/-lē COM; 2. OT birlä Adverb/Postpos. > Turkish -la/-le COM/INS). The written Oirat instrumental was -yēr/-bēr, while the colloquial Oirat is -ār/-ēr/-ōr/-ōr (ibid.). Thus, the Oirat is related to the group of incoherent COM/INS, just like the other Mongolic languages.

Discussion: The Supposed Turkic Etymology

The early Hungarians were referred to with several names in the mostly Byzantian, Persian, Arabic (Muslim), Slavic, and Latin written sources from the end of 9th-century CE. In the Byzantian (Greek) records, their name was Turk (tourkoi; e.g. Constantine VII Porphyrogenitus, Chapter 38; Moravcsik, 1967: 170-179; see also Róna-Tas et al., 2011, I: 27ff), while in the Arabic manuscripts (in the so-called ‘Jayhānī tradition’ as part of the Muslim geographical literature), they were designated usually as Majghar, “they are one of the Turkic tribes/they are a kind of Turk” (ġins min al-atrāk; e.g., Gardżi, al-Bakrī, al-Ḥimyarī, and others). There are also well-grounded Turkic etymologies for the early Hungarian clan names written by the renowned late Turkologist Ārpád Berta (Berta, 2002; 2010: 175-187). At the same time, the early Hungarians, just like other nomadic peoples of the Eurasian Steppe in those times were not only multiethnic including different Turkic ethnic groups, but they were probably also generally bilingual during the 9th-10th centuries, as Constantine VII Porphyrogenitus claimed about both the Kabars (or Qavars; they spoke a debated Turkic language or languages; see e.g., Golden, 2005) and Magyars at one occasion in the middle of the 10th century (Chapter 39):

The so-called Kabaroí were of the race of the Chazars. [...] but others escaped and came and settled with the Turks [i.e., Hungarians – A.M.] in the land of the Pechenegs, and they made friends with one another, and were called ‘Kabaroi’. And so to these Turks they taught also the tongue of the Chazars, and to this day they have this same language, but they have also the other tongue of the Turks. [...] (Moravcsik, 1967: 175)

Since the Hungarian language does not just have a large amount of Old Turkic (OT) lexical elements in many semantic fields (such as names body part names, terminology of kinship, animal husbandry,
On the Etymology of the Hungarian Comitative-Instrumental Case Marker -val/-vel and the Postposition vele

agriculture, religious concepts, economy, color, fauna, etc.) but also some grammatical elements, such as the grammaticalized noun kor (‘age’, ‘epoch’, ‘era’; see Clauson, 1972: 642; Róna-Tas et al., 2011, I: 567-570) as a temporal suffix -kor (ekkor ‘by this time’; akkor ‘at that time’; ilyenkor ‘at such a time’, ‘in such case’; hétkor ‘at seven’; hét órakor ‘at seven o’clock’, etc.), the -nan/-nen ablative case marker in some fixed phrases and in a question word (Honnan? ‘Where from?’, innen ‘from here’, ‘here from’, etc.; it is not productive anymore), it seems reasonable to look around among the historical and modern Turkic languages, when we are searching for a reliable etymology of the Hungarian postposition vele and its grammaticalized comitative-instrumental marker -val/-vel. Such an extension of the research focus on the Turkic languages is justified by the fact that most of the supposed earlier etymological attempts were remarkably unconvincing and doubtful (Benkő, 1976, III: 1110). Even the author of the entry vele him/herself is uncertain in the historical-etymological dictionary of the Hungarian language (ibid.).

A Turkic etymology was first suggested by Vámbéry (1870: 186), and rejected by Benkő (1976: 1110), both without any explanation. What is worthwhile in Vámbéry’s account is that he observed structural parallelism between Hungarian vele and Azerbaijani (Azeri) dialectal bile and brought them in connection in the aspect of possessive suffix added to the adverb in both languages. Vámbéry presented just the Singular paradigm, omitting to display the semantic context as well. He omitted to present the source material for the Azeri dialectal data too, albeit he was an excellent field worker, so the data presented here could –in principle– derive from his fieldnotes (Vámbéry, 1870: 186):

Hungarian:

velem (with-POSS.1.SG),
veled (with-POSS.2.SG),
vele (with-POSS.3.SG);

Azeri dialectal:

bilem (?with-POSS.1.SG),
bileng (?with-POSS.2.SG),
bilesi (?with-POSS.3.SG).

About three decades later, Vámbéry expanded his previous incomplete declension chart with an explanation as follows:

[...] while some adverbs, like e.g., beraber (‘together’) borrowed from Persian, and bile (‘to, with, by, besides’) can be affixed quite regularly with possessive affixes and declined too. So, e.g.,

beraberüm, with me
beraberüñ,1 with you
beraberü, with him

We read likewise: beraberümdem (‘in my company’) and beraberüm dan (‘away from me’). So will be used bile (‘to, with, by, besides’) too:

bilem, together with (or to) me
bileni, together with (or to) you
bilesi, together with (or to) him

As I am expressing the opinion here, that in Turkish, one and the same word exists for ‘besides’ and ‘to’, I cannot avoid assuming Prof. Radloff’s remark, that the formation of the word ile (‘with’) seems inexplicable (Radloff, 1897: 84). From the available comprehensive Old Turkic texts, it has been well enough proven that bile has taken not only the meaning of ‘to’ or ‘besides’ but the sense of ‘together, with, at the same time’ as well, and that the western Turkic ile has arisen from bile, by the omission of labial anlaut13 (Vámbéry, 1901: 12–13).14

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11 ñ = ŋ; voiced velar nasal.

12 [Probably southern] Azeri.
However, it is unusual in most Turkic languages that an adverb bears possessive suffixes, therefore the occurrence should be analyzed in intra-Turkic cross-linguistic context, which task will be achieved in the recent section somewhat later.

There were multiple strategies to express instrumentality (Erdal, 2004: 175-177, 182) and accompaniment in OT (Tekin, 1990; Erdal, 2004: 180-181, 182, 379-380). According to Erdal’s thorough analysis, OT nominals had eleven active and productive case suffixes, whose one is instrumental, while the comitative, a twelfth case, was neither active nor productive and absent from the pronoun paradigms (ibid., 182). The OT instrumental suffix –(X)n was added to the postposition bi(r)lä ‘with’. As Erdal writes, Originally it probably applied to the postpositional phrase as a whole, putting it to adverbial use; in late Uyghur, however, bi(r)län becomes a variant of bi(r)läl. (ibid., 176)

So, birlä+n ‘together’ with the instrumental case suffix -n came into existence in the late OT period (ibid. 326, 331). Regarding the formation of OT adverb birlä, Erdal’s convincing analysis is as follows:

Thus, the OT adverb and postposition birlä derived most probably from bir- ‘one’ and the nominal lexeme (adverbial suffix) +lA, and then it has been petrified in this form and in the ‘with, together’ function (see also: Gronbech, 1936: 35). In later OT sources, it could lose its /r/ and was sometimes expanded with the INS marker -n to give either bi(r)län or simple bila in later (Old) Uyghur (Erdal, 2004: 111-112, 333). Erdal does not consider the adverbial constructions as a grammatical case, while Stolz included the Turkish postposition ile ‘with’ into his list of WITH-relators as a component of a coherent comitative-instrumental construction. 

Stolz omitted the Turkish -la/-le (-lA) COM/INS marker but added the Hungarian -val COM/INS marker (he forgot to mention the front vowel variant) and excluded the Hungarian postposition vele. However, both languages, viz. modern Turkish (Western Anatolian Turkic, Oghuz/ SW; see Schönig, 1997, 2: 264-274, esp. 268) and modern Hungarian employ a coherent (syncretistic or polysemous) COM/INS system, in which both an adverbial construction and case marker can express comitativity and instrumentality. This comitative-instrumental polysemy in both languages seems to be completely independent of the “Standard Average European” (SAE) (Heine & Kuteva, 2006) since it has been formed before the 13th century in the Eurasian Steppe zone, hence far from SAE and the German speakers as well.


Ebenso lesen wir: beraberümde (in meiner Begleitung) und beraberümdin (von mir weg). So wird auch bile (zu, neben) angewendet: bilem, nebst (oder zu) mir | bilei, nebst (oder zu) dir | bilesi, nebst (oder zu) ihm | bilemi, nebst (oder zu) uns | bileleri, nebst (oder zu) ihnen.

Indem ich hier die Meinung ausspreche, dass im Türkischen für „neben“ und „zu“ ein und dasselbe Wort existirt, kann ich nicht umhin, auf die Bemerkung Prof. Radloff’s einzugehen, dem die Entstehung des Wortes ile (mit) unerklärlich erscheint (Dr. W. Radloff, Die alttürkischen Inschriften der Mongolei. Neue Folge, St. Petersburg, 1897, p. 84.). Aus dem vorliegenden reichhaltigen alt-türkischen Texte ist es zur Genüge erwiesen, dass bile nicht nur in der Bedeutung „zu“ oder „neben“, sondern auch im Sinne von „zusammen, mit, zugleich“ zu nehmen ist, und dass das westtürkische ile, mit Weglassung des labialen Anlautes, aus bile hervorgegangen ist (Vámbéry, 1901: 12-13).

14 Translated from German by A. M.

15 Radlov’ & Malov’ 1913.
In the sum of the grammaticalization processes of OT postposition *birlä* and instrumental marker *-n*, the latter had been added to a rare OT comitative marker *-lıγu/-ligü* (OT *birlän* had together not yet a comitative-instrumental role, it expressed accompaniment, which has been preserved sporadically in several modern Turkic languages (Turkmen, Tatar, Uyghur, Kazakh, etc.; see also Levitskaya, 1976: 23). See an incomplete list of historical and modern forms of it, including the grammaticalized COM and/or INS suffixes (for the classification see Johanson, 1998: 82; 2022: 84):

**Historical Turkic Languages:**

**Old Turkic (OT):**

OT *birlä* ‘with’ (Clauson, 1972: 364-65) *birlän* (late OT; Erdal, 2004: 326, 331); Old Uyghur *bilä/bilän/birlä* ‘ile, beraber, birlikte’ (Caferoğlu, 1968: 42)

**Middle Turkic:**

Chagatay *-n/, -ïn/-in, -un/-ün* (fossilized); *-la/-lä* (INS; fossilized, rare; Eckmann, 1966: 102; Bodrogligeti, 2001: 47-48); *bilä/birlä/birlän* ‘with, by; and’ (Eckmann, 1966: 284; conf. Boeschoten, 2022: 169-171)

Ottoman Turkish *-la/-le; ile, bile* (PP; Erdal, 1991, I: 403-404; Bulut, 2003: 324)

**Modern Turkic Languages:**

**Southwestern Branch, Oghuz Turkic:**

Turkish *ile* (PP); *-la/-le* ‘with, by, and’ (COM/INS; Kornfilt, 1997: 115-116, 227-228); Gagauz *ile/ilen* ‘c’ (PP; Pokrovskaya, 1964: 135-136; *-lan/-län/-nän* (Levitskaya, 1976: 23); [standard] Azeri *ilä* (PP); *-la/-lä*; dialectal *-(i)nan/-i)nän; -ilan/-ilän* ‘by, with, and’ (Householder, 1965: 243; Ragagnin, 2022: 247, 254); Turkmen *-la(n)/-le(n); bile/bilen* ‘with, and, by; and’ (Erdal, 2004: 326, 331); Azeri *ilän* (-lanä) (COM/INS; Mehmet, 2007: 329-330)

**Southeastern Branch, Karluk Turkic:**

Uzbek *bilän* (pronounced *blän*) ‘with, by, and’ (PP; Boeschoten, 2022: 392, 400-401, 403, 405-406); *-b(i)lan* ‘with’ (Sjoberg, 1963: 59); modern Uyghur *bilän* ‘with’ (PP; Yakup, 2022: 420); Eastern Turkic/ modern Uyghur dialectal *vile* [vilä] (Jarring, 1951, IV: 89); *vilen* (Guma, Hotan Prefecture, Southern Dialect; Jarring, 1951, IV: 32, 79, 83, 89, 102, 103, 132, 134, etc.); *bile/birle/vile* (Jarring, 1964: 55; see also Clauson, 1972: 364-65).

**Northwestern Branch, Kipchak Turkic:**

Kazakh *-men/-ben/-pen* (Krippes, 1996: 15-16); Kyrgyz *menen* (Judahin, 1965: 524); Karakalpak *menen/benen/penen* ‘with’ (Baskakov, 1958: 456; Wurm, 1951: 564); Nogai *ban/ben; man/pen; pan/pen; mînän/minen* ‘с, вместе’ (PP; Baskakov, 1963: 70, 214); Tatar *-bilän* ‘with’ (Berta, 2022: 304) *bilän/mînän, birlä* (PP; ibid. 315); Bashkir *bilän/mînän* (ibid. 315); Crimean Tatar *ile* (PP); *-nen*  

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16 Tulu wrote the suffixed noun in question in line 4) as *bu mâllāmâlî* ‘with this possession’ (ibid. 90).
(dialectally also –nan); -le ‘with’ (Kavitskaya, 2010: 81); Karachay-Balkar bla (Tenišev, 1989:153); Kumyk bulan ‘c, со, вместе с’; birče/birge ‘вместе, совместно’ (Bammatov, 1960: 90; Bammatov, 1969: 77, 78, 85-86)

**Northeastern Branch, Siberian Turkic:**

Altaï Ø; -la/-le/-lo/-lō; Chulym -vele (INS; Schönig, 1998: 409) -vele/-bele/-mele/-v’la/-b’la/-vala/-mïla/-bïlaŋ/-pïlaŋ (COM/INS; Pomorska, 2001: 105-106, 110); Khakas nada, hosti; pirge (‘together’; ‘вместе’; Čankov, 1961: 100); Shor pirge, pir-da (‘собищта, вместе, совместно, etc.’; Kurpeško-Tannagaševa et al., 1993: 41); Tuvan -bile (-la) (Tenišev, 1968: 103; Anderson, 2003: 175)


**Chuvash, representing Oghur Turkic:**

Chuvash pîrle (> bïla > bla > ba > -pa, -pe (‘with, and’); -pala/-pele (Levitskaya, 1976: 22-24, 27); -Ba/-Bä (COM/INS; Agyagási, 2022: 464)

**Khalaj, representing Arghu Turkic:**

Khalaj -la(n)/-le(n); -na/-ne (Bulut, 2022: 294).

As one can see in the preserved forms, there are a vast number of special morphological and morphophonological phenomena that should be analyzed in future research. In respect of our topic in etymology and comitative-instrumental typology, it should be mentioned that there is sometimes larger intra-Turkic variation in form, usage, and typological characteristics (e.g., between Yakut and Tuvan or between Sonqor and Western Anatolian Turkic) than between the non-Turkic labeled Hungarian and Chulym or Uyghur (e.g., the Turfan dialect).

Nonetheless, there are several morphophonological problems in the supposed etymology to be solved. The initial v- in the Hungarian postposition vele is not common among the modern Turkic languages. There could have been proceeded a spirantization in the initial position: b- (voiced bilabial plosive) > v- (labio-dental plosive), both in Hungarian, in Chulym (-vele/-vïla) and in Uyghur (dialectal vile), while analogous shift happens sporadically (in monosyllabic verb stems) in Salar (Dwyer, 2007: 217-19), as well as in the Western Oghuz languages (Doerfer, 1990: 31, 34). There are several direct and indirect data, e.g., Oghuz personal names among the multiethnic early Hungarians (see e.g., Ligeti, 1979, II: 407-469) about the ethnic and cultural contact situations between early Hungarians (they were probably in disparate rates and varieties bi- and multilingual, including diverse variants of a hypothetical “proto-Hungarian”) and the speakers of Western Oghuz languages at least during the 8–9th centuries, but this subfield of contact and historical linguistics has not been worked out properly. In any case, Claus Schönig observed in respect of the Oghuz-Chuvash (Bolgar Turkic/Oghur subgroup; Schönig, 1997, I: 121-122, 127-128) connection the following grammatical correspondences:

> Besides lexical features, we find an astonishing parallel in suffix structure, mainly in that of case suffixes: Chuvash and Oghuz have kept the Old Turkic type of genitive suffix *+(n)Iŋ with the structure +(C)V̆C; most of the modern units have produced [been] by analogy genitive suffixes of the frequent type +CVC. In Chuvash and Oghuz, the +(C)V̆C-type has spread onto the dative and the accusative suffixes too. In other Turkic units, it can be found only sporadically. […] (Schönig, 1997: 272)

In this context, it would be surprising if Hungarian, with its deep historical and geographical roots in western Central Asia, would be untouched by Oghuz Turkic effects in its phonology, morphology, and morphophonology. Even so, if the grammatical elements in question share a common origin, it should be demonstrated that in Hungarian, there has been a spirantization in the initial position: b- > v-. In Hungarian, such a development might occur in the following cases:

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Attila Mátéffy

OT *bol* - originally ‘to become (something)’ > SW Turkic *ol* - ‘to be, occur, happen’ (Clauson, 1972: 331-32) ~ Hung. *vol* - ‘to be, been, is’ (Benkö, 1976: 1084-1085; 1171; conf. Ligeti, 1977: 66-67; etc.)

For unknown reasons the *b-* was elided in some Western [Turkic] languages at an early date, prob. through an intermediate form with *w-*. Today *ol-* is the only form in SW Az[eri], Osm[an Turkish] (but not Turkmen) and occurs sporadically elsewhere [...]. (Clauson, 1972: 331)


Another problem is of morphological nature. We would expect that the origin of the Hungarian comitative-instrumental marker -val/-vel and its free counterpart, the postposition *vele* goes back to a nominal base, similarly to Turkish *önümde, önünde, önünde* or *yanında, yanında, yanında*, etc. In contrast, OT *birlä* and its modern counterparts generally cannot bear possessive suffixes (e.g., West Anatolian Turkish *ilem, ilen, ilesi*), which would indicate that it is not a nominal base. It should be mentioned at this point that not only the postposition *vele* but most of the Hungarian postpositions can bear possessive suffixes regularly in the entire paradigm. I provide below a declination chart of Hungarian postpositions, with possessive suffixes in all three persons in singular and plural:

- **SG**:
  - *(ő)*
    - *(ő)*
    - *(ő)*
- **PL**:
  - *(en)*
  - *(en)*
  - *(en)*

etc.: *(en)bennem, (en)belőlem, (en)belém, (en)rólam, (en)rám, nálam, (en)tőlem, (en)hozzám* [the entire paradigm]

The regularity of the postposition *vele* indicates that it should be a part of the Hungarian language, when the system of postpositions has been formed. The affixed forms demonstrate that the stem is not *vele* but *vel*-. This circumstance could induce difficulty in the correlation between the OT *birlä* (bir+lā) and the Hungarian *vele* (*vel*+e). Since the grammaticalized comitative/instrumental markers (as a result of the fast speech, becoming an enclitic) are -val/-vel in Hungarian, I suggest that the *-e* [*-ē*] ending of the *birlä > *wirlä > vélle > véle/vele* dropped out, and this form had an effect on the postposition *vele* as well. The latter has been inflected by the 3.SG possessive affix -e, where through the comitative/instrumental postposition became *vel + e*.

It seems to be another difficulty in Morphology to see –viz. the dropping-out of the –*r* from the –*rl*-cluster, which kind of morphophonological change is not common in Hungarian. However, one can find among the diachronic data of Hungarian other examples as well.

- *birlä: -rI > -lI > -l* (vele)
- *vele* (Hung.) < 1552 CE: *véle < vélle*; 1466 CE: *én véllem ‘with me’ < *wirlä < birlä* (OT).

Analogously, another Hungarian lexical element (noun) of OT origin demonstrates the same phonological development (consonant shift in the consonant cluster; regressive assimilation: -rl- > -ll-) in the Hungarian language:

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17 Since the possessive suffixes make the meaning unambiguous, the personal pronouns *(en, te, ű, mi, ti, űk)* can be omitted. In everyday usage, it is the main strategy. The same is true for the contemporary literary language, though the usage of the personal pronouns can emphasize the person, to whom the postposition is applied, or make the message somewhat high-toned (e.g., in religious texts), pathetic, poetic, or archaic. Prior to the 20th century, the usage of personal pronouns in such constructions was more common. In written language, the personal pronoun, and the postposition must be written in one word: *envelem, minekünk, tiértetek*, etc.

In both cases, there were variations in Hungarian (-l-, -ll-), but, in the end, in the first case, after the standardization, the final form became vele with -l-, while in the second case, serleg with -rl-. This bidirectional phonological development18 is quite similar to those of the Uyghur dialects of East Turkestan,19 where a postposition birlä (giplä, ‘with’) and an adverb billä (gilä, ‘together’) exist in one and the same dialect simultaneously, as Radloff informed us (Radloff, 1897: 84; conf. Brockelmann, 1954: 182–183). Hitherto, I have not been able to identify which Uyghur dialects have the above-mentioned feature, however, one of them, namely the Turfan dialect (e.g., Qara-khoja/Gaochang) and its subdialects seem to be certain:

birlä, billä, birlän, billän, bilä, bilän mit ['with'] […] (Le Coq, 1910, 1: 56, 85)

Otherwise, regressive assimilation of this kind (final -r followed by a suffix-initial -l [-r + l- > -ll-] is frequent in a modern Western Iranian Turkic language, the Qashqa’i as well (Bulut, 2016: 246).

As we have seen above, the Hungarian vele + possessive suffix construction functions as a personal pronoun: velem ‘with me’, veled ‘with you’, vele ‘with her/him,’ etc. While such structure is absent in the OT, it seems to be lacking in the Middle Turkish, with the possible but undocumented exception of Early Ottoman Turkish (see: Bulut, 2003: 324),20 just as in most modern Turkic languages, one can find not the same but similar construction in some Turkic dialects in Western Iran and Iraq (Azeri, Bayat, Khalaj, Sonqor and Erbil of Turkmen), where it has a function of a reflexive pronoun (bile + possessive suffix + case marker; see e.g., Soper, 1987: 386-387 [sample sentences (70/c), (70/e), and (71)], 388-389 [(74)], 401-402 [(92/a)]; Bulut, 1999: 20-21; Bulut, 2003: 321-335; Bulut, 2016: 248-249). Consequently, Hungarian would not be the only example for such construction based on the pronominal stem bile/vele of possible OT origin. Another parallelism between the discussion of the etymology of bile in the above Western Iranian and Iraqi Turkic dialects and vele in Hungarian is the debated OT etymology: < (?) OT birlä.

Yet, there is little evidence to identify the pronominal stem bile with the old postposition bile < birle, as it would be quite unusual for real postpositions to take possessive suffixes across Oghuz Turkic languages. Furthermore, combinations of bile + possessive suffix do not seem to have belonged to the inventory of pre-thirteenth century Turkic texts (Bulut, 2003: 325).

Bulut tended to agree with Soper, whose opinion was that bilä would go back to the Persian belä ‘so, such’ that can combine with possessive suffixes (Bulut, 2016: 249; footnote 16). Albeit Soper’s translation for the Qashqa’i (Qashqay) pronominal stem seems somewhat biased, since belä-m-ä means ‘me’ (as he indicated in square brackets), but he translated it as “such-my-DAT”, which is based on his opinion that bilä/belä would originate from Persian belä ‘so, such.’ He did it in all other cases alike. Recently, Elisabetta Ragagnin follows the opinion of Bulut in her closing remark on the pronominal stem bilä- (Ragagnin, 2020: 577-579) regarding its etymology, although she seems to have forgotten to acknowledge that the suggestion Bulut uses derives

18 Conf. the somewhat similar phonological and lexical split recorded in a pre-modern (2nd half of the 17th c., Isfahan, Safavid Iran) Azeri transcription text in Latin script (“text L”) (see Rentzsch, 2011: 337). „Das nebeneinander von ilan/man und bila in Text L ist ein Beispiel für eine lexikalische Spaltung, bei der Etymon durch unterschiedliche lautliche Entwicklungen zu zwei Lexemen mit divergierenden Bedeutungen geworden ist (Rentzsch, 2011: 339-340).“

19 Radloff wrote “languages” instead of dialects, which suited the actual ethnopolitical situation at the end of the 19th century. Since 1921, these languages called uniformly (modern) Uyghur, and their three main dialects; the Central (includes Turfan, Kucha, Aqsu, Kashgar, and Yarkand), the Southern or Khotan, and the Eastern or Lopnor dialects (see Yakup, 2005: 8ff; see also Yakup, 2022: 421-422).

20 “[…] As there are, in fact, numerous examples for texts displaying a mixture of Eastern and Central or Western Oghuz characteristics, the entries in the Tarama Sözlüğü do not necessarily give evidence that bile was widely used in Ottoman Turkish. Yet, similar forms do appear in 17th century Iran-Turkic materials from Isfahan.” (Bulut, 2003: 324) Yet there are abundant written sources about the usage of bile as a pronominal stem in Ottoman Turkish, but not in inflected form.
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originally from Soper. In respect of the etymology of bilä, Ragagnin also forgot to mention the opposite standpoint, namely the OT origin, supported by Rentzsch (2011: 339-340; based on the corpora gathered by Doerfer & Hesche, 1989: 339). The author of this paper also supports the opinion that the pronominal stem bilä originated from the OT birlä, instead of the Persian adverb belä. The Hungarian pronominal construction [velle + possessive suffix] may represent an indirect argument for this idea. The semantic and cognitive analysis of possible correspondences between reflexivity and comitativity (conf. the reflexive-comitative polysemy in several Australian languages; Heine, 2000: 11) in my view is one of the most relevant aspects for future research.

Summary

In this study, I have proposed a diachronic evaluation of the evolution of comitative-instrumental markings that considers socio-historical and sociolinguistic background information as well. According to Erdal’s analysis, the Old Turkic case system was very rich (Erdal, 2004: 168); an analogous characteristic of Hungarian with its eighteen grammatical cases. The latter has been formed by grammaticalization, a process consisting of parallel features with those of Old Turkic. Since the Hungarian case system and especially the comitative-instrumental marker and the related postposition have no acceptable etymologies among the so-called Uralo-Yukaghir languages, it seems reasonable to search for parallel constructions among the Turkic languages. From the 6th till the 10th centuries, the multiethnic Hungarian clans have lived in a shared socio-historical environment with several Turkic and Iranian pastoral nomad and semi-nomadic populations in the Eurasian Steppe zone, such as Alans, Bulghars, Kabars, Oghuzes, etc., whose culture resembled that of and shared in many aspects with the Hungarians. Bi- and multilingualism were prevalent strategies for survival and prosperity. The diachronic and contemporary linguistic data of the Hungarian language reflects markedly these long-term historical contacts. Since the semi-nomad Hungarians were a heterogeneous, multiethnic, and dynamic population, an item-based approach would be much more promising than another paradigm, which is based on the notion of “genetics of syncretism” (Stolz, 1997: 127), and unjustified “genetic affiliation of a language” (ibid. 155). Regarding the available cross-linguistic data and extensive information on the linguistic diversity and linguistic change in a Eurasian context, it is proposed that the Hungarian and Turkic polysemous comitative-instrumental constructions are historically and etymologically related to each other.

Abbreviations Used

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>COM</td>
<td>Comitative</td>
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<tr>
<td>COM/INS</td>
<td>Comitative-Instrumental</td>
</tr>
<tr>
<td>COM-INS</td>
<td>Comitative-Instrumental opposition</td>
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<td>Genitive</td>
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<td>Instrumental</td>
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<td>Present</td>
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<td>Reflexive Pronoun</td>
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<tr>
<td>OT</td>
<td>Old Turkic</td>
</tr>
<tr>
<td>UY</td>
<td>Uralo-Yukaghir</td>
</tr>
</tbody>
</table>
References


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Zolnai, Gy. (1894). *Nyelvémlekeink a könyvnyomtatás koráig (Our language records until the age of printing press)*. Budapest: Magyar Tudományos Akadémia.
Mood Selection of Epistemic and Deontic MUST in Persian

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Abstract
This paper presents novel data from Persian which bears on the interaction of modal flavors, on the one hand, and tense, aspect and mood on the other. More particularly, we examine the case of the necessity modal auxiliary bāyad ‘must’ in its epistemic and deontic readings, and discuss different tense/aspect/mood combinations in its complements.

Keywords: Modality, T(ense)A(spect)M(ood), Deontic MUST, Epistemic MUST, Persian

Introduction

Kratzer’s semantics for modals (Kratzer, 1981, 1991) assumes three dimensions for modal expressions, namely, MODAL FORCE (necessity, weak necessity, good possibility, etc.), MODAL BASE (circumstantial vs. epistemic), and ORDERING SOURCE (deontic, bouletic, etc.). Modals that have epistemic modal bases are called EPISTEMIC MODALS, and those with circumstantial modal bases are called ROOT MODALS. The latter group can be further differentiated according to their ordering sources into deontic, bouletic and teleological modals. While the modal force is usually determined lexically (must denotes necessity and may possibility), modal force and ordering source are determined contextually via CONVERSATIONAL BACKGROUNDS, i.e., the set of propositions denoted by phrases like what is known and given the circumstances which mark, respectively, epistemic and circumstantial modal bases or what the law provides and what is preferred which convey, respectively, deontic and bouletic ordering sources. This setting enables the system to assign one lexical entry to must, shown in (1), in which both the modal base (f) and the ordering source (g) are provided by context. Given the cross-linguistic observation that the same modals express both epistemic and root meanings (epistemic must in it must be raining, and root must in he must go to jail), this is a welcome result because it assumes a single meaning for each modal, and derives its flavors through context.

1 \[[must\]^{w,g}= \lambda f_{\text{epistemic}} \cdot \lambda g_{\text{deontic}} \cdot \lambda q_{\text{deontic}} \cdot \forall w' \in \max_{g(w)} (\cap f(w)): q(w')=1
von Fintel & Heim (2011, p. 61)

Kratzer mentions that her two modal bases “may correlate with a difference in argument structure” (Kratzer, 1991, p. 650), and there are a couple of studies which discuss the interaction of modal flavors and other grammatical categories beyond contextual factors; two of such studies which are more relevant to the topic of this paper are Stowell (2004), which examines the interaction in English of epistemic and root modals with tense, and Hacquard (2009), which gives an account of ‘actuality entailment’ in French which is related to the interaction of modal flavor and aspect. In what follows, we will briefly discuss the two studies.

Stowell (2004) gives the following examples in English, and argues that while root modals are interpreted at the event time (2a describes Carl’s ability at the utterance time, and 2b his ability at a past time), epistemic modals are always interpreted at the utterance time meaning that they describe the speaker’s epistemic evaluation at the actual utterance time, no matter if the event time is in the past or present (3a-b)
2  a. Carl can’t move his arm (ability at the utterance time)
   b. Carl couldn’t move his arm (ability at a past time)
3  a. There has to be at least a hundred people here.
   b. There had to be at least a hundred people there.
   (‘There must have been at least a hundred people there.’)

Stowell then proposes an analysis which puts the epistemic modals on a position higher than tense:

“… (T)he morpho-syntactic past tense in (3b) is interpreted as though it were under the scope of the epistemic modal have-to … This suggests an analysis whereby the epistemic semi-modal is required to undergo movement in the derivation of the Logical Form (LF) representation to a position above that of the past tense, which is then interpreted as though it were equivalent to a (non-finite) perfect under the scope of the semi-modal” (Stowell, 2004, p. 626)

Hacquard (2009) discusses the case of ‘actuality entailment’ in French which describes this observation that the use of perfective on root modals, but not epistemic modals, forces the proposition expressed by the complement of the modal to hold in the actual world; in (4) CAN has an ability meaning, and the use of perfective leads to an actuality entailment, and thus we cannot continue the sentence by negating the complement proposition. In (5), however, where the same modal has an epistemic reading, we see that the actuality entailment does not hold, as the felicitous continuation in (5) suggests. Hacquard argues that this phenomenon finds a natural explanation if we assume that root modals scope below aspect, while epistemic modals scope above aspect. Aspect in this framework is taken to quantify over events, and comes with its own world of evaluation. Now in the case of root modals where aspect scopes above modal, aspect has the actual world as its evaluation world, and therefore the event binder in the aspect node ensures that there is a VP event in the actual word, which explains the actuality entailment. In the case of epistemic sentences, on the other hand, the epistemic modal scopes above the aspect, and therefore aspect’s world of evaluation is the one provided by the modal. Consequently, the event binder in the aspect node only ensures that there exists a VP event in the worlds quantified over by the epistemic modal and not necessarily in the actual world, which explains the lack of actuality entailment therein.

4. Jane put traverser le lac à la nage, # mais elle ne le fit pas.
   Jane can-past-pfv cross the lake by swim, # but she it do-past-pfv not
   “Jane could (was able to) swim across the lake, but she didn’t do it.”

5. Bingley a (bien) pu aimer Jane, comme il a (bien) pu ne pas l’aimer.
   Bingley can-past-pfv (well) love Jane, like he can-past-pfv (well) not her love.
   “Bingley may (well) have loved Jane, just as he may (well) not have loved her.”

As we see, Stowell (2004) and Hacquard (2009) account for the differences between epistemic and root modals by assuming two syntactic positions for them, a high position above tense for epistemics, and a low position below aspect for root modals, as shown in (6a-b). This, however, poses a problem for single entries assumed for epistemic and deontic modals, e.g., the one given for MUST in (1), because now epistemics are TP-level and combine with complements of type <st>, while deontic modals are VP-level and combine with complements of type <εt>. Therefore, Hacquard (2009) provide two entries for MUST as in (7a-b).

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1 Among all the root modals we are only concerned with deontic ones in this study, and therefore in what follows we use the more specific term deontic instead of the general term root.
Mood Selection of Epistemic and Deontic MUST in Persian

6 a. Low position for deontic modals
   b. High position for epistemic modals

7 a. \[ \text{[must}_{\text{deon}}]w = \lambda p_{\epsilon, \text{st}}. \lambda e_{\epsilon}. \forall w' \text{ compatible with obligations in } w: p(w')(e)=1 \]
   b. \[ \text{[must}_{\text{epis}}]w= \lambda p_{\epsilon, \text{st}}. \forall w' \text{ compatible with what is known in } w: p(w')=1 \]

Hacquard (2010), on the other hand, tries to maintain Kratzer’s unified analysis, and proposes a framework where both VP and TP are of type \(<\text{st}>:\) following von Fintel’s (2001) lecture notes, she assumes aspect to merge as an argument of the verb, which then moves out of this position, leaving a trace of type \(e\) behind, and binds the trace from its target position. In this way, as the diagrams in (8) show, both VP and TP receive type \(<\text{st}>\), and therefore, we can maintain single entries for epistemic and deontic modals while letting them appear in two different positions. Hacquard’s proposed entries for modals, however, differ from Kratzer’s proposal in that modal bases and ordering sources are now relativized to events, rather than to worlds of evaluation. (9) presents an event-relative denotation for MUST: modals in the low position are interpreted relative to the VP-event, so they are anchored to the event time and to event’s participants, while those in the high position are interpreted relative to the speech event, thus anchored to the speech time and to the speaker. Hacquard then gives an account why high position modals are interpreted as epistemic ones, while those in the low position are root modals.

8 a. \[ \text{[must}_{\text{deon}}]w = \lambda p_{\epsilon, \text{st}}. \lambda e_{\epsilon}. \forall w' \text{ compatible with obligations in } w: p(w')(e)=1 \]
   b. \[ \text{[must}_{\text{epis}}]w= \lambda p_{\epsilon, \text{st}}. \forall w' \text{ compatible with what is known in } w: p(w')=1 \]

In this paper, we present novel data from Persian which bears on the interaction of modal flavors, on the one hand, and tense, aspect and mood on the other. More particularly, we examine the case of the necessity modal auxiliary \(bāyad\) ‘must’ in its epistemic and deontic readings, and discuss different tense/aspect/mood combinations in its complements. Persian, like French, makes morphological distinctions between perfective, imperfective and perfect aspects, but additionally, the finite complements to \(bāyad\), in contrast to infinitival complements in French, feature mood distinctions, i.e., indicative/counterfactual vs. subjunctive. Therefore, the data in Persian informs us about the interaction of modal flavors not only with tense and aspect, but with mood as well. The roadmap of the paper is as follows: in section 2, we give some background information on Persian
verbal system and then present our data on epistemic bāyad in 2.2 and on deontic bāyad in 2.3. This section ends with some generalizations about the data followed by three research questions. In section 3, we provide an analysis in two parts: 3.1 discusses the interaction of modal flavor and aspect and 3.2 the interaction of modal flavor and mood. Section 4 concludes the paper.

2. Data

2.1 Background data on tense/aspect system of Persian

According to Windfuhr & Perry’s (2009) description of Persian verbal system, indicative mood makes morphological distinctions between three aspects, i.e., perfective, imperfective and perfect, and two tenses, present/future\(^2\) and past. Table 1 shows the tense/aspect combinations in the indicative mood for the verb rav- (present stem)/ raft- (past stem) ‘to go’ conjugated for 3rd singular. As we can see, the perfect forms are periphrastic, consisting of the perfect participle plus the copula in present and past tense forms. As for mood distinctions, in addition to indicative, Persian has subjunctive and counterfactual. The former has two forms: subjunctive imperfective, which, following the general practice in the literature we call subjunctive present, and subjunctive perfect, which is also known as subjunctive past. Counterfactual mood also has two forms: counterfactual past, which is identical to imperfective past indicative, and counterfactual past perfect, which is identical to past perfect indicative. Subjunctive and counterfactual forms for 3rd singular of the same verb rav- (present stem)/ bāyad (past stem) are shown in Table 2. As we can see, parallel to the perfect periphrastic form in the indicative mood, subjunctive perfect is also periphrastic, consisting of the perfect participle plus the subjunctive form of the copula.

<table>
<thead>
<tr>
<th>Tense/Aspect</th>
<th>Present/Future</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfective</td>
<td>raft go.PT.3SG</td>
<td></td>
</tr>
<tr>
<td>Imperfective</td>
<td>mi-rav-ad IMPFV-go.PR-3SG</td>
<td>mi-rafi IMPFV-go.PT.3SG</td>
</tr>
<tr>
<td>Perfect</td>
<td>rafte ast go.PART is.3SG</td>
<td>rafte bud go.PART is.PT.3SG</td>
</tr>
</tbody>
</table>

Table 1. Persian tense/aspect system in the indicative mood

<table>
<thead>
<tr>
<th>Tense/Aspect</th>
<th>Subjunctive</th>
<th>Counterfactual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfective</td>
<td>be-rav-ad SUBJ-go.PR-3SG</td>
<td>mi-rafi IMPFV-go.PT.3SG</td>
</tr>
<tr>
<td>Imperfective</td>
<td>be-rav-ad SUBJ-go.PR-3SG</td>
<td>mi-rafi IMPFV-go.PT.3SG</td>
</tr>
<tr>
<td>Perfect</td>
<td>rafte bāš-ad go.PART be.SUBJ-3SG</td>
<td>rafte bud go.PART is.PT.3SG</td>
</tr>
</tbody>
</table>

Table 2. Persian tense/aspect system in subjunctive and counterfactual moods

2.2 Tense/aspect/mood selections in the complements to epistemic bāyad

In this section, we examine the tense/aspect/mood combinations in the complements to epistemic bāyad. In presenting our data, we first give non-modal sentences and then trace the changes that occur by introducing

\(^2\) There is a periphrastic form which is exclusively used for the future tense, but it does not appear in any of the modal constructions that are of interest to us, so we do not discuss it further.
bāyad to the sentence: in (10-11), the non-modal sentences (a) features simple present tense, and adding bāyad changes the form to subjunctive present (b). (12) features present perfect tense, and adding bāyad changes the form to subjunctive perfect (b). Finally, (13-14) feature simple and imperfective past forms, and we see that the corresponding modal sentences both use subjunctive perfect.

Simple present

10a  Sām  dar  xāne  ast  
Sām  in  house  is.IND  “Sām is home.”

10b  Sām  bāyad  dar  xāne  bāšad  
Sām  in  house  is.SUBJ.PR  “Sām must be home.”

11a  injā  ziyād  bārān  mi-āyad  
here  a lot  rain  come.IND  “Here, it rains a lot.”

11b  injā  (qāedatan)  bāyad  ziyād  bārān  bi-āyad  
here (supposedly)  a lot  rain  come.SUBJ.PR  “Here, it must rain a lot.”

Present perfect

12a  māmān dige alān  rafte  sar-e kār  
mom  by  now  gone.IND  to work  “By now, mom has gone to work.”

12b  māmān  dige alān  bāyad  rafte bāše  sar-e kār  
mom  by  now  gone.SUBJ.PF  to work  “By now, mom must have gone to work.”

Simple and imperfective past

13a  parvande-ye  man  avāset-e  Mehr  raft  barāye  chek  
file-EZ  my  mid  Mehr  went.IND  for  check  “My file was sent for checking in mid September.”

13b  parvande-ye  man  bāyad  avāset-e  mehr  rafte bāšad  barāye  chek  
file-EZ  my  mid  Mehr  gone.SUBJ.PF  for  check  “My file must have been sent for checking in mid September.”

14a  Sām  ruz-i  3-4 sāʔat  tamrin-e  piyāno  mikard  
Sām  every  day  3-4 hours  practice-EZ  Piano  would do.IND  “Sām practiced the Piano 3 hours every day.”

14b  Sām  ruz-i  3-4 sāʔat  bāyad  tamrin-e  piyāno  karde bāšad  
Sām  every  day  3-4 hours  practice-EZ  Piano  done.SUBJ.PF  “Sām must have been practicing the piano for 3-4 hours every day”

2.3 Tense/aspect/mood selections in the complements to deontic bāyad

In this section, we examine the tense/aspect/mood selections in the complements to deontic bāyad. We observe similar changes as for epistemic bāyad in present contexts, but in past contexts things turn out to be different. (15-16) feature simple present forms, and adding bāyad changes the forms to subjunctive present. The same holds for (17) in which adding the modal changes the present perfect indicative to subjunctive perfect. In past contexts, however, as we see in (18) which features simple past form and in (19) which has imperfective past form, adding bāyad to the sentence does not change the mood of the sentence, as it does in epistemic sentences; rather, we have imperfective past forms in both simple past and imperfective past sentences (18b-19b).
Simple present

15a  Sām  har ruz  be  madrese  mi-ravad
    Sām  every day  to  school  go.IND
    “Sām goes to school every day.”

15b  Sām  bāyad  har ruz  be  madrese  be-ravad
    Sām  every day  to  school  go.SUBJ.PR
    “Sām must go to school every day.”

16a  Sām  fardā  be  ketābxāne  mi-ravad
    Sām  tomorrow  to  library  go.IND
    “Sām (will) go to the library tomorrow.”

16b  Sām  bāyad  fardā  be  ketābxāne  be-ravad
    Sām  tomorrow  to  library  go.SUBJ.PR
    “Sām must go to the library tomorrow.”

Present perfect

17a  Sām  qablan  šām  xorde ast
    Sām  previously  dinner  eaten.IND
    “Sām has eaten dinner already.”

17b  barāy-e inke  betavānad  keyk  boxorad,  bāyad  qablan  šām  xorde  bāšad
    in order to  is able.SUBJ  cake  eat.SUBJ.PR  previously  dinner  eaten.SUBJ.PF
    “In order (for Sām) to have permission to eat some cake, he has had to eat dinner first.”

Simple and imperfective past

18a  Sām  diruz  be  ketābxāne  raft
    Sām  yesterday  to  library  went.IND
    “Sām went to the library yesterday.”

18b  Sām  diruz  bāyad  be  ketābxāne  mi-raft,
    Sām  yesterday  to  library  would  go.IND
    “Sām had to go to the library yesterday.”

19a  Sām  hafte-ye  piš  har ruz  dars  mixānd
    Sām  week-EZ  last  every day  would study.IND
    “Sām was studying every day last week.”

19b  Sām  hafteye  piš  har ruz  bāyad  dars  mixānd
    Sām  week-EZ  last  every day  would study.IND
    “Sām had to study every day last week.”

The observations for epistemic and deontic bāyad are summarized in Table 3-4. As Table 3 shows, epistemic bāyad always has subjunctive forms in its complements, either subjunctive present or subjunctive perfect. Deontic bāyad, however, selects subjunctive only in present/future contexts, but in past contexts selects imperfective indicative in both simple past and imperfective past forms. In other words, there is no difference between epistemic and deontic bāyad in present/future contexts, but in past contexts epistemic bāyad triggers subjunctive, while deontic bāyad retains the same indicative mood.
The generalizations made above raise the following questions:

**Question 1:** How can we describe the distribution of subjunctive present and subjunctive perfect in epistemic sentences?

**Question 2:** How can we account for different behaviors of deontic and epistemic modality in past contexts?

**Question 3:** Why do we get imperfective indicative in deontic past sentences?

3 Analysis

In our analysis, we adopt the Davidsonian tradition (Davidson, 1967) and assume a referential analysis of tense where tenses are pronouns (cf. Partee, 1973). In this setting, verb phrases are taken as predicates of events, i.e., of type $\lambda t. \exists e \ [t \subseteq \text{time(e)} \land p(e)=1]$ which combine with the Aspect node. Aspects quantify over events and introduce the time argument. Tense then saturates the time argument introduced by Aspect, and returns a proposition. This proposition (of type $\lambda t. \exists e \ [(\text{time(e)} < t \land p(e)=1]$) is then evaluated true or false against the evaluation world.

3.1 Aspectual distinctions in the complements of epistemic and deontic bāyad

The generalizations made above raise the following questions:

**Question 1:** How can we describe the distribution of subjunctive present and subjunctive perfect in epistemic sentences?

**Question 2:** How can we account for different behaviors of deontic and epistemic modality in past contexts?

**Question 3:** Why do we get imperfective indicative in deontic past sentences?

### Table 3. change of tense/aspect/mood in epistemic and deontic bāyad

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<thead>
<tr>
<th></th>
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<tr>
<td><strong>Perfective</strong></td>
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<td></td>
</tr>
<tr>
<td>Imperfective</td>
<td>indicative</td>
<td>subjunctive perfect</td>
</tr>
<tr>
<td>Perfect</td>
<td>indicative</td>
<td>subjunctive perfect</td>
</tr>
</tbody>
</table>

**Analysis**

In our analysis, we adopt the Davidsonian tradition (Davidson, 1967) and assume a referential analysis of tense where tenses are pronouns (cf. Partee, 1973). In this setting, verb phrases are taken as predicates of events, i.e., of type $\lambda t. \exists e \ [t \subseteq \text{time(e)} \land p(e)=1]$ which combine with the Aspect node. Aspects quantify over events and introduce the time argument. Tense then saturates the time argument introduced by Aspect, and returns a proposition. This proposition (of type $\lambda t. \exists e \ [(\text{time(e)} < t \land p(e)=1]$) is then evaluated true or false against the evaluation world.

### 3.1 Aspectual distinctions in the complements of epistemic and deontic bāyad

Following Klein’s (1994) analysis of aspect and tense, we consider aspect to establish relations between the event/situation time and the topic time, and tense to relate the topic time to the utterance time. We adopt Kratzer’s (1998) formulation of Klein’s analysis as given in (20).

\[
\begin{align*}
[[\text{imperfective}]] &= \lambda p \lambda \epsilon. \exists e \ [t \subseteq \text{time(e)} \land p(e)=1] \\
& \quad \text{‘topic time included in the event/situation time’}
\end{align*}
\]

\[
\begin{align*}
[[\text{perfective}]] &= \lambda p \lambda \epsilon. \exists e \ [t \subseteq \text{time(e)} \land p(e)=1] \\
& \quad \text{‘event/situation time included in the topic time’}
\end{align*}
\]

\[
\begin{align*}
[[\text{perfect}]] &= \lambda p \lambda \epsilon. \exists e \ [(\text{time(e)} < t \land p(e)=1] \\
& \quad \text{‘event is over by the topic time’}
\end{align*}
\]

Furthermore, assuming tenses as pronouns, we adopt Kratzer’s (1998) definition of past and present tense in (21). Since tense relates the topic time to the utterance time, in present tense the topic time is identical to the utterance time, and in past tense, the topic time precedes the utterance time.
21 \([\text{[present]}]_{g,c} \) is only defined if \(c\) provides an interval \(t\) that includes \(t_0\) (=the utterance time). If defined, then \([\text{[present]}]_{g,c} = t\).

\([\text{[past]}]_{g,c} \) is only defined if \(c\) provides an interval \(t\) that precedes \(t_0\) (=the utterance time). If defined, then \([\text{[past]}]_{g,c} = t\).

Against this framework, we discuss the aspéctual features of the complements to epistemic \(bāyad\) in 3.1.1, and deontic \(bāyad\) in 3.1.2.

**Aspect in the complements to epistemic \(bāyad\).** Aspectual features of the subjunctive forms in epistemic sentences are repeated in table 4.

<table>
<thead>
<tr>
<th>Present/Future</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perfective</strong></td>
<td>subjunctive perfect</td>
</tr>
<tr>
<td><strong>Imperfective</strong></td>
<td>subjunctive present</td>
</tr>
<tr>
<td><strong>Perfect</strong></td>
<td>subjunctive perfect</td>
</tr>
</tbody>
</table>

*Table 4.* Distribution of the forms in the complements to epistemic \(bāyad\)

To justify the aspect of the subjunctive forms, our task is to identify the relation between the event time and the topic time in the epistemic sentences. Now, as we mentioned in the introduction, epistemic modals are based on speaker’s body of evidence at the utterance time, and therefore are taken to be speaker-oriented and are interpreted at the speech time. In epistemic sentences, therefore, the modal predicate is in the present tense, which means that the topic time is identical to the utterance time. Consequently, our task in identifying the relation between the event time and the topic time in epistemic sentences amounts to identifying the relation between the event time and the utterance time. Once we identify this relation, we can predict the aspect based on the definition of imperfective, perfective and perfect aspects given in (20) above, and repeated below by replacing the topic time with the utterance time:

- If the utterance time is included in the event time, we expect imperfective.
- If the event time is included in the utterance time, we expect perfective.
- If the event time precedes the utterance time, we expect perfect.

i) Now, when the non-modal sentence is in present imperfective form, the combination of present tense and imperfective aspect means that the utterance time is included in the event time. Therefore, we expect imperfective aspect in the modal sentence, and this is what we have: as we mentioned in the introduction, what we call subjunctive present is in fact subjunctive imperfective form.

ii) When the non-modal sentence is in present perfect form, the event time precedes the utterance time, and thus, we expect perfect aspect in the modal sentence, which is what we have.

iii) When the non-modal sentence is in the past tense (perfective past or imperfective past), the event time precedes the utterance time, and therefore we expect perfect aspect again in the modal sentence, which is what we have.

**Aspect in the complements to deontic \(bāyad\).** Aspectual features of subjunctive and indicative forms in deontic sentences are shown in table 5. As we can see, in two cases we have imperfective aspect, namely, when the complement takes a subjunctive present or imperfective indicative form. In one case, we get perfect aspect, i.e., when the non-modal sentence is in present perfect tense.
Deontic modals are assumed to occupy a position lower than Aspect, as shown in (8) above, which means that Aspect receives the node of bāyad + VP as its argument, and then relates the time of its argument, to the topic time. In other words, the time of bāyad + VP constitutes the situation time in Klein/ Kratzer’s terminology, and not the time of VP itself (unlike in epistemic sentences). Now as mentioned in the introduction, the evaluation time of the root modals is the time provided by tense, as argued e.g. by Stowell (2004). Therefore, in present contexts the time of bāyad +VP, i.e., the situation time, is the time interval which includes the utterance time and at which the obligation in question has been in force. In past contexts, on the other hand, the situation time is a past interval at which the obligation in question was in force. Our task is now to determine the topic time in each case. Klein (2009:46) defines the topic time as “the time about which something is asserted”, in contrast to the situation time which is “the time at which the situation obtains or occurs”. Applying these definitions to our data for deontic sentences, i.e., 15b, 18b, 19b which are repeated below for convenience, we can determine the topic time in each sentence: in (15b) the topic time is every day, in (18b) yesterday, and in (19b) last week, every day. Considering the situation time which is the time interval at which the obligations have been/were in force, we see that in each case the situation time denotes a longer interval, and therefore the topic time is included in the situation time. This inclusion relation in our framework explains the use of imperfective aspect.

<table>
<thead>
<tr>
<th>Deontic modals</th>
<th>present/future</th>
<th>past</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfective</td>
<td>indicative imperfective past</td>
<td></td>
</tr>
<tr>
<td>Imperfective</td>
<td>subjunctive present</td>
<td>indicative imperfective past</td>
</tr>
<tr>
<td>Perfect</td>
<td>subjunctive perfect</td>
<td></td>
</tr>
</tbody>
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Table 5. distribution of the forms in the complements to deontic bāyad

Deontic modals are assumed to occupy a position lower than Aspect, as shown in (8) above, which means that Aspect receives the node of bāyad + VP as its argument, and then relates the time of its argument, to the topic time. In other words, the time of bāyad + VP constitutes the situation time in Klein/ Kratzer’s terminology, and not the time of VP itself (unlike in epistemic sentences). Now as mentioned in the introduction, the evaluation time of the root modals is the time provided by tense, as argued e.g. by Stowell (2004). Therefore, in present contexts the time of bāyad +VP, i.e., the situation time, is the time interval which includes the utterance time and at which the obligation in question has been in force. In past contexts, on the other hand, the situation time is a past interval at which the obligation in question was in force. Our task is now to determine the topic time in each case. Klein (2009:46) defines the topic time as “the time about which something is asserted”, in contrast to the situation time which is “the time at which the situation obtains or occurs”. Applying these definitions to our data for deontic sentences, i.e., 15b, 18b, 19b which are repeated below for convenience, we can determine the topic time in each sentence: in (15b) the topic time is every day, in (18b) yesterday, and in (19b) last week, every day. Considering the situation time which is the time interval at which the obligations have been/were in force, we see that in each case the situation time denotes a longer interval, and therefore the topic time is included in the situation time. This inclusion relation in our framework explains the use of imperfective aspect.

15b  Sām  bāyad  har ruz  be  madrese  be-ravād
Sām  every day  to  school  go.SUBJ.PR
“Sām must go to school every day.”

18b  Sām  diruz  bāyad  be  ketābxāne  mi-raft,
Sām  yesterday  to  library  would go.IND
“Sām had to go to the library yesterday.”

19b  Sām  hafteye piš  har ruz  bāyad  dars mixānd
Sām  week-EZ last  every day  would study.IND
“Sām had to study every day last week.”

There only remains the case of perfect aspect in deontic sentences, an example of which is given in (17b) and is repeated below. This sentence has a present tense context, so the situation time, i.e., the time when the obligation is in force, is an interval containing the utterance time. As for the topic time, we would like to suggest that in view of the teleological feature of the sentence, marked by the phrase barāy-e inke ‘in order to’, the topic time is an interval in the future, which means that the situation time precedes the topic time, and therefore the use of the perfect aspect is justified. This analysis ties the use of perfect aspect in deontic sentences to the presence of a teleological component, and it seems to be the case: if we omit the first part of (17b), still we can have subjunctive perfect in the complement clause, but the sentence loses its deontic meaning and can be interpreted only epistemologically (17c).

17b  barāy-e inke  betavānad  keyk  boxorad,  bāyad  qablan šām  xorde bāšad
in order to  is able.SUBJ.PR  cake  eat.SUBJ.PR  previously  dinner  eaten.SUBJ.PF
“In order (for Sām) to have permission to eat some cake, he has had to eat dinner first.”

17c  bāyad  qablan  šām  xorde bāšad
previously  dinner  eaten.SUBJ.PF
“He must have had dinner already.”
3.2 Mood selection in the complements of epistemic and deontic bāyad

Any account of the mood selection in the complements of epistemic and deontic bāyad needs to make references to a general theory of mood in Persian. We adopt the theory formulated in (22), which is based on an analysis of mine about the mood selection in complement clauses to attitude and also some non-attitude predicates in Persian.

22 When the matrix predicate selects a non-propositional complement (of type \(<\varepsilon t>\)), which is the case with causative, directive, preference and implicative predicates, subjunctive is selected as the default mood. When the matrix predicate selects a propositional complement (of type \(<st>\)), which is the case with doxastic, factive, assertive and desire predicates,

- indicative is selected when there is high degree of certainty on the part of the attitude holder about the truth of \(p\).
- counterfactual is selected when not-\(p\) is presupposed,
- subjunctive is selected when neither indicative nor counterfactual can be selected. In other words, the use of subjunctive indicates that both \(p\) and not-\(p\) are considered possible by the attitude holder.

As we saw above, Hacquard’s (2010) analysis of modals let epistemic and deontic modals appear in two different syntactic positions, and still combine with complements of type \(<st>\). If we adopt this analysis, then the complements to both epistemic and deontic bāyad are propositional, and we expect similar mood selection procedure as we formulated for complement clauses of attitude predicates. Against this background then, we examine the mood selection of epistemic bāyad in section 3.2.1 and deontic bāyad in section 3.2.2.

Mood in the complements to epistemic bāyad. In the case of epistemic bāyad, as we saw above, it always selects subjunctive, which can be explained as follows: epistemic modals describe what the world looks like based on the evidence that the speaker has at the speech time. In this sense, epistemic modals can be compared with doxastic matrix predicates, because those predicates also denote what the world looks like to the attitude holder at the matrix time.

To put it in terms of modal bases and ordering sources, both epistemic modals and doxastic predicates involve an epistemic modal base and a stereotypical ordering source, if they have one. The difference is that epistemic modals build their modal bases upon the speaker’s doxastic worlds, whereas doxastic predicates have their modal base based on the attitude holder’s doxastic worlds. Now, looking at the mood selection of doxastic matrix predicates in Persian, we see that they form a continuum, shown in Table 6, where the most certain predicates, e.g., motma\(\text{\textasciitilde}en\) budan ‘be sure’, select indicative mood, less certain ones, e.g., šak dāšt\(\text{\textasciitilde}an\) ‘doubt’, select subjunctive and the ones in between, e.g., gom\(\text{\textasciitilde}n\) kardan ‘conjecture’ can select both indicative and subjunctive.

<table>
<thead>
<tr>
<th>Degree of certainty</th>
<th>(\text{\textasciitilde}a\text{\textasciitilde}d\text{\textasciitilde}n\text{\textasciitilde}dan/fe\text{\textasciitilde}r\text{\textasciitilde}n\text{\textasciitilde}kardan) ‘consider unlikely’</th>
<th>šak dāšt(\text{\textasciitilde}an) ‘doubt’</th>
<th>gom(\text{\textasciitilde}n) kardan ‘conjecture’</th>
<th>fek(\text{\textasciitilde}r) kardan ‘think’</th>
<th>bāvar dāšt(\text{\textasciitilde}an); goft(\text{\textasciitilde}n) ‘believe’</th>
<th>motma(\text{\textasciitilde}en) budan ‘be sure’</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJ</td>
<td>SUBJ</td>
<td>SUBJ/IND</td>
<td>IND/SUBJ</td>
<td>IND</td>
<td>IND</td>
<td>IND</td>
</tr>
</tbody>
</table>

Table 6. Mood selection of doxastic predicates based on the degree of certainty

If we assume for doxastic predicates a Kratzer-style modal semantics, similar to the one that we have for MUST repeated below in (9′), those doxastic predicates which convey high degree of certainty (e.g., BE SURE) can be assumed to involve an epistemic modal base and an empty ordering source, because the truth of \(p\) is asserted for all the worlds in the modal base, e.g., all the worlds compatible with the evidence that the attitude holder has. As for less certain doxastic predicates (e.g., gom\(\text{\textasciitilde}n\) kardan ‘conjecture’, šak dāšt\(\text{\textasciitilde}an\) ‘doubt’), they still involve epistemic modal bases, but the ordering source is not empty: it is not the case that the truth
of the proposition is asserted in all the worlds in the modal base, but rather, only in a subset of them. Kratzer (1991:644) discusses the gradable possibilities, including HUMAN NECESSITY, HUMAN POSSIBILITY, WEAK NECESSITY, SLIGHT POSSIBILITY, etc., in terms of the truth of \( p \) or not-\( p \) in the best worlds among the worlds of the modal base. Now the generalization about doxastic predicates can be formulated as follows: when the semantics of the matrix predicate is such that the degree of certainty about the complement proposition is higher than a certain grade, indicative is selected, and when it is lower, subjunctive is selected. Extending this analysis to modal bāyad then, we can say that bāyad patterns like the less certain doxastic predicates in view of the fact that it always selects subjunctive. In this respect, we can compare bāyad with another epistemic adverb, i.e., hatman ‘surely’, which corresponds to more certain doxastic predicates and universally selects indicative (23-27).

\[
(9') \quad [[\text{must}]] = \lambda f_{\epsilon_{\text{elt}}}, \lambda g_{\epsilon_{\text{elt}}}, \lambda q_{\epsilon_{\text{elt}}}, \lambda e_{\text{elt}}. \forall w' \in \max_{\epsilon_{g(e)}} (\cap f(e)): q(w') = 1
\]

, where \( \cap f_{\epsilon_{g(e)}}(e) = \{ w': w' \text{ is compatible with what is known in } e \text{ (by Agent(e) at time (e))} \}

\[\text{Simple present}\]

23 Sām hatman dar xāne ast

Sām in house is.IND “Surely, Sām is home.”

24 injā hatman ziyād bārān mi-āyad

here a lot rain come.IND “Surely, it rains a lot here.”

\[\text{Present perfect}\]

25 māmān hatman alān dige rafte sar-e kār

mom by now gone.IND to work “By now, mom has surely gone to work.”

\[\text{Simple and imperfective past}\]

26 parvande-ye man hatman avāset-e mehr rafte barāye chek

file-EZ my mid Mehr gone.IND for check “Surely, my file was sent for checking in mid September.”

27 Sām hatman ruz-i 3-4 sāat tamrin-e piyāno mi-karde

Sām every day 3-4 hours practice-EZ Piano done.IND “Surely, Sām has been practicing the piano for 3-4 hours every day”

\[\text{Mood in the complements to deontic bāyad}. \text{ As we saw in table (3), which is repeated below, in deontic sentences subjunctive is selected in present/future contexts, and indicative is selected in past contexts.}\]

<table>
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</table>

We argue that deontic modals, which describe the rules and obligations of the world, can be compared with desire predicates, e.g., xāstan ‘want’, dust dāstān ‘like’, xošhāl budan ‘be glad’, which describe the preferences of the attitude holder: in terms of modal bases and ordering sources, Hacquard’s (2010) semantics repeated in (9’’) below assumes that deontic modals involve a circumstantial modal base and a deontic ordering source. As for desire predicates, von Fintel (1999) proposes a Kratzer-style modal semantics for the desire predicate WANT, given in (28), in which the modal base is attitude holder’s doxastic worlds but the ordering source is deontic. So what is shared between deontic modals and desire predicates is the presence of a deontic ordering source, but they differ in their modal bases. We argue that these two factor help us explain the mood selection of deontic bāyad in view of the generalization that we made about the mood selection in attitude predicates: along with the generalization in (22), desire predicates are observed to select all three moods: xošhāl
budan ‘be glad’, which presupposes that attitude holder’s doxastic worlds are p-worlds, selects indicative (29), kāš ‘wish’, which presupposes not-p selects counterfactual (30), and xāstan ‘want’, which is defined only if attitude holder’s doxastic worlds contain both p and not-p, select subjunctive (31).

9′′ \[ \text{[must]} = \lambda f <_{\text{circ}}, \lambda g <_{\text{circ}}, \lambda q <_{\text{circ}}, \lambda e <_{\text{circ}}. \forall w' \in \max_{g(e)} (\cap f(e)): q(w') = 1 \]
, where \( \cap f_{\text{circ}}(e) = \{ w': w' \text{ is compatible with the circumstances of } e \} \)

28 If defined, \[ \text{[want]} = \lambda f <_{\text{circ}}, \lambda x <_{\text{circ}}, \forall w' \in \max g(x,w) (f(x,w)): p(w') = 1 \]
, where \( f \) and \( g \) represent, respectively, the modal base and the ordering source,

29 (be eštebāh) fekr mikonad barande šode va xeili xošhāl ast ke barande šode (by mistake) thinks has won.IND and very is happy that has won.IND “He (mistakenly) thinks that he won, and is very happy that he won.”

30 kāš ne-mi-porsid-i
I wish NEG-ask. COUNT-2SG
“I wish you didn’t ask.” (presupposes you asked)

31 Sām mixāhad mā diruz az safar bargašte bāš-im
Sām wants we yesterday from trip returned.SUBJ.PF-1PL
“Sām wants us to have returned yesterday”.

Assuming the same procedure for mood selection in sentences with deontic bāyad, we predict that indicative is selected when the modal base is p-world, counterfactual when the modal base is not-p world, and subjunctive when the modal base is neither p nor not-p world. Now, as shown in (7′′) deontic modals have circumstantial modal bases, i.e., a modal base which is identical to the actual world up to the utterance time but can have different possibilities for the future. Therefore, in present/future contexts, the circumstantial modal base is not settled yet with regard to p and therefore we expect subjunctive, which is indeed what we have. In past contexts, on the other hand, the circumstantial modal base is already settled with regard to p, i.e., it is either p-world or not-p world and thus we expect indicative or counterfactual. Now counterfactual verbs in Persian are identical in form with imperfective past indicative verbs, as shown in 32-33: dars mixānd in (32) is counterfactual because the sentence presupposes that ‘he is not studying enough’, but the same dars mixānd in (33) is imperfective indicative as it denotes habitual actions in the past. Consequently, in past contexts no matter if the circumstantial world is p-world or not-p world, deontic bāyad has imperfective indicative/counterfactual form in its complement, as the felicitous continuations to (34) shows: in continuation a. the modal base is a p-world, and in continuation b. a not-p world.

32 kāš Sām bištar barāye emtehān dars mixānd
I wish Sām more for exam would study
“I wish Sām studied more for the test.”

33 Sām hafteye piš ruzi 3 sāʔat dars mixānd
Sām week last a day 3 hours would study
“Last week, Sām studied 3 hours a day.”

34 Sām diruz bāyad be ketābxāne mi-raft,
Sām yesterday to library would go.IND
a. ,vali na-raft.
, but NEG.went.IND
“Sām had to go to the library yesterday,
  a. but he didn’t.”
  b. that’s why he didn’t come with us.”
4. Conclusion

In this paper, we discussed the interaction of modal flavors with aspect and mood in Persian. In particular, we examined the aspect/mood combinations in the complements to epistemic and deontic bāyad ‘must’. We adopted Hacquard’s (2010) framework for modals in which epistemic and root modals are posited in two different syntactic positions, and yet both combine with arguments of type <st>. In our discussion of the interaction of modal flavors and aspect, adopting Klein/Kratzer’s theory of tense and aspect in terms of utterance time, topic time and situation time, we provided an account for aspectual features of epistemic sentences by noting that adding an epistemic modal to the sentence always changes the topic time to NOW, and that explains the pervading perfect forms in epistemic sentences. Adding the deontic modal, on the other hand, changes the nature of the situation time: while in the non-modal sentence the situation time is the interval when the event/ situation in question occurs/obtains, in deontic sentence the situation time is the interval when the obligations to do the events are in force. This, we argued, explains the pervading imperfective forms in deontic sentences.

In our discussion of the interaction of mood and modal flavors, we made comparisons between the epistemic modals and doxastic predicates, on the one hand, and deontic modals and desire predicates, on the other. Based on a generalization about the mood selection of doxastic predicates in Persian, we argued that epistemic bāyad, which universally selects subjunctive, parallels those doxastic predicates which convey less degree of certainty, which likewise select subjunctive, and we compared bāyad with an epistemic adverb, i.e., hatman ‘surely’, which arguably conveys more degree of certainty and universally selects indicative. We accounted for the mood selection of deontic sentences, which select both subjunctive and indicative/counterfactual moods by noting that Persian desire predicates also select subjunctive, indicative and counterfactual depending on the status of $p$ in their modal bases. In the same way, deontic sentences select subjunctive if their modal base is not settled yet with regard to $p$, which is the case in present/future contexts, but select indicative/counterfactual if the modal base is already settled with regard to $p$, which is the case in past contexts.

References


Poetics of the *Kokinshū* in Eurasian context

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Abstract

This paper aims to situate Japanese poetry book compiled upon the order of Emperor Daigo in 905 the *Kokinshū* in Eurasian context. To do so, the paper is divided into three parts. The first part focuses on Japanese writing. In Eurasia, two different concepts of segmental and non-segmental scripts met to invent various scripts, of which today Japanese writing is the only surviving case of preserving both within the single writing system. The second part focuses on an Eurasian influence pattern called stimulus diffusion and also by Beckwith conversion (versus diversion from the single center). The third part explores numerous national scripts that were historically shaped as a part of hegemonic assertion of power by monarchs. While two Japanese segmental *kana* scripts of *hiragana* and *katakana* naturally rose, with the compilation of the *Kokinshū*, Japan also fit in the Eurasian pattern of displaying monarchical powers by the scripts of *kana* through the poetry of *waka*.

Keywords: *Kokinshū*, segmenta scripts, non-segmental scripts, stimulus diffusion, conversion

In the Eurasian continent, two concepts of writing met, interfered, and evolved across the diverse regions of this large landmass. The one is segmental script and the other is non-segmental script. Since writing represents speech, any writing contains phonetic elements, and pure ideograms without anticipating any sound of speech do not exist. For this reason, many linguists prefer to speak of logograms instead of ideograms in order to designate the non-segmental scripts. With this caution, we start our examination of Japanese writing.

In an inspiring book entitled *Contact and Exchange in the Ancient World*, Jerry H. Bentley observes that peoples without modern national states today are without history because actual academic discipline splits the ancient world by projecting modern country lines even to the pre-historical world that predates the formation of any modern nation state, (2006). In Central Eurasia, many nations evolved and disappeared, and the ways to draw political, cultural, and linguistic divisions changed over the course of time. In that mobility, we can track the “stimulus diffusion” of two concepts of segmental and non-segmental writings among the countries now long disappeared or even among different regions inside today’s country. The one is phonetically based segmental writing systems and the other is ideographic non-segmental writing systems.

In Central Eurasia, these two different types of writing met and crossed to invent various scripts. The phonetic scripts represent sounds of speech, and the non-segmental logograms represent morphemes that represent the minimal meaning unit. Phonetic script has two sources in Eurasia: one is the Semitic script of Aramaic from the Near East and the other is Brahmi script from India. As for non-segmental writing, it has two sources: the archaic Mesopotamian cuneiforms and Chinese characters. Asian writing systems are the products of the mutual interference of these two different concepts of writing at its origin, in which Japanese writing is a rare surviving case that preserves both segmental and non-segmental scripts within the writing system of a single language.

Before starting to describe the evolution of Japanese writing within the Central Eurasian and East Asian writing systems, I propose to use the following terms to designate non-segmental writing. In *The World’s*
Writing Systems (1996), William G. Boltz uses the term Sinitic writings for the writing systems derived from Chinese script which thus preserve a genealogical affiliation with it. On the other hand, Boltz proposes another term of Siniform writings for the writing systems inspired by Chinese script but not genealogically connected with Chinese characters. This second category includes many languages starting with Tangut of Tibeto-Burman language family, Khitan and Jurchin scripts of Altaic language family, and the scripts of some languages of South Chinese ethnic groups like Yi of Thai language family. The Vietnamese Chữ nôm also falls into this category. On the other hand, I propose to use the term Chinese characters only for the characters used to write Classic Chinese, which functioned like Latin in Europe. Taiwanese preserves the closest form of this old writing today. Among the first group of Sinitic writings that are genetically related to Chinese characters, I propose to call Sinograms the writing used to write Chinese speech. The term itself comes from Victor Mair’s article on modern Chinese writing in The World’s Writing Systems in which Mair uses the term Sinogram in this sense. Sinograms are divided in turn into two different forms. The one is the classic style practiced in Taiwan combined with their own phonetic signs called Bopomofo used as the phonetic alphabet for the instruction of young children learning how to read and write Chinese. The other is the simplified Sinograms invented after numerous reforms of writing in the People’s Republic of China, where young children use the European alphabet to learn how to pronounce their scripts as they begin reading and writing.

This distinction between Sinograms and Sinitics becomes critical when we talk about Japanese non-segmental script called kanji and two types of phonetic scripts called kana: kata-kana and hira-gana. These two types of kana are both phonetic signs derived from a limited number of Chinese characters used as phonetic signs. Both kanji and the two types of kana are Sinitic because kata-kana uses a part of Chinese characters and hira-gana is derived from the collapsed form of Chinese cursive characters. On the other hand, kanji uses Chinese characters in recognizable forms, but to transcribe Japanese speech. The two types of kana, hira-gana and kata-kana, are not recognizable for Chinese speakers of Taiwan and the People’s Republic of China. The Sinitic script of kanji is more simplified than the Sinograms used in Taiwan, but not as simplified as the Sinograms used in the People’s Republic of China. Neither kana nor kanji are Sinograms because they transcribe Japanese speech. It is necessary to make a clear distinction by proposing the different terms of Sinitic script and Sinograms in order to clearly distinguish the Sinitic characters used to write Japanese speech from the Sinograms used to write Chinese speech. For this purpose, I will use the Japanese term kanji to designate the non-segmental script used to represent Japanese speech. With the two types of kana, both segmental scripts, Japanese writing combines both segmental and non-segmental writings by combining kanji and two types of kana.

I present the following tentative table to show some of the languages written with Sinograms, Sinitic scripts, and Siniforms. The division between Taiwan and the People’s Republic of China is based on their scripts.

<table>
<thead>
<tr>
<th>Scripts</th>
<th>Country of usage</th>
<th>Speech represented by the script</th>
<th>Origin of the script</th>
<th>Compatibility with the original script</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinogram (logogram)</td>
<td>Taiwan</td>
<td>Chinese (Southern Min)</td>
<td>Oracle Bone scripts</td>
<td>Compatible (Oracle bone inscriptions may be recognizable)</td>
</tr>
<tr>
<td>Sinogram (logogram)</td>
<td>People’s Republic of China</td>
<td>Chinese (Putonghua)</td>
<td>Oracle Bone scripts</td>
<td>Compatible but less than Taiwanese</td>
</tr>
</tbody>
</table>

1 Chinese character is logogram but it often includes phonetic elements that indicate approximately the sound. In this article we do not go into the detail of sound and meaning combination in Chinese characters.

2 John DeFrancis, The Chinese Language (Honolulu: University of Hawaii Press, 1984) pp. 60-64, especially 63. DeFrancis distinguishes between regionalects and dialects, and he classifies dialects as a subcategory of the regionalects, the latter forming more distant language groups than dialects. The language spoken in Taiwan, Southern Fujian, and Hainan Island is a regionalect of Southern Wu in relation to the standard Putonghua. In Taiwan, people also use a different writing system than in the mainland. Our classification here is based on the writing system.
| Sinitic script *kanji* (logogram) | Japan | Japanese | Classic Chinese used to transcribe Middle Chinese\(^3\) | Mostly compatible with Taiwanese |
| Sinitic script *hiragana* (phonogram) | Japan | Japanese | Cursive form of Man’yōgana | Not compatible |
| Sinitic script *kata kana* (phonogram) | Japan | Japanese | A part of a letter of Man’yōgana | Not compatible |
| Siniform script\(^4\) | The Tangut state (1036-latter half of the 16th century)\(^5\) | Tangut (extinct) | Inspired by Classic Chinese used to transcribe Middle Chinese | Mostly not compatible\(^6\) |
| Siniform script Kitan Large script (logogram)\(^7\) | Liao Empire (916-1125)\(^8\) Golden Empire until 1191\(^9\) | Kitan (unknown language)\(^10\) Jurchin until 1191\(^11\) | Inspired by Classic Chinese used to transcribe Middle Chinese | Partially compatible |
| Siniform script Kitan small script (combination of logogram & phonogram)\(^12\) | Liao Empire (916-1125) Golden Empire until 1191\(^13\) | Kitan (unknown language) Jurchin until 1191\(^14\) | Uighur script Classic Chinese script | Largely not compatible (many *faux amis*)\(^15\) |
| Siniform script Jurchin large script (Kitan model)\(^16\) | Golden Empire (Jin, 1115-1234) after 1191\(^17\) | Jurchin after 1120 to 1234\(^18\) | Kitan large script, Classic Chinese script | Writing not entirely deciphered\(^19\) |

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\(^4\) Siniform scripts are not genetically related to Chinese characters, but their structure is inspired by them. See William G. Blotz, “Part IV: East Asian Writing Systems” in *The World’s Writing Systems*, ibidem, p.189.


\(^6\) Kychanov’s explanation and examples show that Tangut respects the structure of Chinese characters as for the way to compose one character, but each element that composes one character is largely their own invention.

\(^7\) Kara, ibidem, p. 230.

\(^8\) György Kara, “Kitan and Jurchin”, *The World’s Writing Systems*, ibidem, pp. 230-238.

\(^9\) Kara, ibidem, 231.

\(^10\) Ramsey, ibidem, p. 225.

\(^11\) Kara, ibidem, 231.

\(^12\) Kara, ibidem, p. 231.

\(^13\) Kara, ibidem, 231.

\(^14\) Kara, ibidem, 231.

\(^15\) According to the list in Kara p. 233-234, many characters that look like Chinese characters have totally different meanings, in other words they are *faux amis*. According to Ramsey p. 225, the extant writings in Kitan are scant.

\(^16\) Kara, ibidem, p. 235.

\(^17\) Kara, ibidem, p. 235, pp. 235-238.

\(^18\) Kara, ibidem, p. 235.

\(^19\) Ramsey, ibidem, p. 225.
There are many others which cannot be listed in the above table and whose historical evolution and origins are not clear. For example, the Yi script, not in the list above, is one of the logograms, whose origin is not known (Shi 1996). As seen in the writing systems in the table, historically it is a Central Eurasian phenomenon to use two different types of scripts to transcribe one’s own mother tongue, one being more logographic and the other closer to phonetic. The Japanese writing system follows this Central Eurasian pattern of accommodating two writing systems.

In order to avoid confusion among the numerous phonetic or partially phonetic scripts used in Central Eurasia, the term alphabet is used only for the phonetic script used in European and Western writings including the Cyrillic scripts. For other phonetic scripts such as Japanese きゃらた (kana), we will use the term phonetic scripts, and more specifically the terms ひらがな and かたかな.

The ideographic, more than logographic, concept prevails in the following loan graph. Victor H. Mair calls our attention to the article published in the newspaper Gansu Daily on the seventeenth of October 2011, that reports the discovery of the oldest writing in China (2012). This oldest writing or what Mair calls the glyph, is a crutch cross ☥ (a cross with two arms of equal length with the crutch-like hook at the end). This glyph is inscribed on pottery dated from the latter part of the third millennium BCE. Mair reconstructs the pronunciation of this glyph that will develop to the modern character 巫, pronounced wū in today’s Chinese. Mair reconstructs its archaic sound of pronunciation m'y[a] and associates it with the Old Iranian maguš, mage or priest.

Mair further associates this oldest glyph in China of Iranian origin with the Chinese characters inscribed on the oracle bones dated from around 1200 to 1050 BCE in the Shang dynasty. The immediate ancestors of the Sinograms, the oracle bone inscriptions also include the same crutch cross ☥. The Chinese character 巫 that develops from ☥ is a figure of a magician with a pair of large sleeves holding a magic wand in the shape of 工, and the archaic glyph ☥ is a crossed combination of two wands 工 (Shizuka 1984). According to legend, King Tang who inaugurated the Shang dynasty and even King Jing of as late as the Eastern Zhou dynasty in the Spring and Autumn period both tried to burn themselves in sacrificial rites in order to save their people from drought. The ancient kings in the Shang dynasty were magicians who governed a theocratic polity under their superhuman power. This legend exemplifies the religious functions of the kings in the Chinese archaic polity.

In this article of 2012, Mair quotes his earlier work published in 1990 and also in The Tarim Mummies in 2000 and connects this glyph with another identical glyph, this time not painted on pottery as above but carved on a mollusk shell excavated from the royal tomb of the Western Zhou dynasty (c. 1046-771. BCE) dated to the early 8th century BCE (Mair 2012, p. 266, Mallory and Mair 2000, p. 326). Based on these archaeological

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20 Kara, ibidem, p. 235.
22 Kara, ibidem, p. 235.
23 Ramsey, ibidem, p. 225.
24 According to Kara p. 236, many characters that look like Chinese characters have different meanings.
findings, Mair suggests that along with “bronze metallurgy, equestrian skills, chariotry, the herding of large animals, respect for and utilization of dogs” (2012, p. 266), this oldest glyph came from Central Eurasia with the similar practice of rituals presided over by magicians.

This oldest Chinese writing 𐅀 reported in the Gansu Daily and quoted by Mair in the articles mentioned above is duly transmitted to Japan. The Japanese archeologist Terasawa Kaoru included in the first volume in the series of comprehensive Japanese history, entitled Ōken tanjō (Birth of King’s Power) published in the year 2000, the inscription 𐅀 inscribed on a bronze mirror excavated in Okayama Prefecture in Japan in the last period of the later Bronze Age, which he dates to the second century CE. Reasoning like Mair but not quoting him, Terasawa explains that the character 𐅀 represents the modern kanji 巫, and that this glyph designates in Japan a shaman. Mair states that Chinese 亖 is not a shaman in ancient China of 2300 BCE, because the term shaman in Chinese was invented much later, some two thousand years after the oracle bone inscriptions, as a Tungusic term (2012). About two thousand five hundred years separate the same glyph on the Japanese bronze mirror from the oldest Chinese glyph. In a vast Eurasian geographical space, and in such diverse time periods, it is safe to assume that the same glyph did not represent the same religion in the regions as diverse as archaic Iran, Shang dynasty China, and Japan of the Yayoi period, and more importantly this glyph was not used to write the same speech in Iran, China, and Japan.

Terasawa published this Japanese mirror with the inscription 𐅀 side by side with the same archeological finding of a head carved in the mollusk shell to which Mair refers in 1990 and 2000, the one excavated in the Western Zhou royal site in Shaanxi Province in China, from the time of the Western Zhou dynasty. When Terasawa was writing in 2000, he does not seem to have known Mair’s article of 1990, and he complements Mair and Mallory by clarifying some points, at least in the Japanese case. The two symmetrical membranes under the magician’s arms which Mair describes as “a cape, wings, or some other attribute, perhaps even amphibian fins” (2012, p. 272) are, for Terasawa and in the case of its Japanese adoption, the shaman in bird costume dancing with a sort of magic wand shaped like 工 or a spindle. With several thousand years of time difference, the glyph 𐅀 migrated much like an object from West Eurasia to reach Japan.

There are two important factors here. First of all, it is unthinkable that archaic Iranian, Chinese, and Japanese, or any other languages involved in the transmission of the glyph 𐅀 pronounced this character in the same way. The sound may have been copied as with many loan words, but the local speeches distorted the pronunciation according to the locally practiced phonetic systems. Nevertheless, the meaning of “magician” that designates some type of leading figure in the multiple local religions was preserved. That shows us one characteristic of the ideogram that represents an idea or a concept. The reading of this glyph 𐅀 worked much like the reading of an object, for example a telescope, an object that is representing its function.

Secondly, this glyph may not be the only one nor the earliest writing transmitted from the Iranian-speaking Central Eurasian population to the territory that became China today. But these other glyphs did not become the ancestors of Chinese writing that starts in the Shang dynasty. With this point, we come to talk about the second concept, stimulus diffusion.

Writings carry human thoughts beyond the reach of voice and across time, and writing requires a particular way or procedure of expressing thoughts, different from speech. I call it a written rhetoric. Rhetoric in this sense is the style of thoughts put down and fixed in writing that entails a particular way of structuring language not always found in speech. To characterize such rhetoric in Central Eurasia and East Asia, I propose to take one notion from a specialist of Central Eurasia, Andrew Sherratt and his definition of “stimulus diffusion” (2006), and to match it with another notion from Japanese history proposed by Mikami Yoshitaka (2013).

Andrew Sherratt quotes Alfred Krueger and proposes the term “stimulus diffusion” to describe a Eurasian style of influence reception as follows: the diffusion of technology or culture does not occur without some “dependence on the preexistence of an earlier model without which the phenomenon in question would not have occurred when and where it did” (p. 34). Krueger and Sherratt are not the only ones to use this notion;
those who observe history over a large scope of time notice the same phenomena in different countries and
time periods. Krueger and Sherratt put the notion of influence the other way around. The notion of influence
is habitually used to designate the consequences emanating from the origin that works as a center from which
the influence is spreading. On the other hand, the notion of stimulus diffusion puts the agency that starts the
influence on the side of the receiver. In other words, the origin becomes the one thanks to the people who
spontaneously discover it. These people discover the other that becomes the source of their inspiration because
they find something that they need or they want to have, and with this discovery they make the source as origin.

Hirase Takao, by quoting Nishijima Sadao (1919-1998), both specialists of ancient China, observes
that the development of Chinese characters as a system of writing did not occur until the social and cultural
conditions of the receivers were ready (2001). In the long history of archaic land in Central Eurasia and East
Asia, the sporadically appearing glyphs were excavated from a time long before the sudden appearance of
oracle bone inscriptions that form already a highly developed system from the beginning, but these early
writings, at least the ones that predate the oracle bone inscriptions, do not form any established writing
system nor are they continuous to the Chinese writings evolving from the oracle bones in the Shang dynasty
to the present. The seed of influence should fall on a ready soil to sprout. When the soil is not ready, the seed
remains dormant. As a consequence, Sherratt argues that even when the “formal similarities […] show striking
parallelisms” for example along with the transmission routes of the Silk Road, the diffusion creates “radically
different structural principles and attitudes to elements of material culture” (2006, p. 42).

That is because the transmission occurred as convergence and not as divergence. This pair of notions
in historical linguistics on the level of speech, which is stressed by Christopher Beckwith (2007), can also be
found in the transmission of cultures, and that is called stimulus diffusion. In Sherratt’s Central Asia, influence
is an active intake of outside elements in order to create internally the dynamics of divergence inside one’s
own internal cultural continuum. In other words, the convergent reception paradoxically actively confirms its
autonomy from the origin by receiving its influence. In historical linguistics, what Beckwith is describing in
terms of convergence and divergence is a dynamic phenomenon caught in the inter-linguistic exchange between
languages. Even between two languages that do not share the same origin and do not belong to the same family,
after a significant contact, a convergence occurs, and then the shared elements in two languages begin to diverge
in their own internal linguistic continuum. In other words, convergence and divergence explain a diachronic
movement of languages beyond the closed system of Ferdinand de Saussure that does not foresee any inter-
linguistic exchange beyond one national language. On the level of writing, we can argue that the glyph of the
crutch cross ✫ is the convergence in which regional religious leaders mirror their own images in the glyph
✩, in order to see a different face.

When does the convergence cease and the original start? We propose that it occurs when the borrowed
element loses an interchangeable compatibility and cannot be recognized in its original home. In a large
spectrum of the invention of writing, that is what happened for example from Phoenician to Jewish scripts
passing by Aramaic (Goerwitz 1996) used to write Iranian (Skjærvø 1996), when Uighur, Mongolian, and
Manchu converted into the vertical writing in Central Eurasia (Kara 1996) while Aramaic scripts remain
horizontal even in Central Eurasia (Daniels 1996). Each script listed here is original and has its own right to be
so, in the sense that they are neither compatible nor switchable with each other.

The evolution may be slow and occur over a long span of time. Japanese historian Mikami Yoshitaka
sketches such a process. Mikami’s aim is to study the wood slips (mokkan) in peripheral regions in Japan far
from the Japanese political center, to study the spread of Japanese writing from the center of the Japanese
government bureaucracy to its peripheries through the implementation of written administrative documents.
These Japanese wood slips were arguably used for daily needs of practicing calligraphy, multiplication charts,
or recording trade accounts, merchandise tags, government tax collections, or carrying the wood slip as a handy calendar, in order to preserve paper for more important occasions. Mikami asserts that the writings inscribed on wood slips are the first-hand crude documents not processed through historiographers’ point of view. Through his study of wood slips, Mikami disproves the centrifuge paradigm proposed earlier by Nishijima Sadao that the spread of writing from China occurred like a circular ripple of waves extending from the center throughout East Asia, through the diplomatic relationships of tributary system (2000). When Nishijima proposed his centrifuge mode, the wood slips had not yet been studied.

For Mikami, Nishijima’s scheme is contrary to the historical facts. Through the study of wood slips, Mikami proves that the spread of writing occurred like a series of collisions spreading like a chain effect of shocks that hop from balls to balls in the billiard game. One ball hits many others. Then each one of these balls starts a new transmission toward multiple directions and causes in its turn new shocks. Unlike Nishijima’s centrifuge model, Mikami’s model does not exclude the possibility that the multiple shock waves might come back to hit again for the second time the balls that are once moved. In contrast to Nishijima also, for Mikami the carriers of this multi-directional shock are not diplomats. In many occasions of social unrest, ordinary people, not the diplomats, were forced to migrate to safer places and the literate part of population carried multiple regional adaptations of writing with them. Mikami compares the Japanese wood slips with the ones in the Korean Peninsula, and concludes that, besides the transmission of writing from China itself, Chinese writing was transmitted to the three kingdoms of Silla, Paekche, and Koguryo, and from these three sources, Japan also received Chinese writing (2013). Each of the three kingdoms in the Korean Peninsula had its own way of adopting the Chinese characters into their local languages. The kanji used in Japan preserves three dialectal origins in China, of go-on, kan-on, and to-on. The Japanese adoption of writing started before the time when the Korean Peninsula offered one single source of language and one single method of adapting Chinese characters because it was not yet culturally and linguistically unified before the unification of Silla in the seventh century. As for China, it has many regional dialects, and each dialect evolved over the course of time. Japan had contacts with multiple regions of both China and Korea.

The wood slips show what people wrote. One poem cited as the father of all waka in the prefaces of the Kokinshū appears on the Japanese wood slips. This poem is transcribed in the phonetic script of man’yōgana. The man’yōgana uses Chinese characters as phonetic signs to transcribe the Japanese sounds of speech. One factor that encouraged Japanese adoption of Chinese writing occurred with the integration of Buddhism whose first written record exists in Japan from 538 CE. The sutras translated into Chinese use Chinese characters as phonetic signs to transcribe Sanskrit names and words into Chinese. Taken from the title of the oldest anthology of poems the Man’yōshū, the concept of man’yōgana is much like this phonetic use of Chinese characters, which also occurred in the poetic genre of hyangga once practiced in the Kingdom of Silla in the Korean Peninsula. There are twenty-five existing hyangga written in the script called hyangch’al dated from the seventh to the tenth centuries (Lee 1993). The Man’yōshū, with about four thousand five hundred poems from the fourth century to the last datable poem in 759, is partially contemporary with hyangga, which proves that there is an East-Asian practice of using Chinese characters as phonetic signs to transcribe native speeches. When this system was used to mirror the poetic rhythm of language, often sung with music, the writing enters a new phase of written rhetoric. In Japanese literature, the anthology of poems the Kokin wakashū, often abbreviated as the Kokinshū commissioned by Emperor Daigo in 905, and written with kana, marks this new phase.

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26 The tax was imposed by seed bank. The regional governments loaned the seeds and the farmers who planted them returned the loan with their harvest. According to Minami, this form of taxation exists from Japan to Dunhuang in eastern Gansu Province, on the border of Uighur Autonomous Region and the Tarim Basin in the Taklamakan Desert, the gateway to the West on the Silk Road.

References


Defining ways of Turkic elements in medieval Persian dictionaries

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Abstract

Dictionaries are valuable sources reflecting the lexical fund of any language and show mutual relationships between languages. Persian and Turkic languages have been in long-term mutual interaction continuing till today. But investigation of these connections more accurate complicates and even fails in some cases. This article deals with offering some variants in order to make easier these moments.

Keywords: dictionaries, Persian language, lexicography, turkic elements, medieval age

The age of lexicography can be measured by thousand years. Lexicography, compiling of dictionaries is as old as the written language itself. Persian linguistics was founded by lexicographical work. The emergence of Persian lexicography stands on IX-XI centuries, but till the very first Persian dictionary appeared, there were already a range of old dictionaries in ancient Iranian languages. Dictionaries are valuable sources in order to comprise historical, geographical, ethnographic, also linguistic information.

In the result of neighborhood and mutual relationship of Turks and Persians measured by centuries a range of borrowing elements took place in both languages, and these elements were reflected in many sources, as well as in medieval Persian dictionaries. In some cases, it is possible and even easy to determine these elements, but some words were subjected to so drastic changes that for recognizing them anyone must follow their development process.

Anyway it is possible to classify the ways we observed while choosing Turkic elements reported in medieval Persian dictionaries in some units.

1. Turkic suffixes using in Persian language were borrowed from Turkic languages within the Turkic words. Some suffixes were firmly established afterwards and added to Persian origin words. Hybrid words also are material for discovering new Turkic words. A lot of hybrid words have been stated in dictionaries and the various etymology of their each component draws attention in order to follow the mutual historical process among languages.

\( \text{پولاد} + \text{سنجاق} \) (Turkic word) is one of the hybrid words we come across in the dictionaries. The word means “brave, fearless” and this signification bases on the ancient etymology “to win, to defeat” of “saj” root and the meaning of “polad” and combination of these two words. Another hybrid combination we see in dictionaries is \( \text{خاله بیبی} \) (khalebibi). The constituents of the words are: \( \text{خاله} \) (Arabic) (the sister of the mother) and \( \text{بیبی} \) (bibi) (the sister of the father). Though these two words are the kinship expressing, together they express the name of the meal:

\( \text{خاله بیبی} \) - نام آشی است از آش‌های آرد که در آن برنج نیز کنند

(Tabrizi, 2013, p.704)

The number of such hybrid facts sufficient.

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2. Another method as an auxiliary mean in determining and analyzing of Turkic words is the phonetic method. Phonetic structures and their linguistic features played a role as a phonetic norm in the definition of Turkic words. There is no concrete phonetic rule receiving Turkic words unequivocally comply in Persian language. Nevertheless, a range of phonetic features belonging to Turkic languages may help to define these words.

Due to the long term superiority of Arabian languages over Persian, many phonetic alterations have been observed, so in many words we see phonetical changes. There are many of the same words in dictionaries written with both غ and گ. The wide spread گ consonant in modern Persian did not exist in old and middle Persian. This consonant entered into the Persian language by Arabic and Turkic loan words.

In the result of the Arabic language’s rooted impression ک and گ (k and g) consonants were replaced by ق (je) in many words.

Dictionaries allow us to conclude that in some cases the words written by ق (gaf) have been constricted by the other alterations, but variations written with both consonants are available in some words. This turning to "ق" process is so wide-spread in Persian that some consonants are being replaced by ق even in French, Russian, and other languages.

3. The morphological analysis of words recorded in dictionaries paves the way for determining the etymology of words. Thus, dictionaries also play the role of grammar books. Dictionaries are also significant classical sources in order to pursue the affixation process. Scholars state that there are 80 kinds of derivational suffixes in Persian. The variety of suffixes increases their using as synonyms. Just in this respect dictionaries serve as major sources in order to follow the meaning attitudes they create. As known, the -چی (chi) is profession expressing Turkic suffix, but in the word چمانچی (chamanchi) noted in dictionary (Attatavi, 1958, p. 538) we see a varied moment. From the first glance, this is a word formed from the root of چمیدن (elegant walking) verb and ان (an) participle suffix that expresses “elegant walking of someone”. But the second meaning of the word چمانه (chamane) is “wine jug” with the -چی (chi) suffix to express “sahang (carafe) for wine”. So, the suffix meaning “any profession holder” by using with the Persian word like چمانچی (chamanchi) expresses “sahang (carafe) for wine”.

Medieval Persian dictionaries include many words of all spheres of ethnography. The name of clothing, meals, household utensils, public-political-military lexicon may be included in this group. While analyzing the names of meals we came across with the combination of کاغذ را قاتق کردن (to economize the paper) with the word قاتق to express the additional meaning of more yogurt.

Another interesting dictionary item is the word chuxa (چوحا) stated in “Burhan-i Gate” (Tabrizi, 2013, p. 669). This word comes from the “choha” meaning “broadcloth”. We also see this word in a Chuxadurmaz compound word. In the Shaki city of Azerbaijan it means “slush mountain with slippery slopes that chuxa does not stand on it”. There are also many word combinations based on several words in medieval dictionaries. For instance, it is combined with the word خاتون (lady) to form many expressions. We see 8 of them in “Farhang-i Rashidi”:

- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)
- خاتون چهارم خانم (xatun-e چهارم خانم)

and some of them mean “sun” (خاتون چهارم خانم، خاتون چهارم خانم، خاتون چهارم خانم، خاتون چهارم خانم, another’s “wine”).

4. Iranian authors have mostly generalized Turkic words. In most cases these words were given with a ترکیست (torkist) note to denote the Turkic origin of these words in one hand, but also to define to which Turkic language it belongs. Besides the exact information about the words’ etymology, there also notes like "معروف است / مشهور است" in dictionaries notifying the wide spreading fact of these words in that period. In some points the name of the vast territories are given with the general ethnos or territory name such as: ترک - ترکستان (Turk - Turkestan). The explanation of the city’s name or the features related to the city have been noted in many dictionaries.
So, we read in the commentary of Ilak (ایلک) which can be used either as an anthroponym, eponym, and toponym: “شهریست در ترکستان که خوبان بسیار آنجا باشد” (Nakhchevani, 1976, p. 173).

Similar explanations are also written about یغما (khan-e yeghma) in “Farhang-i Jahangiri” which expresses “layed table by kind-hearted people and inviting every one around it” (Shirazi, 1996, p. 292).

Dictionaries also help to get information about an author’s identity, the historical period, and condition in which the dictionary was compiled. A Turkic explanatory dictionary “Sihah ol-fors” has been confused with the bilingual dictionary “Sihah ol-adjam” for many years. Notes taken by authors help to clarify such situations in many cases. The author of “Sihah ol-fors” repeats the note of پدرم رحمت الله گفت and s.o. in several parts of his dictionary and these notes paved the path to clarification.

Some authors reference their predecessors, whose dictionaries are missing, to provide information about them. For instance، گویند "they say", شاید "may be", معلوم می شود که “it seems”. Similar notes also help to determine the authors’ attitude to words’ etymology, compiler’s inexact information or on the contrary, and these moments are useful from a linguistics and language history standpoint.

References

Radloff, V. V. (1893). Opit slovarya tyurskix narechii. [Lexicographical experience of Turkic languages.] Sankt-Peterburg.
Comparing dominance measures in speakers of typologically different languages: A case study of Turkish-English Bilinguals

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Abstract

This study aims to contribute to a better understanding of dominance in typologically different languages, such as Turkish and English. Developing robust measures of dominance is especially important and challenging for this population, since most methods to measure dominance rely on syntax or grammatical structures.

We compared measures that probe dominance through participant self-reports (explicit measures) with measures that assess dominance through tasks that do not rely on self-reports (implicit measures) in order to explore what the specific measures tell us about language dominance. We found a strong correlation between implicit and explicit measures, which might suggest convergence of the two. On the other hand, no correlation was found between response time and accuracy from the implicit measure. This might be indicative of them measuring different aspects of dominance.

Keywords: bilingualism; language dominance; Turkish

The past 20 years have seen increased interest in studies of bilinguals. It has been found that competencies in bilinguals are rarely, if ever, equal in their two languages. For this reason, dominance is a critical variable in any study on bilingualism. It has been used as a variable in studies of bilingual first language acquisition (Döpke, 1998; Yip & Matthews, 2000; Petersen, 1988), language processing in bilinguals (Gathercole & Thomas, 2009), studies on code-switching (Basnight-Brown & Altarriba, 2007), studies about crosslinguistic influence in bilinguals and L2 users (Daller, 2011) and more.

It’s important to have a shared understanding of language dominance, as well as reliable ways of measuring it, especially for bilinguals of typologically different languages in order to ensure replicability of studies on bilingualism.

Despite that, there is still no consensus on how dominance should be measured. So far, a wide variety of measures has been used, including self-evaluated language background questionnaires (e.g., Amengual, 2016; Dussias, 2003; Gollan et al., 2007; Li et al., 2006), sentence repetition (e.g., Flege et al., 2002), picture naming (e.g., Gollan et al., 2015; O’Grady et al., 2009), self-paced reading (e.g., Fernández, 2003), lexical diversity (e.g., Treffers-Daller, 2011), and speech rate (e.g., Stevens, 2019; Yip & Matthews, 2006).

In particular, the debate on how to measure dominance revolves around the difference between what we call implicit and explicit measures of dominance. By implicit, we mean measures that do not rely on self-reports and do not tap conscious knowledge (such as lexical access, proficiency tests, speech rate). Explicit measures, on the other hand, rely on conscious knowledge and are metalinguistic. Self-report questionnaires are
a good example of explicit measures. Pros and cons of each type of measure have been found in the literature. According to some scholars (see Chávez, Burt & Dulay, 1978 and Flege, 2002), implicit measures are more valid because they are less likely to be subject to bias. On the other hand, explicit measures have the advantage of being able to measure multiple dimensions of dominance at once, unlike implicit measures, which are more limited in their dimensionality (see Luk & Bialystok, 2013).

The problem of measuring dominance becomes even harder to solve when it comes to bilingual speakers of typologically different languages. Creating parallel versions of the same test in two languages is extremely difficult. How do we make sure the test has the same degree of difficulty in each language?

This difficulty in comparing measures of typologically different languages also applies to speech rate. For example, Daller et al. (2011) describes how three words in German might be expressed by only one word in Turkish—since Turkish is an agglutinative language—so the two are difficult to compare through a “words per minute” measure of speech rate.

Dominance in bilingual speakers of Turkish and English (two typologically different languages) has so far been understudied. Improving our understanding of language dominance in Turkish-English bilinguals has the potential to benefit both theoretical work on bilingualism as well as educational practices for bilinguals. The aim of this paper is to contribute to a better understanding of dominance in speakers of typologically different languages, in our case Turkish-English bilinguals. We compare implicit and explicit measures of dominance to see whether there is a significant difference between them.

Overview of the current study

This paper aims to contribute to a better understanding of dominance in speakers of typologically different languages, in particular Turkish and English, by comparing implicit and explicit measures of dominance. We ask the following questions:

1. Are implicit and explicit measures of language dominance comparable?
2. What do the specific measures (e.g., accuracy, response time, self-ratings) tell us about dominance?

Method

Participants. Twenty-one Turkish-English late bilingual adults who were born and raised in Turkey participated. They all learned Turkish as their first language and moved to the U.S. at age 17 or later (M = 26.6, SD = 5.4). Prior to their arrival to the US, probably all participants had some exposure to English. In Turkey, English is taught as a second language starting from the second year of elementary school in the public system and from kindergarten in private schools, however the quality and quantity of English teaching varies across regions.

Materials. In order to measure dominance, we used both implicit and explicit measures. Our implicit measures came from the Body Naming Test (BNT), designed by O’Grady et al. (2009). The explicit measure that we used was the Bilingual Language Profile (BLP), a questionnaire designed by Birdsong et al. (2012).

Body Naming Test (BNT) – Implicit measure. The BNT is a lexical naming task that measures accuracy and response time as participants name images of body parts in each of their languages (in our case, Turkish and English).

There were a total of 31 body-part pictures, divided into low frequency (n=14) and high frequency (n=17) lexical items. To create the Turkish version, the English words provided by O’Grady et al. (2009) were translated into Turkish by a highly proficient L2 Turkish speaker and checked for accuracy by a native Turkish speaker. Items from each language were presented in one of two orders, counterbalanced by participant. Half
of the participants were given English version 1 and Turkish version 2, while the other half were given English version 2 and Turkish version 1. The items are listed in Table 1, in the appendix.

Each participant was tested in two sessions, one entirely in English and one entirely in Turkish. Half of the participants received English first, and half received Turkish first. Items were presented in a different order in each language, in order to minimize the possibility that participants would generate expectations in the second session based on their memory of the first session. However, all high frequency items always preceded all low frequency items.

For each trial, a picture was shown on a computer tablet screen, synchronized with a short beep in order to mark the moment that the picture appeared in the audio recording. The entire session was audio-recorded. Before each session, the subject received instructions in the language in which s/he was about to be tested. Instructions are given in the appendix.

**Bilingual Language Profile (BLP) – Explicit measure.** The explicit measure we used was the BLP, a self-report questionnaire divided into four sections: language history, language use, language proficiency and language attitude.

Each response is combined into a total score for each language. In order to obtain the overall relative language dominance index, we subtracted one language total from the other to render a dominance score that ranges from -218 to +218. A score of zero indicates balanced bilingualism, a more positive score indicates English dominance, and a more negative score indicates Turkish dominance. The BLP used in this study is presented in the appendix.

**Results**

**Explicit measure results: dominance score (BLP)**

As we can see in Figure 1, according to the results of our explicit measure most participants were Turkish dominant, as expected, since they were all late bilinguals who arrived to the US in adulthood.

![Figure 1. Histogram and density plot of relative dominance scores from the BLP](image)

*Note: The x axis indicates the dominance score. Positive scores indicate English dominance, and negative scores indicate Turkish dominance. The vertical blue line is at zero, which indicates where balanced dominance would be.*
Implicit measures’ results: BNT relative accuracy score

Figure 2 shows the relative accuracy score obtained from our implicit measure, the body naming test (BNT). Most participants are to the left of zero, which indicates that most participants were more accurate naming the body parts in Turkish rather than in English.

We created relative measures of language dominance (one based on mean accuracy, another based on mean log RT) using the following equation \((LA – LB) / (LA + LB) * 100\) (Birdsong, 2016) for each participant based on the literature on handedness (Birdsong, 2016; Stover et al., 2021).

![Figure 2. Relative accuracy score.](image)

Note: The x axis indicates the dominance score. Positive scores indicate English dominance, and negative scores indicate Turkish dominance. The vertical blue line is at zero, which indicates where balanced dominance would be.

Implicit measure (BNT): Accuracy score by language and frequency

Figure 3 shows that there were no significant differences in accuracy among Turkish high and low frequency words and English high frequency words. However, participants were significantly less accurate on English low frequency words than on all three other conditions.

![Figure 3. Mean response accuracy by language and frequency with 95% confidence interval error bars.](image)
To further test the significance of effects, accuracy was fit with a logistic mixed effects model with language and frequency as fixed effects and by-subject and by-item random intercepts. ‘Turkish’ was coded as the baseline level for the factor ‘language’, and ‘high’ was coded as the baseline level for the factor ‘frequency’. There were no main effects of either language or frequency. However, a significant interaction between language and frequency ($\beta = -2.26$, SE($\beta$) = 0.59, $z = -3.80$, $p < .001$) confirms the finding that participants were significantly less accurate on English low frequency words than on the other three conditions.

**BNT relative response time score**

As seen in Figure 4, the plot is denser on the left side of the zero, showing that participants tended to be faster answering in Turkish than they were in English.

![Figure 4](image.png)

**Figure 4.** Histogram and density plot of the relative response time score.

*Note: The x axis indicates the dominance score. The vertical blue line is at zero, which indicates where balanced dominance would be.*

**Implicit measure (BNT): Response time by language and frequency**

Response times were log-transformed to address the non-gaussian distribution. Response times from trials where the participant responded incorrectly were removed. As we can see in Figure 5, participants were significantly faster with Turkish high frequency words than with words in the other three conditions. We observe no difference between English high-frequency words and Turkish low frequency words. Participants were slower on trials with English low-frequency words.

Log-transformed response time was fit with a linear mixed effects model with the same fixed effects, baseline levels, and random intercepts as the logistic mixed effects model from the section “Implicit measure (BNT): Accuracy score by language and frequency”. Both fixed effects and their interaction were significant. Participants were significantly slower on English than Turkish words ($\beta = 0.18$, SE($\beta$) = 0.02, $t = 8.78$, $p < .0001$) and slower on low frequency than high frequency words ($\beta = 0.17$, SE($\beta$) = 0.03, $t = 4.81$, $p < .0001$). The significant interaction indicates that the effect of language was stronger in low frequency words, and the effect of frequency was stronger in English words ($\beta = 0.09$, SE($\beta$) = 0.03, $t = 2.81$, $p < .01$).
We compared the dominance measures from the BNT (accuracy and response time) to the BLP measure in order to see if implicit measures of language dominance (BNT) would correlate with an explicit measure (BLP). For both kinds of measures, a higher score indicates greater English dominance. Recall that the degree of dominance is a proportional relationship of the dominant language to the non-dominant language, not to be confused with proficiency.

Figure 6 plots relative accuracy score on the BNT (y-axis) against BLP dominance score for each participant. We found a strong correlation (Spearman’s $\rho = .76$, $p < .01$), supporting convergence of the two measures.
We now turn to the potential relationship between response time on the implicit measure (BNT) and the explicit dominance score (BLP), plotted in Figure 7. Here we find a non-significant correlation ($\rho = .25$, $p = .27$). A closer look reveals an extreme outlier (in red).

The outlier is very high on the BLP dominance scale, but very low on the BNT response time dominance scale. This participant considered himself English dominant. In the Body Naming Test, however, he resulted Turkish dominant. When we remove this participant from the analysis (Figure 8), the positive correlation approaches significance but is still not significant at alpha = .05 ($\rho = .42$, $p = .06$).
Relative accuracy and relative response time within BNT

We compared the accuracy and response time from our implicit measure (BNT) to see if the two measures are correlated.

As seen in Figure 9, there was no correlation between the response time and accuracy dominance scores from the BNT (Spearman’s $\rho = .05$, $p = .84$), suggesting that the two variables might measure different aspects of language dominance.

![Figure 9. Accuracy and LogRT.](image)

Conclusions and further directions

Our results show that there is a strong correlation between the implicit measure’s relative accuracy score and the explicit measure’s dominance score. This suggests convergence of the two measures, at least at this level and would confirm Luk & Bialystok’s (2013) findings. On the other hand, no correlation was found between response time and accuracy measures within the BNT, or between BNT response time and BLP dominance scores.

The lack of correlation between response time and accuracy dominance scores from the implicit measure, as well as the lack of strong correlation between BNT response time and BLP dominance score suggests that response time might measure a different aspect of dominance than accuracy and self-reports. Response time might measure lexicon access, while accuracy might measure lexical size.

Further research is needed to corroborate this hypothesis, but this possibility would underline the need for a variety of measures in assessing language dominance, especially in speakers of typologically different languages like Turkish and English.

The data presented here was collected from a population of bilinguals highly exposed to English. Would there be some effect of daily exposure if the bilinguals lived in Turkey? Also, it would be interesting to replicate the tests we used on early bilinguals, looking for an effect of age of acquisition. These are important questions not only for a deeper understanding of bilingualism, but also to help develop consistent measurements of language dominance. These could be used effectively across studies and for both syntactically similar and dissimilar languages.
References


Appendix

1. Body Naming Test (BNT)

a. Instructions of the Body Naming Test:

English: “Please name the circled object as quickly as you can, with the first word in English that comes to mind. For some objects, you might not be able to think of a word. If that happens, just stay silent and wait for the next object. If you say the wrong word by mistake, let me know by shaking your head, but don’t spend time correcting it – just wait for the next object. Try not to make any other sounds (coughs, “ums”) before you say the word. Remember, you’re only going to use English right now, to name as many of these objects as you can.”


b. Elicited words

Table 1. BNT list of items in each language and each presentation order.

Note. Items in bold are low frequency. Translation was made by the first author. Adapted from A psycholinguistic tool for the assessment of language loss: The HALA project by O’Grady et al., 2009.

<table>
<thead>
<tr>
<th>English V1</th>
<th>English V2</th>
<th>Turkish V1</th>
<th>Turkish V2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stomach</td>
<td>Face</td>
<td>Göbek / Karın</td>
<td>Yüz / Surat</td>
</tr>
<tr>
<td>2. Leg</td>
<td>Nose</td>
<td>Bacak</td>
<td>Burun</td>
</tr>
<tr>
<td>3. Back</td>
<td>Ear</td>
<td>Sırt</td>
<td>Kulak</td>
</tr>
<tr>
<td>4. Face</td>
<td>Head</td>
<td>Yüz / Surat</td>
<td>Kafa</td>
</tr>
<tr>
<td>5. Eye</td>
<td>Stomach</td>
<td>Göz</td>
<td>Mide / Göbek / Karın</td>
</tr>
<tr>
<td>6. Head</td>
<td>Back</td>
<td>Kafa</td>
<td>Sırt</td>
</tr>
<tr>
<td>7. Teeth</td>
<td>Leg</td>
<td>Diş / Dişler</td>
<td>Bacak</td>
</tr>
<tr>
<td>8. Tongue</td>
<td>Hand</td>
<td>Dil</td>
<td>El</td>
</tr>
<tr>
<td>9. Lips</td>
<td>Shoulder</td>
<td>Dudak / Dudaklar</td>
<td>Omuz</td>
</tr>
<tr>
<td>10. Mouth</td>
<td>Teeth</td>
<td>Ağız</td>
<td>Diş / Dişler</td>
</tr>
<tr>
<td>11. Nose</td>
<td>Tongue</td>
<td>Burun</td>
<td>Dil</td>
</tr>
<tr>
<td>12. Ear</td>
<td>Lips</td>
<td>Kulak</td>
<td>Dudaklar / Dudak</td>
</tr>
<tr>
<td>13. Hand</td>
<td>Mouth</td>
<td>El</td>
<td>Ağız</td>
</tr>
<tr>
<td>14. Shoulder</td>
<td>Eye</td>
<td>Omuz</td>
<td>Göz</td>
</tr>
</tbody>
</table>
Comparing dominance measures in speakers of typologically different languages: A case study of Turkish-English Bilinguals

15. Finger  Finger  Parmak  Parmak / Parmaklar, El Parmakları
17. Foot  Foot  Ayak  Ayak
18. Forehead  Arm  Alın  Kol
19. Chin  Wrist  Çene  El Bileği / Bilek
20. Eyebrow  Toe  Kaş  Ayak Parmağı / Parmak
21. Neck  Ankle  Boyun  Ayak Bileği / Bilek
22. Cheek  Heel  Yanak  Topuk
23. Arm  Elbow  Kol  Dirsek
24. Wrist  Neck  Kol Bileği / Bilek  Boyun
25. Thumb  Cheek  Baş Parmak  Yanak
26. Palm  Eyebrow  Avuç / AVuç İçi  Kaş
27. Fingernail  Forehead  Parmak Tırnağı / Tırnak
28. Toe  Chin  Ayak Parmağı / Parmak  Çene
29. Elbow  Thumb  Dirsek  Baş Parmak / Parmak
30. Ankle  Fingernail  Ayak Bileği / Bilek  Tırnak
31. Heel  Palm  Topuk  AVuç İçi / El İn / El Ayası

2. Bilingual Language Profile.

Adapted from:

**Bilingual Language Profile: English-Turkish**

We would like to ask you to help us by answering the following questions concerning your language history, use, attitudes, and proficiency. This survey was created with support from the Center for Open Educational Resources and Language Learning at the University of Texas at Austin to better understand the profiles of bilingual speakers in diverse settings with diverse backgrounds. The survey consists of 19 questions and will take less than 10 minutes to complete. This is not a test, so there are no right or wrong answers. Please answer every question and give your answers sincerely. Thank you very much for your help.

I. Biographical Information

Name ___________________________________________       Today’s Date ________/________/________

Age ___ □ Male / □ Female / □ Other       Current place of residence: city/state _____________ country: ____________

High level of formal education:  □ Less than high school □ High school  □ Some college
□ College (B.A., B.S.) □ Some graduate school □ Masters
□ PhD/MD/JD □ Other: ______________
I. Biographical Information

In this section, we would like you to answer some factual questions about your language history by placing a check in the appropriate box.

1. At what age did you start learning the following languages?

   **English**
   
   - [ ] Since birth
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

   **Turkish**
   
   - [ ] Since birth
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

2. At what age did you start to feel comfortable using the following languages?

   **English**
   
   - [ ] As early as I can remember
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+
   - [ ] not yet

   **Turkish**
   
   - [ ] As early as I can remember
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+
   - [ ] not yet

3. How many years of classes (grammar, history, math, etc.) have you had in the following languages (primary school through university)?

   **English**
   
   - [ ] 0
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

   **Turkish**
   
   - [ ] 0
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

4. How many years have you spent in a community where the following languages are spoken?

   **English**
   
   - [ ] 0
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

   **Turkish**
   
   - [ ] 0
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
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   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

5. How many years have you spent in a family where the following languages are spoken?

   **English**
   
   - [ ] 0
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+

   **Turkish**
   
   - [ ] 0
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12
   - [ ] 13
   - [ ] 14
   - [ ] 15
   - [ ] 16
   - [ ] 17
   - [ ] 18
   - [ ] 19
   - [ ] 20+
5. How many years have you spent in a **work environment** where the following languages are spoken?

**English**

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
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<th>3</th>
<th>4</th>
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<th>16</th>
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<th>18</th>
<th>19</th>
<th>20+</th>
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</table>

**Turkish**

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
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<th>17</th>
<th>18</th>
<th>19</th>
<th>20+</th>
</tr>
</thead>
</table>

**IV. Language Proficiency**

*In this section, we would like you to rate your language proficiency by giving marks from 0 to 6.*

12 a. How well do you speak **English**?

6. How well do you speak **Turkish**?

13 a. How well do you understand **English**?

6. How well do you understand **Turkish**?

14 a. How well do you read **English**?

6. How well do you read **Turkish**?

15 a. How well do you write **English**?

6. How well do you write **Turkish**?
A Corpus-Based Analysis of Newspaper Reports on the COVID-19 Pandemic in Kazakh

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Abstract

The aim of the study is to explore the creation of vocabulary related to the COVID-19 pandemic in the Kazakh language. This study provides an overview of the characteristics of language related to COVID-19 and of linguistic corpora developed for the novel coronavirus. This article presents a corpus-based study of the pandemic-related words and phrases in Kazakh in the early stages of the COVID-19 crisis. A software programme NVivo is used to analyze data collected from the Kazakh-language newspaper Égemen Qazaqstan to perform a corpus-based study. The analysis reveals that the words that have reached a new level of familiarity for many people since the global outbreak of COVID-19 such as “coronavirus”, “pandemic”, and “COVID-19” are the most frequently used words in the Kazakh COVID-19 vocabulary. The results of the study show that along with such well-known terms, the original words of the Kazakh language, such as “indet”, are often used in the vocabulary of the pandemic. A detailed linguistic description is given to the most frequently used words in the first four months of 2020 within the lexicon of the pandemic.

Keywords: COVID-19, pandemic, coronavirus, Kazakh, corpus, corpus-based analysis

It has been more than a year since the COVID-19 coronavirus outbreak started in December 2019 in Wuhan, China, spreading since then to almost every part of the world. The World Health Organization (WHO) warned of the virus on January 9, 2020, and originally called it the Novel Coronavirus 2019 (n-COV). The WHO later named the current strain of the coronavirus “COVID-19” and declared it a pandemic (World Health Organization, n.d.).

The pandemic has had a tremendous impact on every sphere of life, from economics to education, and language is no exception. Language displays all these social changes. It may be explained “through viewing language as a social fact that can be easily influenced by social, political, and other events, especially those that affect whole communities and not individuals” (McMahon, 1994). The word ‘corona speak’ was described by a linguist Tony Thorne as “the new language of the pandemic” (King’s College London, 2020), suggesting that COVID-19 has created a language of its own. According to Lawson (BBC, 2020), the speed of linguistic change with COVID-19 is “unprecedented,” resulting from factors such as “the dizzying pace at which the virus has spread, its dominance in the media and global interconnectivity at a time when social media and remote contact are so important.” Indeed, everyday language has been transformed by the pandemic, leading to new linguistic inventions and adaptations of existing terms to describe the pandemic and its impact on the world.

A significant amount of data such as news, newspaper reports, scientific articles, social media posts, and other information about the virus have been published since the outbreak in 2019. Newspaper reports - the main source of this study - play an important role both in providing people with information about the pandemic and influencing their opinions and behavior. A majority of studies have focused on the influence of COVID-19 on

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Correspondence concerning this article should be addressed to Gulnar Adebietkyzy Sarseke, Department of Kazakh Linguistics, 11 Kazhymukan St., Nur-Sultan, Z01C0T6. Email: sarseke_ga@enu.kz
the language of media and social networks, analyzing them using a corpus-based approach (Haddad Haddad & Montero-Martinez, 2020; Hua, Azman, Ho Abdullah et al., 2020; Montkhongtham, 2021; Nauman Ahmed & Islam, 2020; Prieto-Ramos, Pei, & Cheng, 2020). Like many other languages, Kazakh, too, has been affected by the pandemic. Indeed, while Kazakh media and social platforms are booming with COVID-19 related discussions, the Kazakh COVID related vocabulary is not adequately represented by existing corpora in Kazakhstan. To that end, I have built my own corpus for this study.

This study aims to identify the COVID-19-related vocabulary in Kazakh and analyze the frequency of pandemic-related words. First, I will briefly describe the existing research in this area, particularly corpus studies on COVID-19. Second, I will present the findings on this topic based on the Kazakh data. I will track the development of the language of the pandemic in Kazakh and offer linguistic context. The Kazakh words and phrases analyzed in this study will be given in the Latin spelling along with the Kazakh version in parentheses.

Literature Review

Corpora on COVID-19

News reports on the epidemic have increased ever since its outbreak in 2019. “The interest in the language used in reporting, describing, discussing, metaphorizing, and referring” (Hua, Azman, Ho Abdullah et al., 2020) to the coronavirus pandemic might be a driver for development of linguistic corpora on the pandemic. Researchers have been collecting COVID-19-related discourses for linguistic analyses and making corpora. Since January 2020 different corpora have been created which are now used as the source for various linguistic research.

Corpus research plays an important role in the identification and registration of the pandemic vocabulary. The Oxford English Dictionary (OED) is a leading corpus in defining the vocabulary of COVID-19: it is “a comprehensive online corpus that has been monitoring, recording, and analyzing changes in the language of COVID-19 since its inception” (“Discover the story,” n.d.). The main source of this corpus is web news. At the time of this study, the corpus had approximately 350 million words.

Another major corpus is the Corpus of Contemporary American English (COCA). It was created by a professor in linguistics Mark Davies. First released in 2019, the COCA’s ‘Coronavirus Corpus’ was created as “a record of the social, cultural, and economic impact of the coronavirus (COVID-19) in 2020 and beyond” (Coronavirus corpus, n.d.). This corpus comprises texts from online newspapers and magazines in 20 English speaking countries. At the time of the study, the corpus had approximately 1026 million words, growing by 3-4 million words per day (Coronavirus corpus, n.d.). This corpus shows the frequency, collocates and patterns of the pandemic related words and phrases in each 10-day period since the pandemic began.

Sketch Engine, a corpus manager and text analysis software, has published its own COVID-19 corpus consists of texts that were released as part of the COVID-19 Open Research Data set (CORD-19) (COVID-19 corpus, 2020). It is one of the comprehensive corpora devoted to COVID-19-related language in more than 90 languages. The COVID-19 corpus in English has 224,061,570 words, and includes collocations, concordances, a thesaurus, n-grams, word frequency lists, and keyword lists.

The Kazakh language, however, has no COVID-19-related corpus yet. Currently, two or three online corpora are available, which I have checked for any pandemic-related vocabulary. Unfortunately, I could not find any results in the Almaty Kazakh language corpus (Алматы қазақ тілінің корпусы, n.d.). The National Corpus of the Kazakh language has some words related to the coronavirus (National Corpus of the Kazakh Language - qazcorpus.kz, n.d.), but the number of texts is still small. For instance, at the time of the study, the number of documents featuring the word “коронавирус” (“коронавирус”) was 74, and “пандемия” (“пандемия”) was 12. There were no registered texts including the term “COVID-19.”
Research Data

The data were collected from the newspaper *Egemen Qazaqstan*, a government-owned Kazakh language newspaper published in Kazakhstan. Its coverage spans all regions of the country’s vast territory. Because its pandemic-related coverage is so broad, I have found the newspaper to be a reliable source of data. *Egemen Qazaqstan* has its own website (https://egemen.kz/) which offers a PDF format of newspaper issues by day and year, where one can conveniently download their issues of choice.

Data were collected from January 2020 to April 2020, during the initial breakout of the pandemic. Data from December 2019 were checked for words and phrases related to COVID-19, and although none were found, it was used as a baseline comparison for subsequent months.

Research Tool

I used the NVivo, a qualitative data analysis computer software programme, to analyze the frequency of words. The data collection process consisted of several stages. First, I downloaded issues from December to April 2020 from the *Egemen Qazaqstan* website (Егемен Қазақстан – egemen qazaqstan, n.d.). The number of issues was 68 in total: January - 6, February – 20, March – 20, April - 22. I considered the issues in January only from the date when the coronavirus topic appeared. Next, I determined the frequency of each word over these four months as well as the frequency of each word and word form in every month. It should be noted that I consider only references of words and phrases directly related to the pandemic. For example, a phrase like “qol alysu” (“қол алысу”) meaning “a greeting, or an act showing that you have made an agreement, in which two people who are facing each other take hold of and shake each other’s right hand” (*Handshake*. Cambridge Dictionary, n.d.) would be left out of the analysis. Instead, the phrase ‘to avoid shaking hands during the pandemic so as to prevent the spread of the virus’ would be taken into consideration.

Although NVivo works well when finding word stems in Kazakh, it does not work when finding or recognizing stemmed words. If I search for “пандемия” (“пандемия”) in Kazakh, the programme will only find the “пандемия” word form. NVivo does not recognise the morphological forms of this word such as “пандемияның” (“пандемияның”), “пандемиага” (“пандемиага”), “пандемиясы” (“пандемиясы”) and the morphological forms of other words. I have had to do a separate search on every Kazakh word related to the pandemic and its different morphological forms, making for time-consuming work.

Research Findings and Analysis

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<tr>
<th>Kazakh</th>
<th>English</th>
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<tr>
<td>зат есім</td>
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<td>antibody</td>
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<td>social distance</td>
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<td>белгі/симптом</td>
<td>symptom</td>
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<td>бетперде/бет перде/маска</td>
<td>facemask</td>
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<td>вакцина</td>
<td>vaccine</td>
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<td>вирус</td>
<td>virus</td>
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<td>сый есім</td>
<td>вирустық</td>
<td>virus</td>
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<td>Кыргыз тилинде</td>
<td>Английский</td>
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<td>екпе/вакциналау</td>
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<td>quarantine</td>
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<td>quarantine procedure</td>
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<td>quarantine</td>
<td>quarantine</td>
</tr>
<tr>
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<td>quarantine zone</td>
<td>quarantine zone</td>
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<tr>
<td>карантин шаралары</td>
<td>quarantine measures</td>
<td>quarantine measures</td>
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<tr>
<td>КВИ/коронавирус/коронавирус инфекциясы</td>
<td>coronavirus infection</td>
<td>coronavirus infection</td>
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<tr>
<td>кол алысу</td>
<td>handshake</td>
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<td>кол санитайзер</td>
<td>hand sanitizer</td>
<td>hand sanitizer</td>
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<td>protective suit</td>
<td>protective suit</td>
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<td>окшаулау</td>
<td>isolation</td>
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<td>озин-озин окшаулау/ озин өзі окшаулау/ өз-өзин окшаулау</td>
<td>self-isolation</td>
<td>self-isolation</td>
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<td>озин-озі окшаулау/ озін өзі окшаулау/ өз-өзін окшаулау</td>
<td>self-isolate</td>
<td>self-isolate</td>
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<td>pandemic</td>
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<tr>
<td>пандемиялық</td>
<td>pandemic</td>
<td>pandemic</td>
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<tr>
<td>ПТР/полимеразды тізбекті реакция</td>
<td>PCR/ polymerase chain reaction</td>
<td>PCR/ polymerase chain reaction</td>
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<tr>
<td>ПТР диагностикалау адістемесі</td>
<td>PCR diagnostic methods</td>
<td>PCR diagnostic methods</td>
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<td>ПТР талдау/ПТР анализ</td>
<td>PCR analysis</td>
<td>PCR analysis</td>
</tr>
<tr>
<td>сактык шаралар</td>
<td>precautionary measures</td>
<td>precautionary measures</td>
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<td>санитайзер</td>
<td>sanitizer</td>
<td>sanitizer</td>
</tr>
<tr>
<td>санитарлык-карантиндік бакылау</td>
<td>sanitary and quarantine control</td>
<td>sanitary and quarantine control</td>
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<tr>
<td>симптомсыз</td>
<td>asymptomatic</td>
<td>asymptomatic</td>
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<tr>
<td>тепловизор</td>
<td>thermal imaging</td>
<td>thermal imaging</td>
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<tr>
<td>тыныс алу</td>
<td>breath/breathing</td>
<td>breath/breathing</td>
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<tr>
<td>Ухань</td>
<td>Wuhan</td>
<td>Wuhan</td>
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<tr>
<td>уй карантині</td>
<td>home quarantine</td>
<td>home quarantine</td>
</tr>
<tr>
<td>індет</td>
<td>epidemic/pandemic</td>
<td>epidemic/pandemic</td>
</tr>
<tr>
<td>хлордексиден</td>
<td>chlordexidene</td>
<td>chlordexidene</td>
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</table>
One of the most frequent words used in the Kazakh data is “koronavirus” (“коронавирус”). “Koronavirus” was used 1097 times during these four months. It was used 47 times in January and increased to 566 in April. The usage of “koronavirus” increased each month, from 100 times in February to 384 in March. (Table 2). “Koronavirus” is only one word version appeared in the analyzed data. Shortened form of this word such as “korona” (“корона”) does not appear in the analyzed newspaper data, although it does appear in other Kazakh-language social networks such as Facebook. (Picture 1)

Table 1. COVID-19 vocabulary. Source: *Egemen Qazaqstan*

<table>
<thead>
<tr>
<th>English Word</th>
<th>Казахский эквивалент</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>rapid/express/quick test</td>
<td>экспресс тест/экспресс тест/жедел тест</td>
<td>noun</td>
</tr>
<tr>
<td>epidemic</td>
<td>эпидемия</td>
<td>adj</td>
</tr>
<tr>
<td>COVID-19</td>
<td>COVID-19</td>
<td>noun</td>
</tr>
</tbody>
</table>
The second most frequently used word is “indet” (“індет”). This is the equivalent word for “koronavirus” in Kazakh. “Indet” is the original Kazakh word included in the lexicon of the pandemic. “Indet” with the ‘infectious disease, disease, illness’ (ҚазҰЭК, n.d.) meaning has long been a word in the lexicon of the Kazakh language. In Kazakh history, various diseases, such as plague and foot-and-mouth in livestock, were also called “indet”. In the data I reviewed, “indet” was used not only to refer to the coronavirus, but also to corruption and computer games. “Indet” is used to describe corruption in the discourses below:

<Files\01.2020\24.01.20> - § 2 references coded [0,01% Coverage]
Reference 2 - 0,01% Coverage
24 ҚАҢТАР 2020 ЖЫЛ ҚҰҚЫҚ ҚҰҚЫҚ ҚОРҒАУ ҚАДАМДАРЫ ЖЕМҚОРЛЫҚ – ІНДЕТ, ЖОЮ – МІНДЕТ

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Reference 1 - 0,01% Coverage

However, “індет” is usually used as a lexeme to describe different types of disease in Kazakh, such as “plague” and “foot-and-mouth disease in livestock” as seen in the analyzed newspaper data. I have only analyzed references related to COVID-19. Other usages of this word such as ‘disease of livestock’, ‘bribery as an infectious disease’, ‘computer games as a disease’, ‘infectious disease of plague’, and other usages of different infectious diseases in the history of the Kazakh language were not taken into account. On that note, “indet” as defined here was used 980 times from January to April. Of these, only 8 were in January, 45 in February, 221 in March, and 706 in April (Table 3).
“Pandemia” ("пандемия") is another frequently used word in the analyzed Kazakh data. The word "pandemia" was used 366 times over the course of four months. The word first came into use in February. Since then, its use has gradually increased, and in April, it appeared 276 times (Table 4). The number of newspaper reports with this word and its morphological forms also increased from 1 in February to 22 in April.

A Corpus-Based Analysis of Newspaper Reports on the COVID-19 Pandemic in Kazakh
The acronym “2019-nCoV” was used for the first time in January over the course of the four months analyzed. It was used frequently in February but became obsolete in subsequent months. (Table 4). This is true for English as well (“Discover the story,” n.d.).

The next term “COVID-19” was first used by the World Health Organization as an acronym for “coronavirus disease 2019” (Novel Coronavirus (2019-nCoV) - who.int., n.d.). “COVID-19” as a scientific term was used in science in 1960s (“Discover the story,” n.d.). Many researchers expressed the view that “COVID-19” is ‘only one truly new word’ in the pandemic vocabulary (Asif, Zhiyong et al., 2020; “Discover the story,” n.d.). Despite the term “COVID-19” first appeared in English in February, it is one of the most popular words in today’s world.

The two spellings of the virus, i.e., “COVID-19” and “COVID-19,” reflect regional differences in English. COVID-19 is capitalized in the United States, Canada, and Australia, while COVID-19 is common in the United Kingdom, Ireland, New Zealand, and South Africa (Roger, 2021). However, recent research in this area has shown that common usage has moved slightly toward to a lower-case spelling in the United States (“Discover the story,” n.d.). Oxford English Dictionary (https://www.oed.com) follows the British “COVID-19” lower case spelling, while World Health Organization (https://www.who.int/) uses the “COVID-19” spelling. As for whether the term is written in uppercase or lowercase letters, there is no difference in Kazakh: the frequency of both forms gave same results in number, and there is no specific linguistic difference. “COVID-19”, “COVID-19”, “COVID -2019” and “COVID-2019” are the four spellings which appeared in the analyzed data. Among them, “COVID -2019” and “COVID-2019” are less used. They appeared only five times in total:

The word “COVID-19” appeared 233 times total over these four months. It was not used in January and was used only twice in two reports in February. The usage of the term, however, increased to 85 in March and 146 in April. (Table 5).
Table 5

The versions of “COVID-19” such as “Қовид”, “Қовид-19” or “ҚОВИД-19” in Kazakh were not used at all in the data I analyzed. However, they appeared in online news websites and social networks in Kazakh. (See Picture 1 above)

Conclusion

Since the beginning of the pandemic, a vast majority of familiar terms from media, social networks, and government briefings have acquired a new meaning in describing the current situation, and their frequency has increased. Some words in the pandemic lexicon that were previously used in a broad sense are now used to refer to the COVID-19 pandemic. On the other hand, a number of terms used only in certain fields of science acquired a common character in 2020.

The results of this study show that in the first four months of 2020, the use of terms related to the pandemic has increased significantly, and they have expanded beyond certain discipline areas and become popular. An analysis of the vocabulary of the pandemic in Kazakh has shown that the keywords of the first months of the pandemic were mainly terms related to the disease, particularly “coronavirus,” “indet,” “pandemic,” and “COVID-19.” Linguistic corpora have been created for the coronavirus in English and other languages, but there are no corpora for the 2020 pandemic in Kazakh. However, the pandemic vocabulary began to appear in the existing Kazakh corpora, albeit in small numbers. Based on the data of the newspaper *Egemen Qazaqstan*, the words “coronavirus,” “indet,” “pandemic,” and “COVID-19” were at the top in the frequency list of words in the first four months of 2020.
References


Sign Language: Voices of Deaf in Kyrgyzstan

Feruza Shermatova
Independent Scholar

Abstract

The paper reflects the results of the field work among deaf community in Kyrgyzstan in order to register the previously non-recorded Kyrgyz ethnic gestures and signs.

The purpose of this research is to identify the current situation of Sign Language Issues in Kyrgyzstan. The Russian Sign Language is used as a SL for all Deaf people in Kyrgyzstan as in the other parts of post-Soviet space. This paper analyzes the challenges that the deaf community and schools face. Society of Deaf and Blind in the Kyrgyz Republic estimates that there were 9,507 disabled people in the country in January 2017. The data collected at the National Deaf School will be the main core of the analysis. Since the Kyrgyz language acquired official status in 1989, classes of the Kyrgyz language are conducted via the bilingual method while translating gestures from Russian into Kyrgyz at the National Deaf School. However, according to official information of the Ministry of Education and Science, there is no officially accredited and codified Kyrgyz Sign language across the country despite some attempts to create one. Department of Special Education and Psychological Correction at the Ishenaly Arabaev State University trains teachers in Surdopedagogy and Oligophrenic pedagogy; their curriculum contains only some courses in gesture communication and Sign Language; teachers have to develop their competency in gestures and signs by themselves. Recently some projects of non-governmental agencies started short-term courses of training Sign Language Interpreters from the spoken Kyrgyz language into the Russian Sign Language.

I argue that Sign Language Issues are not studied as a separate topic of research in the country. The lack of research background makes the study extremely significant in the context of modern Post-Soviet linguistics. The research will concern the ‘information conveyed by manual signs, the synchronicity between two hands’. The study also specifies whether Sign Language in Kyrgyzstan shares any significant similarities with their respective the spoken languages and culture.

Keywords: Sign Language, Kyrgyzstan, Signed Russian, Deaf Community

Introduction

Sign Languages are the languages that evolved in different parts of the world by the necessity of the deaf community. They are different from the spoken languages by the laconism of their grammar; because it collects all linguistic rules into a visual and manual model. It is a unique system of linguistic signs that is always interesting to study. As D. Stein and others claim, “in spite of common misconceptions, SLs are natural, indigenous and independent means of communication for deaf and hard-of-hearing communities worldwide”. (Stein et al 2007) Besides that, Sign Languages are mutually intelligible only via teaching and introducing them in the different countries, thus British Sign Language and American Sign Languages are not mutually intelligible, though British and American English are the variants of the English language. The Russian Sign Language discussed in this paper is related to the French Sign Language; it has some similarities with the
American Sign language. According to Kim B. Kurz, the features of Signs as Handshape, Palm Orientation, Location, Motion comprise the grammar of Sign Languages. If spoken languages compose speech sounds, sign languages compose words (Kim B. Kurz 2012, p. 137). Linguistic research on sign languages started in the 1950s by B. Tervoort (Tervoort, 1953) and W. Stokoe (Stokoe et al., 1960). Since 1990 sign language research acquired a new trend with the development of Machine Translation.

**Russian Sign Language**

Russian Sign Language (русский жестовый язык, российский жестовый язык, русский язык жестов, русский язык глухих) is the Sign Language that the Deaf community in Russia and the other post-Soviet countries use. It has strict word order (SVO) and word formation than the spoken and written Russian language. There is no systematic writing for Russian Sign Language, though it uses handshape, location and articulated movement by W. Stokoe (Stokoe, 1960), also the Hamburg Notation System (HamNoSys) (Hanke, 2004) and SignWriting (Sutton, 1995. There was a big gap in Sign Language research in the Soviet and Post-Soviet academia. Research on Russian Sign Language started with Galina Lazarevna Zaitseva. Her PhD dissertation “Выражение пространственных отношений в мимико-жестиккуляторной речи глухих” (Expression of spatial relationships in Russian Sign Language) was done in 1969. She proposed a taxonomy of Russian Sign Language (русский язык жестов-РЯЖ) and Signed Russian (manually coded) Language -(КЖЯ-калькуирующий жестовый язык). ‘Signed Russian’ (manually coded) copies the spoken and written Russian language, it is used in formal talks, sign language teaching, conference papers, and on TV. However, conversational Russian Sign Language is system of oral communication among Deaf people. G. L. Zaiseva claims that Russian Signed Speech always improves its vocabulary with political, economic, academic terminology. If the teaching of Russian Signed Speech is not done appropriately, the message given via Russian Signed Speech will remain unknown (Зайцева 1986, 1987). However, it is really hard to duplicate all the Russian grammatical rules (free word order, three genders, six cases, highly inflected morphology and syntax) in Russian Signed Speech. L. Grenoble argues that the “extreme form” of Signed Russian ‘would duplicate Russian word order in signs, and would presumably fingerspell all inflections. As it is, only finger spelled words (such as proper nouns) duplicate Russian inflection, and then only sometimes. Exactly how much fingerspelling occurs depends both upon the signer’s level of education and upon register. Despite these differences, the lexicon of Signed Russian is by and large borrowed from RSL.

The exact level of comprehension of any utterance in Signed Russian will depend on several factors: (a) where the Signed Russian lies on the diglossic continuum; (b) the addressee’s own knowledge of literary Russian; and, of course (c) any extra-linguistic context that might aid in interpretation. (Grenoble 1992, p.322).

**Sign Language Issues in Kyrgyzstan**

The paper reflects the results of the field work among deaf community in Kyrgyzstan in order to register the previously non-recorded Kyrgyz ethnic gestures and signs. The first school for deaf opened its door in 1934 in Kyrgyzstan. Since then the school exists as the National school for Deaf and people with hearing impairments. In 1958 the Society of Blind and Deaf people was established. Since it functions as non-governmental agency in which disabled people work in the small and medium business area, it is a platform the deaf and blind people to share their social and legal issues related to access to education, healthcare, equal labor and legal life in the country. Access to education remains the key issue among Deaf people, even though there are special schools in every region of the country. In 1971 a National library for the disabled people started to work in the country. They claim about their rights in the Mass media. In 2010 Society of Deaf and Blind proposed a public law project which could make Russian Sign Language as the one of the official languages within the framework of Constitutional Amendments of the Kyrgyz Republic. Another claim was to have a
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five percent quota for the parliament of the country and local municipal authorities. The Department of Special Education and Psychological Correction at the Ishenaly Arabaev State University trains teachers in Surdopedagogy and Oligophrenic pedagogy. Surdopedagogy deals with Deaf education. During the field work at the Department of Special Education and Psychological Correction, Professor Tilekeev Kenesh Mukhtarovich, head of the department, talked about the current situation of Deaf Education. This is the only accredited Bachelor Program across Kyrgyzstan that trains instructors for Deaf schools. The curriculum of the Department has been updated and modified according to the guidelines and standards of the Ministry of Education and Science of the Kyrgyz Republic. The department exists since nineteen eighties. The main part of the curriculum comprises methods of Deaf education rather than Sign Language mastering. The bachelor program contains a single course on Non-Verbal Communication; it introduces the basic notions and techniques of Russian Sign language. The Curriculum does not contain Sign Linguistics and Sign Language courses. According to the head of the Department, there are some attempts to create Kyrgyz Sign Language within the framework of different projects and some manuals have been created by the Department and recommended for publishing. I argue that Deaf education is impossible without mastering a Sign Language and Sign Language Interpretation.

I claim that the following social, educational and linguistic reasons depict the current situation of Sign Language Issues in Kyrgyzstan:

1. The system of Deaf Education is not well-developed due to the lack of a National Strategy on developing Sign Languages in the Country. Lack of academic research in the field of Sign Linguistics and the need for special libraries across the country are one of the reasons to highlight the issue in the academia.

2. The Kyrgyzstan system of education of deaf children still views deafness as a pathology and there are no bilingual and bicultural programs. Moreover, Kyrgyz Sign Language (KSL – Кыргыз жандоо тили) is not yet created and officially recognized as a language to develop communication and literacy among deaf children.

However, a few changes are seen. The Ministry of Education and Science of the Kyrgyz Republic is elaborating a plan to establish Sign Language Interpretation Courses in the national academic curriculum on the Bachelor Level. Ishenaly Arabaev State University will be the main core institution to train Sign Language Interpreters. I argue that Sign Language Interpretation courses should go together with Sign Linguistics and Psycholinguistics. Because competencies in Applied Linguistics are compulsory for Sign Language Interpreters to be aware of linguistic and extra-linguistic features of Sign Language.

The Ministry of Finland, Ministry of Justice and Ministry of Labor and Social Development of the Kyrgyz Republic launched a project of Sign Language Interpreters in legal issues in Osh in 2016 under the joint project of UNDP. It promoted the Deaf community to have access to justice and fair service in the juridical system of the country. Since January, 2018 there were amendments to the ‘Law about Help to Deaf people’ initiated by Parliament member Dastan Bekeshev. The amendments defined the wages of Sign Language Interpreters; the rights of Sign Language Interpreters were clearly outlined for the first time in the history of Kyrgyzstan. In September 2018, the Ministry of Labor and Social Development is going to implement a mobile app of Sign Language Interpretation for Deaf and people with hearing impairment. The app will be useful during visit to the medical clinics and notary offices.

Non-governmental projects and private courses on the early childhood education among the deaf are carried out mainly in Bishkek; short-term courses on Sign Language Interpreters are conducted within the framework of governmental and non-governmental projects.
Depth-Interview Analysis

As a prerequisite to the paper, I interviewed two people:

A. (name is shortened for the ethical issues), a Sign Language Interpreter; a Kyrgyz lady of 25-30;

M. (name is shortened for ethical issues), a Kyrgyz lady of 30-35, who lost her hearing at 10.

In order to discover the research goals, the interview queried the respondents about the real picture of Sign Language Issues in Kyrgyzstan. Two Depth-Interviews were different from each other by their content: The first interview was conducted verbally. The latter was a non-verbal interview; she responded with questions in written Russian with elements of signed Russian, where inflections (case, number, agreement of the noun and adjective) were not reflected in some sentences.

First Interview

The first interview with the Sign Language Interpreter included open-ended questions as (1) Why did you choose to become a Sign Language Interpreter? (2) Which languages do you know and which language is your first working language (it may be either a sign or spoken language)? (3) Do you use spoken Kyrgyz much in interpretation? (4) What are challenges among the Deaf Community in Kyrgyzstan.

The idea of becoming a Sign Language Interpreter emerged out of necessity; the respondent told that she has a younger deaf brother who needed help. She did not get any special education in Linguistics; therefore, some of her responses were superficial. Sign Language Interpreters in Kyrgyzstan attend short-term courses funded by NGOs and learn Signed Russian Language. The working languages of interpretation are Signed Russian, Spoken Russian and Spoken Kyrgyz. Usually she interprets from Spoken Russian into Signed Russian and vice versa. The application of Spoken Kyrgyz in Sign Language Interpretation occurs in the family gatherings during dialogues and non-formal talks. She interprets from Spoken Kyrgyz into Signed Russian simultaneously. But recently spoken Kyrgyz is often practiced in official meetings and public places and it is necessary to be a multilingual interpreter in the bilingual sociolinguistic context of Kyrgyzstan. The Deaf community should have more access to education. As a member of Society of Blind and Deaf, she visited Belgium recently on a work trip. The Kyrgyz delegation discussed about the teaching of the International Sign Language to Interpreters and the Deaf Community in Kyrgyzstan with the assistance of Belgian colleagues. The interview ended with some follow up questions about the possibility of creating a Kyrgyz Sign language. The respondent claims that it is necessary to create and codify the Kyrgyz Sign Language.

Second Interview

The second interview was conducted via written record. My second respondent was small business owner. I met her at a Business meeting in 2013. She was not alone; a sign language interpreter was accompanying her. This time I met her on social media; she agreed for an interview. The questions were: (1) Where did you learn Russian Sign Language? (2) Do you know written Kyrgyz? (3) Which difficulties do you face in during Sign Communication? (4) Are the gestures different in different regions of Kyrgyzstan?

My respondent lives in the southern part of the country, who lost her hearing at 10. She attended a local school for deaf children. Signed Russian language was taught. But the school introduced basic notions only. There were courses for Deaf and Sign Language users in Osh city which she attended to improve her Sign Language competencies. She is involved in the activities of the local Deaf community and has met friends among Sign Language Interpreters, thus she upgrades her non-verbal education. Written Kyrgyz seems her native language and she claims that Kyrgyz ethnic gestures exist; but they are not systematized. Every Kyrgyz
family which has a deaf member may have its own gestures that reflect Kyrgyz culture. But they are not recorded and they are applied in the family. Only the deaf community in Kyrgyzstan needs more books and resources to update Sign Language competencies. Signed Russian is taught in all schools; but gestures may be different by regions; some gestures used in Osh may be non-identical in Bishkek. Gestures are corrected according to Signed Russian rules. She claims that it would be a great success if Kyrgyz deaf have own Sign Language. The important thing in her written record is that she does not follow some grammatical rules as agreement of the noun with adjective, numbers and tense categories.

**Sign Language peculiarities in Kyrgyzstan**

Signed Russian Language (it should not be confused with Russian Sign Language) is used for all Deaf communities in post-Soviet space. It is the polished language that follows the linguistic features of written and spoken Russian. As L. Grenoble claims, ‘just how many different sign languages are currently in use in the former Soviet Union is an open question’ (Grenoble 1992, p. 324). I. Gejl’man (1981) states that most of the post-soviet countries use adapted version of Russian Cyrillic manual alphabet. Estonian, Latvian and Lithuanian Sign Languages use the Latin alphabet. Kyrgyzstan uses Signed Russian since 1934 when National boarding school for Deaf children (Дүлөй балдардын республикалыш жалпы билим берүүчү мектеп-интернаты) started its life. The boarding school has 318 students in total at the age of 6-17. They are from different regions of Kyrgyzstan. According to the head of the boarding school, Kanykei Jamanbaeva, all classes are conducted in Signed Russian, except the courses of Kyrgyz. Since 1989 the staff of the school has been attempting to teach Kyrgyz in the Singed version. Kyrgyz is an agglutinative language, that uses a great number of suffixes and has vowel harmony. It has three letters [ө], [ү] [ң] that do not exist in Russian. So, the school introduced these three letters with finger spelling while adapting Russian [о], [у] [н].

I propose the term ‘Signed Kyrgyz’ and also argue that they attempt to teach Signed Kyrgyz (not Kyrgyz Sign Language) referring to Signed Russian. The same Cyrillic alphabet is used with the addition of three [ө], [ү] [ң]. If Signed Russian has 33 letters, then Signed version of Kyrgyz has 36 letters. But this version of Signed Kyrgyz is used only in this school and it is not linguistically codified across the country. Even there is not still a term defining the concept ‘Sign language’. I suggest three terms to signify the concept ‘Sign Language’ in Kyrgyz: ‘jandoo tili’ (gesture language), belgi tili (sign language), ishaarat tili (sign language). Turkish sign language uses the same term ‘ishaaret dili’.

Classes are conducted using the bilingual approach of teaching. It proposes using both finger spelling and gesture in teaching. The boarding school uses the special manual *Orto Aziya duduktardyn jandoo tilin okup uironuu* (*Learning Central Asian Sign Language*) as the optional text-book for Kyrgyz, but the manual is not recommended on the national level.

As for gestures, most of them are translated directly from Signed Russian. The word ‘house’ in both Russian and Kyrgyz are gestured by finger tips touched each other down. In fingerprint alphabet the word ‘dom’ (house) in Russian uses three finger spelling letters, while Kyrgyz uses two finger spelling letters, while one is adapted letter [ү], thus it is ‘ui’ (house).

A sentence “I go to school” - ‘ya hodit v shkola’ in Russian does not mark the verb conjugation (first person, present tense) and it also does not recognize the grammatical gender. While translating the sentence into Kyrgyz, the crucial issue is word order; it changes into SOV from SVO: ‘I to school go’ - *Men mektep baruu*. Signed Kyrgyz does not recognize the dative case of direction: *mektep+ke*. Verb in the 1st person singular and in the present tense is not marked as well. Signed Russian uses future time with verbs ‘budet’ (will be) and past tense ‘bylo’ (was, were) and in Signed version of Kyrgyz future tense of ‘will be’ (bolot) may express both present and future. Kyrgyz verb ‘boldu’ (was, were) expresses both singular and plural.
I also claim that Signed version of Kyrgyz does not recognize agglutinative suffixes that coin new words and change the meaning: ‘menin baldarymdyn atasy - my children’s father’ may sound as ‘men bala ata- I children father’. Signed version of Kyrgyz omits possessive suffix –in in the word ‘men+in’. Here the plural suffix –lar, possessive suffixes –ym, dyn are not marked as well.

Like Signed Russian, which marks natural gender, signed version of Kyrgyz also marks natural gender: bala – a boy, kyz- a girl, apa-mother; ata-father.

Spoken and written Kyrgyz has a large number of possessive pronouns that are not recognized in Signed Kyrgyz except mine (ozumdun). Thus the sentence with reciprocal pronoun ‘we love each other’ may sound ‘men sen suiuu’ – I you love. Kyrgyz verb is rich in collocations (compound verbs) which shows two simultaneous actions. For example, the verb ‘to tell ’ is expressed with two verbs – ‘aityp beruu’ -tell and give. It will be also difficult to express them in Signed version of Kyrgyz. Another issue in Signed Kyrgyz is related to postpositions that correspond to the prepositions in the Indo-European Languages. In the sentence ‘the bag is on the table’ will be ‘kitep stol ustundo’ - (the book table on) which is close to literary Kyrgyz: ‘kitep stoldun ustundo’.

The negation -syz (-less) expressed by the special gesture which the right palm is put on the left that both palms look front and make sliding down movement. I think this is the only suffix that may express agglutination in Kyrgyz. The continuous action in the Kyrgyz verb also is expressed by verbal collocations like in the sentence: I am sleeping- Men uktap jatamyn. Signed Kyrgyz uses ‘men uktoo’ – I to sleep. It does not signify the aspect of movement. I think the color terms is another big topic of research in Sign language, because spoken and written Kyrgyz does not differentiate color term as much as Russian does. For example, Russian blue has two colors: sitiui, goluboi, while Kyrgyz has the only term: kok. The word blue in gesture shows the configuration of the letter ‘C’ in the watch line. Here Russian also expresses ‘blue’ with one gesture. Spoken and written Kyrgyz does not have the orange color. But Signed Russian shows ‘orange’ with hand movement touching cheeks in configuration of the letter ‘O’. The word ‘orange’ is translated as ‘kyzgyltym sary’ (reddish yellow) which may be difficult for deaf children to write. Literary Kyrgyz usually expresses it with generic term ‘sary’ that is suitable for all shades of yellow. So it is suitable to use ‘sary’ for ‘orange’. Literary Kyrgyz also uses ‘kzyyl’ for all shades of the red color. Signed Kyrgyz uses ‘achyk kzyyl’ for pink and ‘kzyyl’ for red. The word ‘achyk kzyyl’ means scarlet red; so there are some mistranslations in the manual that should be corrected. Gestures in both Signed Russian and Signed version of Kyrgyz use synchronicity of the two hands in most of the cases. Gestures used in the manual are of Russian origin and share cultural identity of the Russians.

The manual Orto Aziya duduktardyn jandoor tilin okup uironuu (Learning Central Asian Sign Language) contains 201 gestures both in Russian and Kyrgyz. Most of them were taken Russian Sign Language that exists among Deaf people in Russian. The national boarding school takes enormous efforts to introduce Signed version of Kyrgyz, which may be the basis for the officially codified Signed Kyrgyz.

The research also disclosed that Kyrgyz ethnic gestures do exist in the Kyrgyz language and culture. Famous turkologist K. Konkobaev and his PhD student Aishat Botobekova published a Dictionary of Kyrgyz gestures (Кыргыз ымдоо-жаңсоолорунун түшүндүрмө сөздүгү); Aishat Botobekova defended her PhD thesis “Kyrgyz gestures and signs” (“Кыргыз ымдоо-жансоолору”).

The Psycholinguistic and Ethnolinguistic Nature of the Kyrgyz Ethnic Gestures and Signs

The Kyrgyz ethnic gestures and signs mark the gender. Women signs reflect love, shyness, shame, hate, wonder and disappointment: pinching the cheeks (shame), flirting with eyes (love, affection), touching the face (being shy), a sudden loud clap of hands (disappointment), bowing (greeting newlywed brides). Some women signs and gestures are accompanied by interjections. Men use punching, touching one’s beard, crossed legs tucked underneath (in the old way it was considered Kyrgyz free sitting: in the presence of the khan or the
khagan, it was not allowed), putting one’s right hand over their heart, handshakes. Old Kyrgyz handshakes were rarely used custom, it was the sign of strong agreement, none was to breach it. Women never made handshakes. The Kyrgyz way of greeting had two ways: bowing head while keeping the distance; bowing head keeping right hand over the chest. Kissing on the cheeks was not practiced, except parent’s kissing a child on the forehead. Sticking one’s tongue out (playfulness), pointing to one’s own nose (playfulness), clapping hands, stomping the ground.

Archaic Signs

To rip one’ face off – a woman pulled her face so strongly that the skin of the face comes off during the funeral of her husband, also she was to unbind her hair. A Kyrgyz woman never unbound her hair in public. To kiss the Ground – to express longing for one’s homeland. To kiss the Sword (old nomadic sign) To get down on one knee (to ask forgiveness). Kyrgyz signs and gestures use the head motion, hand motion, nose motion, use of fingers, lip motion, tongue motion, motion of eyes and eyebrows, and face motion. I will show you some gestures which naturally come with my language. A Head bowing (башын ийкөө) expresses greeting, approval, it shows disappointment too. A head shake (башын чайкоо) - the head is turned left and right to express disagreement, or rejection, also it denotes surprise and it is followed by interjections Pay-pay, Barakelde, Bah. Moving one’s head implies to point to someone (башы менен жаңсоо), Moving one’s head to the one side (башын бир жакка кыйшайтуу) expresses deep thought and enjoyment. Moving one’s head abruptly (башын чулгуу) expresses disagreement.

Lip movement. Biting one’s under lip (эрдин тиштөө) expresses regret, guilt, shame. Concealing under lip (эрдин кымтуу) expresses anger, but you should hide your irritation. Turning the under lip out (эрдин түйрүү, эрдин чүйрүү) expresses sarcasm, irony, resentment (it is used by women and children).

Mouth. Opening one’s mouth (оозун ачуу) expresses great surprise, fright, suspicion.

Eyebrow. Moving one’s eyebrow up (кашын керүү) is a feminine gesture to express love and affection.

Nose. Moving one’s nose up expresses being snobbish.

Eye. A single wink implies joking gesture. Eyes Wide Open expresses surprise, fright. Eyes closed implies deep thought, unwillingness to talk.

Face. Making one’s eyebrows closer together implies sadness and disappointment. Wrinkling one’s face expresses disgust and squeamishness.

Hands. The most of the Kyrgyz gestures are done by hands. One hand gestures (palm, fingers, fist) Two hands gestures (palms, fingers, fist). Two hand gestures reflect the culture.

Ethnic Kyrgyz gestures fully correspond to the written and spoken Kyrgyz language and the Kyrgyz culture; but they are not still codified as the official signs and gestures of the Kyrgyz Sign language. Kyrgyz ethnic gestures and signs express emotions of the Kyrgyz by motion of head, eyes, eyebrows, nose, and hands. Those signs and gestures are vividly described verbally by motion imitation verbs and verbals (tuurandy sozdor) in the Kyrgyz literature, Kyrgyz has a great number of motion imitation verbs and verbals, that can be the basis for the codifying Kyrgyz Sign Language. A native Kyrgyz speaker despite the region has the competency of signs and gestures in the speech.

The Signed version of Kyrgyz taught at the National boarding school for Deaf can be the basis of the future Signed Kyrgyz language. It may be codified linguistically and recognized as standard in Deaf Education. It will be a descendant language of Russian Sign Language that belongs to French Sign Language family. If the ethnic Kyrgyz gestures and signs are not applied to the Signed version of Kyrgyz, it still may be characterized as a regional variety of Signed Russian.
Conclusions

This was a brief review about the current situation of Sign Language issues in Kyrgyzstan. According to the results of the short research, I propose the following hypotheses:

1. The Signed version of Kyrgyz taught at the National boarding school for Deaf will be the basis of the future Signed Kyrgyz language. It may be codified linguistically and recognized as standard in Deaf Education. It will be a descendant language of Russian Sign Language that belongs to French Sign Language family.

2. I claim that Kyrgyz non-verbal communication contains the ethnic gestures which share much common with the Kyrgyz culture. They should be recorded and systematized linguistically. Ethnic gestures should be added to Signed Kyrgyz and codified. If the ethnic Kyrgyz gestures and signs are not added to the Signed version of Kyrgyz, it still may be characterized as a regional variety of Signed Russian. Kyrgyz Sign alphabet should be also arranged according to the phonetic shape of Kyrgyz.

3. Ethnic Kyrgyz gestures fully correspond to the written and spoken Kyrgyz language and the Kyrgyz culture; but they are not still codified as the official signs and gestures of the Kyrgyz Sign language.

4. Kyrgyz ethnic gestures and signs express emotions of the Kyrgyz by motion of head, eyes, eyebrows, nose, and hands.

5. Those signs and gestures are vividly described verbally by motion imitation verbs and verbals (tuurandy sozdor) in the Kyrgyz literature, Kyrgyz has a great number of motion imitation verbs and verbals, that can be the basis for the codifying Kyrgyz Sign Language.

6. A native Kyrgyz speaker despite the region has the competency of signs and gestures in the speech.

7. The Signed version of Kyrgyz taught at the National boarding school for Deaf can be the basis of the future Signed Kyrgyz language. It may be codified linguistically and recognized as standard in Deaf Education. It will be a descendant language of Russian Sign Language that belongs to French Sign Language family.

8. If the ethnic Kyrgyz gestures and signs are not applied to the Signed version of Kyrgyz, it still may be characterized as a regional variety of Signed Russian.

9. The analysis in the paper is still speculative and the topic remains open for further research.
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Political Communication Style And Medium Uses:
A Case Study Of Black Sea, Aegean, Marmara, Mediterranean,
Central Anatolia Eastern Anatolia and South Eastern Anatolia

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Abstract

On March 31, 2019, the mayor, city mayor, city council members, provincial general assembly, as an outcome of the ideal selection according to Black Sea, Aegean, Marmara, Mediterranean, Central Anatolia Eastern Anatolia and South Eastern Anatolia Region. members, mukhtars and old councils were determined.

This paper explores the relation between language use in the Black Sea, Aegean, Marmara, Mediterranean, Central Anatolia Eastern Anatolia and South Eastern Anatolia Region during two-month period between February to April 2019 and the widely used social networks were limited to Twitter and Eksi Sozlük’s account. It focuses on how the people from those regionals post or comment political message on social media and social networking groups affects the intercultural interpersonal communication.

This paper examines events such as the verbal and nonverbal communication and its effect on the communication behavior with discourse analysis context from Turkey’s social media and social networking groups. The last literature examined the relation between language use in the world most spoken languages such as high context culture like Mandarin, Arabic, and Bahasa spoken countries and low context culture like English, Spanish and French spoken countries. Through last paper explanation, the language shapes the social behavior, this research focuses on the importance of relations of the Black Sea, Aegean, Marmara, Mediterranean, Central Anatolia Eastern Anatolia and South Eastern Anatolia Region communication components and their intercultural interpersonal or group communication.

Keywords: communication, political, social media, election

“Politics” is a word of Arabic origin. It means horse training. However, we know that the word “politics” taken from the West for the same concept is of Greek origin. In Greek, “polis” is the name given to the city-states. Politics also means works belonging to the state (Kişlalı, 200:17). According to Ünal Erzen (2009), in order for the political system to continue to exist in a society, political values, beliefs, rules, tendencies and behavior patterns must be transferred and adopted by the members participating in the political society. It is possible for individuals who have just joined the society and the political system to become actors who can play a role in the political system, if they grow up as “political people”. With political socialization, individuals become “political people” ready to play a role in the political system.

It also establishes good communication for a good political administration. Beatte (1981), the word Communico is the Latin form of communication. People have a special skill that helps them to free themselves from disorder and create order, to know their environment better, to interact with other people to achieve goals in harmony, and to make use of available information. This skill is the human’s capacity to communicate at a high level (Güney, 2001: 195). Therefore, people become dependent on mass media in order to learn what is

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happening around them and to direct their lives accordingly (Autumn, 1995: 114). There are many purposes
of communication such as informing and being informed, educating and being educated, changing and being
changed, persuading and being persuaded (Karadoğan, 2003: 139). In this context, the characteristics of
communication can be stated as follows (Güney, 2001: 198):

- Communication provides the exchange of information, meaning, feelings and thoughts between social
  units.
- Communication is a social phenomenon that ensures the establishment of necessary relations between
  social units and the continuity of social life.
- Communication is a psychological phenomenon that expresses human behavior in terms of both the
  sender and the receiver.
- Communication is a system of closely interconnected elements such as source, receiver, message,
  communication channels and tools. At the same time, it is not a one-time action, but a multi-faceted
  process with continuity.

Abülkeri (2018), communication as a system of social relations is divided into five. Communication
with the Self (Internal Communication): It is the communication that the person makes by himself at every
moment of his life and in every place. The person thinks while communicating with himself; He talks to himself
and to others. Interpersonal Communication: Communication between two people, usually in the form of a
face-to-face relationship. This communication either takes place in the form of two people sharing the same
environment physically (face-to-face communication) or by any means of communication between people in
different environments. Group communication: The most important aspect of interpersonal communication
is group communication. Group communication is a form of communication in which two or more people
influence and are influenced by each other.

Organizational communication: This communication is the exchange of information and ideas between
the elements of the organization (internal environment) and between the organization and the external
environment in order to ensure the execution of daily activities in the organization and to achieve organizational
goals. Mass communication: Communication that occurs through a mass medium, such as television,
wallboards, or cinemas. Mass media are tools that reach a large number of viewers and provide communication
(newspaper, magazine, television, radio, cinema, video and new communication technologies, etc.).

Interactivity is the most important feature of social media that enables it to be used as a political
communication tool, with functions such as providing public support and changing indecisions positively.
In order to attract public support, interactivity, traditional tools and methods in establishing two-way
communication with the target audience and in all areas that can generate support have also shaped political
communication in the light of new technologies (İlker, 2014). Interactive communication, the ability of
politicians to address a wider audience in a short time and their ability to measure their reaction more easily are
the reasons that make social media a powerful political tool. Citizens can express their opinions more easily
by using social media tools, and they can comment and reply to other people’s articles or politicians’ posts.

Many politicians, ministers and presidents all over the world, including those living in Turkey, Black Sea,
Aegean, Marmara, Mediterranean, Central Anatolia, East Anatolia and South East Anatolia Region, use social
networks actively because politicians can be recognized by more people, thanks to these networks. They can
reach a large number of voters and evaluate their views effectively and efficiently. The era of politics, where the
politician speaks and the citizen listens, is coming to an end. Instead, a new era of politics based on interactive
communication begins and a new understanding emerges. The most important power that realizes this change is
social media tools. Obviously, these tools have become an important power in politics and they are increasing
their power day by day. Because while social networks make communication easier, more efficient and instant
on the one hand, they also reduce its cost (Cihan, 2012).
Methodology

1. Purpose and Importance In the research, the communication and political thought differences of the Turkish people according to the regions will be explained. Concrete reflections will be tried to be made understandable with academic findings. As a matter of fact, social media attracts the attention of the politician as an area where political, economic, social, cultural and activities can be sustained. Performances in this area reveal the form and nature of the relationship.

2. Scope and Limitations. The duration of the research was limited. In order to determine the local governments in Turkey, it was held on 31 March 2019 and as a result of the election, the mayor, the metropolitan mayor, the members of the city council, the members of the provincial council, the headmen and the councils of elders were determined. For this reason, the duration of the research was limited to a two-month period between February-April 2019, taking into account criteria such as possibilities and limitations. According to We Are Social, the most used social networks are Whatsapp, Instagram, Youtube, Facebook, and Twitter, respectively (http://www.dijitalajanslar.com/internet-ve-social-medya-user-istiktitkleri-2016/) Social media usage intensities vary according to their agenda. In some periods, intense post sharing was provided, while in some periods no sharing was made. Because; While determining the duration of the research, it was aimed to coincide with the most recent periods in which both social media groups selected as the sample shared more than one post.

3. Population and Sample of the research was selected as the best newspaper in Turkey’s region. The sample is selected by the purposive/judicial sampling method, which is one of the improbable/non-random sampling types, Gazete Yenigün (@gazete_yenigun), Karadeniz’den Günebakış (@gazetegunebakis), Marmara Newspaper (@MarmaraGazette), Akdeniz Newspaper (@AkdenizGazette), ANADOLU GAZETESİ (@AnadoluGazete06), Anayurt Newspaper (@anayurt_06), News Packages (@haberpackets), Dünya Newspaper (@dunya_gazetesi) and Southeast Current (@guneydoguguncel). In the improbable/non-random sampling method, there is no equal chance of being selected among the individuals or objects to be selected as the sampling unit, and the researcher’s attitudes and convictions become valid. In the purposive/judicial sampling method, the sample units are selected by the researcher with the thought that they will provide the most appropriate data for the research purposes. Based on the assumption that it will provide the most appropriate data for the research purposes, the leaders who received the most attention in Turkey were chosen as the sample unit.

4. Context analysis is the data analysis method. The data suitable for the research were recorded by scanning the books, articles and internet resources on the subject. The data in the analysis section of the research, in which the content analysis was carried out, was obtained from the Twitter accounts of the political party leaders selected as a sample. Keeping a record of the data on Twitter makes it possible to review retrospectively. The data obtained within the scope of the research were analyzed with the categorical analysis technique, which is one of the content analysis types. In this analysis technique, the data is distributed into the created categories and analyzed. Two researchers recorded the data within the framework of the categories determined in the context of scope and limitations.

Findings and Interpretations

Newspaper Yenigün (@gazete_yenigun), Karadeniz’den Günebakış (@gazetegunebakis), Marmara Newspaper (@MarmaraGazetesi), Akdeniz Newspaper (@AkdenizGazetesi), ANADOLU GAZETESİ (@AnadoluGazete06) in order to determine the reflections of the understanding of leader in Turkish political culture in the political communication processes. ), Anayurt Newspaper (@anayurt_06), Haber Packs (@
haberpackets), Dunya Newspaper (@dunya_gazetes) and Güney Newspaper (@guneydoguguncel) official
Twitter accounts for the three-month period between February and April 2019. The first point of focus in the
review process is the number of followers and shares in the official Twitter and sour verbal accounts, which are
the best newspapers. Because the number of followers on Twitter, which is a communication media on follow-
up relations, ensures that the elements that users prioritize politically are legible. Black Sea, Aegean, Marmara,
Mediterranean region, more republican, secularism, populism, nationalism, statism and revolutionism. Central
Anatolia East Anatolia and South East Anatolia Region are more conservative, democratic, they like citizenship,
especially about organization or Islam and the characters.

According to the surveys, AREA, PIAR, Optimar, Eurasia, ORC, MEdiar, Gezici, EMAX, PollMark,
SAROS, Mediar, Themis, ADA, the highest for Election Results are Aegean (CHP), Mediterranean (CHP),
Marmara (AK Party), Central Anatolia (AK Party), Eastern Anatolia (AK Party), and South East Anatolia (AK Party).

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A Systematic Review About the Historical Development of the Azerbaijani Language

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Abstract

The Azerbaijani language is the official language of the Republic of Azerbaijan, it is widely spoken by people in South Azerbaijan, which is situated in Iran, Russia, Georgia and in other countries in the world. Unfortunately, many people in the world, especially in the USA, are not aware of this language and the country. So, this article aims to inform about a systematic review of the historical development of the Azerbaijani language.

There are some stages about the historical development of the Azerbaijani language. In general, linguists split the development period of the language into groups on the basis of its lexical, phonetic, and syntax features. In addition, the Soviet period also played an important role in the development of the Azerbaijani language.

The formation period of the Azerbaijani language consists of the following areas:
1. XIII-XIV centuries
2. XV-XVI centuries

The development period of the Azerbaijani language goes through the following stages:
1. XVII-XVIII centuries
2. XIX century
3. Early 20th century
4. The period after the 20-30s of the XX century

The features of each stage in the formulation of the language are summarized shortly in the article. Also, used alphabets in Azerbaijan are detailed here.

Keywords: Azerbaijani, language development, language formation

The Azerbaijani language is the official state language of the Republic of Azerbaijan. The Azerbaijani language is the main communication language in the Republic of Azerbaijan. The Azerbaijani language is also the native language of 40 million Azerbaijanis living in the Islamic Republic of Iran.

According to the genealogical classification, the Azerbaijani language is included into the Oghuz group of the Ural-Altai language family with Turkish, Turkmen and Gagauz languages which consist of the south-western group of the Turkic languages. The Azerbaijani language is an agglutinative language so suffixes come at the end of words. The Azerbaijani literary language has reached today’s level through a complex development process in the context of the interaction of intra-linguistic and extra-linguistic factors. The development process has moved in a constantly rising line. Turks, who form the ethnic basis of the Azerbaijani people, came to the Azerbaijani’s current territory at the beginning of the first millennium and became ancient inhabitants of this land.
Features of the main stages and language policy in the development of ethnolinguistic processes:

The formation of the Azerbaijani language (as well as the Azerbaijani people) went through the following three stages:

1) From ancient times to the middle of the 1st millennium B.C. - it is a period of wide ethnolinguistic relations, the initial consolidation of different Turkic ethnic groups.

2) From the middle of the 1st millennium B.C. to the 1st century A.D. - a period of strengthening of Turkic ethnic groups in Azerbaijan and gaining socio-political prestige.

3) From the 1st century A.D. to the 3rd-7th centuries - a period of strengthening the international position of Turks and, as a result, the formation of the Azerbaijani language.

First period: Saks and other Turkic ethnic groups played a key role in the ethno-political movement until 3rd-2nd centuries B.C., the formation of the Great Hun state and the influx of Huns to Azerbaijan. Apparently, the first ethnolinguistic centralization in Azerbaijan was in the first half of the 1st millennium B.C. The influx of Hun Turks to Azerbaijan and their settlement in this territory was a significant impact on the ethnolinguistic processes in Azerbaijan. In fact, the formation of the Azerbaijani language got accelerated during the settlement of Huns in this area.

Second period: All ethnic groups living in the territory of Albania from the 3rd century B.C. to the 7th century A.D. (and later), especially Turks were inheritors of the Albanian culture. The ethnic history of Albania is connected with Turkic ethnoses, as well as with Huns, Bulgars, Caspians, Sabirs, Kangars, Pechenegs and others. Thus, before the formation of the Azerbaijani language, various ethnic groups had lived in the territory of Azerbaijan, some of them - Turkic and Caucasian ethnic groups - lived here at different times. From the beginning of the first millennium B.C., ethnoses of Indo-European (mainly Iranian) origin came here. However, from the middle of the first millennium A.D., Caucasian-speaking ethnic groups began to settle in the north (and partly in the north-west) of Azerbaijan. The formation of the Azerbaijani people and the Azerbaijani language is based entirely on ethnic groups of Turkic origin. In the first centuries A.D., ethnolinguistic relations between the North (Albania) and the South (Anthropaten) of Azerbaijan were strengthening. Undoubtedly, this process is intensified by the movement of Huns to Azerbaijan.

At a time when the Azerbaijani language was formed (3rd-7th centuries), elements of literary language also appeared. However, it is impossible to speak of a strong ethnic unity between North and South Azerbaijan in the 3rd-5th centuries. Such unity emerged in the seventh and eighth centuries with the entry of both parts into the Arab caliphate, and even then the “internal” linguistic life of various non-Turkic ethnic groups continued to exist. The Azerbaijani language is formed in such a complex ethnolinguistic context.

Thus:

a) The Azerbaijani language was formed not only on the basis of Turkic ethnic groups living in the territory of Azerbaijan in the most ancient times and coming to Azerbaijan only in the III-VII centuries, but also on the basis of the common Turkish language potential;

b) The formation of the Azerbaijani language was accompanied by the consolidation of various Turkic ethnic groups and, at the same time, the regionalization of the common Turkic language and its spread among ethnic groups of Turkish and non-Turkish origin in Azerbaijan;

The development of the Azerbaijani literary language took place mainly in two stages:

1. From III-V centuries to VII-VIII centuries: the language is based on the national Azerbaijani language in this period.

2. From VI-VIII centuries to XI-XIII centuries: the Oghuz-Seljuk features were observed in the development of the language at this stage.
In the first stage, the formation of the Azerbaijani literary language is connected with internal (regional) processes, and in the second stage it is associated with external (Turkish) processes at the same time.

Although Azerbaijan became a part of Sassanid Empire as a political and administrative unit in the 4th century, independent ethnolinguistic processes still took place here. Attacks of Arabs to Azerbaijan had a significant impact on ethnolinguistic processes in the middle of the 7th century.

Since the middle of the 9th century, independent, semi-independent states have emerged in the territory of Azerbaijan. As a result of the intensification of the new influx of Turks, the Arab government and, in general, the political influence of Arabs completely disappeared, and such a historical situation caused the Azerbaijani language to have the opportunity to manifest itself in its full quality.

The huge monument of the Azerbaijani language “Kitabi-Dada Gorgud” was created in the IX-XI centuries.

No written source of the XI-XII centuries has been found in the Azerbaijani language, the first sources belonged only to the XIII century. Although Azerbaijani people wrote their poems in Persian in the XI-XII centuries, they showed themselves to be an Azerbaijani in the content of works, and in the artistic structure, as well as in the use of individual words and expressions in Azerbaijani.

The Azerbaijani language underwent a complex period of formation from the 13th to the 17th centuries. During that period, the language developed in close interaction with the national language, and there were the following stages of this development:

1) XIII-XIV centuries Azerbaijani language
2) XV-XVI centuries Azerbaijani language

Thus, the socio-political and ethno-cultural movement in Azerbaijan in the XIII-XIV centuries was the result of three important historical events: Oghuz-Seljuk movements, Mongol-Tatar intervention and finally Teymur’s attack. In all three cases, the “Turkish influx” from East to West passed directly through Azerbaijan, it had a great historical impact, and in most cases, ethno-cultural processes intensified and became more relevant in the context of Turkification.

The first written sources in the Azerbaijani language were the famous ghazals of the Azerbaijani poet Izzeddin Hasanoglu. In general, the geography of sources written in the Azerbaijani language of the XIII-XIV centuries included the following territories: Eastern Anatolia, Northern Azerbaijan (Shirvan), South Azerbaijan (Tabriz), Iran (Khorasan), Iraq (Baghdad) and Egypt. Such geographical latitude was associated with the socio-political and ethno-cultural processes of the time. The norms of the Azerbaijani literary language, first of all, attracted attention with their democracy and popularity in the XIII-XIV century. However, Arabic, as well as Persian words, which entered the Azerbaijani literary language in the IX-XII centuries, were already in the majority in the written sources of the XIII-XIV centuries.

During the Safavid Empire, the Azerbaijani language gained the status of the state language (the language of palaces, international relations, etc.). Undoubtedly, the main reason for this was the founder of the state, Shah Ismail Khatai. He wrote beautiful poems in his native language, issued decrees in this language.

The sources of the Azerbaijani language in the XV-XVI centuries were as rich as in the XIII-XIV centuries, but in contrast to the previous centuries, more classical sources appeared at this stage. Shah Ismail Khatai, Fuzuli lived and wrote at this period.

In the XVII-XVIII centuries, the period of formation of the Azerbaijani language on the basis of the national language completed. So, the national literary language was formed.

The period of formation of the Azerbaijani literary language on the basis of the national language consisted of the following stages:
I. XVII-XVIII centuries
II. XIX century
III. In the early 20th century.
IV. After 20-30s of the XX century.

1) In general, although wars and riots were in Azerbaijan in the XVII-XVIII centuries, life conditions were sometimes more complex than ever before, culture was rapidly being reorganized, even studies showed that it underwent a renaissance. In the 17th - 18th centuries, writing style shifted from the classical style to the folklore style. Democratic features spread in the written language. At this time, Arabic and Persian words were not widely used in the written language. European-Russian words were used in writing in the literary language at this stage. This event was due to the intensification of Azerbaijani-Russian relations and the emergence of documents reflecting those relations.

2) From the beginning of the XVIII century, Russia tried to pursue an intensive policy in the Caucasus and invaded this territory. At the end of the 18th century and the beginning of the 19th century, the North of Azerbaijan became a part of Russia and the South of Iran. The current system of governance and economic relations have gradually led to certain differences between the North and the South of the country. Since the middle of the 19th century, capitalist relations have been developing rapidly in the north of Azerbaijan, especially due to the expansion of the oil industry, public relations have changed, and social stratification has intensified. Russian schools have been opened in Azerbaijan since the 1930s. The Azerbaijani theater was formed in the 70s of the XIX century.

The rapid growth of the Azerbaijani language in the 19th century was due to several reasons: The first is the result of the Russian Empire’s special attention to Azerbaijan (because Azerbaijan was an economically rich, profitable country), secondly, Azerbaijan was Russia’s access to Turkey and Iran, the whole of Central Asia. Thus, the XIX century emerged as a new stage in the organization of the Azerbaijani language on the basis of the national language. Azerbaijani origin words were the basis of national language thinking; The invasion of the North of Azerbaijan by the Russian Empire led to the spread of European-Russian culture (along with oppression) here.

3) The beginning of the XX century is a qualitatively new stage in the history of the Azerbaijani people. The development of capitalist relations, the emergence of its ideologues and, finally, the rise of Baku’s position as an ethnocultural center formed national thinking ability of people. In the early twentieth century, Baku became the cultural-historical (even political-ideological) center not only of the North Azerbaijan, but also of the South of Azerbaijan. A new period in the history of Azerbaijan began with the establishment of the Azerbaijan Democratic Republic. However, Azerbaijan lost its independence with the invasion of Soviet Russia in 1920.

Such tensions in the socio-political life of the early twentieth century, the frequent changes of events also had a significant impact on the landscape of the language.

The most important factors influencing the expansion of the functional capabilities of the language in the early twentieth century were: 1) the expansion of the school network and the intensification of the relationships between school and life; 2) increase of the press; 3) the rise of the national theater; 4) establishment of political, cultural organizations.

At the end of the 19th and the beginning of the 20th centuries, the vocabulary of the Azerbaijani language consisted of Turkic, Russian-European, and Arabic-Persian origin words.

4) The Azerbaijani language entered a new development stage during the Soviet era. This stage is a period of rapid development of lexical, semantic and grammatical processes in the history of the Azerbaijani language. Due to the new socio-economic structure, social development and scientific and technological progress, new phrases, lexical and syntactic units appeared in the language. One of the factors influencing the
development of languages is the increasing role of the media in this period. Newspapers, magazines, radio, television, cinema, theater, etc. were among the means of mass communication. They had a great influence on the development of literary language, as well as the emergence of new words. During the period, the Azerbaijani literary language functioned as the official language and became the official language of the republic.

The XIX-XX centuries have been the fastest progress and flourishing period in the Azerbaijani language. Four main stages in the development of ethnolinguistic processes in Azerbaijan can be noted in the XIX-XX centuries: During the Russian Empire (XIX century - 1917); period of the Azerbaijan Democratic Republic (1918-1920); Soviet era (1920-1991); the period after the restoration of state independence (after 1991). These stages differ from each other according to the main features of the language policy. The language policy is the most effective and stronger means of countries. As the ideological basis of the colonial policy of the Russian Empire was Russianise, the inequality principle of languages in the country was determined at the legislation. The government of the Russian Empire pursued a strong language policy. The most typical features of this policy was to adopt non-Russian nations the Russian language forcibly and to establish obstacles to the development of mother languages. The Russianize policy was carried out in Azerbaijan more rudely compared to the neighbor regions, such as Georgia and Armenia. Thus, the attitude of tsarism to the Azerbaijani language compared to Georgian and Armenian languages was more intolerable and a variety of prohibitions were accepted to remove the Azerbaijani language in the main areas of society. However, despite all the efforts of the tsarism, it was not possible to prevent the functional development of the Azerbaijani language. The main socio-economic changes happened at the end of 19th century and in the early 20th century, the establishment of capitalist relations, the process of formation of the Azerbaijani nation led to serious changes in the process of functional development of the national language. The radical changes in the functional development of the Azerbaijani language were only obtained after the declaration of Azerbaijan’s independence on May 28, 1918. This event was a new beginning of the functional development of the Azerbaijani language. Thus, nationalization processes and activities were implemented to develop the Azerbaijani language.

The Azerbaijani language was declared as the state language for the first time on June 27, 1918 and all written processings were only in this language. On August 28, 1918, a decision was made to nationalize the country’s educational institutions in order to educate people in the Azerbaijani language. The establishment of higher education institutions operating in the Azerbaijani language and the first steps for the reform of the Azerbaijani alphabet were among the main achievements of the period of 1918-1920. In this regard, the period of 1918-1920 can be considered a significant point in the functional development of the Azerbaijani language over the past two hundred years.

The USSR started to accelerate the process of eliminating the national differences starting from the end of the 30s of the 20th century. Transfer of national alphabets to Kirill graphics from Latin graphics, the creation of privileged conditions for the functional development of the Russian language were the main elements and components of this policy. According to the decision made in March 1938 by USSR, the Russian language was taught in all secondary schools since the 1938/39 academic year.

However, attention was increased to the development of national languages since the mid-50s. A special decision on the Azerbaijani language was made in the third session of the Supreme Soviet of the Azerbaijan SSR on August 21, 1956. Then even if there were real steps to use the Azerbaijani language in government organizations of the republic, this process was stopped by the pressure of the central government. The Russian policy of the USSR was one of the main directions of the Soviet policy in the Soviet countries starting from the middle of 1960s. This policy was carried out under the development of national-Russian bilingualism. This policy intensified the spread of Russian language between Azerbaijanis. However, despite all the pressure of the central government, the Azerbaijani language was announced as a state language in the Constitution dated 1978. Although that article was significantly formal at that time, it was a serious spiritual and psychological victory of the Azerbaijani people. Thus, there was a special article about the language only in the constitutions of three
USSR countries, such as Azerbaijan, Georgia and Armenia. The Azerbaijani language was announced as an official language in the Constitution accepted on November 12, 1995.

The Alphabets used in Azerbaijan

At present, the Azerbaijani alphabet formed on Latin graphics is used in Azerbaijan. Great changes in the country’s political, economic, scientific, cultural life have led to a rapid increase in the terms of the vocabulary of the modern Azerbaijani language. This process is clearly observed in all styles of the literary language, especially in business and scientific styles, to some extent. The dialects of the Azerbaijani language consists of four groups: 1) East group (Baku, Guba, Shamakhı dialects); 2) Western group (Ganja, Gazakh, Karabakh dialects); 3) Northern Group (Shaki, Zagatala-Gakh dialects); 4) southern group (Nakhchivan, Ordubad dialects). The languages of the nations living in Azerbaijan are included into Iranian languages and Iber-Caucasian languages.

Also, the latin alphabets of minorities such as lezgis, Avars, Tatars, Talysh, Kurds, Udis were established in Azerbaijan in the end of the 20s of the 20th century. However, the natural development of language construction was violated in Azerbaijan as a result of the rude intervention of the USSR management in 1938. The newly established alphabets of minor people were canceled based on the decision of the central government.

On July 11, 1939, the Supreme Soviet of the Azerbaijan SSR decided to transfer from the Latin alphabet to Cyrillic. Thus, Azerbaijan started using the Cyrillic alphabet from 1940.

There were very serious differences among the new Turkish alphabets created based on Cyrillic graphics. Thus, the same phonemes were described with different characters in separate alphabets. This was aimed to deepen the differences between Turkish languages. Therefore, when the Soviet Union collapsed in the 80th, the first demand of the Azerbaijani government was to get the Latin alphabet back. The draft prepared by the commission was approved by the Azerbaijani Parliament on December 25, 1991. However, due to some reasons, the Latin alphabet was accepted in the entire territory of all Azerbaijan after the decree dated 18 June 2001 by Haydar Aliyev, the president of the Azerbaijan Republic.

Conclusion

In conclusion, the Azerbaijan language has experienced a long historical way to reach this level out. During the Soviet era, despite the fact that the majority of the population consisted of Azerbaijanis, the Azerbaijani language was not a main language in our republic. The development and enrichment of our native language was impossible and no measures were taken by the state for this purpose. Also, the Azerbaijani alphabet was exposed to have been changed rapidly that all the information detailed in the article. Now, Azerbaijan is an independent country and it has own official language and alphabet.

The Azerbaijani language is currently spoken in the Islamic Republic of Iran and Iraq as well. Folklore works also clear show that there is no difference between the languages of Azerbaijanis living in those countries. However, there are many differences in the point of view of literary language, and these differences clearly show itself in newspapers and magazines, radio and television programs. Naturally, there are historical, social reasons for this difference. As a result of the war between Iran and Russia was ended up with Gulustan (1813) and Turkmenchay (1828) agreements and Azerbaijan was divided into two parts. Thus, the same people live from in a completely different environment and conditions for about 200 years. Whether Iran and Russia did not allow any economic relationships to people divided into two parts. Although some relations have been established since independence of Azerbaijan in 1991, these differences still continue in the language. Influences of Russian are observed in the North of Azerbaijan and influence of the Persian language in the South
of Azerbaijan. There are still lexic, phonetic, and certain grammar differences between the literary languages of northern and southern Azerbaijan. Although Azerbaijan was part of Russia until 1991, the Azerbaijani language had been teaching in secondary schools and universities. Azerbaijani language, its history, dialects have been widely explored, hundreds of articles have been published about the Azerbaijani language.

There is almost no people left that their prominent literary and scientific works were not translated into Azerbaijani. Textbooks to all subjects (mathematics, physics, chemistry, etc.) have been written in Azerbaijani. It seems that the Azerbaijani language has been widely spoken under the Soviet Union. The situation was different in Iran. So, the Azerbaijani literary language has not been actually processes in Iran.

After the collapse of the USSR in 1991 and the restoration of Azerbaijan’s state independence, the main duty in the language policy was to eliminate the problems inherited from the Soviet era in a short time. The law on the state language declared in 2002 was an important step in the direction of reaching these goals. The alphabet of the Azerbaijani language was Arabic until the end of the 20s of the 20th century. The government established a special commission to prepare a draft of the new Azerbaijani alphabet in March 1919. However, the occupation in April (1920) did not allow the government to implement this reform. The alphabet reform in Azerbaijan was carried out by the Bolsheviks who seized the authorisation in the country. Based on the decision of October 11, 1928, the Republic accepted the Latin alphabet. The reform of the Azerbaijani alphabet supported the language development in the country.

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Part III: Pedagogy and Teaching
The L1 Acquisition of Evidentiality in Turkish: The Case of Older Children

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Abstract

The first language (L1) acquisition of evidentiality is a late-achievement cross-linguistically. In Turkish, research with 2- to 7-year-old children found that evidentiality is not fully mastered until after age 7. However, it is not known whether Turkish-speaking children fully acquire evidentiality after the age of 7. One major account attributes the protracted acquisition of evidentials to the late development of source concepts, while an alternative account relates it to the difficulty in mapping the source representations with the corresponding evidential markers. To test these accounts, this study investigated the acquisition of evidential morphology by monolingual Turkish adults and three groups of children (3- to 6-, 7- to 10- and 11- to 14-year-olds) using a story-retelling task and a picture selection task. Findings revealed lower accuracy rates in the youngest monolingual group (3- to 6-year-olds) in both tasks, and similar accuracy across conditions (See, Hear and Infer) in all groups in the picture selection task. Because the children’s performance does not follow the developmental path of source concepts, the late acquisition of evidentiality is most compatible with mapping difficulties between the underlying representations and the overt evidential markers. These results underscore the need to consider task modality when interpreting the findings from young children.

Keywords: evidentiality, first language acquisition, Turkish, older children

1. Introduction

Evidentiality is the grammatical marking of source information on which a statement is based (Aikhenvald, 2004). Languages have various ways to refer to information source. In English, evidentiality is expressed through lexical means (I heard that you lost the competition vs. I saw that you lost the competition). However, in about one quarter of the world’s languages (e.g., Bulgarian, Japanese, Quechua, Turkish), evidentiality is grammaticalized through particles, verbal affixes, adverbs or with parentheticals (Aikhenvald, 2004, 2014, 2020; Aikhenvald & Dixon, 2001; de Haan, 1998, 2001; Delancey, 2001; Faller, 2001; Fitneva, 2009). For instance, in Japanese, evidentiality is realized through non-obligatory morphosyntactic markers that express evidentiality when present, as shown in (1) with yoo vs. soo (McCready & Ogata, 2007, p. 153):

(1) a. Jon-wa konya-no paatii ni kuru yoo-da
    John-TOP tonight-GEN party to come YOO-COP.PRES
    ‘It seems that John will come to the party tonight.’

   b. Jon-wa konya-no paatii ni kuru soo-da
    John-TOP tonight-GEN party to come SOO-COP.PRES
    ‘I heard that John will come to the party tonight.’

Research has shown that the first language (L1) acquisition of evidentiality is a late-achievement cross-linguistically (de Villiers et al., 2009; Fitneva, 2018; Öztürk & Papafragou, 2016; Papafragou et al., 2007 among others). In a series of experiments conducted with Tibetan 2- to 10-year-olds, de Villiers et al. (2009) reported that the comprehension of the direct evidential ‘dug and the neutral evidential yod red precedes that of the indirect evidentials yod sa red and yod kyi red, and that even 10-year-olds showed inconsistency with the comprehension of Tibetan indirect evidentials. Similarly, 3-to-6-year-old Japanese children were found to perform poorly understanding the difference between the direct evidential particle yo and the indirect evidential particle for report tte in Japanese (Matsui, Yamamoto, & McCagg, 2006). Crucially, however, the same children showed better understanding of the particles encoding speaker certainty, suggesting earlier acquisition of corresponding source concepts. Fitneva (2008) tested the comprehension of evidentiality by 24 6-to-7-year-old kindergartners and 24 9-to-10-year-olds in Bulgarian. Six-year-old Bulgarian children were found to draw only on modality information (i.e., how the information was acquired) but not on authorship information (i.e., who acquired the information) in their judgments. However, they were able to perform adult-like and use both types of information by age 9 (cf. Lee & Law, 2000 on Cantonese). Taken together, the cross-linguistic evidence clearly suggests that the production and particularly the comprehension of evidential systems remain challenging until late childhood.

So far, two major accounts have been proposed for the late mastery of evidentiality: The first account attributes the delayed acquisition of evidentials to the late development of conceptual representations of source information (Choi, 1991; Gopnik & Graf, 1988; O’Neill & Gopnik, 1991; Wimmer, Hogrefe & Perner, 1988), and the following developmental path in the acquisition of evidential markers has been taken to reflect the development of its associated representations: Seen, Infer and Hear (Aksu-Koç, Balaban, & Alp, 2009; Aksu & Slobin, 1986). This is also reflected in Aksu and Slobin (1986, p. 166) who state that “[t]he … time lag in the order of emergence of the two forms in Turkish child speech is presumably due to the further complexity of making an inference (-mIş) as compared to simply accessing an experience event from memory (-di)”.

Similarly, regarding the two evidential meanings of -mIş (hearsay and inference), Aksu and Slobin (1986) further add that the earlier acquisition of -mIş for inference than -mIş for hearsay is due to the more complex nature of the hearsay function on a cognitive level “since it involves the use of another person’s utterance, rather than one’s own experience, as evidence for one’s assertion” (p. 166).

According to the alternative view, children may be delayed in discovering the mappings between the underlying source representations and the corresponding evidential markers, even when the source concepts are already in place (Öztürk & Papafragou, 2007, 2008, 2016; Papafragou, Cassidy, & Gleitman, 2007; Papafragou, Li, Choi, & Han, 2007; Uzundağ et al., 2018). This view predicts difficulty with all evidential markers to a similar extent, and the mapping problems may arise from the following factors or a combination of them: i) multifunctionality of evidential markers, which may mark not only evidentiality but also tense and aspect (e.g., Turkish), ii) the abstract nature of evidentials, which do not refer to observable referents in the world, and iii) discovering the language-specific distinctions within the evidentiality system in the target language (Öztürk & Papafragou, 2016, p. 202). Very few studies have investigated the underlying reasons for the observed patterns in view of these two accounts. In one such study, Papafragou et al. (2007) tested 3- and 4-year-old Korean children’s comprehension and production abilities of Korean evidentials as well as non-linguistic source monitoring skills. The findings revealed that all children productively used the direct evidential -e, while only 4-year-olds were able to perform above chance in producing the hearsay evidential marker -tay. However, even the oldest children showed variability in their comprehension of the two morphemes. The authors attributed the observed delay in production and particularly in comprehension of Korean evidentials to the mapping problems in trying to pair evidential language to specific source concepts since all children showed sophisticated knowledge about source reasoning in non-linguistic source monitoring tasks. In Turkish, earlier work on the L1 acquisition of evidentiality has studied children between the ages of 2 and 7, and it is not known whether Turkish-speaking children fully acquire the evidential system in Turkish after the age of 7.
This study aims to address this issue by testing younger Turkish-speaking children (3- to 6-year-olds) and two groups of older monolingual children (7- to 10-year-olds and 11- to 14-year-olds) as well as adults using a story-retelling (production) task and a picture selection (comprehension) task. If younger monolingual children (3- to 6-year-olds) show adult-like performance, then we can suggest that evidential morphology is acquired early in Turkish. However, if Turkish-speaking children do not perform adult-like, then their delayed performance could be attributed to i) mapping problems between evidential morphemes and their meanings, or ii) the late development of conceptual representations of source information. If the former is true, we expect them to show difficulty with both -\textit{mIş} and -\textit{DI} to a similar extent, whereas they are expected to perform better with -\textit{DI} (direct evidential) than -\textit{mIş} (indirect evidential) according to the latter view. Before presenting the details of our study, the next section describes evidentiality in Turkish.

2. Evidentiality in Turkish

Turkish has two past tense morphemes to encode evidentiality, namely the direct evidential marker –\textit{DI} (realized as -\textit{dı}, -\textit{di}, -\textit{du}, -\textit{ti}, -\textit{tu}, -\textit{tü}) and the indirect evidential marker –\textit{mIş} (realized as -\textit{muş}, -\textit{miş}, -\textit{muş}, -\textit{miş}), and Turkish speakers have to make an obligatory choice between the two morphemes while uttering a sentence with past reference. The two morphemes differ in that the event is uttered based on indirect evidence through either hearsay or inference based on observable evidence when –\textit{mIş} is used, whereas –\textit{DI} is required when there is direct evidence related to the event (usually through visual perception) (Aksu-Koç & Slobin, 1985; Göksel & Kerslake, 2005; Johanson, 2003; Kornfilt, 1997; Slobin & Aksu, 1982). For instance, evidentiality is overtly marked with –\textit{DI} in (2a), indicating that the speaker has witnessed the event. However, the use of –\textit{mIş} in (2b) implies that the speaker has indirect information about the event either through hearsay or inference.

(2) a. Anne-m sen-i ara-di.
    mother-POSS.1SG you-ACC call-D.PAST.3SG
    ‘(I saw that) my mother called you.’

b. Anne-m sen-i ara-miş.
    mother-POSS.1SG you-ACC call-M.PAST.3SG
    ‘(I heard/inferred that) my mother called you.’

The indirect evidential marker –\textit{mIş} has several pragmatic functions as well such as expressing irony, scorn, surprise or compliment (Kaili, Çeltek, & Papadopoulou, 2016; Uzundağ et al. 2018). It is also commonly used in traditional children’s narratives as shown in (3) below (Aksu & Slobin, 1986; Coşkun Kunduz, 2018, p. 41; Delancey, 2001; Slobin & Aksu, 1982).

(3) Nasreddin Hoca bir gün bir köy-e git-miş.
    Nasreddin Hoca one day a village-DAT go-M.PAST.3SG
    ‘One day, Nasreddin Hoca went to a village.’

In her pioneering study on the acquisition of evidentiality, Aksu-Koç (1988) examined the performance of Turkish-speaking children (aged 3-6) in free speech samples as well as several production and comprehension tasks and found that they successfully marked evidentiality with –\textit{DI} around the age of 3, while the appropriate use of –\textit{mIş} was further delayed, stabilizing at around the age of 4. However, in comprehension, the same level of performance was achieved around age 6 and only for –\textit{DI}, while even 6-year-olds performed at chance level in their comprehension of –\textit{mIş}. Based on these findings, Aksu-Koç has indicated that the earlier acquisition of the direct evidential –\textit{DI} compared to the indirect evidential –\textit{mIş} is best explained by the late development of corresponding source concepts. More specifically, she argued that Turkish-speaking children may be initially more interested in “concrete, referential and objective characteristics of situations” than in “subjectively relevant distinctions such as the speaker’s attitude to the proposition asserted” (p. 195).
Aksu-Koç et al. (2009) reported similar findings to those of Aksu-Koç’s (1998) but further added that the correct use of -mls for inference preceded that of -mls for hearsay, which were appropriately used at the levels of 95% and 75% at age 6 (the oldest age group), respectively (Ögel, 2007). More recently, Öztürk and Papafragou (2016) conducted 6 experiments testing Turkish-speaking children’s (aged 5-7) source monitoring skills as well as comprehension and production abilities of evidential morphology. The findings showed that the comprehension and production of -DI and -mls was not stable until after age 6 or 7, and that Turkish-speaking children performed better with -mls for hearsay than -mls for inference across all ages, contrary to previous findings (Aksu-Koç, 1988; Aksu-Koç & Alici, 2000; Aksu-Koç et al., 2009; Ögel, 2007). Furthermore, children were found to show better performance in source monitoring experiments than in evidentiality experiments, suggesting that the late acquisition of evidentiality in Turkish is not likely due to late emergence of the source monitoring abilities but rather may stem from the mapping problems between evidential morphology and antecedently available source concepts. Based on these findings, Öztürk and Papafragou (2016, p. 218) concluded that “the evidential functions of the two morphemes are discovered after the age of 6 or 7, even though our data do not resolve the question of when knowledge of the Turkish evidential system becomes completely adult-like”. Therefore, in this study, we compare younger Turkish-speaking children (3- to 6-year-olds) to two groups of older monolingual children (7- to 10-year-olds and 11- to 14-year-olds) as well as adults using a story-retelling (production) task and a picture selection (comprehension) task and discuss the findings in view of the aforementioned accounts on the acquisition of evidentiality.

3. The study

The purpose of the present study is to determine when adult-like mastery of the Turkish evidential system occurs and the potential reasons underlying the late acquisition of evidentiality in Turkish (mapping problems vs. late cognitive development). We compared three groups of monolingual Turkish children (3- to 6-year-olds, 7- to 10-year-olds and 11- to 14-year-olds) as well as adults. The target inflectional markers investigated are the direct evidential marker -DI and the indirect evidential marker –mls. The tasks employed are a story retelling task and a picture selection task to addresses the following research questions:

1. Is there a difference between the adult and the children’s groups in their comprehension/production of evidential markers in Turkish?
2. Is there a difference between the three age groups of children: (3-6), (7-10) and (11-14)?
3. Does the performance of the groups vary across different functions of -mls?

Based on previous research, Turkish-speaking children are expected to show a gradual development in their knowledge of evidentiality in Turkish and perform non-adult-like until after age 7, particularly in comprehension, although it is still an open question exactly at what age these children become adult-like. Regarding the order of acquisition of different functions of -mls, previous research has been inconclusive: Aksu-Koç (1988) reported that -DI was acquired first, which was then followed by -mls for inference and -mls for hearsay, while Öztürk and Papafragou (2016) found that Turkish-speaking children have difficulties with both -DI and -mls until after age 6 or 7, and that -mls for hearsay is acquired before -mls for inference. Therefore, we expect in our study that -DI may be acquired earlier than, or at the same time as, -mls for hearsay or -mls for inference, although we do not make specific predictions regarding which evidential meaning of -mls is acquired first. If children show earlier understanding of the direct evidential -DI than the indirect evidential -mls, then this would support the hypothesis that the acquisition of evidentiality is delayed by the late development of the corresponding source representations. Alternatively, children may face challenges with both evidential morphemes to a similar extent, which would then yield support for the alternative view that attributes the observed difficulty to the problems in discovering the mappings between evidential morphemes and the underlying source concepts.
3.1. Participants

A total of 81 native speakers of Turkish participated in our study, including 36 adults ($M_{\text{age}} = 39.6$, range = 33–50) and 45 children. The children were further distributed across three age groups: 3- to 6-year-olds ($n = 20, M_{\text{age}} = 4.7$), 7- to 10-year-olds ($n = 10, M_{\text{age}} = 9.2$), and 11-to-14-year-olds ($n = 15, M_{\text{age}} = 12.3$). We included two older children’s groups as well as a younger monolingual children’s group because we wanted to establish when in childhood Turkish children reach adult-like competence of evidentiality, as measured by the tasks used in this study. Children were recruited through preschools or grade schools in Düzce, Turkey, and they were tested individually in a quiet room outside their classroom.

3.2. Experimental tasks

Data was collected through a story retelling task and a picture selection task. Following Montrul (2004), production data was elicited by using a series of pictures from the story, *Little Red Riding Hood*, which were presented in a PowerPoint presentation. This task was chosen because it has proven to be successful in previous studies to elicit past tense marking (e.g., -DI and -mIş in Turkish) (Montrul 2004; Montrul & Bowles, 2009). More specifically, the narrative function of –mIş (i.e., its use in traditional children’s narratives) was examined in this task.

The second task was a picture selection task, whose goal was to test the comprehension of the evidential markers in Turkish (Öztürk & Papafragou, 2016; Ünal & Papafragou, 2016). All the stimuli were presented audio-visually. Participants were first presented with a series of pictures, each depicting a short story. After the participants saw the pictures, two puppets which gained access to the event the same way (e.g., witnessing, hearsay or inference) described the same event in two different sentences, one with -DI and the other one with -mIş. Participants were then presented with the question “Who said it better?”, and they were asked to select the puppet who described the event better. For instance, for the target picture in the See condition as exemplified in (4a), both the panda and the kangaroo witnessed an event, and then the panda said *Kız kazağı giydi* (I saw that the girl put on the sweater), while the kangaroo said *Kız kazağı giymiş* (I heard/inferred that the girl put on the sweater). After listening to both puppets, participants were then asked to click on the puppet (kangaroo vs. panda) who they think described the event better, which would be the panda in this case. In the Hear condition, the puppets were told what had happened to the characters by a third character (as in 4b), and participants were then expected to click on the puppet who described the event using -mIş. Finally, in the Infer condition, the puppets did not see nor hear the event, but instead they went into the room and inspected the evidence for what the character(s) had done (as in 4c), and once again the target sentence was the one with -mIş.

(4) a. See condition

Kız kazağ-ı giy-di.
‘(I saw that) the girl put on the sweater.’
b. *Hear* condition
   Adam kadın-ı öp-müş.
   man woman-ACC kiss-M.PAST.3SG
   ‘(I heard that) the man kissed the woman.’

![Image]

The design of this task was adapted from Ünal and Papafragou (2016), who argued that this type of design is cognitively less demanding than designs where pictures describing the two types of target sentences (−DI-marked vs. −mIş-marked) are simultaneously presented to children, who are then asked to match the given description with one of the pictures. However, in this design, children were presented with one picture at a time. Additionally, they were given the two contrastive descriptions of the event (−DI-marked vs. −mIş-marked), such that they did not have to generate the other description on their own.

There were a total of 35 stimuli consisting of 16 target items testing evidentiality, 16 distractor items (quantifiers and numerals) and three practice items that were presented in a PowerPoint presentation. All sentences consisted of only three words, and the direct object was always marked with the accusative marker −(y)I. No verbal markers other than −DI or −mIş appeared on the predicate. All the experimental items were pseudo-randomized and care was taken to ensure that no two consecutive items included the same condition type. Half of the participants were given the sentences in the initial randomized order, while the other half were given the sentences in the reversed randomized order. The left-right position of the pictures and the puppet that gave the right answer were counterbalanced. Half of the sentences included animate objects, while the other half included inanimate objects.

The participants first completed the story retelling task, which was then followed by the picture selection task. The two tasks took an average of 40 minutes to complete. In addition to reading the instructions given in the PowerPoint presentations, the participants were also informed verbally about how to do the task by the investigator. The story retelling task was audio-recorded and transcribed for analysis. The transcriptions were then coded for presence and absence of the evidential markers.

4. Results

The analyses for both tasks were computed by R with the version 3.5.2 (R Core Team, 2018) using the *lme4* package (Bates, Maechler, Bolker, & Walker, 2015). The pirate plots were produced using the *yarrr* package in R (Philips, 2017). For the story retelling task, a binomial linear mixed-effects model (Jaeger, 2008; Linck & Cunnings, 2015) was performed on the relationship between response accuracy rates and age (adults, 3- to 6-year-olds, 7- to 10-year-olds, and 11- to 14-year-olds). For the picture selection task, condition (i.e.,
See, Hear, Infer) was also added to the model as a variable. The full model for the story retelling task included subjects as random effects. For the picture selection task, variable selection for models was done in a backward stepwise selection method using the Akaike Information Criterion (AIC), and the model that was the best fit for the data was chosen. The full model included both subjects and items as random effects. In both models, the group levels were compared using treatment coding in which each level was compared to the reference level (monolingual adults), and the intercept was the cell mean of the reference level. Post-hoc comparisons were computed by using Estimated Marginal Means from the emmeans package (Lenth, Singmann & Love, 2018).

### 4.1. Story retelling task

The narrative function of –ml∫ (i.e., its use in traditional children’s narratives) was examined in this task. Participants’ answers were coded as ‘incorrect’ if the verb was left unmarked (omission) or marked with another inflectional marker (substitution), and ‘correct’ if it was marked with -ml∫, as demonstrated in (5) below. In (5a), the participant sees the picture of the woodsman entering the room where the wolf is sleeping and infers that the woodsman would do something to the wolf. Although the participant uses past tense to tell the story up until this point, s/he omits -ml∫ in this sentence, which in turn leaves the sentence in future tense. Therefore, the sentence in (5a) was further coded as an omission error. In (5b), -DI was substituted for -ml∫, which was further coded as a substitution error since only -ml∫ can be used in traditional children’s narratives.

(5) a. Omission

\[
\text{Kurt-a bir şey yap-acak} \\
\text{wolf- some thing do-FUT.3SG} \\
\text{‘He is going to do something to the wolf.’} \\
\text{Intended meaning: ‘He was going to do something to the wolf.’}
\]

b. Substitution to -DI

\[
\text{Kız şüphelen-di} \\
\text{girl got.suspicious-D.PAST.3SG} \\
\text{‘The girl got suspicious.’}
\]

As displayed in Table 1, the analysis of the data revealed that simple effects of age for 7- to 10-year-olds (\(z(3029) = -1.5, p = .13\)) and 11- to 14-year-olds (\(z(3029) = .81, p = .42\)) on the response accuracy rates were not significant. This indicates that the accuracy percentages of the 7- to 10-year-olds (\(M = 98, SE = .70\)) and the 11- to 14-year-olds (\(M = 92, SE = 1.5\)) were not significantly different from the monolingual adults’ (\(M = 95, SE = .07\)). The model output, however, revealed that the simple effects of age for 3- to 6-year-olds (\(z(3029) = 3.2, p = .001\)) on the response accuracy rates were significant, indicating that the 3- to 6-year-olds (\(M = 82, SE = 1.5\)) had significantly lower accuracy percentages than adults, as also displayed in Figure 1.

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>SE</th>
<th>z ratio</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-3.8</td>
<td>.36</td>
<td>-10.57</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3- to 6-year-olds</td>
<td>1.7</td>
<td>.53</td>
<td>3.2</td>
<td>.001**</td>
</tr>
<tr>
<td>7- to 10-year-olds</td>
<td>-.98</td>
<td>.65</td>
<td>-1.5</td>
<td>.13</td>
</tr>
<tr>
<td>11- to 14-year-olds</td>
<td>.52</td>
<td>.64</td>
<td>.81</td>
<td>.42</td>
</tr>
</tbody>
</table>

R code: glmer(Response ~ Age + (1 | Participant))

**Table 1.** Mixed-effects regression modeling results of accuracy rates in the story retelling task with the factor Age (reference level = Adult)
An error analysis was also performed to further gain insights into the nature of the variability that is observed in the younger children’s group. The number of omission and substitution errors was calculated and compared across all the groups, as displayed in Table 2. Accordingly, the highest number of errors was observed in the 3-6-year-old children’s group who made omission and substitution errors to a similar extent, as also displayed in Figure 2. 11- to 14-year-olds were comparable to 3- to 6-year-olds in the number of substitution errors that they made; however, they had fewer omission errors. Finally, 7- to 10-year-olds made the fewest number of errors with only 7 omission and 2 substitution errors in total. Crucially, however, all groups achieved a mean accuracy percentage of over 80%.

![Figure 1. Mean accuracy percentages by age in the story retelling task](image)

**Table 2. Error analysis in story retelling task**

<table>
<thead>
<tr>
<th>Groups</th>
<th>No. of obligatory context</th>
<th>Correct use</th>
<th>Omission</th>
<th>Substitution</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>1186</td>
<td>1128 (95%)</td>
<td>15 (1%)</td>
<td>43 (4%)</td>
<td>58 (5%)</td>
</tr>
<tr>
<td>3- to 6-year-olds</td>
<td>517</td>
<td>424 (825)</td>
<td>45 (9%)</td>
<td>48 (9%)</td>
<td>93 (18%)</td>
</tr>
<tr>
<td>7- to 10-year-olds</td>
<td>504</td>
<td>495 (98%)</td>
<td>7 (1.5%)</td>
<td>2 (.5%)</td>
<td>9 (2%)</td>
</tr>
<tr>
<td>11- to 14-year-olds</td>
<td>433</td>
<td>398 (92%)</td>
<td>2 (1%)</td>
<td>33 (7%)</td>
<td>35 (8%)</td>
</tr>
<tr>
<td>Total</td>
<td>2640</td>
<td>2445 (92.6%)</td>
<td>69 (2.6%)</td>
<td>126 (4.8%)</td>
<td>195 (7.4%)</td>
</tr>
</tbody>
</table>

*Note. Percentages are given in the parentheses.*
In sum, the accuracy rates of adults, 7- to 10-year-olds and 11-year-olds did not significantly differ in this task. On the other hand, the younger children’ group (3- to 6-year-olds) were significantly less accurate, and the error analysis further revealed that they made omission and substitution errors to a similar extent. Crucially, however, their overall accuracy rate was still over 80%, suggesting that Turkish-speaking children acquire the pragmatic meanings of -mIş very early on.

Figure 2. Error analysis in story retelling task

4.2 Picture selection task

All responses were coded as ‘correct’ if participants chose the puppet (panda vs. kangaroo) who described the event better for the given picture, and ‘incorrect’ otherwise. The mean accuracy percentages were lower and standard errors were larger in all groups in this task as compared to the story retelling task.

The model output showed simple effects of age for 3- to 6-year-olds ($z(1368) = 9.4, p < .001$) and 7- to 10-year-olds ($z(1368) = 3.1, p = .001$) on the response accuracy rates, as shown in Table 3. This indicates that the 3- to 6-year-olds ($M = 53, SE = 3$) and the 7- to 10-year-olds ($M = 85, SE = 2$) were significantly less accurate than the monolingual adults ($M = 93.4, SE = 1$), as also displayed in Figure 3. No significant differences, however, were revealed between 11- to 14-year-olds ($M = 93, SE = 1.7$) and adults ($z(1368) = .21, p = .83$).
The model output also did not reveal any simple effects for the conditions, \( Hear (z(1368) = .89, p = .38) \) and \( Infer (z(1368) = .26, p = .79) \) in any of the age groups, suggesting that participants’ accuracy rates did not differ between the conditions, \( See (M = 81, SE = 2.1) \) and \( Hear (M = 85, SE = 1.96) \) as well as \( Infer (M = 84.5, SE = 1.39) \), as also shown in Figure 4. Because their performance does not follow the developmental path of conceptual representations of source information (Aksu-Koç et al. 2009), the late acquisition of evidential morphology is most compatible with mapping problems between the underlying representations and the overt evidential markers in Turkish. This finding is in line with previous research. In a recent study, Uzundağ et al.
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The L1 Acquisition of Evidentiality in Turkish: The Case of Older Children (2018) investigated the acquisition of the indirect evidential -mIş in naturalistic child-caregiver interactions based on data from 6 children between 8 and 36 months and their caregivers. Contrary to previous proposals (Aksu-Koç, 1988; Öztürk & Papafragou, 2016), no order of emergence was found between the two evidential meanings of -mIş (i.e., hearsay and inference). The authors also indicated that there was no correlation between input frequency and order of emergence of evidential meaning, and that the children showed individual differences in their development of the use of the indirect evidential -mIş.

Taken together, the findings are in line with previous research documenting the early productive use of narrative function of -mIş. The findings also add to previous literature that the acquisition of the Turkish evidential morphology is further delayed and is not completely acquired even after age 7 (at least until age 11).

5. Discussion and conclusion

One major finding of earlier work on the L1 acquisition of Turkish evidentiality is that full semantic and pragmatic understanding of it does not occur until after the age of 6 or 7, the oldest age group studied in previous studies. However, it is not known whether Turkish-speaking children fully acquire the evidential system in Turkish after the age of 7. In this study, we compared younger Turkish-speaking children (3- to 6-year-olds) and two groups of older monolingual children (7- to 10-year-olds and 11- to 14-year-olds) as well as adults using a story retelling (production) task and a picture selection (comprehension) task to determine when in childhood adult-like acquisition of evidentiality occurs. In doing so, we also considered the predictions of two major accounts that can be used to explain the observed late acquisition of evidentiality. According to the first view, the late development of underlying source concepts further delays the acquisition of evidentiality, and the later appearance of indirect evidentials (e.g., -mIş) as compared to direct evidentials (e.g., -DI) is taken as evidence for this. On the other hand, the alternative view attributes the delayed acquisition of evidentiality to the complexities of mapping between the source concepts and the corresponding evidential morphemes and predicts difficulties with all the evidential morphemes to a similar extent. Below, we discuss our findings in view of these two accounts.

In line with previous research, -mIş has been productively used in traditional children’s narrative in the story retelling task as early as 3 years of age (Aksu-Koç, 1998; Aksu & Slobin, 1986). The analysis of the data revealed that 3- to 6-year-old Turkish-speaking children were significantly less accurate than adults in correctly supplying -mIş in obligatory contexts, while both groups of older children (7- to 10-year-olds and 11- to 14-year-olds) performed adult-like. Crucially, however, their mean accuracy rate was still over 80%. The analysis of errors further revealed that the younger children (3- to 6-year-olds) made omission and substitution errors (i.e., use of -DI instead of -mIş) to a similar extent, and most omission errors in the younger monolingual children’s group were due to incomplete sentences that the children produced. Adults and 11- to 14-year-olds made similar numbers of substitution errors to 3- to 6-year-olds; however, this made up only 4% and 7% of their -mIş production, respectively. Lastly, 7- to 10-year-olds made the least number of errors that constituted only 2% of their overall production. These findings suggest that the narrative use of -mIş is productively used as early as 3 years of age, posing no major problems to Turkish-speaking learners. Similar findings were also reported by Uzundağ et al. (2018) who used corpus data of the interactions between young Turkish-speaking children (8- to 36-months-olds) and their caregivers. The authors reported that the non-factual use of -mIş was very common in child-directed speech as well as child’s speech, making up 42.6% and 44.9% of their overall production of source information in Turkish.

Contrary to the findings of the story retelling task, 3- to 6-year-olds, together with 7- to 10-year-olds, performed non-adult-like in their comprehension of the evidential meanings of -DI and -mIş (i.e., See, Hear and Infer). This suggests that as compared to early productive use of narrative function of –mIş, the acquisition of the Turkish evidential system develops along a protracted timetable and is not mastered even after age 7 (at least until age 11). Crucially, however, none of the groups differed in their performance across the three
evidential meanings that were tested, suggesting that the late acquisition of evidentiality is most compatible with mapping problems between the underlying representations and the overt evidential markers in Turkish; the children’s performance in this study does not follow the developmental path of conceptual representations of source information (Aksu-Koç et al. 2009). Similar findings were reported by Ünal and Papafragou (2013) who tested 4- to 6-year-old Turkish speaking children’s production of evidential morphology (i.e., -DI and -mIş for inference) and their understanding of source information in two experiments. Results showed that children as young as 4 years of age were able to identify the source information based on direct (visual) evidence and indirect evidence (i.e., inference from visual cues). However, even the 6-year-olds had difficulties producing -DI and -mIş based on the evidence they were presented with. Based on these findings, the authors concluded that the late acquisition of evidentiality in Turkish is likely due to the late mastery of linguistic mappings between the underlying source concepts and the evidential markers. Papafragou et al. (2007) also report similar findings for Korean.

Our findings add to the Turkish as well as cross-linguistic data and point to the key issue in mastering evidentiality in L1 acquisition: Children continue to face challenges (even after age 7) in finding out the mappings between the underlying source concepts and the evidential morphemes even when the source concepts have been previously acquired and are already in place (cf. Öztürk & Papafragou, 2016). Several reasons may underlie this problem. First, children need to discover how the evidential system is structured in their target L1. For instance, Turkish-speaking children need to find out that -mIş can be used for both hearsay and inference, while -DI only expresses direct evidence typically through visual perception. The multifunctionality of the evidential morphemes may further complicate the mappings between these morphemes and their meanings. Both -mIş and -DI mark tense and aspect in addition to evidentiality in Turkish, and -mIş also has several other extended pragmatic uses such as its use in narratives, irony, scorn and compliments (Aksu & Slobin, 1986; Johanson, 2003). Turkish-speaking children need to acquire the pragmatic uses of -mIş on top of mastering the evidential system of Turkish to be able to have a full command of the evidential morphemes. Lastly, evidentials are abstract in the sense that “few clues in the extra-linguistic environment point to source meanings: even in the cases of direct perception, where an act of observing an event has occurred, the learner needs to link a grammatical morpheme to a propositional attitude (‘direct access/perception’) which itself is unobservable” (Öztürk & Papafragou, 2016, p. 219). All these factors contribute to the mapping difficulties in the acquisition of evidentiality in young children.

The results of our study also point out the need to consider the modality of task in interpreting the findings (Montrul et al. 2019; Ünal & Papafragou, 2016). In a series of comprehension and production experiments, Ünal and Papafragou (2016) reported that 3- to 6-year-olds Turkish-speaking children showed better performance in producing the evidential markers than understanding them, and that this asymmetry could be attributed to the perspective-taking demands of considering someone else’s information sources (p. 196). Although the picture selection task was chosen because it was cognitively less demanding compared to other similar designs (Ünal & Papafragou, 2016), it might have still posed challenges to the participants for the following reasons: i) they still needed to figure out not how the puppets gained access to information (See, Hear or Infer), and ii) make judgments based on not their own perspective but the perspective of the puppets.

In sum, the findings of the current study indicated, as compared to the early emergence and productive use of the narrative function of -mIş, that the acquisition of evidentiality is delayed until after the age of 7 (at least until age 11) in Turkish. Although this study is innovative in comparing children from younger and older ages, and it has a lot to offer to our understanding of the L1 acquisition of evidentiality, further work with more controlled and structured tasks is needed to better understand the late acquisition of evidential systems and the triggering factors behind it.

References


Telecollaboration for L2 Turkish Students: 
The Analysis of Online Interpersonal Communication

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Abstract

This study investigates the interpersonal interactions during a telecollaboration Project at a novice level L2 Turkish course. Currently, telecollaboration has mostly been used for exchanges between people in distant geographical locations, typically between learners of the target language and native speakers residing in the country or regions that are home to the target culture. Few studies have focused on the preparation that students need in order to engage in telecollaborative exchanges, particularly at the novice and low-intermediate levels. In this study, I develop and explore the notion of ‘in-course telecollaboration’ between learners of the target language. With this aim, the instructor-researcher designed biweekly oral and written interactional tasks based on discrete thematic units covering cultural points, grammatical structures, and vocabulary. Throughout the term, the instructor analyzed students’ oral and text conversations to evaluate their performance and track developments in their interpersonal communication proficiency. The six-week in-course telecollaborative exchanges culminated in a telecollaboration project with pre-service Turkish teachers residing in Turkey. In conclusion, this offers insight into a variety of factors that are critical to learners’ development of interpersonal communication as defined by the World-Readiness Standards for Learning Languages (ACTFL, 2006). The study shows that telecollaboration projects are possible even for novice-level learners. Online encounters enable students to practice the language in a meaningful context and get peer-feedback. An online environment could be more flexible and non-threatening for the students. During the interpersonal interactions, students had to produce contextually appropriate language which is beyond grammar and vocabulary. This challenge encouraged students and helped them to develop their skills in the discourse level. However, this challenge caused language breakdowns. But the students dealt with these breakdowns, asking for help from their peers or using their body language. Even in novice-level, the learners can exchange cultural points and daily habits. Telecollaboration projects are important tools to improve all participants’ e-skills.

Keywords: second language, interpersonal communication, intercultural communication, telecollaboration, Turkish.

1. Introduction

L2 students need and request communication starting from the first days of their language classes, albeit in the simplest form. Furthermore, communication is one of the five Cs contained in the Standards for Foreign Language Learning in the 21st Century (ACTFL, 2006). In this document, communication is divided into three modes: interpretive, presentational and interpersonal. A person who learns a language should improve these three modes to be able to communicate effectively in the target language.

On the other hand, it is worth noting that virtual communication is becoming more and more common on a global scale. Language, itself, is increasingly sharing the semiotic stage with not only images but also sound and video, in both public and private communication. Unlike broadcast technologies such as TV, radio, and print, today’s internet-based technologies are notable for their extensive interpersonal use, affording friends and family -or even complete strangers- ongoing social contact despite physical distances between them (Stephens, 1998: 1).

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Today it is not a question of whether to use technology in FL education. More and more, our students will be called upon to use their language in technology-mediated environments. Personal relationships in today’s world rely heavily on a mix of online (i.e. Whatsapp, Groupme) and face-to-face communication. Therefore, language educators not only need to teach their students language, but also prepare them for new forms of communication (Kern, 2014; Kern and Develotte, 2018: 10). Moreover, the recent COVID-19 pandemic has shown that online communication is a life-saving skill in a time of crisis. Educational institutions have moved their classes to online platforms during the pandemic, leading people to appreciate the value of online tools.

Technology-mediated communication is often influenced by the infrastructure of the digital medium. We engage in different forms of participation with different tools (Stephens, 1998: 1; Kern, 2014: 342). Zoom/skype culture is different from Youtube culture, just as synchronous culture is different from asynchronous culture. In addition, type of technological tool affects the linguistic features of language used during conversation. With these points in mind, the best tool to foster L2 students’ interpersonal communication skills is synchronous telecollaboration tools (such as Zoom, Skype, etc.), because they facilitate two-way interpersonal interaction. This mode of interpersonal communication allows students to engage in conversations, provide and obtain information, express feeling and emotions, and exchange opinions (ACTFL, 2006). In addition, telecollaboration is a form of collective inquiry that enables learners of a language to benefit from the expertise of native speakers (Lewis and O’Dowd, 2016 cited in Cunningham, 2019: 161).

Keeping these in mind, this study aims to examine interactions during a two-step telecollaboration project. These interactions include: 1. Interaction between the students of a beginner level course and 2. Interaction between these students and pre-service Turkish teachers.

2. Methodology

Seven Turkish-language learners who enrolled in an Elementary Turkish I (A1) course participated in this study. They had oral and written in-course telecollaboration biweekly for 6 weeks. They utilized the Zoom app for oral collaboration and the text messaging app of their choice for written collaboration. The students submitted their conversations biweekly and they were given online feedback. At the end of 6 weeks, the students had an intercultural telecollaboration with pre-service teachers living in Turkey utilizing the Zoom app.

In-course telecollaboration meetings were conducted based on course curriculum units. The course curriculum consisted of six different units and each unit consisted of three different themes. The students selected different themes for the oral and written telecollaboration, practiced the vocabulary and grammar of those themes, built the structure of the conversation, and had a spontaneous chat biweekly.

Intercultural telecollaboration was conducted between students of Turkish and pre-service Turkish teachers. The pre-service teachers participated in the study voluntarily. On the other hand, telecollaboration project were a graded part of the course for the Turkish language learners. The intercultural telecollaboration consisted of three steps. In the first step, the students and pre-service teachers wrote a biography of them and the instructor exchanged biographies between the groups. In the second step, the students and pre-service teachers wrote questions to ask counterparts based on biographies. In the first two steps, the main goal was to establish a personal relationship with partners and increase a cultural awareness as R. O’Dowd and Waire (2009) also indicated in their study. In the third step, the participants had conversations. In the U.S. side, participants used Zoom rooms which their institution provides for them and the instructor divided them into groups of two or three for each room. In Turkey side, participants were individually assigned the student groups. The sessions took 50 minutes.

At the end of the project, I analyzed transcript of interactions and asked the students their reflections on the project in a survey form to gain insight into the telecollaboration project. In the survey, I used likert scale
and open-ended questions. I analyzed recordings of interactions and survey results together and determined emerging themes. In the analysis phase, I focused on the interactions between the participants (feedbacks, topics spoken) and examined the range of language (the authenticity, fluency and accuracy of language).

3. Findings

First, I present the emerging codes and their frequencies that is extracted from the open-ended questions in student reflections. Subsequently, I present the themes that emerged from these codes and the analysis of the transcripts of student interactions.

<table>
<thead>
<tr>
<th>The Phase of Telecollaboration</th>
<th>Student Reflections</th>
<th>Frequency (Number of mentions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-course phase</td>
<td>“used the previously learned vocabulary and grammar structure in a context”</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>easier to practice with peers (since the language competence is similar)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>the task is very structured (so it is repetitive and boring)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>the task takes long time to prepare</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(students) improve fluency</td>
<td>1</td>
</tr>
<tr>
<td>Intercultural phase</td>
<td>(students) hear the authentic language and copy it</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(students) use the language in real-life conditions</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(students) learn Turkish culture and values</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>the task is less structured</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(students) use the language more fluently compared to in-course one</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(students) learn other’s life</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>more enjoyable since it is an out of class activity</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1. Students’ reflections on the telecollaboration project

3.1. Using language in a meaningful and real-life context

In-course Phase

In a broad sense, the chief goal of the telecollaboration in this study was to practice the previously learned course themes in a comfortable environment. This goal gave the students more time to practice the previously learned course themes in a comfortable environment. As was aimed, the students illustrated in their reflections that they “learned vocabulary and grammar in a meaningful context” (4). In addition to that, the oral and written correspondence between the students also carry traces of similar themes to those mentioned in the student reflections. Conversations between the students included the previous unit’s vocabulary and grammar as well as even older material. While the students practiced vocabulary and grammar in a meaningful context, they also discussed the familiar topics using limited formulaic language.

Fig. 1 and 2 illustrate the contribution of the project to the vocabulary and fluency of the students from the students’ point of view.
The students indicated that these kinds of telecollaborations enabled them to “hear native language” (5) and “use the learned language in real-life” (3). Correspondence between the students also demonstrates those mentioned in the student reflections. The students were exposed to daily speech during their interviews.

3.2. Breakdowns in communication and authenticity of the conversation

**In-course phase**

In terms of authenticity, the language used throughout the telecollaboration does not flow organically. At the L1 level, the students cannot make transitions authentically. For example, after they greeted each other, a student directly asked to their peer “What is your mom’s name?” which was not appropriate.

**Intercultural phase**

In their reflections, the students appreciated the authenticity of the intercultural telecollaboration (5). This type of telecollaboration allowed them to “hear native and authentic Turkish language” (5) and “gave them the opportunity of using the language in real-life situations” (3). When I analyzed the video recordings, I observed similar interactions. The students were exposed to daily speech and even slangs.

3.3. Giving/Taking feedback

During these interactions, students were influenced by their peers in real time, both positively and negatively. While a student rephrased and corrected his/her sentence, the other student -influenced by this rephrasing- made the correct form of the sentence. Similarly, sometimes a student used an inappropriate word in a certain context. Upon this event, the other student used the proper form or kept using the inappropriate form. In addition to that, when students could not recall vocabulary, they asked for help from their peers and learned the vocabulary from each other. The students indicated in their reflections that “it is easier to practice with peers since their language competence is similar” (2). “The contribution of the project to the grammatical accuracy of the students is illustrated below from the students’ point of view.
3.4. Taking risk with L2

The in-course telecollaboration enables students to interact with their friends in a flexible environment. The students directly and comfortably checked with their peers when they were confused about the usage of certain vocabulary. They indicated that “it is easier to practice with peers since their language competence is similar” (2). In addition, when they could not communicate with each other using their limited vocabulary, the video screen allowed them to use body language to communicate. Furthermore, some students enjoyed these kinds of conversations. Although they were in the same class during the day, they had fun in an online environment. They also used some informal phrases that they do not prefer to use in the class.

3.5. Cultural exchange

In-course phase

A close analysis of the oral and written chat recordings suggests that students can get to know each other to some extent during these meetings. Because in these meetings, students learned about each other’s special days, festivals, personal interests, feelings, family life and friends more than real class environment.

Intercultural phase

Doing certain tasks (like those mentioned in section 2) before the conversation also helped for these beginner level students to engage in the conversation. Reading each other’s autobiography before the conversation helped the students to familiarize themselves with each other. In one group the student was pleased when the pre-service teacher in Turkey easily recalled his/her name and nickname.

During the conversations, the students shared details from their daily lives, favorite music groups, the courses they take, and favorite foods. The students were particularly engaged in the conversation when they shared some pictures from their personal lives including their families, schools, and cities.

During the intercultural exchanges, the pre-service teachers were very eager to share their culture and learn the American students’ culture. The pre-service teachers were very comfortable in sharing their resources (e.g. family albums), since the Zoom app has features to share a white board, website, or document. However, technical problems sometimes interrupted the conversation. The pre-service teachers could not share their pictures at those times and had to change the topic. On the other hand, the students in the U.S. could not share a lot except their daily life, because their level was not particularly high. According to a pre-service teacher’s comment, the students could not express themselves since they did not use their personal computers. The students were in the groups in Zoom rooms and did not have access to share function of the tool.
3.6. The limitations of the project

In-course phase

In student reflections, there are pros and cons for the telecollaboration. According to the students, these kinds of pairings between the students could sometimes exhaust them. The students reported that “it took a lot of time to come together with their peers using tech tools” (2). In addition, “it felt repetitive when they practiced certain themes” (2). They liked the oral part more than the text part.

Intercultural phase

Some of the students indicated that speaking with a native speaker was hard for their level. “The students did not feel ready because their Turkish was not good enough and the duration of the conversation was too long” (2). In the analysis of the recordings, I also observed that some students could not keep interacting. Sometimes they could not understand what their peer was saying, remained silent, or responded with an unrelated answer. However, as the students were intentionally placed in groups with mixed levels of competence, they could ask and help each other when they had trouble on following the conversation. When one student could not explain what s/he wants to say, the other student helped her/him. Moreover, they used body language and mimicry when they could not understand each other. Despite this, all students were able to conduct the conversation using formulaic sentences as was expected from their levels.

3.7. The contribution to interpersonal communication skill

Figure 4 below shows the contribution of the project to the students’ interpersonal communication. According to the figure, while four students stated that this project fostered their interpersonal communication skills, three students indicated that it remained the same before and after the project.

![Figure 4](image)

Figure 4. The contribution of the project to interpersonal communication skill

4. Discussion

This chapter was organized in comply with the themes presented in the Results chapter.

4.1. Using language in a meaningful context and real-life conditions

As aforementioned in the previous chapter, the aim of the in-course project was to practice previously learned topics during the class meetings. In accordance with the purpose of the project, during the telecollaboration sessions the students not only practiced previously learned vocabulary and grammar, but also used the language in a meaningful context. Both in the in-course and intercultural exchanges, they communicated by using a number of isolated words and memorized phrases, limited by the particular context in which the language had been learned, as was expected from their levels (See ACTFL Proficiency Guidelines 2012 – Speaking and Writing).
Using language for meaningful communication inevitably requires students to go beyond vocabulary knowledge and grammatical accuracy, challenging them to use contextually appropriate language. It means that students have to interpret utterances and negotiate meaning, using L2 skills. The students use the language as a resource for building relationships and do not focus on ‘language’ in the abstract sense of units within a linguistic system (Godwin-Jones, 2019: 10, 17; Gennaro and Ojeda, 2019: 171).

4.2. Breakdowns in communication and authenticity of the conversation

Although using the language in a meaningful context moves students beyond the grammar and vocabulary, for novice level learners creating a contextually appropriate language is challenging, and breakdowns in communication are quite natural. According to Godwin-Jones (2019: 10) some of these breakdowns include not observing the typical opening or closing of conversations, not engaging in expected small talk, or being too direct (or indirect) in formulating requests, questions, or opinions. Such incidents can be awkward and embarrassing or even lead to conflict and confrontation. However, Lee (2007) observed in their study that speakers engaged in a variety of negotiation strategies such as clarification requests and comprehension checks during mainly lexically provoked communication breakdowns.

My study had similar findings in that students could not open or close conversations due to the lack of vocabulary. They were too direct with each other due to the lack of pragmatic competence. At that times, the students asked their peers for clarification and verified that they had been understood. However, their communication skills improved as they practice during in-course telecollaborations. As Figure 4 also showed, pairing learners with each other and letting them practice communication strategies before interacting with a native speaker helps them to improve their interactional skills. In the final intercultural telecollaboration, I observed that the students were more proficient compared to their proficiency before the telecollaboration projects.

4.3. Giving/Taking Feedback

Interpersonal communication opens a channel for interactional feedback. In this study, the students immediately heard the language used by their peers and noticed, clarified, reused, or rephrased it. Research has identified specific skill areas that may benefit from interactional feedback, including vocabulary and grammar, pronunciation, and quantity of production. Feedback typically involves requests for help or clarification, observing and recycling partners’ phrasing, and engaging in self-correction as well as the development of strategic competence in the L2. Direct and explicit feedback during synchronous oral or written chats most strongly predicted subsequent language development (Bueno-Alastuey, 2013; Helm, 2015; Cunningham, 2019). Figure 1, 2 and 3 show the contribution from the students’ point of view in terms of vocabulary, fluency and accuracy which are critical aspects of language development. According to these figures, telecollaboration has a positive impact on interactional feedback. In addition, some studies have indicated that interacting and receiving feedback from peers, rather than from instructors, is more likely to lead to linguistic uptake. Since meaningful communication with a real partner is involved, users may pay more attention to form, accuracy, and appropriateness. Furthermore, telecollaboration has a positive impact on the development of students’ writing and feedback-giving skills (Guth and Marini-Maio, 2010; Bueno-Alastuey and Kleban, 2016: 150).

4.4. Taking risk with L2

The study shows that communication with a peer through a computer screen seems to provide the students with a flexible, non-threatening environment. Therefore, they enjoyed the conversation and took risks
to use the language which is very necessary in L2 learning. Gennaro and Ojeda (2019) also suggest that learning is stimulated by taking risks with the L2. In the classroom, however, some students may be less motivated to take risks.

4.5. Cultural exchange

While the dominant discussion in scholarly discourse is cultural exchange in telecollaboration projects with advanced students, this study shows limited cultural exchange because the students are in novice level. Even though the students are still in the novice level, during the in-course project they shared some cultural information such as descriptions of their daily lives, favorite music groups, the courses they take, and the foods they eat. But as was expected, the students were more enthusiastic and interested in each other’s cultures during the intercultural project. Online encounters between cultures are similar to physical presence in the target culture and raise motivation and interest. From that point of view, intercultural telecollaboration projects can be considered as a preparation period for students embarking on study abroad programs, and sometimes in the same function if there is not a study abroad opportunity in the institution (Cunningham, 2019: 162; Bueno-Alastuey and Kleban, 2016: 151).

4.6. Limitations of the project

Although telecollaboration creates a flexible environment for the students, practical limitations such as assignment-related problems, different time zones, or academic calendar could affect the feasibility of telecollaborations (Bueno-Alastuey and Kleban, 2016: 152, 160). Besides that, students often view the virtual encounters as an academic task instead of an enjoyable cultural exchange when it was done as a classroom activity (Ware, 2005: 71). In this study, I also observed that the students viewed especially the in-course project as an academic task. They viewed having an oral and written chat regularly as an exhausting process. This perception decreased the students’ motivation after a while. In addition, in this study students felt that the tasks were repetitive in the in-course telecollaborations. They criticized the tasks as being strictly structured. But indeed, this was necessary to help the students meet the learning objectives of the unit. Looking these data from the study, the necessity of structuring the conversation between the novice level learners limits the flexibility of the students and decrease their motivation. Telecollaboration requires a flexible environment in nature.

4.7. Other factors

Pairing students based on similarities

Henshaw (2020) indicates that similar “proficiency” and “background” create an environment which is more conducive to learning. This can be considered when pairing the telecollaborators with each other in in-course telecollaboration. In terms of pairing based on proficiency, the analysis of the recordings showed that the students’ levels of mutual comprehension were higher in the in-course project. However, it is also necessary to keep in mind that interactional feedback among the students could have a negative impact on their language use. In terms of pairing based on background, research (Henshaw, 2020) also shows that L2-L2 dyads retain more information than L2-HL (Heritage Language) dyads. Although this project did not pair L2 speakers with HL speakers, this important finding should serve as the basis for this research, which paired L2 speakers with similar backgrounds with each other in its first step.

On the other hand, the instructors could group higher competence students with lower competence students to encourage peer learning in intercultural telecollaborations. In this study, I observed that the students
helped each other in their groups and continued the conversation when one of them paused the conversation or became silent.

**Improving e-skills**

Participants of telecollaboration projects actively explore the potential of technology and improve their e-skills (Bueno-Alastuey and Kleban, 2016: 148-151). Pre-service teachers who participated in this study mentioned this benefit of telecollaboration in their reflections. The instructor-researcher, on the other hand, observed a significant skill improvement in his students’ later technology-related projects in the class.

5. Conclusion

In today’s world, one of the most important skills is communication. Moreover, online communication is now a daily reality for billions of people around the world. Telecollaboration, which mostly depends on online language and culture exchange between people, improves language skills of learners. Telecollaboration, in particular, helps in improving one’s interpersonal communication skills.

This study examined two types of telecollaboration. The first was in-course telecollaboration between novice-level Turkish learners. The second was intercultural telecollaboration between these learners and pre-service Turkish teachers. The study showed that telecollaboration projects are possible even for novice-level learners. Online encounters enable students to practice the language in a meaningful context and get peer-feedback. An online environment could be more flexible and non-threatening for the students. During the interpersonal interactions, students had to produce contextually appropriate language which is beyond grammar and vocabulary. This challenge encouraged students and helped them to develop their skills in the discourse level. However, this challenge caused language breakdowns and helped them to develop their skills in the discourse level. However, this challenge caused language breakdowns and helped them to develop their skills in the discourse level. But the students dealt with these breakdowns, asking for help from their peers or using their body language. Even in novice-level, the learners can exchange some cultural points and daily habits. Telecollaboration projects are also important tools to improve all participants’ e-skills.

The research has less focused on novice-level learners in telecollaboration projects. However, communication is a need for language learners beginning from the first day of the classes. This study revealed qualitative data on novice-level learner telecollaboration projects. These data will contribute to further telecollaboration projects and research with novice-level L2 learners.
References


