

DİL NƏZƏRİYYƏSİ
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THEORY OF LANGUAGE

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MORPHOLOGICAL CONSTRAINTS ON SUFFIX-INITIAL
CONSONANT VARIATION IN PARADIGMS OF TURKIC LANGUAGES

Abstract

It is difficult to fully explain the distribution of suffix-initial consonants in paradigms of the Turkic languages, merely using the traditional ‘consonant assimilation’ model. By the data from intra-paradigmatic and inter-paradigmatic relations of Turkic languages, it can be concluded that suffix-initial consonant alternation is firstly subject to the morphological restrictions within paradigms, and then to the morphological constraints from other paradigms, due to the close inter-paradigmatic relations. The phonological features of stem-final segments, in fact, are not the determining factor.

Keywords: *suffix-initial consonants, Turkic languages, paradigm, morphological restrictions.*

This paper aims at contributing to the distribution of suffix-initial consonants in paradigms of the Turkic languages. Such consonant alternation in Turkic commonly was explained as a phonological process, such as ‘consonant assimilation’ mainly, rather than morphological process, despite many counterexamples. Our data illustrates that the phonological features of stem-final segment are not determinant, but morphological constraints within paradigms and from other paradigms are.

In section 1 we briefly discuss the difficulty in explaining consonant alternation with the so-called ‘progressive assimilation’; in section 2 we compare inter-paradigmatic relations of the Turkic languages to propose that morphological constraints in one paradigm are highly correlated with other paradigms’ constraints, which affect consonant variations in question; Section 3 will discuss how the morphological constraints within paradigms determine consonant alternation.

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1. So-called ‘progressive assimilation’ and the problem

The suffix-initial consonant alternation in paradigms of Turkic languages is commonly viewed as consonant progressive assimilation, namely consonant variation is determined by the phonological properties of the stem-final segment. Such views actually contain two presets:

(i) Consonant alternation in paradigms is purely a phonological process, not a morphological process.¹

(ii) The phonological nature of the stem-final segment is a necessary and sufficient condition for the alternation of the suffix-initial consonant and the consonant variation is predictable.²

Actually, there are a lot of cases in which the same stem-final segments do not involve the same consonant variant. For example, in Kazakh alternations of accusative and possessive are same, namely $n \sim d \sim t$, but for stems ending in nasal, e.g., *adam* ‘person’, suffix-initial consonants will be different, Kazakh accusative *adam-dī* (not **adam-nī*), possessive *adam-niŋ* (not **adam-dīŋ*). But based on the points of view above, similar phenomena were simply regarded as ‘unusual alternation’ (Räsänen, 1955: 144).

In addition, some scholars have noticed the influence of the intra-phonological properties of case suffixes themselves on the alternation of initial consonants, that is, the effect of regressive assimilation. For example, Menges (1959:461) considers such phenomena, as the Kazakh case above, to be influenced by the η within the possessive suffix. Although this view modifies the relatively extreme claim as ‘progressive assimilation’ to a certain extent, but still treats it as accidental, purely phonological phenomena. And it is not effective to explain why there are no similar phenomena in relative languages or in the languages in contact.

2. Inter-paradigmatic relationships and the morphological constraints

2.1 Framework

The framing method of this paper will not be carried out within the framework of a certain morpho-syntax-functional subcategory in a certain Turkic language, as usual, but rather under a cross-linguistic observation on the possibility of similar variations in different paradigms and their distributions and tendency in whole Turkic family.

¹ For example, Dmitriev (1948:61) holds this view point, which had a considerable impact on Soviet Turkology: unlike European languages, in Turkic languages, for case variation, there is no morphological variants, but only phonological variants. For special-languages, it is often asserted that suffix-initial consonants depend on stem-final segment, e.g., Muhamedowa (2016:283); and discussions on the forms, number, distribution, origin, etc. of consonant variation are often had within the framework of consonant assimilation, e.g., Deny (1959), Tenishev (1988), etc

² This view point may come from the understanding on sound harmony, namely ‘systematic left-to-right long-domain assimilation that operate across morpheme boundaries’, about which should hold with rigorous attitude, because of validity of the harmony has often been overstated (Johanson 2021:304,306).

Consonant variations realized in same place of articulation or with similar forms will be combined into one group for analysis, e.g., locative and ablative (e.g., *-DA* vs. *-DAn*), accusative and genitive (*-NI* vs. *-NIŋ*), interrogative focus particles and instrumental (*MA* vs. *Men*), 1SG finite verbal agreement marker and 1PL finite verbal agreement marker (*-MIn* vs. *-MIz*), and etc.

Methodologically, the phonological-morphological research about paradigms of the Turkic languages, in spite of full and accurate description, often ignores the relationship between paradigms (Tenishev, 1988: 28-29). The present contribution focuses on interaction between paradigms and on model of paradigmatic relations in Turkic languages from cross-linguistic perspective. Our discussion will refer to following paradigms:

- a. Paradigm of noun without possessive marker (hereinafter referred to as 'Paradigm A')
- b. Paradigm of noun with possessive marker ('Paradigm B')
- c. Paradigm of noun with 1SG and 2SG possessive marker ('Paradigm B1')
- d. Paradigm of noun with 3P possessive marker ('Paradigm B2')
- e. Paradigm of noun with 1PL and 2PL possessive marker ('Paradigm B3')
- f. Paradigm of pronominals ('Paradigm C')

2.2 Inter-paradigmatic relationship

2.2.1 Paradigm A & Paradigm B

The basis of noun inflection of the Turkic is the interaction between case and possessive categories (Blagova, 1982: 32-33), the prominent feature of which is diversity between Paradigm A and Paradigm B, mainly represented in Dative, e.g., *-GA* vs. *-A* in Paradigm A and Paradigm B1 in Kazakh, and then in other cases, for example 'Pronominal *n*' in locative, e.g., *-dA* vs. *-n-dA* locatives in Paradigm A and Paradigm B1 in Noghay.³

Regarding the 'pronominal *n*', some scholars believe that it is essentially a phonetic feature which becomes a morphological feature (Batmanov 1938:11), or a non-etymological insertion (Tenishev 1976:59). Other scholars believe that it may be a variant of a certain morphological marker, like relicts of instrumental case and possessive (Ščerbak, 1961: 70), or relict of the complete form of Genitive (Ramstedt, 1957: 228), or the result of the analogy of 'proun-formational *n*' from Paradigm C to Paradigm B.⁴

However, in modern languages, Paradigm A and Paradigm B show a trend of convergence. There is no difference between Paradigm A and Paradigm B3

³ 'Pronominal *n*' is widely accepted term, but in Russian literature instead of it 'вставное *n*' is used. There is another term 'местоименное основообразующее *n*' used for inserted *n* into personal pronouns in PC (Tenishev 1988), for the convenience of description, in this paper it is called as 'proun-formational *n*'.

⁴ A few of scholars think that it is inadequate to discuss from morphological perspective, because possessive markers in Paradigm B have illustrate the difference between Paradigm A and Paradigm B, and some grammars regard 'Pronominal *n*' and case suffix as a whole.

in nearly all of Turkic, and between Paradigm A and Paradigm B1 in most Turkic languages. In addition, there is a considerable number of modern languages which have lost the ‘Pronominal n’ that made Paradigm A and Paradigm B completely convergent.

2.2.2 Paradigm C & other paradigms

In Turkic there is close relationship between noun and pronominal inflections. Paradigm C maintains more ancient forms than noun paradigms. However, in the course of development, special and complex suffixes in Paradigm C were largely leveled that makes Paradigm C and Paradigm A to show a certain trend of convergence (Menges, 1959: 461; Blagova, 1971: 39-49).

In most modern languages, there are merely some special Datives retained in Paradigm C, for example, Karakalpak *maɣan* ‘to me’, Noghay Ak dialect *maɣar* ‘to me’. Due to these closed inter-paradigmatic relationships, cross-linguistical analysis on interaction between paradigms is necessary.

2.3 Inter-paradigmatic relations and morphological constraints

This section will compare different kinds of paradigms of Turkic languages, and show that a certain paradigm is significantly restricted by morphological constraints of other paradigms. With the method described in 2.1, here we will mainly take the comparing group ‘locative and ablative’ as example.

There is no generalization about when suffix-initial consonant of locative or ablative is *t* or *d* in the Old Turkic (Gabain, 1941: 54). The alternation of *t*~*d* in most modern languages seems to be determined by whether the end of the stem is a voiceless consonant (Räsänen, 1955: 143). Seemly, in most cases the initial consonant of ablative can be judged with reference to locative, but there are also some counterexamples, such as in Tatar, Kazakh, Altay, etc.: when the stem ends with a nasal, ablative variant will be the -nAN with initial n, which is not -dAN or -tAN, as expected. This form appears in Paradigm A, Paradigm B and Paradigm C, e.g., Kazakh *adam-nan* (< **adam-dan*) ‘from people’, Karachay-Balkar *baš-ï-n-nan* (< **baš-ï-n-dan*) ‘from his head’, Altay *menen* (< **men-nen* < **men-den*) ‘from me’. If we use N for n, m, or ŋ, A for possible vowel variants, the process can be generalized as follows:

(1)N-nAN < N-dAN 或 nAN < N-nAN < N-dAN

As stated in Section 1, process (1) was commonly regarded as a purely phonological process, e.g., as a special type of consonant assimilation (Johanson, 2021: 468), as a kind of assimilation, which follows a principle of so-called ‘phonetic economy’ without changing the meaning of words (Baskakov, 1976: 65).

From a cross-linguistic perspective, the point of view above will face many challenges. First, it is difficult to explain why there is no process (1) in locative in all Turkic languages; Second, it cannot explain why N-dAN in other Turkic languages, except for those mentioned above, did not occur process (1).

In the following, we will illustrate the morphological restriction of Paradigm C on Paradigm A through the obvious co-occurrence of ‘pronoun-formational n’ in Paradigm C and the process (1) in each paradigm.

Paradigm C’s no longer retaining ‘pronoun-formational n’, especially no retaining dative ‘pronoun-formational n’, is a large-scale innovation in the course of the evolution of the Turkic languages. It refers to Siberia, Altay, Central Asian, Volga Basin, Crimea and Caucasus; due to the different forms of Paradigm C in standard Kirghiz and its dialects, the area where speak in Kirghiz is a border zone; the Kazakh-speaking area, as dialect island, retains ‘pronoun-formational n’ (Tenishev, 1988: 126). Compare, Kazakh *mayan* ‘to me’, Tuvan *mā:*, Khakas *maya*, Shor *maga*, Karaim *maja* or *ma*. According to whether Paradigm C retains dative ‘pronoun-formational n’ or not and whether the process (1) occurs in each paradigm, can be generally divided into three types:

Table 1. The types of relations between retainment of dative ‘pronoun-formational n’ in Paradigm C and occurrence of (1) process in paradigms

Types	retainment of dative ‘pronoun- formational n’ in Paradigm C	in Paradigm A	occurrence of (1) process		Paradigm C
			Paradigm B1	Paradigm B2	
I	Yes	Yes	Yes	Yes	Yes
II	No	Yes	Yes	Yes	Yes
III	No	No	No	No	No

Type I includes Kazakh, Karakalpak, Karagashey-Noghay, Alabugat-Tatar, Yordov-Tatar, Kipchak Uzbek. These languages are distributed in the Kazakh grassland as the core area, and in Volga lower reaches, Kaspian northern shore, and the areas of Uzbekistan, which are close to Kazakhstan.

Kazakh is the most typical language in this type. First, nasalization process continues to expand. Not only the process of N-nAN < N-dAN in each paradigm, but also the process of nAN < N-nAN < N-dAN occurs in Paradigm B2 and Paradigm C. Second, the nasalization involves more categories and types of variations, similar phenomena can be observed in genitive (vs. accusative, e.g. *-nlŋ*, not *-dlŋ* or *-tlŋ*), instrumentals (vs. interrogative focus particles e.g. *-men*, not *-ben* or *-pen*), 1SG finite verbal agreement marker (vs. 1PL finite verbal agreement marker, e.g. *-mln*, not *-bln* or *-pln*).

Karagashay-Noghay is different from other Noghay dialects due to its special dative form in Paradigm C that is regarded as the result of the close contact

with Kazakh (Arslanov, 1986: 11-15), or as relict of ancient form, which is maintained in the Kazakh environment (Arslanov, 1992: 36), and Noghay itself has a very close relationship with Kazakh and common development (Baskakov, 1962: 74). (1) process can be seen in all paradigms, e.g., *senen~sennen* ‘from you’ (Arslanov, 1992: 86).

The eastern Kipchak Uzbek, represented by Bahmal dialect, also exhibits this special dative form, which is not observed in the western Kipchak Uzbek. In addition to the process of (1) occurring in Paradigm A, there is another nasalization process in Paradigm A, such as *oŋ-ŋa < oŋ-ya* ‘to the right’ (Danijarov, 1975: 143).

Besides the special dative, in Alabugat-Tatar and Yordov-Tatar there are forms, as *maya* or *miya* ‘to me’ (Arslanov, 1996b: 511), which reflect a transitional stage.

In languages of Type II, including Altay, Noghay, Khakas, Tatar, Karachay-Balkar, Shor, etc. that mainly used in South Siberia, there is no ‘pronoun-formational n’ in Paradigm C but process (1) in each paradigm. This type seems to disprove our hypothesis. But if take account of the data from dialects and earlier records, this type, in fact, exhibits an obvious negative tendency towards nasalization to varying extents, which also proves our hypothesis.

In standard Tatar in Paradigm A ablative after *m*, *n* or *ŋ* is *-nAn*, but young people use *-dAn* instead (Chen, 1986: 55). Noghay Aq dialect exhibits not only *-nAn*, but also *-dAn* in Paradigm A and Paradigm B1 (Baskakov, 1940: 66). In the early records of the Altay, ablative after *m*, *n* or *ŋ* in Paradigm A is *-nAŋ* (Chleny 1869:40), but in the newly published Altaic grammar, the one after *m* has changed to *-dAŋ* (Nevskaja, 2017: 45). In Kumandin, for ablative in Paradigm A the process of (1) basically does not occur, e.g., *din~dan~daŋ~naŋ* (Baskakov, 1972: 82). The process of (1) does not take place in the standard Karachay-Balkar, e.g., *menden* ‘from me’ (Compare Balkar dialect *mennen* ‘from me’); The Bakhsan-Chegem dialect has shown a clear tendency toward not starting nasalization, and process (1) does not occur in any paradigm (Pritsak, 1959: 355).

Type III stands at another polar opposite to the type I, namely there is no ‘pronoun-formational n’ in Paradigm C and no process (1) in any paradigm. Languages, which don’t belong to first two types, can be classified into this type (Ubrjatova, 1982:145). Unlike other types, type III exhibits complete tendency to not-taking place of (1) process. However, type III can be divided to two subtypes, in the first one there is ‘Pronominal n’, but in the second none. The former still shows diversity between Paradigm A, Paradigm B and Paradigm C to certain extent, but the latter—completely similar inflection model.

There are some languages on the transitional stage between type I and type II, e.g., Kirghiz. In standard Kirghiz there is no ‘pronoun-formational n’, but in some dialects still remains, e.g., *buyan* ‘to this side’. In Paradigm B1 there are two kinds of variants, which involve two types, e.g. *ata-m-dan* and *atam-an* (< *atamnan* < *atamdan*) ‘from my father’ (Akmataliev, 2015: 242; Hu, 1986: 38).

To sum up, whether the ‘pronoun-formational n’ in Paradigm C is re-

tained is closely related to whether the nasalization process occurs in each paradigm. Due to the close relationships between paradigms, morphological restriction on a certain paradigm is not merely a morphological restriction within the paradigm, but is also affected by other paradigms to a considerable extent.

3. Intra-paradigmatic morphological constraints

3.1 The Problem

Section 2 illustrates the impact of inter-paradigmatic relations on process (1). However, in many languages, when the end of stem is a vowel, the suffix also has a nasal suffix-initial variant, such as Kazakh genitive in *-nIŋ* and accusative in *-nI*. Does the appearance of these nasal variants also follow a process similar to (1) under the morphological constraints of Paradigm C?

We assume a process (2) similar to (1), where V is used for vowels and N for possible nasal consonants:

$$(2) \quad -V-NVN < -V-dVN \text{ or } -NVN < -V-NVN < -V-dVN$$

(2) seems to be plausible to explain why the genitive form should be *-nIŋ*. But if it is true, it cannot explain: firstly, why the ablative after stem-final vowels is not in **-nAn*, as shown in table 2 below, between the syllable structure of genitive and ablative there is no essentially difference; secondly, why the accusative after stem-final vowels is *-nI*, is not other forms, which kind of factors makes it so; and then why there is no locative form such as **-nA* in Paradigm A in any Turkic language.

Table 2. Kazakh locative, ablative, accusative and genitive in Paradigm A

stem-final segment \ variants \ cases			comparing group 1		comparing group 2		
			locative	ablative	accusative	genitive	
vowels			*-nA	*-nAn	-nI	-nIŋ	
voiced consonants	glides	y / w	-dA	-dAn	-dI	-dIŋ	
	laterals or Rhotics	l / r		-nAn			
	nasals	m / n / ŋ		-dAn			-nIŋ
	fricatives	z / ž		-dAn			-dIŋ
voiceless consonant			-tA	-tAn	-tI	-tIŋ	

3.1 Morphological constraints within paradigms

The morphological constraints within paradigms are the most essential restriction on consonant alternation.

For example, in Kazakh, except for the parts where have undergone process (1) (the gray cells in the Table 2), the alternation of locative and ablative is essentially binary (d~t), and the one of accusative and genitive is ternary (n~d~t).

Such morphological constraints are stable and do not change easily. A new morphological constraint, e.g., Kazakh ablative *-nAn* in Paradigm A, will only occur when there are quite sufficient conditions, such as stable enough ‘pronoun-formational n’ in Paradigm C of Kazakh, Karagashey-Noghay, or other languages of type I, and the phonological possibility, e.g. more nasals before and after suffix-initial consonant make nasalization easier.

Appearance of genitive nasal variants after stem-final vowels in Paradigm A, such as *-nIŋ* in Kazakh, is due to ternary inherent constraints of the paradigm, and is not related with any process like (1) or (2). Compare variations of genitive in Kazakh and Karagashey-Noghay, which are ternary and binary respectively, in the latter there is no forms as *-nIŋ*, although in both of them there is process (1) in paradigms.

Some morphological constraints within paradigms are common to Turkic languages. For example, locative forms in Paradigm A are mainly *-dA/-tA*, forming a binary inherent morphological restriction. Such restriction is fairly general and stable, widespread in all Turkic languages. No matter how the phonological possibility is conducive to stimulate nasal variants, no nasal variants have been found in Paradigm A, such as forms like **-na*. Yakut *man-na* ‘here’ ← *bu* ‘this’ can be seen as an inadequate counterexample: first, it is in Paradigm C, not in Paradigm A; second, the high frequency of use should be taken into account.

Other morphological constraints within paradigms are not common as above, but typical of a certain branch or a language, e.g., the accusative forms in Oghuz branch, the locative forms of Bashkir in Paradigm A, etc.

There must be a certain objective corresponding mapping between suffix-initial consonant variants and stem-final segments, however, such mapping is the embodiment of morphological constraints, not the cause.

4. Conclusion

The distribution of suffix-initial consonants in paradigms of the Turkic languages is subject to morphological constraints within paradigms, and then the morphological constraints from other paradigms. The phonological features of stem-final segment are not determinant, just partly conducive to possible phonological condition.

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Türk dillərinin paradigmlərində ön şəkilçi samitləri variantlarının morfoloji məhdudluğu

Xülasə

Yalnız ənənəvi “samitlərin assimilyasiyası” modelindən istifadə etməklə türk dillərinin paradigmlərində ön şəkilçi samitlərinin distribusiyasını tam izah etmək çətinidir. Türk dillərinin intra-paradigmadik və inter-paradigmatik münasibətlərinə dair məlumatlara əsasən belə qənaətə gəlmək olar ki, ön şəkilçilərdə samitlərin əvəzlənməsi əvvəlcə paradigmlərin daxilində, sonra isə, paradigmlərarası əlaqələrin yaxınlığı sayəsində, digər paradigmlərdə morfoloji məhdudluqlara məruz qalır. Kök-əsas seqmentlərinin fonoloji xüsusiyyətləri əslində əsas müəyyənedici amil deyil.

Açar sözlər: ön şəkilçi samitləri, türk dilləri, paradigma, morfoloji məhdudluğu.

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Морфологическая ограниченность префиксальных консонантных вариантов в парадигмах тюркских языков

Резюме

Трудно вполне объяснить дистрибуцию префиксальных согласных в парадигмах тюркских языков, пользуясь лишь традиционной моделью «консонантной ассимиляции». На основе данных о внутрипарадигматических и межпарадигматических связях тюркских языков можно прийти к заключению, что префиксальные консонантные чередования подвергаются морфологическим ограничениям первоначально внутри парадигм, а затем, вследствие близости межпарадигматических отношений, – в других парадигмах. Фонологические особенности сегментов корнеоснов по существу не являются основным определяющим фактором.

Ключевые слова: *префиксальные согласные, тюркские языки, парадигма, морфологические ограничения.*
