

## Balkar X-marking: a change in progress

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**Abstract.** This paper explores patterns of morphological expressions employed by Balkar (a Turkic language spoken by ca. 300K people in Russia) to mark contexts of X-marking (von Fintel & Iatridou 2023): counterfactual conditionals, weak necessity modals, and counterfactual desires. The main oddity of Balkar with respect to X-marking is that its X-marking system appears to be transforming into a system without antecedent X-marking. The theoretical implications of this pattern are explored in this paper.

**Keywords.** Turkic; Balkar; x-marking; conditionals

**1. Introduction.** 'Many languages have some morphological elements that are used to express counterfactuality, which have traditionally been called 'counterfactual' or 'subjunctive' morphology. Pointing out the problems of these terminologies, however, von Fintel and Iatridou (2023) have recently proposed a label called 'X-marking' to cover relevant morphological items, with 'O-marking' reserved for the formal counterpart that lacks X-marking.'

Importantly, as observed in von Fintel & Iatridou 2023, X-marking morphology is not only used to distinguish sorts of conditionals, but also to mark weak necessity modals (like English *should*) and verbs of counterfactual desire (like English *to wish*) if they are transparently derived from regular necessity modals and verbs of desire, respectively. A prime example of X-marking in natural language is found in Hungarian, where the suffix *-nA-* is observed in all X-marking contexts.

Sentences in (1) are examples of conditionals in Hungarian, (1a) representing an ordinary conditional and (1b) representing a X-marked one, as evident from the counterfactual meaning associated with it. Importantly, in both antecedent and consequent clauses of (1b), the suffix *-nA-* appears, marking the difference between (1b) and (1a).

- (1) Hungarian conditionals (von Fintel & Iatridou 2023:8)
- a. Ha János tudja a választ, Mari is tudja a választ.  
 if János knows the answer-ACC Mari too knows the answer  
 'If János knows the answer, Mari knows the answer (too).'
- b. Ha János tudná a választ, Mari is tudná a választ.  
 if János know-*nA* the answer-ACC Mari too know-*nA* the answer  
 'If János knew the answer, Mari would know the answer.'

The same may be observed in examples in (2-3). Example (2b) is an example of a counterfactual wish in Hungarian: look at the *-nA-* suffix found both on the verb *szeret-* 'to like' and in the embedded clause. Example (2b) is contrasted with example (2a), which does not have any *-nA-*'s whatsoever. Note that the Hungarian verb 'to wish' in (2b) is derived from the verb 'to like' by adding the *-nA-* suffix.

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(2) Hungarian desires and counterfactual desires (von Fintel & Iatridou 2023:25)

- a. Szeretem, hogy tudja a választ.  
like-1SG that know-3SG the answer  
'I like that she knows the answer.'
- b. Szeretném ha Marcsi tudná a választ.  
like-*nA*-1SG if Marcsi know-*nA* the answer  
'I wish Marcsi knew the answer'

Sentence (3b) is an example of a weak necessity modal in Hungarian. A test for weak necessity modals is the addition of 'but x is not obliged to do something.' clause as the right context. A regular necessity modal in (3a) is infelicitous when used with the test for weak necessity. Importantly, the weak necessity modal in (3b) bears the *-nA-* suffix, while the regular necessity modal in (3a) does not. Moreover, the weak necessity modal is derived from the regular necessity modal by adding the *-nA-* suffix.

(3) Hungarian (weak) necessity modals (von Fintel & Iatridou 2023:32)

- a. #Péter-nek el kell mosogat-ni-a az edény-ek-et,  
Péter-DAT PART must wash-INF-3SG the dish-PL-ACC  
de senki nem követeli meg tőle  
but no one not require-3SG.SUBJ-3.OBJ PART 3SG.ABL  
'Péter has to do the dishes, but he is not obliged to.'
- b. Péter-nek el kell-ene mosogat-ni-a az edény-ek-et,  
Péter-DAT PART must-*nA* wash-INF-3SG the dish-PL-ACC  
de senki nem követeli meg tőle  
but no one not require-3SG.SUBJ-3.OBJ PART 3SG.ABL  
'Péter ought to do the dishes, but he is not obliged to.'

So, the pattern of X-marking is that the same morphological devices are used to mark counterfactual/subjunctive conditionals, weak necessity modals, and counterfactual desires. Another important property of X-marking is that there are two types of it: antecedent X-marking and consequent X-marking, which may or may not be expressed via the same morphological means in a given language.

(4) Two types of X-marking

- a. Antecedent X-marking: antecedents of X-conditionals, embedded clauses of counterfactual desire predicates.
- b. Consequent X-marking: consequents of X-conditionals, verbs of weak necessity and counterfactual desires (if transparently derived from regular necessity modals and desire predicates, as in Hungarian, but unlike English).

This paper is concerned with X-marking in Balkar, a Turkic language spoken by ca. 300,000 people in Russian Federation. This paper argues that Balkar grammar is undergoing a change wrt. X-marking: the system with past tense morphology used consistently to X-mark is being replaced by a system where there is no antecedent X-marking morphology at all. The second system appears to be important to distinguish between theories where both X-marking elements are semantically non-vacuous and those where there is only one semantically non-vacuous element and the other one is just a morphological reflex. However, as argued later in the paper, that is not necessarily the case.

**2. Balkar data.** This section deals with the patterns of X-marking in Balkar. The first subsection is devoted to conditionals, the second subsection deals with weak necessity modals and counterfactual desires, and the third, last subsection summarizes the findings. Data was gathered during fieldwork in Verkhnyaya Balkariya village (Kabardino-Balkarian republic, Russian Federation) in August 2021.

2.1. COUNTERFACTUAL CONDITIONALS. Firstly, we should consider how a regular Balkar conditional looks. Like many other Turkic languages, the antecedent clause (ANT) is marked by the conditional suffix *-sA-* (*-sa-* or *-se-*, depending on the vowel harmony) on the verb, while the consequent clause (CONS) has no additional marking whatsoever. The sentence in (5) exemplifies this pattern. In the antecedent clause, the verb bears conditional morphology, the *-se-* suffix, while the consequent clause has no special marking that distinguishes it.

- (5) [men šorpa et-se-m,]<sub>ANT</sub> [Kerim quan-iriq-di]<sub>CONS</sub>  
 1SG soup make-COND-1SG Kerim happy-FUT2-3SG  
 ‘If I make a soup, Kerim will be happy.’

Now, consider a X-marked counterpart of example (5), given in (6). The differences are clear: in both antecedent and consequent clauses an auxiliary verb in the past tense (*e-di*) is found, which acts as a morphological device of distinguishing between ordinary and X-marked conditionals. So, it can be suggested that the analytic past tense is both antecedent and consequent X-marking in Balkar.

- (6) [men šorpa et-se e-di-m,]<sub>ANT</sub> [Kerim quan-iriq e-di]<sub>CONS</sub>  
 1SG soup make-COND AUX-PST-1SG Kerim happy-FUT2 AUX-PST  
 ‘If I made a soup, Kerim would be happy’

However, the case has not been fully made yet. It could be argued that the past tense morphology in antecedents is interpretable (given the past orientation of antecedents in examples (5-7)), while past tense morphology in consequents is the only true X-marking in Balkar. Luckily, the data does not appear to confirm this suggestion. Even with a context that requires a future-oriented antecedent, past tense morphology is found in the antecedent clause.

- (7) Context: Kerim and the speaker need to go to store or to another village (if one goes in one place, the other goes to another place). Someone wants me to go to another village, but Kerim does not want to go to the store.  
 Kerim tüken-ŋe bar-sa e-di, men bašxa el-ge  
 Kerim store-DAT go-COND AUX-PST 1SG other village-DAT  
 bar-ir e-di-m  
 go-FUT AUX-PST-1SG  
 ‘If Kerim went to the store, I would go to another village.’

There is another complication. In some examples, the lack of past tense morphology is observed in Balkar X-marked antecedents. It appears that Balkar allows three distinct morphological patterns in X-marked conditionals, without apparent change in meaning.<sup>1</sup> The first strategy, which has been described above, is the presence of an auxiliary in past tense in the antecedent, shown in (8), for the minimal triad’s sake.

<sup>1</sup> It should be noted that most speakers seem to consider all three morphological marking patterns acceptable, so we are not dealing with sociolinguistic variation here.

- (8)      tünene            sen      xic'in            aša-sa            e-di-ŋ,  
 yesterday      2SG      khychin            eat-COND      AUX-PST-2SG  
 men    saja                    uruš-uruq            e-di-m  
 1SG    2SG.DAT            scold-FUT2      AUX-PST-1SG  
 'If you had eaten the khychin yesterday, I would have scolded you.'<sup>2</sup>

The second strategy is the complete lack of past tense morphology in the antecedent, which does not affect interpretation, exemplified in (9).

- (9)      tünene            sen      xic'in            aša-sa-ŋ,            men    saja  
 yesterday      2SG      khychin            eat-COND      1SG    2SG.DAT  
 uruš-uruq      e-di-m  
 scold-FUT2      AUX-PST-1SG  
 'If you had eaten the khychin yesterday, I would have scolded you.'

However, there is a puzzling third strategy presented in (10): an auxiliary with past tense morphology on it (*e-di*) is present in the antecedent clause, but agreement morphology is found on the lexical verb instead of the auxiliary, suggesting a non-verbal status of *edi* in (10).

- (10)      tünene            sen      xic'in            aša-sa-ŋ                    e-di,  
 yesterday      2SG      khychin            eat-COND-2SG            AUX-PST-2SG  
 men    saja                    uruš-uruq            e-di-m  
 1SG    2SG.DAT            scold-FUT2      AUX-PST-1SG  
 'If you had eaten the khychin yesterday, I would have scolded you.'

It may be, however, that the patterns in (8-10) have nothing to do with X-marking and/or antecedents by themselves. It is possible that all three strategies in (8-10) are found whenever there is an auxiliary in past tense. This is not the case: X-marked conditionals with deviant morphology in the antecedent (non-agreeing auxiliary or the lack of auxiliary) are found unacceptable by the speakers of Balkar, as shown by the minimal triad in (11).

- (11) a.      tünene            sen      xic'in            aša-sa            e-di-ŋ,            men  
 yesterday      2SG      khychin            eat-COND      AUX-PST-2SG    1SG  
 saja                    uruš-uruq            e-di-m  
 2SG.DAT            SCOLD-FUT2      AUX-PST-1SG  
 'If you had eaten the khychin yesterday, I would have scolded you.'
- b.      \*tünene            sen      xic'in            aša-sa            e-di-ŋ,            men  
 yesterday      2SG      khychin            eat-COND      AUX-PST-2SG    1SG  
 saja                    uruš-uruq-ma  
 2SG.DAT            SCOLD-FUT2-1SG  
 Int: 'If you had eaten the khychin yesterday, I would have scolded you.'
- c.      \*tünene            sen      xic'in            aša-sa            e-di-ŋ,            men  
 yesterday      2SG      khychin            eat-COND      AUX-PST-2SG    1SG  
 saja                    uruš-uruq-ma    e-di  
 2SG.DAT            SCOLD-FUT2      AUX-PST  
 Int: 'If you had eaten the khychin yesterday, I would have scolded you.'

<sup>2</sup> Khychin is a thin flatbread made of unleavened dough with a filling of boiled potato, homemade cheese, or meat with fresh herbs.

The strategies exemplified in (8-10) seem to represent three stages of past tense auxiliary *edi* becoming unnecessary in X-marked antecedents: the first stage, exemplified in (8) is the auxiliary being a part of the verbal form, since it bears agreement morphology. The second stage, exemplified in (9), is *edi* being treated as a particle, a single non-verbal morphological unit (similarly to *by* in Russian language; Grønn 2013). The third stage, exemplified in (10), is *edi* being absent from the antecedent clause: no antecedent X-marking is necessary.

Before we address theoretical questions raised by the variability in Balkar X-marking, additional data should be discussed. If we want to infer a claim about antecedent X-marking from data discussed here, examination of other X-marking contexts is necessary. It may be the case that X-marking in weak necessity modals and counterfactual desires behaves somehow else.

2.2. WEAK NECESSITY AND COUNTERFACTUAL DESIRES. Let us consider examples of desire and necessity in Balkar without X-marking and concurrent semantic effects. Example (12a) shows the verb of desire in Balkar, *süj-*, in a subject control environment. Example (12b) shows *süj-* embedding a clause with an overt subject (Alim), distinct from the matrix subject (Kerim). Example (12c) shows the necessity modal verb *kerek-*.

- (12) a.    men    [xicin            aša-rka]            süj-e-me  
           1SG    khychin        eat-INF            want-IPFV-1SG  
           ‘I want to eat a khychin.’
- b.    Kerim [Alim toj-ka            kel-se]            süj-e-di  
           Kerim Alim   wedding-DAT go-COND            want-IPFV-3SG  
           ‘Kerim wants Alim to go to the wedding.’
- c.    Alim   [qol-lar-i-n            zua-rka]            kerek-di  
           Alim   hand-PL-3-ACC        wash-INF            must-3SG  
           ‘Alim must wash his hands.’

Before we consider their X-marked counterparts, let us recall what we expect. Generalization in von Fintel & Iatridou 2022 states that antecedents of X-marked conditionals bear the same distinctive morphology as embedded clauses in counterfactual desires, while consequents of X-marked conditional bear the same distinctive morphology as verbs of counterfactual desires and weak necessity modals, should they be transparently derived from regular verbs of desire and necessity, respectively.

Bearing the contents of the last subsection in mind, we might expect Balkar verbs of counterfactual desire and weak necessity to be derived from regular verbs of desire and necessity by adding a past tense morphology. Embedded clauses in counterfactual desires may exhibit the same morphological variability as X-marked antecedents: we may encounter three strategies (verbal *edi*, non-verbal *edi*, lack of *edi*).

Let us look at the data. Examples (13a-b) show counterfactual desires in Balkar, example (13c) shows weak necessity in Balkar. As expected, we find that the past tense auxiliary *edi* expresses counterfactual desire, when combined with a desire predicate. Weak necessity is expressed via combining the necessity modal *kerek* with past tense affix, resulting in *kerek-di*.

- (13) a.    men    [xicin            aša-rka            süj-e]            e-di-m  
           1SG    khychin        eat-INF            want-IPFV        AUX-PST-1SG  
           ‘I wish I ate a khychin.’
- b.    Kerim [Alim toj-ka            kel-se]            süj-e            e-di  
           Kerim Alim   wedding-DAT go-COND            want-IPFV        AUX-PST  
           ‘Kerim wishes Alim went to the wedding.’

- c. Alim [qol-lar-i-n                      zua-rka]                      kerek e-di  
 Alim hand-PL-3-ACC                      wash-INF                      must AUX-PST  
 ‘Alim ought to wash his hands.’ (but he doesn’t have to)

So, counterfactual desires and weak necessity modals behave just like consequents of X-marked conditional, which shows that past tense auxiliary *edi* is indeed used for consequent X-marking. What about antecedent X-marking morphology then? Consider the embedded clause in the example (13b). It is the same as the embedded clause in the sentence (12b), which exemplified regular desire, there is no past tense morphology there. Do we find the same variability as in the antecedents of X-marked conditionals?

Examples (14a-b)<sup>3</sup> parallels examples (9-10): past tense morphology may be present or absent in the embedded clause without any clear difference in meaning. Unfortunately, I do not have an example parallel to (10).<sup>4</sup> However, this is not a problem, since nothing in the paper hinges on examples of the type of (10). For our purposes, it suffices that the undergoing loss of *edi* as antecedent X-marking is found both in antecedents of conditionals and in counterfactual desires (to some extent, at least).

- (14) a. Kerim süj-e                      e-di                      [qatin-i                      zaš                      tab-sa]  
 Kerim want-IPFV                      AUX-PST                      wife-3                      boy                      deliver-COND  
 ‘Kerim wishes his wife delivered a baby.’ (but ultrasound shows that it’s a girl)
- b. Kerim süj-e                      e-di                      [qatin-i                      zaš                      tab-sa  
 Kerim want-IPFV                      AUX-PST                      wife-3                      boy                      deliver-COND  
 e-di]  
 AUX-PST  
 ‘Kerim wishes his wife delivered a baby.’ (but ultrasound shows that it’s a girl)

Examples in (12-14) show us that the Balkar data does not contradict the generalization put forth in von Fintel & Iatridou 2022. Weak necessity modal *kerek-di* and the verbs of counterfactual desire *süj-e e-di* are just regular necessity modal *kerek-* and regular desire verb *süj-* with past tense morphology added, similarly to how past tense is what distinguished consequents of X-marked conditionals from regular ones. The embedded clause of counterfactual desires is marked in the same way as antecedents of X-marked conditionals, which means that it may bear past tense morphology or not.

To summarize, we can suggest a following rule for Balkar X-marking. Consequent X-marking is past tense morphology. Antecedent X-marking may be past tense morphology, or *edi* acting as a particle, or no marking whatsoever. The last option for antecedent X-marking, in my opinion, may be important for existing theories of X-marking. This point is elaborated upon in the next section.

**3. The nature of change in Balkar.** As argued in the previous section, X-marking in Balkar is undergoing a change from a system with past tense morphology as X-marking in both clauses (antecedents and consequents of conditionals; matrix and embedded clauses in desires) to a system where only consequents of conditionals and matrix clauses in desires are morphologically distinguished. The system of the first type is found in English. The system of the second type is

<sup>3</sup> The word order in (12a-b) is not natural for Turkic languages, but it is likely to have arisen due to influence of Russian on Balkar speakers. For validity’s sake, the word order has not been changed.

<sup>4</sup> Alternatively, one could argue that (13b) is parallel to (10) rather than (9). Unfortunately, I do not have an example with a first/second person subject, so there is no way to tell the two apart.

found, for example, in Japanese (Mizuno, Kaufmann 2019). What theoretical significance this change holds, if any?

The question that Balkar data poses, in my opinion, is the following: how do we elaborate on the description of undergoing change? It is not enough to simply state that morphological pattern A transformed into morphological pattern B. What exactly changed? Did a morphological rule disappear? Has semantics changed?

Some work (e.g., Bjorkman 2015) argues that the past tense morphology in the antecedents of counterfactual conditionals is not interpreted and is merely a result of some copying operation. This idea is usually combined with an analysis of past tense in counterfactual conditionals as scoping over the whole conditional, which results in counterfactual semantics when combined with a certain model of time (see Mizuno, Kaufmann 2019, Khoo 2022 for elaboration). If we assume such an approach, the change in Balkar can be formulated as the loss of the morphosyntactic copying of tense in the antecedents.

What could have triggered such a change? I think it is promising to view it as the consequence of Balkar conditionals being felicitous in a context requiring past-oriented antecedent without any past tense morphology in the antecedent, as shown in example (15). The past-oriented nature of the antecedent is expressed via aspect.

- (15) Alim            xicin-ni                    aša-kan            e-se,            Kerim de  
 yesterday        khychin-ACC            eat-PF            AUX-COND     Kerim ADD  
 aša-kan-di  
 eat-PF-3SG  
 ‘If Alim ate the khychin, Kerim ate it too.’

The point of showing the example (15) is to suggest that Balkar antecedent clauses are deficient with respect to tense, for some reason. This property could have caused the X-marking copying rule to become optional. To summarize, we have suggested that the change in Balkar should be understood as loss of the morphological tense copying rule diachronically triggered by the lack of tense distinctions in antecedents of conditionals in Balkar.

**4. Conclusions.** This paper has discussed patterns of X-marking in Balkar, a Turkic language spoken mainly in Russia. The core findings are as follows. Consequent X-marking is past tense morphology (-di-) for all X-marking contexts: -di- is found in consequents of X-conditionals, on verbal forms of weak necessity and on verbal forms of counterfactual desire. Antecedent X-marking, however, is subject to three-way variation.

The first strategy is the past tense being present on a *bona fide* auxiliary, which bears agreement morphology as well. The second strategy is the past tense and auxiliary acting as a particle of sorts since the auxiliary does not bear agreement morphology. The third strategy is the absence of past tense morphology (-di-) in any form. The variability of presence/absence of past tense morphology as antecedent X-marking has also been observed in embedded clauses in counterfactual desires. I have argued that this variation should be understood as showing a change happening in Balkar grammar. The precise nature of the change in progress has been hypothesized to be the loss of a rule, which copies past tense morphology into the antecedent clause/

It should be acknowledged that it may be the case that the variability of X-marking strategies is conditioned by grammatical factors, which are to be discovered. Nevertheless, I believe that the picture outlined in this paper gives a reasonable explanation to the variation found in Balkar.

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