

КОНСТРУКЦИИ ДОЛЖЕНСТВОВАНИЯ В МАЛОКАРАЧКИНСКОМ ДИАЛЕКТЕ ЧУВАШСКОГО ЯЗЫКА: ПАДЕЖНЫЕ АЛЬТЕРНАЦИИ И ВЗАИМОДЕЙСТВИЕ С ОТРИЦАНИЕМ*

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В статье обсуждаются два показателя долженствования, лексический и морфологический, в малокарачкинском диалекте чувашского языка и их взаимодействие между типом модальности (деонтической или эпистемической) и падежным маркированием субъекта (номинативным или генитивным). В то время как предыдущие исследования показали, что генитивный субъект, в отличие от номинативного, допустим только при деонтической необходимости, в данной статье также показывается, что лексический модальный предикат имеет дополнительные ограничения, а именно встречается с генитивным субъектом только в отрицательных/вопросительных контекстах. В статье также предлагается единый формальный анализ двух вышеупомянутых показателей долженствования в рамках дистрибутивной морфологии (DM).

Ключевые слова: деонтическая необходимость, эпистемическая необходимость, неноминативные подлежащие, отрицание, тюркские языки.

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CASE ALTERNATION AND POLARITY SENSITIVITY WITH NECESSITY MODALS IN POSHKART CHUVASH*

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The paper discusses two modal necessity markers, lexical and morphological, in the Poshkart dialect of Chuvash (Turkic) and their interactions between the type of modality (root/deontic vs. epistemic) and the type of subject marking (genitive vs. nominative). While previous work has established that genitive subjects, as opposed to nominative ones, are restricted to root necessity, it is here proposed that the lexical modal shows a further restriction, namely it can occur with a genitive subject only in negative/interrogative environments. The paper also offers a unified formal account of the two abovementioned necessity markers and their observed restrictions within a realizational morphological framework (DM).

Keywords: deontic necessity, epistemic necessity, oblique subjects, negation, Turkic.

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1. Introduction

Previous work on necessity modals in the Poshkart dialect of Chuvash (<Turkic), spoken in the village of Maloe Karachkino (Poshkart), Chuvash Republic, Russian Federation (henceforth, PC), has identified some interesting interactions between type of modality (root *vs.* epistemic), type of modal marker (lexical *vs.* morphological) and type of case marking of the subject (nominative *vs.* genitive) [Matyusheva 2020]. Specifically, it was observed that whereas epistemic necessity co-occurs with a nominative subject, root necessity predominantly co-occurs with a genitive subject, even though a nominative subject is not impossible. In addition, it was noted that whereas epistemic and so-called participant-external/deontic necessity can be expressed both lexically (with *kerlë*) and morphologically (with *-mAlA*), the lexical modal is strongly dispreferred as an expression of participant-internal modality (need).

The main goal of the paper is to extend and refine Matyusheva's important observations, in particular, with respect to the availability of participant-internal necessity with *kerlë*, which I argue is fully acceptable, but only in negative and interrogative environments. I also make some further amendments to Matyusheva's generalizations.¹ The other goal is to sketch a formal account of these generalizations based on a unified analysis of the two modal constructions.

The paper proposes an account of genitive-assignment in the two constructions (largely based on the analysis of Russian dative-infinitive constructions in [Burukina 2020]) which explains why genitive subjects are disallowed with epistemic necessity and also shows how the restriction of genitive subjects with *kerlë* to negative/interrogative environments can be formally captured in a realizational morphological framework (DM). In addition, it offers a functional explanation for the emergence of this restriction.

Section 2 and 3 discuss the distributional properties of the two necessity modals in PC. Section 4 develops the formal account. Section 5 is a brief conclusion.

¹ For reasons of space I limit myself only to very brief comparisons between the present account and the one in [Matyusheva 2020], which are mostly relegated to footnotes.

2. The construction with *-mAlA*

2.1. The morphosyntax of *-mAlA*

The form *-mAlA* is a frozen combination of the infinitival marker *-mA* and the attributivizer *-lA*, used to derive certain classes of adverbs (cf. *t̥avaʃ-la* [Chuvash-ATTR] ‘in Chuvash’).² Distributionally, *-mAlA* behaves like a finite verbal marker and in this respect resembles other non-inflected participial and converbial forms used finitely.³ A special property of *-mAlA* is that it can take a genitive subject⁴ (apart from a nominative one), as illustrated in (1a)–(1b) below. Genitive subjects are otherwise not observed in finite clauses in PC and only exceptionally in (non-finite) embedded clauses, where nominative is the default option.⁵ The alternation between a genitive and a nominative subject with *-mAlA* will be discussed in the sections to follow.

2.2. Root necessity with *-mAlA*

The form *-mAlA* is the most common way of expressing root necessity in PC, including participant-internal necessity, or need [van der Auwera, Plungian 1998], as in (1a), and deontic necessity, or obligation, as in (1b). Note that the subject of the construction (corresponding to the ‘needer’ or the ‘obligee’ participant) in (1a)–(1b) is marked with genitive.

- (1) a. *man amal ëç-me-le.*
 I.GEN medicine drink-INF-ATTR
 ‘I need to take a pill.’

² In traditional grammar, *-mAlA* is treated as an unanalyzed (‘participial’) form [Pavlov et al. 1957: 227].

³ *-MAIA* (when followed by the frozen 3rd person possessive marker, i.e. in the form *-mAlI*) can also be used as a participial marker and as an action nominal marker (in the latter case with an appropriate case suffix). In such uses, it has the same morphosyntactic properties as other participles and action nominals, e.g. it requires a nominative marking on the subject [Logvinova 2019].

⁴ Throughout the paper, I use the term ‘genitive subject’ (and also ‘nominative subject’) to refer to the argument which corresponds to the grammatical subject of the non-modal counterpart of the construction. See Section 4 for specific proposals regarding the structural position of such subjects.

⁵ Genitive subjects (outside necessity modals) are found with so-called non-inflected future ‘participle’ (action nominalization) *-As*, used e.g. in some idiomatic desiderative constructions as well as in (different-subject) purpose clauses.

b. *san pajan kaç-pa urok-sam tu-ma-la.*
 you.GEN today evening-INS lesson-PL do-INF-ATTR

‘You must do homework tonight [as you promised me].’

Importantly, a genitive subject occurs independently of whether it is interpreted as an obligee (needer).⁶ For example, in (2a) the subject is inanimate and cannot be an obligee (which remains implicit) but it is still marked with genitive. In such cases nominative (= unmarked) subject is also possible, with no difference in meaning.⁷ However, when the context favors an obligee interpretation of the subject, as is normally the case when it is animate, as in (2b), genitive is strongly preferred by most speakers. Interestingly, when the context favors an implicit/pragmatically supplied obligee but the subject is still animate, e.g. when the subject is non-specific and hence must be in the scope of the modal, as in (2c), there is variation: some speakers allow both genitive and nominative whereas others prefer genitive.⁸

(2) a. *patinka-n / patinka koridor-da lar-ma-la.*
 shoe-GEN shoe hall-LOC lie-INF-ATTR

‘Shoes must remain in the hall [wearing shoes inside is not allowed]’

b. *??es pajan kaç-pa urok-sam tu-ma-la.* (cf. (1b))
 you today evening-INS lessons-PL do-INF-ATTR

‘You must do homework tonight [as you promised me].’

c. *kam-ən / (?k)kam da bol-in şkol-da jol-ma-la.*
 who-GEN who ADD be-CONC school-LOC remain-INF-ATTR

‘Someone [whoever it is] must stay in the school [in order to guard it while the others are away]’

Thus, in constructions of root necessity with *-mAlA* genitive subject is always available independently of whether it is interpreted as an obligee, whereas nominative subject is only possible for non-obligees.

⁶ In the descriptive sections of the paper, I abstract away from the issue of whether the obligee is a theta-role assigned by the modal [Wurmbrand 1999, Ramchand 2018: 138 ff.]. But see Section 4 for some specific analytical claims.

⁷ This description departs from [Matyusheva 2020], according to which nominative marking in constructions of root necessity with *-mAlA* is not available.

⁸ A possible explanation of this variation is that speakers who require genitive marking interpret the subject DP as an obligee irrespective of its being in the scope of the modal (assuming that obligees must be marked with genitive, see Section 4).

2.3. Epistemic necessity with *-mAlA*

The form *-mAlA* can also express epistemic necessity, as in (3a)–(3b), even though the construction with *kerlə* is more common here (see Section 3). In contrast to root necessity, genitive subject is disallowed in (3a)–(3b), or, more precisely, forces the root interpretation. For example, sentence (3a) with genitive would be felicitous in a scenario where the salesperson is supposed to cheat in such a way as to make the watermelon appear to weigh 10 kilos.

- (3) a. *ku arbuz / *arbuz-ən vonə kilo dort-ma-la.*
 this watermelon watermelon-GEN ten kilo weigh-INF-ATTR
 ‘[According to my assessment] this watermelon must weigh [approximately] ten kilos.’
- b. *vəl / *on klas-ra lar-ma-la.*
 he he.GEN class-LOC sit-INF-ATTR
 ‘He [Petya] must be in the class [preparing, as he is giving a talk at the seminar tomorrow].’

Interestingly, the expression of epistemic necessity with *-mAlA* seems to be restricted to stative predicates.⁹ For example, dynamic predicates such as ‘do homework’, as in (4), require the construction with *kerlə* (cf. (5b)).¹⁰ Note that the same restriction is also reported for English [Bybee et al. 1994: 200 ff., Ramchand 2018: 172 ff.].

- (4) **vəl urok-sam tu-ma-la.*
 he lesson-PL do-INF-ATTR
 Int.: ‘He must be doing his homework.’ (cf. *He must do his homework)

The case marking of the subject with *-mAlA* is summarized in Table 1.

Table 1. Case marking of the subject with *-mAlA*

		genitive	nominative
root modality	subject = oblige	√	*
	subject ≠ oblige	√	√ (only inanimate for some speakers?)
epistemic modality		*	√

⁹ This restriction is not mentioned in [Matyusheva 2020].

¹⁰ A detailed examination of what counts as a ‘stative predicate’ (for which speakers of PC) is left for future work. For example, some speakers were not fully comfortable with examples like (3b), suggesting that ‘sit in class’ is not stative for those speakers.

To summarize, when *-mAlA* expresses epistemic necessity, nominative subject is the only option. When on the other hand *-mAlA* expresses root necessity, nominative subject is possible just in case it is not an oblige, whereas genitive subject is possible independently of whether it is an oblige or not.

3. The construction with *kerlë*

3.1. Epistemic necessity with *kerlë*

Epistemic necessity in PC is most commonly expressed with the adjectival predicate *kerlë* ‘necessary’ taking an infinitival complement, as shown in (5a)–(5b). The subject in such constructions is always nominative, as in constructions of epistemic necessity with *-mAlA*. In contrast to *-mAlA*, however, there is no stativity restriction on the predicate, as shown in (5b), cf. (4).

- (5) a. *ku arbuz / *arbuz-ən vonə kilo dort-ma kerlë.*
 this watermelon watermelon-GEN ten kilo weigh-INF necessary
 ‘[According to my assessment] this watermelon must weigh [approximately] ten kilos.’
- b. *vəl / *on urok-sam tu-ma kerlë.*
 he he.GEN lesson-PL do-INF necessary
 ‘He must be doing his homework [since he is not playing outside].’

3.2. Root necessity with *kerlë*

Kerlë can also express deontic necessity, as in (6a)–(6c), although *-mAlA* is more common in this case, especially when the context suggests that the subject is an oblige. For example, if the subject is animate the construction often has the flavor of reduced agentivity/volitionality (cf. (6c)). Speakers are especially reluctant to use *kerlë* with participant-internal necessity at least where the subject is likely to be understood as the needer, as in (6d).¹¹ Note that a genitive subject is ungrammatical in all these examples independently of the meaning of the sentence.¹²

¹¹ The construction with *kerlë* in (6d) is not totally ungrammatical as it can be construed in the somewhat pragmatically odd non-agentive sense, i.e. ‘It is necessary that I take a pill’.

¹² In this characterization I depart from [Matyusheva 2020], where it is stated that genitive subject is in principle possible in construction of root (deontic) necessity with *kerlë*.

- (6) a. *patinka* / **patinka-n* *koridor-da* *lar-ma* *kerlä*.
 shoe shoe-GEN hall-LOC sit-INF necessary
 ‘Shoes must remain in the hall [as wearing shoes inside is not allowed].’
- b. *kam* / **kam-ən* *da bol-in* *şkol-da* *jol-ma* *kerlä*.
 who who-GEN ADD БЫТЬ-CONC school-LOC remain-INF necessary
 ‘Someone [whoever it is] must stay in the school [in order to guard it while the others are away].’
- c. *ku* *vagət-ra* *petə* / **pet-ən* *lekarstvo* *ëç-me* *kerlä*.
 this time-LOC Petya Petya-GEN pill drink-INF necessary
 ‘Petya must take a pill at this time [≈It is necessary that Petya take a pill].’
- d. ??*ep* / **man* *amal* *ëç-me* *kerlä*. (cf. (1a))
 I I.GEN medicine drink-INF necessary
 Int.: ‘I need to take a pill.’

There is one systematic exception, however.¹³ The construction with *kerlä* allows a genitive subject just in case it occurs with negation, as in (7a), or in a polar question, as in (7b); cf. the ungrammaticality of (7c).¹⁴ Moreover, in construction with negation *kerlä* obligatorily has a narrow scope (cf. (7a)). The pattern shown by *kerlä* with genitive strongly resembles English *need* (with bare infinitive), which is standardly analyzed as an NPI [Cormack, Smith 2003: 157; Iatridou, Zeijlstra 2013; Ramchand 2018: 146 ff.]. Note also that in such constructions *kerlä* with genitive always expresses participant-internal necessity (need).

- (7) a. *san* *xola-ja* *kaj-ma* *kerlä* *mar*.
 you.GEN town-OBJ go-INF necessary NEG_ASCR
 i. √ ‘You need not go to town [as you can buy a cow in the village].’
 ii. # ‘You must not go to town [as they can spot you there].’

¹³ These exceptions are not mentioned in [Matyusheva 2020].

¹⁴ Genitive with *kerlä* can also be licensed by negation in the higher clause (with the verb ‘think’), as in (i).

(i) *ep* [*san* *xola-ja* *kaj-ma* *kerlä*] *teze* *şotla-m-a-p*
 I you.GEN town-OBJ go-INF necessary COMP think-NEG-NPST-1SG
 (cf. **şotl-a-p*).
 think-NPST-1SG

‘I don’t think you should go to town.’ (ungrammatical with affirmative ‘I think...’)

b. *san xola-ja kaj-ma kerlä-k-i?*

you.GEN town-OBJ go-INF necessary-EMPH-Q

‘Do you need not go to town [to buy the cow or you can buy it here]?’

c. **san xola-ja kaj-ma kerlä.*

you.GEN town-OBJ go-INF necessary

Int.: ‘You need to go to town [as you can’t buy a cow here].’

The case marking of the subject in constructions of root necessity with *kerlä* is summarized in Table 2.

Table 2. Case marking of the subject with *kerlä*

		genitive	nominative
root	participant-internal necessity (negatives and questions)	√	??
modality	participant-internal necessity (other environments)	*	??
	deontic/participant-external necessity	*	√
epistemic modality		*	√

3.3. *Kerlä* with a nominal complement

For the sake of completeness, it must be mentioned that *kerlä* can also express participant-internal necessity in construction with a nominal complement, as in (8a). Interestingly, in such constructions the needer is marked with objective (dative-accusative) case rather than genitive. Moreover, objective case cannot occur on the subject in constructions with an infinitival complement, as shown in (8b).¹⁵ This differs from Russian, where dative subjects occur in both types of constructions.

(8) a. *man-a ëne kerlä.*

I-OBJ cow necessary

‘I need a cow.’

b. *man / *man-a ëne il-me kerlä.*

I.gen I-OBJ cow get-INF necessary

‘I need to buy a cow.’

¹⁵ Sentences like (8b) have an irrelevant interpretation where the infinitive is parsed as a purpose clause with an object prodrop, as shown in (i).

(i) *man-a ëne [il-me] kerlä.*

I-OBJ cow get-INF necessary

‘I need a cow to buy [something or other].’

4. Analysis

4.1. Preliminary considerations

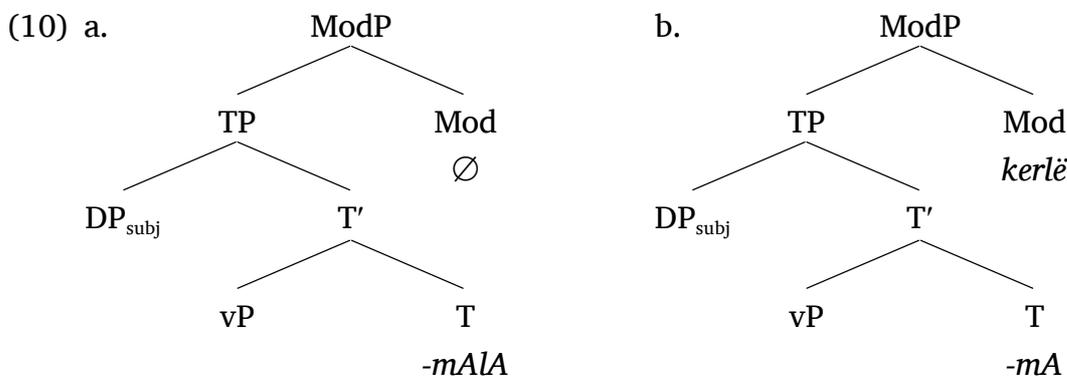
An account of the patterns in Table 1 and 2 must address three main questions:

- (9) a. Why and how is genitive case (as compared to nominative) assigned to the subject in constructions with necessity modals in PC?
- b. In particular, why can genitive case not be assigned in constructions of epistemic necessity (both with the lexical and the morphological modal)?
- c. Why is genitive-assignment with *kerlë* restricted to negative/interrogative environments?

These questions (at least (9a)–(9b)) presuppose a unified analysis of the two necessity modal markers (*-mAlA* and *kerlë*). I wish to argue that such an analysis can indeed be provided, which is the task of the next section. In Sections 4.3–4.5, I turn directly to the questions in (9a)–(9c).

4.2. A unified analysis

I will analyze *kerlë* as the realization of the designated functional head Mod and *-ma* as the realization of (infinitival) T. For the construction with *-mAlA*, I will assume that it involves a silent Mod. I will also assume that *-mAlA* is (synchronically) a special infinitival marker restricted to environments with a silent Mod. This is schematically represented in (10a)–(10b).¹⁶ Thus, the two modal markers have essentially the same syntactic structure modulo the exponents of the (infinitival) T and Mod.



¹⁶ The status of the subject DP is discussed in Section 4.3 below.

The analysis in (10a)–(10b) largely follows the analysis proposed in [Burukina 2020] for main clause infinitivals/dative-infinitive constructions in Russian, illustrated in (11), where they are taken to contain a silent deontic modal (a counterpart of *nado* ‘necessary’), see [Fleisher 2006, Tsedryk 2018]. The main difference is that in PC the structures in (10a)–(10b) obtain not only for root (deontic) but also for epistemic modals, which I will represent as values [deont] and [epist] of the feature [mod] on Mod encoding the flavor of modality.

- (11) *Maše (nado) rano vstavat’.*
 Masha.DAT necessary early wake.up.INF
 ‘Masha should wake up early.’

4.3. Genitive assignment

The analysis of the subject case marking will also follow Burukina’s account of the dative subject in dative-infinitive constructions in Russian. Burukina assumes, following [Tsedryk 2018], that the dative DP in such constructions is normally an (applied) Holder argument of the deontic modal controlling the PRO subject of the infinitive. The dative DP is introduced in the specifier of the Appl(icative) head, which is above the modal and which assigns case and theta-role to it. However, Burukina argues that dative can also show up on a DP which is not a Holder, as e.g. in (12), where it is inanimate.¹⁷ For such cases, Burukina assumes that the DP remains in the embedded subject position, where it is assigned dative by Appl across TP boundary (in an ECM-like fashion) while the Spec,ApplP position is occupied by an implicit Holder, which does not require case.¹⁸

- (12) *Nado [projektu zakončit’sja k srede].*
 necessary project.DAT complete.INF by Wednesday
 ‘It is necessary for the project to be complete by Wednesday.’ [Burukina 2020: 2]

¹⁷ I find examples like (12) marked but the same point can be made with other dative-assigning impersonal predicates, e.g. *važno* ‘important’ [Moore, Perlmutter 1999: 237].

¹⁸ Specifically, [Burukina 2020:4] assumes, following [Landau 2010], that [case] is a property of DPs and that implicit indirect/oblique objects can but need not be DPs.

Turning now to PC, recall that genitive can be assigned to the subject in the construction with *-mALA* independently of whether or not it is interpreted as an oblige (cf. (1a)–(1b) and (2a)). I wish to propose that this variability can be understood along the lines of [Burukina 2020] except that Appl in PC assigns genitive rather than dative. Specifically, when the genitive DP is an oblige, it is in the Spec,AppIP where it gets genitive and the Oblige theta-role and from where it controls PRO, as in (13a). When it is not an oblige, it remains in the infinitival Spec,TP, receiving genitive from Appl across TP, whereas Spec,AppIP is occupied by an implicit Holder, as in (13b).¹⁹

(13) a. genitive DP = Oblige (Holder), cf. (1a)–(1b)

$$[_{\text{AppIP}} [DP_{\text{gen}}]_i [_{\text{AppI}'} \text{Appl} [_{\text{ModP}} [_{\text{TP}} \text{PRO}_i [_{\text{T}'} \text{vP} [_{\text{T}} \text{mala}]]]] \text{Mod}]]]$$

b. genitive DP = embedded subject, cf. (2a)

$$[_{\text{AppIP}} \emptyset_{\text{implicit holder}} [_{\text{AppI}'} \text{Appl} [_{\text{ModP}} [_{\text{TP}} DP_{\text{gen}} [_{\text{T}'} \text{vP} [_{\text{T}} \text{mala}]]]] \text{Mod}]]]$$

The idea that genitive is assigned by the head that also introduces the Holder/Oblige (i.e. Appl) can provide an answer to (9a), namely, why a genitive subject is incompatible with epistemic necessity (cf. (3a)–(3b) and (5a)–(5b)). Epistemic modals are standardly analyzed as (unary) operators that are not associated with any thematic relation (akin to Tense, Negation, etc.). Thus, they are incompatible with Appl. This can be encoded as a selectional property of Appl, namely that Appl requires [deont] on its ModP complement, as in (14). But given that genitive assignment is dependent on the presence of Appl, we derive the fact that genitive subjects will never occur with epistemic necessity.

(14) Appl selects for ModP_[deont] (but not for ModP_[epist])

Note that whereas a genitive subject requires root necessity, the converse is not the case since root necessity is also compatible with a nominative subject (cf. (2a) and (6a)–(6c)). The consequence of the analysis of genitive-assignment

¹⁹ As pointed out by Pavel Rudnev (p.c.), independent evidence is needed to show that the implicit Holder does not require case, which e.g. may consist in showing that it fails to project to a DP level along the lines of [Landau 2010] (see the previous footnote).

above, is that root modals with a nominative subject must correspond to a structure with no Appl (and hence no Obligee), as in (15), which is essentially the same as that postulated for epistemic modals (modulo the feature [deont]).²⁰

(15) [ModP [TP DP_{nom} ...] Mod_[deont/epist]] (cf. (2a), (3), (5), (6a)–(6c))

I take the availability of both structures with Appl (and hence syntactically represented Obligee), as in (13a)–(13b), and without it, as in (15), for root necessity modals a welcome consequence since it has been repeatedly argued, e.g. in [Wurmbrand 1999], that root/deontic modals do not require the projection of an Obligee/Permissee (based on examples like *There must be three guards on duty*, from [Ramchand 2018:138], and the like). At the same time, there is also evidence that an Obligee *can* be projected in root modals since otherwise it is difficult to account for why the Obligee can vary with the choice of the subject DP in examples like (16a)–(16b). To account for this dual nature, it is sometimes argued that root necessity modals optionally project an Obligee theta-role [Ramchand 2018: 142]. This is basically the account proposed here.

(16) a. *The girls must get the same score as the boys.*

b. *The boys must get the same score as the girls.* [Ramchand 2018: 141]

To summarize, I have proposed that the subject marking and the presence/absence of the obligee interpretation of the subject in necessity modals in PC reflects their underlying syntactic structure as shown in Table 3. This provides an answer to questions (9a)–(9b).

Table 3. Structure of necessity modals depending on the case and interpretation of the subject

	Type of construction	Structure
A	root & GEN = Obligee	[_{AppIP} DP _{gen} [_{ModP} ... Mod _[deont]] Appl]
B	root & GEN = embedded subject	[_{AppIP} [_{ModP} [_{TP} DP _{gen} ...] Mod _[deont]] Appl]
C	root & NOM = embedded subject	[_{ModP} [_{TP} DP _{nom} ...] Mod _[deont]]
D	epistemic & NOM = embedded subject	[_{ModP} [_{TP} DP _{nom} ...] Mod _[epist]]

²⁰ I abstract away from the exact mechanism of nominative assignment in structures like (15) as well as from the issue of potential raising of the nominative subject. For concreteness, it may be assumed that nominative is assigned to the DP as a default case after it raises to the higher clause.

4.4. Polarity-sensitivity of *kerlä* with genitive

Let's now turn to question (9c), namely why *kerlä* is incompatible with a genitive subject except in negative/interrogative environments. The structures presented in Table 3 do not distinguish between an overt (*kerlä*) and a silent modal. This leads to overgeneration as it predicts that a genitive subject will be freely available with *kerlä* (in constructions of root necessity). However, as we saw in (7a)–(7c), genitive subject is restricted to negative/interrogative environments. I propose the following analysis to capture this restriction.

I assume that there are two homophonous lexical items Mod both realized as *kerlä*. The first one, referred to as *kerlä*₁ and shown in (17a), is a root/deontic modal (hence [deont]) and also a negative polarity item/NPI (cf. (7a)–(7d)), which I represent with value [neg] of the feature [pol(arity)] checked by the corresponding value on some functional head in the left periphery.^{21,22} The other one, referred to as *kerlä*₂ and shown in (17b), is unspecified for [deont/epist], cf. (5a)–(5b) and (6a)–(6c). I also tentatively assume that it is a positive polarity item/PPI, i.e. it has a wide scope with respect to negation [Iatridou, Zeijlstra 2013], which I represent as value [pos] of the feature [pol]. This is supported by examples like (18a)–(18b), although more data is needed to firmly establish this.

(17) a. Mod_[deont, neg] ↔ *kerlä*₁

b. Mod_[pos] ↔ *kerlä*₂

c. Mod ↔ ∅

(18) a. *Ku mašinə miljon dengə tər-ma kerlä mar.*
 this car million ruble cost-INF necessary NEG_ASCR
 'This car must not (= cannot) cost one million rubles.' (□ > ¬)

b. *Klas-ra ni-kam da ol-in jol-ma kerlä mar.*
 class-LOC no-who ADD БЫТЬ-CONC remain-INF necessary NEG_ASCR
 'Nobody may remain in the class.' (□ > ¬ > ∃)

²¹ I assume an analysis of NPI licensing in terms of feature checking (see Iatridou and Zeijlstra 2013 for a discussion of different approaches).

²² The lexical item in (17a), as well as the other two items in (17b)–(17c), must probably also be specified for the force of modality (e.g. as [nec(essy)]), which I omit for clarity.

As for the silent modal, shown in (17c), I assume that it is unspecified for both [deont/epist] (cf. (1)–(2) and (3a)–(3b)) and [neg/pos] (cf. (22) below), that is, it is a polarity-neutral modal [Iatridou, Zeijlstra 2013]. To ensure that the silent modal always occurs with *-mAlA* (as opposed to *-mA*), I further assume that (unspecified) Mod has a special diacritic that triggers its lowering to infinitival T, as in (19), in which case T surfaces as *-mAlA*, as shown in (20b), cf. its default realization *-mA* in (20a).

(19) Polarity-neutral Mod (unspecified for [neg/pos]) lowers to infinitival T.

(20) a. $T_{[\text{inf}]} \leftrightarrow -mA$ (Elsewhere)

b. $T_{[\text{inf}]} \leftrightarrow -mAlA / _ \text{Mod}$

Now, we can capture the fact that *kerlë* only occurs with a genitive subject in negative/interrogative environments (cf. (7c)) by assuming that Appl (disjunctively) selects for Mod or $\text{Mod}_{[\text{neg}]}$, as shown in (21).²³ Since a genitive subject requires the presence of Appl, (21) predicts that such a subject will only occur either with the NPI *kerlë* in (17a) or with the silent modal in (17c), i.e. with *-mAlA* (given (19) and (20a)–(20b)). This provides an answer to question (9c).

(21) Appl selects for Mod or $\text{Mod}_{[\text{neg}]}$ (but not for $\text{Mod}_{[\text{pos}]}$).

Note that since *kerlë*₁ and *kerlë*₂ in (17a)–(17b) are more specified than the silent modal in (17c) they will block it when Mod is selected with the [neg/pos] feature (due to the Elsewhere Condition). However, this need not always happen since Mod can also be selected without [neg/pos], in which case the silent modal will be the only possible realization for Mod (due to the Subset Principle). Thus, all the three items in (17a)–(17c) will actually be realized in necessity constructions in PC.

4.5. A functional explanation for polarity-sensitive *kerlë*

The proposed account provides a rather technical solution to the problem of deriving the restriction of *kerlë* with genitive to negative/interrogative environments (cf. (9c)). The solution consists in the existence of two lexical items *kerlë* with different specifications for polarity (cf. (17a)–(17b)) and in the sensitivity of Appl to this feature (cf. (21)). But how can we *explain* the existence of

²³ I thank Pavel Rudnev for suggesting to me this implementation.

these two homophonous items? In other words, could it have an advantage over a hypothetical variant (PC') which has only one *kerlë*, unspecified for [pol]?

Although my suggestion remains speculative, I wish to propose that there is a functional motivation for the existence of (17a)–(17b), namely, ambiguity avoidance. In Section 3.2 above, we saw that *kerlë* with genitive has a fixed narrow scope with respect to negation. Interestingly, the construction with *-mAlA* is different in this respect as it is potentially ambiguous between a wide and a narrow scope of the modal, as shown in (22).

(22) *san xola-ja kaj-ma-la mar.*
 you.GEN town-OBJ go-INF-ATTR NEG_ASCR

- i. √ ‘You need not go to town [as you can buy a cow in the village].’
- ii. √ ‘You must not go to town [as they can spot you there].’

Although ambiguities such as (22) are typologically not uncommon (cf. English *may not*), languages tend to avoid them by developing various strategies of unambiguously expressing the same meaning [de Haan 1997]. For example, different necessity modals for expressing different scopes may be used (cf. English *must not/should not* ($\square > \neg$) vs. *need not* ($\neg > \square$)) as well as a different linear position of the negation or different constructions, etc.²⁴

In a similar vein, it may be hypothesized that in response to the ambiguity problem posed by (22) PC developed two specialized modals with a fixed scope of negation, namely $\text{Mod}_{[\text{deont, neg}]}$, with a fixed narrow scope, as in (17a), and $\text{Mod}_{[\text{pos}]}$, with a fixed wide scope, as in (17b). Further, because the former only and always occurs with Appl (i.e. with a genitive subject), it can be easily distinguished from the second one, allowing PC to resort to the same exponent for both modals in a rather economical way.

5. Conclusion

In this paper, I have discussed two necessity modal constructions in Poshkart Chuvash, focusing on their interactions with case marking of the subject and also with polarity. A major goal of this paper was to refine earlier generalizations in [Matyusheva 2020]. In particular, I showed that the lexical modal (*kerlë*)

²⁴ Note that an unambiguous strategy of expressing some meaning may co-exist with an unambiguous construction, cf. Russian scopally ambiguous *ne nado* vs. *nel'zja* ($\square > \neg$) vs. *ne objazatel'no* ($\neg > \square$) [de Haan 2002].

behaves like an NPI in construction with a genitive subject (but otherwise requires a nominative subject). I also showed that the divide between a nominative and a genitive subject does not align with the epistemic vs. root distinction (in the case of both the morphological and the lexical modal), i.e. nominative subject is always possible with participant-external necessity. I also noted an interesting stativity restriction for *-mAlA* which must be investigated in future work. Apart from refining the descriptive generalization, I also offered a unified account of the two necessity modals in PC within a DM framework which views their form-meaning interactions in terms of different morphosyntactic features and their phonological realization.

Abbreviations

1 — 1st person; ADD — additive; ATTR — attributivizer; COMP — complementizer; CONC — concessive; GEN — genitive; EMPH — emphasis; INF — infinitive; LOC — locative; NEG — negation; NEG_ASCR — ascriptive negation; NPST — nonpast; OBJ — objective; PL — plural; Q — question; SG — singular.

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