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Indexical shift in Tabasaran

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Abstract
The Nakh-Daghestanian language Tabasaran displays indexical shift in the reported speech construction. Having many properties in common with indexical shift attested in other languages, the shift of embedded pronouns in Tabasaran depends strongly on the presence of person clitics on the embedded verb in the reported speech. Pronouns doubled by clitics receive a shifted interpretation, while independent personal pronouns have an indexical interpretation. This behavior of clitics contrasts with their behavior in an affirmative root clause, where they obligatorily double any first or second person subject. The investigation of interrogative sentences draws a link between two different strategies in the behavior of person clitics in the reported speech construction and in the affirmative root clause. I propose that personal pronouns and clitics are separate DPs, specified for different features: pronouns are indexicals, while clitics specified for person features also have the Logophoric feature and therefore indicate the logophoric Speaker and Addressee. In reported speech, when bound by a clitic, personal pronouns receive a shifted interpretation and also refer to logophoric participants that are matrix arguments in the reported speech. The paper also discusses the binding relationship between clitics and personal pronouns in those cases where they do not match in their *phi*-features and proposes that the binding is based not on the interaction between their morphological *phi*-features but rather on their referential content, which is generated by the whole feature set of each item.

Keywords Tabasaran · Reported speech · Indexical shift · Person clitics · Logophoricity · Binding

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1 Introduction

Tabasaran is an ergative language of the Lezgic branch within the Nakh-Daghestanian family (the Republic of Daghestan, Russia). This paper discusses indexical shift in the reported speech construction in the Džuli dialect of the language.[1]

Typologically, personal pronouns exhibit universal indexical behavior and uniformly refer to discourse participants. However, several unrelated languages display a phenomenon of indexical shift in reported speech sentences, where *I* and *you* refer to somebody other than the current speaker or the current addressee. Schlenker (1999, 2003) discusses what is now a very well-known example from Amharic (Ethiopian-Semitic), literally: 'John$_i$ says that I$_{i/j}$ am a hero' where 'I' can indicate not only the current speaker who restates what John said, but alternatively refer to 'John,' the third person argument that is semantically the original speaker.

Tabasaran shares several characteristics of indexical shift with other languages that display this phenomenon. First, in Tabasaran, indexical shift occurs in the same syntactic environment as in other languages. The reported speech construction in Tabasaran is a complex clause. When they appear in the embedded clause under the attitude predicate, the interpretation of personal pronouns can change, in a way similar to Amharic. Second, as has been shown for other languages with indexical shift, the change in the interpretation of a personal pronoun is not a result of quoted speech, and the embedded clause cannot be treated as a direct quotation. In Tabasaran, in reported speech, the subordinate clause is obligatorily introduced by the special complementizer *k'udi*,[2] and other facts concerning the behavior of person clitics in reported speech that differ extremely from a root clause cannot support a quotation analysis either (Sect. 4). The third common property that Tabasaran shares with other languages is that indexical shift occurs within the embedded finite clause and does not occur in non-finite clauses. Examples (1a–1b) demonstrate the contrast. In (1a) the complementizer *k'udi* (glossed as COMP) introduces the embedded finite clause. The first person pronoun *izu* 'I' within the embedded clause shifts and refers to the reported speaker *gagaj* 'father' (the coreferential arguments *izu* 'I' and *gagaji* 'father' are marked by the same index *i*). The unshifted interpretation, where *izu* 'I' refers to the current speaker, is impossible here. By contrast, in (1b) in the complex sentence the same complementizer *k'udi* introduces a non-finite purpose clause, the first person pronoun *izu* 'I' has only the unshifted interpretation, referring to the current speaker.

[1] Having approximately 100,000 native speakers, Tabasaran is divided into a number of dialects that are not mutually intelligible. Džuli belongs to the northern dialect group (Genko 2005). The data presented in this paper were collected during my fieldwork. The basic examples were collected from one speaker of the Džuli dialect and tested with many speakers from other dialects. More complex examples, such as those with feature mismatches in embedded clauses of indirect speech, were asked from at least three other Džuli speakers.

[2] The conjunct *k'udi* is diachronically the imperfective converb of the verb 'say' (for more information about a similar marker *kur'i* in the Mežgül dialect, see also Appendix A.1).

(1) a. *gagaj-i_i [izu_i derbent.di-s $a^{ʕ}$G-id=za_i k'udi] p-nu.*[4]
father-ERG I Derbent-DAT (H.SG)go-FUT=1SG COMP say-AOR
'The father$_i$ said that he$_i$ would go to Derbent.' (shifted)
*'The father said that I would go to Derbent.' (unshifted)

b. *gagaj-i_i dumu ma^{ʕ}ha^{ʕ}mad.ri-s [$izu_{k/*i}$ derbent.di-s*
father-ERG this(ABS) Mahamad-DAT I Derbent-DAT
da^{ʕ}r-a^{ʕ}G-di k'udi] p-nu.
NEG-(H.SG)go-IPFCONV COMP say-AOR
'The father told this to Mahamad so that I would not go to Derbent.' (unshifted)
*'The father$_i$ told this to Mahamad so that he$_i$ would not go to Derbent.' (shifted)

What makes Tabasaran interesting compared to other languages is that in indexical shift not only personal pronouns are involved but person clitics as well. Example (1a) shows that if the first person pronoun *izu* is doubled by the 1.SG clitic *=za* on the embedded verb *a^{ʕ}‹CL›G-* 'go,' the pronoun *izu* 'I' has a shifted interpretation. By contrast, example (2) demonstrates that if the embedded verb does not bear the clitic, the pronoun *izu* 'I' can only be interpreted indexically, unshifted; that is, it may only refer to the current speaker.

(2) *gagaj-i_i [$izu_{k/*i}$ derbent.di-s $a^{ʕ}$G-idi k'udi] p-nu.*
father-ERG I Derbent-DAT (H.SG)go-FUT COMP say-AOR
'The father said that I would go to Derbent.' (unshifted)
*'The father$_i$ said that he$_i$ would go to Derbent.' (shifted)

Although indexical shift in the reported speech construction is discussed at great length in the current literature, the contribution of verbal inflections to indexical shift has only recently received theoretical attention. In this article, I document indexical shift in Tabasaran and show what contribution these data make to modern theories of indexical shift proposed for other languages.

The article is organized as follows. In Sect. 2, I give a short overview of two main approaches to indexical shift: the analysis with monster operators, and the binding-based analysis. I also take a closer look at languages that demonstrate shifting not only with personal pronouns but also with verbal inflections and discuss the phenomenon of feature mismatches between pronouns and verbal markers in the embedded report. In Sects. 3 through 9, I present indexical shift in Džuli and propose an analysis based on binding. Section 10 concludes.

[4]Abbreviations: ABS – absolutive, ACC – accusative, AOR – aorist, APUD – the locative case 'close to a landmark,' AUX – auxiliary, COMP – complementizer, CONT – the locative case 'attached to a landmark,' DAT – dative, ELAT – the directional case 'from the area of localization,' ERG – ergative, EXCL – exclusive pronoun, F – feminine, FUT – future, H – human gender, INCL – inclusive pronoun, INF – infinitive, IPF – imperfect, CONV – converb, LAT – the directional case 'to the area of localization,' M – masculine, MASD – masdar (verbal noun), N – neuter (non-human) gender, NH – non-honorific, NEG – negation, NOM – nominative, OBL – oblique, P – person, PAT – patient, PF – perfect, PL – plural, PRS – present, PST – past, Q – question marker, REFL – reflexive, S– subject, SG – singular, 1/2/3 – first/second/third person. Parentheses in glosses are used to spell out null morphemes; angle brackets indicate infixes; the equal sign separates clitics.

2 Modern theories of indexical shift

Currently, at least two types of approaches to non-indexical behavior of personal pronouns in reported speech can be identified: those that employ context shift operators, and those that use the binding mechanism (see Deal 2019: 21–31 for a more complete overview of other sorts of approaches). The latter family of research has recently split in two directions. Typically, binding-based approaches assume that the indexical shift of pronouns is a result of a dependency relationship between embedded pronouns and an attitude verb or, more commonly, between the pronoun and a silent element, introduced by the attitude verb. By contrast, Alok and Baker (2018) and Alok (2020) propose that such kinds of elements can exist in the periphery of any finite clause and that indexical shift is a special case of how they can manifest themselves. This section briefly discusses key points in the development of the theory concerning indexical shift in order to show which components of the theory can be applied to the analysis of Tabasaran data.

2.1 Monsters and shifty operators

As is well known, the indexical theory of personal pronouns was initiated by Kaplan (1989), who claimed that personal pronouns like *I* and *you* are indexicals, whose semantics are fixed, since they directly refer to the speaker of the current speech act or his/her addressee. Kaplan's main conclusion is that there are no context-shifting operators that can change the interpretation of indexicals. He calls this kind of operator a "monster" and rejects its existence in his theory.

However, Schlenker (1999, 2003) resurrects the metaphor of the monster and, in contrast to Kaplan's theoretical claim, shows that pronouns can shift their interpretation, at least in the reported speech construction, as discussed for Amharic (see Sect. 1). Schlenker claims that the shifting operator does exist and can manipulate indexicals. He proposes that in Amharic these are attitude verbs that behave like Kaplan's monsters. Personal pronouns in Amharic are treated as all-purpose indexicals that can get their interpretation either from a matrix or embedded context. He accounts for indexical shift in terms of binding. Indexicals consist of the free context variables ‹author, time, and world› and may spell out as variables that are bound either by the coordinates of the matrix or the coordinates of the embedded context.

The idea of the existence of a monster responsible for indexical shift is developed by Anand and Nevins (2004), who analyze data from Zazaki (Iranian) and Slave (Athabaskan). These two languages demonstrate a phenomenon that the authors call "shift-together," where in the embedded clause under attitude verbs all indexicals simultaneously shift and all receive their reference from the same context. Example (3) from Zazaki shows that not only does the pronoun 'I' shift and refer to the reported speaker, but the adverbs 'now' and 'here' also have a shifted interpretation and refer to the situation described, in the embedded clause of the reported speech, rather than to the current speech act. The authors propose introducing a syntactically separate operator that overwrites all context parameters.

Zazaki (Anand and Nevins 2004: 23)

(3) *Hesen mi-ra va ke cz nika {uZa, *ita} ena.*
Hesen me.OBL-to said that I now {there, *here} coming
'Hesen told me that he is coming here now.'

For a selective indexical shift attested in Slave, where under the verbs 'say' and 'want' only a first person pronoun can shift, the authors enrich the operator with an index parameter such as Author (OP_{author}), which is determined by the lexical entry of the matrix verb.

After Anand and Nevins (2004), Shklovsky and Sudo (2014), discussing indexical shift in Uyghur (Turkic), not only introduce a monster operator into their analysis of Uyghur but also show that the monster has a certain syntactic position in the clause structure. In Uyghur, indexical shift depends on whether the embedded pronoun is marked by accusative or nominative case. A nominative first person or second person subject obligatorily shifts in embedded clauses, as in (4a), while the subject pronoun in accusative case requires an unshifted interpretation, as in (4b) (see Sect. 2.3 concerning verbal morphology in these examples):

Uyghur (Shklovsky and Sudo 2014: 386)

(4) a. *Ahmet [men ket-tim] di-di.*
Ahmet 1SG.NOM leave-PST.1SG say-PST.3
*'Ahmet said that $I_{speaker}$ left.' (unshifted)
'$Ahmet_i$ said that he_i left.' (shifted)

b. *Ahmet [meni ket-ti] di-di.*
Ahmet 1SG.ACC leave-PST.3 say-PST.3
'Ahmet said that $I_{speaker}$ left.' (unshifted)
*'$Ahmet_i$ said that he_i left.' (shifted)

The authors conclude that the monster divides the embedded clause into two domains: the shifted domain, the part of the clause that is under the monster; and the unshifted domain, the part of clause that is above of the monster. The accusative embedded subject is always structurally higher than the monster operator, so it does not shift. By contrast, the nominative embedded subject is lower and falls within the scope of the monster operator, with the consequence that it always has a shifted interpretation. One of the confirmations that the monster occupies a certain position in the clause structure in Uyghur is a fact strongly reminiscent of "shift-together," discussed by Anand and Nevins (2004): in Uyghur, none of the indexicals within the accusative subject may shift, since they are not in the scope of the monster, while all indexicals within the nominative subject must shift since they do fall under the scope of the monster.

Considering a sufficiently large sample of languages with indexical shift, Deal (2017, 2019) develops the theory of shifty operators and shows that different attitude verbs introduce complements of different sizes, which affects the degree of indexical shift. Shifty operators sit in a rigid sequence in the clause periphery and vary in how many parameters of context they modify.

2.2 Operator binding theory

The alternative to shifty operator approaches is binding-based theory. Koopman and Sportiche (1989) are the first to propose a binding analysis to explain the logophoric behavior of pronouns in embedded clauses in reported speech in Abe (Kwa branch of the Niger-Congo family). The essence of the analysis is that there is a silent DP element (log operator), which acts as a mediator between the matrix subject and the corresponding embedded pronoun. The log operator specifies the CP in its scope as its logophoric domain and binds the embedded pronoun there, so that the latter refers to the matrix subject (see also Sect. 6).

Explaining the behavior of the long-distance anaphor in two dialects of Mandarin, Anand (2006) proposes that both mechanisms—the overwriting context parameters and the local binding between a silent element and an anaphor—can be operative in the syntax.

Based on Anand (2006), Deal (2017, 2018, 2019) proposes distinguishing between two different phenomena: true shifted indexicals, which change their interpretation depending on the context operator in whose scope they fall (Sect. 2.1) and what she calls *indexiphoricity*, parallel to *logophoricity*, which is a result of a binding relationship (see Sect. 2.3).

2.2.1 Reductive binding analysis: Alok and Baker (2018)

Recently, Alok and Baker (2018) have proposed a reductive binding analysis for the indexical shift found in Magahi (Eastern Indo-Aryan). Their main idea is that the non-indexical behavior of pronouns in reported speech is a manifestation of binding relationship between personal pronouns and silent elements in the periphery of root clauses.

In Magahi, in the embedded report, a personal pronoun can refer to either the current speaker or his/her addressee, constituting a non-shifted reading, or refer to matrix arguments, resulting in a shifted interpretation, shown in (5).

Magahi (Alok and Baker 2018)

(5) *Santeeaa Banteeaa-ke kah-kai [ki ham toraa dekhl-i ha-l].*
Santee Bantee-DAT told-3.NH.S that I you.ACC saw-1.S be-PF
'Santee told Bantee that I (=Santee or =speaker) saw you (=Bantee or =addressee).'

What is interesting is that in Magahi not only personal pronouns but also allocutive markers can shift. Beyond the reported speech construction, allocutive markers (agreement) can optionally be used in a root clause and express the honorific status of the addressee from the speaker's point of view in three degrees: non-honorific (speaker's peer), honorific, and high honorific.

In reported speech, allocutive markers can be optionally used in an embedded clause and indicate the status of the addressee from the current speaker's perspective (unshifted) or the status of the addressee from the reported speaker's point of view (shifted) in the same three degrees (non-honorific, honorific, high honorific).

What is crucial here is that if the allocutive marker on the embedded verb refers to the addressee of the reported speaker—that is, has a shifted interpretation—then any personal pronouns in the embedded clause are also subject to obligatory shift.

At the heart of Alok and Baker's (2018) analysis is the theory of agreement in the finite clause developed by Baker (2008). In Baker's theory, agreement of first and second person differs in nature from agreement in other features and is a sort of operator–variable agreement.[5] He introduces special empty categories at the CP level, null arguments that designate the speaker (Sp) and addressee (Ad) of the sentence, which bind the first and second person pronouns, acting as operators. Baker proposes that personal pronouns receive their person features over the course of their derivation (an idea akin to Krazter's 2009 minimal pronoun approach). To be rendered fully fledged by person features, personal pronouns must participate in binding relationships with higher elements Sp and Ad that supply the whole package of person features to the bound personal pronoun.

For this reason, the allocutive markers in Magahi are treated as DPs that manifest the existence of Ad in the periphery of any finite clause. Being DPs, they bear all features that other DPs have in Magahi and are able to bind other referentially dependent DPs in their domain. Since allocutive makers bear features associated with the person that the sentence is addressed to, they bind second person pronouns in their domain. Although there are not any first person markers that would allow one to ascertain the covert Sp(eaker) in Magahi, Alok and Baker assume that there is another DP in the periphery of the clause that identifies the covert Speaker. In the same way that Ad binds the second person pronoun in its domain, Sp binds the first person pronoun.

Since in the reported speech construction the embedded clause is also finite, it also has Sp and Ad in its periphery. Whether an embedded pronoun has a shifted or unshifted interpretation depends on what its binder is. If the first pronoun is bound by the covert Sp of the embedded clause, the Sp is controlled by the subject of the main clause (the reported speaker) resulting in the embedded first person pronoun having a shifted interpretation, as presented schematically in (6):

(6) John_i said [SP_i that [I_i would come]]

control binding

Otherwise, the first person pronoun is bound by the Sp element of the main clause and so refers to the current speaker.

In the same way, if the second person pronoun in the embedded clause of the reported speech is bound by the Ad element of the embedded clause, the latter is controlled by the matrix goal argument (the addressee of the reported speaker), which yields the shifted interpretation of the second person pronoun, shown in (7):

[5] Baker (2008) considers that agreement in number–gender features is characterized as a relationship between a functional head and agreed-with NP. By contrast, the person agreement is a relationship between a variable and the operator that binds it.

(7) John told Ann$_i$ [Ad$_i$ that [you$_i$ passed the exam]]

control binding

By contrast, if the embedded second person pronoun is controlled by the highest Ad (of the main clause), there is no shifting and the pronoun refers to the addressee of the current speaker.

Alok and Baker's (2018) analysis in terms of binding makes several strong predictions. First, since pronouns receive their features by being bound by Sp and Ad, the features on the pronoun and the features of the corresponding verbal marker must be the same, because of their strict syntactic feature sharing (based on Baker's 2008 theory). Any mismatch in features between them is impossible. A mismatch is only valid if pronouns and allocutive markers have the ability to refer to the addressee independently, but this is not the case. Second, since Ad is controlled by the goal argument of the matrix clause, the covert DP has the same features as the goal of the matrix clause. Alok and Baker compare the Ad element with PRO in sentences like *Mary told John* [*PRO to buy milk*] and consider the Ad to be a kind of null pronominal at the edge of a particular type of clause. Third, the analysis also predicts that the argument controlling Sp is a syntactic subject nearest to Sp and that a mismatch between the grammatical subject and the semantic notion of speaker (author) of the propositional content is also impossible (for the diagnostic contexts, see Sect. 9).

Although the control analysis itself does not predict the "shift-together" phenomenon, Alok and Baker assume that "shift-together" is the result of the simultaneous control of Ad and Sp by arguments from the same syntactic level. Ad of the embedded clause is controlled by the matrix goal if and only if Sp in the embedded clause is controlled by the matrix subject.[6]

[6]For a more accurate explanation of the "shift-together" phenomenon, Alok (2020) further develops the proposal by Alok and Baker (2018). In his analysis, the embedded Sp and Ad are still bound by the matrix subject and the object, but the binding relationship is mediated by the attitude verb and the embedded Fin. Therefore, the shift of embedded pronouns depends on the feature specification of the attitude verb. A verb like 'tell' has both the subject and object arguments, thereby introducing two λ-abstractors with first person [Sp] and second person [Ad] features. When 'tell' binds the embedded Fin, the first person abstractor binds the embedded Sp and the second person abstractor binds the embedded Ad. As a result, both embedded first and second person pronouns obey "shift-together." By contrast, a matrix verb like 'think' only has the subject feature and only introduces the [Sp], because it does not have an object argument. When 'think' binds the embedded Fin, its subject feature binds the embedded Sp, and therefore the embedded first person pronoun shifts. However, in the sentence with the verb 'think' the presence of the second person pronoun or Ad-agreement blocks the shifted interpretation of the first person pronoun. As assumed, this is due to the fact that the verb 'think' has no second person coordinate, so the second person embedded pronoun and the Ad Fin get reference from the utterance context. Then, based on von Stechow (2003), Alok proposes that the attitude verb binds the embedded Fin, all features associated with the embedded Fin are deleted, and consequently, the Ad of Fin is deleted along with the Sp of Fin. In this way, both first and second person pronouns receive the same unshifted interpretation (Alok 2020: 166–168). Alok discusses one example of a violation of "shift-together" in Magahi. The mixed reading of embedded pronouns is possible in the case when the embedded clause introduced by a verb like 'think' has a first person null subject *pro* and the overt second person pronoun. In this case, the *pro* refers to the matrix argument, but the overt second person pronoun refers to the current addressee. Alok assumes that the *pro* and the overt pronoun have different biding abilities: *pro* is directly bound by the attitude verb, while overt pronouns are always bound by Sp/Ad elements.

Baker (2008: 149–155) applies his analysis to the data from Amharic, Zazaki, and Slave (Schlenker 1999, 2003; Anand and Nevins 2004; see Sect. 2.1) and shows that it can successfully explain the indexical shift in these languages.

The theory of indexical shift receives a new twist in its development by drawing on new facts from languages in which pronouns and verbal inflections in embedded clauses demonstrate mismatches in their features.

2.3 Feature mismatches in the embedded report

Different approaches propose different explanations for feature mismatches between pronouns and verbal exponents in embedded reports.

Within the shifty operator-based account, Shklovsky and Sudo (2014) explain such mismatches in Uyghur based on a geometrical representation of clause domain. As shown in (4a), the nominative first person subject obligatorily triggers first person agreement. However, in (4b), the accusative first person subject does not have the corresponding agreement, and the embedded verb has the third person inflection, thus displaying a mismatch in features with the subject. The authors assume that in (4b), the accusative subject is not a proleptic argument of the embedded verb and therefore does not shift; however, the third person verbal agreement, being under the scope of the shifting operator, does shift, resulting in a third person interpretation.

In Uyghur, feature mismatches between embedded arguments and verbal agreement are also possible when both refer to matrix arguments. Example (8) shows that an accusative first person subject triggers second person agreement. Despite this mismatch, the two elements have the same interpretation, referring to the addressee of the reported speaker.[7]

Uyghur (Shklovsky and Sudo 2014: 399)

(8) *Ahmet [meni nan ye-isen] di-di.*
Ahmet [1SG.ACC bread eat-IPF.2] say-PST.3
'Ahmet said to me$_i$: "You$_i$ eat bread." '

Although the structural analysis proposed by Shklovsky and Sudo (2014) is able to explain the appearance of mismatches between subjects and agreement markers when they refer to the current participants, as in (4b), it seems unable to fully explain the situation in (8), where the accusative first person subject refers to the addressee of the reported speaker, receiving the same interpretation as the second person verbal agreement. The mechanism by which the referential identity between the pronoun and the verbal inflection is established is not clear from the structural analysis.

[7] Unfortunately, Shklovsky and Sudo (2014) do not exhibit an example where the accusative second person subject is doubled with the first person verbal marker like in schematic example (i). If such a sentence is possible, the subject should refer to the reported speaker. It seems that, logically, an example like (i) should be possible, since a symmetrical mismatch between the accusative first person subject doubled with the second person verbal marker is possible (example (8)); see also (10) from Aqusha Dargwa and Sect. 8.2 for a similar example in Tabasaran.

(i) 'You$_i$ say [that you$_i$(Acc) left-1Sg$_i$].'

One of the first binding analyses for mismatches between pronominals and verbal markers in the embedded report was proposed for Tamil (Dravidian) by Sundaresan (2012). In that language, in indirect speech, the embedded subject that refers to the reported speaker is expressed by the third person anaphor *ta(a)n*. The embedded verb can have either third person or first person agreement. In the latter case, the logophoric pronoun and the first person inflection referring together to the reported speaker do not specify for the same person features, as shown in (9).

Tamil (Sundaresan 2012: 54–55)

(9) *Raman*$_{i}$ *[CP taan*$_{i/*k}$ *jey-pp-een-nnu*$_{i}$*]* *so-nn-aan.*
Raman[NOM.SG] ANAF[NOM.SG] win-FUT-1SG-COMP say-PST-3MSG
'Raman$_{i}$ said [CP that he$_{i/*k}$ would win].'

Sundaresan (2012) first examines the third person agreement on the embedded verb and shows that agreement reflects the person–gender–number features of the matrix subject, the antecedent of *ta(a)n*. Referring to Kratzer (2009), she assumes that the anaphor *ta(a)n* itself has either defective features or no *phi*-features at all. Therefore, it is not the anaphor that triggers verbal agreement, but rather the verbal marker has another source. She introduces a null pronominal operator, a DP whose presence depends on the selection properties of a superordinate attitude predicate. The relationship between the matrix subject and the pronominal operator (DP) is predominantly conceptual and instantiates a type of non-obligatory control. The anaphor *ta(a)n* and the operator are characterized as having a Dep(endent) feature. The pronominal operator binds the anaphor, and two elements converge in their reference. In the case of first person agreement, the pronominal operator is shifted. It is interpreted as first person with respect to the context introduced by the speech predicate. Since *taa*(*n*) is feature-defective, the probe on T upwardly agrees with the null element, resulting in the first person agreement. Binding relationships between the silent DP, the anaphor, and the agreement with the silent DP ensure that *taa(n)* and the first person verbal inflection denote the same entity.

Messick (2023) revises Sundaresan's (2012) analysis of monstrous agreement in Tamil. He examines a similar agreement pattern in reported speech in Telugu (Dravidian), where just as in Tamil, in the embedded report the third person pronoun co-occurs with first person agreement on the verb. In contrast to Sundaresan's (2012, 2018) analysis, Messick proposes that it is the third person anaphor itself which controls the first person agreement. Based on Schlenker (2003), he assumes that an embedded pronoun, referring to an attitude holder, has complex features. It is simultaneously first person, bearing the features [+Author; −C(urrent speech)], and third person, specified for the features [−Author; +C(urrent speech)]. In contrast to the embedded pronoun, the agreement morphology is unspecified for [±C]. Therefore, the feature bundled with [+C]—that is, [−Author]—is deleted and the first person agreement morpheme is inserted.[8]

[8]For indexical shift within the binding-based approaches, the mechanism of deletion is discussed by von Stechow (2003). The main idea is that if an argument is semantically bound, it may lose its features. In this approach, semantic binding requires agreement in *phi*-features. In Messick's (2023) analysis, agreement becomes established via the deletion of features for which the verb is not specified (see also footnote 4, where the deletion mechanism is disccused in Alok's 2020 approach).

Based on Culy (1994) and Coppock and Wechsler (2018), Deal (2019) examines reported speech in Donno Sɔ (Dogon) and Kathmandu Newari (Tibeto-Burman) and shows that in these languages, in simple declarative clauses a first person subject triggers first person agreement. However, in reported speech the same verbal inflection appears with an anaphoric pronoun and cannot appear with an embedded first person pronoun, unlike in a root declarative clause. Deal (2017, 2018) proposes that the logophoric operator in Donno Sɔ has the special property of licensing first person agreement and calls the effect *agreement reprogramming*. In Deal (2019), she proposes that a subject can bear a meaningful feature *author*, which manifests itself on the verb as first person agreement. In matrix declarative clauses, since the subject has this feature, the verb obligatorily bears first person agreement. In the embedded reported speech, embedded anaphoric pronouns have the feature *author*, resulting in the appearance of index-sensitive verbal inflection. Thus, despite the morphologically different feature specification, the two elements coincide in the feature *author*.

Recently, Ganenkov (to appear) has proposed a binding-based analysis for reported speech in Aqusha Dargwa (Nakh-Daghestanian). As in other languages cited above, in Aqusha, embedded personal pronouns and corresponding verbal agreement can shift in reported speech. Additionally, Aqusha demonstrates the mismatch discussed above, where the third person anaphor can trigger first person agreement. Finally, in Aqusha, a second person embedded pronoun can co-occur with the first person verbal marker, as shown in (10).

Aqusha Dargwa (Ganenkov, to appear)

(10) *ħad$_i$* *hanbik-ib* *[ħu$_i$* *q'an i-ub-**ra$_i$***
you.SG(DAT) seem:PF-AOR you.SG(ABS) late (M.SG)become:PF-AOR-**1**
ili].
COMP
'You (masc.) thought that you were late."

Two types of agreement are distinguished in the analysis: the type that is sensitive to person features of arguments, and the type that is sensitive to logophoric features. The latter is involved in indexical shift in reported speech: only pronouns that denote the participants of the matrix clause trigger logophoric agreement. The complementizer *ili* acts as a log operator that represents the context of the speech event. It binds personal pronouns defining their context of interpretation (with reference to Schlenker 2003) and supplying them the feature [Log] via binding. In this case, the pronouns obligatorily trigger first or second person agreement correspondingly and both elements refer to matrix arguments.

An embedded report that contains mismatches is derived differently. In an example like (10), the second person pronoun does not shift, since it refers to the addressee of the current speaker. However, the verb bears first person agreement. In this case, the logophoric complementizer does not participate, since the embedded pronoun is indexical rather than shifted. The next assumption is that the complementizer introduces a null argument specified for the feature [attitude holder], which binds the second person pronoun so that the latter receives the [attitude holder] feature and therefore triggers first person agreement, however, superficially, it looks like a feature mismatch between two elements.

In sum, in the current theory of indexical shift, two types of analysis coexist: approaches with shifty operators and binding-based approaches. The latter are presented in at least two versions depending on where the logophoric operator is introduced. The more common assumption is that the log operator is initiated by the syntax of the reported speech construction and introduced by attitude verbs (Sundaresan 2012, 2018; Deal 2019; Messick 2023; Ganenkov to appear) or an attitude verb itself binds personal pronouns (Schlenker 1999, 2003; Ganenkov to appear). By contrast, Alok and Baker (2018) and Alok (2020) propose that operators responsible for indexical shift in reported speech exist in any root finite clause. Additionally, binding approaches greatly differ in how they treat relationships between a silent log operator, embedded pronouns, and verbal inflections. In Sundaresan (2012, 2018), T agrees with the log operator, yielding the mismatch between *phi*-features of the embedded anaphor and verbal agreement. Roughly, in Deal (2019), Messick (2023), and Ganenkov (to appear), embedded pronouns, independently of their morphological features, receive an additional feature such as [author] or [attitude holder] and therefore trigger first person inflection on the verb, resulting in their feature mismatches. Alok and Baker's (2018) and Alok's (2020) binding theory does not predict any mismatches between pronouns and verbal exponents; they must coincide in their features.

The rest of this paper documents the reported speech construction in Tabasaran.[9] For indexical shift there, I propose a binding-based analysis, going back to original idea of Alok and Baker (2018) but with a revision of their theory. Section 3 describes the main properties of Tabasaran clitics in root clauses. I lay out my main assumptions about the structure of simple clauses and the position of clitic in them. I outline the main characteristics of Tabasaran clitics, which are not explained by the existing approaches, and present my core proposal that clitics and pronouns are separate DPs, which differ in their features. The facts concerning reported speech bring their properties to light, and the rest of the discussion provides arguments for my claim. In Sect. 4 I focus on reported speech sentences and show that indexical shift in reported speech depends on the presence of clitics. The absence of "shift-together" and blocking effects in Džuli make both an analysis with a context operator and a binding-based analysis with a binder operator inappropriate for Tabasaran. Instead of this, I propose that in Tabasaran clitics trigger the shift of personal pronouns entering in the binding relationship with them. Section 5 demonstrates the behavior of pronouns and clitics in interrogative sentences and shows that the same binding mechanism is present in any root clause, which generally confirms the intuition of Baker (2008), Alok and Baker (2018), and Alok (2020). However, in contrast to their approach, I show that both pronouns and clitics have independent referential ability. Pronouns specified for person features are real indexicals. Clitics specified for person features independently of pronouns additionally have the Log(ophoric) feature and therefore refer only to logophoric participants. Bound by the corresponding clitics, pronouns also receive the Log feature via binding. Section 6 takes a closer look at personal pronouns and logophoricity and integrates the Tabasaran data into the theoretical

[9] Indexical shift is attested in a number of Daghestanian languages: Chirag Dargwa (Ganenkov 2016), Aqusha Dargwa (Ganenkov to appear), Archi (Daniel 2015), Hinuq (Forker 2013: 662–664), Sanzhi Dargwa (Forker 2019), Tsez (Polinsky 2015, 2016).

discussion. Nominalizations give another piece of evidence that personal pronouns in Tabasaran are not minimal and that they have their own referential content. Section 7 shows this mechanism of binding for reported speech sentences in more detail. Section 8 demonstrates possible feature mismatches between personal pronouns, the reflexive, and clitics in Džuli and discusses that binding relationships are based not on the morphological *phi*-feature interaction between the items but rather on the interaction of their referential content generated by the features. Clitics are sensitive to items with the referential content [Logophoric Participant] and [Person Participant]. Finally, Sect. 9 discusses the relationship between matrix arguments and clitics.

3 Clitics in affirmative clauses

This section describes the behavior of clitics in a root affirmative sentence in order to subsequently show the difference in their behavior in indirect speech.

3.1 The structural position of clitics

First of all, I will briefly sketch the structure of a simple clause in Tabasaran and the clitic position there. I mostly depend on the analysis of the transitive clause, presented in Bogomolova (2022), based on the data from another Tabasaran dialect, Mežgül.

For a number of Daghestanian languages it has already been shown that they are extremely different from nominative–accusative languages, where the subject case assignment is associated with TP. Tsez, Archi, and Lak (all Daghestanian) demonstrate that case licensing occurs at an earlier stage of clause derivation (Polinsky and Potsdam 2001; Polinsky 2003, 2015, 2016; Gagliardi et al. 2014; Polinsky et al. 2017). The same has been recently shown for one of Dargwa languages, namely Chirag (Ganenkov 2021). This generalization is based on the behavior of nominalizations in these languages, clauses of a smaller size, lacking aspect, tense, and mood projections, which, despite their little content, display the same ergative–absolutive case marking as in a finite transitive clause. Mežgül Tabasaran is no exception here. In Mežgül, a nominalized verb morphologically has the suffix *-ub*, which attaches directly to the verbal root. Syntactically, the nominalization exhibits properties of a small structure. However, it has arguments in the same cases as in a finite clause. Example (11) shows a nominalization with the transitive verb *u'‹CL›χ-* 'save,' where the subject bears ergative case, while the direct object is in the absolutive.

Mežgül Tabasaran (Bogomolova 2022)

(11) *rasul-i* *maˁhaˁmad* *uˁ‹r›χ-ub*
Rasul-ERG Mahamad(ABS) ‹H.SG›save-MASD
'Rasul's saving of Mahamad'

Following the common derivational model proposed for the Daghestanian languages, cited above, I assume that in Tabasaran, arguments receive their case assignment in an early stage, within *v*P.

For the next stage of derivation, again based on the papers mentioned above, I make the conventional assumption that the subject moves to Spec,TP, although it

is apparently not case-feature checking requirements that cause this movement in the languages.[10] In addition to this, Tabasaran shows another peculiarity in that in a finite clause the verb does not display its own *phi*-agreement with the subject. Tabasaran therefore differs from those relative languages that have tense–person morphology.[11]

Although person clitics follow temporal markers in any finite verbal form, they do not associate with T. One piece of evidence that person clitics are not directly tied to TP is that they can be easily separated from tense inflections by other morphological elements, such as by the question marker or particles. The first option is shown in (12) where the question marker *-n* is inserted between the past tense inflection *ji-* and the second person clitic *=va* (the consonant *v* is dropped; for more discussion of interrogative sentences see Sect. 5).

(12) *ivu* *rasul* *d-is-nu-ji-n=a?*
you(SG) Rasul(ABS) H.SG-catch-PF-PST-Q=2SG
'Did you pick up Rasul?'

Assuming the Mirror Principle (Baker 1985), the right-peripheral location of the clitic in a head-final language indicates that it is associated with one of the highest functional heads. In Sect. 6, I identify it as the Log(ophoric) head projected above TP, which hosts clitics.

3.2 Core properties of clitics in an affirmative clause

Let us take a closer look at morphosyntactic behavior of clitics. Clitics are derived from personal pronouns and outwardly resemble them. Table 1 presents the paradigm of personal pronouns in Džuli and corresponding clitics in the absolutive/ergative case. Unlike nouns, neither pronouns nor clitics distinguish between the two cases.

At first glance, the behavior of clitics in a root clause is extremely different from that in reported speech sentences. Both the first and the second person subjects are obligatorily doubled by the corresponding clitic on the verb.[12] The examples in (13) show intransitive and transitive sentences with the first person subject *izu* 'I.' In both cases, the verbs *aˁ‹CL›G-* 'go' (13a) and *ip'-* 'do' (13b) bear the 1.SG clitic *=za*; verbal forms without it are ungrammatical, as shown by an asterisk.

(13) a. *izu* *derbent.di-s* *aˁG-id=za* / **aˁG-idi.*
I Derbent-DAT (H.SG)go-FUT=1SG (H.SG)go-FUT
'I will go to Derbent.'

b. *izu* *rasul.di-s* *kümek ip'-ud=za* / **ip'-uda.*
I Rasul-DAT help do-PRS=1SG do-PRS
'I am helping Rasul.' (lit. 'I am doing a help to Rasul.')

[10] See, for instance, discussions in (Zeijlstra 2012; Bjorkman and Zeijlstra 2019; and references therein) about the relationship between T and move in the current theory of agreement.

[11] For instance, in Dargwa languages person features clearly reside on T; see Ganenkov (2021), where it is shown for Chirag Dargwa, while in Tabasaran they are apparently encoded higher.

[12] In their grammatical sketch of Tabasaran, Kibrik and Seleznev (1982) treat the subject-verbal relationships as a type of agreement, obviously first of all taking into account the obligatory presence of verbal markers with first or second person subjects.

Table 1 Personal pronouns and person clitics in absolutive/ergative case in Džuli

	PRONOUNS	CLITICS
1SG	izu	=za
2SG	ivu	=va
1PL:EXCL	ixu	=xa
1PL:INCL	iču	=ča
2PL	iču	=ča

Examples (14) demonstrate sentences with the same verbs *aˤ‹CL›G-* 'go' (14a) and *ip'-* 'do' (14b), but with the second person subject *ivu* 'you (SG).' The verbs obligatorily bear the 2.SG clitic *=va*. If the clitic is omitted, the sentences are not felicitous, again shown by an asterisk.

(14) a. *ivu derbent.di-s aˤG-id=va / *aˤG-idi.*
you(SG) Derbent-DAT (H.SG)go-FUT=2SG (H.SG)go-FUT
'You will go to Derbent.'

b. *ivu rasul.di-s kümek ip'-uda-rar=va / *ip'-uda-rar.*
you(SG) Rasul-DAT help do-PRS-NEG=2SG do-PRS-NEG
'You are not helping Rasul.'

In a simple clause, person non-subject arguments can also be optionally doubled with the corresponding person clitic. In the transitive clause in (15a), the direct object is the first person *izu* 'I,' while in (15b) the direct object is expressed by the second person pronoun *ivu* 'you(SG).' In both cases, the arguments can be optionally doubled with corresponding clitics on the verbs, *=za* in (15a) or *=va* in (15b).

(15) a. *rasul-di izu uˤ‹r›χ-nu / uˤ‹r›χ-nu=za.*
Rasul-ERG I ‹H.SG›save-AOR ‹H.SG›save-AOR=1SG
'Rasul saved me.'

b. *rasul-di ivu d-is-nu / d-is-nu=va.*
Rasul-ERG you(SG) H.SG-catch-AOR H.SG-catch-AOR=2SG
'Rasul caught you.'

Although in finite clauses verbal markers obligatorily co-occur with pronominal subjects in a way that resembles a type of agreement, they nevertheless exhibit behavior typical for clitics. In particular, they can form combinations and display several restrictions on them, similar to the Person Case Constraint phenomenon, attested on clitic clusters, for example, in some European languages. In (16) the verb *a‹CL›χ-* 'carry' obligatorily has the subject clitic, 1.SG *=za*. Alternatively, in this sentence the verb can also attach the object clitic, 2.SG *=va*, forming the cluster *=zu=va*.[13]

(16) *izu ivu derbent.di-s aχ-idi=za / aχ-idi=zu=va.*
I you(SG) Derbent-DAT (H.SG)carry-FUT=1SG (H.SG)carry-FUT=1SG=2SG
'I will take you to Derbent.'

[13] Absolutive/ergative clitics in final position have the vowel *-a*, which changes to *-u* if followed by another clitic.

However, the opposite combination, namely the 2.SG subject clitic with the 1.SG object clitic is systematically blocked, shown in (17) by an asterisk.

(17) *ivu izu derbent.di-s aχ-nu-dar=va /*
you(SG) I Derbent-DAT (H.SG)carry-AOR-NEG=2SG
**aχ-nu-dar=vu=za.*
(H.SG)carry-AOR-NEG=2SG=1SG
'You did not take me to Derbent.'

3.3 Modern approaches to clitic doubling and clitics in Tabasaran

Before continuing with the presentation of facts and the analysis of indirect speech, I very briefly review the main approaches to clitic doubling. This is far from an exhaustive overview, but it can help highlight characteristic properties of clitics in Tabasaran and show differences with other languages with respect to this familiar phenomenon.

Most current literature applies the movement analysis to clitic doubling (Uriagereka 1995; Anagnostopoulou 2006; Arregi and Nevins 2008; Nevins 2011; Harizanov 2014; among many others; see Kramer 2014 for an overview). At least two types of movement are discussed. The first one assumes that, roughly speaking, the clitic and its associate start out as a single big constituent, where the clitic is a D category that moves from within the DP to a verbal functional head. In some sense, the clitic is similar to a definite determiner (see Kramer 2014 for more discussion). This assumption cannot easily be applied to the Tabasaran data, since we deal with the clitics of the first and second person here and not with the third person.

The second option is that clitic doubling is a result of the movement of the entire DP, where both the lower and higher copies are pronounced. This type of movement has been compared with object shift, and for some researchers it is even identical to it. Non-subject clitics and the absence of object shift in Tabasaran, along with other issues relevant to the topic, are discussed for Mežgül Tabasaran in Bogomolova (2022, Sect. 7). Moreover, Tabasaran is very different from the languages with clitic doubling, since first of all, it has obligatory subject clitics. Modern theories on clitic doubling do not cover the case where both subject and non-subject arguments can be doubled simultaneously. This is, however, a core characteristic of Tabasaran clitics. Furthermore, Tabasaran shows additional conclusive evidence that a clitic and its associate cannot be treated as an outcome of a movement. Regardless of what type of movement is assumed for clitic doubling, the movement is triggered by the agreement mechanism in these approaches. As a result, all *phi*-features of clitics and their associates always match. However, I will show that in Tabasaran, clitics have their own *phi*-features (Sect. 5), which may even differ from features of corresponding full DPs (Sect. 8). The reported speech construction is crucial here and reveals the independent clitic behavior from their associate.

The alternative to the movement analysis is a base-generated approach. According to it, clitics are derived in their surface position (Borer 1984; Suñer 1988; Sportiche 1996 for the earliest discussion). However, within this approach clitics are again treated as non-canonical agreement markers, bearing the same features as their full counterparts.

Recently, in their analysis of object markers in Amharic, Baker and Kramer (2018) have proposed a new modification to the theory. With some caution, they assume that

in Amharic object markers are also base-generated (however, see Kramer 2014 for a movement analysis applied to the same data). They assume that clitics are independent DPs, interpreted as pronouns and distinct from doubled DPs. Along with *phi*-feature matching between them, object markers in Amharic enter into relationships of referential dependence with their associate.

Although Tabasaran clitics are again very different from the Amharic object markers and do not fit well into the analysis by the authors, some results of their study partly coincide with my conclusions regarding the Tabasaran data.

To account for clitics in Tabasaran, I propose that: i) clitics are base-generated in the periphery of a finite clause; and ii) they are independent pronominal elements, bearing their *phi*-features themselves. Reported speech reveals that they have an additional logophoric feature; iii) clitics and full pronouns are in referential dependent relationships and, as I assume they enter binding relationships,[14] where the pronoun that is bound by the corresponding clitic also receives the logophoric feature, the result is that both refer to the same logophoric participant. Reported speech exposes the original nature of clitics and exhibits a whole set of their properties, which are not visible in a root clause.

4 Clitics in reported speech

This section takes a closer look at reported speech in Tabasaran and at clitic behavior in that context.

4.1 Clitics and shifted interpretations of arguments

In Tabasaran, besides the verb *p-* 'say/tell' (see example (1a) above), different speech verbs such as *ult'u‹CL›ĉ:-* 'boast,' *nüq'aˤn ap'-* 'swear' (lit. 'swear do'), *kčul ap'-* 'tell lies' (lit. 'falsehood do'), *č'ir ap'-* 'cry' (lit. 'cry do'), and *žavav tuv-* 'answer' (lit. 'answer give'), several mental verbs such as *fikir ap'-* 'think' (lit. 'thought do'), *quʁ-* 'believe,' and the experiential verb *gič'-* 'fear' also allow for indexical shift. For instance, example (18a) illustrates a sentence parallel to (1) but with the matrix verb *gič'-* 'fear.' The dependent clause demonstrates the same properties as in (1): the first person subject *izu* 'I' doubled with the clitic *=za* on the embedded verb *aˤ‹CL›G-* 'go' has a shifted interpretation, referring to the reported speaker 'father.' Other examples illustrate a similar indexical shift of the first person pronouns *izu* 'I' doubled by the 1.SG clitic *=za* but under different matrix verbs: 'tell lies' in (18b), 'boast' in (18c), and 'believe' in (18d).

(18) a. *gagaj.i-s* *[izu$_i$* *derbent.di-s* *aˤG-id=za$_i$*
father-DAT I Derbent-DAT (H.SG)go-FUT=1SG
k'udi] *gič'-uda.*
COMP fear-PRS
1. 'The father$_i$ is afraid that he$_i$ will go to Derbent.' (shifted)
2. *'The father is afraid that I would go to Derbent.' (unshifted)

[14]This assumption contrasts with what Baker and Kramer (2018) propose for Amharic. For them, clitics and full DPs are not in binding relationships, but rather in coreferential anaphoric.

b. *rasul-di*$_i$ *[izu*$_i$ *maskva.ji-s uš-nu=za*$_i$ *k'udi]*
Rasul-ERG I Moscow-DAT (H.SG)go-AOR=1SG COMP
kč'ul-ar ip'-uda.
falsehood-PL do-PRS
1. 'Rasul$_i$ is lying that he$_i$ went to Moscow.'
2. *'Rasul is lying that I went to Moscow.'

c. *rasul-di*$_i$ *[izu*$_i$ *baha-ri mašin Gara‹v›G-nu=za*$_i$
Rasul-ERG I expensive car(ABS) ‹N.SG› take-AOR=1SG
k'udi] ilt'irčːv-uda.
COMP boast-PRS
1. 'Rasul$_i$ boasts that he$_i$ bought an expensive car.'
2. *'Rasul boasts that I bought an expensive car.'

d. *rasul*$_i$ *[izu*$_i$ *sapu-r-di ǯa‹r›G-nu*
Rasul(ABS) I first-H.SG-ADV ‹H.SG›run-PFCONV
*qu‹r›G-i=*za$_i$ *k'udi] quʁ-udu.*
‹H.SG›reach-FUT=1SG COMP believe-HAB
1. 'Rasul believes that he will come in first.' (in the race)
2. *'Rasul believes that I will come in first.'

Let me first discuss why this type of sentence does not simply employ direct quotation. Tabasaran has obvious evidence that this is not the case, since in indirect speech we observe syntactic facts prohibited in root affirmative clauses. If these sentences were a case of quotation, they would have the same syntax as simple clauses, but this does not line up with the facts. As we saw above in (13) and (14), in affirmative clauses any pronominal subject is obligatorily doubled with the corresponding clitic. However, in reported speech, a pronominal subject may not be doubled with a clitic, as shown in (2) above for the first person pronoun *izu* 'I.' Examples (19a–19b) demonstrate the same difference with the second person pronoun *ivu* 'you(SG).' In (19a), the verb *aˁ‹CL›G-* 'go' bears the 2.SG clitic *=va*, and the pronoun *ivu* 'you(SG)' receives a shifted interpretation, referring to the addressee of the reported speaker, that is, *Rasul*. However, in example (19b), the embedded verb *aˁ‹CL›G-* 'go' does not bear the clitic. In contrast to a similar root clause (compare with example (14a)), the sentence in (19b) is felicitous. The difference between (19a) and (19b) is that in (19b) the second person pronoun *ivu* 'you' does not have a shifted interpretation and refers to the addressee of the current speaker.

(19) a. *gagaj-i rasul.di-s*$_i$ *[ivu*$_i$ *derbent.di-s aˁG-id=va*$_i$
father-ERG Rasul-DAT you(SG) Derbent-DAT (H.SG)go-FUT=2SG
k'udi] p-nu.
COMP say-AOR
1. 'The father told Rasul$_i$ that he$_i$ would go to Derbent.' (shifted)
2. *'The father told Rasul that you would go to Derbent.' (*unshifted)

b. *gagaj-i rasul.di-s*$_i$ *[ivu*$_k$ *derbent.di-s aˁG-idi*
father-ERG Rasul-DAT you(SG) Derbent-DAT (H.SG)go-FUT
k'udi] p-nu.
COMP say-AOR

1. 'The father told Rasul$_i$ that you would go to Derbent.' (unshifted)
2. *'The father told Rasul$_i$ that he$_i$ would go to Derbent.' (*shifted)

Examples (1a), (2), and (19) demonstrate the behavior of pronominal subjects in reported speech. Additionally, in the reported speech, non-subject arguments having a shifted interpretation must also be obligatorily doubled by clitics. Again, this contrasts with the situation in root clauses, where the doubling of the same arguments is always optional (see the examples in (15)). The examples (20) show the contrast. In (20a), the first person pronoun *izu* 'I' in the embedded clause is the direct object. It is doubled on the verb *CL-is-* 'catch' with the 1.SG clitic *=za*, referring to the reported speaker *gagaj* 'father.' The doubling here is required. If the first person direct object *izu* 'I' is not doubled with the clitic as in (20b), it has another interpretation and refers to the current speaker.

(20) a. *gagaj-i$_i$ [rasul-di izu$_i$ d-is-id=za$_i$ k'udi] p-nu.*
father-ERG Rasul-ERG I H.SG-catch-FUT=1SG COMP say-AOR
1. 'The father$_i$ said that Rasul would pick him$_i$ up.' (shifted)
2. *'The father said that Rasul would pick me up.' (unshifted)

b. *gagaj-i$_i$ [rasul-di izu$_k$ d-is-idi k'udi] p-nu.*
father-ERG Rasul-ERG I H.SG-catch-FUT COMP say-AOR
1. 'The father$_i$ said that Rasul would pick me up.' (unshifted)
2. *'The father$_i$ said that Rasul would pick him$_i$ up.' (shifted)

Examples (21a–21b) show the same pattern for the second person non-subject argument. In (21a) the second person direct object *ivu* 'you(SG)' is also obligatorily doubled with the 2.SG clitic *=va* on the verb *CL-is-* 'catch,' referring to the addressee of the reported speaker. This is the opposite of (21b), where the same argument that is not doubled with the clitic indicates the addressee of the current speaker.

(21) a. *gagaj-i rasil.di-s$_i$ [dadaj-i ivu$_i$ d-isi-id=va$_i$*
father-ERG Rasul-DAT mother-ERG you(SG) H.SG-catch-FUT=2SG
k'udi] p-nu.
COMP say-AOR
1. 'The father told Rasul$_i$ that the mother would pick him$_i$ up.' (shifted)
2. *'The father told Rasul that the mother would pick you up.' (unshifted)

b. *gagaj-i rasul.di-s$_i$ [dadaj-i ivu$_k$ d-is-idi*
father-ERG Rasul-DAT mother-ERG you(SG) H.SG-catch-FUT
k'udi] p-nu.
COMP say-AOR
1. 'The father told Rasul$_i$ that the mother would pick you$_k$ up.' (unshifted)
2. *'The father told Rasul$_i$ that the mother would pick him$_i$ up.' (shifted)

As we see, clitics behave differently in a root affirmative clause, where they are required for pronominal subjects and their absence leads to ungrammaticality, as compared to in reported speech, where the absence of clitics under the same conditions does not yield infelicitous sentences but affects the interpretation of embedded personal pronouns. The rules for doubling with non-subject arguments are also different

in simple clauses and reported speech. Contrary to an affirmative sentence, in an embedded report, clitics are obligatorily even for non-subject arguments if the latter have a shifted interpretation.

Thus, all these facts indicate that reported speech in Tabasaran is not a case of quotation (see also Appendix A.2 for standard tests of non-direct quotation).

With this in mind, let me briefly clarify how I treat verbal forms without a clitic in embedded clauses in reported speech as well as in a root clause. In examples (1a), (18), (19a), (20a), and (21a), with reported speech where personal pronouns are doubled with clitics, one can assume that it is the presence of a dedicated operator in the left periphery of the embedded clause that causes the shift with the personal pronouns as well as the shift of verbal inflections. Following this logic, in examples (2), (19b), (20b), and (21b), where the pronouns are not doubled with clitics, the verbal form can be interpreted as a shifted third person form. Such an analysis is proposed for Uyghur by Shklovsky and Sudo (2014), where in indirect speech, personal pronouns can trigger the form that is used with a third person argument instead of the corresponding verbal first or second person form. Similar mismatches are discussed by Messick (2023) for several languages.[15]

In Tabasaran, the verbal form without a clitic is indeed used with nouns and demonstrative pronouns, as shown in example (22a) for a root clause and in (22b) for indirect speech, where the demonstrative pronoun *dumu* indicates another participant distinct from *Rasul*.

(22) a. *dumu derbent.di-s a^{ʕ}G-idi*.
3.P(ABS) Derbent-DAT (H.SG)go-FUT
'He will go to Derbent.'

b. *rasul-di$_i$ [dumu$_k$ derbent.di-s a^{ʕ}G-idi k'udi] p-nu*.
Rasul-ERG 3.P(ABS) Derbent-DAT (H.SG)go-FUT COMP *say*-AOR
'Rasul$_i$ said that he$_k$ would go to Derbent.'

Below I show that a verbal form without a clitic is not a dedicated form for third person, but rather a bare form that does not contain person information and that can also be used not only with third person arguments but also with the first person pronoun in an interrogative clause (see Sect. 5). For this reason, in reported speech sentences I do not treat verbal forms without clitics like those in (2), (19b), (20b), (21b), and (22b) as shifted third person forms but instead consider them to be bare verbal forms unspecified for any person features.

The following section shows that Džuli does not demonstrate the "shift-together" phenomenon in reported speech and therefore presents an argument counter to the analysis with a context operator. Džuli does not display any blocking effect either, which makes it difficult to apply a binding-based analysis with a binder operator as proposed for the languages cited in Sect. 2.2.

[15] Messick (2023) discusses the cases of Golin (Papuan) and Mishar Tatar with references to Lounghnane (2005) and Podobryaev (2014), respectively, where the first person pronoun in an embedded report can trigger a zero marker treated as third person agreement. Based on these facts, Messick makes a typological generalization that in such cases embedded pronouns always express the [+C(urrent speech)] feature, while the agreement morphology represents the feature [−C], yielding the feature mismatches.

4.2 No "shift-together" or blocking effect in Džuli

Several facts in reported speech are used as diagnostics for either a shifty operator, which overrides context parameters, or the presence of a binder operator, which establishes binding relationships with an embedded argument.

As assumed, the phenomenon "shift-together," where all indexicals receive their interpretation from the same context, is a piece of evidence that the matrix verb introduces a context operator that is responsible for the shift of all indexicals. However, referring to Leslau (1995: 779), Schlenker (1999: 23) shows that in Amharic, non-"shift-together" is also possible and that two elements—the embedded first person pronoun and first person verbal agreement—can receive their interpretations from different contexts.[16]

Džuli also allows non-"shift-together" where two pronouns are interpreted differently in the embedded report. In (23a), the embedded subject *ivu* 'you(SG)' is not doubled with the corresponding clitic and so refers to the addressee of the current speaker. By contrast, the direct object *izu* 'I' is doubled with the 1.SG=*za* clitic on the verb *CL-is-* 'catch,' whereby the pronoun shifts and indicates the reported speaker *Rasul*. So, two pronouns—*ivu* 'you(SG)' and *izu* 'I'—in the same embedded clause receive different interpretations: unshifted and shifted, respectively. Similarly, in example (23b) in the embedded clause, the subject *izu* 'I' is not doubled with the corresponding clitic on the verb *CL-is-* 'catch' referring to the current speaker. By contrast, the direct object *ivu* 'you(SG)' doubled with the corresponding clitic of the 2.SG =*va* on the verb *CL-is-* 'catch,' refers to the addressee of the reported speaker *Mahamad* and does not indicate the current addressee. Again, two pronominal arguments in the same embedded clause receive their interpretation, unshifted and shifted, from different contexts.

(23) a. *rasul-di*$_i$ *maʕhaʕmad.ri-s* *[ivu*$_k$ *izu*$_i$ *d-is-id=za*$_i$
Rasul-ERG Mahamad-DAT you(SG) I H.SG-catch-FUT=1SG
k'udi] *p-nu*.
COMP say-AOR
'Rasul$_i$ told Mahamad that you would pick him$_i$ up.'

b. *rasul-di* *maʕhaʕmad.ri-s*$_i$ *[izu*$_k$ *ivu*$_i$ *d-is-id=va*$_i$
Rasul-ERG Mahamad-DAT I you(SG) H.SG-catch-FUT=2SG
k'udi] *p-nu*.
COMP say-AOR
'Rasul told Mahamad$_i$ that I would pick him$_i$ up.'

The introduction of a shifty operator overwriting context parameters is problematic in (23). If there were an operator responsible for indexical shift, all pronouns would

[16] Schlenker (1993) does not provide further analysis of such examples, merely mentioning them as a diagnostic for indirect quotation. Discussing the same examples, Deal (2019: 126–127) proposes that in Amharic the agreement morphology does not distinguish between indexiphors, which always function as logophors and refer to matrix arguments, and true indexicals, which refer to current discourse participants. According to her analysis, the verbal morphology in Amharic shows syncretism, collapsing into the same first person inflection.

have to receive the interpretation from the same context (see also Appendix A.3 for a brief discussion of temporal adverbs in embedded reports).

Another diagnostic is the *de re* blocking effect, which, as assumed, diagnoses the presence of an operator that binds embedded arguments, yielding their shifted interpretation (Anand 2006). Discussing "non-shift-together," Deal (2018: 82–83) describes the *de re* blocking effect as an impossibility for the first person subject to remain unshifted while the first person clausemate object shifts. Messick (2023) applies the diagnostics to Telugu and also concludes that the intervention is sensitive to c-command.

What is interesting is that in Džuli, two personal pronouns specified for the same features can refer to participants of different contexts. In example (24), the embedded first person subject *izu* 'I' refers to the current speaker, since the verb does not have the corresponding 1.SG clitic. However, the first person indirect object *izu-s* 'I-DAT' is doubled with the corresponding clitic *=jas* and therefore refers to the reported speaker, rather than to the current speaker. The result is that two first person pronouns have unshifted and shifted interpretations and refer to speakers from different contexts.

(24) *rasul-di*$_i$ *gagaj.i-s* *[izu*$_k$ *izu-s*$_i$ *kümek ap'-idi=ja-s*$_i$
Rasul-ERG father-DAT I I-DAT help do-FUT=1SG-DAT
k'udi] p-nu.
COMP say-AOR
'Rasul$_i$ told the father that I would help him$_i$.'

The same is possible with the second person pronouns. In example (25), the second person subject *ivu* 'you (SG)' refers to the addressee of the current speaker, since the verb *ap'-* 'do' does not bear the corresponding 2.SG clitic. By contrast, the second person indirect object *ivu-s* 'you(SG)-DAT' has a shifted interpretation, since the verb *ap'-* 'do' has the corresponding 2.SG clitic *=vu-s*.

(25) *gagaj-i* *rasul.di-s*$_i$ *[ivu*$_k$ *ivu-s*$_i$ *kümek ap'-id=vu-s*$_i$
father-ERG Rasul-DAT you(SG) you-DAT help do-FUT=2SG-DAT
k'udi] p-nu.
COMP say-AOR
'The father told Rasul$_i$ that you would help him$_i$.'

Thus, Džuli exhibits neither "shift-together" nor the blocking effect. Based on these facts, I claim that the clitics themselves trigger the shift of personal pronouns in the reported speech construction: whenever a pronoun is bound by a clitic, the former obligatorily shifts, referring to logophoric participants, that is, matrix arguments (see also Appendix A.4 for the interpretation embedded arguments in the case of their omission).

My next question is what the nature of the clitics is, whether they affect the interpretation of the personal pronouns. I turn back to root clauses, showing that the origins of the shift with the pronouns are in the syntax of simple clauses. This makes my proposal akin to the reductive approach of Alok and Baker (2018) and Alok (2020). However, in contrast to their theory, where the silent elements Sp and Ad and the personal pronouns they bind are essentially the same, I propose that in Tabasaran,

personal pronouns and clitics, which are also in binding relationships, differ in their referential properties, yielding many unusual effects in reported speech. The following section discusses the behavior of clitics in interrogative clauses and shows that the dissociation between clitics and pronouns is possible even in simple sentences.

5 The interrogative clause: Pronouns and clitics are different DPs

In Sect. 3, we saw that personal pronouns and clitics behave very differently in a root clause and reported speech. However, although the subject clitics mimic an obligatory agreement in an affirmative clause, the facts concerning interrogative sentences show that the same binding mechanism between personal pronouns and person clitics involved in a reported speech sentence is also operative in any root clause. An interrogative clause can be a connecting link between two different strategies in the behavior of clitics and personal pronouns in the affirmative clause and the reported speech construction.

In Tabasaran *yes/no* questions have a marker *-n* that is attached to the verbal form after tense inflections (see (12)). In contrast to an affirmative sentence, in any interrogative sentence the first person pronoun is never doubled on the verb with the corresponding first person clitic. Examples (26a–26b) illustrate this difference. (26a) shows the affirmative sentence with the verb *a‹CL›q-* 'fall down,' where the subject is the first person *izu* 'I,' the verb obligatorily bears the 1.SG clitic *=za* (like in (13a–13b)). The sentence without the clitic *=za* is not felicitous, as shown by an asterisk. By contrast, example (26b) demonstrates the interrogative sentence with the same verb *a‹CL›q-* 'fall down.' Unlike the affirmative clause, in (26b) the first person subject *izu* 'I' cannot be doubled with the 1.SG clitic *=za*; the sentence with the clitic is ungrammatical, again shown by an asterisk. (26c) demonstrates a *wh*-question with the subject *izu* 'I,' where doubling it with the first person clitic is also prohibited.[17] Examples (26d–26e) demonstrate that the same bare form without a clitic is used with the third person argument *Rasul* in both *yes/no* and *wh*-questions and in the affirmative sentence in (26f) (see also (22a)).

(26) *a.* *izu* *aq-nu=za* / **aq-nu*
I (H.SG)fall.down-AOR=1SG (H.SG)fall.down-AOR
'I fell down.'

b. *izu* *aq-nu-n?* / **aq-nu-n=za?*
I (H.SG)fall.down-AOR-Q (H.SG)fall.down-AOR-Q=1SG
'Did I fall down?'

c. *izu* *fele* *aq-nu?* / **aq-nu=za?*
I when (H.SG)fall.down-AOR (H.SG)fall.down-AOR=1SG
'When did I fall down?'

d. *Rasul* *aq-nu-n?*
Rasul(ABS) ‹H.SG›fall.down-AOR-Q
'Did Rasul fall down?'

[17] In Tabasaran *wh*-word questions do not require a special question marker, unlike *yes/no* questions.

e. *Rasul fele aq-nu?*
Rasul(ABS) when (H.SG)fall.down-AOR
'When did Rasul fall down?'
f. *Rasul aq-nu.*
Rasul(ABS) (H.SG)fall.down-AOR
'Rasul fell down.'

The following examples demonstrate the same strategy with non-subject arguments. In the affirmative sentence in (27a), the first person direct object *izu* 'I' can be optionally doubled with the 1.SG clitic *=za* on the verb *CL-is* 'catch,' as we discussed above (see also (15a)). However, in example (27b) in the interrogative sentence with the same verb *CL-is-* 'catch,' this option is prohibited and the sentence with the 1.SG clitic *=za* is ungrammatical.

(27) a. *rasul-di izu d-is-idi / d-is-id=za*
Rasul-ERG I H.SG-catch-FUT H.SG-catch-FUT=1SG
'Rasul will pick me up.'
b. *rasul-di izu d-is-idi-n? / *d-is-idi-n=za?*
Rasul-ERG I H.SG-catch-FUT-Q H.SG-catch-PRS-Q=1SG
'Will Rasul pick me up?'

The interrogative examples (26b–26c) and (27b) immediately show that the first person pronoun here behaves independently of the clitic, which contrasts with the affirmative clause, where the subject pronouns are obligatorily doubled with the corresponding clitics. What is even more interesting is that examples (26b–26c) and (27b) demonstrate a strong parallelism with the indirect speech constructions where personal pronouns can also behave independently of clitics. Example (28) again illustrates that the bare first person pronoun receives an indexical interpretation and does not refer to the logophoric speaker *gagaj* 'father.'

(28) *gagaj-i_i dadaj.i-s [izu_k aq-nu k'udi] p-nu.*
father-ERG mother-DAT I (H.SG)fall.down-AOR COMP say-AOR
'The father told the mother that I fell down.'

My first assumption is that personal pronouns and clitics are separate DPs. As we see, bare personal pronouns (without the corresponding clitic) have their own referential ability, do not depend on the presence of clitics, and behave as real indexicals. The reported speech sentences show that it is the clitics that change the interpretation of pronouns and make them to refer to matrix arguments of the reported clause. Let us assume that clitics themselves, being DPs independent of personal pronouns, have this ability to refer to logophoric participants (following papers on African languages discussing logophoricity: Hagège 1974; Clements 1975; Culy 1997; Huang 2000). Thus, my second assumption is that personal pronouns and clitics are referentially distinct: personal pronouns are indexicals, while clitics indicate logophoric participants. I propose that personal pronouns and clitics are internally specified for different features. Personal pronouns are specified for person features, while clitics, which are also specified for person features, additionally have the Log(ophoric) feature, as shown in (29).

(29) a. pronouns {person}
b. clitics {Log, person}

For these reasons, I propose that the pronouns that are coindexed by clitics are in binding relationships with them. Clitics c-command personal pronouns and via binding supply the Log feature to bound personal pronouns with the result that both refer to logophoric participants.[18]

This opens the door for an explanation as to why in the interrogative sentence the first person pronoun cannot be doubled with the first person clitic. This ban is a restriction on the binding relationship between them. According to the proposed analysis, any personal pronoun bound by a clitic refers to a logophoric participant; however, this conflicts with the semantics of interrogative sentences. The speaker who is asking is not a logophoric participant, and especially, is not a source of information.[19] Therefore, in an interrogative sentence, the first person pronoun cannot be bound by the first person clitic.[20]

However, in an interrogative sentence with the second person pronoun, the second person clitic is still obligatorily present on the verb, since it is assumed that the semantics of an interrogative sentence is that the second person participant is still an attitude holder, the source of information. In example (30a), the second subject *ivu* 'you(SG)' is obligatorily doubled with the clitic =(*v*)*a* (the consonant *v* drops at a morpheme boundary) on the verb *CL -is-* 'catch'; the verbal form without the clitic is ungrammatical. Example (30b) shows that the second person direct object *ivu* 'you(SG)' can be also optionally doubled with the clitic =(*v*)*a* just as in any root clause.

[18]The idea that personal pronouns can behave not only as indexicals, denoting a speaker or an addressee, but can depend on another linguistic element has become quite common. Several explanations are proposed for the non-indexical behavior of personal pronouns. In semantic works (Heim 2008; Rullmann 2004; Sudo 2012; among others), roughly speaking, pronouns are treated as bound variables that carry indices, which they share with their binders. Another family of approaches explains the dependent behavior of personal pronouns based on their morphosyntactic representation (Déchaine and Wiltschko 2002; Kratzer 2009), assuming that dependent personal pronouns are defective in their internal structure, allowing them to be bound by another DP, which supplies them with missing features.

[19]See earlier discussions on logophoricity, in particular Sells (1987), who proposes that the *logophoricity* phenomenon is not unified. As known, he distinguishes between three primitive concepts: i) source of the report ("source"), ii) the person with respect to whose consciousness the report is made ("self"), and iii) the person from whose point of view the report is made ("pivot"). In his approach, logophoric pronouns link to a DP that has one of these three particular roles. Apparently, clitics in Tabasaran indicate the source of the information or his/her addressee. The distribution of clitics in questions and the behavior of clitics in a reported speech sentence with the verb 'hear' (see Sect. 9) show that first person clitics are only bound by an argument that semantically indicates an original source of the information, while second person clitics are always bound by an argument designated as the addressee of the source of the information.

[20]The parallelism in the behavior of interrogatives and reported speech sentences is discussed by Deal (2019: 122–123). She describes the case of Kathmandu Newari (Tibeto-Burman) and the phenomenon she calls "interrogative flip." In that language, the inflection used for the first person pronoun in declaratives is also employed for marking a logophoric pronoun in reported speech. In interrogatives, however, the same marker is employed for the second person pronoun, but not for the first person pronoun, in contrast to declaratives.

(30) a. *ivu* *rasul* *d-ils-un-n=a?* / **d-ils-undu-n?*
you(SG) Rasul(ABS) H.SG-catch-FUT-Q=2SG H.SG-catch-FUT-Q
'Will you pick up Rasul?'

b. *rasul-di* *ivu* *d-ils-undu-n?* / *d-ils-un-n=a?*
Rasul-ERG you(SG) H.SG-catch-FUT-Q H.SG-catch-FUT -Q=2SG
'Will Rasul pick you up?'

What happens in an affirmative clause where a pronominal subject is obligatorily doubled by the corresponding clitic? What is strongly reminiscent of an agreement relationship is in fact obligatory binding between personal pronouns and clitics. The mandatory binding in examples like (13) and (14) is due to the fact that the speaker who reports about himself/herself is at the same time a source of information, a logophoric speaker. Via binding, the first person pronoun and person clitic are co-indexed, referring to the logophoric speaker, who referentially coincides with the speaker of the utterance. Since the second person pronoun is always doubled with the corresponding clitic too, we can conclude that the addressee of the speaker is also conceptualized as a logophoric participant. The second person pronoun being bound by the second person clitic is co-indexed and refers to the logophoric addressee who is the addressee of the speaker of utterance.

Let us take stock. First, interrogative sentences having a parallelism with the reported speech sentence demonstrate that the same binding mechanism between clitics and pronouns is present in the syntax of the root clause, which can be a confirmation of Baker's (2008), Alok and Baker's (2018), and Alok's (2020) proposal. Second, in contrast to Alok and Baker (2018), however, who consider that personal pronouns receive their person features via binding with higher elements Sp and Ad and that pronouns and the silent DPs are referentially the same, for Tabasaran I propose that personal pronouns and clitics are independent DPs. Personal pronouns are full-fledged; specifying for person features independently of person clitics, they have their own referential ability to indicate the speaker or his/her addressee. Being DPs, clitics are also specified themselves for person features (see discussion of feature mismatches in Sect. 8 for a strong confirmation of this), and in addition to this, they have the Log(ophoric) feature. In contrast to personal pronouns, a clitic refers to such a logophoric participant, who is obligatorily a source of information or his/her addressee. Personal pronouns entering in binding relationships with clitics receive the {Log} feature, so both items are co-indexed referring to the logophoric speaker or addressee. This mechanism works in any root affirmative clause, as shown in (31).

(31)
$_{CP}$[clitic {Log, person}$_{TP}$[pronoun{person}]]=[Sp:1person]$^{Log\ Sp}$ or [Ad:2person]$^{Log\ AD}$
binding

The bare personal pronouns with no clitic refer to participants without logophoric properties. The interrogative sentence with the first person pronoun demonstrates this behavior, as in (32):

(32) $_{CP}$[$_{TP}$[pronoun{1person}]] = Speaker

I address details of the mechanics of these relationships in Sect. 8.3. For now, let us turn to the question as to what introduces the clitic syntactically.

6 Log(ophoric) head

Based on their morphological position after tense markers for clitics in Tabasaran, I introduce the Log head in the periphery of a finite clause above T, which hosts clitics. This assumption leads us to a more general discussion about the correlation of personal pronouns with logophoricity.

6.1 Logophoricity and personal pronouns

As mentioned in Sect. 2, Koopman and Sportiche (1989) treat logophoricity in syntactic terms. For them, some complementizers introduce a silent NP with the [+n] feature, which binds the corresponding embedded *n*-pronoun,[21] so that the latter refers to the matrix subject. The authors do not specify the meaning of the feature [n], leaving this question open. In later papers on the topic, the [+n] feature is assimilated to the [+log] feature, and the silent element with the feature [+n] is understood as a log operator (for a recent discussion, see Charnavel and Sportiche 2016; Charnavel 2020).

The notion of *log*(*ophoric*) *operator* is also adopted to explain the phenomenon of long-distance anaphors attested in many languages.[22] Its behavior is only outwardly long-distance and is reduced to a local binding relationship with a silent log operator. Recently, Charnavel (2020) has discussed exempt anaphors in French.[23] The core ingredients of her approach are as follows: a Log projection can be introduced in any domain (TP, vP, DP, or other XP) rather than being contingent upon reported speech constructions. The Log head is a logophoric operator, which selects a silent logophoric pronoun referred to as the *prolog*. The relationship between the *prolog* and its complement depends on a combination of discourse and syntacticosemantic factors, rather than on syntactic feature interaction. The *prolog* introduces the first person perspective, while the second person is not taken into account. Therefore, all perspectival elements occurring in the same domain correspond to what the logophoric center could (or did) express in direct discourse in first person.

Making reference to Cable (2005), Kratzer (2009) proposes a local operator, but for first and second person pronouns. Her operator is a *context shifter* (again comparable to the shifty operators proposed in Anand and Nevins 2004; see Sect. 2), which is additionally equipped with indexical indices, allowing the operator to bind first and second person pronouns. Thus, a Log head in Charnavel (2020), or a λ-operator on a verbal head in Kratzer (2009), functions locally, but Kratzer's operator works on the basis of feature interaction, rather than discourse factors as in Charnavel (2020).

[21] The authors identify two types of third person pronouns: *O*-pronouns and *n*-pronouns. Only the latter can be used in embedded logophoric contexts and refer to the matrix participant whose speech is reported.

[22] See Sells (1987) and references therein for earlier discussion of the topic.

[23] An exempt anaphor is one that is exempt from Condition C in Chomsky's canonical binding theory (1981); that is, it can be used as a long-distance anaphor.

In his theory of person agreement, Baker (2008: 155) makes the local condition a parameter that distinguishes his Person operators (Sp and Ad) from the Log operator. He assumes that both types of pronouns are always bound by an operator (Sp/Ad for personal pronouns or the Log operator for logophoric pronouns) and that they also have different properties. A logophoric pronoun cannot be used in a root clause, and it can be bound from a distance.[24] By contrast, first and second person pronouns are typically arguments of a root clause and must be bound by the closest operator (see Sect. 7 for the discussion of Tabasaran clitics with regard to the closest binder).

Bianchi (2001) and Sigurðsson (2004, 2007) view logophoricity as information encoded high in the clause structure. Like Baker, Bianchi also argues that person features have a special status, which in finite clauses manifests itself in person agreement. Any finite form encodes the relation of the event time to the speech event (with reference to Rizzi 1997). The latter constitutes the center of deixis from which the person feature is interpreted. She also uses examples from languages with logophoric pronouns and discusses the fact that they are sensitive to the internal deictic center. She concludes that the deictic center is just a particular manifestation of the logophoric center of any clause. Thus, Bianchi's assumption correlates with Baker's: logophoric and personal pronouns are subject to the same conditions. However, while in Baker's theory, pronouns are bound by different operators (Log or Person), in Bianchi's approach, both types of pronouns are interpreted from logophoric centers: logophoric pronouns must be interpreted from the internal log center, while personal pronouns are interpreted from the external log center corresponding to the perspective of the external speaker and addressee. Since the logophoric center is endowed with (possible) spatial and temporal coordinates and logophoric roles, personal pronouns, anchored to the logophoric center, result in person agreement.

Sigurðsson's (2004, 2007) proposal is in general similar to Bianchi's idea: features of the speech event are syntactically present. However, in his approach, logophoric features are not given as a whole package (space, time, log participants) but rather are separate features. He assumes that a final person category grows as a result of a strictly inferential relationship between three clausal levels, [speech features [grammatical features [event features]]]. Sigurðsson's derivational hypothesis is thus close to Baker's (2008) derivational person theory, where personal pronouns get their completeness by being obligatorily bound by the higher elements. However, the difference between the two proposals is that for Sigurðsson these elements are not only the speaker and the addressee, but also logophoric participants, while for Baker they are only the Speaker and the Addressee.

The list in (33) lays out the parameters discussed above for logophoricity:

(33) a. Nature of the Log operator: i) head (Charnavel 2020), ii) DP elements (Koopman and Sportiche 1989; Sigurðsson 2004, 2007; Baker 2008; Kratzer 2009), iii) log center (Bianchi 2001).

[24]To demonstrate this idea, Baker uses doubly embedded sentences and shows that in many West African languages the logophoric pronoun can be ambiguous and refer either to the subject of the intermediate clause or to that of the highest clause. However, in languages that manifest a shift with personal pronouns, a personal pronoun in the lowest clause can only refer to the subject in the clause immediately above it. This is the case of Slave, for example.

b. Location of the Log operator/center: i) reported speech (Koopman and Sportiche 1989; Baker 2008), ii) finite domain (Bianchi 2001; Sigurðsson 2004, 2007); iii) phases/the closest head (Kratzer 2009; Charnavel 2020).
c. The correlation of Log operator/center and person: i) The Log operator is distinct from the Person operator (Baker 2008). ii) The Log operator consists of person information: 1) via indexical indices (Kratzer 2009); 2) introduces the person perspective of first person (Charnavel 2020); 3) the log center includes speech participants (Bianchi 2001) or, more precisely, the logophoric speaker and addressee (Sigurðsson 2004, 2007).
d. Relationships between the Log operator/center and its target: i) feature interaction (Koopman and Sportiche 1989; Sigurðsson 2004, 2007; Baker 2008; Kratzer 2009); ii) person features are anchored by the log center and are realized in person agreement (Bianchi 2001); iii) the relationship between the *prolog* and its complement is based on a combination of discourse and syntacticosemantic factors (Charnavel 2020).

If my analysis is on the right track, the Tabasaran data provide evidence that, indeed, any finite clause can project the Log head above T (see the contrast shown between the finite clause and the non-finite converb clause in examples (1a–1b) in Sect. 1). However, what is interesting is that the Džuli dialect also demonstrates that a verbal form need not necessarily be tense-marked for clitics to appear on it. In spoken texts, I also found jussive forms that do not morphologically have tense markers but nevertheless include clitic doubling. Further research is needed for a more detailed analysis of the relationship between finiteness and the Log projection.

As I propose, clitics are DPs, themselves specified for person and Log features, and they encode both Log participants, Speaker as well as Addressee. However, other coordinates like space and time are not involved (at least overtly; see also Appendix A.3, a discussion about temporal adverbs in reported speech). Therefore, there is no evidence that the Log head introduces a logophoric center with a whole package of coordinates, so it cannot be treated in terms of perspective (at least for Tabasaran).

I also assume that the Log head specified for [person] and [logophoric] features functions as a probe, searching for a DP with the appropriate features. Whenever an argument with [person] features is present in an affirmative clause, the Log head introduces the corresponding clitic and adds the [log] feature to a personal pronoun. The Log head is also sensitive to the [log] feature. This is especially visible in reported speech, since there the logophoric anaphor can also optionally be bound by clitic (Sect. 8.1).

The following section provides an additional piece of evidence that personal pronouns are fully specified for person features themselves and that their referential ability is independent from clitics.

6.2 Full-fledged pronouns

Nominalized clauses such as in (11) (see Sect. 3.1) can also be informative for the feature specification of personal pronouns in Tabasaran. In particular, an anonymous reviewer asks me whether personal pronouns can be treated in the mold of Baker's

(2008) and Alok and Baker's (2018) theory as items that receive their full referential content via binding with high silent Sp and Ad elements.[25] Gender-number agreement within the nominalized clause shows that this is not the case. Like other languages of the family, Tabasaran displays gender–number agreement with an absolutive argument, that is, with a direct object in a transitive clause, and distinguishes between non-human singular (N.SG in glosses) and other DPs, human singular and plural (H.SG and PL in glosses correspondingly). In (11), repeated in (34a) the transitive verb *u'‹CL›χ-* 'save' has the absolutive argument *Mahamad*, which is human, the verb has the corresponding human gender–number marker *‹r›* (H.SG in glosses). (34b) demonstrates a very similar sentence but with the non-human absolutive direct object *gatu* 'cat,' with the verb bearing the non-human gender–number marker *‹b›* (glossed as N.SG); the human gender marker *‹r›* is ungrammatical here.

(34) a. *rasul-i* *maʕhaʕmad* *uʕ‹r›χ-ub*
Rasul-ERG Mahamad(ABS) ‹H.SG›save-MASD
'Rasul's saving of Mahamad'

b. *rasul-i* *gatu* *uʕ‹b›χ-ub* */ *uʕ‹r›χ-ub*
Rasul-ERG cat(ABS) ‹N.SG›save-MASD ‹H.SG›save-MASD
'Rasul's saving of the cat'

What is important for the current discussion is that gender–number agreement with personal pronouns directly depends on their referential properties. For instance, typically, first person pronoun indicates a human speaker. In this case the verb reflects human singular gender–number agreement, as in (35a), where the verb uʕ*‹r›χ-* 'save' has the human singular marker *‹r›*, similar to (34a). However, for example, in a fairy tale narrative the speaker can be non-human, for instance, an animal. In this case, the first person pronoun in the absolutive direct object position triggers the non-human marker *‹b›* on the verb, shown in (35b), similar to example (34b), and the human singular marker *‹r›* is impossible in this case.

(35) a. *rasul-i* *uzu* *uʕ‹r›χ-ub*
Rasul-ERG I ‹H.SG›save-MASD
'Rasul's saving of me' (the speaker is human)

b. *rasul-i uzu* *uʕ‹b›χ-ub*
Rasul-ERG I ‹N.SG›save-MASD
'Rasul's saving of me' (the speaker is non-human)

Taking into account that the nominalization is a clause of a smaller size than a finite sentence (see discussion in Sect. 3.1), we can conclude that even in this environment, personal pronouns already have their referential content, which apparently does not depend on finiteness and, more generally, on higher projections.[26]

[25] An anonymous reviewer proposes that Tabasaran also has Sp and Ad elements at the clausal periphery, which bind the first and second personal pronouns and complete their referential content. Then the difference between Tabasaran and Magahi would only be the fact that Tabasaran additionally has LogP above the FinP, which hosts person clitics.

[26] Some Daghestanian languages provide even more robust evidence that personal pronouns have their features from the very beginning and that their person features do not correlate with high clausal projec-

With this in mind, let's take a closer look at how the binding mechanism between clitics and personal pronouns works in reported speech sentences.

7 The mechanics of indexical shift in reported speech in Tabasaran

In the reported speech construction, the mechanism of binding is the same as in a root clause. The only difference is that in a root clause the current speaker is at the same time also the logophoric speaker, and the addressee of the logophoric/current speaker is the logophoric addressee. This referential identity (between discourse and logophoric participants) is reflected in the fact that personal pronouns must obligatorily be doubled by clitics in any affirmative clause. By contrast, in the reported speech construction two speakers (current and logophoric), as well as two addressees (that of the current speaker and that of the logophoric speaker), are referentially distinguished. This split between participants is reflected in the dissociation between the personal pronouns and the clitics in reported speech.

The mechanics of the binding in the reported speech is as follows. The embedded clause of the reported speech, like other finite root clauses, is able to have its own Log projection and therefore introduce clitics in its periphery. Clitics, being specified for the feature {Log}, always indicate logophoric participants; therefore, in reported speech, they always refer to matrix arguments: the 1.SG clitic indicates the logophoric speaker, while the 2.SG clitic indicates the logophoric addressee (for a more detailed discussion of the relationship between matrix arguments and clitics see Sect. 9; for the current purpose I will refer to this relationship as binding). Clitics specified for person features bind personal pronouns within the same embedded domain. Bound personal pronouns receive the same referential interpretation as clitics resulting in indexical shift: the first person pronoun bound by the first person clitic refers to the reported speaker, shown in (36a); the second person pronoun bound by the second person clitic shifts and refers to the addressee of the reported speaker, as in (36b).

(36)

a. [matrixSp{Log}$_{i\ CP}$[clitic{Log;1person}$_{i\ TP}$[pron{1person}$_i$]]]=pron{1}=matrixSp

binding binding

b. [matrixAd{Log}$_{i\ CP}$[clitic{Log; 2 person}$_{i\ TP}$[pron{2 person}$_i$]]]=pron{2}=matrixAd

binding binding

It should be also noted that a personal pronoun bound by a clitic can only refer to the closest antecedent. In example (37), in doubled embedded clauses, the shifted bound

tions. For instance, in Chirag Dargwa (Ganenkov 2021), gender–number agreement reflects the opposition between plural speech act participants and other human plural arguments, which indicates that person features are already inside the personal pronouns at least at the vP level of the clause. Aqusha Dargwa also demonstrates a similar opposition.

first person pronoun *izu* 'I' refers only to the matrix subject of the clause immediately above it, to the reported speaker *Ahmed*, and not to the highest matrix subject *Rasul*. Thus, clitics in Tabasaran display properties of Baker's (2008) Person operator and demonstrate the closest relationship with its antecedent.

(37) *rasul-di*$_i$ *[aχmed-ri*$_k$ *gagaj.i-s [izu*$_{k/*i}$ *derbent.di-s*
Rasul-ERG Ahmed-ERG father-DAT I Derbent-DAT
a^{ʕ}*G-id=za*$_{k/*i}$
(H.SG)go-FUT=1SG
k'udi] k'uda-ji k'udi] p-nu.
COMP say-IPF COMP say-AOR
'Rasul$_i$ said that Ahmad$_k$ was telling the father that he$_{k/*i}$ would go to Derbent.'

The algorithm described in this section is manifest in examples (1a), (18), (19a), (20a), (21a), and (23–25). In all these cases, embedded personal pronouns and clitics have the same person features: the first person pronoun is bound by the first person clitic, and the second person pronoun is doubled with the second person clitic correspondingly. However, like the languages mentioned above, Tabasaran also allows mismatches between embedded clitics and the pronouns that they bind.

The following section takes a closer look at three types of mismatches displayed by the Džuli dialect and provides details of the binding mechanism between clitics and pronouns.

8 Feature mismatches between embedded pronouns and clitics in reported speech in Džuli

Several mismatches between pronouns and clitics in embedded report are attested in Džuli: between personal pronouns and clitics and between the third person reflexive and clitics.

8.1 The reflexive and clitics in the embedded clause of reported speech

Let us start with the last case of feature mismatches. In Tabasaran, the reflexive *čav* can be used in reported speech sentences in the embedded clause, similar to examples from Tamil discussed above (see (9)).

It should be mentioned that in any root clause, the reflexive is always bound by a third person antecedent, as in grammatical example (38a), while first and second person arguments cannot bind the reflexive, as shown in ungrammatical examples (38b–38c). Thus, in the root clause the reflexive is sensitive to the person feature of its binder, and since the subject of the reflexive clause is third person, the verb never bears person clitics.

(38) a. *rasul-di čа-s kümek ap'-nu.*
Rasul-ERG REFL(SG)-DAT help do-AOR
'Rasul helped himself.'

b. **izu čа-s kümek ap'-nu=za*
I REFL(SG)-DAT help do-AOR=1SG
'I helped myself.'

c. **ivu čа-s kümek ap'-nu=va*
you REFL(SG)-DAT help do-AOR=2SG
'You helped yourself.'

In reported speech, in the embedded clause the reflexive can be bound either by the matrix subject or by the matrix goal argument of the third person. In example (39), the reflexive *čav* can refer to reported speaker *Rasul* or to the addressee of the reported speaker *Mahamad*.

(39) *rasul-di$_i$ ma^{ʕ}ha^{ʕ}mad.ri-s$_k$ [čav$_{i/k}$ derbent.di-s a^{ʕ}G-idi*
Rasul-ERG Mahamad-DAT REFL(SG) Derbent-DAT (H.SG)go-FUT
k'udi] p-nu.
COMP say-AOR
'Rasul$_i$ told Mahamad$_k$ that he$_{i/k}$ would go to Derbent.'

What is interesting is that like in Tamil, Telugu, and Aqusha Dargwa (see Sect. 2.3), in Džuli the reflexive can be doubled with the first person clitic, referring to the original speaker (the matrix subject), as shown in (40).

(40) *rasul-di$_i$ [čav$_i$ derbent.di-s a^{ʕ}G-id=za$_i$ k'udi] p-nu.*
Rasul-ERG REFL(SG) Derbent-DAT (H.SG)go-FUT=1SG COMP say-AOR
'Rasul$_i$ said that he$_i$ would go to Derbent.'

Additionally, in Džuli, the reflexive can be also bound by the second person clitic referring to the addressee of the reported speaker (the matrix goal argument *Rasul*), as in example (41).

(41) *gagaj-i rasul.di-s$_i$ [čav$_i$ derbent.di-s a^{ʕ}G-id=va$_i$*
father-ERG Rasul-DAT REFL(SG) Derbent-DAT (H.SG)go-FUT=2SG
k'udi] p-nu.
COMP say-AOR
'The father told Rasul$_i$ that he$_i$ would go to Derbent.'

First of all, examples (40) and (41) confirm the proposed analysis and show that clitics are specified for their person features independently of personal pronouns, as proposed in (29).

In (40) and (41) clitics cannot receive their person features from the reflexive, which, as we see, is sensitive to the third person antecedent and cannot be bound by personal pronouns (see (38)). Therefore, clitics having person features must themselves be inherently specified for them.

Let us assume that the relationship between the reflexive and clitics within the embedded clause does not differ from the relationship between personal pronouns and clitics in root clauses and that the reflexive and clitics are also in binding relationships, despite the fact that they are specified for different person features. The pertinent question arises as to how the binding between them can be established if they do not

coincide in their features. My first suggestion is that it is not morphological person features that maintain the binding between them.

The contrast in the behavior of the reflexive in a root clause and in reported speech may shed light on the question as to why in indirect speech the reflexive is visible for clitics, while in a root clause it is not.

What makes the reflexive in the embedded clause in the reported speech construction different from the reflexive in a root clause is that in reported speech sentences the reflexive appears in the particular position where it is obligatorily bound by matrix arguments that are logophoric participants. It thereby receives the reference to logophoric participants via the binding relationships with matrix arguments, shown in (42a), something that never happens with the reflexive in a simple clause. I suggest that this referential content makes the reflexive in reported speech drastically different from the reflexive in a root clause and provides the possibility of binding relationships with clitics.

Thus, examples (40) and (41) suggest that the dependence between clitics and the reflexive is established due to their referential properties. Only the reflexive indicating logophoric participants (via binding with matrix arguments) is visible for a clitic that is itself inherently specified for the [Log] feature and also refers to a logophoric participant. When bound by the matrix subject, the reflexive can be doubled with the first person clitic, like in (42b); when bound by the matrix indirect object, it can be doubled with the second person clitic, referring to the addressee of the logophoric speaker, as shown in (42c).

(42)

a. matrix Subj{Log}$_i$ / IO {Log}$_k$ $_{CP}$[$_{TP}$[REFLi/K]]= Refl={Log participant}

binding

b. matrix Subj{Log Sp}$_i$ $_{CP}$[clitic{Log,1person}$_i$ $_{TP}$[REFLi]].= Refl=[Log participant]$^{Log\ Sp}$

binding

binding

c. matrix IO{Log Add}$_i$ $_{CP}$[clitic{Log, 2 person}$_i$ $_{TP}$[REFLi]].= Refl=[Log participant]$^{Log\ Ad}$

binding

binding

The first conclusion is that binding is not based on person features but is rather established between items that are referentially complete. Clitics are sensitive to [Log participant], which is the referential content of the reflexive in this particular position in the reported speech, and assign the additional specification [Log Speaker] or [Log Addressee] to the content of the reflexive.

The following section takes a closer look at other mismatches in Džuli between personal pronouns and clitics.

8.2 Feature mismatches between pronouns and clitics in reported speech

In Džuli, in the reported speech in the embedded clause, the first person pronoun can be doubled with the second person clitic referring to the addressee of the reported

speaker. Something similar was demonstrated for Uyghur by Shklovsky and Sudo (2014) (see example (8)).

In examples (43a–43b), in the matrix clause the addressee of the reported speaker is the current speaker expressed by the first person pronoun *izu-s* 'I-DAT.' He/she is also the participant of the situation described in the embedded clause. In (43a) he/she is an agent of the embedded situation, while in example (43b), he/she is a patient in the embedded situation; in both cases they are expressed with the first person pronoun *izu* 'I.' In these examples, the embedded pronoun *izu* 'I' does not shift and refers to the current speaker, in a way similar to the first person pronoun in the matrix clause. Two first person pronouns—one matrix and one embedded—corefer in a regular way, such as in the English sentence in the translation. However, as we see, the embedded verb has the 2.SG clitic *=va*, which signals that the current speaker is at the same time the addressee of the reported speaker. Thus, these examples exhibit mismatches between the embedded first person pronouns and the 2.SG clitic that binds the pronouns.

(43) a. *rasul-di izu-s$_i$ [izu$_i$ derben.di-s a^{ʕ}G-id=va$_i$ k'udi] p-nu.*
Rasul-ERG I-DAT I Derbent-DAT (H.SG)go-FUT=2SG COMP say-AOR
'Rasul told me$_i$ that I$_i$ would go to Derbent.'

b. *rasul-di izu-s$_i$ [ma^{ʕ}ha^{ʕ}mad-ri izu$_i$ aχ-idi=va$_i$ k'udi] p-nu.*
Rasul-ERG I-DAT Mahamad.ERG I (H.SG)take-FUT=2SG COMP say-AOR
'Rasul told me that Mahamad would pick me up.'

A similar mismatch is possible between the embedded second person pronoun and the first person clitic. In example (44), the reported speaker in the matrix clause is simultaneously the current addressee of the current speaker and is expressed by the second person pronoun *ivu* 'you (SG).' He/she is also the participant of the embedded clause. In example (44a) the second person pronoun is the agent of the embedded situation, while in (44b) it is the patient. Again, in these examples the coreference between two second person pronouns of the main and embedded clauses is established in the usual way, similar, for instance, to the English sentence in the translation. However, in both cases the embedded second person pronoun *ivu* 'you(SG)' is bound by the 1.SG clitic, which indicates that the current addressee is simultaneously the reported speaker (the logophoric speaker); compare with example (10) from Aqusha Dargwa.

(44) a. *ivu$_i$ [ivu$_i$ derbent.di-s a^{ʕ}G-id=za$_i$ k'udi] p-nu=va.*
you(SG) you(SG) Derbent-DAT (H.SG)go-FUT=1SG COMP say-AOR=2SG
'You$_i$ said that you$_i$ would go to Derbent.'

b. *ivu$_i$ [ma^{ʕ}ha^{ʕ}mad-ri ivu$_i$ d-ils-unda=za$_i$ k'udi] p-nu=va*
you Mahamad-ERG you H.SG-catch-PRS=1SG COMP say-AOR=2SG
'You$_i$ said that Mahamad would pick you$_i$ up.'

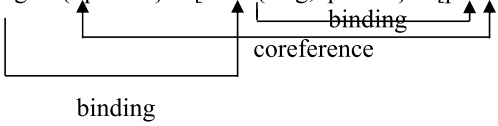
The analysis of the examples with a reflexive that is bound by a person clitic (Sect. 8.1) shows that when entering binding relationships with the embedded re-

flexive, clitics deal not with its features but rather with its referential entity. I propose that something similar happens in examples (43) and (44), since clitics are not sensitive to the person specification of embedded personal pronouns. As we see, these mismatches between personal pronouns and clitics are possible only in the situation when there is a referential overlap between current and logophoric participants. I propose that clitics license an additional referential status to the reference that personal pronouns already have.

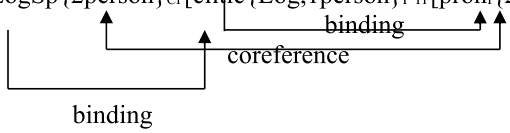
In the case of the mismatches between the reflexive and clitics in examples (40) and (41), the reflexive becomes visible for clitics when it acquires referential content [Log participant]. Clitics are sensitive to its logophoricity. In the case of mismatches between personal pronouns and clitics, since the clitics are indifferent to the particular person feature specification of the pronouns, I assume that they are sensitive only to the fact that both first and second person pronouns refer to Person Participants (see also Béjar 2003; Béjar and Rezac 2009), which is shown schematically in example (45a) for the mismatch between the first person pronoun and second person clitic (corresponding to (43a–43b)) and in (45b) for the mismatch between the second person pronoun and the first person clitic (corresponding to (44a–44b)).

(45)

a. LogAd{1person}$_{i\ CP}$[clitic{Log,2person}$_{i\ TP}$[pron$_i${1person}]]=pron[PersPart]$^{Log\ AD}$



b. LogSp{2person}$_{CP}$[clitic{Log,1person}$_{i\ TP}$[pron$_i${2person}]]=pron[PersPart]$^{Log\ SP}$



Now let me introduce Tabasaran data and my analysis into a more formal discussion of the binding mechanism.

8.3 Feature mismatches and the theory of binding

For the binding theory, feature mismatches between two elements in dependent relationships constitute a problematic case. Several solutions have been proposed for this.

Mismatches in reported speech sentences were already discussed by Koopman and Sportiche (1989), who clearly indicate that logophoric contexts lift the prohibition against binding with mismatches. They discuss another type of mismatch between the matrix subject and the operator specified for the [+n] feature (the [+log] feature) and ask how it is possible that the matrix subject not being specified for the [+n] feature can bind the operator with [+n]. They allow a binding relationship between two elements if they have the same feature specification (with reference to Montalbetti 1984 and his discussion of Spanish, Brazilian Portuguese, Japanese, and Catalan). If this condition does not hold, two elements can be coreferential to each other.

Apart from reported speech, different types of binding contexts with mismatches have been accounted for. For instance, Reuland (2011: 130–131), referring to Menuzzi (1999), discusses mismatches in Brazilian Portuguese where the 1.PL pronoun *nós* can bind the 3.SG noun *gente* and vice verse. He distinguishes between syntactic binding, which requires feature matches between two elements, and semantic binding, which does not.

Different kinds of mismatches between bound personal pronouns and their binder are discussed extensively in papers on formal semantics where they are resolved via indices. Roughly speaking, bound personal pronouns can carry multiple indices with different *phi*-features, which they partially share with the indices of their antecedent. This mechanism allows them to be bound by an antecedent with features that do not fully coincide with pronominal features (Heim and Kratzer 1998; Rullmann 2004; Heim 2008; Sudo 2012; among others).

In the theory of binding, the general problem with feature mismatches arises from the theoretical assumption that binding is essentially based on the same mechanisms as Agreement.

This idea is one of the basic components of the binding theory proposed by Reuland (2011), who follows Pesetsky and Torrego's (2004) agreement approach, treating syntactic binding as *feature sharing* and decomposing binding into mechanisms similar to agreement: *unification* of two elements, where the content of one occurrence of a feature overwrites the content of another, supplying its bound variable with missing features; and, second, the features that do not provide an independent contribution to interpretation are *overwritten/deleted*.

In her theory of bound personal pronouns, Kratzer (2009) also considers binding to be *unification*. She uses a special mechanism—*feature transmission*—via which a bound pronoun (which is minimally specified for features) receives features from its binder, resulting in the feature unification of the two items.

Formal semantic approaches employ the same mechanisms as *feature transmission* (Heim 2008) or *feature sharing* (Sudo 2012), with the difference that the mechanisms employ indices.

As we discussed in Sect. 2.2.1, Baker (2008) and Alok and Baker (2018) consider binding to be the *matching* of features: bound personal pronouns and silent SP and Ad elements are the same. Overtly expressed person agreement is a part of this binding relationship and therefore cannot appear with different features.

What is interesting is that the feature mismatches either in the reported speech or even for person agreement are not problematic in the approaches where binding or agreement is not viewed as "getting one from two."

For instance, for the mismatch between the anaphor and first person agreement on the embedded clause of the reported speech in Tamil, Sundaresan (2012) assumes that the operator and anaphor have their features independently. The binding relationship between them is needed to ensure the same referential denotation for both elements.

In her theory of person agreement, Bianchi (2001) discusses examples from Spanish and Catalan where nouns underspecified for person can trigger first and second person agreement.[27] Such examples correlate well with her theory of logophoric cen-

[27]Considering examples (i) and (ii), Bainch also disagrees with canonical Minimalist agreement theory, where the *phi*-features on the agreement head are treated as uninterpretable. In her approach, verbal agree-

ter, where person information should be interpreted from the center and finally realized as first or second person inflections. These mismatches in agreement are informative and indicate the presence of Speaker or Addressee.

The theoretical view that binding is similar to the Agree relationship has recently been revised (Charnavel and Sportiche 2016; Preminger 2019; and references therein). Polinsky (2015), also describing reported speech in Tsez (related to Tabasaran), points out that binding in terms of Agree cannot be applied to the relationship between a matrix argument and a long-distance anaphor in Tsez, since the latter can be specified for person features different from those of its matrix antecedent.

At around the same time, Preminger (2017), discussing the Agree operation in terms of *feature sharing* essentially rethinks the mechanics of it. In his treatment of agreement, the final result of the goal–probe relationship is not a unification ("getting one from two"), but rather a union, defined over the geometric feature structures of both elements. For this reason, Preminger calls the goal–probe relationship feature-geometric agreement.

I propose something similar for relationships between clitics and pronouns in Tabasaran, with the difference that this is binding (a downward relationship) and that here we are dealing with fully referential items, rather than morphological features. However, what is important is that all features on bound personal pronouns are active and none of the features is lost or deleted, since all of them are interpretable (for this reason they cannot be deleted within the binding/agreement framework either; see Reuland 2011). The whole feature set of bound variable pronouns creates their referential content. Then, their dependent relationship builds combinatorially: via binding, the content of the clitics combines with the content of the personal pronouns. In the case of feature matching, [Log Speaker]/[Log Addressee] are added to the [Speaker]/[Addressee] content of the bound personal pronouns. This mechanism is much more visible in the cases with feature mismatches that have been discussed in Sects. 8.1 and 8.2, where personal pronouns can even receive a new participant assignment: the [Person Participant] content can combine with [Log Addressee] (in the case where the first person pronoun is bound by the second person clitic) or [Log Speaker] (when the second person pronoun is bound by the first person clitic). The referential content of pronouns is not deleted as a result of the binding. The same happens in the case with a reflexive bound by clitics. Any [Log Participant] can be specified for [Log Speaker] or [Log Addressee], and again no information is lost.

Although here we are dealing not with morphological *phi*-features, but with descriptive ones, I nevertheless consider the binding found in Tabasaran between clitics

ment is a result of anchoring person features to the logophoric center, and agreement includes the Speaker and Addressee and is thus interpretable.

(i) Spanish
Los profesores estamos mal pagados.
the professors are-1.PL poorly paid
'We teachers are poorly paid.'

(ii) Catalan
Els professors esteu mal pagats.
the professors are-2.PL poorly paid
'You teachers are poorly paid.'

and personal pronouns to be syntactic, since none of the *phi*-features are ignored in the dependency relationship and all features are involved in the creation of referential output of pronouns. Only descriptive features such as [Log Participant] and [Person Participant] are visible for clitics so that the latter can license the additional feature, such as [Log Sp] or [Log Ad], to these entities. Due to their syntactic dependency, this relationship looks much more like a form of agreement in a root clause.

Non-logophoric, non-person arguments are not visible to clitics, which can be demonstrated using examples with third person demonstratives. Example (46a) shows that, unlike the reflexive, the third person pronoun *dumu* 'he/she' cannot be bound by the matrix arguments in the reported speech construction and thus cannot indicate a logophoric participant. Not having logophoric properties, and not indicating person participants, the third person pronoun is never doubled by a clitic in the reported speech, as shown in (46b):

(46) a. *rasul-di*$_i$ *ma*^{ʕ}*h*^{ʕ}*amad.ri-s*$_k$ *[dumu*$_{*i/*k/g}$ *derbent.di-s* *a*^{ʕ}*G-idi*
Rasul-ERG Mahamad-DAT 3.SG(ABS) Derbent-DAT (H.SG)go-FUT
k'udi] *p-nu*.
COMP say-AOR
'Rasul$_i$ told Mahamad$_k$ that he$_{*i/*k/g}$ would go to Derbent.'

b. **rasul-di*$_i$ *[dumu*$_i$ *derbent.di-s* *a*^{ʕ}*G-idi=za*$_i$ *k'udi]*
Rasul-ERG 3.SG(ABS) Derbent-DAT (H.SG)go-FUT=1SG COMP
p-nu.
say-AOR
'Rasul$_i$ says that he$_i$ would go to Derbent.'

In fact, Alok and Baker (2018) discuss that feature mismatches between pronouns and verbal markers in reported speech are hypothetically possible, and they admit their existence in the case where personal pronouns and verbal markers are referentially different. However, since their approach presupposes referential identity between pronouns and verbal inflections, mismatches are not predicted there. As we see, Tabasaran confirms Alok and Baker's (2018) hypothesis even though the authors themselves reject it, and the language provides evidence that feature mismatches can indeed be allowed between pronouns and verbal clitics in the reported speech, since they are not referentially identical; however, the descriptive content of the two must overlap, resulting in a combinatorial binding relationship.

The last section discusses the relationship between matrix arguments and clitics.

9 On the relationship between matrix arguments and clitics in reported speech

As we discussed in Sect. 2, the relationship between matrix arguments and inflections on the embedded verb is analyzed differently in the various approaches. Sundaresan (2012) considers these relationships in terms of feature transition from the matrix argument to the DP in the periphery of the embedded clause. In the case of the first person verbal agreement, the *phi*-features are re-evaluated in the presence of the attitude predicate. Alok and Baker (2018) propose for Magahi that the Ad element on

the embedded verb is syntactically controlled by the matrix goal argument, while the hidden Sp element is controlled by the matrix subject. Therefore, both covert DPs have the same features as their controllers: Sp shares features with matrix subject, while Ad has the features of the matrix goal arguments.

Unlike Tamil, where the verbal inflection on the embedded verb can have the same features as the matrix subject, and unlike Magahi, where the allocutive markers reflect the features of the matrix goal argument, Tabasaran demonstrates that when matrix arguments and verbal inflections on the embedded verb are co-indexed, they are specified for different features. Examples (47a–47d) repeat examples above and summarize all possible combinations of matrix arguments and clitics. Example (47a) shows that the matrix subject is third person, whereas the clitic referring to the matrix subject is first person. Example (47b) demonstrates that the 2.SG clitic refers to the third person matrix goal argument. Example (47c) illustrates that the 1.SG clitic refers to the second person matrix subject. Finally, example (47d) illustrates that the 2.SG clitic indicates the goal 1.SG. argument.

(47) a. *gaga-ji*$_i$ *[čav derbent.di-s a*^{ʕ}*G-id=za*$_i$ *k'udi] p-nu.*
father-ERG REFL(SG) Derbent-DAT (H.SG)go-FUT=1SG COMP say-AOR
'The father$_i$ said that he$_i$ would go to Derbent.' (shifted)

b. *gagaj-i rasul.di-s*$_i$ *[čav*$_i$ *derbent.di-s a*^{ʕ}*G-id=va*$_i$
father-ERG Rasul-DAT REFL(SG) Derbent-DAT (H.SG)go-FUT=2SG
k'udi] p-nu.
COMP say-AOR
'The father told Rasul$_i$ that he$_i$ would go to Derbent.' (shifted)

c. *ivu*$_i$ *[ivu*$_i$ *derbent.di-s a*^{ʕ}*G-id=za*$_i$ *k'udi] p-nu=va.*
you you Derbent-DAT (H.SG)go-FUT=1SG COMP say-AOR=2SG
'You said that you would go to Derbent.'

d. *rasul-di izu-s*$_i$ *[izu*$_i$ *derbent.di-s a*^{ʕ}*G-id=va*$_i$ *k'udi]*
Rasul-ERG I-DAT I Derbent-DAT (H.SG)go-FUT=2SG COMP
p-nu.
say-AOR
'Rasul told me that I would go to Derbent.'

We see that neither Sundaresan's (2012) analysis of feature transition nor Alok and Baker's (2018) analysis of control can explain the relationship between matrix arguments and embedded clitics in Džuli. I suggest that the relationship between matrix arguments and person clitics is binding, but it is based on the referential abilities of two items, similar to that discussed for the relationship between embedded pronouns and clitics. Below I show that the choice of the binder for the clitics depends on the semantic role of matrix participants. The first person clitic is bound by any matrix argument that is semantically the original source of information, while the second person clitic is bound by an argument that is the addressee of the original speaker.

To show the syntactic control between matrix arguments and DP elements in the periphery of the embedded clause in Magahi, Alok and Baker (2018) discuss two verbs—'tell' and 'hear'—that are different with respect to the grammatical marking of arguments with the same semantic role. The verb 'tell' expresses the source of information with the subject and the recipient of the information through the indirect

object, while the verb 'hear' expresses the source of information through a prepositional phrase, but the recipient of the information through the subject. This contrast is illustrated by examples (48a–48b) in English, borrowed from Alok and Baker (2018). Example (48a) shows the reported speech sentence with the verb *tell*, where *Mary* is a subject and a source of information. By contrast, example (48b) demonstrates a similar sentence with the verb *hear*, where *Mary* is also an original source of information but is expressed with a prepositional phrase. Both examples also demonstrate the contrast in the expression of the recipient of the information, *John*. In (48a), it is expressed with an indirect object, while in (48b), it is the subject.

(48) a. Mary told John that she would come tomorrow.
b. John heard from Mary that she would come tomorrow.

Alok and Baker (2018) show that in Magahi, the grammatical function of the matrix arguments plays a role in indexical shift. Only the matrix subject can control the shifted first person pronoun, while the argument of the prepositional phrase cannot. The same pattern is also illustrated by the causative construction. Alok and Baker (2018) compare sentences with lexical and syntactic causatives presented in (49a–49b), where in both cases *Sue* is semantically the Causee, whereas syntactically the arguments are different; in (49b) *Sue* is a kind of subject (of the small clause), while in (49a) it is only the object of the verb 'convince.'

(49) a. Mary convinced Sue that she would pass the test.
b. Mary made Sue think that she would pass the test.

In Magahi, in such types of sentences the attitude holder *Sue* is always a syntactic object expressed by the dative and therefore can never control the silent Sp in the embedded clause, so the first person pronoun in the embedded clause cannot shift.

Let us look at similar constructions in Tabasaran. Example (50) shows the sentence with the verb *i‹CL›k-* 'hear.' In Tabasaran, the verb 'hear' is an experiential verb and marks its subject (the recipient of the information) with dative case, while the source of information (the original speaker) bears one of the locative cases, namely the cont-elative. The example shows that the 1.SG clitic *=za* co-indexes only with *Rasul*, the argument that is expressed by the cont-elative case but semantically indicates the original speaker. The co-indexation of the 1.SG clitic with the dative subject *Maʕhaʕ mad* is impossible, since it is not an original speaker.

(50) *maʕhaʕmad.ri-s$_k$ rasul.di-k-an$_i$ [izu$_{*k/i}$ eksamen tuv-nu=za$_i$*
Mahamad-DAT Rasul-CONT-ELAT I exam(ABS) give-AOR=1SG
k'udi] i‹v›k-niji.
COMP ‹N.SG›hear-IPF
'Mahamad$_k$ heard from Rasul$_i$ that he$_{*k}$/$_i$ passed the exam.'

What is interesting is that if the embedded verb has the second person clitic, it co-indexes with the dative subject, apparently because the subject here is semantically the addressee of the original speaker, as shown in (51).

(51) *maˁhaˁmad.ri-s$_i$ rasul.di-k-an [ivu$_i$ ekzamen tuv-nu=va$_i$*
Mahamad-DAT Rasul-CONT-ELAT you(SG) exam(ABS) give-AOR=2SG
k'udi] i‹v›k-nu.
COMP ‹N.SG›hear-AOR
'Mahamad$_i$ heard from Rasul that he$_i$ passed the exam.'

The causative construction shows a similar relationship between matrix arguments and embedded clitics. In Tabasaran, the causative construction is built with the verb *Gaˁt-* 'let' that takes the infinitive clause. The Causer appears in the ergative, while the Causee is in the dative case. In example (52), the source of information is the dative Causee *baj* 'boy.' The 1.SG clitic *=za* on the embedded verb *tuv-* 'give' refers to the source of information that is the matrix dative argument *bal.i-s* 'boy-DAT' rather than to the subject *širu* 'girl-ERG.'

(52) *širu$_i$ ba.li-s$_k$ [[izu$_{*i/k}$ ekzamen tuv-nu-dar=za$_{*i/k}$ k'udi]*
girl(ERG) boy-DAT I exam(ABS) give-AOR-NEG=1SG COMP
pu-s] Gaˁt-nu.
say-INF let-AOR
'The girl made the boy$_i$ say that he$_i$ had not passed the exam.'

Interestingly, the embedded finite verb *tuv-* 'give' can also have the 2.SG clitic *=va*. In this case, the matrix subject (Causer) *širu* 'girl-ERG' is interpreted as the addressee of the Causee 'boy' and the clitic *=va* is bound by the matrix subject *širu* 'girl(ERG),' as shown in (53).

(53) *širu$_i$ ba.li-s [[ivu$_i$ ekzamen tuv-nu-dar=va$_i$ k'udi]*
girl(ERG) boy-DAT you(SG) exam(ABS) give-AOR-NEG=2SG COMP
pu-s] Gaˁt-nu.
say-INF let-AOR
'The girl$_i$ made the boy say that she$_i$ had not passed the exam.'

Examples (50–53) show that the relationships between clitics on the embedded verb and the matrix arguments do not depend on the syntactic role of the latter and that matrix arguments and clitics are in binding relationships based on their semantics. Since the first and second person clitics refer to the logophoric speaker or the logophoric addressee correspondingly, they can be bound by arguments with a similar semantic role: the first person clitic is bound by an argument that has the role of the logophoric speaker. The second person clitic is bound by an argument that can be interpreted as the logophoric addressee.

Binding relationships between matrix arguments and clitics can be confirmed by the sentences where the reported speaker or his/her addressee is expressed by a quantified NP. Examples (54a–54c) demonstrate this possibility where the 1.SG clitic *=za* is bound by the NP 'nobody.' Since in all these sentences the NP binds the clitic from different syntactic positions, this means that its syntactic function does not play a role in establishing the binding. In (54a), the quantified NP is in the subject position, in (54b) it is in the oblique, and finally, in (54c) it is in the indirect object position. The binding is established due to the fact that in all three cases, the NP indicates a logophoric speaker, despite the fact that the NP is incapable of reference.

(54) a. *slin-ti$_i$ [čav$_i$ derbent.di-s a^{ʕ}G-id=za$_i$ k'udi]*
nobody-ERG REFL(SG) Derbent-DAT (H.SG)go-FUT=1SG COMP
pun-da-ji.
say-NEG-IPF
'Nobody$_i$ said that he/she$_i$ would go to Derbent.'

b. *ma^{ʕ}lim.di-s šl-in.ti-k-an$_i$ [čav$_i$ dars*
teacher-DAT nobody-CONT-ELAT REFL(SG) lesson(ABS)
ap'-nu-dar=za$_i$ k'udi] i‹v›k-un-da-ji.
do-AOR-NEG=1SG COMP ‹N.SG›hear-AOR-NEG-IPF
'The teacher did not hear from anybody$_i$ that he/she$_i$ had not done the homework.'

c. *ma^{ʕ}lim-di slin.ti-s$_i$ [[izu$_i$ dars ap'-nu-dar=za$_i$*
teacher-ERG nobody-DAT I lesson(ABS) do-AOR-NEG=1SG
k'udi] pu-s] Ga^{ʕ}t-nu-dar.
COMP say-INF let-AOR-NEG
'The teacher did not make anyone$_i$ say that he/she$_i$ had not done the homework.'

10 Conclusions

This paper documents indexical shift in Tabasaran (Nakh-Daghestanian). Despite the apparent differences between languages in indirect speech, the phenomena that are discussed are strikingly similar. Although I propose an analysis that explains the facts of the Tabasaran language, the Tabasaran data reveal some important results for the theory of indexical and bound personal pronouns, as well as for the theory of agreement and binding more generally.

For Tabasaran I propose a binding analysis, demonstrating that indexical shift there strongly depends on the presence/absence of clitics on the embedded verb of the reported speech. According to my analysis, clitics are introduced by the Log head above T in any finite clause. Therefore, the reason for indexical shift in the reported speech construction lies in the syntax of the simple clause, and the same binding mechanism between pronouns and clitics that is operative in indirect speech exists in any root clause. For Tabasaran, I analyze clitics and personal pronouns as independent DPs that differ in their features and have different referential ability. Personal pronouns are indexicals and refer to speaker and addressee without logophoric properties, while clitics specified for person features also have the Log(ophoric) feature and therefore indicate logophoric participants. In the reported speech construction, personal pronouns enter the chain of binding relationships, being bound by clitics that are themselves bound by matrix arguments.

Binding between three items (embedded pronouns, clitics, and matrix arguments) is based on their semantic properties. Nevertheless, the binding between clitics and bound personal pronouns is syntactic. Superficial mismatches between clitics and personal pronouns in their *phi*-features reveal the binding mechanism: these are not *phi*-features themselves that are involved in the binding but rather the content that these morphological features generate. All morphological features are taken into account and engender the descriptive features [Log Participant] for the reflexive and

Table 2 Key points in the analysis of indexical shift in Tabasaran

Parameters	Tabasaran
Trigger of indexical shift	Clitics, separate DPs, introduced by Log head above T
Nature of the shift trigger	Present in a root clause
Features of clitics	Specified for person and Log features independently of personal pronouns
Feature mismatches between embedded pronouns and clitics	Possible, since binding relationships between clitics and pronouns are defined by their referential content generated by the whole set of the *phi*-features, but not by interaction between their morphological *phi*-features. Finally, their descriptive features are obligatorily overlapping.
The relationship between matrix arguments and clitics on the embedded verb	Binding based on the semantics: the first person clitic referring to a logophoric speaker can be bound by an argument that has the role of logophoric speaker, while the second person clitic indicating a logophoric addressee is always bound by an argument that can be interpreted as a logophoric addressee.

[Person Participant] for personal pronouns, which overlap with the [Log Speaker] or [Log Addressee] content of the clitics. Thus, the descriptive features are not identical, but the intersection in their content is obligatory for binding between them. Table 2 summarizes the results of the analysis of indexical shift in Tabasaran.

The Tabasaran data provide several interesting results for the theory of agreement and binding in general. They show that the relationship between personal pronouns and the verb can indeed be binding (a downward relationship), as was proposed by Baker (2008), rather than agreement (an upward relationship). However, in contrast to the Person operator that completes pronoun derivation in Baker's theory, Tabasaran shows that personal pronouns are not minimal and can themselves be fully specified, not needing to be bound by an element to receive their referential properties. But if they are bound, they get the additional specification for the Log feature. Thus, the Person operator proposed by Baker can be saved assuming that the operator is not equivalent to the content of personal pronouns, as was proposed in papers by Sigurðsson (2004, 2007). However, this leads us to a revision of binding theory, or at least to the assumption that there may be several types of binding mechanisms and that binding based on the Agree operation in morphological *phi*-features is not the only type of binding possible.

Appendix: Additional information about indirect speech in Tabasaran

A.1 The complementizer *k'udi* in Džuli and the corresponding marker *k'uri* in Mežgül Tabasaran

In the literature on indexical shift it has been already discussed that, typologically, the complementizers that introduce the embedded clause in reported speech can also be used as citative (or reportative) markers in simple clauses. Deal (2019: 11) cites

several languages where these kinds of complementizers can be used, as she puts it, equally in the introduction of quoted and non-quoted clauses. In Daghestanian languages such markers are typical for spontaneous narratives. Polinsky (2015) discusses the marker =*ƛin* in Tsez, showing that its behavior is also ambiguous: on the one hand, it is a complementizer, introducing a finite complement in the reported speech construction, while on the other hand, it behaves as a genuine quotative element, marking a direct quotation.

Spoken texts on the Džuli dialect have yet to be analyzed. At first glance, it seems that *k'udi* is not common as a citative marker in the Džuli narratives in the way that a similar item is in the southern dialects of Tabasaran.

Southern Tabasaran dialects have the complementizer *k'uri*, parallel to the complementizer *k'udi* in Džuli. What is interesting is that in southern dialects the reduced form *k'ur* is often used as a citative marker. Examples (55) and (56) demonstrate the difference. Example (55) illustrates a typical fragment of spontaneous narrative, which contains *k'ur*, glossed as CIT (examples taken from the corpus at https://multicast.aspra.uni-bamberg.de), while in example (56) the complementizer *k'uri* introduces the finite complement clause, headed by the verb *guč'*- 'fear' (see similar example (18a) with the complemetizer *k'udi* in Džuli).

(55) *ajdum, ʁač χla-z* ***k'ur***.
Ajdum, go(IMP) house-DAT CIT
'Ajdum, go back to the house, – (they) say.'
vaʔ ***k'ur****, uců$_i$ čaχir u<b>q-ura=čå$_i$.*
no CIT you(PL) wine(ABS) <N.SG>drink-PRS=2PL:AG
'No, – (Ajdum) says – you all are drinking wine.'
uzu$_i$ u<b>q-ura-da=za$_i$ ***k'ur****, ʁuˤr-da=za$_i$*
I <N.SG>drink-PRS-NEG=1SG:AG CIT come-NEG=1SG:AG
χla-z.
house-DAT
'I am not drinking, – (Ajdum) says, I am not going into the house.'

(56) *rasul.i-z$_i$ [uzu$_i$ derben.ǯi-z aˤʁ-uˤru=za$_i$* ***k'uri]*** *guč'-ura.*
Rasul-DAT I Derbent-DAT go-FUT=1SG:AG COMP fear-PRS
'Rasul$_i$ is afraid that he$_i$ will go to Derbent.'

Thus, in the southern Tabasaran dialects, although the citative marker *k'ur* and the complementizer *k'uri* are derived from the same verbal root 'say,' they are not morphologically identical and are used differently: *k'ur* marks a direct quotation, while *k'uri* introduces indirect speech.

A.2 Standard diagnostics for indirect quotation

Section 4 shows that Tabasaran has strong evidence that the reported speech is not a direct quotation, since simple clauses and reported speech have different rules for clitic doubling.

As well known, several other tests are conventionally applied to distinguish between direct and indirect speech. One of these diagnostics is the difference between *de re* and *de dicto* readings. Under a *de re* reading, the description is evaluated against

what the speaker thinks is true, while under *a de dicto* reading, it is evaluated against what the attitude holder thinks is true (Anand 2006; Sudo 2012; among others).

To illustrate this, imagine that I am on my way to the village of Džuli, sitting on a public bus, where all passengers are inhabitants of the village. Since I am a stranger among them, they are looking at me with great interest. Brimming with curiosity, the closest passenger asks me who I am and what I am doing here. I try to explain to him that I am interested in the Tabasaran language and that I am studying its grammar. The surprised passenger exclaims: 'I am a Tabasaran teacher at the village school,' meaning that he can help me in my work. His name is Rasul, and he is the only teacher of Tabasaran in the village, but I do not know any of these facts. It is hot and very crowded. We do not talk anymore. When I come to the village, to the family hosting me, I tell them: 'In the bus, I had a short talk with a teacher of Tabasaran.' Then the hostess of the house periphrases my words to her husband, who did not hear our conversation:

(57) *duGu$_i$* *[izu$_i$ rasul.di-qri gaf-ar ap'-nu=za$_i$ k'udi] p-nu.*
3.P(ERG) I Rasul-COM word-PL do-AOR=1SG COMP say-AOR
'He/she$_i$ said that he/she$_i$ was speaking with Rasul.' (shifted)

In the sentence, *rusul.di-qri* 'Rasul'-[COM] is the hostess's own word; she knows everyone in the village by name and for her the teacher of Tabasaran is Rasul. In the scenario given above, I myself did not utter the sentence: 'I had a talk with Rasul.' According to my knowledge, I spoke with a teacher. Therefore, (57) is not a direct quotation of my words. However, the reworded embedded clause has the first person pronoun *izu* 'I,' which has a shifted interpretation, referring to the reported speaker, the third person matrix subject.

By contrast, example (58) demonstrates the sentence with an unshifted first person pronoun 'I.' First, the embedded clause has the syntax, which is prohibited in the corresponding affirmative clause, missing the first person clitic (see Sect. 4 in the text). Second, the situation of the embedded clause has only *a de dicto* interpretation and no *de re* reading.

(58) *duGu$_i$* *[izu$_k$ rasul.di-qri gaf-ar ap'-nu k'udi] p-nu.*
3.P(ERG) I Rasul-COM word-PL do-AOR COMP say-AOR
'He/she said that I was speaking with Rasul.'

Another commonly used diagnostic of indirect quotation is the behavior of *wh*-words. In the case of direct quotation, *wh*-words do not interact with the main clause, and semantically speaking, this kind of sentence does not imply any answer. By contrast, in indirect speech, *wh*-words can move to the main clause, forming a question requiring a reply. In (59), *wh*-word *šli-qri* 'who'-[COM] is in the matrix clause and appears in the comitative case, which can be licensed only on the argument of the embedded verb *gafar ap'-* 'talk with' (lit. 'do words with someone'). Example (58) illustrates this: *rusul.di-qri* 'Rasul'-[COM] is an embedded argument of the same verb *gafar ap'-* 'talk with' and consequently appears in the comitative case. In (59), *šli-qri* 'who'-[COM] is a word of the matrix clause, resulting in a question that semantically implies an answer. Such properties are not expected with directly quoted sentences.

(59) *šli-qri duGu$_i$ [izu$_i$ gaf-ar ap'-nu=za$_i$ k'udi] p-nu.*
who-COM 3.P(ERG) I word-PL do-AOR=1SG COMP say-AOR
'Who did he/she$_i$ say he$_i$/she$_i$ was talking to?'

A.3 Temporal adverbs in embedded reports in Tabasaran

It should be noted that temporal adverbs and, most probably, locative adverbs in reported speech in Tabasaran are subject to different conditions than personal pronouns. According to my analysis, personal pronouns shift under binding with person clitics. However, the interpretation of temporal adverbs, for example, can be determined by two different contexts: either from the reported speaker's point of view/reported speech time or from the current speaker's perspective/ current speech time. Example (60) describes the situation where the father utters his statement in the day before the current speech event, that is, *yesterday* for the current speaker. The adverb *naq'* 'yesterday' in the main clause indicates this. The father is going to go to the town Derbent next day, that is, tomorrow for him. Thus, in the embedded clause, the adverb *zakur* 'tomorrow' reflects the father's perspective. This means that the items with person features (the first person pronoun and the clitic) and the temporal adverb *tomorrow* are shifted.

(60) *gagaj-i$_i$ [izu$_i$ derbent.di-s zakur$_{father's\ perspective}$ a^{ʕ}G-id=za$_i$*
father-ERG I Derbent-DAT tomorrow (H.SG)go-FUT=1SG
k'udi] naq' p-nu.
COMP yesterday say-AOR
'The father$_i$ said yesterday that he$_i$ would go to Derbent tomorrow.' (the day after the father speaks)

However, in the embedded clause the same situation can be depicted in time from the current speaker's perspective (61). What is *tomorrow* for the father is *today* for the current speaker. The adverb *ʁi* 'today' in the embedded clause reflects the time point of the current speaker. What is important in this example is that the personal pronoun *izu* 'I' bound by the 1.SG clitic *=za* is shifted and refers to the matrix subject *gagaj* 'father.' However, the temporal adverb *ʁi* 'today' is not shifted and corresponds to the current speech situation. Thus, the items with person features and the temporal adverb here do not follow the same rules.

(61) *gagaj-i$_i$ [izu$_i$ derbent.di-s ʁi$_{current\ speaker's\ perspective}$ a^{ʕ}G-id=za$_i$*
father-ERG I Derbent-DAT today (H.SG)go-FUT=1SG
k'udi] naq' p-nu.
COMP yesterday say-AOR
'The father$_i$ said yesterday that he$_i$ would go to Derbent today.' (the day after the father speaks)

Example (62) illustrates the embedded report where the personal pronoun 'I' is not shifted, while the temporal adverb vice versa has a shifted interpretation. (62) implies that the participant will go to Derbent next day after the father's utterance. The pronoun *izu* 'I' is not doubled here by a clitic, so it has an unshifted interpretation

and refers to the current speaker. However, the adverb *zakur* 'tomorrow' is one of the father's own words and reflects the perspective of the reported speech time.

(62) *gagaj-i*$_i$ *[izu*$_k$ *derbent.di-s zakur*$_{father's\ perspective}$ *aˁG-idi*
father-ERG I Derbent-DAT tomorrow (H.SG)go-FUT
k'udi] naq' p-nu.
COMP yesterday say-AOR
'The father$_i$ said yesterday that I would go to Derbent tomorrow.' (the day after the father speaks)

Thus, (61) and (62) demonstrate the possibility of different interpretations between items with person features and temporal adverbs. I conclude that their behavior depends on different facts. Temporal adverbs can be interpreted from the matrix or the embedded contexts, and they can be analyzed in line with Schlenker (1999, 2003) (see Sect. 2.1), while the interpretation of personal pronouns strongly depends on the presence/absence of clitics.

A.4 The interpretation of participants in the embedded report when arguments or clitics are not expressed

Here I demonstrate the set of examples that illustrate how, for instance, an embedded subject is interpreted depending on the omission of the argument and the absence of clitics.

The core example (63a) repeats (1a) in the paper, where the subject is expressed by the first singular pronoun *izu* 'I' and doubled by the corresponding 1.SG clitic *=za*. The pronoun is shifted and refers to the matrix subject *gagaj* 'father.' However, Tabasaran freely allows the omission of arguments, so that the subject can easily be dropped. Example (63b) demonstrates the embedded clause where the subject is not overtly expressed, while at the same time the verb bears the 1.SG clitic *=za*. The omitted subject is interpreted as 1.P and has the same shifted interpretation, referring to *gagaj* 'father'.

(63) a. *gagaj-i*$_i$ *[izu*$_i$ *derbent.di-s aˁG-id=za*$_i$ *k'udi] p-nu.*
father-ERG I Derbent-DAT (H.SG)go-FUT=1SG COMP say-AOR
'The father$_i$ said that he$_i$ would go to Derbent.' (shifted)
*'The father said that I would go to Derbent.' (unshifted)

b. *gagaj-i*$_i$ *[_____*$_i$ *derbent.di-s aˁG-id=za*$_i$ *k'udi]*
father-ERG Derbent-DAT (H.SG)go-FUT=1SG COMP
p-nu.
say-AOR
'The father$_i$ said that he$_i$ would go to Derbent.' (shifted)
*'The father said that I would go to Derbent.' (unshifted)

Example (64) repeats example (2) and demonstrates the case where the clitic is absent, but the subject is expressed by the first person pronoun *izu* 'I.' The subject has only an unshifted interpretation, referring to the current speaker, as discussed in the paper.

(64) *gagaj-i*$_i$ *[izu*$_{k/*i}$ *derbent.di-s a*^{ʕ}*G-idi k'udi] p-nu.*
father-ERG I Derbent-DAT (H.SG)go-FUT COMP say-AOR
'The father said that I would go to Derbent.' (unshifted)
*'The father$_i$ said that he$_i$ would go to Derbent.' (shifted)

When the embedded clause has neither an expressed argument nor a clitic, the omitted argument is interpreted as third person, as shown in (65). The coreferential relationships are not established between the main and the omitted embedded subjects.

(65) *gagaj-i*$_i$ *[_____*$_k$ *derbent.di-s a*^{ʕ}*G-idi k'udi] p-nu.*
father-ERG Derbent-DAT (H.SG)go-FUT COMP say-AOR
'The father$_i$ said that (he/she/they)$_{k/*i}$ would go to Derbent.'

See Borer (1984), who discusses clitic doubling in several European languages and approaches clitics as proper governors if they are coindexed with empty categories.

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