Title: Partial control with overt embedded subjects in Chirag

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Abstract: This article documents a previously unattested variety of obligatory control (OC) in the Nakh-Daghestanian language Chirag Dargwa, which lies at the intersection between two phenomena known from previous research: overt controlled subjects and partial control. Despite being less widespread cross-linguistically, these two phenomena do occur in various unrelated languages and are known to not quite fit in with existing theories of OC. Combined in a single construction, they yield a new empirical option in the typology of OC and provide evidence in favor of a *pro* analysis of controlled subjects.*

Keywords: obligatory control, partial control, infinitive, desiderative predicates, Chirag Dargwa, Nakh-Daghestanian

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1. INTRODUCTION. That OC constructions can feature an overt embedded subject has been known since at least Borer 1989, who documents the phenomenon in Korean, Italian, Chinese, and Saramaccan, as shown in 1 and 2.[1]

(1) Korean

John-un$_i$ [Tom-i$_j$ Bill-eykey$_k$ [caki$_{*i/j/*k}$ Mary-lul manna-keyss-ta-ko]
John-TOP Tom-NOM Bill-DAT self(NOM) Mary-ACC meet-VOL-DECL-COMP
yaksokha-ess-ta-ko] mitnunta.
promise-PST-DECL-COMP believe
'John believes that Tom promised Bill to meet Mary.' (Park 2018: 306)

(2) Italian

Anche io odierei [andare solo io a Milano]
also I would.hate.1SG go.INF only I to Milan
'I too would hate it if only I went to Milan.' (Szabolcsi 2009: 2)

In (1), the lowest embedded clause is a controlled complement under the matrix control verb *yaksokhata* 'promise'. Yet, it features its own subject in the form of the long-distance reflexive *caki* obligatorily co-indexed with the matrix subject. In a similar way, the infinitival complement of the subject control verb *odiare* 'hate' has a subject in the form of the 1SG pronoun *io* in example 2 from Italian. Although less discussed in theoretical literature, examples like these are attested across a wide variety of languages and thus demonstrate that overt controlled subjects are a legitimate empirical option in OC; see Madigan 2008, Lee 2009, Park 2018 on overt controlled subjects in Korean; Mensching 2000, Herbeck 2015 on subject pronouns in controlled infinitival complements in Romance; Szabolcsi 2009 for a study of overt OC subjects in Hungarian and a cross-linguistic sketch.

Partial control (PC) is another less familiar phenomenon within the domain of OC. The most typical example discussed with regard to PC is an OC construction with an infinitival complement that hosts a collective predicate, as illustrated in 3.

(3) John decided to meet at 6 p.m.

In this example, the matrix verb *decide* is a subject control verb that requires the referential identity of the matrix subject and the subject of the embedded infinitival clause. The matrix subject in 3 is unambiguously singular, whereas the embedded predicate semantically selects a plural subject. The syntax of OC that requires the embedded subject to be identical to the singular matrix subject and the semantic requirement of the embedded predicate thus come into conflict. This conflict can be resolved by assigning a plural interpretation to the null embedded subject, which, however, must obligatorily include the matrix subject in its reference. That is, in example 3 above, the embedded subject is understood as a group that consists of the matrix subject *John* and some other contextually defined referent(s). PC thus allows partial identity mismatch between the matrix and embedded subject; see Barrie & Pittman 2004; Grano 2015; Landau 2000, 2004, 2015; Pearson 2016; Rodrigues 2007 for various proposals on PC.
Both phenomena, overt infinitival subjects and partial control, lie outside the most typical pattern of OC, called forward exhaustive OC, as illustrated in 4.

(4) John decided to quit the job.

In forward exhaustive OC, the subject of the matrix clause receives overt expression, whereas the subject of the embedded clause is absent on the surface and is interpreted in the semantics as strictly identical to the matrix subject. It is this variety of OC that one seeks to derive when developing a theory of OC, while the two phenomena introduced above are often viewed as somewhat peripheral. This insufficient attention to those "marginal" OC patterns results in a situation where no major approach to OC appears to be able to derive either of them in a natural way. Taken seriously, however, they do present some theoretical challenges and may require a major revision of our core assumptions about OC.
One such assumption shared by many Minimalist theories of OC, except perhaps the Movement Theory of Control, is that OC subjects are defective in that they lack reference and agreement features of their own and acquire them over the course of syntactic derivation from the controller in the matrix clause. Both PC and overt controlled subjects seem to contradict this view. With regard to PC, it is not clear how the mismatching part of the embedded subject's reference/features could be acquired from the matrix controller; with regard to overt controlled subjects, it is not obvious that they lack their own agreement features. Yet, the most common

strategy for dealing with these less familiar phenomena has so far been to maintain the core assumption about the inherent defectivity of OC subjects, claiming instead that some other part of the OC construction is responsible for said phenomena.

In what follows, I present some new data from Chirag Dargwa of the Nakh-Daghestanian family and argue that this language has this previously unattested option: PC constructions with overt embedded subjects. I show that not only do OC constructions in Chirag allow some overt material in the subject position of controlled clauses, but also that these overt subjects can, in a restricted and principled way, diverge from the matrix subject in reference and agreement features. In Section 2, I introduce the empirical pattern central to this article and document the inventory of overt expressions allowed to occupy the subject position of controlled infinitival complements in Chirag. In Section 3, I look into some of the syntactic properties of those complements, showing that what appears to be an infinitival subject is indeed located in the subject position of the infinitival clause. Section 4 specifically argues that infinitival constructions with overt subjects do instantiate OC, regardless of whether the embedded subject is identical to or divergent from the matrix one. In Section 5, I discuss some of the consequences the data presented here has for the general theory of OC. I argue that the existence of PC constructions with overt subjects drastically reduces the set of theoretical choices for either PC or overt controlled subjects, and that none of the existing proposals for either can account for the Chirag data. Even though I do not develop any specific technical proposal to account for the data, I suggest that the empirical phenomenon described in the article is best handled by the analysis that overt infinitival subjects under desiderative predicates in Chirag have to contain a pronominal, null or overt, obligatorily bound by the matrix subject. Extrapolating this conclusion to null expressions in the controlled subject position, I suggest that they are obligatorily bound null pronominals (*pro*s) rather than the theoretically distinct entity commonly known as PRO. On the theoretical side, I identify the analytical pieces warranted by OC structures in Chirag and propose that an analysis along the lines of Haug 2014 or Pearson 2016 might be the best solution.

2. THE EMPIRICAL PICTURE. Chirag is one of the most divergent dialects/languages of the Dargwa branch of the Nakh-Daghestanian family, originally spoken in the eponymous village of Chirag (Republic of Daghestan, Russia). The majority of inhabitants have now moved to the lowlands of Daghestan, primarily to the city of Kaspiysk, which makes it difficult to estimate the number of

speakers. Most Chirag speakers are also fluent in the regional variant of Russian, with younger ethnic Chirags tending to only speak Russian or at least to be considerably more fluent in Russian than in their ethnic language. I estimate the number of fully competent speakers of Chirag to be around 1,500 people.[2]

Chirag is a morphologically ergative, *pro*-drop, SOV language. Like other Dargwa languages, Chirag possesses verbal gender–number agreement which, together with case marking, functions according to the ergative–absolutive pattern: intransitive subjects and transitive objects in the (unmarked) absolutive case determine gender–number agreement on the verb, whereas transitive subjects in the (marked) ergative case do not. The presence of the gender–number agreement slot is lexical information: some verbs are specified as agreeing and show agreement in gender–number in all of their forms, finite and nonfinite, while other verbs never have gender–number agreement. Person agreement is mainly found in finite contexts with verbs forms that can head an independent sentence, but also in nonfinite clauses headed by the Conditional or the Subjunctive. Either the subject or the direct object may serve as controller of person agreement. The preference is for person agreement with the first or second person subject; if the subject is third person, a first or second person direct object triggers person agreement. In sentences where both core arguments are third person, the finite verb has third person agreement (Ganenkov 2022).

2.1. OVERT SUBJECTS OF INFINITIVAL CLAUSES. In this article, I discuss infinitival complement clauses in Chirag, illustrated in 5 through 8.

(5) ca xade čaq̣-r-aq̣χ-ib [iš-tːa-cːille r-uš-i]
one woman(ABS) PV-F.SG-begin:PF-AOR.3 PROX-PL-COM F.SG-talk-INF
'One woman began to talk with them.'

(6) [datːiq'ar-ra ca χabar b-urs-i] r-urχ-ud du
uncle-GEN one story(ABS) N.SG-tell-INF F.SG-can:IPF-FUT.1 1SG(ABS)
'I can tell a story about my uncle.'

(7) dam [ħuž-l-i e-j] b-ikːan-da
1SG(DAT) hajj-OBL-DAT go:PF-INF N.SG-want:IPF-DUR-1
'I want to go to hajj.'

(8) [tːupang išʷ-i] itː-a-j b-uχːu-l-ačːu
rifle(ABS) throw:PF-INF DIST-PL-DAT N.SG-know:IPF-CVB-PST:NEG
'They didn't know how to shoot a gun.'

Infinitival complements can appear with a variety of matrix predicates: implicative ('forget', 'manage'), aspectual ('begin'), modal ('be able', 'must', 'may'), evaluative ('good', 'difficult'), and desiderative ('want', 'intend', 'decide', 'be afraid', 'agree', 'ready', 'strive'). As can be seen from the examples above, Chirag has a very typical forward control type of OC with an overt matrix subject and an embedded verb in the infinitive, but no expressed subject in the embedded clause. The infinitive is a nonfinite verbal form, which can only appear in embedded clauses. As mentioned above, the infinitive can inflect for gender–number agreement, when its lexical stem is marked as agreeing for gender–number. The infinitive of an agreeing verb shows the features of the clause-mate absolutive argument, such as an intransitive subject as in 5 or a transitive direct object as in 6. The infinitive of a verb not agreeing in gender–number does not show gender–number agreement; see 7 and 8.
In addition to the dominant OC pattern illustrated above, Chirag also has another variant of the infinitival construction, where the subject position inside the infinitival clause is occupied by an overt element. By way of introduction, let us consider the examples below.

(9) dami b-ikː-an-da [di-cːi=cuna ʁu̯ra b-uc-i]
1SG(DAT) N.SG-want:IPF-DUR-1 1SG-ERG=only hare(ABS) N.SG-catch:PF-INF
'I want to catch the hare myself/alone.'
(10) rasul [cin-i=cuna qale b-arq'-i] urχ-ar
R.(ABS) self.SG-ERG=only house(ABS) N.SG-do:PF-INF (M.SG)can:IPF-FUT.3
'Rasul (male first name) can build a house on his own.'
(11) maħmad [cin-i=cuna qal-be d-arq'-i] čą̄q-j-ą̄χ-ib
M.(ABS) self.SG-ERG=only house-PL(ABS) N.PL-do:PF-INF PV-M.SG-begin:PF-AOR.3
'Mahammad (male first name) started building a house himself/alone.'

According to the analysis proposed in this article, both the matrix clause and the embedded clause each contain their own overt subject in these examples: a lexical DP or a personal pronoun

in the matrix clause, on one hand, and a pronoun in the embedded clause, on the other hand. When the matrix subject is a 1.P or 2.P pronoun, the embedded subject is simply another occurrence of the same personal pronoun, as in 9. When the matrix subject is a third person DP, the embedded subject appears in the form of the long-distance reflexive pronoun, as in 10 and 11.[3]

While any controlled infinitival complement in Chirag can contain an overt pronominal or reflexive subject, below I concentrate on infinitival constructions with desiderative predicates. For the purposes of this article, I assume a semantic definition of desiderative verbs as the verbs that describe (positive or negative) volition or intention of a participant (cf. also Landau 2000: 37-38). Examples of desiderative verbs that take infinitival complements in Chirag are given in 12.[4]

(12) Desiderative verbs with infinitival complements[5]
B-ikː- 'want', *B-ikːagi* 'begin to want', *q'ast B-u* 'intend', *q'ast B-arq'i* 'decide', *ħazur B-uχi* 'become ready, prepare', *xul B-arq'i* 'strive', *raʕde B-uχi* 'agree', *ruχː B-učːi* 'become afraid'

Like other infinitival complements, infinitival clauses with desiderative predicates allow an overt expression in the subject position, as shown in 9 for the verb *B-ikː-* 'want' and in 13 for the verb *q'ast B-arq'i* 'decide'.[6]

(13) a. di-cːe q'ast b-arq'-ib-da [du꞊cuna šːa r-ač'-i]
1SG-ERG decision(ABS) N.SG-do:PF-AOR-1 1SG(ABS)=only home F.SG-come:PF-INF
'I decided to come back home MYSELF/ALONE.'

b. χažat-le q'ast barq'ib [ce꞊r›i꞊cuna šːa r-ač'-i]
K.-ERG decision made.3 self‹F.SG›(ABS)=only home F.SG-come:PF-INF
'Khadijat (female first name) decided to come back home HERSELF/ALONE.'

What is special about desiderative predicates compared to other matrix verbs is that they allow a controlled infinitival complement where the embedded subject is expressed by a plural pronoun even when the matrix subject is singular.[7] Consider the sentences in 14.

(14) a. di-cːe$_{i}$ q'ast barq'ib-da [nusːa$_{i+}$=cuna šːa d-ač'-i]
1SG-ERG decision made-1 1PL.EXCL(ABS)=only home 1/2PL-come:PF-INF
'I decided that we (the speaker and other person/people contextually associated with the speaker) would come back home THEMSELVES/ALONE.'

b. χažat-le$_{i}$ q'ast barq'ib [čebži$_{i+}$=cuna šːa b-ač'-i]
K.-ERG decision made.3 self.PL(ABS)=only home M/F.PL-come:PF-INF
'Khadijat decided that they (Khadijat and the group contextually associated with her) would come back home THEMSELVES/ALONE.'

In both examples above, the infinitival clause contains an overt expression that, judged from its case marking, looks like (and will be called so further below) the subject of that embedded clause: a personal pronoun in 14a and a long-distance reflexive in 14b in absolutive case, as appropriate for the subject of the intransitive embedded verb *B-ač'i* 'come'. In both examples, this pronoun must be interpreted as a plurality that includes the subject of the matrix clause and at least one other contextually salient participant.
In both examples above, the embedded subject matches the matrix subject in person, but differs in number: the matrix subject is singular, whereas the embedded subject is plural. However, an additional mismatch in person is also possible, as shown in 15.

(15) χažat-le$_{i}$ q'ast barq'ib [nusːa=cuna$_{i+}$ šːa d-ač'-i]
K.-ERG decision made.3 1PL.EXCL(ABS)=only home 1/2PL-come:PF-INF
'Khadijat decided that we (the group which minimally includes the speaker and Khadijat) would come back home OURSELVES/ALONE.'

In example 15, the subject of the infinitival clause is the 1PL.EXCL (first person plural exclusive) pronoun, while the subject of the matrix clause is a 3SG singular DP. Again, the embedded subject must be interpreted as a plurality that includes the referent of the matrix subject. The reference of the embedded subject must also include the speaker, in accordance with the specification of the pronoun *nusːa* as a first person pronoun. The 1PL.EXCL pronoun in 15 thus minimally refers to the speaker and the matrix subject but can also include other contextually salient participant(s) in its reference.[8]

Matrix predicates other than desiderative verbs cannot have an infinitival complement with an embedded subject that diverges from the matrix one in person or number, as illustrated in 16 for the modal verb *B-uχi* ‘can, be able’.

(16) *rasul [ču-d=cuna qale b-arq’-i] urχ-ar
R.(ABS) self.PL-ERG=only house(ABS) N.SG-do:PF-INF (M.SG)can:IPF-FUT.3
Intended: *‘Rasul can build a house themselves.’

2.2. TWO CONDITIONS FOR OVERT SUBJECTS. The ability of infinitival complements with desiderative verbs to feature their own overt subject is regulated by two conditions. The first one is spelled out in 17.

(17) Overt embedded subjects are only acceptable under contrastive focus.

The most straightforward way to satisfy this requirement is to attach a focus-sensitive clitic to the overt embedded subject. There are at least three such clitics in Chirag: *=ra* ‘and, also, even’, *=cuna* ‘only, alone’, *=jal* ‘only, alone’. Examples 9 to 15 above show the use of the clitic *=cuna*; examples 18 and 19 illustrate the clitic *=jal* and the clitic *=ra*, respectively.

(18) dami [du=jal š:a w-ač’-i] b-ik:-an-da
1SG(DAT) 1SG(ABS)=only home M.SG-come:PF-INF N.SG-want:IPF-DUR-1
‘I want to come back home ALONE.’

(19) dami [du=ra š:a w-ač’-i] b-ik:-an-da
1SG(DAT) 1SG(ABS)=ADD home M.SG-come:PF-INF N.SG-want:IPF-DUR-1
‘I want to come back home AS WELL (i.e. I want it to be the case that I, too, come back home).’

Overt infinitival subjects, both singular and plural, are unacceptable in the absence of contrastive focus, as shown in 20. Overt subjects with contrastive focus expressed solely by intonation are strongly dispreferred in elicitation, though not entirely rejected; see 21.

(20) a. *dami [du š:a r-ač'-i] b-ik:-an-da
1SG(DAT) 1SG(ABS) home F.SG-come:PF-INF N.SG-want:IPF-DUR-1
'I want to come back home.'

b. *χažat-l-i [ce‹r›e š:a r-ač'-i] b-ik:-le
K.-OBL-DAT self‹F.SG›(ABS) home F.SG-come:PF-INF N.SG-want:IPF-DUR.3
'Khadijat wants to come back home.'

(21) a. ʔdami [DU š:a r-ač'-i] b-ik:-an-da
1SG(DAT) 1SG(ABS) home F.SG-come:PF-INF N.SG-want:IPF-DUR-1
'I want to come back home myself.'

b. ʔχažat-l-i [CE‹R›E š:a r-ač'-i] b-ik:-le
K.-OBL-DAT self‹F.SG›(ABS) home F.SG-come:PF-INF N.SG-want:IPF-DUR.3
'Khadijat wants to come back home HERSELF.'

The second requirement is defined in 22.

(22) The embedded subject in controlled infinitival clauses with desiderative verbs must include the matrix subject in its reference.

This generalization covers both variants of the construction shown above: embedded subjects fully matching the matrix subject in reference, as in 9–11 and 13 above, on one hand, and those including the matrix subject as a subset, as in 14 and 15, on the other hand. Note that neither of the requirements is entirely new in the typology and theory of OC. Since Landau's (2000) work, desiderative predicates are commonly recognized as allowing PC. The contrastive/exhaustive focus requirement is also a common observation when it comes to the possibility of overt controlled subjects (Szabolcsi 2009, Livitz 2014); it is clear now that overt controlled subjects under contrastive focus are a reality in many languages rather than a typological rarum.

2.3. THE CALCULUS OF OVERT INFINITIVAL SUBJECTS WITH DESIDERATIVE VERBS. Chirag has six pronouns that are allowed to appear in the embedded subject position: two singular personal pronouns (*du* '1SG', *uˤ* '2SG'), three plural personal pronouns (*nus:a* '1PL.EXCL', *nux:a* '1PL.INCL', *nuš:a* '2PL'), and the long-distance reflexive *ceBe* (singular or plural).[9] When the

subjects of the matrix clause and the embedded clause are referentially identical, the embedded subject must exactly match the agreement features of the matrix subject. When the subject of the matrix clause is properly included into the reference of the embedded subject, the latter must have agreement features compatible with the matrix subject's features. Sentences where the embedded subject is disjoint from the matrix subject in reference are ungrammatical.
The grammaticality of a combination of a certain matrix subject with a given pronoun in the embedded subject position is determined by a hierarchy that is reminiscent of the one used in person resolution rules in agreement with coordinated NPs (Corbett 2006). As long as the matrix subject is 1SG, the embedded subject can only be first person. This receives a natural account given the requirement in 22, since any DP whose reference includes the speaker must be specified as first person. The embedded subject can thus be expressed by the 1SG pronoun, as in 13a above, 1PL.EXCL pronoun, illustrated in 14a, or 1PL.INCL pronoun, illustrated in 23.

(23) di-cːe$_{i}$ q'ast barq'ib-da [nuxːa$_{i+}$=cuna šːa d-ač'-i]
1SG-ERG decision made-1 1PL.INCL(ABS)=only home 1/2PL-come:PF-INF
'I decided that we, including you, would come back home OURSELVES/ALONE.'

Second- and third-person embedded subjects, whether singular or plural, cannot be understood as including the speaker and thus violate the generalization in 22. The examples below demonstrate the ungrammaticality of such sentences.

(24) *di-cːe q'ast barq'ib-da [uˤ=cuna šːa w-ač'-i]
1SG-ERG decision made-1 2SG(ABS)=only home M.SG-come:PF-INF
Intended: 'I decided that you would come back home YOURSELF/ALONE.'

(25) *di-cːe q'ast barq'ib-da [ceʿrʾi=cuna šːa r-ač'-i]
1SG-ERG decision made-1 self‹F.SG›(ABS)=only home F.SG-come:PF-INF
Intended: 'I decided that she would come back home HERSELF/ALONE.'

(26) *di-cːe q'ast barq'ib-da [nušːa=cuna šːa d-ač'-i]
1SG-ERG decision made-1 2PL(ABS)=only home 1/2PL-come:PF-INF
Intended: 'I decided that you guys would come back home YOURSELVES/ALONE.'

(27) *di-cːe q'ast barq'ib-da [čebži=cuna š:a b-ač'-i]
1SG-ERG decision made-1 self.PL(ABS)=only home M/F.PL-come:PF-INF
Intended: 'I decided that they would come back home THEMSELVES/ALONE.'

When the matrix subject is 2SG, the embedded subject can be either 2.P, singular or plural, or 1PL.INCL, as in 28–30. Again, this distribution follows from 22: any DP that includes the addressee in its reference must be specified as 2.P.[10]

(28) aˤ-cːe q'ast barq'ib-de [uˤ=cuna š:a w-ač'-i]
2SG-ERG decision made-2SG 2SG(ABS)=only home M.SG-come:PF-INF
'You decided that you would come back home YOURSELF/ALONE.'
(29) aˤ-cːe q'ast barq'ib-de [nuš:a=cuna š:a d-ač'-i]
2SG-ERG decision made-2SG 2PL(ABS)=only home 1/2PL-come:PF-INF
'You decided that you all would come back home YOURSELVES/ALONE.'
(30) aˤ-cːe q'ast barq'ib-de [nux:a=cuna š:a d-ač'-i]
2SG-ERG decision made-2SG 1PL.INCL(ABS)=only home 1/2PL-come:PF-INF
'You decided that we, including you, would come back home OURSELVES/ALONE.'

First person exclusive pronouns and third person reflexives cannot have the addressee as part of their reference and are not allowed in the position of the embedded subject, as shown in 31– 34.

(31) *aˤ-cːe q'ast barq'ib-de [du=cuna š:a w-ač'-i]
2SG-ERG decision made-2SG 1SG(ABS)=only home M.SG-come:PF-INF
Intended: 'You decided that I would come back home MYSELF/ALONE.'
(32) *aˤ-cːe q'ast barq'ib-de [ceꞇi=cuna š:a r-ač'-i]
2SG-ERG decision made-2SG self‹F.SG›(ABS)=only home F.SG-come:PF-INF
Intended: 'You decided that she would come back home HERSELF/ALONE.'
(33) *aˤ-cːe q'ast barq'ib-de [nus:a=cuna š:a d-ač'-i]
2SG-ERG decision made-2SG 1PL.EXCL(ABS)=only home 1/2PL-come:PF-INF
Intended: 'You decided that we would come back home OURSELVES/ALONE.'

(34) *aˁ-cːe q'ast barq'ib-de [čebži=cuna šːa b-ač'-i]
2SG-ERG decision made-2SG self.PL(ABS)=only home M/F.PL-come:PF-INF
Intended: 'You decided that they would come back home THEMSELVES/ALONE.'

Finally, when the matrix subject is a third person DP, the embedded subject can be expressed by a singular reflexive, as in 13b, by a plural reflexive, as in 14b, or by a first/second person plural pronoun, as in 15 and in the examples below.

(35) χažat-le$_{i}$ q'ast barq'ib [nux:a=cuna$_{i+}$ šːa d-ač'-i]
K.-ERG decision made.3 1PL.INCL(ABS)=only home 1/2PL-come:PF-INF
'Khadijat decided that we (the group which minimally includes the speaker, the addressee, and Khadijat) would come back home OURSELVES/ALONE.'

(36) χažat-le$_{i}$ q'ast barq'ib [nuš:a=cuna$_{i+}$ šːa d-ač'-i]
K.-ERG decision made.3 2PL(ABS)=only home 1/2PL-come:PF-INF
'Khadijat decided that you guys (the group which minimally includes Khadijat and the addresse of the speaker) would come back home YOURSELVES/ALONE.'

However, singular personal pronouns are ungrammatical in the embedded subject position in the presence of 3.P matrix subject.

(37) *χažat-le q'ast barq'ib [du=cuna šːa w-ač'-i]
K.-ERG decision made.3 1SG(ABS)=only home M.SG-come:PF-INF
Intended: 'Khadijat decided that I would come back home MYSELF/ALONE.'

(38) *χažat-le q'ast barq'ib [uˁ=cuna šːa r-ač'-i]
K.-ERG decision made.3 2SG(ABS)=only home F.SG-come:PF-INF
Intended: 'Khadijat decided that you would come back home YOURSELF/ALONE.'

Table 1 summarizes the possibilities for overt pronouns in the subject position of controlled infinitival complements under desiderative predicates.[11]

<INSERT TABLE 5 ABOUT HERE>

Note that regardless of the person of the matrix subject, the position of the embedded subject can never be filled with a referentially disjoint referential DP or a demonstrative pronoun, as shown in 39 and 40.

(39) *χažat-le q'ast barq'ib [ʔali=cuna š:a w-ač'-i]
K.-ERG decision made.3 A.(ABS)=only home M.SG-come:PF-INF
Intended: 'Khadijat decided that Ali (male first name) would come back home HIMSELF/ALONE.'

(40) *χažat-le q'ast barq'ib [jaˁ=cuna š:a w-ač'-i]
K.-ERG decision made.3 PROX.SG(ABS)=only home M.SG-come:PF-INF
Intended: 'Khadijat decided that he would come back home HIMSELF/ALONE.'

Instead, disjoint embedded subjects with some desiderative verbs are allowed in a different nonfinite clausal complement, with the head in the form of perfective converb, as shown in 41 for the verb *B-ik:-* 'want'. The embedded subject has the usual morphological case required by the embedded lexical verb, and it does not need any focus marking in such complements.[12]

(41) dami [{χažat / uˁ} š:a r-ač'-ib-le] b-ik:-an-da
1SG(DAT) K.(ABS) 2SG(ABS) home F.SG-come:PF-AOR-CVB N.SG-want:IPF-DUR-1
'I want Khadijat/you to come back home.'

An anonymous reviewer also asks whether expressives are possible in the embedded subject position, pointing out that in some languages they are allowed in constructions where exact identity is otherwise required (Haddad 2013). As example 42 demonstrates, expressives cannot appear in the infinitival subject position in Chirag, regardless of whether or not they carry a focus clitic.

(42) *ʔali-l-i b-ik:-le [ruχ:uč'(=cuna) š:a w-ač'-i]
A.-OBL-DAT N.SG-want:IPF-DUR.3 wimp(ABS)=only home M.SG-come:PF-INF
Intended: 'Ali$_i$ wants the wimp$_i$ to come back home (alone).'

However, the embedded subject position can be filled in with a common noun that co-occurs with 1.P agreement (known as subset controllers in unagreement constructions; Ackema & Neeleman 2018) on the condition that it carries a focus clitic. The sentence in 43a illustrates unagreement in a simple clause; example 43b shows that the unagreement construction can also be hosted by an infinitival complement (see the 1/2PL prefix *d-* on the infinitive).

(43) a. c:ade š:a d-ač'-ib-da
women(ABS) home 1/2PL-come:PF-AOR-1
'We women came back home.'

b. nis:i b-ik:-l-ač:u-da [c:adi=cuna š:a d-ač'-i]
1PL.EXCL(DAT) N.SG-want:IPF-DUR-NEG-1 women(ABS)=only home 1/2PL-come:PF-INF
'We don't want us women to come back home alone.'

The proper analysis of such expressions in independent clauses is still a subject of theoretical debate as to whether they represent the true subject or just are adjoined to the null subject (see Ackema & Neeleman 2018 for a discussion of theoretical options and further references). I am not in a position to defend one alternative over the other and will leave their status in infinitival complements out of discussion as well.

In what has been described so far, the subject position in infinitival complements is occupied by a pronoun or a long-distance reflexive. However, there is one more important class of expressions able to fill in that position, which are coordinated DPs, as demonstrated in 44.[13]

(44) di-c:e$_i$ q'ast barq'ib-da [du$_i$=ra χažat$_j$=ra š:a d-ač'-i]
1SG-ERG decision made-1 1SG(ABS)=ADD K.(ABS)=ADD home 1/2PL-come:PF-INF
'I decided that Khadijat and I would come back home.'

However, the acceptability condition in examples with a coordinated DP in the embedded subject position remains the same, that is, the infinitival subject must include the matrix subject in its reference.[14] That can be achieved by having a personal pronoun or a long-distance reflexive bound by the matrix subject as one of the conjuncts; see also 45. Coordinated DPs where neither

of the conjuncts in the infinitival subject position is bound by the matrix subject are unacceptable, as demonstrated in 46, just like other examples with disjoint subjects shown above.

(45) χažat-le$_i$ q'ast barq'ib [ceʁi$_i$=ra du=ra š:a d-ač'-i]
K.-ERG decision made.3 self‹F.SG›(ABS)=ADD 1SG(ABS)=ADD home 1/2PL-come:PF-INF
'Khadijat decided that she and I would come back home.'

(46) *χažat-le$_i$ q'ast barq'ib [ʔali$_i$=ra du=ra š:a d-ač'-i]
K.-ERG decision made.3 A.(ABS)=ADD 1SG(ABS)=ADD home 1/2PL-come:PF-INF
Intended: 'Khadijat decided that Ali and I would come back home.'

Summing up, infinitival constructions under desiderative verbs in Chirag allow overt expressions in what looks like the embedded subject position. The expression can either fully match the matrix subject in agreement features or diverge from it in number and in person. Three kinds of overt expressions are allowed in that position: (i) personal pronouns, (ii) long-distance reflexives, and (iii) coordinated DPs with a personal pronoun or a long-distance reflexive as one of the conjuncts. Despite the fact that such examples, especially those with coordinated DPs, might not look like controlled structures, the distribution of overt expressions in the embedded subject position indicates that they are: only those overt expressions are allowed that include the matrix subject in their reference. With personal pronouns and long-distance reflexives, the embedded subject must either be fully identical to the matrix subject or include it as a subset. With coordinated DPs in the infinitival subject position, one of the conjuncts must either be fully identical to the matrix subject or include it as a subset. When the matrix subject is not included in the reference of the embedded subject in any way, the construction with an overt infinitival subject is ungrammatical. In the next section, I analyze the structure of infinitival complements in more detail.

3. STRUCTURAL MAKE-UP OF INFINITIVAL CLAUSES. In this section, I discuss the properties of infinitival constructions with overt embedded subjects and demonstrate that: (i) the overt infinitival subject is in fact licensed inside the embedded clause, (ii) it remains in the embedded

clause in the final representation, (iii) it is a true subject rather an intensifier adjoined to the null embedded subject, and (iv) the infinitival constructions are biclausal.

3.1. INFINITIVAL CLAUSES LICENSE THEIR OWN SUBJECT. Case marking represents the most important piece of evidence about the structural origin of nominal arguments in infinitival constructions, straightforwardly showing that overt embedded subjects in the construction under discussion do originate in the infinitival clause.

A short introduction into subject case marking in Chirag is in order here (see Ganenkov 2022 for more details). There are three major ways to case-mark clausal subjects. Chirag is a morphologically ergative language, meaning that the subject of a transitive verb is expressed by the special ergative case, as in 47, while the subject of an intransitive verb is in the unmarked absolutive case, as in 48.

(47) rusːi-le qa̱r b-erk-un
girl-ERG apple(ABS) N.SG-eat:PF-AOR.3
'The girl ate an apple.'

(48) rusːe r-isː-ib
girl(ABS) F.SG-cry:PF-AOR.3
'The girl started crying.'

The same DP *rusːe* 'the girl' appears in absolutive case when in the position of the subject of the intransitive verb *B-isːi* 'cry' in 48, but carries ergative marking when used as the subject of the transitive verb *B-erčʷi* 'eat' in 47. Apart from the ergative and absolutive subjects, Chirag also has subject experiencer verbs, such as *B-ga̱ħi* 'see', *č'a-B-aq'i* 'hear', *ha-B-aχi* 'find out', *čarʁʷi* 'understand', and *B-ikː-* 'love, want (stative)', which have the subject in the dative. 49 shows subject case marking in a sentence with the dative subject verb *B-ga̱ħi* 'see'.

(49) rusːi-l-i sːik-ne d-a̱ħ-un
girl-OBL-DAT bear-PL(ABS) N.PL-see:PF-AOR.3
'The girl saw bears.'

This system of subject case marking makes it fairly easy to track the structural origin of DPs in infinitival constructions as long as we make sure that the matrix predicate and the embedded infinitive require different morphological cases for their subject. In example 13, repeated here as 50, the transitive matrix verb *q'ast B-arq'i* 'decide' requires an ergative subject, whereas the embedded verb is intransitive, thus calling for an absolutive subject.

(50) a. di-cːe q'ast barq'ib-da [du꞊cuna šːa r-ač'-i]
1SG-ERG decision made-1 1SG(ABS)=only home F.SG-come:PF-INF
'I decided to come back home MYSELF/ALONE.'

b. χažat-le q'ast barq'ib [ceᵹrᵹi꞊cuna šːa r-ač'-i]
K.-ERG decision made.3 selfᵹF.SGᵹ(ABS)=only home F.SG-come:PF-INF
'Khadijat decided to come back home HERSELF/ALONE.'

The fact that personal pronouns, long-distance reflexives, and coordinated DPs appear in the absolutive in those examples thus suggests that they receive case within the embedded clause. In a similar way, example 9, repeated below as 51, features the matrix verb *B-ikːˑ* 'love, want (stative)', which invariably has a dative subject, whereas the infinitival clause hosts a pronoun in ergative case as required by the embedded transitive clause. In 18, repeated as 52, the same matrix verb takes an intransitive infinitival complement, which licenses an embedded subject in absolutive case. Again, the absolutive form of the pronoun indicates that it is assigned case in the embedded clause. It is clear, therefore, that the form of the pronoun/reflexive in the construction discussed co-varies with the transitivity of the embedded predicate, thus diagnosing that reflexive/pronoun as originating in the subject position of the infinitival clause.

(51) dami b-ikːˑ-an-da [di-cːi꞊cuna ʁu̯ra b-uc-i]
1SG(DAT) N.SG-want:IPF-DUR-1 1SG-ERG=only hare(ABS) N.SG-catch:PF-INF
'I want to catch the hare myself/alone.'

(52) dami [du꞊jal šːa w-ač'-i] b-ikːˑ-an-da
1SG(DAT) 1SG(ABS)=only home M.SG-come:PF-INF N.SG-want:IPF-DUR-1
'I want to come back home MYSELF/ALONE.'

3.2. OVERT SUBJECTS REMAIN IN THE INFINITIVAL CLAUSE. The major piece of evidence for the structural position of the pronoun/reflexive comes from gender–number agreement, which is always controlled by the clause-mate absolutive argument in Chirag. The matrix and embedded clauses constitute two different domains for gender–number agreement, that is, they generally agree in gender–number with different controllers. This can be seen in example 53 where the matrix verb *ruχ: Buč:i* 'be afraid' agrees with its absolutive subject *gale* 'boys', whereas the embedded infinitive *t:ez warq'i* 'wake up' shows gender–number agreement with its absolutive direct object *ʔale* 'Ali (male first name)'.

(53) gal-e [ʔale t:ez w-arq'-i] ruχ: b-uk:-le
boy-PL(ABS) A.(ABS) awake M.SG-do:PF-INF afraid M/F.PL-LV:IPF-DUR.3
'The boys are afraid to wake up Ali.'

Inspecting gender–number agreement in infinitival constructions with overt embedded subjects, we can see that embedded pronouns/reflexives in absolutive case determine gender–number agreement on the embedded infinitive, but never do so on the matrix verb, even when the matrix clause lacks its own absolutive argument, as in 54, where the matrix verb has the default N.SG prefix and third person agreement suffix despite the 1PL feature of the embedded subject.

(54) χažat-l-i b-ik:-le [nus:a=cuna š:a d-ač'-i]
K.-OBL-DAT N.SG-want:IPF-DUR.3 1PL.EXCL(ABS)=only home 1/2PL-come:PF-INF
'Khadijat wants that we (including herself) would come back home OURSELVES/ALONE.'

Gender–number agreement and/or person agreement reflecting the agreement features of the absolutive pronoun is ungrammatical here, as shown in 55, which means that the overt focused pronoun belongs to the infinitival clause rather than to the matrix clause.

(55) *χažat-l-i { d-ik:-le / b-ik:-an-da / d-ik:-an-da }
K.-OBL-DAT 1/2PL-want:IPF-DUR.3 N.SG-want:IPF-DUR-1 1/2PL-want:IPF-DUR-1
[nus:a=cuna š:a d-ač'-i]
1PL.EXCL(ABS)=only home 1/2PL-come:PF-INF

Intended: ‘Khadijat wants that we (including herself) would come back home OURSELVES/ALONE.’

Summarizing, subject case marking and the behavior of gender–number agreement allow us to locate the focused pronoun/reflexive in the subject position of the infinitival clause.

3.3. OVERT SUBJECTS ARE NOT INTENSIFIERS ADJOINED TO THE NULL EMBEDDED SUBJECT. Given that the overt pronoun in the examples above belongs to the infinitival clause, the question now is whether they instantiate the true subject of the infinitival complement or rather an intensifier adjoined to the null subject. Indeed, both reflexives and personal pronouns allowed in this position potentially could be analyzed as a kind of emphatic pronominal double, as shown in 56, especially given that they can in fact function as intensifiers, as seen from their behavior in simple clauses where they co-occur with an overt DP, always matching it in agreement features and in case. The following examples illustrate the reflexive in the intensifying function adjoined to the absolutive subject, as in 57, and ergative subject, as in 58.

(56) The emphatic double hypothesis for long-distance reflexives in infinitival clauses

DP$_{i\ [ERG]}$ decide-3 [PRO$_{i\ [ABS]}$ self$_{i\ [ABS]}$=only V-INF]

(57) iχ cej ar-w-arč-ib-le w-ač’-ib-le

DEM(ABS) self.M.SG(ABS) away-M.SG-turn:PF-AOR-CVB M.SG-come:PF-AOR-CVB

‘He came back himself.’

(58) ʔaš̱ː-na-d b-irq’-an-de nisːija čːu-d

shepherd-PL-ERG N.SG-do:IPF-DUR-PST cheese(ABS) self.PL-ERG

‘The shepherds used to make cheese themselves.’

It might be tempting to assume that overt reflexives in controlled clauses also represent such an emphatic double, adjoined to a null infinitival subject, as schematically shown in 56. While a similar analysis could be extended to personal pronouns, it is difficult to imagine a non-subject analysis of coordinated NPs in the infinitival clause in examples like 44–46, which straightforwardly demonstrate that infinitival clauses under desiderative predicates can have their own overt subject. For this reason and for the purpose of uniformity, I assume that long-distance

reflexives and personal pronouns in the infinitival clause also occupy the subject position.[15] Note that this assumption makes no difference for the argument to follow, since (i) all critical claims can be illustrated with coordinated DPs in the embedded subject position, (ii) even if long-distance reflexives and personal pronouns are emphatic doubles, they are still part of an OC construction showing the controlled subject's agreement features in the morphology and thus certifying, together with gender–number agreement, that PC can be seen in the overt syntax.

3.4. INFINITIVAL CONSTRUCTIONS WITH DESIDERATIVE VERBS ARE BICLAUSAL. In this section, I will show that the infinitival clause in the examples above lexicalizes a syntactic structure no smaller in size than TP. The fact that the infinitival clause licenses its own subject, as demonstrated above, already indicates that the complement minimally instantiates *v*P. In addition, the infinitival complement of a desiderative verb can be negated, as shown in 59.

(59) di-cːe q'ast barq'ib-da [du꞊cuna šːa aˁ-r-ač'-i]
1SG-ERG decision made-1 1SG(ABS)=only home NEG-F.SG-come:PF-INF
'I decided not to come back home MYSELF/ALONE.'

The possibility of independent negation suggests that the embedded clause in 59 instantiates a piece of structure bigger than *v*P, since *v*Ps cannot have negation independent of the matrix clause in Chirag (see Ganenkov 2022). Furthermore, an infinitival clause embedded under a desiderative matrix predicate can also host its own temporal adverbial, including the one that conflicts with the temporal interpretation of the matrix clause; see 60.

(60) di-cːe q'ast barq'ib-da [ʁuršalli hanži-l-i du꞊cuna r-ač'-i]
1SG-ERG decision made-1 tomorrow M.-OBL-DAT 1SG(ABS)=only F.SG-come:PF-INF
'I decided to come back to Makhachkala tomorrow MYSELF/ALONE.'

In this sentence, the matrix clause describes an event located in the past with respect to the speech time, whereas the infinitival clause hosts the adverb *ʁuršalli* 'tomorrow', thus indicating that the respective event will occur after the speech time. The behavior of negation and temporal adverbs thus diagnose the infinitival complement as no less than TP.

Summing up, this section demonstrates that the infinitival complement under a matrix desiderative verb is a separate clause that can have an overt expression in the subject position. The next section evaluates the behavior of infinitival subjects against the OC vs. NC (no control) distinction.

4. ESTABLISHING OC. In this section, I show that infinitival constructions with desiderative verbs in Chirag represent OC, that is, the subject of the embedded clause is syntactically forced to be referentially dependent on the subject of the matrix clause. Recall that in Chirag, the embedded subject does not need to fully match the matrix subject and can include the latter as a subset. One indicator that the relation between the matrix subject and the embedded subject is not that of accidental coreference is the distribution of overt elements available in the embedded subject position. As described in Section 2, whether an overt expression is grammatical or not as the subject of the embedded clause depends on its semantic interpretation and its agreement features. Overt expressions in the embedded subject position are judged acceptable only under a controlled interpretation; the agreement features of the embedded subject must be compatible with those of the matrix subject. Note that this requirement also extends to first and second person pronouns, which normally don't require a c-commanding antecedent to receive their reference. This distribution follows naturally if the embedded subject is grammatically coerced to include the matrix subject in its reference, whereas it requires an explanation under the assumption that the structure is noncontrolled.

Landau (2013: 29) defines OC as constructions that display the "OC signature," which includes two criteria: (i) the controller must be "co-dependent" (roughly, clausemate) of the infinitival clause, and (ii) the embedded subject must be interpreted as a bound variable.

With regard to possible controllers, note that overt referentially free subjects in the infinitival clause are ungrammatical, thus demonstrating that they need to have a controller, as extensively documented in Section 2 above. Moreover, the embedded subject must find its antecedent not just in any dominating clause, but specifically in the immediately dominating matrix clause. When the reflexive in the embedded subject position matches the agreement features of the matrix subject, the embedded reflexive can only be interpreted as coindexed with that matrix subject, rather than with a subject of some other upper clause, as in 61.

(61) babaj-l-i b-uχːu-le [χažat-le [ceᵒrᵒi = cuna
mother-OBL-DAT N.SG-know:IPF-DUR.3 K.-ERG self‹F.SG›(ABS)=only
šːa r-ač'-i] q'ast barq'ib-ze]
home F.SG-come:PF-INF decision made-ATR
i. 'Mom knows that Khadijat decided to come back home HERSELF/ALONE.'
ii. *'Mom knows that Khadijat decided that she (=Mom) would come back home HERSELF/ALONE.'

Note that *ceBe* is a long-distance reflexive, which can be bound across more than one clausal boundary, as shown in 62 and 63 for the reflexive in the subject and object position, respectively.

(62) babaj-l-i b-uχːu-le [χažat qːila-r-ič-ib-ze
mother-OBL-DAT N.SG-know:IPF-DUR.3 K.(ABS) realize-F.SG-LV:PF-AOR-ATR
[itːa-d ceᵒrᵒi cun r-i̱bq-ib-zi-l]]
DIST-PL-ERG self‹F.SG›(ABS) how F.SG-deceive:PF-AOR-ATR-EQ
'Mom$_i$ knows that Khadijat$_j$ realized how they had conned her$_{i/j}$.'

(63) babaj-l-i b-uχːu-le [χažat qːila-r-ič-ib-ze
mother-OBL-DAT N.SG-know:IPF-DUR.3 K.(ABS) realize-F.SG-LV:PF-AOR-ATR
[ceᵒrᵒi murt r-ubk'-an-zi-l]]
self‹F.SG›(ABS) when F.SG-die:IPF-DUR-ATR-EQ
'Mom$_i$ knows that Khadijat$_j$ realized when she$_{i/j}$ would die.'

However, when appearing in the subject position of the infinitival clause, it can only refer back to the subject of the control verb, as 61 demonstrates. Note also that when the embedded subject differs in agreement features from the matrix subject, the sentence is ungrammatical even when there is a more distant argument with matching features.

(64) *babaj-l-i b-uχːu-le [di-cːe [ceᵒrᵒi = cuna
mother-OBL-DAT N.SG-know:IPF-DUR.3 1SG-ERG self‹F.SG›(ABS)=only
šːa r-ač'-i] q'ast barq'ib-ze]
home F.SG-come:PF-INF decision made-ATR

Intended: ‘Mom knows that I decided that she would come back home HERSELF/ALONE.’

(65) *dami b-uχːu [χažat-le [du=cuna
1SG(DAT) N.SG-know:IPF K.-OBL-DAT self‹F.SG›(ABS)=only
šːa r-ač’-i] q’ast barq’ib-ze]
home F.SG-come:PF-INF decision(ABS) N.SG-do:PF-AOR-ATR
Intended: ‘I know that Khadijat decided that I would come back home MYSELF/ALONE.’

(66) *babaj-l-i b-uχːu-le [ʔali-le [ceꟈi=cuna
mother-OBL-DAT N.SG-know:IPF-DUR.3 A.-OBL-DAT self‹F.SG›(ABS)=only
šːa r-ač’-i] q’ast barq’ib-ze]
home F.SG-come:PF-INF decision(ABS) N.SG-do:PF-AOR-ATR
Intended: *‘Mom knows that Ali decided that she would come back home HERSELF/ALONE.’

Furthermore, in subject control constructions discussed here, only the subject, but not any other argument, can be the antecedent. For null embedded subjects, this means that a genitive modifier inside the matrix subject cannot bind the embedded subject, as shown in 67; nor can they have arbitrary reference, as illustrated in 68.

(67) *di-la$_i$ datːi-le$_j$ q’ast barq’ib [Δ$_i$ šːa r-ač’-i]
1SG-GEN father-ERG decision made.3 ABS home F.SG-come:PF-INF
Intended: ‘My dad decided for me (female) to come back home.’

(68) *di-cːe$_i$ q’ast barq’ib-da [Δ$_{j/arb}$ šːa b-ač’-i]
1SG-ERG decision made-1 ABS home M/F.PL-come:PF-INF
Intended: *‘I decided for them/one$_{arb}$ to come back home.’

In a similar way, a genitive modifier inside the matrix subject cannot bind the overt embedded subject, even when they match in agreement features. Again, this requirement equally applies to both personal pronouns and reflexives.

(69) *di-la babaj-le q’ast barq’ib [du=cuna šːa r-ač’-i]
1SG-GEN mother-ERG decision made.3 1SG(ABS)=only home F.SG-come:PF-INF

Intended: ‘My mom decided for me to come back home MYSELF/ALONE.’

(70) *χažat-la$_i$ babaj-le$_j$ q’ast barq’ib [ce‹r›i$_i$=cuna š:a r-ač’-i]
K.-GEN mother-ERG decision made.3 self‹F.SG›(ABS)=only home F.SG-come:PF-INF
Intended: ‘Khadijat’s mom decided for her to come back home HERSELF/ALONE.’[16]

Moreover, singular reflexive pronouns appearing in the embedded subject position must have the exact same agreement features as the matrix subject; a mismatch is ungrammatical.

(71) *χažat-le q’ast barq’ib [cej=cuna š:a w-ač’-i]
K.-ERG decision made.3 self.M.SG(ABS)=only home M.SG-come:PF-INF
Intended: ‘Khadijat wants him to come back home HIMSELF/ALONE.’

The second part of the definition of the OC signature is that the embedded subject must demonstrate the behavior of an expression bound by the matrix subject. In our case, this means that the embedded subject should behave that way, regardless of whether it is expressed by a fully matching pronoun, a partially mismatching pronoun, or remains null. The following examples demonstrate that sentences with a quantified (nonreferential) matrix subject are only acceptable under the co-varied reading where the embedded subject is understood as coinciding with or including the matrix subject. This is trivial in the case of the null embedded subject in 72 and the overt embedded subject matching in agreement features in 73.

(72) š-e q’ast barq’ib-i [š:a w-ač’-i]
who-ERG decision made.3-Q home M.SG-come:PF-INF
‘Who decided to come back home?’

(73) š-e q’ast barq’ib-i [cej = cuna š:a w-ač’-i]
who-ERG decision made.3-Q self.M.SG(ABS)=only home M.SG-come:PF-INF
‘Who decided to come back home alone?’

In case the embedded clause contains a partially mismatching overt subject, the latter can also be interpreted only as co-varying with the matrix subject.

(74) š-e q'ast barq'ib-i [čebži = cuna š:a b-ač'-i]
who-ERG decision made.3-Q self.PL(ABS)=only home M/F.PL-come:PF-INF
i. 'Who decided that they would come back home alone (as a group minimally including the decision maker and some other participant)?'
ii. *'Who decided that they would come back home alone (with the decision maker not included in the reference of the reflexive pronoun)?'

(75) š-e [nux:a = cuna š:a d-ač'-i] q'ast barq'ib-i
who-ERG 1PL.INCL(ABS)=only home 1/2PL-come:PF-INF decision made.3-Q
i. 'Who decided that we would come back home alone (as a group that minimally includes the speaker, the addressee, and the decision maker)?'
ii. *'Who decided that we would come back home alone (with the decision maker not included in the reference of the 1PL.INCL pronoun)?'

The infinitival subject in both examples is clearly bound by the *wh*-pronoun in the matrix subject position; the readings are, respectively, 'who is the person *x* who decided that *x* and other participants would come back home alone' for 74 and 'who is the person *x* who decided that *x* and other participants, including the speaker and the addressee, would come back home alone' for 75.

Again, full DPs and third person demonstrative pronouns are not allowed in the embedded subject position under a quantified matrix controller precisely because they are nonbindable; see 76 and 77.

(76) *š-e q'ast barq'ib-i [ʔali = cuna š:a w-ač'-i]
who-ERG decision made.3-Q A.(ABS)=only home M.SG-come:PF-INF
Intended: 'Who decided that Ali would come back home alone?'

(77) *š-e q'ast barq'ib-i [jaˁ = cuna š:a w-ač'-i]
who-ERG decision made.3-Q PROX.SG(ABS)=only home M.SG-come:PF-INF
Intended: 'Who$_i$ decided that he$_{*i/*j}$ would come back home alone?'

To summarize, infinitival complements with desiderative verbs allow a null or overt subject, which must be either completely identical in reference to the matrix subject or include the latter

as a subset. Embedded subjects referentially disjoint from the matrix subject are judged ungrammatical by my consultants. Together with the evidence presented in previous sections, this allows us to conclude that infinitival constructions in Chirag instantiate OC, with four different variants of what can be put in the position of the infinitival subject: (i) a null expression, (ii) an overt personal pronoun or long-distance reflexive matching the matrix subject in agreement features, (iii) a pronoun or reflexive diverging from the matrix subject in agreement features, or (iv) a coordinated DP where one of the conjuncts is a personal pronoun or a long-distance reflexive.

5. DISCUSSION. The infinitival construction with an overt controlled subject, including in both its matching variant and mismatching variant, poses some challenges to the current theories of OC, especially those parts of it that deal specifically with overt controlled subjects and with partial control, but also with some more general common assumptions about the nature and properties of controlled subjects. In the rest of this article, I discuss some of the consequences the data presented above has for our understanding of OC. I begin with a short overview of a similar pattern in Korean, proceeding then to a discussion of overt infinitival subjects and PC, and finally concluding with a more general meditation on the nature of OC subjects and their properties.

5.1. OVERT CONTROLLED SUBJECTS IN KOREAN. As mentioned above, previous research on OC has already established the possibility of overt controlled subjects in a number of languages. Korean has been one of the key languages in this regard, possessing a pattern closely resembling the Chirag pattern discussed here (Madigan 2008, Lee 2009). In particular, Korean has been attested to allow a personal pronoun or a long-distance reflexive matching the matrix controller in person and number, as shown in 78 and 79.

(78) Inho$_1$-ka Jwuhi$_2$-eykey caki$_{1/*2}$-ka ppali il-ul kkuthney-keyss-ta-ko
I.-NOM J.-DAT self-NOM quickly work-ACC finish-VOL-DECL-COMP
yaksok-ha-yess-ta
promise-do-PST-DC

‘(lit.) Inho$_1$ promised Jwuhi$_2$ SELF$_{1/*2}$ to the work quickly.’ (Madigan 2008: 84; glosses adapted)

(79) Na-nun Inho-eykey ney-ka cip-ey ka-keyss-ta-ko yaksok-ha-yess-ta
1SG-TOP I.-DAT 1SG-NOM home-LOC go-VOL-DECL-COMP promise-do-PST-DECL
‘I promised Inho that I would go home.’ (Madigan 2008: 248; glossed adapted)

In addition, Korean also allows plural expressions in the embedded subject position even when the matrix controller is singular. Madigan (2008) provides an example of the plural long-distance reflexive; see 80.

(80) Jwuhi$_1$-ka caki-tul-i$_{1+}$ yeses-si-ey moi-keyss-ta-ko yaksok-ha-yess-ta
J.-NOM self-PL-NOM six-time-at gather-VOC-DECL-COMP promise-DO-PST-DECL
‘Jwuhi promised to gather at 6.’ (Madigan 2008: 278; glosses adapted)

In addition, Lee (2009) demonstrates that coordinated NPs are also allowed there, as in 81.

(81) Mina$_1$-ka Pata-eykey [nayil Wucin-kwa caki$_1$ twul-man hakkyo-ey
M.-NOM P.-DAT tomorrow W.-and self two-only school-LOC
ka-keyss-ta]-ko yaksok-ha-yess-ta
go-VOL-DECL-COMP promise-do-PST-DECL
‘Mina promised Pata that only two, Wucin and herself, would go to school tomorrow.’
(Lee 2009: 170; glosses adapted)

In essence, this is exactly what we observe in Chirag. However, there is some disagreement with respect to the OC/NC status of complements with overt subjects in the literature on Korean (Madigan 2008, Lee 2009), specifically with regard to the question as to whether overt controlled pronouns are best analyzed as an overt expression of PRO or as pronominals. Based on Lee’s (2009) discussion of the differences between null (PRO) subjects and the reflexive *caki* in the embedded subject position, Landau (2013) concludes that “the precise status of overt controlled subjects in South East Asian languages is not settled yet.”

From a more general perspective, this disagreement seems to arise, at least in part, from the fact that overt subjects are discussed in a way as if their status must be identical in all of the different combinations of matrix predicates and complement types. Lee (2009) specifically points out that both the identity of the matrix predicate and the choice of complement play a role in the properties and behavior of the long-distance reflexive *caki* in the embedded subject position. At the same time, Lee provides examples from different constructions when discussing different aspects of its behavior. For example, sentences with a finite complement, similar to 78 above, are shown to highlight the PRO-like behavior of *caki*, while some of the differences between *caki* and null subjects are illustrated using examples with a nominalized complement (Lee 2009: 175–189). From what is reported in the literature, it may well turn out that some of the constructions with overt subjects in Korean (e.g. finite volitional complements under *yaksokha-* 'promise') are in fact OC structures that allow overt subjects, similar to what we see in Chirag. However, a more structured discussion would be needed to determine the status of overt subjects in various environments in Korean.

Related to that is the fact that the literature on Korean has not provided, to the best of my knowledge, a detailed paradigm of what is possible in the embedded subject position, especially when it comes to PC and potential mismatches in agreement features between the embedded subject and the matrix controller. As the examples above show, a singular third person controller can co-occur with a plural long-distance reflexive or a coordinated NP in the embedded subject position. That is, a mismatch in number between the controller and the controlee is possible with third person expressions. It is not clear whether the same is true about first and second person pronouns, similar to what we see in examples 13a and 29 in Chirag. In addition, it is not clear whether mismatches in person are tolerated in Korean. Madigan (2008: 249) mentions that a mismatch of person features between the controller and the controlee is impossible. However, he apparently means only singular expressions, showing that the third-person animate singular reflexive *caki* in the embedded subject position is not allowed in the presence of the first person singular pronoun in the matrix controller position. Whether person mismatches in PC parallel to what is documented in 15 and 35 for Chirag are possible in Korean has yet to be revealed.

Summing up, the literature on Korean has documented a pattern that is very similar to the pattern described here for Chirag. However, disagreement with regard to the nature of such constructions, that is, whether or not they instantiate true OC, hinders a thorough exploration of

ramifications those constructions could have for the general theory of OC. Empirically, the Korean pattern also remains understudied to a certain extent, with the full range of options still waiting to be documented. Unlike Korean, Chirag unambiguously possesses true OC structures with overt embedded subjects that can diverge from their matrix controller in both number and person. With that, I turn to a discussion of the implications the Chirag data has for theoretical understanding of OC.

5.2. OVERT INFINITIVAL SUBJECTS. OC constructions with overt infinitival subjects diverge from the most typical pattern of forward OC, and none of the major theories of OC straightforwardly predicts this empirical pattern, as observed in Chirag and other languages. Moreover, many approaches to OC are predicated on the belief that nullness is an inherent property of controlled subjects, hardwiring that property into their architecture. For example, in recent iterations of the PRO-based theory, such as Landau 2004, 2015, the embedded subject is necessarily a null expression that receives its reference and agreement features from the matrix controller. While the Movement Theory of Control is different, in principle allowing the embedded subject to be pronounced, it predicts that the latter must exactly match the matrix subject (see Hornstein 1999, Hornstein and Polinsky 2010, Polinsky and Potsdam 2006).

One common strategy used to account for the possibility of overt controlled subjects is to assume that they are somehow licensed under agreement. The ANAPHORIC AGR proposal put forth by Borer (1989), who was one of the first to deal with overt controlled pronouns, connects overt pronouns in the embedded subject to agreement. It also seems to be the most radical one, seeking to refute the PRO Theorem and proposing that controlled subjects are pronominals, null or overt, licensed due to the inherent anaphoricity of agreement features on the embedded verb. The gist of the proposal is that agreement inside the controlled clause is anaphoric in nature and must be bound by the closest c-commanding antecedent. The matrix subject in an OC construction controls the reference of the anaphoric agreement on the embedded verb by transmitting its agreement features to the latter. As a result, the embedded verb licenses its own subject in much the same way as finite verbs inflected for person and number are often assumed to license null pronominals in *pro*-drop languages.

Landau's (2004) influential approach to OC is also couched in terms of agreement or, more specifically, the operation called AGREE in Minimalism. Landau proposes a comprehensive

theory of control, with OC arising in finite or nonfinite environments via a number of Agree links with the matrix subject on the one end of the chain and the embedded subject on the opposite end of that chain.[17] In a similar way, Szabolcsi (2009) sketches a theory where overt infinitival subjects are licensed under some long-distance dependency with the finite verb in the matrix clause: the matrix verb has to transmit its agreement features to the embedded subject. Given the dataset introduced in Section 2 above, it is clear that the embedded verb that carries the agreement features transmitted from the matrix subject would not be able to license overt controlled pronouns/reflexives in partial control environments in Chirag; the matrix clause simply lacks the plural and/or person feature we see on the embedded subject in overt PC environments. Nor would anaphoric agreement be able to result in overt coordinated subjects containing a lexical DP.

Summing up, the existing approaches to overt controlled subjects cannot accommodate the empirical picture observed in Chirag, since OC constructions in those approaches are assumed to have a full match in agreement features between the matrix subject and the embedded subject, in clear contrast to the empirical data from Chirag. Note also that in the absence of a syntactic link between the matrix subject and the embedded controlled subject, the latter cannot receive its agreement features from the former and thus must carry its own valued features, thus suggesting that Borer's (1989) important insight that controlled subjects are pronominal may be on the right track.

The literature on overt subjects in Korean discussed above appears to support this conclusion. Instead of assuming that overt subjects have to be somehow licensed by a special mechanism, Madigan (2008) flips the issue on its head and suggests that nothing in the nature of OC subjects requires them to be null so overt subjects are in fact to be expected. Rather, it is languages like English where overt controlled subjects are impossible that require a special explanation. Madigan (2008) proposes that the only factor that determines the distribution of what can appear in the controlled subject position is semantics. As long as the embedded subject can be bound by the matrix controller, it can be expressed overtly.[18] In a similar way, Lee (2009) proposes that null controlled subjects in Korean should be labeled *pro* rather than PRO, given their ability to alternate with overt expressions. Below, I argue that the Chirag data warrants a similar conclusion and propose that the locus of OC in grammar is semantics/LF with no universal syntactic implications.

5.3. ACCOUNTS OF PARTIAL CONTROL. The phenomenon of PC, where an embedded subject under a control verb may diverge in reference from the matrix subject, is by no means new (see the references cited in Section 1). Two important differences set Chirag apart from most other languages where PC has been documented. On one hand, previous reports of the phenomenon in English and some other languages highlight that PC is most clearly observed in embedded clauses with collective predicates, which require a plural argument in the subject position, such as *meet*, *gather*, and so on. This restriction has been one of the most compelling arguments for a coercion approach to PC. When a matrix clause with a singular subject combines with an embedded clause that contains a predicate requiring a plural subject, the infinitival subject, which is syntactically singular, is coerced into a plural interpretation, thus giving rise to PC. Pitteroff and colleagues (2017: 166) mention that PC is in principle independent of the lexical properties of the embedded verb and can be obtained as long as the context requires a plural reading of the embedded subject, as in examples like 82, where world knowledge demands that the null embedded subject be understood as a plurality rather than an atomic individual.

(82) John promised to move the piano without damaging it.

However, even with this extension, the idea of coercion still persists: something in the embedded clause must indirectly invoke the semantically plural reading of the controlled subject, be it the lexical properties of the embedded verb or world knowledge about the situation described by the embedded clause. In contrast, Chirag appears to be the first reported case of a language that allows unambiguous PC freely without any lexical or world-knowledge trigger, as long as the two conditions in 17 and 22 are satisfied.[19] The plurality of the embedded subject (under a singular matrix subject) is directly expressed in the overt morphology. It is clear then that PC is not necessarily a result of coercion that arises because of some mismatch between the requirement that the embedded subject must be identical to the matrix subject, on the one hand, and the demand that the embedded predicate have a plural subject, on the other hand.
Another topic that has been the focus of theoretical attention is the question as to whether the embedded subject in partial control remains syntactically singular, so that the observed effects are exclusively due to the mechanisms of semantic interpretation, or whether it is plural in the

syntax as well. The coercion approach to PC suggests that the plurality of the embedded subject is only semantic. Landau's (2000, 2004, 2015, 2016a) work on PRO in partial OC has developed an approach which basically restricts PC to semantic interpretation, without affecting the narrow syntax. While this approach may well be justified for languages like English, there seem to be other options. Some initial data has been published that may be incompatible with the semantic analysis of PRO in PC. For example, as Sheehan (2018) demonstrates, a subset of European Portuguese speakers allows partial control with overt expression of PRO's plural feature in the form of person agreement on the inflected infinitive. In other words, the infinitive in controlled complements in European Portuguese can agree with its subject, and the number value that surfaces in such agreement is plural rather than singular. This pattern is rejected by most European Portuguese speakers and on these grounds doubted by Landau (2016a). However, it does raise questions about the analysis of PC in terms of semantic but not syntactic plurality. Another finding reported by Pitteroff et al. 2017: 169–170 suggests that German may also have a syntactically plural subject in PC, as seen from reflexives, which can help us track the number of the subject. Finally, Madigan (2008: 121–125) and Lee (2009: 171–175) both agree that null subjects in Korean PC are demonstrably syntactically plural in addition to the fact that the plurality of the subject can be expressed overtly, as shown in 80 above. Again, not much is known about partial control in other languages, and despite Landau's attempts to initiate the discussion of partial control, the latter remains understudied in the theoretical literature.

Chirag thus appears to be the first unambiguous case of overt controlled subjects in PC, demonstrating that PC can be detected in the overt syntax.[20] What Chirag infinitival structures show us is that in at least some languages PC can be detected as early as in the narrow syntax: the controlled subject in PC is expressed overtly and is evidently distinct from the matrix subject in the morphosyntax. This conclusion is not compatible with the current Minimalist approaches to OC, since the syntactic features of the embedded subject in OC are commonly assumed to fully match (or even be transmitted from) the matrix subject. The presence of the syntactic plural feature in the Chirag examples documented here reiterates that overt controlled subjects must be syntactically plural and are not (fully) dependent on the matrix subject for their agreement features.

To summarize, PC in Chirag involves syntactic, rather than only semantic, plurality of the embedded subject, which is in clear contradiction with the existing syntactic analyses of PC. If

the analysis of infinitival constructions with desiderative verbs proposed above is correct, it entails a number of shifts in our theoretical thinking about OC. Below I discuss two issues which I think Chirag infinitival constructions make the most important contribution to: (i) the source of agreement features on the embedded subject, and (ii) the theoretical status of OC subjects.

5.4. SOURCE OF AGREEMENT FEATURES ON THE EMBEDDED SUBJECT. The assumption that that OC subjects do not in fact have agreement features of their own, but receive them later in the syntactic derivation from the controller in the matrix clause may be the most economical way to derive the observation that the embedded subject's (morphosyntactic) features must fully match the features of the matrix subject in exhaustive OC constructions (see Landau 2004 and subsequent Agree-based approaches to OC).

However, PC constructions with overt subjects, such as those observed in Chirag, are not straightforwardly compatible with this view on the agreement features of controlled subjects. It is clear that the plural feature and the 1.P feature of the embedded subject in examples like 14 above cannot come from the matrix clause, simply because the matrix subject does not have them. The embedded subject then is not fully dependent on the matrix subject for its reference and can have its own agreement features. This fact alone violates the prediction of the transmission/sharing approaches to OC subjects, including those assuming that OC subjects are minimal pronouns (Landau 2015): at least some of the agreement features of the embedded subject in PC constructions with overt subjects are derived independently of the matrix subject. Note that the embedded subject is still bound by the matrix subject, as demonstrated in Section 4. However, the embedded subject in PC also has a free part, not depending on the matrix subject, which makes it similar to the cases of PARTIAL BINDING as analyzed in Rullmann 2004; see also Partee 1989, Heim 2008, Sudo 2012, among others. That is, the embedded subject in PC constructions acts as a variable ranging over sets of individuals, which unambiguously covaries with the matrix controller, but also includes other referents that are fixed and determined by the context. The embedded subject thus is PARTIALLY BOUND by the matrix controller.

Following that work, I propose that the infinitival subject in PC carries a complex index, each with its own agreement features. One index is bound by the matrix subject, thus ensuring the controlled nature of the embedded subject. The other index is free. Both the surface form that lexicalizes such an argument (a personal pronoun or an LDR) and its agreement features are

computed based on the conjunction of the features of the two indices, as shown in 83 based Rullmann's (2004) and Sudo's (2012) proposals, thus ultimately leading to feature mismatches between the matrix subject and the embedded subject.

(83) A bound pronoun with a complex index *I* is

a. a first person plural inclusive pronoun, if some $i \in I$ has [1.P] and some $j \in I$ has [2.P];

b. a first person plural exlcusive pronoun, if no $i \in I$ has [2.P] and some $j \in I$ has [1.P];

c. a second person plural pronoun, if no $i \in I$ has [1.P] and some $j \in I$ has [2.P];

d. a third person plural LDR, otherwise.

For example, the overt subject in sentences like 14, repeated here as 84, can be analyzed as carrying two different indices, bound and free. The features of the bound index are identical to the features of the matrix subject, that is, 3SG. The other index is free and can carry any agreement feature. In case the free index has 3SG or 3PL, the conjunction of the bound index and the free index yields the 3PL feature on the embedded subject, thus signaling the presence of at least one other third person participant in the reference of the embedded subject. As a result, the embedded subject is lexicalized by a 3PL reflexive and triggers 3.P human plural agreement on the infinitive.

(84) χažat-le$_{i[3SG]}$ q'ast barq'ib [čebži$_{i[3SG]+j[3PL]}$=cuna š:a b-ač'-i]
K.-ERG decision made.3 self.PL(ABS)=only home M/F.PL-come:PF-INF
'Khadijat decided that they (Khadijat and the group contextually associated with her) would come back home THEMSELVES/ALONE.'

In examples like 85, repeated from 15 above, the bound index is also 3SG, matching the matrix subject, whereas the free index is 1SG, indicating the inclusion of the speaker, or 1PL, indicating the inclusion of the speaker and some additional participants associated with the speaker. This combination results in inserting the 1PL.EXCL pronoun in the embedded subject position, which triggers plural participant agreement on the infinitive.

(85) χažat-le$_{i[3SG]}$ q'ast barq'ib [nusːa$_{i[3SG]+j[1SG]}$=cuna$_{i+}$ šːa d-ač'-i]
K.-ERG decision made.3 1PL.EXCL(ABS)=only home 1/2PL-comeːPF-INF
'Khadijat decided that we (the group which minimally includes the speaker and Khadijat) would come back home OURSELVES/ALONE.'

As mentioned above, the bound index always matches the matrix subject in features. The question then arises as to where the agreement features on the free index come from in these examples. Obviously, they cannot come from the matrix subject, since the latter does not have the 1SG feature and/or the plural feature. Two analytical options seem reasonable: either the features are present on the embedded subject from the beginning of the derivation or they are generated by some kind of associative operator, as schematically presented in 86 for the 1PL.EXCL pronoun *nusːa*.

(86) a. Inherent analysis: *nusːa*$_{i[3SG]+j[1SG]}$
b. Associative plural (derived) analysis: *nusːa*$_{group(1SG)}$

Landau (2016a) proposes that the additional feature can be derived by means of an associative operator on *v* at LF, while syntactically the embedded subject stays singular. This proposal is incompatible with the facts discussed here, since PC in Chirag demonstrably involves syntactic plurality. However, one might assume that something like Landau's associative operator could derive the facts presented above if that operator could affect the morphosyntactic plurality of the subject. In fact, Landau (2016a) suggests that this exact option may be attested in Portuguese, where reflexive marking on controlled infinitives does show the morphological plural feature. Assuming that plural personal pronouns and long-distance reflexives can be analyzed as associative plurals, the associative operator does derive the examples with a plural personal pronoun or a plural long-distance reflexive in Chirag.

However, the associative operator analysis cannot account for examples with a coordinated DP in the controlled subject position, described in Section 2. Since the construction instantiates OC, as shown above, the infinitival subject must be bound by the matrix subject, meaning that one of the conjuncts must be expressed by a personal pronoun or a long-distance reflexive bound by the matrix subject, as in 87 repeated from 44.

(87) di-cːe$_i$ q'ast barq'ib-da [du$_i$=ra χažat$_j$=ra šːa d-ač'-i]
1SG-ERG decision made-1 1SG(ABS)=ADD K.(ABS)=ADD home 1/2PL-come:PF-INF
'I decided that Khadijat and I would come back home.'

It is clear that the embedded subject here cannot be the result of an operator yielding groups from individuals.[21] Instead, it is a syntactically plural complex DP where one part is bound by the matrix subject, while the other is free. Given such examples, it seems only natural to conclude that no associative operator is involved in the derivation of PC in Chirag and surrender to the inherent plural analysis in 86a. We see that the free part of the complex index on the embedded subject is not transmitted from the matrix clause and cannot be derived in the syntax by means of a special semantico-syntactic operator. From this, I conclude that the pronoun already has some features at the Numeration and enters the syntactic derivation specified for agreement features. Whether the controlled pronoun/reflexive is completely independent from the matrix controller with regard to its features is not entirely clear. Based on similar facts, Lee (2009: 171–175) apparently suggests that no dependency for agreement features needs to be assumed for Korean controlled subjects. This means that the bound index in 86a can in fact be derived in two different ways. On the one hand, it could be morphosyntactically independent from the controller, only being subject to feature matching; on the other hand, the bound index would receive its features from the matrix clause by way of Feature Transmission (Kratzer 2009) or another mechanism. No evidence has been uncovered yet in Chirag that would provide support to one or the other position. I leave a deeper investigation of this topic for future research.[22]

5.5. THEORETICAL STATUS OF OC SUBJECTS AND THE NATURE OF OC. There are at least two different types of null arguments that usually are kept apart in theory—OC PRO and *pro*—a distinction that is commonly seen as robust and cross-linguistically valid. The two can in fact be distinguished by a number of different diagnostics, and in many languages those diagnostics do correlate with each other, so the distinction between PRO and *pro* looks like a categorical one. PRO is only found in the subject position, admits only bound readings in ellipsis and binding, and must have the subject of the immediately dominating clause as its antecedent. In contrast,

pro can appear in various clausal positions, allows strict interpretation in ellipsis, and can find an antecedent more than one clause above or outside the sentence in discourse.

Against this backdrop, NULL subjects in Chirag desiderative constructions look almost like normal controlled subjects of the PRO type. As demonstrated above, they are only possible in the subject position; they are obligatorily bound by the matrix subject; they must find the antecedent in the subject position of the immediately dominating clause. What is different about Chirag is that that same subject position in a controlled infinitival clause can be occupied by an overt expression, as extensively documented earlier in this article. The infinitival subject, whether null or overt, must be bound by the matrix subject in Chirag. However, as shown above, the control/binding relationship between the two subjects does not have to be exhaustive. As long as a part of the embedded subject is bound by the matrix subject, be it an index within a complex index or a conjunct within a coordinated DP, the construction is grammatical. This ability of controlled subjects in Chirag to oscillate between an unpronounced argument and an overt pronoun makes them similar to *pro*, as previously proposed by Borer (1989) and by Lee (2009). More specifically, the contrastive focus requirement makes Chirag OC subjects particularly similar to *pro* in consistent null subject languages: the subject is unpronounced in discourse-neutral environments, while still being able to show up on the surface in some configurations. How or why some contexts facilitate or require the overt appearance of expressions that otherwise tend to remain silent goes far beyond the scope of this article. Suffice it to say here that the two conditions I am considering—contrastive focus and coordination—just can't be applied to a null constituent: one cannot focus a null pronoun or coordinate one with an overt DP; see Livitz 2014: 153–161 on focusing silent elements. Another relevant connection is the behavior of bound pronouns in finite embedded clauses; see, in particular, Holmberg & Sheehan 2010 who discuss the nullness/overtness of bound subjects in embedded finite clauses in partial null-subject languages. Herbeck (2018) also draws a parallel between controlled subjects in nonfinite clauses and bound pronominal subjects in embedded finite clauses, reminding us that in some languages, such as Romance null-subject languages, both tend to remain silent but can still appear overtly in coordination or under contrastive focus.[23]

Livitz's (2014) dissertation offers another perspective on why contrastive focus and coordination are allowed in the controlled subject position. Assuming that controlled subjects are Kratzer's (2009) minimal pronouns, she proposes that they are defective goals, that is, they are

referentially, structurally, and featurally deficient and have to establish an Agree relationship with a sufficiently local antecedent. Defective goals must be eliminated before they are sent to PF, much like lower copies in the usual movement dependencies. The nullness of controlled subjects thus is derived rather than inherent. That means, in particular, that deletion can be avoided when the minimal pronoun is merged as a complement under a focus projection headed by an overt particle, since this larger focus phrase is a nondefective goal in the Agree relationship, due to the fact that it has its own formal features in addition to those acquired by Agree from the controller. Note, however, that while this approach does account for the possibility of pronouns in the controlled subject position, it fails to predict that coordinated DPs are also an option in Chirag OC constructions. Livitz (2014) emphasizes that the alternation between null and overt subjects in OC does not translate into the alternation between φPs (minimal pronouns) and full-fledged DPs and thus predicts coordinated DPs to be ungrammatical in the controlled subject position.

In the context of the discussion of the nature of the controlled subject, the possibility of coordinated DPs in the controlled subject positions indicates that we may not even need the notion of PRO to account for the syntax of desiderative complements in Chirag. In case we were to employ that notion, we would have to say that the subject position in infinitival complements under a desiderative predicate can either be filled with a PRO or with a pronominal bound by the matrix subject, or else with a coordinated structure that contains such a pronominal. This disjunction calls for a simplification along the lines that infinitival complements under desiderative verbs never feature PRO, and their null subjects instantiate *pro* instead of PRO, leading to the generalization in 88.[24]

(88) The subject position in a controlled infinitival clause under a desiderative verb must contain a pronominal obligatorily bound by the matrix subject.

This conclusion reiterates Borer's (1989) point about the pronominal nature of controlled subjects and Lee's (2009) proposal that controlled subjects in Korean instantiate *pro*, which can alternate with overt subjects expressed as a personal pronoun, a long-distance reflexive, or a coordinated DP, just as in Chirag; see examples 78, 79, and 81 above. It is compatible with all the evidence about the behavior of controlled subjects in Chirag described above, covering all of

the attested variation, but apparently not allowing anything ungrammatical. On the one hand, the "OC signature" part of their properties is accounted for by the statement that they are obligatorily bound by the matrix subject. The binding requirement prevents nonbindable expressions, such as full DPs and demonstrative pronouns, to appear in the subject position of controlled complements. On the other hand, their ability to remain null or show up in the form of a personal pronoun or long-distance reflexive directly follows from their *pro* status.

The observation in 88 also meshes well with an emerging line of research suggesting that OC PRO is not inherently different from *pro*, but rather that the two instantiate the same underlying entity. For example, McFadden and Sundaresan (2018) propose that OC PRO, NOC PRO, and *pro* represent the same pronoun UPro, with the difference in their properties arising as a function of different syntactic environments; see also references therein for examples of similar earlier research. The behavior of controlled subjects in Chirag infinitival constructions may thus be one more piece of evidence pointing in that direction.

The Chirag data also allows us to draw some conclusions about the relationship between the matrix subject and the embedded subject in OC. Two different mechanisms are most commonly assumed to establish the control relation within Minimalism. In one approach, the control arises due to Agree (Landau 2000, 2004; McFadden & Sundaresan 2018, among others). The other approach captures the relation in terms of movement (Hornstein 1999, Hornstein & Polinsky 2010). Yet, neither is able to fully capture the data introduced above. For example, the Agree approach has to establish an Agree relation between the matrix subject and the embedded subject in one way or another. However, as shown in Section 3.1, the infinitival clause boundary is not permeable for Agree. If the opposite were true, the embedded subject could be accessed by φ-probes from the matrix clause, and we would see the finite verb agree with the embedded subject, contrary to fact. Hence, no Agree relation can be established between the matrix subject and embedded subject either. Independently, establishing an Agree connection between the matrix subject and a conjunct within a coordinated DP in examples like 87 would also be problematic.

On a first sight, the Movement Theory of Control seems to be better suited to account for examples with matching subjects, as in 9 or 13a above. Note, however, that the matrix controller in the examples above does not carry the focus particle and thus is not a copy of the embedded subject. An MTC analysis of such examples would presumably need to allow sub-extraction of

the subject DP from the projection headed by the focus particle *cuna* 'only', an option that seems impossible; see also a similar point in Szabolcsi (2009) and observations on differences between overt subjects in control and raising constructions in Barbosa (2018).

Moreover, plural embedded subjects clearly show that previous accounts of PC within the MTC are not viable (Barrie & Pittman 2004, Boeckx et al. 2010, Rodrigues 2007). For example, Barrie and Pittman (2004) assume that PC is a purely semantic phenomenon, while in the syntax the embedded subject is singular, contrary to what has been shown in this article. Boeckx and colleagues (2010) propose that PC arises due to the presence of a null comitative phrase inside the complement, while the controlled subject is still identical to the matrix controller; see also Sheehan 2014. Rodrigues (2007) proposes that the controlled subject is a DP structure that contains a smaller DP and a null pronoun (*pro*) adjoined to it [$_{DP}$ *pro* DP]; thus, the embedded subject is plural. The smaller DP later moves out of the big DP to the matrix controller position, whereas the null pronoun remains stranded in the original position, thus resulting in a mismatch between the matrix controller and the controlled subject.

Both the null comitative analysis and the *pro*-adjunction analysis have been criticized elsewhere; see Landau 2016b. The Chirag facts presented here provide further evidence against both. On the one hand, Boeckx and colleagues' (2010) null comitative analysis does not seem to be able to accommodate the fact that a plural expression appears in the controlled subject position in Chirag. On the other hand, Rodrigues' (2007) adjunction analysis would have to assume that the DP *χažat* moves out of the first person plural exclusive pronoun *nusːa* or out of the third person plural reflexive *čebže* in sentences like 15 and 14b. Alternatively, the personal pronoun/reflexive could be adjoined to the DP in the same way as *pro* is in Rodrigues' account. However, an analysis along these lines would predict the existence of a structure like [$_{DP}$ *χažat nusːa*], which is absent from Chirag.

The generalization in 88 boils down to defining OC as obligatory variable binding of the subject of a controlled clause, leaving the syntactic markers of OC that we see in many languages subject to cross-linguistic variation and a more fine-grained theoretical parametrization. PC with overt subjects in Chirag thus indicates that the answers about the ultimate nature of OC are most likely to be found in an approach that sees its core in the semantics or at least separates its universal variable binding core from various nonuniversal syntactic effects we often observe across languages. The history of research in OC over the past decades has evidenced a steady

stream of studies striving to highlight the semantic basis of OC (Jackendoff 1972, Jackendoff & Culicover 2003, Culicover & Jackendoff 2006). One recent example of a semantic approach that deals specifically with PC and in fact seems to come close to capturing overt PC in Chirag in an accurate way is Pearson 2016. In Pearson's analysis, the requirement for the obligatory binding of the controlled subject follows from the property view of controlled complements and is built into the semantics of the matrix predicate, which includes existential quantification over world–time pairs in case of exhaustive control or quantification over 'extensions' (world–time–individual triples that stand in a certain relation to the elements of the modal base) in case of PC. Controlled subjects are not referential, but are rather λ-abstracted at LF. Pearson's distinction between quantification over world–time pairs, on the one hand, and quanitification over world-time-individual triples, on the other, helps us understand why only desiderative but not modal or phasal matrix predicates license PC in their complements. Desiderative predicates are quantifiers over world–time–individual triples, which opens up a possibility to manipulate the interpretation of the individual coordinate in the semantics. Pearson 2016 achieves this via the relation of 'extension' that allows the individual argument of the embedded property to be interpreted as a superset of the attitude holder of the matrix clause, thus yielding PC. Modal and phasal predicates are quantifiers over world–time pairs with no individual coordinate that could be 'extended' to yield a PC interpretation.

Note that this analysis says nothing about their syntax, such as their null or overt status or their agreement features. Although Pearson does accept the common view that OC subjects are obligatorily null, nothing in her theory requires that assumption. The controlled subject position can theoretically host an overt pronoun, which allows for overt OC in syntax. At LF, this pronoun is bound by a λ-abstractor merged in the left periphery of the controlled complement and yields a property that can be closed by the matrix controller, ultimately resulting in OC. Pearson also assumes that embedded subjects in PC are universally syntactically singular, as they appear to be in English and other European languages. Since nothing in her theory predicts that, she makes an additional syntactic assumption that the controlled subject must inherit its agreement features from its controller. The Chirag facts discussed here show that this is not necessarily the case, and the ability of Pearson's approach to accommodate these facts thus becomes an advantage over approaches where the syntactic singularity of the PC subject is hardwired into the derivation.

Another promising direction for the analysis of overt PC in Chirag can be found in relatively recent developments within the LFG theory of OC. Although nothing in the architecture of the control theory in LFG unambiguously predicts the possibility of overt controlled subjects, nothing prohibits such a possibility either, due to the existence of parallel layers of linguistic structure, such as c-structure, f-structure, and semantic representation (see Bresnan 2001, Dalrymple 2001, Falk 2001, Dalrymple et al. 2019 for an introduction to the parallel constraint-based architecture of LFG). The existence of those parallel layers in this theory allows it to keep different components of OC apart from each other. The overtness/nullness of the embedded subject is dealt with in c-structure, and the referential dependence of the embedded subject is declared in f-structure, whereas specific instructions as to how that referential dependence should be resolved are given in the semantic representation. More specifically, as Haug (2013, 2014) argues, PC can be analyzed as an instance of LFG's anaphoric control where semantic rules of the resolution for the controlled subject license relations other than strict identity between the matrix controller and the embedded subject, such as a relation of inclusion. Exactly which relations are licensed in a given sentence depends on the specific control verb, although, unlike in Pearson's approach, Haug's analysis misses the systematic character of PC and its correlation with tense. Haug's account of OC thus seems to be able to technically implement the generalization in 88 without necessarily making further implications about the defective nature of controlled subjects, such as their inherent nullness or the absence of inherent agreement features, which is a welcome result (see also a summary of Haug's approach in Dalrymple et al. 2019).

It is not clear to me yet whether Pearson's and Haug's analyses can in their present form accommodate all of the evidence presented above. In particular, I am not sure how coordinated DPs in the embedded subject position would be dealt with in either of the approaches. Also, given that the resolution of the referential dependency between the controller and controlee in Haug's theory is articulated in terms of (discourse) antecedents in this theory, it is not clear how OC structures with an overt embedded subject should be analyzed where the matrix controller is expressed by a quantified expression, such as a universal quantifier or a *wh*-pronoun; see examples 73–75 above. I hope future research will spell out the necessary details to see whether or not these analyses need further modification and refinement.

6. CONCLUSION. The article deals with a cross-linguistically rare and theoretically challenging pattern of partial control in Chirag Dargwa, where the subject position in controlled infinitival clauses under desiderative verbs allows an overt expression that properly includes the matrix subject in their reference. The discussion of the inventory of such expressions leads to the conclusion that the only positive thing we can say about OC subjects under desiderative matrix predicates in Chirag is that they must have a variable part bound by the matrix subject and can in addition also have a free part carrying valued agreement features. The derivation of OC does not involve movement or Agree. Nor does it result from the transmission of agreement features from the matrix clause. Ultimately, what we are left with is the conclusion that OC in Chirag most likely arises as a result of the interplay between the semantics of the matrix predicate and the syntactic properties of the infinitival complement, as observed earlier by Stiebels (2007), rather than due to some special nature of the subject in controlled complements or its need to establish a syntactic relationship with a controller in the matrix clause. I conclude that the answers about the ultimate nature of OC are most likely to be found in approaches like Haug 2014 or Pearson 2016 that attribute OC to the semantics or at least separate the universal semantic core of OC from nonuniversal syntactic effects that we observe cross-linguistically in OC complements.

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matrix subject	embedded subject	grammatical?	example
1SG	1SG	+	9, 13a
	2SG	*	24
	3.REFL.SG	*	25
	1PL.INCL	+	23
	1PL.EXCL	+	14a
	2PL	*	26
	3.REFL.PL	*	27
2SG	2SG	+	28
	1SG	*	31
	3.REFL.SG	*	32
	2PL	+	29
	1PL.INCL	+	30
	1PL.EXCL	*	33
	3.REFL.PL	*	34
3SG	3.REFL.SG	+	13b
	1SG	*	37
	2SG	*	38
	1PL.INCL	+	35
	1PL.EXCL	+	15
	2PL	+	36
	3.REFL.PL	+	14b

Table 1. The calculus of overt subjects in controlled infinitival complements under desiderative verbs.

[1] The abbreviations in the article follow the Leipzig Glossing Rules (https://www.eva.mpg.de/lingua/resources/glossing-rules.php), with the following additions: ADD – additive, AOR – aorist (perfective past), ATR – attributive, EQ – embedded question, IPF – imperfective stem, LV – light verb, OBL – oblique stem suffix, PF – perfective stem, PV – spatial prefix, VOL – volitional.

[2] The data in this article comes from my own fieldwork with three native speakers of Chirag.

[3] *Ce‹b›e* (*čebže* is the absolutive plural form, the stems *cin-* and *ču-* are used in oblique cases in the singular and in the plural, respectively) is a long-distance reflexive, which like long-distance reflexives in other Nakh-Daghestanian languages can be locally bound, long-distance bound, or remain free within its sentence. In the latter case, it has to be "discourse-bound" by the logophoric center from the preceding context; see Ganenkov & Bogomolova 2020 for an overview of long-distance reflexives in Nakh-Daghestanian and Daniel 2015 for a discussion of logophoric-bound reflexives in Archi. An anonymous reviewer asks whether *ce‹b›e* can be analyzed as a general third person pronoun, where the reflexive use is just one of its functions. I prefer to think about it as a long-distance reflexive that can have a discourse antecedent (see Cole et al. 2006 on long-distance binding in South-East Asian languages). Regardless of the exact analysis of *ce‹b›e*, one should bear in mind that it is different from other third person expressions, including demonstrative pronouns (which I think fit in better with what is usually described as third person pronouns). As example 40 shows, demonstratives, unlike the reflexive, cannot appear in the controlled subject position.

[4] Capital *B* separated by a hyphen stands for the gender–number agreement marker. The agreement slot can host the following morphological markers: M.SG *w-*/*j-*/*0-*, F.SG *r-*, N.SG *b-*, M/F.PL *b-*, and N.PL *d-*.

[5] Although fear predicates can be considered separate from desiderative predicates (Noonan 1985), the verb 'be(come) afraid' taking an infinitival complement is sometimes grouped with desiderative predicates in the literature on control, viewed as semantically expressing a kind of negative volition about a future situation and syntactically behaving similar to desiderative predicates (Landau 2000).

[6] The verb *q'ast B-arq'i* is a complex verb consisting of the verb *B-arq'i* 'do, make' and the noun *q'ast* 'intention, decision' filling in the position of the absolutive direct object of the light verb. The verb *B-arq'i* is specified as gender–number agreeing and thus shows prefixal gender–number agreement, invariably with its absolutive direct object *q'ast*. Person agreement on the verb is determined by the subject. Various examples throughout this article include this verb in the Aorist (perfective past) form. Example 13a shows the details of the morphological structure of the form, together with the associated interlinear glosses. Only a simplified analysis is shown in other examples to make them more compact.

[7] Note that singular DPs in Chirag cannot be interpreted associatively and cannot thus trigger plural agreement, as illustrated in (i).

(i) *χažat b-ač'-ib
K.-ERG M/F.PL-come:PF-AOR.3
Intended: 'Khadijat and others came.'

[8] Constructed examples with null infinitival subjects that diverge from the matrix subject in reference and agreement features are judged unacceptable in elicitation, even when the plurality of the null embedded subject is overtly signaled by the prefix *d-* on the infinitive; cf. 14a. It is not entirely clear whether examples like this would be possible in spontaneous speech with an established discourse context facilitating the partial control reading of the null embedded subject.

(i) *di-cːe q'ast barq'ib-da [šːa d-ač'-i]
1SG-ERG decision made-1 home 1/2PL-come:PF-INF
Intended: 'I decided that we would come back home.'

[9] As mentioned in footnote 3, Chirag employs demonstrative pronouns to index third-person referents (see Ganenkov & Bogomolova 2020 on Nakh-Daghestanian in general). As can be seen below in 40 and 77, the demonstratives cannot appear in the controlled subject position; instead, a reflexive must be used for third person controllers.

[10] The combinations of the 2SG matrix subject with the 1PL.INCL or 2PL embedded subject are accepted more reluctantly by native speakers than other combinations.

[11] The paradigm in Table 1 has been checked with two desiderative verbs: *q'ast barq'i* 'decide' and *B-ikːˑ-* 'want'.

[12] With verbs allowing a converbal complement, partially matching subjects also prefer that way of expression rather than the infinitival strategy described above; it is the most likely variant to be given when translating stimuli from Russian.

(i) dami [nusːa šːa d-ač'-ib-le] b-ikː-an-da
1SG(DAT) 1PL.EXCL(ABS) home 1/2PL-come:PF-AOR-CVB N.SG-want:IPF-DUR-1
'I want us to go home.'

[13] Coordination is bisyndetic in Chirag: coordinated DPs are formed by attaching the clitic *=ra* to every conjunct (see van den Berg 2004 on coordination in Nakh-Daghestanian). The clitic *=ra* itself has a wide array of uses, including the additive focus use 'also' and the scalar focus use 'even' (see Forker 2016 on additive clitics). That coordination produces syntactically plural DPs can be seen from the fact that only plural agreement is possible with such expressions, as shown below; see also infinitival agreement in 44–46.

(i) χažat=ra uˤ=ra šːa aˤ-d-ik'-utːa
K.(ABS)=ADD 2SG(ABS)=ADD home NEG-1/2PL-come:IPF-FUT.2PL
'Khadijat and you won't come back home.'

[14] An anonymous reviewer asks whether the contrastive focus condition is also satisfied in examples like 44. I haven't looked into the properties of bisyndetic coordinated DPs with regard to contrastive/exhaustive focus. However, note that the additive clitic *=ra* 'and, also, even' that is attached to every conjunct in coordinated DPs also belongs to the set of focus-inducing clitics that can appear on controlled embedded subjects in Chirag; see 19 above. I assume that the presence of the additive clitic either makes the coordinated DP exhaustively/contrastively focused or that it licenses an overt expression in the controlled subject position in some other way.

[15] Note also that long-distance reflexives in the intensifier function can freely appear without a focus-sensitive clitic, whereas long-distance reflexives in controlled infinitival clauses must carry such a clitic. This difference would require some explanation on the assumption that the reflexives in infinitival constructions are emphatic doubles.

[16] This sentence is grammatical if the embedded reflexive is understood as referring back to Khadijat's mother rather than to Khadijat: 'Khadijat's mother decided to come back home HERSELF/ALONE.'

[17] In a more recent version of the Agree-based approach, Herbeck (2011, 2015) also assumes a series of Agree relationships that connect the embedded subject with the matrix subject through functional heads, stipulating some fairly complex interaction between a pronoun in the embedded subject position and the embedded T, which results in the bound reading of the embedded subject.

[18] Another condition for overt subjects in Chirag as well as in Korean is exhaustive focus (Madigan 2008); see a discussion below in Section 5.4.

[19] Korean may also belong to this type, given the existence of examples like 81, where nothing in the lexical verb or the situation described suggests a plural subject; see also Lee 2009: 170, 173. However, the discussion of PC in Korean has so far concentrated mostly on standard examples with embedded collective predicates without explicitly stating that PC readings in constructions with a plural overt embedded subject can be obtained with any lexical predicate.

[20] Again, the Korean data discussed above may also be as good an example of this type. However, its theoretical impact is diluted by the disagreement about the exact status of overt subjects in such constructions, as mentioned in Section 5.1.

[21] In a similar vein, Madigan (2008: 136–142) proposes that PC in Korean arises due to a combination of the features inherited from the matrix controller with Kratzer's (2009) [group] feature. While that may be suitable for the dataset Madigan discusses, that approach is only able to derive number mismatches between the matrix controller and the controlled subject, failing to derive person mismatches documented in Chirag or controlled coordinated subjects, as discussed here for Landau's approach.

[22] Theoretical research on OC has presented some strong arguments that at least some features of the controlled subject may be inherited from the controller, as seen, for example, from honorific marking in Korean (Madigan 2008: 142–144) and agreement with epicene nouns in Romance (Rodrigues 2007).

[23] Biberauer et al. 2010 is a collection of articles that discuss the intricacies of null subject licensing in various languages; see Biberauer et al. 2010 and Herbeck 2018 for a broader discussion of *pro* licensing and further references.

[24] As mentioned in Section 2 above, the focus of this article is on PC complements of desiderative verbs, so this generalization doesn't say anything about the nature of controlled

subjects in complements with other matrix predicates, such as modal and phasal. Like desiderative verbs, they also allow a personal pronoun or LDR in the controlled subject position; see 10 and 11. However, those other matrix predicates only allow pronominal/reflexive subjects that match the matrix controller in agreement features, thus excluding mismatching pronominal/reflexive and coordinated controlled subjects. It is not clear to me yet whether the alternation between null and overt embedded subjects under modal and phasal verbs is sufficient to extend the *pro* analysis proposed here for desiderative complements to other controlled complements in Chirag.