A Survey of Urdu Subjects and their Properties[*]

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1 INTRODUCTION

Typological work has shown that subjects can have a variety of cases, most commonly nominative and ergative, but also dative, genitive, and instrumental amongst others. Urdu is a language in which subjects can be marked with almost any case available in the language. An interesting question emerges: are differently case-marked subjects in the same position? In Urdu, it has been observed that dative subjects behave differently from nominative subjects with respect to some subject properties. Davison (2004) and Poole (2016) argue that this is because dative subjects are in a different structural position from nominative subjects. Poole extends this to all quirky case subjects, and claims that quirky subjects are found in a lower position than nominative subjects. Thus, there is no single subject position and subjecthood is a continuum.

In this paper, I compare the behaviour of a wide range of external and internal arguments in Urdu with respect to subject properties identified in the literature on Hindi-Urdu subjects.[1] I report three findings. Firstly, I confirm that subject properties do not always group together in Urdu (Davison 2004, Poole 2016). Secondly, I show that Urdu has high and low subjects, with high subjects passing more subject diagnostics than low subjects. And finally, I argue that in parallel to the high and low division, other factors, such as Agree with certain functional heads, also influence the availability of some subject properties. The data presented in this paper is novel and a survey of this breadth has not been conducted before.

I begin by giving background on subjects and subject properties in Urdu in section 2. In section 3, I present the data: the behaviour of selected arguments with respect to four subject properties (control into participial clauses, anaphor binding, no pronoun binding, and being PRO). Section 4 explores the potential source for each of these properties. In section 5, I discuss the implications of the data, and open questions that remain. Section 6 concludes.

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[1] Although it is common to use the umbrella term 'Hindi-Urdu' in the literature, I refrain from doing so, as the judgements reported in this paper are from Urdu speakers only, and there is some microvariation between Hindi and Urdu although not well-explored. The dialect reported in this paper is from the 'Urdu-speaking' community in Karachi.

2 Background

In this section, I introduce the various arguments that I will survey in this paper and the properties that I will test them against.

2.1 Arguments included in the survey

Urdu has seven cases: nominative, ergative, dative, accusative, instrumental, genitive and locative. Subjects of all cases except accusative have been identified in the literature (Davison 2015, Mohanan 1994). Here, I give a short description of the distribution of each subject. We shall see in section 3 that each of these passes at least one subject diagnostic, showing that they are truly subjects (see section 5.3 for discussion on the definition of 'subject').

Nominative case is found on subjects of intransitives, both unergative (1a) and unaccusative (1b).[2]

(1) a. ***Rami*** *cheekh-a.*
     Rami.NOM scream-PFV.M.SG

     'Rami screamed.'

   b. ***Rami*** *gir gya.*
     Rami.NOM fell go.PFV.M.SG

     'Rami fell.'

Nominative case is also found on subjects of transitive clauses (2a), when tense and aspect conditions for split-ergativity are not met. Present or past tense and perfective aspect result in ergative case on the subject (2b) (Butt & King 2004).

(2) a. ***Rami*** *kaam kar-tha he.*
     Rami.NOM work.NOM do-IPFV.M.SG be.PRS.3.SG

     'Rami does work.' / 'Rami works.'

   b. ***Rami=ne*** *kaam ki-ya.*
     Rami=ERG work.NOM do-PFV.M.SG

     'Rami did (the) work.'

Some psychological predicates, complex V-V or N-V predicates, and deontic modals require dative subjects (3).

(3) ***Rami=ko*** *Sana yaad aa-ii.*
   Rami=DAT Sana.NOM memory come-PFV.F.SG

   'Rami remembered/missed Sana.'

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2 All examples are my own unless stated otherwise.

It is sometimes claimed that dative case is associated with the experiencer theta-role but this is not completely accurate as there are many experiencer subjects which have nominative and ergative case as well (Davison 2015). Hence, it may be more apt to take dative case as a lexical case rather than an inherent or semantic one.

Urdu has an inabilitative construction which looks like a negated passive on the surface (4 vs. 10, 12) but has a different deep structure (Davison 1982, Mohanan 1994, Srishti 2011: Ch 5). Both have the same morpheme *jaa*, similar inflection on the verb, and an instrumental argument. A key difference between the two is that the instrumental argument is an obligatory subject in the inabilitative (4) while it is an optional *by*-phrase in the passive (12).[3]

(4)   ***Rami=se***   *kaam*   *nahi*   *ki-ya*   *gya.*
      Rami=INS   work.NOM   not   do-PFV.M.SG   go.PFV.M.SG

      'Rami was unable to do the work.'

There are several facts that show that the instrumental argument (rather than the nominative one) is the subject in the inabilitative. First, as mentioned, this argument is obligatory as subjects generally are in Urdu.[4] Second, this instrumental argument cannot be gapped in a coordinate construction with a low argument as the antecedent. Mohanan (1994) shows that gapping in coordinate constructions in Urdu requires matching of both case and grammatical function (GF) between the antecedent and gapped element. In (5), the instrumental argument of an inabilitative is gapped with a low instrumental argument (*by*-phrase, causee and source expression respectively) as the antecedent. None of these low arguments is able to license gapping of the instrumental argument of the inabilitative or vice versa (not shown) showing that it is not a low argument and is, indeed, a subject.

(5)   a.   *Ravi*   ***Ram=se***   *peeT-a*   *gya*   *aur*   ***us=se***
          Ravi.NOM   **Ram=INS**   beat-PFV.M.SG   PASS.PFV.M.SG   and   **3.SG.OBL=INS**

          /   *___   hans-a*   *nahi*   *gya.*
          /   *___   laugh-PFV.M.SG   not   go.PFV.M.SG

          'Ravi was beaten by Ram and he couldn't laugh.'

    b.   *Ram=ne*   ***Anil=se***   *Ravi=ko*   *piT-va-ya*   *aur*   *us=se*
          Ram=ERG   **Anil=INS**   Ravi=ACC   beat-CAUS-PFV.M.SG   and   **3.SG.OBL=INS**

          /   *___   hans-a*   *nahi*   *gya.*
          /   *___   laugh-PFV.M.SG   not   go.PFV.M.SG

          'Ram made Anil beat Ravi and he couldn't laugh.'

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[3]   The shared morpheme, *jaa*, also occurs as a light verb in Urdu. In inabilitatives, *jaa* behaves more like the passive morpheme than the light verb. However, I still gloss it as the light verb in my examples of inabilitatives to prevent confusion with passive examples. It may be the case that *jaa* in inabilitatives is at an intermediate stage of grammaticalisation between the light verb and passive uses.

[4]   Urdu allows *pro*-drop of discourse-salient arguments.

c. *Anil=ne* **Ram=se** *paisa* *maang-a* *aur us=se*
Anil=ERG **Ram=INS** money.NOM ask.for-PFV.M.SG and **3.SG.OBL=INS**

   / *___ *di-yaa* *nahi gya.*
   / *___ give-PFV.M.SG not go.PFV.M.SG

'Anil asked Ram for money and he couldn't give (it).'

<div align="right">(adapted from Mohanan 1994: 163, ex.38-40)</div>

Moreover, the only other contender for subject position, the nominative argument is the direct object as it can show differential-object-marking and have either nominative or accusative case.

Locative subjects are also found in Urdu. Locative case has four forms: -*mein* 'in', -*par/-pe* 'on', -*tak* 'to/till', and null 'to/till'. Each of these has a distinct semantic contribution, reflecting the postpositional qualities of locative case (Kidwai 2019). To my knowledge, only the first two forms of locative case occur on subjects (6).[5]

(6) a. **Rami=mein** *bohath khubian* *hein.*
     Rami=LOC very good.qualities.NOM be.PRS.3.PL

     'There are many good qualities in Rami.'

   b. **Rami=par/pe** *bohath zimadaariyan* *hein.*
     Rami=LOC very responsbilities.NOM be.PRS.3.PL

     'There are many responsibilities on Rami.'

Once again, we can use gapping in coordinate constructions to show that these locative expressions are subjects. In (7), a low locative argument is not able to license gapping of the locative subject.

(7) *Sana=ne* *Rami=mein khubian* *dhoond-iin* *aur us=mein*
Sana=ERG Rami=LOC good.qualities.NOM find-PFV.F.PL and 3.SG.OBL=LOC

   / *___ *bohath khubian* *hein.*
   / *___ very good.qualities.NOM be.

'Sana searched for good qualities in Rami and there are many good qualities in Rami.'

Finally, genitive case is found as the default case on overt subjects in non-finite clauses (8).

(8) **Rami=ka** *kaam* *kar-na* . . .
   Rami=GEN.M.SG work.NOM do-INF . . .

'Rami's doing of (the) work. . .' / 'For Rami to do (the) work. . .'

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[5] The reason why subjects can have some locative case markers but not others may be due to either the markers being at different stages of grammaticalisation from postposition to clitic, or due to incompatible semantics. Mohanan (1994: 164–175) gives examples of PP subjects which, if true subjects, suggest that postpositional qualities should not prevent locative case markers from occurring on subjects, and that incompatible semantics is a better explanation.

The genitive in constructions of possession equivalent to the English lexical *have* is also sometimes cited as a genitive subject (9) (Davison 2015).

(9) ***Rami=ki***   *biwi*   *he.*
     Rami=GEN.F.SG wife.NOM be.3.SG

     'Rami has a wife.'

However, I do not take these to be subjects as it is very likely that the genitive itself is not the subject but rather the whole possessor plus possessee DP, with the literal meaning 'Rami's wife is', meaning Rami's wife exists.

I examine the behaviour of the full range of previously identified subjects in this paper. I also look at two derived subjects. First are promoted objects of passives which bear nominative case (10) (see discussion in Kidwai 2022 for arguments in favour of promotion, cf. Mahajan 1995).

(10) ***Rami***   *pakR-a*   *gya.*
      Rami.NOM catch-PFV.M.SG PASS.PFV.M.SG

      'Rami was caught.'

The second are promoted objects in reversible dative-nominative constructions. Dative predicates have a dative and a nominative argument (3). Generally, the dative argument is said to be the subject and the nominative one the object. However, it has been argued that this construction is "reversible" and that the nominative argument may be raised to a higher position than the dative one (11) (Davison 2004, Poole 2016). In this case, the promoted nominative argument is said to show subject behaviour.

(11) ***Sana***   *Rami=ko* *yaad*   *aa-ii.*
      Sana.NOM Rami=DAT memory come-PFV.F.SG

      'Rami remembered/missed Sana.' / 'Sana was remembered/missed by Rami.'

In addition to subjects and derived subjects, I have also included low agents in my survey, *by*-phrases of passives (12) and causees in complex causatives (13), both of which carry instrumental case. Being agents precludes these arguments from being objects, but they are not quite subjects either, and strikingly, have never been labelled as such. This might be because they are not usually the highest argument in the clause – *by*-phrases are sometimes the highest argument (Kidwai 2022) while causees are never.

(12) *Rami*   ***Sana=se*** *pakR-a*   *gya.*
      Rami.NOM **Sana=INS** catch-PFV.M.SG PASS.PFV.M.SG

      'Rami was caught by Sana.'

(13) *Rami=ne* **Sana*=se* *kitaab* *paRh-va-ii.*
      Rami=ERG **Sana=INS** book.NOM read-CAUS-PFV.F.SG

      'Rami made Sana read a/the book.'

Hence, the full range of arguments surveyed in this paper includes external arguments (e.g. transitive subjects), internal arguments (e.g. unaccusative subjects and derived subjects), agents (e.g. ergative subjects, *by*-phrases, causees) and non-agents (e.g. dative subjects). Thus, we will be able to tell if "subject" properties are in fact agent or external argument properties instead. Furthermore, I compare these arguments not only amongst themselves but also to direct (14) and indirect objects (15), as well as instrumental expressions in comitatives (16).

(14) *Rami=ne* **seb** *(=ko)* *kha-ya.*
      Rami=ERG **apple.NOM** (=ACC) eat-PFV.M.SG

      'Rami ate an/the apple.

(15) *Rami=ne* **Sana*=ko*** *kitaab* *di.*
      Rami=ERG **Sana=DAT** book.NOM give.PFV.F.SG

      'Rami gave a/the book to Sana.'

(16) *Rami* **Sana*=se*** *mil-a.*
      Rami.NOM **Sana=INS** meet-PFV.M.SG

      'Rami met (with) Sana'.

We now move on to subject properties in the literaure on Hindi-Urdu.

2.2 Subject properties in the literature

The following are all the properties that have been ascribed to Hindi-Urdu subjects in the literature.

(17) Subject properties in Hindi-Urdu literature:

      a. Anaphor binding (Davison 2001, 2015, Bhatia & Poole 2016, Mohanan 1994, Poole 2016)

      b. No pronoun binding (Davison 2015, Bhatia & Poole 2016, Mohanan 1994)

      c. Control into participial *-kar* clauses (Davison 2015, Mohanan 1994)

      d. Being PRO (Poole 2016)

      e. Heading reduced relatives (Poole 2016)

      f. Being in the semantic scope of subject-oriented auxiliaries (Davison 2015)

      g. Gapping in coordinate constructions (Mohanan 1994)

First let us note that verb agreement is not a subject property in Urdu and has never been proposed as such. The highest nominative argument triggers agreement. This is can be the subject (when it is nominative, 18a) or the object (when there is a non-nominative subject, 18b). When there is no nominative argument in the sentence, agreement goes to default, 3.M.SG (18c).

(18) a. ***Sana***   *donuts*   *khaa-thi*   *he.*
          Sana.NOM donuts.NOM eat-IPFV.F.SG be.PRS.3.SG

          'Sana eats donuts.'

      b. *Sana=ne* ***donuts***   *khaa-ey.*
          Sana=ERG **donuts.NOM** eat-PFV.M.PL

          'Sana ate (the) donuts.'

      c. *Sana=ne* *donuts=ko* *kha-ya.*
          Sana=ERG donuts=ACC eat-PFV.**M.SG**

          'Sana ate the donuts.'

Of the properties given in (17), the first three are the most commonly cited. Urdu has possessive anaphors, *apna* 'self' and *apne aap* 'self's self', which are said to be subject-oriented, in that they can only be bound by subjects and not objects. Some variation has been reported for *apna*, which can be bound by objects for some speakers (Bhatia & Poole 2016) or under certain conditions (Kidwai 2022, Mohanan 1994), but never for *apne aap*. For this reason, I check the behaviour of all subjects with respect to both anaphors separately (section 3.2). Possessive pronominals, on the other hand, are anti-subject-oriented and are never bound by subjects (section 3.3). The final commonly used subject diagnostic is control into participial clauses. Urdu uses clauses with the participle *kar* 'do' as modifiers (19). It is generally agreed that the PRO subject of these clauses can only be controlled by subjects (section 3.1).

(19) *PRO ghar*   *jaa kar*
      PRO home.LOC go do

      'going home' / 'after going home'

Poole (2016) proposes two additional subject properties. The first is being PRO. PRO may only occur in subject position, therefore, if an argument can be PRO, it must be a subject. Poole shows that there is variation in the behaviour of nominative vs. dative subjects in this regard. Davison (2008) argues that there is a case restriction on being PRO in Hindi-Urdu, which allows arguments with structural case but not non-structural case to be PRO. The two agree that nominative subjects can be PRO and dative subjects cannot but disagree on ergative subjects which, according to Poole, pattern like dative subjects (or quirky subjects), and, according to Davison, pattern like nominative subjects (or structural case subjects). I look at this in detail in section 3.4.

The second diagnostic proposed by Poole (2016) is heading reduced relative clauses. He claims that only subjects are able to head reduced relatives. Assuming that nominative subjects can head reduced relatives (although he does not give any examples), he shows that dative subjects cannot do so (20b), and takes this to be a crucial difference between nominative and quirky case subjects.

(20)   a.   *LaRke=ko chot   lag-i.*
            Boy=DAT   hurt.NOM contact-PFV.F.SG

            'The boy got hurt.'

       b.   *[___1   *chot*   *lag-a*   ] *laRka1* . . .
            [___.DAT1 hurt.NOM contact-PFV.M.SG] boy1   . . .

            Intended: 'the hurt boy . . .'   (Poole 2016: 10, ex.22)

However, nominative subjects are not able to head reduced relatives either (21b), and Bárány (2018) shows that heading reduced relatives is in fact an object property in Hindi-Urdu, specific to direct objects (22b vs. 22c). Therefore, I do not include heading reduced relatives as a subject property in my survey.

(21)   a.   *LaRka   seb   kha-tha   he.*
            Boy.NOM apples.NOM eat-IPFV.M.SG be.PRS.3.SG

            'The boy eats apples.'

       b.   *[___1   *seb*   *kha-tha*   ] *laRka1* . . .
            [___.ERG1 apple.NOM eat-IPFV.M.SG] boy1   . . .

            Intended: 'the boy who eats apples'

(22)   a.   *Us   mahila=ko   kitaab   di   gaii.*
            That.OBL woman=DAT book.NOM give.PFV.F.SG PASS.PFV.F.SG

            'That woman was given a book.'

       b.   Direct object:
            [*us   mahila=ko   ___1 *di* *gaii*   ] *kitaab1*
            [that woman=DAT   ___1 give PASS.PFV.F.SG] book1

            'the book given to that woman'   (Bárány 2018: 17, ex.21b)

       c.   Indirect object:
            *[___1 *kitaab   di*   *gaii*   ] *mahila*
            [___1 book.NOM give PASS.PFV.F.SG] woman1

            Intended: 'the woman given the book'   (Bárány 2018: 17, ex.21c)

There are two other subject properties mentioned in the literature, both of which I also exclude in this paper. Davison (2015) notes that only subjects can be in the semantic scope of certain 'subject-oriented' auxiliaries, such as *baiThna* 'to do

something inadvertently' (lit. 'to sit') (23a) and *paana* 'to manage to do something' (lit. to gain) (23b).

(23) a. *Mein / *=ne aap=ki Daak paRh baith-aa.*
          I.NOM / *=ERG 2.RESP=GEN.F.SG[6] mail.NOM read sit-PFV.M.SG

    'I inadvertently read your mail (by mistake).'

    (Davison 2015: 1486, ex.27)

      b. *Coast.guard=ko yeh naaNw dikh nahi paa-ii.*
          Coast.guard=DAT this ship.NOM seen not manage-PFV.F.SG

    'The coast guard did not manage to spot this ship.'

    (Davison 2015: 1486, ex.28)

There is clearly something of interest in the behaviour of different subjects with respect to these auxiliaries. In (23a), a nominative but not ergative subject can occur in the semantic scope of the subject-oriented-auxiliary, and yet the dative subject is acceptable in (23b). In addition to syntactic structure, it is highly likely that semantics is at play, as both the auxiliaries and the case markers contribute to semantics and the meaning of both would need to be compatible for acceptable judgements. For instance, the ergative case marker contributes a meaning of agentivity which is at odds with the auxiliary *baiThna* 'to do something inadvertently' in (23a). However, beyond the two examples given by Davison there is no list of subject-oriented auxiliaries, making it difficult to construct examples with appropriate semantics for the full range of arguments under consideration in this paper. For this reason, I do not survey this property and leave it open for future research.

The second property that I do not look at in detail in this paper is gapping in coordinate constructions. As mentioned, Mohanan (1994) observes that gapping in coordinate constructions requires matching in both case and grammatical function between the gapped element and its antecedent. For example, in (24), the gapped element must be both nominative and a subject to match the antecedent, *Ravi*.

(24) *Ravi ghar gyaa aur ___ so-ya.*
      Ravi.NOM home.LOC go.PFV.M.SG and ___ sleep-PFV.M.SG

    'Ravi went home and (Ravi) slept.' (Mohanan 1994: 132, ex.25a)

This is a useful diagnostic for determining the grammatical function of certain case-marked arguments, for example, instrumental and locative subjects since instrumental and locative expressions occur elsewhere in the grammar as low arguments. However, I do not include it in the survey in section 3 as I am not interested in the distribution of subjects but rather in their behaviour where they do occur.

I now turn to the main data of this paper.

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[6] RESP = respectful

<div align="center">3 Subject Properties</div>

The four subject properties examined in this paper are given in (25).

(25)   Subject propertes in this paper:

    a.   Control into participial *-kar* clauses (section 3.1)

    b.   Anaphor binding (section 3.2)

    c.   No pronoun binding (section 3.3)

    d.   Being PRO (section 3.4)

I look at each property in turn and the behaviour of all arguments with respect to it. As we will see, not all subjects show all the properties.

3.1 Control into participial clauses

Urdu has participial clauses with the participle *kar* 'do' and a PRO subject. These clauses act as modifiers to nominals, as shown in (26).

(26)   *Rami$_i$*　　　[*PRO$_i$ ghar*　　*jaa kar*]　*so*　*gya.*
　　　Rami.NOM$_i$ [PRO$_i$ home.LOC go do] sleep go.PFV.M.SG

　　　'Rami$_i$ went to sleep when he$_i$ went home.'

The PRO subject of these clauses can be controlled by the nominative subject of unaccusative (26), unergative (27) and transitive verbs (28).

(27)   *Rami$_i$*　　　[*PRO$_i$ ghar*　　*jaa kar*]　*ro-ya.*
　　　Rami.NOM$_i$ [PRO$_i$ home.LOC go do] cry-PFV.M.SG

　　　'Rami$_i$ cried when he$_i$ went home.'

(28)   *Rami$_i$*　　　[*PRO$_i$ ghar*　　*jaa kar*]　*seb*　　　*kha-tha*
　　　Rami.NOM$_i$ [PRO$_i$ home.LOC go do] apple.NOM eat-IPFV.M.SG
　　　he.
　　　be.PRS.3.SG

　　　'Rami$_i$ eats an apple when he$_i$ goes home.'

The same is seen for ergative subjects (29 - 31).

(29)   *Rami=ne$_i$　Sana=ko$_j$*　[*PRO$_{i/*j}$ ghar*　　*jaa kar*]　*dekh-a.*
　　　Rami=ERG$_i$ Sana=ACC$_j$ [PRO$_{i/*j}$ home.LOC go do] see-PFV.M.SG

　　　'Rami$_i$ saw Sana$_j$ when he$_i$/*she$_j$ went home.'

(30) *Rami=ne*ᵢ *Sana=ko*ⱼ *kitaab* [*PRO*ᵢ/*ⱼ *ghar* *jaa kar*]
      Rami=ERGᵢ Sana=ACCⱼ book.NOM [PROᵢ/*ⱼ home.LOC go do]

      di.
      give.PFV.F.SG

      'Ramiᵢ gave Sanaⱼ a/the book when heᵢ/*sheⱼ went home.'

(31) *Rami=ne*ᵢ *Sana=se*ⱼ [*PRO*ᵢ/*ⱼ *ghar* *jaa kar*] *baath ki.*
      Rami=ERGᵢ Sana=INSⱼ [PROᵢ/*ⱼ home.LOC go do] talk do.PFV.F.SG

      'Ramiᵢ talked to Sanaⱼ when heᵢ/*sheⱼ went home.'

[Poole](2016) argues that controlling PRO is not a subject property as objects can also control PRO. This is true (32), but not for participial *-kar* clauses. Direct objects (29),[7] indirect objects (30) and comitative expressions (31) are not able to control PRO in these clauses. It is control into these specific clauses that I take to be a subject property ([Davison 2015], [Mohanan 1994]).

(32) *Hum=ne un=ko*ᵢ [*PRO*ᵢ *wahaan jaa-ne*] *=ke* *liye majbur*
      We=ERG 3.PL=ACCᵢ [PROᵢ there go-INF.OBL] =GEN.OBL for forced

      nahi ki-ya.
      not do-PFV.M.SG.

      'We did not force them to go.'   ([Davison 2008]: 30, ex.4)

All the remaining subjects, derived subjects and low agents introduced in [section 2.1](#) are also able to control into participial clauses.

(33) Instrumental subject:
      *Rami=se*ᵢ [*PRO*ᵢ *ghar* *ja kar*] *kaam* *nahi ki-ya*
      Rami=INSᵢ [PROᵢ home.LOC go do] work.NOM not do-PFV.M.SG

      gya.
      go.PFV.M.SG.

      'Ramiᵢ was unable to do the work when heᵢ went home.'

(34) Locative subject:
      *Rami=pe*ᵢ [*PRO*ᵢ *Pakistan* *ja kar*] *bohath zimadaariyan*
      Rami=LOCᵢ [PROᵢ Pakistan.LOC go do] very responsibilities.NOM

      paR ga-iin.
      fell go-PFV.F.PL.

      'A lot of responsibilies fell on Ramiᵢ when heᵢ went to Pakistan.'

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7   Direct objects in Urdu can have either nominative or accusative case due to differential-object-marking. No difference was found between the behaviour of marked and unmarked direct objects for the properties discussed in this paper.

(35) Genitive infinitive subject:
Rami=ka$_i$　　　[*PRO$_i$　ghar*　　　*ja　kar*]　*ro-na...*
Rami=GEN.M.SG$_i$ [PRO$_i$　home.LOC　go　do　]　cry-INF...

'Rami's$_i$ crying when he$_i$ went home...'

(36) Dative subject and promoted object of dative predicate:
Rami$_i$　　　*Sana=ko$_j$*　[*PRO$_{i/j}$　Cambridge*　　　*ja　kar*]　*pasand*
Rami.NOM$_i$　Sana=DAT$_j$　[PRO$_{i/j}$　Cambridge.LOC　go　do　]　like

　aa-ya.
　come-PFV.M.SG

'Sana$_j$ liked Rami$_i$ when he$_i$/she$_j$ went to Cambridge.'

(37) *By*-phrase and promoted object of passive:
Omar$_i$　　　*Sana=se$_j$*　[*PRO$_{i/j}$　ghar*　　　*ja　kar*]　*pakR-a*
Omar.NOM$_i$　Sana=INS$_j$　[PRO$_{i/j}$　home.LOC　go　do　]　catch-PFV.M.SG

　gya.
　PASS.PFV.M.SG

'Omar$_i$ was caught by Sana when he$_i$/she$_j$ went home.'
　　　　　　　　　　　　　　　　　　　　　　　　　(Kidwai 2022: 7, ex.22b)

(38) Causee:
Rami=ne$_i$　　*Sana=se$_j$*　[*PRO$_{i/j}$　ghar*　　　*ja　kar*]　*khaana*
Rami=ERG$_i$　Sana=INS$_j$　[PRO$_{i/j}$　home.LOC　go　do　]　food.NOM

　pak-va-ya.
　cook-CAUS-PFV.M.SG

'Rami$_i$ made Sana$_j$ cook food when he$_i$/she$_j$ went home.'

As mentioned in section 2.1, either the dative subject or the nominative object may raise in reversible dative-nominative constructions (Davison 2004). When the object does not raise, it does not show subject properties. Kidwai (2022) shows the same for passives: the object is optionally promoted and it shows subject properties only when it is raised. It should also be noted that although these objects need to raise to show subject properties, the dative subject and the *by*-phrase are able to do so even when they are below the object, as long as the controllee (or anaphor in section 3.2) is in their c-command domain (see discussion in section 5.1).

　　The data has been summarised in Table 1. All subjects, derived subjects and agents are able to control PRO in participial *-kar* clauses. Objects are not.

	Control
NOM unaccusative subject	✓
NOM unergative subject	✓
NOM transitive subject	✓
ERG subject	✓
INS subject	✓
LOC subject	✓
GEN infinitive subject	✓
DAT subject	✓
INS *by*-phrase	✓
INS causee	✓
Promoted NOM object of passive	✓
Promoted NOM object of dative predicate	✓
DAT indirect object	×
NOM/ACC direct object	×
INS comitative expression	×

Table 1   Control into participial clauses.

3.2 Anaphor binding

Urdu has two possessive anaphors, the simplex *apna* 'self's' and the complex *apne aap* 'self's self'. Like English *self*-anaphors (e.g. *myself, himself/herself, themselves*), these anaphors must have an antecedent, and this antecedent must c-command them. In addition, it is generally agreed that these anaphors are subject-oriented (Davison 2001, 2015, Bhatia & Poole 2016, Mohanan 1994, Poole 2016) – they can be bound only by subjects and never by objects. This holds even when the object c-commands the anaphor. For example, indirect object c-commands the anaphor in direct object in (39) but cannot bind it.[8] [9]

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[8] There is a strong preference to use *apna* over *apna aap* in non-emphatic use (e.g. *apni kitaab* 'self's book' vs. *apne aap=ki kitaab* 'self's self's book'), except when referring to one's self. This may be due to redundancy effects.

[9] For some speakers, it is possible for objects to bind the anaphor *apna* 'self' when they c-command it, as in (39) (Bhatia & Poole 2016). For these speakers, binding *apna* may not be a subject property and c-command alone is sufficient (see Bhatia & Poole 2016 for an alternative explanation). No mixed judgements have been reported for *apna aap* 'self's self'.

(39) *Rami*ᵢ *Sana=ko*ⱼ *apni*ᵢ/*ⱼ / *apne.aap=ki*ᵢ/*ⱼ *kitaab*
      Rami.ᵢ Sana=DATⱼ SELF'Sᵢ/*ⱼ / SELF'S.SELF=GEN.F.SGᵢ/*ⱼ book.NOM

      bhejay *ga.*
      send.FUT.3.SG FUT.M.SG

      'Ramiᵢ will send Sanaⱼ hisᵢ/*herⱼ own book.'

Comitatives are also unable to bind anaphors (40).

(40) *Rami=ne*ᵢ *Sana=se*ⱼ *apne*ᵢ/*ⱼ / *apne.aap=ke*ᵢ/*ⱼ *baare=mein*
      Rami.NOMᵢ Sana=ACCⱼ SELF'Sᵢ/*ⱼ / SELF'S.SELF=GEN.OBLᵢ/*ⱼ about=LOC

      baath ki.
      talk   do.PFV.F.SG

      'Ramiᵢ talked to Sanaⱼ about himselfᵢ/*herselfⱼ.'

  The remaining subjects and agents are all able to bind anaphors, as shown below
(41 – 48).

(41) Nominative unaccusative subject:
      *Rami*ᵢ   *apne*ᵢ / *apne.aap=ke*ᵢ   *bistar=mein* *so*   *gya.*
      Rami.NOMᵢ SELF'Sᵢ / SELF'S.SELF=GEN.OBLᵢ bed=LOC   sleep go.PFV.M.SG

      'Ramiᵢ went to sleep in hisᵢ own bed.'

(42) Nominative unergative subject:
      *Rami*ᵢ   *apne*ᵢ / *apne.aap=ke*ᵢ   *bistar=mein* *ro-ya.*
      Rami.NOMᵢ SELF'Sᵢ / SELF'S.SELF=GEN.OBLᵢ bed=LOC   cry-PFV.M.SG

      'Ramiᵢ cried in hisᵢ own bed.'

(43) Instrumental subject:
      *Rami=se*ᵢ *apna*ᵢ / *apne.aap=ka*ᵢ   *kaam*   *nahi* *ki-ya*
      Rami=INSᵢ SELF'Sᵢ / SELF'S.SELF=GEN.M.SGᵢ work.NOM not   do-PFV.M.SG

      gya.
      go.PFV.M.SG.

      'Ramiᵢ was unable to do hisᵢ own work.'

(44) Locative subject:
      *Rami=pe*ᵢ *apne*ᵢ / *apne.aap=ke*ᵢ   *khaandan=ki* *bohath*
      Rami=LOCᵢ SELF'Sᵢ / SELF'S.SELF=GEN.OBLᵢ family=GEN.F.SG very

      zimadaariyan   *hein.*
      responsibilities.NOM be.PRS.3.SG.

      'On Ramiᵢ are many responsibilities of hisᵢ own family.'

(45) Genitive infinitive subject:
Rami=ka_i   apne_i   / apne.aap=ke_i   ghar   ja-na...
Rami=GEN.M.SG_i SELF'S_i / SELF'S.SELF=GEN.OBL_i home.LOC go-INF...

'Rami's_i going to his_i own home...'

(46) Dative subject and promoted object of dative predicate:
Rami_i   Sana=ko_j   apne_{i/j} / apne.aap=ke_{i/j}   sheher=mein
Rami.NOM_i Sana=DAT_j SELF'S_{i/j} / SELF'S.SELF=GEN.OBL_{i/j} city=LOC

pasand aa-ya.
like   come-PFV.M.SG

'Sana_j liked Rami_i in his_i/her_j own city.'

(47) *By*-phrase and promoted object of passive:
Omar_i   Sana=se_j   apne_{i/j} / apne.aap=ke_{i/j}   sheher=mein
Omar.NOM_i Sana=INS_j SELF'S_{i/j} / SELF'S.SELF=GEN.OBL_{i/j} city=LOC

pakR-a   gya.
catch-PFV.M.SG PASS.PFV.M.SG

'Omar_i was caught by Sana_j in his_i/her_j own city.'

(48) Causee:
Rami=ne_i   Sana=se_j   apna_{i/j} / apne.aap=ka_{i/j}   khaana
Rami=ERG_i Sana=INS_j SELF'S_{i/j} / SELF'S.SELF=GEN.M.SG_{i/j} food.NOM

pak-va-ya.
cook-CAUS-PFV.M.SG

'Rami_i made Sana_j cook his_i/her_j own food.'

Again, the dative subject and *by*-phrase are able to bind anaphors without raising, while their respective objects must raise to do so (46, 47). Also note that in (48), the interpretation in which the agent binds the anaphor is more salient than the interpretation in which the causee does so. The reason for this will become clear in the next section (section 3.3).

We can update our table of results as shown in Table 2. Once again, all subjects and subject-like arguments show this property and objects do not.

3.3 No pronoun binding

The third subject property in Urdu is lack of pronoun binding. For third person pronouns, pronominal possessors consist of the oblique form of the pronoun plus genitive case, as in *us=ka* '3.SG.OBL=GEN' and *un=ka* '3.PL.OBL=GEN'. First and second person possessive pronouns have fused forms, like *mera* 'mine', *hamara* 'ours' and

	Control	Anaphor binding
NOM unaccusative subject	✓	✓
NOM unergative subject	✓	✓
NOM transitive subject	✓	✓
ERG subject	✓	✓
INS subject	✓	✓
LOC subject	✓	✓
GEN infinitive subject	✓	✓
DAT subject	✓	✓
INS *by*-phrase	✓	✓
INS causee	✓	✓
Promoted NOM object of passive	✓	✓
Promoted NOM object of dative predicate	✓	✓
DAT indirect object	✕	✕
NOM/ACC direct object	✕	✕
INS comitative expression	✕	✕

Table 2 Control into participial clauses and anaphor binding.

tumhara 'yours', although some dialects have the oblique-plus-genitive in addition to the fused form. In contrast to anaphors, pronominal possessors do not need to have a syntactic antecedent and can also refer to discourse-salient antecedents. Crucially, for our purposes, pronominal possessors in Urdu are anti-subject oriented: subjects are not able to bind pronominal possessors within their own clause, while objects can bind pronouns freely (Davison 2015, Bhatia & Poole 2016, Mohanan 1994).[10] This is shown through the contrast between the nominative subject and indirect object in (49), and between the ergative subject and direct object in (50).[11]

(49) $Rami_i$ $Sana=ko_j$ $us=ki_{*i/j}$ *kitaab* *bhejay* *ga.*
Rami$_i$ Sana=DAT$_j$ 3.SG.OBL=GEN.F.SG$_{*i/j}$ book.NOM send.FUT.3.SG FUT.M.SG

'Rami$_i$ will send Sana$_j$ his$_{*i}$/her$_j$ book.'

---

[10] Bhatia & Poole (2016) use quantifier binding to show that both anaphor and pronoun binding are true cases of binding and not simply co-indexation.

[11] In all these examples, the pronominal possessor may also refer to a discourse salient antecedent not present in the syntax.

(50) *Rami=ne$_i$ Sana=ko$_j$ us=ke$_{*i/j}$ ghar=mein dekh-a.*
Rami.NOM$_i$ Sana=ACC$_j$ 3.SG.OBL=GEN.OBL$_{*i/j}$ home=LOC see-PFV.M.SG

'Rami$_i$ saw Sana$_j$ in his$_{*i}$/her$_j$ home.'

Like direct and indirect objects, comitatives can also bind pronouns (51).

(51) *Rami=ne$_i$ Sana=se$_j$ us=ke$_{*i/j}$ baare=mein baath ki.*
Rami=ERG$_i$ Sana=INS$_j$ 3.SG.OBL=GEN.OBL$_{*i/j}$ about=LOC talk do.PFV.F.SG

'Rami$_i$ talked to Sana$_j$ about him$_{*i}$/her$_j$.'

So far we have seen that all the subject-like arguments behave in the same way: they can all control into participial clauses and bind anaphors (Table 2). However, here we see a divide. Like nominative and ergative transitive subjects, nominative unaccusative (52) and unergative subjects (53), instrumental subjects (54), locative subjects (55) and genitive subjects (56) are unable to bind pronouns.

(52) Nominative unaccusative subject:
Rami$_i$ us=ke$_{*i}$ bistar=mein so   gya.
Rami.NOM$_i$ 3.SG.OBL=GEN.OBL$_{*i}$ bed=LOC sleep go.PFV.M.SG

'Rami$_i$ went to sleep in his$_{*i}$/her bed.'

(53) Nominative unergative subject:
Rami$_i$ us=ke$_{*i}$ bistar=mein ro-ya.
Rami.NOM$_i$ 3.SG.OBL=GEN.OBL$_{*i}$ bed=LOC cry-PFV.M.SG

'Rami$_i$ cried in his$_{*i}$/her bed.'

(54) Instrumental subject:
Rami=se$_i$ us=ka$_{*i}$ kaam   nahi ki-ya   gya.
Rami=INS$_i$ 3.SG.OBL=GEN.M.SG$_{*i}$ work.NOM not do-PFV.M.SG go.PFV.M.SG.

'Rami$_i$ was unable to do his$_{*i}$/her work.'

(55) Locative subject:
Rami=pe$_i$ us=ke$_{*i}$ khaandan=ki   bohath zimadaariyan
Rami=LOC$_i$ 3.SG.OBL=GEN.OBL$_{*i}$ family=GEN.F.SG very   responsibilities
  hein.
  be.PRS.3.SG.

'There are many responsibilities of his$_{*i}$/her family on Rami$_i$.'

(56)   Genitive infinitive subject:
       Rami=ka$_i$ *us=ke$_{*i}$*   *ghar*   *ja-na...*
       Rami=GEN.M.SG$_I$ 3.SG.OBL=GEN.M.SG$_{*i}$ home.LOC   go-INF...

       'Rami's$_i$ going to his$_{*i}$/her home...'

Conversely, dative subjects (57), *by*-phrases (58), causees (59), and promoted objects
of passives (57) and dative predicates (58) are able to bind pronouns. In dative
predicates (57) and passives (58), both the dative subject or *by*-phrase and the object
are able to bind pronouns, regardless of which is higher.

(57)   Dative subject and promoted object of dative predicate:

   a.   *Sana=ko$_j$*   *Rami$_i$*   *us=ke$_{i/j}$*   *sheher=mein* *pasand*
        Sana=DAT$_j$ Rami.NOM$_i$ 3.SG.OBL=GEN.OBL$_{i/j}$ city=LOC   like

        aa-ya.
        come-PFV.M.SG

        'Sana$_j$ liked Rami$_i$ in his$_i$/her$_j$ city.'

   b.   *Rami$_i$*   *Sana=ko$_j$*   *us=ke$_{i/j}$*   *sheher=mein* *pasand*
        Rami.NOM$_i$ Sana=DAT$_j$ 3.SG.OBL=GEN.OBL$_{i/j}$ city=LOC   like

        aa-ya.
        come-PFV.M.SG

        'Sana$_j$ liked Rami$_i$ in his$_i$/her$_j$ city.'

(58)   *By*-phrase and promoted object of passive:

   a.   *Omar$_i$*   *Sana=se$_j$*   *us=ke*   *sheher=mein* *pakR-a*
        Omar.NOM$_i$ Sana=INS$_j$ 3.SG.OBL=GEN.OBL$_{i/j}$ city=LOC   catch-PFV.M.SG

        gya.
        PASS.PFV.M.SG

        'Omar$_i$ was caught by Sana$_j$ in his$_i$/her$_j$ city.'

   b.   *Sana=se$_j$*   *Omar$_i$*   *us=ke$_{i/j}$*   *sheher=mein* *pakR-a*
        Sana=INS$_j$ Omar.NOM$_i$ 3.SG.OBL=GEN.OBL$_{i/j}$ city=LOC   catch-PFV.M.SG

        gya.
        PASS.PFV.M.SG

        'Omar$_i$ was caught by Sana$_j$ in his$_i$/her$_j$ city.'

(59)   Causee:
       Rami=ne$_i$ *Sana=se$_j$*   *us=ka$_{*i/j}$*   *khaana*   *pak-va-ya.*
       Rami=ERG$_i$ Sana=INS$_j$ 3.SG.OBL=GEN.M.SG$_{*i/j}$ food.NOM   cook-CAUS-PFV.M.SG

       'Rami$_i$ made Sana$_j$ cook *his$_i$/her$_j$ food.'

Recall that although cases of anaphor binding are ambiguous in complex causatives (48), there a preference to interpret the anaphor as bound by the agent rather than the causee. We can speculate that this may because the causee has the additional option to bind a pronominal possessor, as in (59), while the agent (nominative or ergative subject) does not. This may lead to a preference to use the anaphor for agents and the pronominal possessor for causees.

Table 3 presents the results so far. We can see three clear groups. The first group shows all three subject properties. The second group is able to control into participial clauses and bind anaphors but is does not exhibit pronoun obviation. The third group consists of objects which have none of these properties, showing us that these are categorically subject properties.

	Control	Anaphor binding	No pn binding
NOM unaccusative subject	✓	✓	✓
NOM unergative subject	✓	✓	✓
NOM transitive subject	✓	✓	✓
ERG subject	✓	✓	✓
INS subject	✓	✓	✓
LOC subject	✓	✓	✓
GEN infinitive subject	✓	✓	✓
DAT subject	✓	✓	✗
INS *by*-phrase	✓	✓	✗
INS causee	✓	✓	✗
Promoted NOM object of passive	✓	✓	✗
Promoted NOM object of dative predicate	✓	✓	✗
DAT indirect object	✗	✗	✗
NOM/ACC direct object	✗	✗	✗
INS comitative expression	✗	✗	✗

Table 3 Control into participial clauses, anaphor binding and no pronoun binding.

3.4 Be PRO

PRO can only occur in the subject position in any given clause (Chomsky 1981). It follows from this that an argument that can be PRO must be a subject (Poole 2016). This also holds in Urdu: PRO always occurs in subject position in its clause (32, repeated).

(32) *Hum=ne   un=ko_i   [**PRO_i** wahaan jaa-ne   ] =ke   liye*
     We=ERG   3.PL.OBL=ACC_i [PRO_i   there   go-INF.OBL] =GEN.OBL for

     majbur nahi ki-ya.
     forced   not   do-PFV.M.SG.

     'We did not force them to go.'   (Davison 2008: 30, ex.4)

Thus, as expected, direct objects (60), indirect objects (61) and comitatives (62) cannot be PRO.

(60) *Sana=ne   Hira=ko_i   [Rami=ka   us=ko_i   / *PRO_i mall=mein*
     Sana=ERG   Hira=ACC_i   [Rami=GEN.M.SG 3.SG.OBL=ACC_i / *PRO_i mall=LOC

     dekh-na] yaad   dila-ya.
     see-INF] memory   buy-PFV.M.SG

     'Sana reminded Hira_i about Rami seeing her_i in the mall.'

(61) *Sana=ne   Hira=ko_i   [Rami=ka   us=ko_i   / *PRO_i kitaab*
     Sana=ERG   Hira=ACC_i   [Rami=GEN.M.SG 3.SG.OBL=ACC_i / *PRO_i book.NOM

     de-na   ] yaad   dila-ya.
     give-INF] memory   buy-PFV.M.SG

     'Sana reminded Hira_i about Rami giving her_i a book.'

(62) *Sana=ne   Hira=ko_i   [Rami=ka   us=se_i   / *PRO_i baath*
     Sana=ERG   Hira=ACC_i   [Rami=GEN.M.SG 3.SG.OBL=ACC_i / *PRO_i talk

     kar-na] yaad   dila-ya.
     do-INF] memory   buy-PFV.M.SG

     'Sana reminded Hira_i about Rami talking to her_i.'

In addition to the subject restriction, there is a case restriction on PRO in Urdu. Davison (2008) shows that while nominative and ergative subjects can be PRO, dative subjects cannot. The verb in the embedded clause of (63a) can take either a nominative or ergative subject, depending on the tense and aspect conditions, as shown in (63b) and (63c). In non-finite clauses, this subject can be PRO. Conversely, the verb in the embedded clause of (64a) assigns dative case to its subject, as seen in (64c). This subject cannot be PRO, even when there is case-matching with the antecedent (64b).

(63) a. *Rami_i   [PRO_i seb   khaa-na] chah-tha   he.*
        Rami.NOM_i [PRO_i apple.NOM eat-INF] want-IPFV.M.SG be.PRS.3.SG

        'Rami wants to eat an apple.'

b. ***Rami*** *seb* *kha raha* *he.*
Rami.NOM apple.NOM eat PROG.M.SG bePRS.3.SG

'Rami is eating an apple.'

c. ***Rami=ne*** *seb* *kha-ya* *tha.*
Rami=ERG apple.NOM eat-PFV.M.SG be.PST.M.SG

'Rami ate an apple.'

(64) a. **Mein*ᵢ [*PRO*ᵢ *aisa* *paisa* *mil-na*] *nahi chah-thi*
I.NOMᵢ [PROᵢ such money.NOM meet-INF] not want-IPFV.F.SG

huun.
be.PRS.1.SG

Intended: 'I don't want to get such money.' (Davison 2008: 1, ex.1a)

b. **Mujhe*ᵢ [*PRO*ᵢ *aisa* *paisa* *mil-na*] *nahi chahiye.*
I.DATᵢ [PROᵢ such money.NOM meet-INF] not want.PFV.M.SG

Intended: 'I don't want to get such money.'

c. ***Mujhe*** *aisa* *paisa* *mil* *gya.*
I.DAT such money.NOM meet go.PFV.M.SG

'I got such money.' (Davison 2008: 1, ex.1b)

From the above, Davison (2008) concludes that PRO can only have structural case in Urdu.[12] She predicts that other non-structural subjects, such as instrumental subjects, should also not occur as PRO. This is indeed the pattern that we find: PRO can only occur in place of subjects with structural case. In addition to nominative and ergative subjects of transitive verbs, other nominative subjects (unaccusative, 65, and unergative, 66), as well as promoted objects of dative predicates (67) and passives (68) can also be PRO. In (65), the antecedent has ergative case although the verb in the embedded clause assigns nominative case to its subject, showing once again that case-matching between the antecedent and PRO is not necessary.

(65) Nominative unaccusative subject:

a. *Rami=ne*ᵢ [*PRO*ᵢ *gir-ne*] *=ki* *kahani suna-ai.*
Rami=ERGᵢ [PROᵢ fall-INF.OBL] =GEN.F.SG story tell-PFV.F.SG

'Rami told the story of his falling.'

b. *Rami* *gir gya.*
Rami.NOM fall go.PFV.M.SG

'Rami fell.'

---

[12] Davison (2008) takes ergative case to be structural, assigned by T and Asp, as do I. See Kidwai (2019) for arguments in favour of a structural analysis of ergative case in Urdu.

(66) Nominative unergative subject:

    a. *Rami_i*   [*PRO_i* *muskura-na*] *chah-tha*   *he.*
       Rami.NOM_i [PRO_i smile-INF] want-IPFV.M.SG be.PRS.3.SG

       'Rami wants to smile.'

    b. *Rami*   *muskura-ya.*
       Rami.NOM smile-PFV.M.SG

       'Rami smiled.'

(67) Promoted object of dative predicate:

    a. *Rami_i*   [*PRO_i* *sirf* *Sana=ko* *pasand* *aa-na*   ] *nahi*
       Rami.NOM_i [PRO_i only Sana=DAT like   come-INF] not
       chah-tha.
       want-IPFV.M.SG

       'Rami doesn't want to be liked by only Sana.'

    b. *Rami*   *sirf* *Sana=ko* *pasand* *aa-ya.*
       Rami.NOM only Sana=DAT like   come-PFV.M.SG

       'Rami was liked by only Sana.'

(68) Promoted object of passive:

    a. *Rami_i*   [*PRO_i* *pakR-a*   *jaa-na*   ] *nahi chah-tha.*
       Rami.NOM_i [PRO_i catch-PFV PASS.PFV-INF] not   want-IPFV.M.SG

       'Rami doesn't want to be caught.'

    b. *Rami*   *pakR-a*   *gya.*
       Rami.NOM catch-PFV.M.SG PASS.PFV.M.SG

       'Rami was caught.'

In contrast, PRO cannot occur in place of instrumental subjects (69), as predicted by Davison (2008), as well as locative subjects (70). The ungrammaticality of these examples cannot be due to lack of case-matching as (64b) is ungrammatical despite case-matching and (65) is grammatical despite case-mismatching.

(69) Instrumental subject:

    a. *Rami_i   [*PRO_i* *jhoot* *na* *bol-a*   *jaa-na*] *nahi chah-tha.*
       Rami.NOM_i [PRO_i lie   not speak-PFV go-INF] not want-IPFV.M.SG

       Intended: 'Rami does not want to be unable to lie.'

    b. *Rami=se* *jhoot* *nahi* *bol-a*   *jaa-tha.*
       Rami=INS lie   not speak-PFV.M.SG PASS-IPFV.M.SG

       'Rami is unable to lie.'

(70) Locative subject:

    a. ** Sana=ne   Rami=ko_i [PRO_i bohath ghussa ho-ne   ] =par*
       Sana=ERG Rami=ACC_i [PRO_i a.lot   anger   be-INF.OBL] =LOC

       daant-a.
       scold-PFV.M.SG

    Intended: 'Sana scolded Rami for there being a lot of anger in him.'

    b. *Rami=mein bohath ghussa he.*
       Rami=LOC   a.lot   anger   be.PRS.3.SG

    'There is a lot of anger in Rami.'

As genitive case is found on overt subjects of non-finite clauses, genitive subjects are in complementary distribution with PRO and have not been included above. The *by*-phrase and causee have also not been included as they are both optional arguments, and so, when silent, it is unclear whether they are present as PRO or have simply been omitted. I will come back to this in the next section and show that there is reason to believe that they cannot be PRO and have been omitted.

    We can summarise the data as shown in Table 4. The clear grouping that emerged from the first three properties no longer seems to hold as being PRO is scattered across the two subject groups. This brings us to the question of where these properties come from and how subjects get them. This is the topic of the next section.

4 Analysis of Subject Properties

In the previous section, we looked at an extensive amount of data and saw that while all subjects, derived subjects and low agents can control into participial *-kar* clauses and bind reflexive anaphors, the other two properties, no pronoun binding and being PRO, are more restricted. In this section, I explore the sources of these properties and how we might explain the findings (Table 4).

    In his work on subjecthood, Poole (2016) proposes that subject properties are spread across a series of functional heads. Arguments move via A-movement into the specifier of a head to gain the associated property. Poole takes anaphor binding, being PRO and heading reduced relatives as subject properties (also for Urdu), associating them with Voice, T and Prt[13] respectively. Subject properties stand in a hierarchy because A-movement is cyclic. Hence, to move into a given specifier and gain the associated property, an argument must have moved through all lower specifiers and gained all lower properties. So, for example, a subject cannot head reduced relatives without also being able to bind anaphors and to be PRO, as it must move through SpecVoiceP and SpecTP to move to SpecPrtP. Poole reports that in Urdu, nominative subjects show all subject properties, while dative subjects can only bind anaphors. Poole's data for ergative subjects is inconclusive but he assumes ergative subjects behave in the same way as dative subjects, as do all other quirky

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[13] Poole (2016) does not specify what Prt is an abbreviation of, only that "Prt^0 is a special projection above T^0 in a reduced relative" (p.22).

	Control	Anaphor binding	No pn binding	Be PRO
NOM unaccusative subject	✓	✓	✓	✓
NOM unergative subject	✓	✓	✓	✓
NOM transitive subject	✓	✓	✓	✓
ERG subject	✓	✓	✓	✓
INS subject	✓	✓	✓	×
LOC subject	✓	✓	✓	×
GEN infinitive subject	✓	✓	✓	N/A
DAT subject	✓	✓	×	×
INS *by*-phrase	✓	✓	×	×
INS causee	✓	✓	×	×
Promoted NOM object of passive	✓	✓	×	✓
Promoted NOM object of dative predicate	✓	✓	×	✓
DAT indirect object	×	×	×	×
NOM/ACC direct object	×	×	×	×
INS comitative expression	×	×	×	×

Table 4   Subject properties.

case subjects. Thus, nominative subjects move through all specifier positions, while quirky case subjects stop at SpecVoiceP.

I take a similar approach to Poole (2016). Subject properties are associated with different functional heads. Arguments enter into Agree with functional heads to satisfy an EPP-type feature, which causes arguments to move into the specifier of that functional head and show the associated subject property. This movement is cyclic, resulting in a hierarchy of subject properties. This is seen clearly with the first three properties in Table 4. No argument shows no pronoun binding without being able to control into participial clauses and bind anaphors. The implicational hierarchy of subject properties is given in (71).

(71)   SUBJECT PROPERTIES HIERARCHY:
control + anaphor binding ≪ no pn binding

Thus, control into participial clauses and anaphor binding must be associated with a lower head than no pronoun binding.

4.1 Analysing being PRO

Before diving into which functional heads might be responsible for the properties in (71), let us discuss the property not on the hierarchy, being PRO. This does not fit neatly into the hierarchy. Being PRO does not rely on showing no pronoun binding (promoted objects) nor vice versa (instrumental, locative and genitive subjects). I propose that being PRO is not associated with a functional head but rather with the unavailability of case due to the absence of finite T. Evidence for this comes from the distribution of overt arguments in non-finite clauses.

In section 3.4, we saw that nominative and ergative subjects, as well as promoted objects of dative predicates and passives can be PRO. These same arguments cannot be overt in non-finite clauses, unless marked with genitive case, the default case in non-finite clauses (72 - 76).

(72) Nominative and ergative transitive subjects:
Rami [*Sana=ka* / **Sana* / **Sana=ne* *seb*
Rami.NOM [Sana=GEN.M.SG / *Sana.NOM / *Sana=ERG apple.NOM

   khaa-na] *chah-tha* *he.*
   eat-INF] want-IPFV.M.SG be.PRS.3.SG

'Rami wants Sana to eat an apple.'

(73) Nominative unaccusative subject:
Rami=ne [*Sana=ke* / **Sana* *gir-ne*] *=ki* *kahani*
Rami=ERG [Sana=GEN.OBL / *Sana.NOM fall-INF.OBL] =GEN.F.SG story

   suna-ai.
   tell-PFV.F.SG

'Rami told the story of Sana falling.'

(74) Nominative unergative subject:
Rami [*Sana=ka* / **Sana* *muskura-na*] *chah-tha*
Rami.NOM [Sana=GEN.M.SG / *Sana.NOM smile-INF] want-IPFV.M.SG

   he.
   be.PRS.3.SG

'Rami wants Sana to smile.'

(75) Promoted object of dative predicate:
Rami [*Omar=ka* / **Omar* *sirf* *Sana=ko* *pasand*
Rami.NOM [Omar=GEN.M.SG / *Omar.NOM only Sana=DAT like

   aa-na] *nahi* *chah-tha.*
   come-INF] not want-IPFV.M.SG

'Rami doesn't want Omar to be liked by only Sana.'

(76) Promoted object of passive:

Rami [*Sana=ka* / ***Sana*** *pakR-a* *jaa-na*] *nahi*
Rami.NOM [Sana=GEN.M.SG / *Sana.NOM catch-PFV PASS.PFV-INF] not

chah-tha.
want-IPFV.M.SG

'Rami doesn't want Sana to be caught.'

Arguments which cannot occur as PRO (dative, instrumental and locative subjects) can, however, grammatically occur as overt subjects with the same case in non-finite clauses as in finite clauses (77 - 79).[14]

(77) Instrumental subject:

Rami [***Sana=se*** *jhoot* *na* *bol-a* *jaa-na*] *nahi chah-tha.*
Rami.NOM [**Sana=INS** lie not speak-PFV go-INF] not want-IPFV.M.SG

'Rami does not want Sana to be unable to lie.'

(78) Locative subject:

Sana=ne *Rami=ko* [***Omar=mein*** *bohath* *ghussa* *ho-ne*] *=par*
Sana=ERG Rami=ACC [**Omar=LOC** a.lot anger be-INF.OBL] =LOC

daant-a.
scold-PFV.M.SG

'Sana scolded Rami for there being a lot of anger in Omar.'

(79) Dative subject:

Mein [***Rami=ko*** *aisa* *paisa* *mil-na*] *nahi chah-thi*
I.NOM [**Rami=DAT** such money.NOM meet-INF] not want-IPFV.F.SG

huun.
be.PRS.1.SG

'I don't want Rami to get such money.'

Recall that the optionality of *by*-phrases and causees makes it difficult to tell when they are silent if they are PRO or have been omitted. Both these arguments are able to occur overtly in non-finite clauses (80, 81), leading me to assume that they are unable to be PRO like other arguments that can occur overtly.

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[14] These subjects also cannot appear with genitive case, the default case in non-finite clauses in Urdu. This is presumably because non-structural case continues to be available in non-finite clauses (see discussion on p.26). This shows that, at least in Urdu, the availability of PRO and default case relies on the *un*availability of case assignment in non-finite clauses.

(80) *By*-phrase:

Rami	[	***Sana=se***	*pakR-a*	*jaa-na*	]	*chah-tha*	*he.*
Rami.NOM	[	**Sana=INS**	catch-PFV	PASS-INF	]	want-IPFV.M.SG	be.PRS.3.SG

'Rami doesn't want to be caught by Sana.'

(81) Causee:

Rami	[	***Sana=se***	*kaam*	*kar-va-na*	]	*chah-tha*
Rami.NOM	[	**Sana=INS**	work.NOM	do-CAUS-INF	]	want-IPFV.M.SG

he.
be.PRS.3.SG

'Rami wants to make Sana do the work.'

The ungrammaticality of structurally case-marked subjects in non-finite clauses versus the grammaticality of non-structurally case-marked subjects is unsurprising. Non-finite clauses are missing finite T, a functional head which is crucial in assigning structural cases to subjects, namely nominative and ergative case ([Kidwai 2019]). It follows then, that these cases cannot be assigned in non-finite clauses, and therefore, are not seen on overt subjects. On the other hand, non-structural cases presumably come from the verb, or other bits of structure, that are present in both finite and non-finite clauses. Therefore, these cases can be assigned in non-finite clauses and as such, overt arguments bearing these cases are grammatical.

The finiteness condition on certain case-marked subjects can be used to explain the distribution of PRO. PRO can only replace subjects whose case cannot be assigned in non-finite clauses due to the absence of finite T. This is a fine-tuned version of [Davison]'s ([2008]) structural case restriction on PRO in Urdu. This also implies that PRO itself does not have any case (c.f. [Landau 2006]). This does not necessarily mean, however, that PRO appears due to the absence of case itself, as default (genitive) case is still available. The link to finite T also explains why only subjects can be PRO: finite T is only involved in case assignment of subjects; objects are assigned case by lower heads.[15] As a result, the absence of finite T never prevents object case assignment, therefore, allowing them to appear overtly in non-finite clauses and preventing the need for PRO.

It should be noted that arguments do not need to be in a specific position to receive case from finite T. There is a range of positions to which finite T can assign case (any specifier in its c-command domain with which it can Agree without intervention), and, therefore, we cannot relate being PRO to the specifier of a specific functional head. Thus, while being PRO is a subject property, in that PRO can only appear in subject position, this is not because of an association with a

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[15] This has interesting implications for nominative case assignment in Urdu. Nominative objects are grammatical in non-finite clauses, showing that there are potentially two nominative assigning heads: finite T to assign nominative case to subjects, and a lower head to assign nominative case to objects (c.f. [McFadden & Sundaresan 2011]). The lower head continues to be available in non-finite clauses, leading to the grammaticality of nominative objects.

specific structural position, but rather due to independent case assignment reasons. The remaining subject properties continue to stand in an implicational hiearchy.[16] Let us now discuss which functional heads may be responsible for the remaining subject properties and how the hierarchy in (71) may be explained.

4.2 Analysing anaphor binding

There has been some work done on identifying the functional head responsible for anaphor binding in Urdu making it a good starting point for our discussion. Davison (2001) proposes that anaphor binding comes from T. She shows that binding is not possible inside domains without TP, such as small clauses (82) and NPs (83).

(82)   a.   *Ram$_i$* [*Mohan=ko$_j$*   *apne.aap=se$_{i/*j}$*   *sharminda*] *samajh-tha*
              Ram$_i$ [Mohan=DAT$_j$ SELF'S.SELF=INS$_{i/*j}$ ashamed   ] understand-IPFV.M.SG

              he.
              be.PRS.3.SG

              'Ram$_i$ sees Mohan$_j$ as ashamed of himself$_{i/*j}$.'

       b.   *Ram$_i$*   [*Mohan=ko$_j$*   *apna$_{i/*j}$*   *sab=se*   *baRa*   *dushman*   ]
              Ram$_i$ [Mohan=DAT$_j$ SELF'S$_{i/*j}$ all=INS   big   enemy   ]

              maan-tha   *he.*
              accept-IPFV.M.SG   be.PRS.3.SG

              'Ram$_i$ sees Mohan$_j$ as his$_{i/*j}$ worst enemy.'

                                                                              (Davison 2001: 63–64, ex.29)

(83)   *[*Ram=ka$_i$*   *apne.aap=ko$_{*i}$*   *dhoka*   ] *qaanun=ke*   *khilaaf*   *nahi*
          [Ram=GEN$_i$ SELF'S.SELF=ACC$_{*i}$ deception] law=GEN.PL   against   not

          he.
          be.PRS.3.SG

       Intended: 'Ram's$_i$ deception of himself$_i$ is not against the law.'
                                                                              (Davison 2001: 64, ex.30a)

Davison (2001) and Mohanan (1994) claim that causees do not show anaphor binding in complex causatives (84). Assuming a bi-eventive but not bi-clausal structure of

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[16] The careful reader may have noticed that there is a second way to interpret the data with the following hierarchy of subject properties and pronoun binding as an independent property.

(i)   ALTERNATIVE SUBJECT PROPERTIES HIERARCHY:
       control + anaphor binding ≪ being PRO

In this view, being PRO would be linked to being in a structural position, perhaps specifier of finite TP, while no pronoun binding would track with an independent property. I do not interpret the data in this way because lack of pronoun binding does not pattern with any other independent property the way being PRO does with distribution of overt arguments. It is, therefore, difficult to conceive of an independent factor to explain lack of pronoun binding to accompany the Alternative Subject Properties Hierarchy.

complex causatives, there is no smaller TP domain which the causee may bind anaphors within. This explains why the sub-event in complex causatives does not show anaphor binding, according to Davison (2001).

(84) *Ram=ne_i Vijay=se_j Ravi=ko_k apni_{i/*j*k} saikil=par bith-va-ya.*
      Ram=ERG_i Vijay=INS_j Ravi=ACC_k SELF_{i/*j*k} bicycle=LOC sit-CAUS-PFV.M.SG

'Ram_i made Vijay_j make Ravi_k sit on his_{i/*j/*k} bicycle.'

(Mohanan 1994: 123, ex.3c)

However, the judgement in (84) directly opposes the judgement that I presented in section 3.2 where I claimed that causees are able to bind anaphors. The relevant example is repeated here.

(48) *Rami=ne_i Sana=se_j apna_{i/j} / apne.aap=ka_{i/j} khaana*
      Rami=ERG_i Sana=INS_j SELF's_{i/j} / SELF's.SELF=GEN.M.SG_{i/j} food.NOM

      pak-va-ya.
      cook-CAUS-PFV.M.SG

'Rami_i made Sana_j cook his_i/her_j own food.'

The acceptability of causees as antecedents for anaphors (48) means that TP cannot be the domain for anaphor binding in this dialect. A second candidate, VoiceP, has been proposed by Poole (2016) and Bhatia & Poole (2016). This proposal accounts for the impossibility of binding in small clauses and NPs, both of which lack VoiceP as well as TP, and additionally for the possibility of binding in the sub-event of complex causatives. It has been argued that complex causatives in Hindi-Urdu embed a VoiceP (Bhatia 2016, Bhatt & Embick 2017, Srishti 2011: Ch 7). This embedded VoiceP (shown in bold in 85) can act as a binding domain for the causee.

(85) [_VoiceP [_vP agent [**_VoiceP** [_vP causee [_VP object]]]]]

However, recall that anaphor binding is also possible in unaccusatives (41, repeated) and dative predicates (86), two structures that have been argued to lack VoiceP (Kidwai 2022, Srishti 2011) because they cannot be passivised.

(41) *Rami_i apne_i / apne.aap=ke_i bistar=mein so gya.*
      Rami.NOM_i SELF's_i / SELF's.SELF=GEN.OBL_i bed=LOC sleep go.PFV.M.SG

'Rami_i went to sleep in his_i own bed.'

(86) *Rami=ko_i apne.aap=par_i ghussa aa-ya.*
      Rami=DAT_i SELF's.SELF=LOC_I anger come-PFV.M.SG

'Rami_i felt angry at himself_i.'

Can we propose that the domain for anaphor binding is even smaller, that is, *v*P? Indeed, this can explain most of the data. Small clauses have been argued to be as small as VP, lacking *v*P as well as higher projections (Harley 2013), and do not show anaphor binding (82). NPs too lack *v*P and cannot have anaphor binding (83). Moreover, the sub-event of complex causatives (85), as well as unaccusatives and dative predicates, all have *v*P and allow anaphor binding.

A well-known exception to Condition A of binding theory are PICTURE noun phrases (Chomsky 1986). These have also been observed in Urdu (87).

(87) [*John=ki$_i$*   *apne$_i$ baare=mein raaey*] *Mary=ko*   *theek*   *nahi*
      [John=GEN.F.SG$_i$ SELF$_i$ about=LOC   opinion] Mary=DAT   alright   not

          lag-i.
          strike-PFV.F.SG.

      'Mary didn't like [John's opinion about himself].'

                                                              (Davison 2001: 65, ex.31)

As per Condition A, an anaphor must be bound in its minimal XP (Chomsky 1981, 1986). To explain what appears to be non-local binding in PICTURE nouns (88a), it has been proposed that these nouns can optionally project a PRO subject, which binds the anaphor and is in turn controlled by the non-local antecedent (88b) (Chomsky 1986, a.m.o.). Thus, anaphor binding itself is local.

(88) a. They$_i$ heard stories about themselves$_i$.   (Chomsky 1986: 166)

      b. They$_i$ heard [PRO$_i$ stories about themselves$_i$].

We have already seen that in Urdu, PRO can alternate with genitive subjects (section 4.1). This explains why the antecedent in Urdu PICTURE nouns (87) is overt while it is covert in English PICTURE nouns (88). Assuming external arguments are generated in Spec*v*P, we expect PICTURE nouns to have *v*P, although not necessarily VoiceP without further evidence, and certainly not a full TP.

However, taking *v*P to be the domain of anaphor binding leaves us with the rather big challenge of finding a base position for external arguments to be generated in. At the beginning of this section, I said that subject properties are gained through Agree with functional heads and subsequent movement to specifier positions. For *v* to enter into Agree with a given argument, that argument must be in its c-command domain. It is unclear what position external arguments might be generated in for this to be possible.

Therefore, I take Voice to be the head associated with anaphor binding. External arguments are generated in Spec*v*P (c.f. Alexiadou, Anagnostopoulou & Schäfer 2015, Harley 2013, Legate 2014), enter into Agree with Voice, and move to SpecVoiceP, where they gain the ability to bind anaphors. With respect to unaccusatives and dative predicates, we can say that they do not lack VoiceP, but rather have a defective VoiceP or *v*P which prevents passivisation. Finally, regarding PICTURE nouns (87), these have a genitive argument, similar to genitive subjects of non-finite clauses (which are also said to have nominal qualities in Urdu), which may suggest that

these PICTURE nouns do in fact have a larger structure to support such an argument. More work into the structure of Urdu PICTURE nouns is needed, which may then shed further light on the domain of anaphor binding.

An issue which remains is that of long-distance binding. The simple anaphor, *apna* 'self', may be bound by a local or long-distance antecedent (89), although a local antecedent is often preferred. However, the complex anaphor, *apne aap* 'self's self', can only be bound by a local antecedent (90).[17] In both examples below, PRO, the local antecedent, is bound by the matrix object.

(89)   *Maa=ne$_i$*   *bachon=ko$_j$*   [*PRO$_j$* *apne$_{i/j}$* *kamre=mein* *kitaabein*
      Mother=ERG$_i$ children=DAT$_j$ [PRO$_j$ SELF's$_{i/j}$ room=LOC   books.NOM

       paRh-ne   ] *di-in.*
       read-INF.OBL] give.PFV.F.PL

      'Mother$_i$ allowed the children$_j$ to read books in her$_i$ / their$_j$ room.'
                                                           (Davison 2001: 54, ex.14)

(90)   *Maa=ne$_i$*   *Ram=ko$_j$*   [*PRO$_j$* *apne.aap=ko*$_{*i/j}$ *gumnaam* *khath*
      Mother=ERG$_i$ Ram=ACC$_j$ [PRO$_j$ SELF's.SELF=DAT$_{*i/j}$ anonymous letter.NOM

       likh-ne   ] *=ke*   *liye mana ki-ya.*
       write-INF.OBL] =GEN.OBL for forbid do-PFV.M.SG

      'Mother$_i$ forbid Ram$_j$ from writing anonymous letters to self's$_{*i/j}$ self.'
                                                     (adapted from Davison 2001: 54, ex.13)

Furthermore, long-distance binding is only possible out of non-finite clauses. An anaphor in a finite clause cannot have a long-distance anaphor (91a vs b).

(91) a. **Radha$_i$*   *(yeh)* *pasand* *nahi* *kar-thi*   [*keh* *apna*$_{*i}$
        Radha.NOM$_i$ (this) like   not do-IPFV.F.SG [that SELF's$_{*i}$

         bhai   *aisay*   *logon=se*   *baath* *kar-ay*   ].
         brother.NOM such.OBL people=INS talk   do-PFV.M.PL]

        Intended: 'Radha$_i$ does not like (it) that her$_i$ own brother should talk to such people.'

   b. *Radha$_i$*   [*apne$_i$* *bhai=ka*   *aisay*   *logon=se*   *baath*
        Radha.NOM$_i$ [SELF's$_i$ brother=GEN.M.SG such.OBL people=INS talk

         kar-na] *pasand* *nahi* *kar-thi.*
         do-INF] like   not do-IPFV.F.SG

        'Radha$_i$ does not like self's$_i$ brother to talk to such people.'
                                                         (Davison 2001: 62–63, ex.26)

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[17] This, coupled with the dialectal variation reported with regards to object antecedents (footnote 9), suggests that binding *apna* might be shifting from a subject property to a more general c-command phenomenon. Binding *apna aap* remains categorically a subject property.

In Davison's (2001) analysis, this is explained by the fact that although finite TP is the binding domain, non-finite TP is not. These facts are not accounted for by the analysis presented in this paper, although we may be able to rely on the phasehood of finite TP. Thus, I take VoiceP to be the domain of anaphor binding, although with the caveat that there are still some wrinkles to iron out.

4.3 Analysing control into participial clauses

In the set of arguments examined in this paper, no behavioural difference was found with respect to control into participial -*kar* clauses and anaphor binding (Table 4). Even in dative predicates and passives, where there are two arguments that can show these properties, the same argument must control and bind. In the passive in (92), the promoted object binds the anaphor in the *by*-phrase. The object also controls into the participial clause.

(92) *Omar$_i$ apni$_i$ behen=se$_j$ [PRO$_{i/*j}$ ghar   ja kar] pakR-a*
      Omar.NOM$_i$ SELF$_i$ sister=INS$_j$ [PRO$_{i/*j}$ home.LOC go do] catch-PFV.M.SG

      gya.
      PASS.PFV.M.SG

      'Omar$_i$ was caught by his$_i$ own sister$_j$ when he$_i$/*she$_j$ went home.'

This suggests that the same functional head, Voice, is responsible for both.

There is one construction where we see differences between control and anaphor binding. Urdu has a passive-like construction with accusative marked objects (93a). It shares the same morphology as the passive (*gya*) but cannot have the instrumental *by*-phrase, unlike the passive (93b).

(93) a. Active impersonal:
          *Omar=ko   (*Sana=se) pakR-a   gya.*
          Omar=ACC (*Sana=INS) catch-PFV.M.SG PASS.PFV.M.SG

          'Omar was caught (*by Sana).'

      b. Passive:
          Omar   (Sana=se) pakR-a   gya.
          Omar.NOM (Sana=INS) catch-PFV.M.SG PASS.PFV.M.SG

          'Omar was caught (by Sana).'

Kidwai (2022) analyses the marked construction as an impersonal with active syntax and a silent *pro* subject, similar to the Icelandic active impersonal (Maling 1993, Maling & Sigurjónsdóttir 2002). This makes accusative case on the object and the absence of the *by*-phrase unsurprising as this is what is expected in active sentences. Kidwai shows that although *pro* is able to control into participial clauses (94), it cannot bind anaphors (95a). Instead, it is the accusative marked object that binds anaphors in this construction.

(94)   *pro_i Sana=ko_j* [*PRO_{i/*j} ghar   ja kar*] *pakR-a   gya.*
       pro_i Sana=ACC_j [PRO_{i/*j} home.LOC go do] catch-PFV.M.SG PASS.PFV.M.SG

'Sana was caught when the catcher went home.'

(95) a. **pro_i apne_{*i} bhai=ko   pakR-a   gya.*
          pro_i SELF'S_{*i} brother=ACC catch-PFV.M.SG PASS.PFV.M.SG

   Intended: The catcher's own brother was caught.'

(Kidwai 2022: 14, ex.44)

   b. *pro_i Sana=ko_j apne_{*i/j} ghar=mein pakR-a   gya.*
       pro_i Sana=ACC_j SELF'S_{*i/j} home=LOC catch-PFV.M.SG PASS.PFV.M.SG

   'Sana_j was caught in her_j own house.'   (Kidwai 2022: 12, ex.37)

This construction is interesting to us for two reasons. Firstly, it is the only instance we have of control into participial clauses and anaphor binding not going hand-in-hand. Secondly, it is also the only case we have of an object binding an anaphor. How can we explain (i) the lack of anaphor binding by the subject, and (ii) the possibility of anaphor binding by the object?

Kidwai (2022) answers (i) through the distiction between strong and weak implicit arguments (Landau 2010), and (ii) by resorting to the idea of prominence (Mohanan 1994). Landau (2010) establishes a distinction between strong and weak implicit arguments (SIAs vs WIAs). SIAs are able to control PRO and bind anaphors, however, WIAs can control (showing they are syntactically present) but not bind due to a missing D feature. On the basis of anaphor binding (65), as well as Condition B effects, Kidwai concludes that the *pro* subject in active impersonals is a WIA. This explains its lack of anaphor binding. The second part of the explanation relies on prominence. Based on the observation that subject properties do not always pattern together, Kidwai claims that they are indicative of prominence instead (i.e. highest structural argument, highest logical argument or agent, etc.), and indicative of relative positioning rather than any specific position (see also Mohanan 1994). Because the subject (*pro*) cannot bind anaphors in active impersonals, the object, as the next most prominent argument, is able to do so instead.

We can explain the lack of anaphor binding shown by the subject in active impersonals in the same way. Little *pro* does not bind anaphors not because of its structural position but rather because of its own properties as a WIA. However, it is not easy to account for why the object can bind anaphors without moving to SpecVoiceP, and moreso, why the object cannot also control into participial clauses (94), if control and anaphor binding truly come from the same functional head. To top it off, the tight relationship between control and anaphor binding *does* seem to hold in active impersonals. Sentences which force a different antecedent for control and anaphor binding are infelicitous (96). Little *pro* can control PRO in the participial clause but cannot bind anaphors. The object can bind anaphors but not control PRO. The only option is for *pro* to control PRO and the object to bind the anaphor, but this does not work.

(96) $^{??}$ *pro$_i$ Sana=ko$_j$* [*PRO$_{i/*j}$ London ja kar*] *apne$_{*i/j}$ ghar=mein*
pro$_i$ Sana=ACC$_j$ [PRO$_{i/*j}$ London.LOC go do] SELF's$_{*i/j}$ home=LOC

pakR-a gya.
catch-PFV.M.SG PASS.PFV.M.SG

Intended: 'Sana$_j$ was caught in her$_j$ own house when the catcher went to London.'

What this shows us is that control into participial clauses and anaphor binding *do* track together, although not all arguments that can control may be able to bind anaphors and vice versa. I do not explore accusative impersonals further in this paper but acknowledge that they are an important data point to account for. Thus, I take control into participial clauses to come from the same functional head as anaphor binding, Voice.

4.4 Analysing no pronoun binding

Having identified Voice as responsible for control into participial clauses and anaphor binding, we can now turn to identifying the functional head associated with no pronoun binding. From the implicational hierarchy (71, repeated), we know this head must be higher than Voice.

(71) SUBJECT PROPERTIES HIERARCHY:
$$\underbrace{\text{control + anaphor binding}}_{\text{Voice}} \ll \underbrace{\text{no pn binding}}_{?}$$

Not much work has been done on identifying the locus of pronoun binding in Urdu but some indicative observations have been made. Davison (2001) reports that the anti-subject orientation of pronouns is limited to the finite clause that they occur in. So, for example, nominative subjects which cannot bind pronominal possessors in their own finite clause (49, repeated), can do so if the pronominal expression occurs in an embedded finite clause (97). Quantifier binding shows that this is a true case of binding and not simply co-reference (98) (Bhatia & Poole 2016).

(49) *Rami$_i$ Sana=ko$_j$ us=ki$_{*i/j}$ kitaab bhej-ay ga.*
Rami$_i$ Sana=DAT$_j$ 3.SG.OBL=GEN.F.SG$_{i/*j}$ book.NOM send-FUT.3.SG FUT.M.SG

'Rami$_i$ will send Sana$_j$ his$_{*i}$/her$_j$ book.'

(97) *Radha$_i$ (yeh) pasand nahi kar-thi* [*keh us=ka$_{i/j}$*
Radha.NOM$_i$ (this) like not do-IPFV.F.SG [that 3.SG.OBL=GEN.M.SG$_{i/j}$

bhai aisay logon=se baath kar-ay].
brother.NOM such.OBL people=INS talk do-PFV.M.PL]

'Radha$_i$ does not like (it) that her$_{i/j}$/his$_j$ brother should talk to such people.'
(Davison 2001: 62, ex.26a)

(98) *Koi laRki$_i$ (yeh) pasand nahi kar-thi*   [*keh   us=ka$_{i/j}$*
      Any girl.NOM$_i$ (this) like   not   do-IPFV.F.SG [that 3.SG.OBL=GEN.M.SG$_{i/j}$

      bhai   aisay   logon=se   baath kar-ay   ].
      brother.NOM such.OBL   people=INS   talk   do-PFV.M.PL]

      'Any girl$_i$ does not like (it) that her$_{i/j}$/his$_j$ brother should talk to such people.'

Binding is also possible into embedded non-finite clauses, with both overt (genitive) and covert (PRO) subjects (99). With PRO subjects, binding is only possible when the matrix subject does not control PRO (99b vs. 100) as this would again put the antecedent in the same clause as the pronoun it binds. There is a preference to interpret the pronoun as being bound by something other than the subject, presumably because the more specific option of anaphor binding is also available in embedded non-finite clauses (section 4.2).

(99) a. *Radha$_i$ [us=ke$_{i/j}$ bhai=ka   aisay*
          Radha.NOM$_i$ [3.SG.OBL=GEN.OBL$_{i/j}$ brother=GEN.M.SG such.OBL

          logon=se   baath kar-na] *nahi chah-thi.*
          people=INS talk   do-INF] not   want-IPFV.F.SG

          'Radha$_i$ does not want her$_{i/j}$ brother talking to such people.'

      b. *Radha$_i$ Omar=ko$_j$ [PRO$_{*i/j}$ us=ke$_{i/j}$ ghar*
          Radha.NOM$_i$ Omar=ACC$_j$ [PRO$_{*i/j}$ 3.SG.OBL=GEN.OBL$_{I/J}$ house.LOC

          aa-ne   ] =ki   ijazat   de-gi.
          come-INF.OBL] =GEN.F.SG permission.NOM give3.SG-FUT.3.SG

          'Radha$_i$ will give Omar$_j$ permission to go to his$_j$/her$_i$ house.'

(100) *Radha$_i$ [PRO$_i$ us=ke$_{*i/j}$ ghar=mein aisay   logon=se*
       Radha.NOM$_i$ [PRO$_i$ 3.SG.OBL=GEN.OBL$_{*i/j}$ house=LOC such.OBL people=INS

       baath kar-na] *nahi chah-thi.*
       talk   do-INF] not   want-IPFV.F.SG

       'Radha$_i$ does not want to talk to such people in her$_{*i/j}$ house.'

This shows us that although Davison (2001) only notes finite clauses as the domain for pronoun obviation, we can extend this to non-finite clauses as well. More evidence comes from the inability of genitive subjects to bind pronominal possessors within their non-finite clause (56, repeated), as shown in section 3.3.

(56) *Rami=ka$_i$ us=ke$_{*i}$ ghar   ja-na...*
      Rami=GEN.M.SG$_i$ 3.SG.OBL=GEN.M.SG$_{*i}$ home.LOC go-INF...

      'Rami's$_i$ going to his$_{*i}$/her home...'

Based on the above, I take TP (unspecified for finiteness) as the domain for pronoun obviation. Arguments that move into SpecTP are unable to bind pronouns within their clause.

4.5 Interim summary and derivations

So far we have established that of the four subject properties in Urdu, three stand in an implicational hierarchy (71, repeated). Subjects that do not bind pronouns are always able to control into participial -*kar* clauses and bind anaphors.

(71) SUBJECT PROPERTIES HIERARCHY:
$$\underbrace{\text{control + anaphor binding}}_{\text{Voice}} \ll \underbrace{\text{no pn binding}}_{\text{T}}$$

We have also identified that the locus of control and anaphor binding is Voice and the locus of no pronoun binding is T. Due to the cyclic nature of movement, all arguments must move through SpecVoiceP to move to SpecTP, resulting in the implicational hierarchy given above.

We also see that not all subject properties come from this hierarchy. Being PRO is not associated with a specific position, but rather with Agree with T for case assignment (or perhaps with Fin in a more fine-grained structure). All structural cases on subjects require Agree with finite T, and hence, are unavailable in non-finite clauses, leading to either genitive case on the subject or the subject being replaced by PRO. T can Agree with arguments in any position it c-commands, hence, being PRO is not associated with a single structural position.

Thus, there are four possible subject types in Urdu (Table 5).

	Control	**Anaphor binding**	**No pn binding**	**Be PRO**
High subject with structural case	✓	✓	✓	✓
High subject with non-structural case	✓	✓	✓	×
Low subject with structural case	✓	✓	×	✓
Low subject with non-structural case	✓	✓	×	×

Table 5 Types of subjects in Urdu.

Figures 1 and 2 show the derivation for high subjects. External arguments (EAs) are generated in Spec*v*P, moving to SpecVoiceP and then further to SpecTP. Unaccusative subjects are generated as internal arguments which may either raise through (defective) Spec*v*P and further on, or straight to SpecVoiceP if *v*P is taken to be missing, depending on the approach taken to unaccusatives. In parallel, T enters into Agree (represented by the dashed arrows) with arguments in its-command domain to satisfy its uninterpretable phi-features (person, number gender). In return, T satisfies the uninterpretable case feature (*u*Case) on the argument in question, thereby assigning structural case to it (Figure 1). [*u*Case] is already satisfied on subjects that have non-structural case (struck-out on Figure 2).

The derivation of low subjects is more complicated as these include external arguments, derived subjects (internal arguments) and low agents. Let us begin with
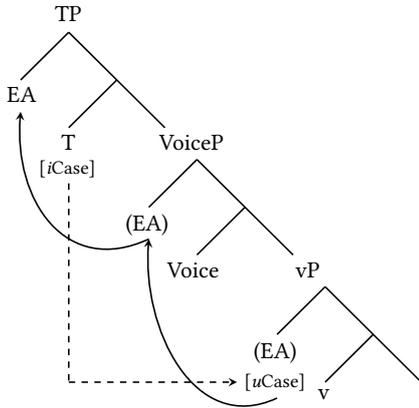
Figure 1 Derivation of high subjects with structural case.
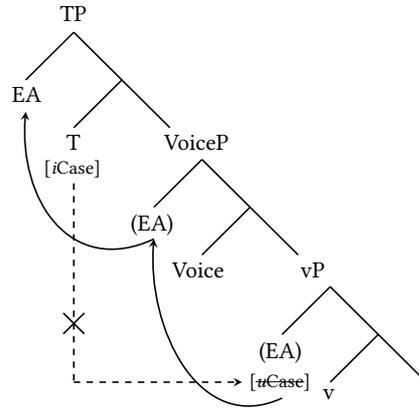
Figure 2 Derivation of high subjects with non-structural case.

low subjects with non-structural case, comprising dative subjects, *by*-phrases and causees. I take all of these to originate as EAs. This is controversial for dative subjects – Davison (2004) takes them to be internal arguments (similar to indirect object PPs), while Bhatia & Poole (2016) place them inside *v*P in their derivations, although they do not claim anything explicitly. For *by*-phrases, I follow the approach that they are arguments and not adjuncts (as shown for Urdu by Kidwai 2019, Mahajan 1995, Srishti 2011: Ch7), hence, generated as the EA. The derivation of dative subjects and *by*-phrases is shown on Figure 3. They both have non-structural case, hence [*u*Case] is already satisfied and there is no Agree with T.
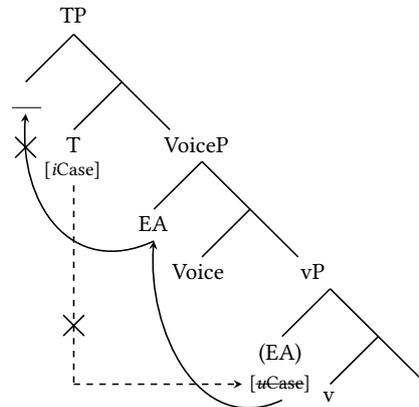
Figure 3 Derivation of dative subjects and *by*-phrases.

I also take causees to be generated as EAs. It has been proposed that complex causatives embed a VoiceP in Urdu (Bhatia 2016, Bhatt & Embick 2017, Srishti 2011: Ch7). A similar Voice-over-Voice structure has also been proposed more generally for morphological causatives by Nie (2020a,b). The causee is generated as an EA in the embedded VoiceP. It then moves to the specifier of this VoiceP, allowing it

to show control into participial clauses and anaphor binding. The agent is a high subject with structural case (ergative or nominative). T enters into Agree with the agent but not with the causee whose non-structural case is satisfied by other means.
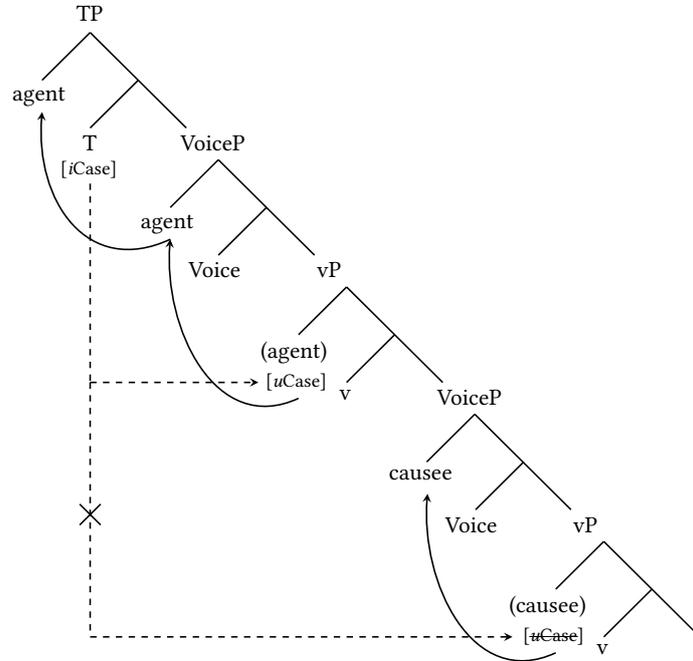
Figure 4   Derivation of causees.

Low subjects with structural case are promoted objects of dative predicates and passives. These are generated as internal arguments. For dative predicates, it has been proposed that these are "reversible" in that the nominative object can scramble to a position above the dative subject (Bhatia & Poole 2016, Davison 2004). What this position might be is not specified, and as such, I leave it as XP. I assume that a similar movement is at play for objects of passives, which optionally promote in Urdu (Kidwai 2022). The object can then move to SpecVoiceP, however, being a low subject, it does not move further to SpecTP. T enters into Agree with promoted objects, assigning them structural nominative case. This is shown on Figure 5. It should be noted that the derivation of these promoted objects is not so simple, however, and some challenges are mentioned in section 5.1.

There still remains a vast discussion on *why* certain heads should be associated with certain properties which is outside the scope of this paper. In the next section, I discuss some of the implications of what has been presented so far.

5 Discussion

In this section, I discuss some remaining aspects of the analysis, as well as its implications.
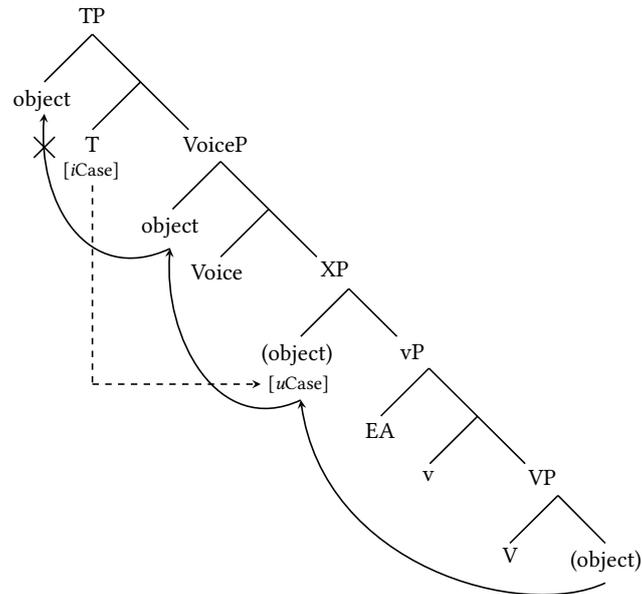
Figure 5   Derivation of low subjects with structural case (promoted objects).

5.1 Further mechanics

I have proposed an analysis for where subject properties come from (functional heads) and briefly discussed how they are obtained (movement to specifier positions as a result of Agree). The precise mechanics of the analysis must still be worked out, and while I do not do so in this paper, here, I point out two issues that need to be resolved.

We saw that arguments divide into high and low subjects with respect to the Subject Hierarchy. High subjects show all three properties whereas low subjects show only the first two. This means that low subjects move to SpecVoiceP, where they gain the ability to control into participial clauses and bind anaphors, and no further. High subjects, on the other hand, move to SpecVoiceP and then to SpecTP, where they gain pronoun obviation. For a complete analysis, two details must be worked out with regards to movement. First, what motivates movement? We can imagine many possible answers to this question as movement is already part of the traditional theories of subjecthood (e.g. external argument is generated in Spec*v*P and moves to SpecTP to satisfy EPP). The second question is more tricky. What stops low subjects from moving further to SpecTP? In Poole's (2016) analysis, only nominative subjects move to the highest available position in Urdu, with all quirky case subjects remaining in SpecVoiceP. He uses a [●NOM●] feature on T which selects for nominative but not other case-marked subjects. Such a mechanism would not work for us, however, as the high subjects include more than just nominative subjects. Structural case-marking (or Agree with T for case-marking) is also not enough as the high and low subjects are not indicative of structural and non-structural case-marking. It remains to be seen what unites the group of high

subjects, such that we can motivate their movement to SpecTP without allowing low subjects to move to SpecTP as well.

The second issue pertains to derived subjects or, in other words, the promoted objects which show subject properties. We saw that in dative predicates and passives, there are two possible contenders for subject properties. In dative predicates, these are the dative subject and the nominative object, if promoted. In passives, these are the *by*-phrase and the object, if promoted. We also said that since subject properties are gained through cyclic A-movement, only the highest argument can be targeted. In dative predicates and passives, we must then explain, how the object is able to gain subject properties without moving over the subject and violating Relativised Minimality (Rizzi 1990). As mentioned in section 4.5, for dative predicates, it has been proposed that the object scrambles to a position above the dative subject which makes it an available target for A-movement to higher positions (Bhatia & Poole 2016, Davison 2004, Poole 2016). Nothing has been proposed yet for passives. In addition to this, we also saw that while objects are only able to show subject properties in these constructions when they have been promoted, the dative subject and *by*-phrase can do so even when below the object (section 3). This raises serious questions for any analysis that derives subject properties exclusively through movement.

5.2 Subjecthood as a continuum

The Subject Properties Hierarchy and the type of analysis presented in this paper lends itself to a 'subjecthood as a continuum' approach, where there is no single subject position but rather multiple subject positions. Arguments can occupy different positions on this continuum, as a result of which they may show more or fewer subject properties.

An alternative approach is to say that there is only one subject position and that some subjects show fewer subject properties because they are not 'true' subjects but rather low arguments that have been raised. These subjects do not show certain subject behaviours because their lower positions are not able to do so. Moore & Perlmutter (2000) propose this for some so-called dative subjects in Russian which, according to them, are generated as internal arguments and raised to subject position. These dative nominals contrast in behaviour with true dative subjects (which are also found in Russian). This is a tempting proposal for Urdu as the low subjects consist of derived subjects (promoted objects of dative predicates and passives), low agents (*by*-phrase and causees), and dative subjects, the latter being the odd-one-out. Indirect objects in Urdu have dative case. Can we say that dative subjects in Urdu are simply raised indirect objects? If this is so, we expect dative subjects to pattern more closely with indirect objects than with, say, nominative subjects.

Dative subjects and indirect objects show some similarities. Neither can trigger agreement, nor can either be promoted in passives. However, neither of these similarities indicates any deeper structural similarity. Agreement in Urdu is only triggered by the highest nominative argument, regardless of subject status . Dative subjects cannot be promoted in passives because dative predicates simply cannot be

passivised. Mohanan (1994) also shows that dative subjects and indirect objects are not the same by using gapping in coordinate constructions. The gapped element must match in case and grammatical function with its antecedent. Neither a dative subject nor an indirect object can license gapping of the other (101).

(101) a. Antecedent = dative subject; gap = indirect object
      Nina=ko   *degree*   *mil-i*   *aur* *headmaster=ne*
      Nina=DAT degree.NOM meet-PFV.F.SG and headmaster=ERG

       us=ko   / *___ *school=mein* *nokri*   *di.*
       3.SG.OBL=DAT / *___ school=LOC job.NOM give.PFV.F.SG

      'Nina$_i$ received a degree and the headmaster gave her$_i$ / *___ a job in the school.'
    b. Antecedent = indirect object; gap = dative subject
      Ravi=ne *Nina=ko* *guRiya* *di*   *aur* *us=ko*   /
      Ravi=ERG Nina=DAT doll.NOM give.PFV.F.SG and 3.SG.OBL=DAT /

       *___ *baRi* *khushi*   *hui.*
       *___ big   happiness happen.PFV.F.SG

      'Ravi gave Nina$_i$ a doll and she$_i$ / *___ was very happy.'
                                  (Mohanan 1994: 150, ex.16)

Thus, we can conclude that dative subjects are not simply raised indirect objects, and as such, the subjecthood as continuum approach still has merit.

Finally, I would like to clarify that I am not claiming that all high subjects are in one position and all low subjects in another. What I have shown is that all low subjects must move through SpecVoiceP and that they cannot move to SpecTP, but there may very well be positions in between which different low subjects stop at. Similarly, high subjects must all move through SpecVoiceP and all in-between positions to SpecTP, but they may move to different positions beyond SpecTP. These additional positions may or may not be associated with additional subject properties beyond the ones examined in this paper. I leave this open for future research.

5.3 Terminology

There are some very interesting implications of the patterns reported in this paper with regards to the terminology that is used in research on subjecthood.

First, the range of arguments selected in this paper clearly shows that subject properties in Urdu are indeed just that. They are not agent properties – non-agents, such as experiencer subjects, inabilitive subjects and promoted objects, were included specifically to test this. They are also not properties of the external argument, or properties associated with base (First Merge) position, as illustrated by the behaviour of low agents and derived subjects.

This brings us to the next point. Throughout this paper, I have used the term 'subject' constantly but have avoided defining it. Poole (2016) defines a subject as anything that shows at least one property on the hierarchy. We may do the same,

although it is interesting to bear in mind that the intuitive definition of a subject is perhaps more narrow as one does not usually think of causees, for example, as subjects.

Another interesting point that emerges is regarding the notion of 'canonical' or 'true' subject. This idea seems inherently in opposition to subjecthood-as-continuum approaches. And yet, despite the vast range of arguments examined in this paper, only nominative and ergative subjects show all four properties (Table 4), and have somehow emerged as 'most subject-like' yet again.

6 Conclusion

In this paper, I have surveyed a wide range of arguments in Urdu and shown their behaviour with respect to four subject properties: control into participial *-kar* clauses, anaphor binding, no pronoun binding and being PRO. I have shown that the first three properties lie in an implicational hierarchy. Control into participial clauses and anaphor binding are associated with Voice, while no pronoun binding is associated with T. Arguments move into the specifier of these heads to gain these properties. In parallel, Agree with finite T for structural case assignment results in some subjects being able to be PRO in non-finite clauses.

The data presented in this paper is novel and a survey of this kind has not been conducted before. The next step is to conduct is to gather more judgements to corroborate those presented in this paper. It would be especially interesting to see if there is more variation with regard to simplex anaphor *apna* binding as reported in some other papers, as well as find out how firmly the subject properties hierarchy holds, and whether being PRO may fit into the hierarchy afterall.

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