What is a Subject? A Survey of Urdu Subjects

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1 Introduction

- Typological work has shown that subjects can have a variety of cases most commonly NOM and ERG (NOM-ACC and ERG-ABS systems), but also DAT, GEN, and INS amongst others (quirky case subjects).
- Q: Are different case-marked subjects in the same structural position?
  i. Cross-linguistic approach:
  E.g. Comparing subjects in NOM-ACC vs. ERG-ABS systems.
  ii. Single language approach:
  E.g. Comparing NOM and ERG subjects in a split-ergative system, or comparing quirky case subjects with canonical subjects.
- This ties in with other questions surrounding subjecthood:
  - Is there a single subject position or multiple subject positions, even when this is not reflected overtly by case?
  - Is subjecthood a spectrum? Can something be more or less 'subject-like'?
  - What is a 'canonical' subject? What is a 'quirky' case subject?
  - What *is* subjecthood?
- In this talk, I will take the single language approach and compare the behaviour of wide range of external and internal arguments in Urdu with respect to subject properties identified in the literature.
- Urdu is an Indo-Aryan language. It is the national language of Pakistan and is also spoken in many parts of Northern India. It is very closely related to Hindi, with a large overlap in grammar and vocabulary.[1]
- Why Urdu?
  - Urdu has 7 cases, out of which all except one can occur on subjects.
  - Urdu is a split-ergative language. Depending on tense and aspect, either ERG or NOM may be assigned in transitive contexts.
  - GEN is the default case for overt subjects in non-finite clauses.
  - Urdu also has quirky case subjects: DAT, INS and LOC subjects.

⇒ I will show that **subject properties do *not* always group together** in Urdu (see also Davison, 2004; Poole, 2016). I propose that there are two factors responsible for this:

- Structural position: Subject properties are associated with a series of functional heads. The properties of a given subject depend on the position it occupies. Subject properties associated with functional heads stand in an implicational hierarchy. Therefore, high subjects pass more subject diagnostics than low subjects.
- Agree with finite T: In parallel, Agree with finite T, also influences the behaviour of subjects with respect to properties that depend on its presence/absence. Agree with T is not associated with a single position as T Agrees with the highest argument with unvalued features in its c-

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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.

command domain, not with arguments in a particular position. Since finite T only Agrees with subjects, these properties are also subject properties, although they are not on the subject properties hierarchy.

- Roadmap:
  i. Subject properties in Urdu
  ii. Arguments selected and their behaviour (data in appendix)
  iii. Locus of subject properties
  iv. Open questions

2 Subject Properties in Urdu

- In this section, I will introduce the subject properties in Urdu. These are properties that objects never show and (at least some) subjects do.
- Note on agreement: Verb agreement is *not* a subject property in Urdu and has never been proposed as such. The highest NOM argument triggers agreement. This is can be the subject (when it is NOM, 1a) or the object (when there is a non-NOM subject, 1b). When there is no NOM argument in the sentence, agreement goes to default, 3.M.SG (1c).

(1) 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*** *the.*
Sana=ERG **donuts.NOM** eat-PFV**.M.PL** be.PST**.M.PL**
'Sana ate donuts.'

c. *Sana=ne* *donuts=ko* *paka-**ya*** ***he.***
Sana=ERG donuts=ACC cook-PFV**.M.SG** be.PRS**.3.SG**
'Sana has cooked the donuts.'

Anaphor binding
(Davison, 2001, 2015; Bhatia and Poole, 2016; Mohanan, 1994; Poole, 2016)

- Urdu has the reflexive possessive anaphor, *apna* 'self's', and its complex form, *apne aap* 'self's self'.[2]
- Like English *self*-anaphors (e.g. *myself, yourself, themselves*), these anaphors must be c-commanded by an antecedent.
- This anaphor is subject-oriented; it can be bound by subjects but not by objects. In (2), the indirect object c-commands the anaphor in the direct object but cannot bind it. The only possible antecedent is the subject.[3]

(2) *Rami$_i$* *Sana=ko$_j$* ***apni$_{i/*j}$*** / ***apne.aap=ki$_{i/*j}$*** *kitaab*
Rami$_i$ Sana=DAT$_j$ **SELF'S$_{i/*j}$** / **SELF'S.SELF=GEN$_{i/*j}$** book.NOM
bhejay *ga.*
send.FUT.3.SG FUT.M.SG
'Rami$_i$ will send Sana$_j$ his$_i$/*her$_j$ own book.'

No pronoun binding
(Davison, 2015; Bhatia and Poole, 2016; Mohanan, 1994)

- Pronominal possessors are also bound by antecedents c-commanding them. However, unlike anaphors, pronominal possessors don't require a syntactic antecedent and can also refer to discourse-salient antecedents.
- Pronominal possessors are anti-subject-oriented. Subjects are unable to bind pronominal possessors. In (3), the pronominal possessor in the direct object is c-commanded by both the subject and the indirect object, but only the latter is able to bind it.

(3) *Rami$_i$* *Sana=ko$_j$* ***us=ki$_{*i/j/k}$*** *kitaab* *bhejay*
Rami$_i$ Sana=DAT$_j$ **3.SG.OBL=GEN$_{*i/j/k}$** book.NOM send.FUT.3.SG
ga.
FUT.M.SG
'Rami$_i$ will send Sana$_j$ his$_{*i/k}$/her$_{j/k}$ book.'

- Anaphors and pronominal possessors are *not*, however, in complementary distribution, as we will see later.

[2] 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.

[3] For some speakers, it is possible for objects to bind the anaphor *apna* 'self' when they c-command it, as in (2) (Bhatia and Poole, 2016). For these speakers, binding *apna* may not be a subject property and c-command alone is sufficient (see Bhatia and Poole, 2016 for an alternative explanation). No mixed judgements have been reported for *apna aap* 'self's self'.

Being PRO
(Davison, 2008; Poole, 2016)

- PRO can only occur in subject position (Chomsky, 1981). It follows from this that an argument that can be PRO must be a subject. In (5), the object must be overt and cannot be PRO because PRO can only occur in subject position (4).

(4) *Sana=ne* *Hira=ko$_i$* [***PRO$_i$*** *wahaan* *jaa-ne*] *=ko*
Sana=ERG Hira=ACC$_i$ [**PRO$_i$** there go-INF.OBL] =ACC
bol-a.
speak-PFV.M.SG
'Sana told Hira to go there.'

(5) *Sana=ne* *Hira=ko$_i$* [*Rami=ka* ***us=ko$_i$*** / ****PRO$_i$***
Sana=ERG Hira=ACC$_i$ [Rami=GEN.M.SG **3.SG.OBL=ACC$_i$** / ***PRO$_i$**
mall=mein *dekh-na*] *yaad* *dila-ya.*
mall=LOC see-INF] memory buy-PFV.M.SG
'Sana reminded Hira$_i$ about Rami seeing her$_i$ in the mall.'

Control into participial clauses
(Davison, 2015; Mohanan, 1994; c.f. Poole, 2016)

- Urdu has a participial clause with the participle *kar* 'do' and a PRO subject. These clauses act as modifiers to nominals.

(6) *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.'

- Although both subjects and objects are able to control PRO (see object control example in 4), the PRO subject of a participial clause can only be controlled by a subject. The only possible interpretation of (7) is one where the subject controls PRO.

(7) *Rami=ne$_i$* *Sana=ko$_j$* *kitaab* [***PRO$_{i/*j}$*** *ghar* *jaa* *kar*]
Rami=ERG$_i$ Sana=DAT$_j$ book.NOM [**PRO$_{i/*j}$** home.LOC go do]
di.
give.PFV.F.SG
'Rami$_i$ gave Sana$_j$ a/the book when he$_i$/*she$_j$ went home.'

3 Survey of Urdu Subjects

3.1 Selection of arguments

- Urdu has 7 cases: ERG, NOM, ACC, DAT, INS, LOC and GEN. Subjects of all cases except ACC have been identified in the literature (Davison, 2015; Mohanan, 1994).
- A mix of external and internal arguments, agents and non-agents was selected as candidates for subjecthood, and compared to known non-subjects (direct objects, indirect objects and comitatives).

	Highest	Non-highest
Agent	NOM unergative subject, NOM transitive subject, ERG subject, GEN subject	INS *by*-phrase, INS causee
Non-agent	NOM unaccusative subject, INS subject, LOC subject, DAT subject, promoted object of passive, promoted object of dative predicate	NOM/ACC direct object, DAT indirect object, INS comitative expression

Table 1: Arguments selected in this survey.

3.1.1 Canonical subjects

Ergative subjects

- Urdu is a split-ergative language. Perfective aspect in past or present tense results in ERG on the subject of transitive verbs.

(8) a. ***Rami=ne*** *kaam* *ki-ya.*
Rami=ERG work.NOM do-PFV.M.SG
'Rami did (the) work.' / 'Rami worked.'

b. ***Rami*** *kaam* *kar-tha* *he.*
Rami.NOM work.NOM do-IPFV.M.SG be.PRS.3.SG
'Rami does work.' / 'Rami works.'

Nominative subjects

- NOM is assigned to subjects of transitive verbs when conditions of ERG case assignment are not met, i.e. imperfective aspect or future tense (8b).
- It is also found on subjects of intransitive verbs, both unergative and unaccusative (9).

(9) 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.'

Genitive subjects

- GEN is found as the default case on overt subjects in non-finite/gerund clauses.
- The ERG and NOM subjects in the above examples (8, 9) have GEN in non-finite clauses (10).

(10) a. ***Rami=ka*** *kaam* *kar-na* ...
Rami=GEN work.NOM do-INF ...
'Rami's doing of (the) work...' / 'For Rami to do (the) work...'

b. ***Rami=ka*** *cheekh-na* ...
Rami=GEN scream-INF ...
'Rami's screaming...'

c. ***Rami=ka*** *gir-na* ...
Rami=GEN fall-INF ...
'Rami's falling...'

3.1.2 Quirky case subjects

Dative subjects

- DAT is found on subjects of some psychological predicates, complex V-V or N-V predicates, and deontic modals.

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

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

Instrumental subjects

- Urdu has an inabilitative construction which looks like a negated passive on the surface (12a vs. b) but has a different deep structure (Davison, 1982; Mohanan, 1994; Srishti, 2011:Ch 5).

(12) a. ***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.'

b. *Kaam* *(**Rami=se**)* *ki-ya* *gya.*
Work.NOM (**Rami=INS**) do-PFV.M.SG PASS.PFV.M.SG
'The work was done (by Rami).'

- Both have the same morpheme *jaa*, similar inflection on the main verb, and an INS argument.
- A key difference between the two is that the INS argument is an obligatory subject in the inabilitative (12a) while it is an optional *by*-phrase in the passive (12b).[4]

[4]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

- How do we know this INS argument is a subject (and not the NOM one)?
  - Gapping test: Mohanan (1994) shows that gapping in coordinate constructions in Urdu requires matching of both case and grammatical function between the antecedent and gapped element.
  - In (13), the INS argument of an inabilitative is gapped with a low INS argument (*by*-phrase, causee and source expression respectively) as the antecedent. None of these low arguments is able to license gapping of the INS argument of the inabilitative or vice versa (not shown) showing that it is not a low argument and is, indeed, a candidate for subjecthood.

(13) a. *Ravi* ***Ram=se*** *peeT-a* *gya* *aur*
Ravi.NOM **Ram=INS** beat-PFV.M.SG PASS.PFV.M.SG and
us=se / *___ *hans-a* *nahi* *gya.*
3.SG=INS / *___ 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*
Ram=ERG **Anil=INS** Ravi=ACC beat-CAUS-PFV.M.SG and
us=se / *___ *hans-a* *nahi* *gya.*
3.SG=INS / *___ laugh-PFV.M.SG not go.PFV.M.SG
'Ram made Anil beat Ravi and he couldn't laugh.'

c. *Anil=ne* ***Ram=se*** *paisa* *maang-a* *aur*
Anil=ERG **Ram=INS** money.NOM ask.for-PFV.M.SG and
us=se / *___ *di-yaa* *na* *gya.*
3.SG=INS / *___ give-PFV.M.SG not go.PFV.M.SG
'Anil asked Ram for money and he couldn't give (it).'
(adapted from Mohanan, 1994:163, ex.38-40)

  - The only other contender for subject position, the NOM argument, is the direct object, as it can show differential object marking and have either NOM or ACC, which NOM subjects cannot.

Locative subjects

- LOC 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 LOC (Kidwai, 2019).
- To my knowledge, only the first two forms of LOC occur on subjects (14).[5]

(14) a. ***Rami=mein*** *bohath* *khubian* *hein.*
Rami=LOC very good.qualities be.PRS.3.PL
'There are many good qualities in Rami.'

b. ***Rami=par/pe*** *bohath* *zimadaariyan* *hein.*
Rami=LOC very responsbilities be.PRS.3.PL
'There are many responsibilities on Rami.'

- Gapping in coordinate constructions shows that these LOC expressions are subjects. In (15), a low LOC argument is not able to license gapping of the LOC subject.

(15) *Sana=ne* ***Rami=mein*** *khubian* *dhoond-iin* *aur* ***us=mein***
Sana=ERG **Rami=LOC** good.qualities find-PFV.F.PL and **3.SG=LOC**
/ *___ *bohath* *khubian* *hein.*
/ *___ very good.qualities be.
'Sana searched for good qualities in Rami and there are many good qualities in Rami.'

3.1.3 Derived subjects

Promoted objects of dative predicates

- Dative predicates have a DAT subject and a NOM object (11, repeated).

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

- It has been shown that this structure is reversible, and that the NOM object can raise to a higher position than the DAT subject (Davison, 2004; Poole,

verb and passive uses.

[5] The reason why subjects can have some LOC 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 LOC markers from occurring on subjects, and that incompatible semantics is a better explanation.

2016). In this case, the promoted NOM object is said to show subject behaviour.

(16) ***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.'

Promoted objects in passives

- Promoted objects of passives have NOM (see Kidwai, 2022 for argument in favour of promotion; c.f. Mahajan, 1995).

(17) a. *Sana=ne Rami=ko pakR-a.* (active)
Sana=ERG Rami=ACC catch-PFV.M.SG
'Sana caught Rami.'

b. ***Rami*** *(Sana=se) pakR-a gya.* (passive)
Rami.NOM (Sana=INS) catch-PFV.M.SG PASS.PFV.M.SG
'Rami was caught (by Sana).'

- NOM on the object does not show differential object marking alternation with ACC unlike objects in active clauses (Kidwai, 2022; c.f. Mahajan, 1995; Mohanan, 1994)

3.1.4 Low agents

***By*-phrase**

- The agent in the passive is expressed as an optional *by*-phrase and carries INS (12b repeated, 17b above).

(12b) *Kaam* ***(Rami=se)*** *ki-ya gya.*
Work.NOM **(Rami=INS)** do-PFV.M.SG go.PFV.M.SG
'The work was done (by Rami).'

Causees

- Causees in indirect/complex causatives also have INS.

(18) *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.'

- Assuming a bi-eventive analysis of complex causatives, the causee is the do-er of the caused event, but is perceived as less agent-like than the main agent. For example, the causee cannot be modified by agentive adverbs as easily as the agent.

3.2 Findings

	Control*	**Anaphor binding**	**No pn binding**	**Be PRO**
NOM unaccusative subject	✓	✓	✓	✓
NOM unergative subject	✓	✓	✓	✓
NOM transitive subject	✓	✓	✓	✓
ERG subject	✓	✓	✓	✓
GEN infinitive subject	✓	✓	✓	N/A
INS subject	✓	✓	✓	×
LOC 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: Behaviour of arguments with respect to subject properties.
*Control into participial clauses.

- Putting aside being PRO, we can identify three groups:
  - Group 1 (top): Shows all subject properties.
  - Group 2 (middle): Shows sub-set of subject properties.
  - Group 3 (bottom): No subject properties → Objects.

- The ability to be PRO is scattered across Groups 1 and 2.
- Being PRO is not applicable to genitive case as PRO and GEN subjects are in complementary distribution in non-finite clauses.

4 Locus of Subject Properties

4.1 Being PRO

⇒ The ability to be PRO depends on the unavailability of case due to the **absence of finite T.**

- Evidence: The distribution of overt arguments in non-finite clauses.
- **All arguments that can be replaced by PRO *cannot* appear overtly with their own case** in non-finite clauses, and can only appear overtly with GEN (19 - 23).

(19) NOM unaccusative subject: overt ×, GEN ✓, PRO ✓

Rami=ne$_i$ [***Sana*** / ***Sana=ke*** / ***PRO$_i$*** *gir-ne*
Rami=ERG$_i$ [***Sana.NOM** / **Sana=GEN.OBL** / **PRO$_i$** fall-INF.OBL
] *=ki* *kahani* *suna-ai.*
] =GEN.F.SG story tell-PFV.F.SG
'Rami$_i$ told the story of Sana/PRO$_i$ falling.'

(20) NOM unergative subject: overt ×, GEN ✓, PRO ✓

Rami$_i$ [***Sana*** / ***Sana=ka*** / ***PRO$_i$*** *muskura-na*]
Rami.NOM$_i$ [***Sana.NOM** / **Sana=GEN** / **PRO$_i$** smile-INF]
chah-tha *he.*
want-IPFV.M.SG be.PRS.3.SG
'Rami$_i$ wants Sana/PRO$_i$ to smile.'

(21) NOM and ERG transitive subjects: overt ×, GEN ✓, PRO ✓

Rami$_i$ [***Sana*** / ***Sana=ne*** / ***Sana=ka*** / ***PRO$_i$***
Rami.NOM [***Sana.NOM** / ***Sana=ERG** / **Sana=GEN** / **PRO$_i$**
seb *khaa-na*] *chah-tha* *he.*
apple.NOM eat-INF] want-IPFV.M.SG be.PRS.3.SG
'Rami$_i$ wants Sana/PRO$_i$ to eat an apple.'

(22) Promoted object of dative predicate: overt ×, GEN ✓, PRO ✓

Rami$_i$ [***Omar*** / ***Omar=ka*** / ***PRO$_i$*** *sirf* *Sana=ko*
Rami.NOM$_i$ [***Omar.NOM** / **Omar=GEN** / **PRO$_i$** only Sana=DAT
pasand *aa-na*] *nahi* *chah-tha.*
like come-INF] not want-IPFV.M.SG
'Rami$_i$ doesn't want Omar/PRO$_i$ to be liked by only Sana.'

(23) Promoted object of passive: overt ×, GEN ✓, PRO ✓

Rami$_i$ [***Sana*** / ***Sana=ka*** / ***PRO$_i$*** *pakR-a* *jaa-na*
Rami.NOM$_i$ [***Sana.NOM** / **Sana=GEN** / **PRO$_i$** catch-PFV PASS-INF
] *nahi* *chah-tha.*
] not want-IPFV.M.SG
'Rami$_i$ doesn't want Sana/PRO$_i$ to be caught.'

- **All arguments that cannot be replaced by PRO *can* appear overtly with their own case** (and cannot appear overtly with GEN) (24 - 28).[6]

[6] Some of these examples are grammatical with GEN and/or PRO but have interpretations associated with NOM or ERG arguments (e.g. 25 vs. below).

(i) 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
'Sana scolded Rami$_i$ for being angry.'

b. *Rami* *ghussa* *hua.*
Rami.NOM angry be.PFV.M.SG
'Rami was angry.'

(24) INS subject: overt ✓, GEN ×, PRO ×

Rami$_i$ [***Sana=se*** / ****Sana=ka*** / ****PRO$_i$*** *jhoot na*
Rami.NOM$_i$ [**Sana=INS** / ***Sana=GEN** / ***PRO$_i$** lie not
bol-a *jaa-na*] *nahi chah-tha.*
speak-PFV go-INF] not want-IPFV.M.SG
'Rami$_i$ does not want Sana/*PRO$_i$ to be unable to lie.'

(25) LOC subject: overt ✓, GEN ×, PRO ×

Sana=ne *Rami=ko$_i$* [***Omar=mein*** *bohath ghussa ho-ne*]
Sana=ERG Rami=ACC$_i$ [**Omar=LOC** a.lot anger be-INF.OBL]
=par *daant-a.*
=LOC scold-PFV.M.SG
'Sana scolded Rami$_i$ for there being a lot of anger in Omar.'

(26) DAT subject: overt ✓, GEN ×, PRO ×

Mein$_i$ [***Rami=ko*** / ****PRO$_i$*** *aisa paisa* *mil-na*] *nahi*
I.NOM$_i$ [**Rami=DAT** / ***PRO$_i$** such money.NOM meet-INF] not
chah-thi *huun.*
want-IPFV.F.SG be.PRS.1.SG
'I$_i$ don't want Rami/*PRO$_i$ to get such money.'

- The optionality of *by*-phrases and causees makes it difficult to tell if have been omitted or appear as PRO. Both these arguments can occur overtly in non-finite clauses (27, 28) and not with GEN, leading me to assume that they are also unable to be PRO.

(27) *By*-phrase: overt ✓, GEN × → PRO ×

Rami$_i$ [***Sana=se*** *pakR-a* *jaa-na*] *chah-tha*
Rami.NOM$_i$ [**Sana=INS** catch-PFV PASS-INF] want-IPFV.M.SG
he.
be.PRS.3.SG
'Rami$_i$ doesn't want to be caught by Sana.'

(28) Causee: overt ✓, GEN × → PRO ×

Rami$_i$ [***Sana=se*** *kaam* *kar-va-na*] *chah-tha*
Rami.NOM$_i$ [**Sana=INS** work.NOM do-CAUS-INF] want-IPFV.M.SG
he.
be.PRS.3.SG
'Rami$_i$ wants to make Sana do the work.'

- The impossibility of PRO in (24) to (28) is not due to case-mismatching between PRO and the antecedent. Case-matching is not a requirement for control (e.g. 19, object control in 4, control into participial clause in 7).
- The division between which arguments can and cannot be replaced by PRO is not arbitrary. **Overt *structurally* case-marked subjects are ungrammatical in non-finite clauses while overt *non-structurally* case-marked subjects are grammatical** (see also Davison, 2008).
- Non-finite clauses are missing finite T which is crucial in assigning structural case (NOM and ERG) to subjects (Kidwai, 2019). 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. They continue to be available in non-finite clauses, and so overt arguments bearing these cases are grammatical.
- 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.[7]
- Note that **arguments do not need to be in a specific position to receive case from T.** Assuming Agree-based case-assignment, T assigns case to the highest argument in its c-command domain which has unvalued features but this argument does not need to be in any specific position.
- Thus, PRO is a subject property but this is not because of an association with

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

a specific structural position, but rather due to independent case assignment reasons.

4.2 Poole (2016): *Deconstructing Subjecthood*

- Summary of Poole (2016):
  - 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.
  - Subject properties stand in a hierarchy because A-movement is cyclic.
  - Subjects cannot show properties that are higher on the hierarchy without showing properties that are lower.
- On Table 2, we see that no subject can show no pronoun binding without showing control into participial clauses and anaphor binding, suggesting there is an implicational hierarchy.

(29) Subject Properties Hierarchy:
control + anaphor binding ≪ no pn binding

- I take a similar approach to Poole (2016) in terms of the locus of subject properties but do not commit to movement as the means for gaining these properties.

4.3 Anaphor binding

- Two candidates have been proposed: T (Davison, 2001) and Voice (Bhatia and Poole, 2016; Poole, 2016).
- Davison (2001) shows that binding is not possible inside domains without TP, such as small clauses (30) and NPs (31).

(30) *Ram*$_i$ [*Mohan=ko*$_j$ ***apne.aap=se*$_{i/*j}$** *sharminda*]
Ram$_i$ [Mohan=DAT$_j$ **SELF'S.SELF=INS$_{i/*j}$** ashamed]
samajh-tha *he.*
understand-IPFV.M.SG be.PRS.3.SG
'Ram$_i$ sees Mohan$_j$ as ashamed of himself$_{i/*j}$.'
(Davison, 2001:63–64, ex.29)

(31) *[*Ram=ka*$_i$ ***apne.aap=ko*$_{*i}$** *dhoka*] *qaanun=ke* *khilaaf*
[Ram=GEN$_i$ **SELF'S.SELF=ACC$_{*i}$** deception] law=GEN.PL against
nahi *hai.*
not be.PRS.3.SG
Intended: 'Ram's$_i$ deception of himself$_i$ is not against the law.'
(Davison, 2001:64, ex.30a)

- However, anaphor binding *is* possible in some domains without TP, such as the caused event of a complex causative (cf. Davison, 2001; Mohanan, 1994).

(32) *Rami=ne*$_i$ *Sana=se*$_j$ ***apna*$_{i/j}$** *khaana* *pak-va-ya.*
Rami=ERG$_i$ Sana=INS$_j$ **SELF'S$_{i/j}$** food.NOM cook-CAUS-PFV.M.SG
'Rami$_i$ made Sana$_j$ cook his$_i$/her$_j$ own food.'

- It has been proposed that complex causatives embed a VoiceP (Nie, 2020a,b), also for Urdu specifically (Bhatia, 2016; Bhatt and Embick, 2017; Srishti, 2011:Ch 7).

(33) [$_{\text{VoiceP1}}$ agent [$_{v\text{P}}$ [$_{\text{VoiceP2}}$ causee [$_{v\text{P}}$ [$_{\text{VP}}$ object]]]]]

- Based on (33), if VoiceP is the domain of anaphor binding, we would expect to see two binding possibilities (one in VoiceP$_1$ and the other in VoiceP$_2$). This is exactly what we see, as either the agent (VoiceP$_1$) or the causee (VoiceP$_2$) can bind the anaphor in a complex causative (32).
- Unavailability of anaphor binding in small clauses and NPs is also explained as both of these not only lack TP but also VoiceP.

⇒ **Therefore, I take VoiceP to be the domain for anaphor binding.**

4.4 Control into participial clauses

- No differences were found between anaphor binding and control into participial clauses (Table 2).
- Like anaphor binding, control into participial clauses is not possible in small clauses or NPs (shown for NP below).

(34) *[*Ram=ka$_i$* *Ahmed=ko$_j$* [***PRO$_{*i/*j}$*** *ghar* *ja* *kar*] *dhoka*
[Ram=GEN$_i$ Ahmed=ACC [**PRO$_{*i/*j}$** home.LOC go do] deception
] *qaanun=ke* *khilaaf* *nahi* *hai.*
] law=GEN.PL against not be.PRS.3.SG
Intended: 'Ram's of Ahmed, upon Ram going home, is not against the law.'

- Control into participial clauses is, however, possible in the caused event of a complex causative. Either the agent or the causee can control into the participial clause in (35).

(35) *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 when he$_i$/she$_j$ went home.'

- Moreover, in dative predicates and passives, where there are two possible arguments that can show these properties (36a), the same argument must show both. For example, in (36b), the promoted object binds the anaphor in the *by*-phrase and also controls into the participial clause. The *by*-phrase cannot control here.

(36) a. *Omar$_i$* *Sana=se$_j$* [***PRO$_{i/j}$*** *ghar* *ja* *kar*]
Omar.NOM$_i$ Sana=INS$_j$ [**PRO$_{i/j}$** home.LOC go do]
pakR-a *gya.*
catch-PFV.M.SG PASS.PFV.M.SG
'Omar$_i$ was caught by Sana$_j$ when he$_i$/she$_j$ went home.'

b. *Omar$_i$* ***apni$_i$*** *behen=se$_j$* [***PRO$_{i/*j}$*** *ghar* *ja* *kar*]
Omar.NOM$_i$ **SELF$_i$** sister=INS$_j$ [**PRO$_{i/*j}$** home.LOC go do]
pakR-a *gya.*
catch-PFV.M.SG 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 domain for control into participial clauses is the same as the domain for anaphor binding, i.e. VoiceP.**

4.5 No pronoun binding

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

- We have identified Voice as responsible for the first two properties. The head responsible for no pronoun binding must be higher, as no argument shows no pronoun binding without showing control into participial clauses and anaphor 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 clause that they occur in. So, for example, NOM which cannot bind pronominal possessors in their own finite clause (3, repeated), can do so if the pronominal expression occurs in an embedded clause (38).[8]

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

(38) a. ***Radha$_i$*** *(yeh)* *pasand* *nahi* *kar-thi* [*keh*
Radha.NOM$_i$ (this) like not do-IPFV.F.SG [that
us=ka$_{i/j}$ *bhai* *aisay* *logon=se*
3.SG=GEN.M.SG$_{i/j}$ brother.NOM such.OBL people=INS
baath *kar-ay*].
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)

[8] Quantifier binding shows that this is a true case of binding and not simply co-reference (Bhatia and Poole, 2016).

b. ***Radha$_i$*** [***us=ke$_{i/j}$*** *bhai=ka* *aisay*
Radha.NOM$_i$ [**3.SG=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.'

⇒ Based on the above, I take TP as the domain for pronoun obviation. **Arguments in SpecTP are unable to bind pronouns within their clause.**

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

4.6 Summary of Analysis

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

Table 3: Types of subjects in Urdu.

- All subjects occupy SpecVoiceP and show low subject properties.
- High subjects move to SpecTP and also show high subject properties.
- In parallel, subjects may or may not be PRO if they are or are not assigned case by finite T.

5 Open Questions

5.1 Challenges

Challenge 1: Formalising no pronoun binding

- Based on Condition B of binding theory, we expect that pronouns cannot be bound by antecedents that are too close.

	Control	Anaphor binding	No pn binding	Be PRO
NOM unaccusative subject	✓	✓	✓	✓
NOM unergative subject	✓	✓	✓	✓
NOM transitive subject	✓	✓	✓	✓
ERG subject	✓	✓	✓	✓
GEN infinitive subject	✓	✓	✓	N/A
INS subject	✓	✓	✓	×
LOC 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 4: Behaviour of arguments with respect to subject properties.

(40) Condition B: A pronominal is free in its binding domain.

- A bizarre set of facts is seen in Urdu. A pronominal possessor in the direct object (DO) can be bound by the indirect object (IO) (41a) but not by the subject which is further away (41b). Further increasing distance, by adding a clause boundary, makes binding possible once again (41c).

(41) a. IO ⟶ DO ✓
b. Subj ⟶ DO ×
c. Subj ... [$_{TP}$ ⟶ DO ✓

- In addition, no pronoun binding is also different from the other properties because it not a property that is gained but rather a property that is lost.

Challenge 2: Gaining subject properties

- Some more details from Poole (2016):
  - Subject properties are gained through movement to specifiers of relevant functional heads.
  - NOM subjects move through all heads while quirky case subjects stop at intermediate positions (depending on the language).
  - Movement is triggered by [•D•] and [•NOM•] features. All subjects can satisfy [•D•] but only nominative subjects can satisfy [•NOM•].
- How can we motivate movement for our data? What feature unites high subjects while excluding low subjects so that only high subjects move to SpecTP?
- If we assume subject properties are gained through movement, and low subject properties are associated with Voice, then we would have to assume that the external argument is generated in a position lower than SpecVoiceP, i.e. Spec$v$P (c.f. Kratzer, 1996; Pylkkänen, 2002).

5.2 Conclusion

- I have shown that subjects are not a homogenous group. Different groups of subjects show different subsets of subject properties.
- I have proposed two factors for this:
  - Structural position: Subject properties are associated with a series of functional heads, Voice and T. Voice is associated with anaphor binding and control into participial clauses. All subjects occupy SpecVoiceP and show these properties. T is associated with no pronoun binding. High subjects move to SpecTP and show additional properties. Since movement is cyclic, all subjects must occupy SpecVoiceP to move to SpecTP, and therefore, must show anaphor binding and control into participial clauses to show no pronoun binding.

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

  - Agree with finite T: In parallel, Agree with finite T, also influences the behaviour of subjects with respect to properties that depend on the presence/absence of finite T. Structural case assigned by finite T is unavailable in non-finite clauses. Subjects with these structural cases must either have genitive case if overt in non-finite clauses or be replaced by PRO. Non-structural cases continue to be available in non-finite clauses, and subjects with these cases cannot be replaced by PRO or have genitive case.
- What have we learnt about subjecthood more generally?
  - There is no single subject position.
  - Subjecthood does indeed seem to be a spectrum.
  - Structural and non-structural case, i.e. canonical and quirky case subjects, are not good indicators of where subjects fall on the spectrum (c.f. Poole, 2016).

	Highest	Non-highest
Agent	NOM unergative subject, NOM transitive subject, ERG subject, GEN subject	INS *by*-phrase, INS causee
Non-agent	NOM unaccusative subject, INS subject, LOC subject, DAT subject, promoted object of passive, promoted object of dative predicate	NOM/ACC direct object, DAT indirect object, INS comitative expression

Table 5: Arguments selected in this survey.

- Arguments in the shaded cells show at least some subject properties. Arguments in the dark shaded cell, with the addition of NOM unaccusative subjects, show all subject properties.
- It is interesting that NOM and ERG subjects are the only ones which show all subject properties, and have, once again, emerged as 'most subject-like'.
- Mohanan (1994) claims that so-called subject properties in Hindi-Urdu are in fact associated with prominence. Arguments can be prominent in many

ways, e.g. syntactically prominent (structurally high), logically prominent (agent theta-role), etc.

- Could a subjecthood spectrum be a spectrum of prominence? How can we capture prominence in functional terms?

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Appendix

Data for control into participial clauses, anaphor binding and no pronoun binding. (Data for being PRO given in Section 4.1.)

Nominative unaccusative subjects

(A1) a. Control into participial clause:

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.'

b. Anaphor binding:

Rami$_i$ *apne$_i$ bistar=mein so gya.*
Rami.NOM$_i$ SELF'S$_i$ bed=LOC sleep go.PFV.M.SG
'Rami$_i$ went to sleep in his$_i$ own bed.'

c. No pronoun binding:

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.'

Nominative unergative subjects

(A2) a. Control into participial clause:

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.'

b. Anaphor binding:

Rami$_i$ *apne$_i$ bistar=mein ro-ya.*
Rami.NOM$_i$ SELF'S$_i$ bed=LOC cry-PFV.M.SG
'Rami$_i$ cried in his$_i$ own bed.'

c. No pronoun binding:

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.'

Nominative transitive subjects

(A3) a. Control into participial clause:

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.'

b. Anaphor binding:

Rami$_i$ *Sana=ko$_j$ apni$_{i/*j}$ kitaab bhejay ga.*
Rami$_i$ Sana=DAT$_j$ SELF'S$_{i/*j}$ book.NOM send.FUT.3.SG FUT.M.SG
'Rami$_i$ will send Sana$_j$ his$_i$/*her$_j$ own book.'

c. No pronoun binding:

Rami$_i$ *Sana=ko$_j$ us=ki$_{*i/j/k}$ kitaab bhejay*
Rami$_i$ Sana=DAT$_j$ 3.SG.OBL=GEN.F.SG$_{i/*j}$ book.NOM send.FUT.3.SG *ga.*
FUT.M.SG
'Rami$_i$ will send Sana$_j$ his$_{*i/k}$/her$_{j/k}$ book.'

Ergative subjects

(A4) a. Control into participial clause:

Rami=ne$_i$ [*PRO$_i$ ghar jaa kar*] *seb kha-ya.*
Rami=ERG$_i$ [PRO$_i$ home.LOC go do] apple.NOM eat-PFV.M.SG
'Rami$_i$ ate an apple when he$_i$ went home.'

b. Anaphor binding:

Rami=ne$_i$ *Sana=ko$_j$ apne$_{i/*j}$ ghar=mein dekh-a.*
Rami=ERG$_i$ Sana=ACC$_j$ SELF'S$_{i/*j}$ house=LOC see-PFV.M.SG
'Rami$_i$ saw Sana$_j$ in his$_i$/*her$_j$ own home.'

c. No pronoun binding:

Rami=ne$_i$ *Sana=ko$_j$ us=ke$_{*i/j/k}$ ghar=mein*
Rami.NOM$_i$ Sana=DAT$_j$ 3.SG.OBL=GEN.OBL$_{*i/j/k}$ home=LOC *dekh-a.*
see-PFV.M.SG
'Rami$_i$ saw Sana$_j$ in his$_{*i/k}$/her$_{j/k}$ home.'

Genitive infinitive subjects

(A5) a. Control into participial clause:

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'

b. Anaphor binding:

Rami=ka$_i$ *apne$_i$* *ghar* *ja-na*
Rami=GEN.M.SG$_I$ SELF'S$_i$ home.LOC go-INF
'Rami's$_i$ going to his$_i$ own home'

c. No pronoun binding:

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'

Instrumental subjects

(A6) a. Control into participial clause:

Rami=se$_i$ [*PRO$_i$ ghar* *ja kar*] *kaam* *nahi ki-ya*
Rami=INS$_i$ [PRO$_i$ home.LOC go do] work.NOM not do-PFV.M.SG
gya.
go.PFV.M.SG.
'Rami$_i$ was unable to do the work when he$_i$ went home.'

b. Anaphor binding:

Rami=se$_i$ *apna$_i$* *kaam* *nahi ki-ya* *gya.*
Rami=INS$_i$ SELF'S$_i$ work.NOM not do-PFV.M.SG go.PFV.M.SG.
'Rami$_i$ was unable to do his$_i$ own work.'

c. No pronoun binding:

Rami=se$_i$ *us=ka$*_i$* *kaam* *nahi ki-ya*
Rami=INS$_i$ 3.SG.OBL=GEN.M.SG$*_i$ work.NOM not do-PFV.M.SG
gya.
go.PFV.M.SG.
'Rami$_i$ was unable to do his$*_i$/her work.'

Locative subjects

(A7) a. Control into participial clause:

Rami=pe$_i$ [*PRO$_i$ Pakistan* *ja kar*] *bohath zimadaariyan*
Rami=LOC$_i$ [PRO$_i$ Pakistan.LOC go do] very responsibilities
paR ga-iin.
fell go-PFV.F.PL.
'A lot of responsibilies fell on Rami$_i$ when he$_i$ went to Pakistan.'

b. Anaphor binding:

Rami=pe$_i$ *apne$_i$* *khaandan=ki* *bohath* *zimadaariyan*
Rami=LOC$_i$ SELF'S$_i$ family=GEN.F.SG very responsibilities
hein.
be.PRS.3.SG.
'On Rami$_i$ are many responsibilities of his$_i$ own family.'

c. No pronoun binding:

Rami=pe$_i$ *us=ke$*_i$* *khaandan=ki* *bohath*
Rami=LOC$_i$ 3.SG.OBL=GEN.OBL$*_i$ family=GEN.F.SG very
zimadaariyan *hein.*
responsibilities be.PRS.3.SG.
'There are many responsibilities of his$*_i$/her family on Rami$_i$.'

Dative subject and promoted object of dative predicate

(A8) a. Control into participial clause:

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.'

b. Anaphor binding:

Rami$_i$ ***Sana=ko$_j$*** *apne$_{i/j}$* *sheher=mein* *pasand*
Rami.NOM$_i$ **Sana=DAT$_j$** SELF'S$_{i/j}$ city=LOC like
aa-ya.
come-PFV.M.SG
'Sana$_j$ liked Rami$_i$ in his$_i$/her$_j$ own city.'

c. No pronoun binding:

Rami$_i$ ***Sana=ko$_j$*** *us=ke$_{i/j}$* *sheher=mein*
Rami.NOM$_i$ **Sana=DAT$_j$** 3.SG.OBL=GEN.OBL$_{i/j}$ city=LOC
pasand *aa-ya.*
like come-PFV.M.SG
'Sana$_j$ liked Rami$_i$ in his$_i$/her$_j$ city.'

By-phrase and promoted object of passive

(A9) a. Control into participial clause:

Omar$_i$ ***Sana=se$_j$*** [*PRO$_{i/j}$* *ghar* *ja* *kar*]
Omar.NOM$_i$ **Sana=INS$_j$** [PRO$_{i/j}$ home.LOC go do]
pakR-a *gya.*
catch-PFV.M.SG PASS.PFV.M.SG
'Omar$_i$ was caught by Sana when he$_i$/she$_j$ went home.'
(Kidwai, 2022:7, ex.22b)

b. Anaphor binding:

Omar$_i$ ***Sana=se$_j$*** *apne$_{i/j}$* *sheher=mein* *pakR-a*
Omar.NOM$_i$ **Sana=INS$_j$** SELF'S$_{i/j}$ city=LOC catch-PFV.M.SG
gya.
PASS.PFV.M.SG
'Omar$_i$ was caught by Sana$_j$ in his$_i$/her$_j$ own city.'

c. No pronoun binding:

Omar$_i$ ***Sana=se$_j$*** *us=ke$_{i/j}$* *sheher=mein*
Omar.NOM$_i$ **Sana=INS$_j$** 3.SG.OBL=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$_j$ city.'

Instrumental causee

(A10) a. Control into participial clause:

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.'

b. Anaphor binding:

Rami=ne$_i$ ***Sana=se$_j$*** *apna$_{i/j}$* *khaana* *pak-va-ya.*
Rami=ERG$_i$ **Sana=INS$_j$** SELF'S$_{i/j}$ food.NOM cook-CAUS-PFV.M.SG
'Rami$_i$ made Sana$_j$ cook his$_i$/her$_j$ own food.'

c. No pronoun binding:

Rami=ne$_i$ ***Sana=se$_j$*** *us=ka$*_{i/j}$* *khaana*
Rami=ERG$_i$ **Sana=INS$_j$** 3.SG.OBL=GEN.M.SG$*_{i/j}$ food.NOM
pak-va-ya.
cook-CAUS-PFV.M.SG
'Rami$_i$ made Sana$_j$ cook *his$_i$/her$_j$ food.'

Indirect objects

(A11) a. Control into participial clause:

Rami=ne$_i$ ***Sana=ko$_j$*** *kitaab* [*PRO$*_{i/*j}$* *ghar* *jaa* *kar*]
Rami=ERG$_i$ **Sana=DAT$_j$** book.NOM [PRO$*_{i/*j}$ home.LOC go do]
di.
give.PFV.F.SG
'Rami$_i$ gave Sana$_j$ a/the book when he$_i$/*she$_j$ went home.'

b. Anaphor binding:

Rami$_i$ ***Sana=ko$_j$*** *apni$*_{i/*j}$* *kitaab* *bhejay* *ga.*
Rami$_i$ **Sana=DAT$_j$** SELF'S$*_{i/*j}$ book.NOM send.FUT.3.SG FUT.M.SG
'Rami$_i$ will send Sana$_j$ his$_i$/*her$_j$ own book.'

c. No pronoun binding:

Rami$_i$ ***Sana=ko***$_{\boldsymbol{j}}$ *us=ki*$_{*i/j/k}$ *kitaab*
Rami$_i$ **Sana=DAT**$_{\mathbf{j}}$ 3.SG.OBL=GEN.F.SG$_{i/*j}$ book.NOM
bhejay *ga.*
send.FUT.3.SG FUT.M.SG
'Rami$_i$ will send Sana$_j$ his$_{*i/k}$/her$_{j/k}$ book.'

Direct objects

(A12) a. Control into participial clause:

Rami=ne$_i$ ***Sana=ko***$_{\boldsymbol{j}}$ [*PRO*$_{i/*j}$ *ghar* *jaa* *kar*]
Rami=ERG$_i$ **Sana=ACC**$_{\mathbf{j}}$ [PRO$_{i/*j}$ home.LOC go do]
dekh-a.
see-PFV.M.SG
'Rami$_i$ saw Sana$_j$ when he$_i$/*she$_j$ went home.'

b. Anaphor binding:

Rami=ne$_i$ ***Sana=ko***$_{\boldsymbol{j}}$ *apne*$_{i/*j}$ *ghar=mein* *dekh-a.*
Rami=ERG$_i$ **Sana=ACC**$_{\mathbf{j}}$ SELF'S$_{i/*j}$ house=LOC see-PFV.M.SG
'Rami$_i$ saw Sana$_j$ in his$_i$/*her$_j$ own home.'

c. No pronoun binding:

Rami=ne$_i$ ***Sana=ko***$_{\boldsymbol{j}}$ *us=ke*$_{*i/j/k}$ *ghar=mein*
Rami.NOM$_i$ **Sana=ACC**$_{\mathbf{j}}$ 3.SG.OBL=GEN.OBL$_{*i/j/k}$ home=LOC
dekh-a.
see-PFV.M.SG
'Rami$_i$ saw Sana$_j$ in his$_{*i/k}$/her$_{j/k}$ home.'

Comitatives

(A13) a. Control into participial clause:

Rami=ne$_i$ ***Sana=se***$_{\boldsymbol{j}}$ [*PRO*$_{i/*j}$ *ghar* *jaa* *kar*] *baath*
Rami=ERG$_i$ **Sana=INS**$_{\mathbf{j}}$ [PRO$_{i/*j}$ home.LOC go do] talk
ki.
do.PFV.F.SG
'Rami$_i$ talked to Sana$_j$ when he$_i$/*she$_j$ went home.'

b. Anaphor binding:

Rami=ne$_i$ ***Sana=se***$_{\boldsymbol{j}}$ *apne*$_{i/*j}$ *baare=mein* *baath* *ki.*
Rami.NOM$_i$ **Sana=INS**$_{\mathbf{j}}$ SELF'S$_{i/*j}$ about=LOC talk do.PFV.F.SG
'Rami$_i$ talked to Sana$_j$ about himself$_i$/*herself$_j$.'

c. No pronoun binding:

Rami=ne$_i$ ***Sana=se***$_{\boldsymbol{j}}$ *us=ke*$_{*i/j/k}$ *baare=mein*
Rami=ERG$_i$ **Sana=INS**$_{\mathbf{j}}$ 3.SG.OBL=GEN.OBL$_{*i/j/k}$ about=LOC
baath *ki.*
talk do.PFV.F.SG
'Rami$_i$ talked to Sana$_j$ about him$_{*i/k}$/her$_{j/k}$.'