Lexical semantics vs. Dependent Case: Urdu/Hindi datives

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Abstract

This paper discusses dative subject experiencer constructions in Urdu/Hindi. These have recently been taken to provide evidence for Dependent Case Theory, which sees the locus of explanation for case marking patterns in the phrase structural configuration two NPs are placed in. This paper reexamines the arguments and adduces more data, concluding that an analysis involving event-based linking within LFG provides a more insightful approach to the data.

1 Introduction

This paper contributes to the on-going debate as to the best approach to understanding case.[†] Legate (2024: 72), for example, provocatively concludes that "Case is out of Universal Grammar" in a recent contribution to a collection entitled *The Place of Case in Grammar* (Sevdali et al. 2024). This is because her analysis of crosslinguistic patterns shows that any understanding of case must involve a confluence of factors, which Legate identifies as encompassing at least "the structural relationships between X^0s and nominals, the structural relationships between nominals, thematic roles, predicate types, the identity of particular lexical items, and so on." Kagan (2024) in that same volume argues that the correlations between case and meaning are widespread crosslinguistically, encompassing thematic roles, individuation/ prominence (i.e. referentiality and topic/focus) and tense/aspect. This echoes the combination of semantic and structural factors that Butt and King have been advocating since the early 1990s in their formulation of a theory of case within LFG (e.g., Butt & King 1991, 2003, 2004). The data Butt & King have drawn on come primarily from Urdu/Hindi (and some Georgian).

However, it is exactly with respect to data from Urdu/Hindi that Baker (2024) in the same *The Place of Case in Grammar* volume advocates an analysis in terms of Dependent Case Theory. In stark contrast to Kagan and Butt & King, Dependent Case sees the primary locus for an explanation of the distribution of case in terms of phrase structure relationships. This paper takes on Baker's analysis and focuses on the role of datives. Baker specifically addresses datives as part of his analysis in order to bolster the structurally motivated Dependent Case analysis for Urdu/Hindi.

In Butt & King's system, on the other hand, datives are semantically motivated in that they mark goals and experiencers (which are seen as an abstract type of goal). This paper reiterates Butt & King's original position and shows that while structural factors play a role in understanding the distribution of case, they cannot provide a full account. Rather, it is argued that systematic properties governing the relationship between arguments and the event structure of a predicate play the crucial role (Schätzle 2018; Beck & Butt 2024; Kagan 2024).

2 Urdu/Hindi: The problem

Baker (2024) takes on Urdu/Hindi[1] precisely because the case patterns in this language

[†]Many thanks to Saira Bano and Benazir Mumtaz for providing interesting data points and to the two anonymous reviewers for very insightful comments.

[1]Urdu and Hindi are written in different scripts and are national languages of Pakistan and India, respectively. However, they are structurally almost identical in many respects, including case marking.

pose a challenge for Dependent Case. Urdu/Hindi has both an ergative/nominative alternation on subjects and an accusative/nominative alternation on objects, as shown in (1) and (2). These alternations operate independently from one another, contra the expectations of Dependent Case.

(1) a. ram**=ne** kamputar xarid-a
Ram.M.Sg=Erg computer.M.Sg.Nom buy-Perf.M.Sg
'Ram bought a/some computer.'
b. ram**=ne** kamputar**=ko** xarid-a
Ram.M.Sg=Erg computer.M.Sg=Acc buy-Perf.M.Sg
'Ram bought a (certain)/the computer.'

(2) a. ram kamputar xarid-e-g-a
Ram.M.Sg.Nom computer.M.Sg.Nom buy-3.Sg-Fut-M.Sg
'Ram will buy a/some computer.'
b. ram kamputar**=ko** xarid-e-g-a
Ram.M.Sg.Nom computer.M.Sg=Acc buy-3.Sg-Fut-M.Sg
'Ram bought a (certain)/the computer.'

The nominative/accusative alternation on the object in both (1) and (2) is due to Differential Object Marking (DOM), by which the accusative *ko* is obligatory when referring to humans and definite/specific objects. Thus, in (1) and (2), the *ko* conveys that a certain/specific computer rather than some random computer has beeen bought from the shop (see Butt (1993); Bhatt & Anagnostopoulou (1996); de Hoop & Narasimhan (2005) for Urdu/Hindi and Bossong (1985); Aissen (2003); Malchukov & de Swart (2009) on DOM more generally.)

The nominative/ergative alternation on the subject in (1) vs. (2) is known as split-ergativity, whereby an ergative is required on agentive subjects for a subset of situations. In Urdu/Hindi the split is aspect based, with perfective morphology on the verb making an ergative obligatory (see Patel-Grosz 2021 for an overview of ergativity in Indo-Aryan). Both split-ergativity and DOM are well-known phenomena. However, many languages seem to employ one but not the other at the same time, leading to intuitions that overt case marking should ideally only occur on one of the core grammatical relations (subject and object) in sentences as in (1) and (2). This intuition is reflected in various forms in the literature, e.g., Dixon (1994); Plank (1979) on typologically motivated ideas of case alignment, Legendre et al. (1993); Aissen (1999, 2003); de Hoop (2009) from the perspective of Optimality Theory (OT). The work by Marantz (2000); Baker (2014) and Baker & Bobaljik (2017), for example, from a Chomskyan perspective has led to the full-fledged formalization of Dependent Case Theory (Baker 2015).

Dependent Case Theory posits that an ergative is structurally dependent on the presence of a nominative object and that an accusative object is structurally dependent on the presence of a nominative subject. This is codified as in (3) (Baker 2024: 37).

(3) a. If NP1 c-commands NP2 in the same domain, then assign NP2 accusative.
b. If NP1 c-commands NP2 in the same domain, then assign NP1 ergative.

The problematic Urdu/Hindi examples for this approach are (1-b) and (2-a). This is different from languages such as Nez Perce, where one also finds an overtly marked

object together with an overtly marked ergative. However, in Nez Perce, the appearance of the ergative is reportedly dependent on the appearance of the accusative. If the object is definite, as in (4-b), then it is marked with the accusative case and the subject then must be ergative. If the object is indefinite, as in (4-a), then both the subject and the object are unmarked (nominative). Patterns as in Nez Perce thus provide evidence for the Dependent Case intuition (Baker 2014: 129).

(4) a. Háama hi-'wí-ye wewúkiye. (Nez Perce)
man.**NOM** 3-shoot-ASP elk.**NOM**
'The man shot an elk.' (Rude 1986: 552)

b. Háama-nm hi-néec-'wi-ye wewúkiye-ne. (Nez Perce)
man-**ERG** 3-PL.OBJ-shoot-ASP elk-**ACC**
'The man shot the elk (pl).' (Rude 1986: 127)

Urdu/Hindi, on the other hand, would seem to go against the Dependent Case intuition. Baker (2024) ends up solving the Urdu/Hindi problem by becoming more specific about the size of the domain the basic rules in (3) can apply in. Overall, three different domains are identified as being relevant for case assignment: vP, AspP and CP. These also correspond to different phases in current Minimalist conceptualizations.

Since the appearance of the ergative crosslinguistically is often tied to aspectual information, for example, as in the perfective morphology in Hindi, Baker sees AspP as the relevant domain for ergative assignment, formulating the rule in (5-a). Conversely, the relevant domain for the assignment of accusative case is taken to be the CP. The relevant rule for Urdu/Hindi is in (5-b).

In order to deal with the constraint that ergatives in Urdu/Hindi (generally) only appear on transitive perfective verbs, he further formulates the constraints in (6).

(5) a. Phase head Asp:
high dependent case: Erg (*ne*),
low dependent case: none,
unmarked case: Nom (∅)

b. Phase head C:
high dependent case: none,
low dependent case: Acc (*ko*),
unmarked case: Nom (∅) (Baker 2024: 40)

(6) a. In Hindi perfective clauses, Asp is a hard phase head (but v is not).
b. In Hindi imperfective clauses, v is a hard phase head (but Asp is not).

Being a hard phase head entails that the relevant case assignments must happen within that phase. Let us see how this works for (7) (repeated from above). As shown in (8-a), 'Ram' is generated in the Spec of vP and 'computer' in the complement position of VP, as per standard Minimalist assumptions. The clause is perfective, so v is not a hard phase head, as per (6-a). The next relevant phase for case assignment is Asp. This is a hard phase head so case must be spelled out here. In Asp the high dependent case is ergative as per (5-a), so Ram is ergative. The low dependent case gets no marking, that is, the object 'computer' is assigned the unmarked nominative case, as shown in (8-b).

(7) a. ram=ne kamputar xarid-a
Ram.M.Sg=Erg computer.M.Sg.Nom buy-Perf.M.Sg
'Ram bought a/some computer.'
b. ram=ne kamputar=ko xarid-a
Ram.M.Sg=Erg computer.M.Sg=Acc buy-Perf.M.Sg
'Ram bought a (certain)/the computer.'

(8) a. [Asp$_{perf}$ [$_{vP}$ Ram v [$_{VP}$ buy computer]]]
b. [Asp$_{perf}$ [$_{vP}$ Ram_**Erg** v [$_{VP}$ buy computer_**Nom**]]]

This configuration accounts for (7-a). Now let's move on to (7-b). Baker (2014) essentially side steps the problem represented by this example in the following way. He adopts the insight that the appearance of the accusative is tied to specificity effects, rather than being due to purely structural constraints. Along with Bhatt & Anagnostopoulou (1996), Baker assumes that objects in Urdu/Hindi move out of the VP if they are specific, thus getting the DOM effect (see also, e.g., Diesing (1992); Ramchand (1997) for crosslinguistic argumentation).

The pattern in (7-b) is thus accounted for by assuming an alternative derivational path for (8-a). This involves the object 'computer' moving out of the VP and into the Spec of AspP, as shown in (9-b). At the same time, 'Ram' also still needs to move higher up in the tree to reach the "final position of the subject" (Baker 2014: 43) in Spec TP, as shown in (9-c). In this configuration the relevant domain for the assignment of case is the CP and as per (5) the low dependent case is accusative, which is assigned to 'computer', as shown in (9-c).

(9) a. [Asp$_{perf}$ [$_{vP}$ Ram_**Erg** v [$_{VP}$ buy computer]]]
b. [$_{AspP}$ computer Asp$_{perf}$ [$_{vP}$ Ram_**Erg** v [$_{VP}$ buy ___]]]
c. [$_{CP}$ [$_{TP}$ Ram_**Erg** [$_{AspP}$ computer_**Acc** Asp$_{perf}$ [$_{vP}$ ___ v [$_{VP}$ buy ___]]]]]

The derivation of the Nom-Nom/Acc patterns in (2), repeated here in (10), can now also follow. As before, 'Ram' is generated in Spec vP and 'computer' as the complement of VP, see (11-a). However, the clause is now not perfective and so now v is a hard phase head. Following Fox & Pesetsky (2004), a consequence of this is taken to be that the contents of the VP are rendered invisible when it is time to assign case to 'Ram' in Spec vP. So this remains unmarked (nominative). Similarly, when Ram moves further up to Spec of TP, it becomes invisible for 'computer' in the complement of VP, so this also remains unmarked (nominative). That gives us (10-a).

(10) a. ram kamputar xarid-e-g-a (Urdu/Hindi)
Ram.M.Sg.Nom computer.M.Sg.Nom buy-3.Sg-Fut-M.Sg
'Ram will buy a/some computer.'
b. ram kamputar**=ko** xarid-e-g-a (Urdu/Hindi)
Ram.M.Sg.Nom computer.M.Sg=Acc buy-3.Sg-Fut-M.Sg
'Ram bought a (certain)/the computer.'

(11) a. [Asp$_{impf}$ [$_{vP}$ Ram v [$_{VP}$ buy computer]]]
b. [$_{CP}$ [$_{TP}$ Ram [$_{AspP}$ computer_**Acc** Asp$_{impf}$ [$_{vP}$ ___ v [$_{VP}$ buy ___]]]]]

The situation changes when the object moves out of the complement of VP for DOM

reasons up to within the vP. As shown in (11-b), now the CP domain contains two NPs and by (5) the lower NP in the CP domain is assigned accusative.

Baker is thus able to make the Urdu/Hindi data work while keeping the structural, configurational flavor of Dependent Case alive. He also makes a point of noting that the DOM movement of the object is essentially structural, even though it may result in a different semantics for the object. If one looks at his system, closely, though, what Baker has essentially done is to decouple the two subject and object NPs from a dependent relation exactly when it is needed, but to place them back together in a structurally dependent position when it is convenient, maintaining that structural dependency is at the explanatory core of case subject/object case assignment, even when it is not.

However, even this intricate account is not without problems within Baker's approach. This is because he posited a *Strict Cycle Condition* as in (12) in earlier work to restrict spurious case assignment.

(12) If NP1 c-commands NP2 at the spell out of XP, and NP1 also c-commands NP2 at the later spell out of YP, this c-command relationship is not considered for the purposes of dependent case assignment in YP. (Baker 2024: 46)

This condition is intended to ensure that in the face of movements to different positions in the tree, only the newer configuration counts for the assignment of Dependent Case. Yet in order to account for the Urdu/Hindi Ergative-Accusative pattern, the configurational relationship between the subject and the object is considered twice (cf. (9)), in contravention of the Strict Cycle Condition.

Rather than abandoning the new account in the face of this theory-internal contradiction, Baker points to data from Urdu/Hindi dative subjects and argues that this data speaks in favor of maintaining the Strict Cycle Condition. As such, he proposes to change the condition slightly, as shown in (13). The effect of this change is that configurations are not counted in the domain of the VP, where more than one argument can be generated, but are counted elsewhere.

(13) *If NP1 and NP2 are both spelled out for the first time in domain XP* and NP1 c-commands NP2 in XP; then NP1 c-commanding NP2 in a later spell out YP is not considered for the purposes of case assignment in YP. (Baker 2024: 48)

The next section first discusses the Urdu/Hindi dative subject data adduced by Baker and then discusses further data that goes against the Dependent Case intuition. An alternative LFG account that works with the event based linking developed in Schätzle (2018); Beck & Butt (2024); Butt et al. (2023) and Butt & Bano (2024) is proposed in section 4, followed by a final discussion in section 5.

3 Urdu/Hindi Dative Subjects

3.1 Dative Subjects and Dependent Case

Urdu/Hindi dative subjects generally adhere to the pattern shown schematically in (14), by which an experiencer subject is marked overtly with the dative and the object remains unmarked. This fits in very well with the Dependent Case intuition since only one case

is overtly marked and this case marking happens as part of a typical Dependent Case configuration of two NPs being set into a relationship with one another.

(14) Kim_**Dat** appeared moon_**Nom**
Lit.: 'To Kim appeared the moon.', meaning 'Kim saw the moon.'

Typical Urdu/Hindi examples with a dative subject are as in (15).[2] The examples in (16) further show that the accusative/nominative DOM alternation observed in the previous section with ergative subjects does not seem to be allowed with dative subjects. Note that the dative and the accusative are form-identical in Urdu/Hindi (and indeed, in many other Indo-Aryan languages).[3]

(15) a. ʈuʃar=ko tʃand dɪkʰ-a
Tushar.M.Sg=Dat moon.M.Nom appear-Perf.M.Sg
'Tushar saw the moon.' (Mohanan 1994a: 141)
b. ram=ko buxar/bimari hɛ
Ram.M.Sg=Dat fever/sickness be.Pres.3.Sg
'Ram is feverish/sick, Ram has a fever/sickness.'

(16) a. ila=ko anu/*=ko dɪkʰ-i
Ila.F.Sg=Dat Anu.F.Sg.Nom/=Acc appear-Perf.F.Sg
'Ila saw Anu.' (lit. Anu appeared to Ila.) (Mohanan 1994a: 96–97)
b. mʊjʰe park-mẽ yeh gʰaɾi/*=ko mɪl-i
I.Obl.Dat park-in this watch.Nom/=Acc met/got-Perf.F.Sg.
'I found this watch in the park.' (Baker 2024: 47)

This seemingly strict dative-nominative configuration thus fits well with the Dependent Case intuition. The details of Baker's analysis are as shown in (17). The two core arguments are assumed to be generated within the VP as shown in (17-a). This initial dependency relationship is governed by the statement in (18-c), which is considered to apply in Urdu/Hindi in addition to the ones already seen in (5).

(17) a. [Asp [$_{vP}$ v$_{Perf}$ [$_{VP}$ Tushar appear moon]]]
b. [Asp [$_{vP}$ v$_{Perf}$ [$_{VP}$ Tushar_**Dat** appear moon_∅]]]

(18) c. Phase head v:
high dependent case: Dat (*ko*), low dependent case: none,
unmarked case: Nom (∅) (Baker 2024: 40)

The relevant phase head for the configuration in (17-a) is v, so the high dependent case is dative as per (18) and that is what Tushar is marked with, see (17-b). Given that objects can in principle move up to a higher position in Spec AspP and receive accusative case there, the question is why that cannot happen for the configuration in (17). The answer is given by the revised version of the Strict Cyclicity Condition, which prohibits configurations of two NPs being (re)considered for Dependent Case if they were first spelled out in the same domain. This holds true of (17), as both the core arguments were first spelled out within the VP. It does not hold true of the ergative configuration in

[2]Here and elsewhere 'Obl' in the gloss refers to 'oblique'.
[3]Evidence for the two distinct functions is adduced in Butt & King (2004).

(9) because there the two core arguments are spelled out in two different domains: VP (object) and vP (subject).

3.2 The Semantics of Dative Case

The Dependent Case account for Urdu/Hindi thus works with respect to the data seen so far. It claims to be a purely structural account; however, semantic factors are invoked indirectly in terms of: a) the movement of the object for specificity semantics; b) the different treatment of dative subjects as originating within the VP vs. ergative subjects as originating in Spec of vP.

This treatment obscures the robust generalization that all instances of datives can basically be analyzed as marking goals in Urdu/Hindi. These can be spatial goals or recipients as in (19) or they can be temporal as in (20), see Ahmed (2006) for an overview of all uses of Urdu/Hindi *ko*, and Ahmed Khan (2009) for a model of Indo-Aryan case in terms of the dimensions PATH, PLACE and DYNAMIC.

(19) a. ʈuʃar=ko kɪtab mɪl-i
Tushar.M.Sg=Dat book.F.Nom receive-Perf.F.Sg
'Tushar received a book.'

b. ram=ne kamputar ila=ko di-ya
Ram.M.Sg=Erg computer.M.Sg.Nom ila.F.Sg=Dat give-Perf.M.Sg
'Ram gave Ila the computer.

c. amra lahor=ko gɑ-yi
Amra.F.Sg.Nom Lahore=Dat go-Perf.F.Sg
'Amra went to Lahore.' (Ahmed 2006)

(20) ʧor rat=ko a-ya
thief.M.Sg.Nom night.F.Sg=Dat come.Perf.M.Sg
'The thief came at night.' (Ahmed 2006)

In addition to temporal and spatial, the goals can also be abstract, thus giving rise to experiencer subjects as in (21) and the examples already seen above.

(21) a. ram=ko hɑlva pɑsɑnd hɛ
Ram.M.Sg=Dat halva.M.Sg.Nom liking.M be.Pres.3.Sg
'Ram likes halva.' (lit. Halva liking is at/to Ram.)

b. nadya=ko kahani yad a-yi
Nadya.F.Sg=Dat story.F.Sg.Nom memory come-Perf.F.Sg
'Nadya remembered a/the story.' (lit. Story memory came to Nadya.)

A purely structural account such as that proposed by Dependent Case Theory loses this very robust generalization witih respect to the distribution of dative case in Urdu.

3.3 More on Differential Case Marking

Differential Case Marking (DCM) is pervasive in Indo-Aryan (Butt 2022), this includes DOM of the type seen above with the accusative/nominative alternation for specificity, but also other types of alternations. One of these involves Differential Subject Marking

(DSM) with ergative vs. dative subjects, as shown in (22).[4] Here the ergative signals that the event is desired by the subject, whereas the dative can be used to denote both a desire and an obligation reading, with the obligation reading being the more dominant one, cf. Bashir (1999).

(22) a. ravi=**ne** barselona ja-n-a hɛ
Ravi.M.Sg=Erg Barcelona go-Inf-M.Sg. be.Pres.3.Sg
'Ravi wants to go to Barcelona.'
b. ravi=**ko** barselona ja-n-a hɛ
Ravi.M.Sg=Dat Barcelona go-Inf-M.Sg. be.Pres.3.Sg
'Ravi must/wants to go to Barcelona.'

The ergative-dative alternation in (22) is part of a wider pattern in Urdu/Hindi by which the ergative alternates with the dative in Urdu/Hindi to express agentive vs. experiencer subjects, as illustrated by the N-V complex predicates in (23). Both constructions have been analyzed already (e.g., Mohanan (1994a); Butt & King (2004) and references therein), the dative in (23-b) is an abstract goal of the type typical for experiencer subjects in Urdu/Hindi (cf. Verma & Mohanan 1990). In N-V complex predicates (as in Urdu/Hindi complex predicates more generally), the light verb determines the case marking on the subject: the agentive 'do' requires an ergative subject whereas the motion verb 'come' requires a goal.

(23) a. nadya=**ne** kahani yad k-i
Nadya.F.Sg=Erg story.F.Sg.Nom memory do-Perf.F.Sg
'Nadya remembered a/the story.' (lit. Nadya did memory of story.)
b. nadya=**ko** kahani yad a-yi
Nadya.F.Sg=Dat story.F.Sg.Nom memory come-Perf.F.Sg
'Nadya remembered a/the story.' (lit. Story memory came to Nadya.)

The use of the dative vs. the ergative in (22) is trickier to analyze, but basically seems to be due to an agentive vs. non-agentive contrast whereby the ergative signals the agentive variant and is placed in contrast to the dative, which is associated with reduced agentivity via its core goal semantics (Butt & King 2004).

Examples as in (22) are not taken into account in Baker's treatment of Urdu/Hindi. Examples such as (23) could in principle be made to work along the lines summarized above once an account of complex predication were in place. In (23) the difference in case marking on the subjects can be made to follow from the choice of light verb. However, in (22) it is not clear what structural factor coud be taken to drive the observed DSM: the only overt difference between the two examples is the case marking.

A further case in point is that a number of other alternations can also be found in Urdu/Hindi. One of these involves an alternation between the polysemous *se* 'from, with, by' (see Butt & Ahmed 2011) and the accusative *ko*.[5] This is found for example in (24) with the verb 'meet' that we have already encountered as a experiencer predicate. Example (25) shows its use with agentive psych predicates.

[4]Generally DCM is taken to pertain only to a situation in which a marked case alternates with an unmarked case. However, I see no reason why situations as in (22) should not be classified as DCM.

[5]The *se* is glossed as instrumental ('Inst') in the close gloss for the sake of convenience since this is its most general meaning. In the examples in this paper it is mainly used to denote sources.

(24) a. ravi amra=**ko** bag^{h}=mẽ mıl-i
Ravi.M.SgNom Amra.F.Sg=Acc garden=in met-Perf.F.Sg
'Ravi met Amra in the garden.'
b. ravi amra=**se** bag^{h}=mẽ mıl-i
Ravi.M.Sg.Nom Amra.F.Sg=Inst garden=in met-Perf.F.Sg
'Ravi met (with) Amra in the garden.'

(25) a. ram sigarət=**se/ko** nafrat kar-ta
Ram.M.Sg.Nom cigarette.F=Inst/Acc hate.F do-Impf.M.Sg
'Ram hates cigarettes.'
b. ram ʊs laṛki=**se/ko** nafrat kar-ta
Ram.M.Sg.Nom that.Obl girl.F.Sg=Inst/Acc hate.F do-Impf.M.Sg
'Ram hates that girl.'

Examples as in (24) and (25) could be accounted for by positing different structural positions that the object argument moves into, but again, the main difference seems to be located in the semantics ascribed to the object argument and it therefore seems that this is where the locus of explanation should also lie.[6]

3.4 DOM and Dative Subjects

This section returns to the observation that dative subjects seem to prohibit an overt marking on the object. This is surprising, given the overall propensity in Urdu/Hindi for DCM, but it is an observation that has so far been robustly attested in the existing lierature. For example, de Hoop & Narasimhan (2005) formulate an Optimality Theory constraint-based account of case marking for argument identification in Hindi and also conclude that dative subjects only allow for dative-nominative configurations. Example (26-a) is particularly remarkable because Urdu/Hindi nominative/accusative DOM generally requires human objects to be marked with *ko*, but this is completely ungrammatical in conjunction with a dative subject.

(26) a. ram=**ko** laṛki/*=**ko** pasand hɛ
Ram.M.Sg=Dat girl.F.Sg.Nom/=Acc liking.M be.Pres.3.Sg
'Ram likes that girl.'
b. ram=**ko** halva/*=**ko** pasand hɛ
Ram.M.Sg=Dat halva.M.Sg.Nom/=Acc liking.M be.Pres.3.Sg
'Ram likes halva.'

One possible explanation for the patterns in (26) could be in terms of the Obligatory

[6] A reviewer points out that the use of *ko* on 'cigarette' in (25) is unexpected since we have so far been told that *ko* is a marker of specificity. There is indeed more to be said about the use of *ko* on objects, with Butt (1993) and Bhatt & Anagnostopoulou (1996) having made a good beginning, but with much more to be done on the connection to the semantics of indefinites and generics. On the one hand, Urdu/Hindi bare nouns can also receive specific readings. On the other hand, *ko*-marked phrases can receive generic interpretations, as in 'I am going to the doctor's.', where a generic doctor's office is being referred to, but *ko* marking on 'doctor' is nevertheless possible. Veneeta Dayal's body of work contains the most advanced insights with respect to Urdu/Hindi, see Dayal & Sağ (2020) for references and an overview of the interconnected topics of kind terms, genericity, (in)definiteness, specificity, bare nouns and pseudoincorporation. As such, section 4 begins a move away from the particular specificity analysis of *ko* towards a more general notion of result/goal and quantizedness.

Contour Principle (OCP) that Mohanan (1994b) posits as a constraint on case realization in Urdu/Hindi. The Case OCP prohibits two (or more) of the same type of an overt case marker to co-occur in a clause. However, Mohanan's Case OCP does not completely rule out two co-occurring *ko*-marked arguments, as these do exist, see (27).

(27) ravi=ne batʃtʃe=**ko** amra=**ko** di-ya
Ravi.M.Sg=Erg child.M.Obl=Acc Amra.F.Sg=Dat give-Perf.M.Sg
'Ravi gave the child to Amra.'

Given that two *ko* can co-occur elsewhere in the language, we cannot use Mohanan's Case OCP to rule out two *ko*-marked arguments for dative subjects.

Furthermore, one does find constellations that go beyond the basic dative-nominative pattern with experiencer predicates that take dative subjects. The examples below are counterparts to the 'liking' predicates used in (26) (the predicate in (26) is actually made up of an N+be combination, as are the predicates in (28)).

(28) a. ram=**ko** ʊs laṛki=**se** nɑfrɑt/pyar hɛ
Ram.M.Sg=Dat that.Obl girl.F.Sg=Inst hate.F/love.M be.Pres.3.Sg
'Ram hates/loves that girl.' (lit. Hate/love of that girl is at Ram.)
b. ram=**ko** sigɑrət=**se** nɑfrɑt hɛ
Ram.M.Sg=Dat cigarette.F=Inst hate.F be.Pres.3.Sg
'Ram hates cigarettes.' (lit. Hate of cigarette is at Ram.)

The data adduced in this section taken together points to an alternative analysis than that proposed by the Dependent Case intuition. For one, the dative-nominative pattern is not the only pattern to be accounted for with respect to dative subjects. For another, the Dependent Case approach does not do justice to the semantic import of case marking: 1) goals are robustly marked with dative case in Urdu/Hindi; 2) dative and ergative are used in DCM to mark semantic differences.

The next section therefore develops an account of the case marking patterns that acknowledges the fundamental semantic nature of case (cf. also Kagan 2020, 2024) and couples the established Constructive Case approach within LFG (Butt & King 2003; Nordlinger 1998) with the event-based theory of linking developed in recent years (Schätzle 2018; Butt et al. 2023; Beck & Butt 2024).

4 Analysis

This section first introduces the basics of event-based linking in section 4.1. An account of the case markers in terms of Constructive Case is then developed in section 4.2, finally leading to a full analysis of the patterns observed with respect to dative subjects in Urdu/Hindi in section 4.3, including a treatment of N-V complex predicates to account for the N+be constructions seen above in (28).

4.1 Event-based linking

Unlike many other proposals for relating argument structure to syntactic roles, standard LFG does not assume an event-based representation (Butt 2006). Rather, argument

structure is conceived of as a list of argument roles such as *agent, patient, goal*, etc.

One exception is Butt's (1995) proposal for linking based on Jackendoff's ideas on event decomposition (e.g., Jackendoff 1990). Butt derives LFG's argument structure hierarchy from an event-based representation that includes notions such as CAUSE, ACT, BECOME and then proceeds to map from argument roles to grammatical relations via LFG's standard mapping theory (cf. Bresnan & Zaenen 1990; Findlay et al. 2023).

A more recent event-based proposal for linking has been formulated in Schätzle (2018); Butt et al. (2023) and Beck & Butt (2024). This approach works with Ramchand's (2008) tripartite organization of subevental structure, combines this with Proto-Role information as proposed by Zaenen (1993) and is integrated with Kibort's (2014) version of LFG's Mapping Theory. A short sketch and motivation of this approach is provided in what follows.

Ramchand (2008) decomposes an event into three major subevents, each of which causes/initiates the other, as shown in (29). In addition, *rhemes* (*rh*) are taken to be in a static relationship with one of the three subevents of a predicate, like a static spatial Figure/Ground relationship. We here do not go into details of the reasons behind this organization, but adopt the basic intuition into LFG's linking theory.

(29) **Ramchand's tripartite event decomposition**

(i) a causing or initiating subevent (*init*); results in a

(ii) a process subevent (*proc*); results in a

(iii) a result state (*res*)

We associate an argument slot with each of Ramchand's subevents (*init, proc, res*) as well as a further one with the *rh*. Overall this yields four argument participants, which nicely corresponds to the four basic argument participant slots proposed by Kibort (2014). We follow Kibort (and Grimshaw 1990) in eschewing thematic role labels. Instead, we use an 'x' to represent an argument slot, as Kibort does. Each of these argument slots is associated with (that is, licensed by) a subevent plus the rheme. The general schema is shown in (30). The argument slot associated with *init* will generally correspond to an agent, the argument slot associated with a *res* to a patient/undergoer. However, these are just rough correspondences. As we shall see, the General Schema in (30) allows us degrees of flexibility and thus a nuanced approach to argument structure.

(30) **General Linking Schema**

		init	proc	res	rh	
predicate	<	x	x	x	x	>
		FIGURE	GROUND			
grammatical relations		SUBJ	OBJ	OBJ_{theta}	OBL	

The argument slots are mapped to grammatical functions. In determining the mapping, we make use of Zaenen's (1993) proposal for integrating the notion of Proto-Roles

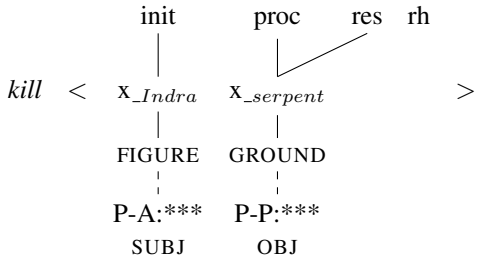
(cf. Dowty 1991; Van Valin & Polla 1997) into LFG's mapping rules so that the argument with the most Proto-Agent properties is linked to the SUBJ and the argument with the most Proto-Patient properties is linked to the OBJ.

We further incorporate figure/ground relations as originally proposed by Talmy (1975) to provide a mechanism by which an argument can be foregrounded (the FIGURE) relatively to a GROUND. The entailments generated by the figure/ground relations as well as the *init, proc, res* and *rh* are all factored into the linking to grammatical relations. For example, a FIGURE will contribute a Proto-Agent property, a GROUND a Proto-Patient property. The *init* contributes a Proto-Agent property, the *proc* and *res* subevents generally each contribute a Proto-Patient property, while the *rh* is inert in the sense that it does not contribute any information as to the Proto-Role properties.

We provide an example for an agentive clause as well as an experiencer predicate to show how the basics of the system work. For more examples and discussion see Schätzle (2018); Butt et al. (2023); Beck & Butt (2024). The examples below are taken from Beck & Butt (2024).[7]

Example: Active Agentive Clause In a typical agentive clause we have two core arguments, classically referred to as an agent and a patient or as an actor and an undergoer. In our schema, this corresponds to two argument slots. One of these is associated with the *init* subevent, the other with both the *proc* and *res* subevents. That is, for the example in (31), 'Indra' is the initiator of the event and the 'serpent' is the undergoer of a process and represents a final result (being dead). The clause is active, so the event initiator 'Indra' is foregrounded, the only other argument is taken to be the GROUND.

(31) Indra killed the serpent.



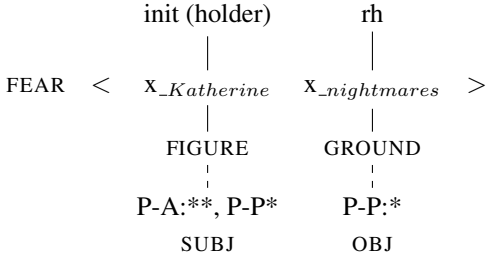
With this basic configuration in place, we can now add up the Proto-Agent (P-A) vs. Proto-Patient (P-P) properties to determine the linking to grammatical functions. 'Indra' receives two P-A properties because it is the initiator of an event and functions as the FIGURE. Our linking schema further takes the degree of the sentience of an argument into account, since this seems to be a very basic and important organizing principle of argument realization (e.g., see Vihman & Nelson 2019; Gregorio et al. 2025) with a strong tendency for arguments with greater relative sentience (as judged by humans) to be realized as subjects. Greater relative sentience can be operationalized via the animacy hierarchy, for example, by which personal pronouns rank over human referents, which rank over other animates, which in turn rank over inanimates (cf. Croft 2012).

[7]The FIGURE/GROUND dimension has no particular effect on the analyses in this paper. It does play a significant role for passives and for the historical change from spatial predications to experiencer subjects ('Fear is at Ravi.' ⟶'Ravi is afraid.'), see Schätzle (2018) and Beck & Butt (2024) for details.

The argument 'Indra' thus receives a total of three P-A properties. In contrast, the 'serpent' receives a total of three P-P properties from: 1) *proc*; 2) *res*; 3) being the GROUND. In this case, the linking to grammatical functions is clear: 'Indra' has the most P-A properties and no P-P properties so it is linked to SUBJ. In contrast, 'serpent' has the most P-P properties and no P-A properties, so it is linked to OBJ.

Example: An Experiencer Predicate Experiencer predicates present a less clear cut picture. The example here is taken from Ramchand (2008), who analyzes experiencer predicates as consisting of a 'holder of a state', namely, the experiencer and a *rh* that represents properties of that state. The experiencer ('holder of the state') is taken to be licensed by the *init* subevent. Given that this is a stative situation, there is no process that is initiated and therefore also no result. Rather, the experiencer is in a configuration with a *rh*, as shown below.

(32) Katherine fears nightmares.



In this example, 'Katherine' has two P-A properties (FIGURE and sentience) and one P-P property (holder of state). While the 'holder of a state' is licensed by the *init*, in this case it does not contribute a P-A property: since it is an experiencer of a state, this counts as a P-P property. The other argument, 'nightmares', has only one P-P property, due to it being a GROUND. The two arguments thus have an equal amount of P-P properties. However, given that 'Katherine' has more P-A properties, this argument is linked to the SUBJ and the 'nightmares' are linked to the OBJ.

4.2 Constructive Case

Linking theory within LFG does not make direct reference to case, even though many of the original mapping rules were motivated by evidence from case marking patterns across languages. We adopt Butt and King's (2003) approach by which case markers are provided with (sub)lexical entries that specify their syntactic and semantic contribution to a clause. The case marking must be compatible with the linking of arguments to grammatical functions, providing a system of mutual constraints typical of LFG.

In line with the Constructive Case approach argued for by Nordlinger (1998), Butt and King take a lexical semantic approach to case. In this approach, case markers provide information as to the grammatical functions of the clause (rather than be "assigned" to a given NP on the basis of its position, for example, as per the Minimalist intuition). As shown in the sample entry in (33) for the Urdu/Hindi ergative, this is achieved via the use of *inside-out functional uncertainty*: the entry states that the mother node that the case marker is contained in must be a SUBJ.

(33) ne (↑ CASE) = erg
(SUBJ ↑)
(init $\uparrow_{arg-str}$)

The other pieces of information in the lexical entry state that the case is ergative and that the semantic requirement that this be related to an *init* subevent must be satisfied (again via inside-out functional uncertainty). We here assume that information about the semantic subevental properties of a clause are represented at a(rgument)-structure, since this is crucial for licensing the argument slots.

The lexical entry for the accusative/dative can be handled similarly, as shown in (34). However, this entry needs to account for both the dative and the accusative functions of *ko*.[8] The accusative is restricted to direct objects: it states that it has case accusative and requires to be contained within a OBJ. The subevental semantic requirement is that it be connected to both a *proc* and a *res* subevent. Following Ramchand (1997), we assume that the arguments of a *res* subevent are *quantized* so that they either measure out a change of state (apples are eaten, buildings are built, serpents are killed) or a path along which the trajectory moves towards a result state (e.g., push a cart to the store). Although the details remain to be worked out, we assume that the specificity reading associated with *ko* on direct objects will follow from the general semantics that can be attributed to a quantized result. Thus, under the analysis in (34), the specificity requirement associated with the accusative is connected to the *res* subevent.

(34) ko

`Possibility 1`	(↑ CASE) = acc	
	(OBJ ↑)	
	(proc&res $\uparrow_{arg-str}$)	
`Possibility 2`	(↑ CASE) = dat	
	`Possibility 2a`	`Possibility 2b`
	(SUBJ ↑)	(OBJ_{goal} ↑)
	($init_{-hold}$ $\uparrow_{arg-str}$)	(res $\uparrow_{arg-str}$)

The dative can mark either subjects or indirect (restricted) objects (OBJ_{goal}), giving rise to two subpossibilities in (34). It can either be used to mark an OBJ_{goal}, in which case it must be connected to a *res* subevent at a-structure (with *res* representing the goal semantics in the sense that reaching a goal (end of a path) represents a resultant state, see Ramchand (1997) for an in-depth discussion). The dative can also be used on subjects. In this case it needs to be connected to an *init* subevent. This makes it look very much like the ergative, with the difference being that this *init* needs to be a holder of a state. This further specification could be achieved formally in any number of ways, for the moment, it is stated simply as an annotation on the *init*.

Lastly, an entry for the use of the *se* is provided in (35). The case marker *se* is highly polysemous, marking instruments and sources more generally. We here only provide the entry needed for the examples in the paper: the *se* marks objects with source semantics.

[8] We assume a single lexical entry for *ko* for two reasons. One is that we adhere to the XLE formalization of LFG, in which we have developed a computational grammar for Urdu (Butt & King 2002). This formalization allows for only one lexical entry per head word. The other reason is that there is no evidence for two separate entries. In line with many of the Indo-Aryan case markers, we treat *ko* as polysemous.

(35) se (↑ CASE) = inst
(OBJ$_{\text{-source}}$ ↑)
(rh$_{\text{-source}}$ $\uparrow_{arg-str}$)

With the basics of linking and the entries for the case markers in place, we can now proceed on to an alternative analysis of the case marking patterns found in Urdu/Hindi.

4.3 Alternative Analysis

For the sake of completeness, we begin with the ergative-accusative patterns from the beginning of the paper. We then move on to the dative subjects.

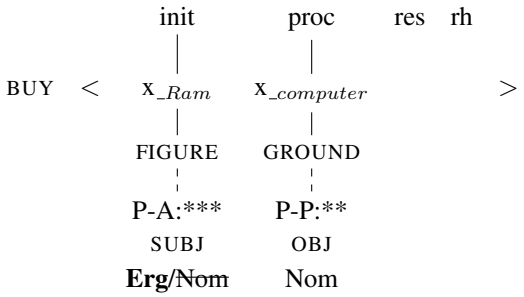
4.3.1 Agentive Clauses

In our analysis, the determination of ergative vs. nominative and accusative vs. nominative operates independently from one another as they are governed by a set of independent constraints. As shown in (36), the linking basically follows that already seen for 'Indra killed the serpent.' We begin with the situation in which the clause has perfective morphology and the computer is non-specific, corresponding to (36-a).

(36) a. ram**=ne** kamputar xarid-a
Ram.M.Sg=Erg computer.M.Sg.Nom buy-Perf.M.Sg
'Ram bought a/some computer.'
b. ram**=ne** kamputar**=ko** xarid-a
Ram.M.Sg=Erg computer.M.Sg=Acc buy-Perf.M.Sg
'Ram bought a (certain)/the computer.'

The major difference to the 'Indra killed the serpent.' example seen before is that the second argument is not also linked to the *res* subevent. The conditions for the accusative case are thus not fulfilled and the object marking will be nominative. The nominative functions as the default case which is assigned in the absence of any more specific constraints as part of the phrase structure rules for the NP, which check that every NP has case. In the situation above the subject could be either ergative or nominative, but the ergative must be chosen because perfective verbal morphology requires an ergative.

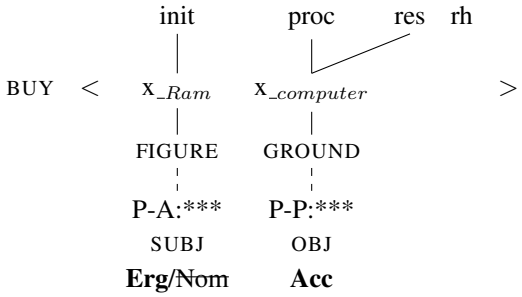
(37) Ram bought a/some computer.



If the second argument is also connected to the *res* subevent, as in (38), then we get the case pattern in (36-b) because the constraints in the entry for the accusative case

are satisfied. The connection to the *res* subevent allows for a specificity reading, thus accounting for the semantics of (36-b).

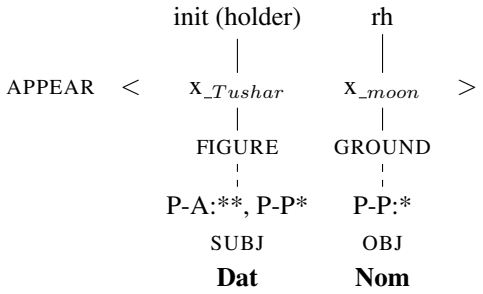
(38) Ram bought a specific computer.



4.3.2 Simplex Experiencer Predicates

The simple dative experiencer subject examples as in (39) follow straightforwardly from Ramchand's analysis of experiencer predicates. The verb is a stative experiencer predicate, as such it has two arguments: one connected to the *init* that licenses a holder of a state and the other connected to a *rh*. Since this is a stative predication, a consideration of the ergative does not enter the picture.

(39) ʈuʃar=ko tʃand dɪkʰ-a
Tushar=Dat moon.M.Nom appear-Perf.M.Sg
'Tushar saw the moon.' (Mohanan 1994a: 141)



The lexical entry for the dative is compatible with this configuration, so the dative is chosen. The nominative is considered the elsewhere case when no other specifications apply (Butt & King 2003, 2004). This is true for the situation in (39).

4.3.3 Complex Predicate Experiencer Subjects

Most of the dative experiencer subjects in Urdu/Hindi are actually complex predicates, as in (40), which features an N+V combination ('liking'+'be'). In analyzing these, we follow the theory of complex predication articulated in Butt (2014) (and references therein). For us, the main relevant features of the analysis are: 1) complex predicates contain a *light verb* which has an open argument slot that must be filled by another predicational element; 2) when two (or more) a-structures are combined, the lowest

matrix argument is coindexed with the highest embedded argument for purposes of linking. The schema in (41) shows how this plays out for the example in (40).

(40) ram=**ko** hɑlva pɑsɑnd hɛ
Ram.M.Sg=Dat halva.M.Sg.Nom liking.M be.Pres.3.Sg
'Ram likes halva.'

(41) Ram likes halva.

BE	<	init$_i$ (holder)		%rh	>				
				|					
				LIKING	<	init$_i$ (holder)		rh	>
		SUBJ						OBJ	
		Dat						**Nom**	

The main predicational element is the predicate 'liking'. This contains *init* and a *rh*, as per Ramchands' basic analysis. This is combined with the light verb version of 'be' that is based on a copula predication. It is also taken to contain an *init* and a *rh*. The idea behind this analysis is that a property (a *rh*) is being predicated of a holder of state (an *init*). In this case the property predicated of the *init* of 'be' is a variable (indicated by %) and this is filled in with 'liking'. As per Butt's theory of complex predication, the lowest matrix argument is coindexed with the highest embedded argument, yielding just two arguments for the purposes of linking. The resulting configuration is exactly that of a simplex experiencer predicate, with thefore exactly the same linking and case marking results: a dative subject and a nominative object.

4.3.4 Experiencer subjects with source stimulus

Having established how basic experiencer predicates work in simplex and complex constructions, we can now turn to the examples in (42), which feature a dative subject and an instrumental case on the object.

(42) a. ram=**ko** ʊs laṛki=**se** nɑfrɑt/pyar hɛ
Ram.M.Sg=Dat that.Obl girl.F.Sg=Inst hate.F/love.M be.Pres.3.Sg
'Ram hates/loves that girl.' (lit. Hate/love of that girl is to Ram.')
b. ram=**ko** sigɑrət=**se** nɑfrɑt/pyar hɛ
Ram.M.Sg=Dat cigarette.F=Inst hate.F/love.M be.Pres.3.Sg
'Ram hates cigarettes.'

The major difference here is taken to stem from the underlying lexical semantics of the main predicates. The second argument is taken to be the *source* of the hating/loving. Otherwise everything proceeds as was already seen above. The complex predicate is formed, yielding an overall *init rh* configuration.

(43) Ram hates that girl.

BE	<	init$_i$ (holder)		%rh	>				
		|		|					
		|		HATE	<	init$_i$ (holder)		rh (source)	>
		SUBJ						OBJ$_{source}$	
		Dat						**Inst**	

The *init* holder of a state is realized as a dative subject, as before. Rather than de-

faulting to a nominative object, however, the further lexical semantic specification on the *rh* puts the lexical entry of *se* into play. Note that the rh for *pasand* 'liking' seen in the previous section is not specified any further and *pasand* is also not compatible with *se* marked arguments.

4.3.5 Agentive Psych Predicates

This final section turns to the pattern exemplified by (44). This pattern features predicates that can also be seen as psych predicates, but agentive ones. They can be modified with adverbials such as 'on purpose' and appear with an ergative when the verbal morphology is perfective, see (45).

(44) ram ʊs laṛki=**se/ko** nɑfrɑt kɑr-ta
Ram.M.Sg that.Obl girl.F.Sg=Inst/Acc hate.F do-Impf.M.Sg
'Ram hates that girl.'

(45) ram=**ne** ʊs laṛki=**se/ko** nɑfrɑt ki-ya
Ram.M.Sg=Erg that.Obl girl.F.Sg=Inst/Acc hate.F do-Perf.M.Sg
'Ram hated that girl.'

The agentive reading is due to the agentive light verb 'do', which takes two arguments, an *init* and a *proc* (one does something, some process/activity). As seen below, the argument structure of the noun 'hate' is substituted in for the *%proc* variable of 'do'. Predicates like 'hate' and 'love' have two different lexical semantics. There is one version which is essentially an experiencer predicate, where the argument licensed by *init* is a holder of state (loving/hating something). This is the version shown below. The argument licensed by the *init* subevent of 'do' can be realized either as nominative or as an ergative, depending on the verbal morphology. The stative version of 'hate' looks exactly as in the previous section, with the *se* being compatible with the source lexical semantics required by the verb.

(46) Ram hates/hated that girl.

DO	<	init$_i$	%proc	>			
			|				
			HATE	<	init$_i$ (holder)	rh (source)	>
		SUBJ				OBJ$_{\text{source}}$	
		Erg/Nom				**Inst**	

The other version of 'hate' is a dynamic version with an undergoer of the hating. Like all dynamic verbs, this version of 'hate' consists of an *init* subevent, along with a *proc* that can lead to a *res* (something undergoes a process of being hated and is hated as a result). For the examples in (45) and (46), we assume the *proc*&*res* combination, allowing for the licensing of accusative *ko*.

(47) Ram hates/hated that girl.

DO	<	init$_i$	%proc	>		
			|			
			HATE	<	init$_i$	proc&res >
		SUBJ				OBJ
		Erg/Nom				**Acc**

4.3.6 Absence of accusative with dative subjects

We have now seen how all of the case patterns attributed to a syntactic Dependency Configuration by Baker can instead be accounted for via a direct recourse to lexical semantic and subevental representations. There is one more fact that needs to be accounted for under this alternative analysis, namely why no accusative objects are allowed in typical dative subject constructions like (48).

(48) *ram=**ko** hɑlva=**ko** pɑsɑnd hɛ
Ram.M.Sg=Dat halva.M.Sg=Acc liking.M be.Pres.3.Sg
'Ram likes halva.'

The explanation for this also most naturally comes from semantic considerations rather than structural configurations. A typical experiencer predicate as in (48) is stative and does not contain a *proc* subevent and therefore also no *res* subevent. As such, the accusative is never licensed for these types of predicates.

5 Conclusion

This paper has looked at case marking patterns in Urdu/Hindi that were taken up by Baker and given an analysis within Dependent Case Theory. Dependent Case Theory crucially makes use of structural configurations between two NPs. This approach foregrounds syntactic factors as the locus of explanation for case marking patterns, integrating semantic considerations only indirectly via movement and the positions NPs are spelled out in (e.g., within VP or vP).

The Dependent Case approach begins with attractively simple assumptions and mechanisms. However, the deeper it ventured into the Urdu/Hindi case patterns, the more complex the overall mechanisms became. This paper instead proposes to take a primarily semantically motivated approach to case, as already proposed in previous work for Urdu (Butt & King 1991, 2003, 2004) and adds to the existing research by extending the account to case marking patterns found witih dative subjects.

The analysis crucially involves event-based linking, a constructive case approach and a consideration of the lexical semantics of the predicates. The dative is taken to be associated with an abstract goal semantics that includes experiencers, the accusative is associated with result subevents. These semantic factors interact with syntactic constraints and this can be modeled naturally within LFG's projection architecture.

Contra Legate (2024: 72), who concludes that "Case is out of Universal Grammar", we propose that Universal Grammar should in fact be covering the intricate interaction between lexical semantics, case and grammatical functions, rather than concentrating on only syntactic tree configurations. That is, if one sees case as providing a systematic interface between argument realization and event semantics, then it is certainly part of Univeral Grammar and the LFG analysis proposed here provides an avenue towards crosslinguistically viable analyses.

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