

# Grammaticalizing case: some inherent problems

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**Grammaticalization:** common source of language change.

→ Often thought of as changes where **lexical** items (i.e. verbs, nouns) become **functional** items (i.e. tense markers, determiners)...

– e.g. Old English *willan* ‘wish, want’ (verb) → Modern English *will* (modal auxiliary)

...but also includes changes involving **only functional items**...

– e.g. perfect → evidential (e.g. in Turkish, Bulgarian, Pal. Arabic, among many others.)

...and changes where we don’t see shift in use, but **broadening**:

– e.g. English *go*: motion verb → motion verb + future.

A large literature on grammaticalization with well established generalizations (Heine, 1993; Hopper & Traugott, 1993; Bybee et al., 1994, a.o.)

...but relatively little work from formal generative perspectives (cf. von Stechow, 1995; Roberts & Roussou, 2003).

**From grammaticalization to formal analysis:**

- Grammaticalization highlights relationships between categories—giving a window into abstract representations.

→this can—and **should**—inform our analysis of those categories.

- Formal analysis of grammaticalization as changes in the **semantic types** with which an element can compose (von Stechow, 1995, et seq.).

**Focus today:** grammaticalization of **oblique case marking patterns**.

- Oblique case often explained in terms of the **semantic interpretation of arguments**.

→ i.e. as **inherent** case. (e.g. dative experiencers, ergative agents)

- The point of interest: predicates of individuals that are marked via inherent case can grammaticalize to predicates of other semantic types:
- When this happens oblique case is **dissociated** from argument interpretation → a problem for standard views of how inherent case is assigned.

## Plan for today:

1. Setting the stage: using grammaticalization to inform syntactic analysis.

**Case study 1a:** Possession → Necessity with HAVE

2. A complication: grammaticalizing oblique case marking in BE-possession languages.

**Case study 1b:** Possession → Necessity with BE+OBL

3. A broader perspective on grammaticalized case patterns.

**Case study 2:** Correlations between Oblique Case and Aspect

→ oblique subjects in perfect/perfective

→ oblique objects in imperfective

4. Reassessing “inherent” case and the mechanisms of case assignment.

**Proposal:** the grammaticalization of case patterns can be accounted for via a concrete mechanism for inherent case assignment.

- Inherent case = **feature transfer**: a feature on  $X^0$  can be moved to a phrase in Spec-XP:

$$[_{XP} YP [ X^0_{[F]} ] ] \rightarrow [_{XP} YP_{[F]} [ X^0 ] ]$$

(cf. *Morphological Merger in DM*)

Applies in both first-merge positions (traditional inherent case) but also in derived positions (grammaticalized inherent case).

5. Conclusions

## 1 Setting the stage

**Goal for this section:** illustrate how grammaticalization can inform formal analysis, without the complication of case patterns.

**Case Study 1a:** Possession → Necessity with HAVE

(summary of Bjorkman & Cowper, 2014, 2015)

**Observation:** In a variety of languages, the morphosyntax used to express **possession** has been extended to express modal **necessity**, illustrated for HAVE-possession languages in (1).

(Also true for OBL+BE-possession languages, to which we return in section 2)

- (1) a. The children have to do their homework now. [English]  
 b. Juan tiene que comer esta manzana.  
 Juan has that eat-INF this-F apple  
 ‘Juan has to eat this apple.’ [Spanish]  
 c. Der Hans hat rechtzeitig in Wien anzukommen  
 the Hans has in-time in Vienna to-arrive  
 ‘Hans has to arrive in Vienna in time.’ [German: Bhatt, 1997, (6)]

- The remainder of this section develops an analysis of possessive modality, highlighting its implications for the **semantics of possession** and the **syntax of modality**.

## 1.1 What gives rise to grammaticalization?

Whenever a single morphological expression *M* appears in two contexts *A* and *B*, there are at least three different types of analysis we should consider:

**All** of these are reasonable analyses to consider for any case of grammaticalization.

But in the case of possessive modality, **Option 3** is the most successful.

1. *M* originally means only *A*, but is used to to **convey** *B* (e.g. through implicature, metaphor)
    - A general source for semantic reanalysis → predicts two different “lexical items”, here *have<sub>poss</sub>* and *have<sub>nec</sub>*.
    - But note: possessive modality is available in English with other expressions of predicative possession, e.g. *have got*, *got*.<sup>1</sup>
  2. *M* extends automatically due to semantic **identity** of *A* and *B*.
    - e.g. if necessity can be composed from the literal semantics of possession → no actual grammaticalization needed.
    - Here modal *have* would express literal possession of an obligation (or some other possession relation).
    - But note: it’s easy to find cases where the surface subject of modal *have* is **not** the possessor of an obligation: (2) and (3).
- (2) The letter has to arrive by the deadline. (Inanimate subject → can’t bear obligation)
- (3) a. There have to be six people on the team.  
 b. It has to be snowing for them to cancel a game. (Expletive → can’t bear obligation)

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<sup>1</sup>For descriptive summaries of the English modal system, including the use of *have*, *have got*, and *got*, see e.g. Jespersen (1961), Visser (1969), and Quirk et al. (1972), among many others. For the relation of *have* to *have got* and *got* in contemporary Canadian English, see e.g. Tagliamonte & D’Arcy (2007); there is considerable literature on the diachrony of possessive modality in English and variation in its expression, but space unfortunately prevents further discussion here.

3. An **abstract similarity** between  $A$  and  $B$  leads to the context for  $M$  being generalized.
  - E.g. possession and necessity involve the same relation, albeit between different argument types; this similarity allows possessive *have/tener/haben* to generalize to a less specific context of occurrence.
  - Option 3 is interesting because it means that the best analysis of possession—a notoriously difficult semantic domain—will be one that offers something in common with modality—a semantic domain where we have a better idea what’s going on.

## 1.2 What relation could unify possession and necessity?

**Idea:** possession expresses a relation between **individuals** that, when you apply it to arguments of a different semantic type, results in **necessity**.

**Challenge:** difficult to pin down a core semantics for possession.

**However:** we have a better understanding of the semantics of modality, allowing a different approach to this problem.

This instance of grammaticalization allows us to use the meaning of necessity to inform our analysis of possession (at least in possessive modality languages).

**A (very abbreviated) formal semantics for modals:**

- Kratzer (1981, 1991) et seq.: modals are generalized quantifiers that relate **sets of worlds**.<sup>2</sup>
  - Proposition ( $P$ ): set of worlds in which a proposition is true.
  - Modal Base ( $B(w)$ ): set of worlds accessible (epistemically, deontically) from the actual world ( $w$ ).
  - Ordering Source ( $O(w)(B(w))$ ): a function that ranks the accessible worlds according to some set of criteria (the law, probability, etc.), returning the set of ‘best’ worlds, notated here as  $BB(w)$ .
- Framing necessity and possibility as universal / existential quantification:
  - Possibility: **Some** of the worlds in  $BB(w)$  are also in  $P$ .
    - The set of ‘best’ worlds in the Modal Base overlaps with the proposition worlds.
  - Necessity: **All** of the worlds in  $BB(w)$  are also in  $P$ .
    - The set of ‘best’ worlds in the Modal Base is a **subset** of the proposition worlds.

**Resulting view of necessity:**

$BB(w)$  is a subset of  $P(w) = P(w)$  **includes**  $BB(w)$

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<sup>2</sup>Kratzer’s proposals are built on the prior treatments of counterfactualty in terms of possible worlds in the philosophical semantic literature, by Lewis (1973) and Stalnaker (1968).

## Back to possession:

- **Inclusion**, or **part-whole**, is also one of the core meanings expressed by possession.
- (4)
- a. The chair has four legs.
  - b. The cat has blue eyes.
  - c. This talk has two case studies.
- What about “canonical” possession, i.e. ownership? Requires an animate subject → inclusion not in a physical sense but within a sphere of control (cf. Boneh & Sichel, 2010).
- (5)
- a. The cat has a mouse-shaped toy.
  - b. My sister has a guitar.
  - c. My friend has the key.<sup>3</sup>
- Indeed, it is more generally true of possessive *have* that its interpretation is strongly influenced by properties of the arguments it relates.

**Proposal:** extension from possession to necessity is possible because both involve a relation of **inclusion** between two arguments of the same type.

But grammaticalization is necessary because they involve arguments of **different types**.

Possession: inclusion between individuals ( $\langle e \rangle$ )  
Necessity: inclusion between sets of worlds ( $\langle s, t \rangle$ )

### 1.3 What is the unit of grammaticalization?

- It's the common relation of **inclusion** that makes possessive modality possible → but that semantic similarity exists equally between *have* and *must*.
- But grammaticalization (on this view) requires a **syntactic/morphological** change in addition: giving possession and necessity the same **representation** and the same **realization**.

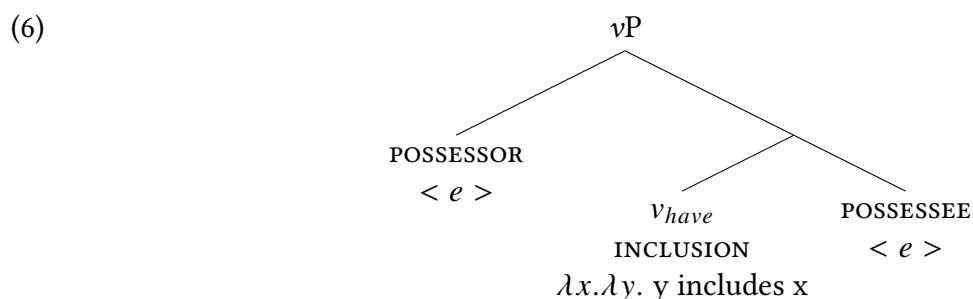
**What is the unit that extends from possession to necessity?**

**Something smaller than a syntactic head: a feature**

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<sup>3</sup>Predicative possession is subject to the well-known *definiteness effect* of existential constructions (Milsark, 1974, 1977). In possession, in contrast to existentials, definite objects are acceptable, but lead to the interpretation that the object is *temporarily* in the control of the subject.

- General agreement that *have*-possession involves a structure like (6), where the possessor c-commands the possessee.<sup>4</sup>



- But get the right syntactic relations for modals, their first argument (BB(w)) must compose *head-internally*.<sup>5</sup>
- That means that inclusion is a relation expressed by something **smaller than a head** → a semantically interpretable feature.<sup>6</sup>



- To express the representational similarity underlying possessive modality, we need this kind of decomposed syntactic representation for modal heads.
- Semantic commonality: in both possessive and modal structures, INCLUSION takes two arguments of the same type.
- Syntactic differences: while possessive HAVE has a thematic subject in Spec-*vP*, modal HAVE (like other modals) is a **raising verb**: the highest DP in the constituent corresponding to *P(w)* (i.e. a non-finite complement) will move to the clausal subject position.

<sup>4</sup>Though syntactic analyses are unified by associating possession with a functional head rather than with a lexical  $V^0 / \surd$ , this head has been variously identified as prepositional (Freeze, 1992; Kayne, 1993; Levinson, 2011) or as a flavour of  $v^0$  (Harley, 1995; Ritter & Rosen, 1997); this difference is orthogonal to the point being made here, and so I set it aside.)

<sup>5</sup>For a discussion of the syntactic configuration in which modals generally—and modal *have* in particular—must compose, see appendix A.

<sup>6</sup>Bjorkman & Cowper (2014, 2015) make the point that the same is true for BB(w): as a semantically interpreted element internal to a head, BB(w) must be syntactically represented as a feature. I set this point aside for the purposes of the discussion here.

## 1.4 Interim Summary

Extending possession to modality involves changes in the syntactic and semantic properties of an INCLUSION feature.

- Initially, INCLUSION:
  - occurs independently on  $v^0$
  - takes two arguments of type  $\langle e \rangle$  (= two individual-denoting DPs).
- Once extended, INCLUSION occurs in an additional context:
  - still occurs on  $v^0$  but co-occurs with a head-internal element providing an (ordered) set of worlds,  $BB(w)$ .  $BB(w)$  saturates the first argument; syntactic complement thus provides the second (outer) argument.
  - semantically, takes two arguments of type  $\langle s, t \rangle$ ; i.e., sets of worlds.

**Relevantly for our purposes today:**

- The grammaticalization of possession  $\rightarrow$  necessity gives us a new source of evidence for the semantic analysis of possession.
- It also informs our choice of what the smallest syntactic units of semantic composition are for modality (i.e. decomposing modal meaning into features)

**Next:** A complication that arises when we consider the same pattern of grammaticalization, but involving the morphological realization not of a head, but of the **dependents** of that head.

## 2 Complication: Grammaticalizing Case Patterns

**The problem:** possessive modality also arises in BE-possession languages.

These are languages that lack a verb HAVE—possession is instead expressed using the verb BE, together with oblique or prepositional marking on the possessor subject.

- (8) a. John-ko sirdard hai  
John-DAT headache be.PRES  
'John has a headache.'
- b. John-ko seb khaa-naa hai  
John-DAT apple eat-GER be.PRES  
'John has to eat the apple.'
- [Hindi-Urdu: Bhatt 1997, (8)]

- The core of the account developed above for HAVE-possession can be extended here  $\rightarrow$  broadening of the types of arguments related by a feature INCLUSION.
- But unlike for HAVE possession, what extends is not the realization of a **head** but the realization of **dependents** of that head.

## Why is this a problem?

- For HAVE-possession languages, the feature INCLUSION **directly** mediates shared morphology and semantics:
  - INCLUSION is itself semantically interpreted at LF and **also** the context for *have* at PF.
- In BE-possession languages, the correspondence becomes **indirect**:
  - INCLUSION is still semantically interpreted at LF.
  - INCLUSION merely **conditions** the realization of a DP as oblique at PF.

Tying into a theoretical distinction between **inherent** and **structural** case marking:<sup>7</sup>

**Structural Case:** Case that appears on an argument in virtue of its structural position in a clause, e.g. nominative subjects, accusative objects.

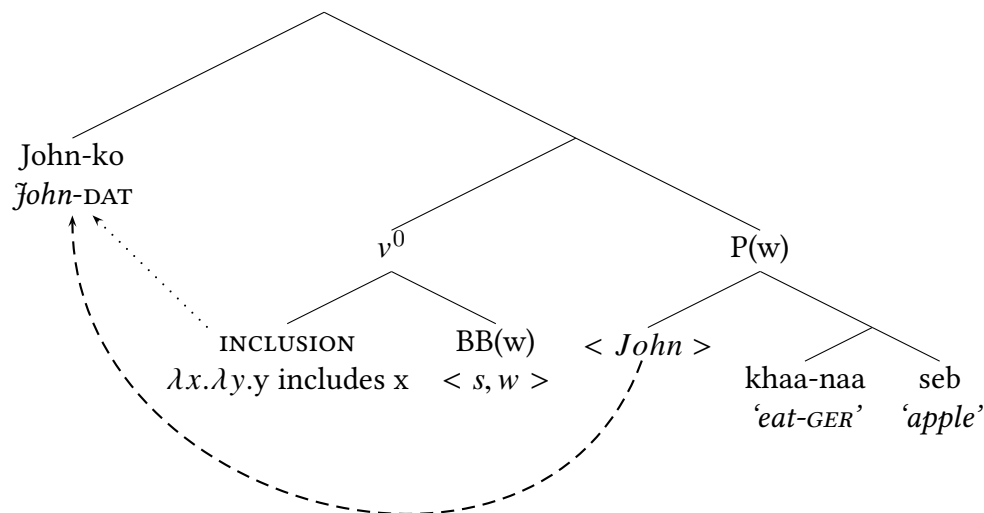
**Inherent Case:** Case that appears on an argument in virtue of its semantic relation to the predicate, e.g. dative experiencers, ergative agents.

→ In Minimalism, inherent case tied to **first merge** (=thematic) position of a DP.

## Back to oblique marking in possessive modality:

- In possessive contexts like (8a), the oblique DP is thematically related to  $v_{have}$ —its oblique marking can be semantically related to its argument status (i.e. as **inherent** case).
- In modal contexts like (8b), however, the subject DP is **not** thematically related to the modal head—it could therefore only get dative case from the modal head as a result of movement, shown in (9).<sup>8</sup>

(9)



<sup>7</sup>This distinction goes back at least to Chomsky (1981, 1986); in more recent work, see especially Woolford (1997, 2006). Woolford further distinguishes inherent case—assigned to arguments in specifier position—from lexical case—truly quirky case assigned by verbs to their complements. Lexical case does not come up in the phenomena we are considering, and so I set it aside here.

<sup>8</sup>For positive evidence that Hindi-Urdu is like English in this respect, see appendix B.



- Subjects in possessive modality appear with oblique case **as though** they were semantic arguments of the case assigning head. **How?**

If oblique subjects are **inherent**, how can they grammaticalize?  
Do we need to rethink the mechanisms responsible for inherent case?

### 3 A broader perspective: Aspect-linked case patterns

**Goal for this section:** establishing that the same questions arise outside possessive modality

→ and indeed that there's a wider range of facts to explain, involving not only oblique subjects but also oblique objects.

**Case Study 2:** Correlations between Oblique Case and Aspect

- oblique **subjects** in **perfect/perfective**
- oblique **objects** in **imperfective**

**Plan for the section:**

1. Establishing the generalization.
2. The semantic basis: viewpoint aspect ~ locative and possessive relations.
3. Returning to the syntactic puzzle: extending “inherent” case.

#### 3.1 Establishing the generalization

**Viewpoint aspect** establishes relations between **times**.

- **Mediates** the relation between an event and tense.
- Aspect can be marked in many ways, including verbal inflection, auxiliaries, particles, and **also** by oblique marking of the subject or object.

Not only that, but there are reliable correlations between viewpoint aspect and which argument surfaces as oblique:

**Perfective/Perfect:** oblique **subjects**.

E.g.:

- Estonian possessive perfect (Lindström & Tragel, 2010)
- North Russian possessive perfect (Timberlake, 1974; Lavine, 2000; Jung, 2011)
- Kartvelian perfects / perfectives (e.g. Georgian, Mingrelian: Harris, 1985; Tuite, 1998)
- Perfective-linked ergative, e.g. in Hindi-Urdu (as argued in Bjorkman, 2015)

## **Imperfective: oblique objects.**

E.g.:

- Finnish / Estonian (Kiparsky, 1998, Craioveanu, 2014, and references cited therein)
- Kartvelian imperfectives (Harris, 1985; Tuite, 1998)
- Kalkatungu imperfective (Blake, 1977)
- Berber (Galand 1985, cited in Lazard, 1989)
- Antipassive in Inuktitut (Spreng, 2010, 2012), Yucatec Mayan (Krämer & Wunderlich, 1999; Victoria Bricker, 1978)

**In the remainder of this section:** specific instances of aspect-linked oblique marking:

- North Russian possessive perfect
- Hindi-Urdu perfects and perfectives
- Kalkatungu imperfective
- Mingrelian imperfectives, perfectives, and perfects

### **3.1.1 Possessive Perfect in North Russian**

- Varieties of North Russian have been described as exhibiting a perfect construction in which the subject occurs within a prepositional phrase.

(Timberlake, 1974; Lavine, 2000; Jung, 2011; Seržant, 2012)

- This is the same prepositional phrase used for possessors (Russian being a BE-possession language), and so the construction has been referred to as the *possessive perfect*.

- (10) a. Eto u avtomobilja ideno  
that at automobile.GEN gone.PTCP.N.SG  
“That was a car that went by.”  
b. U traktora tut proexano.  
at tractor.GEN here passed.by.PTCP.N.SG  
“A tractor has passed by here.”

[North Russian: Lavine 2000]

- Lavine (2000) and Jung (2011) both discuss evidence that the prepositional phrase is syntactically a subject in these contexts (in contrast, e.g., to English *by*-phrases).
  - The oblique subject can bind a reflexive.
  - The oblique subject can control PRO.
  - The oblique subject allows parallelism with nominative subjects in coordination.

- (11) a. U Šrki privedeno svoja staraja nevesta.  
 at Šrka.GEN bring.PTCP.N.SG [own old fiancée].NOM.SG.F  
 “Šrka has brought his own old fiancée.” [Kuz'mina & Nemčenko, 1971, 35]
- b. U babki naverno [ PRO kosit' ujdeno ].  
 at grandma.GEN probably [ mow.INF left.PTCP.N.SG  
 “Grandma has probably left to mow.” [Lavine, 2000, citing Matveenko 1961, 123]
- c. U menja eto ne zakončeno, no pojdu poguljat'  
 at me.GEN this not finished.PTCP.N.SG but go.FUT.1SG take a walk.INF  
 “I have not finished this but will go to take a walk.” [Jung 2011:115]

- The fact that the subject is in the same form used for possessors suggests an obvious parallel to languages where *have* is used as a perfect auxiliary, a point emphasized by Jung (2011).

### 3.1.2 Perfective-linked Ergative in Hindi-Urdu

- Hindi-Urdu, like many languages with ergative-absolutive case alignment, exhibits a split between the imperfective and the perfective.
- The result of this is that ergative case—argued by Mahajan (1997) and others to be adpositional—occurs only in the perfective, not in the imperfective.

- (12) a. Raam-ne Ravii-ko piṭṭaa.  
 Ram-ERG Ravii-OBJ beat-PFV  
 “Ram beat Ravi.”
- b. Raam-ne Ravii-ko piṭṭaa hai.  
 Ram-ERG Ravii-OBJ beat-PFV BE.PRES  
 “Ram has beaten Ravi.”
- c. Raam Ravii-ko piṭṭaa hai.  
 Ram Ravii-OBJ beat-IMPF BE.PRES  
 “Ram beats Ravi.” [Hindi-Urdu: (Mohanani, 1994, 70)]

- Ergative alignment in the Hindi-Urdu perfective is in fact a “split intransitive” or “split S” system: the ergative marker *-ne* also occurs on agentive subjects of intransitive verbs.

- (13) a. Raam-ne nahaayaa  
 Ram-ERG bathe.PFV  
 “Ram bathed.”
- b. \*Raam nahaayaa [Hindi-Urdu: (Mohanani, 1994, 71)]

- (14) a. Raam giraa  
 Ram fall.PFV  
 “Ram fell.”
- b. \*Raam-ne giraa [Hindi-Urdu: (Mohanani, 1994, 71)]

- Bjorkman (2015): ergative in Hindi-Urdu (and perhaps in other languages) is best understood as being directly licensed by an aspectual head Asp<sup>0</sup>.

### Aside: a preliminary note on viewpoint aspect vs. Aktionsart

- Before moving on to oblique objects in the imperfective, note that it is important to distinguish **imperfective (viewpoint) aspect** from **non-telic Aktionsart** (aka *situation* aspect).
- Both are associated with oblique objects—for non-telicity, e.g. in so-called “conative alternations” in languages like English and German:

- (15) a. I shot the bear. (accusative = telic)  
b. I shot at the bear. (prepositional = atelic)

- (16) a. Sie hat tagelang Fausthandschuhe gestrickt.  
She has for.days mittens-ACC knit.  
“She knit mittens for days.”  
b. Sie hat tagelang an Fausthandschuhen gestrickt.  
She has for.days at mittens-DAT knit.  
“She was knitting mittens for days.”

[German: Kratzer, 2004]

- This is relevant because we have some idea of how non-telic interpretations should arise compositionally from partitive or oblique objects...
  - cf. a literature going back at least to Verkuyl’s (1972) observation that Aktionsart is a property of the VP as a whole, and more recently concrete semantic proposals including Kratzer (2004).
- ...but no reasonable understanding of how partitive or oblique objects could influence the semantics of viewpoint aspect, which is not only structurally higher than Aktionsart but also involves a relationship between **times** rather than between a DP argument and the predicate.
- Some languages commonly described as associating oblique objects with “imperfective aspect” appear to actually associate oblique objects with atelic Aktionsart (e.g. Samoan, as described in Milner 1973).

### 3.1.3 Imperfective oblique objects in Kalkatungu

- Blake (1977) describes patterns of oblique objects associated with imperfectivity in several Australian languages, most notably in Kalkatungu (Pama-Nyungan), formerly spoken in Australia.
- Kalkatungu exhibits ergative alignment in the perfective (past), but the object is dative (and the subject bare/absolute) in the imperfective (present):

- (17) a. Pa-i iti-i ucan ipcii-na.  
that-ERG man wood chop-PAST  
‘That man chopped wood.’  
b. Kupaŋuru-fu caá kalpin lai-na.  
old.man-ERG here young.man hit-PAST  
‘The old man hit the young man.’

- c. tuku-ju juru icai-na  
 dog-ERG man bite-PAST  
 ‘The dog bit the man’

[Kalkatungu: Blake 1977]

- (18) a. Paa juru iɲcii-ma<sup>nti</sup> ucan-ku.  
 there man chop-IMP wood-DAT  
 ‘That man is chopping wood.’

- b. Kupaɲuru caa kalpin-ku lai-mina.  
 old.man here young.man-DAT hit-IMP  
 ‘The old man is hitting the young man.’

- c. tuku ɲuli icai ruupu-u ai iɲka  
 dog CONTIN bite rope-DAT COMP.he go  
 ‘The dog keeps chewing at the rope to get away.’

[Kalkatungu: Blake 1977]

- Hopper & Thompson (1980) and Malchukov & de Hoop (2011) discuss this as an example of *reduced transitivity* in imperfective contexts—but while there are some progressive events that are intuitively “less transitive” than their perfective counterparts (e.g. *writing a letter*), this is less clear for iterative predicates like those in (17) and (18).

### 3.1.4 Imperfective, perfect, and perfective in Mingrelian

- Mingrelian is a Kartvelian language (language family also including Georgian).
- Like other members of the family, Mingrelian exhibits a split in case marking between Series I (perfective), Series II (imperfective) and Series III (perfect).
- Unlike its better-studied family member Georgian, however, Mingrelian no longer exhibits ergative alignment in the perfective: what was historically the ergative marker now occurs on all perfective subjects, regardless of transitivity (Harris, 1985; Tuite, 1998).
- The case-marking division between aspects is nonetheless preserved:

- (19) NOM-DAT alignment in the imperfective (Series II)

- a. koč-i yuru  
 man-NOM die.II.3SGS  
 ‘The man dies.’

- b. koč-i ʔviluns ye-s  
 man-NOM kill.II.3SGS.3SGO pig-DAT  
 ‘The man kills a pig.’

- c. muma arzens cxen-s skua-s  
 father.NOM give.II.3SGS.3SGO.3SGIO horse-DAT child-DAT  
 ‘The father gives a horse to his child.’

[Mingrelian: Harris 1985:55-6]

- (20) Uniformly “ERG” subjects in the perfective (Series I)
- a. k’oč-k doγuru  
man-“ERG” die.I.3SGS  
‘The man died.’
- b. ჯყაბი-კ (კო)საპ’უ  
girl-“ERG” dance.I.3SGS  
‘The girl danced.’
- c. მუმა-კ ცხენ-ი (კი)მეწუ skua-s  
father-“ERG” horse-NOM give.I.3SGS.3SG(O).3SG(IO) child-DAT  
‘The father gave a horse to the child.’ [Mingrelian: Harris 1985:56-7]
- (21) DAT-NOM alignment in the perfect/evidential (Series III)<sup>9</sup>
- a. ბაჲან-ეპ ჴუდეს კუდოსკილადენა  
child-PL-NOM house.DAT stay.III.3PLS  
‘The children have stayed at home.’ (unaccusative → NOMsubject)
- b. ჸოწ-ემ-ს დუჴვილუ ჲეჲ-ი  
man-PL-DAT kill.III.3PLS.3SGO pig-NOM  
‘The man has killed a pig.’
- c. რეზო-ს ვარდ-ეპ-ი (კ)უწკუკებუ დიდა-შა  
Rezo-DAT flower-PL-NOM give.III.3SGS.3SGO mother-ALLATIVE  
‘Rezo (apparently) gave flowers to (his) mother.’

|              | Transitive          | Unergative | Unaccusative      |               |
|--------------|---------------------|------------|-------------------|---------------|
| IMPERFECTIVE | NOM-DAT-(DAT)       | NOM        | NOM               | (=Series II)  |
| PERFECTIVE   | “ERG”-NOM-(DAT)     | “ERG”      | “ERG”             | (=Series I)   |
| PERFECT      | DAT-NOM-(-ALLATIVE) | DAT        | NOM <sup>10</sup> | (=Series III) |

Table 1: Argument Marking in Mingrelian (Harris, 1985)

- The Kartvelian languages—including Mingrelian—are striking for exhibiting oblique case on a core argument in **both** the perfective/perfect and the imperfective.

### 3.2 Viewpoint Aspect and Locative Relations

**So far:** we’ve seen evidence of a cross-linguistic association between viewpoint aspect and oblique marking on a core argument.

**imperfective** is associated with oblique **objects**  
**perfective** is associated with oblique **subjects**

<sup>9</sup>Across the Kartvelian languages, the Series III perfect is used primarily to express evidential meanings. Bjorkman et al. (2015), following Izvorski (1997), argue that this arises because perfects and (indirect) evidentials can be understood as expressing the same relation, but between time intervals vs. sets of worlds.

<sup>10</sup>The fact that unaccusative subjects remain nominative in the perfect could be viewed as a preservation of ergative alignment, albeit in a more limited domain.

**Now:** where do these associations come from?

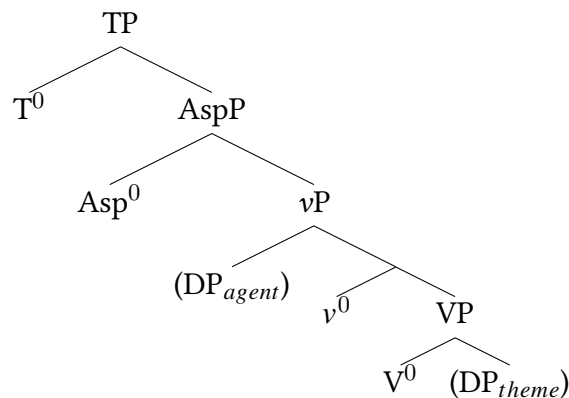
- These patterns of case marking align with common sources of grammaticalization:
  - Imperfectives can arise from partitive/atelic constructions (oblique *patients*).
  - Perfectives can arise from possessive or passive constructions (oblique *agents*).
- But even given these plausible historical origins, the association of core argument case with aspect should be **surprising** from a synchronic perspective, for the same reasons as with possessive modality.

From the perspective of work on **aspect**:

- Viewpoint aspect is about relations between *times* (or between an event and a time)  
→ widely associated with a functional head  $Asp^0$ , above  $vP$  but below  $T^0$

(e.g.: Tenny 1987; Smith 1991; Klein 1994; Giorgi & Pianesi 1997; Kratzer 1998; Kusumoto 1999; Demirdache & Uribe-Etxebarria 2000; among many others)

(22)



From the perspective of work on **case**:

- Oblique case on core arguments, by contrast, is (supposed to be) about their relation to the predicate (or to other aspects of their licensing/interpretation).
- To the extent that oblique or prepositional marking has semantic content, it would contribute at best indirectly to the semantics of viewpoint aspect.

Can these associations tell us anything about the representation of aspectual contrasts?

**A recurring idea:** Viewpoint aspect should be compared to **locative** relations.

(cf. Klein 1994, Demirdache & Uribe-Etxebarria 2000, et seq.)

The association between imperfective aspect and broadly “locative” morphosyntax is well established in the typological literature.

(Comrie, 1976; Dahl, 1985; Bybee et al., 1994).

Formal implementation of this idea:

- Demirdache & Uribe-Etxebarria (2000): temporal relations, including tense and viewpoint aspect, are **formally semantically identical** to locative relations.

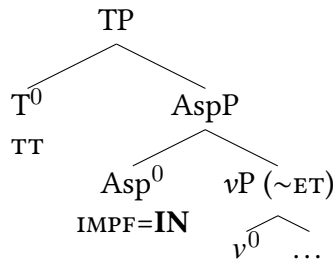
**A (very abbreviated) overview of temporal semantics:**

- Finite clauses involve relations between at least **three** times (Reichenbach, 1947 et seq.):

Event Time (ET) : time of the event  
 Utterance Time (UT) : time at which a clause is uttered / evaluated  
 Topic Time (TT) : **time that is being talked about**

- **Tense** involves a relation between UT and TT.
- **Aspect** (viewpoint) involves a relation between TT and ET.<sup>11</sup>
  - Imperfective = TT ⊂ ET = TT is **IN** ET
  - Perfective = ET ⊂ TT = ET is **IN** TT
- It is in this framework that Demirdache & Uribe-Etxebarria (2000) say that aspects (and other temporal relations) are semantically equivalent to locative relations:<sup>12</sup>

(23)



- This type of structure can easily explain the occurrence in the imperfective of locative auxiliaries (e.g. *sit, stand*), or the appearance of locative marking on the predicate as a whole (e.g. *I am **in** walking*), because these involve either the realization of Asp<sup>0</sup> itself or marking on a semantic argument of Asp<sup>0</sup>
- The relationship of (23) to oblique object marking, however, remains compositionally puzzling.

<sup>11</sup>The perfect, which is neither a canonical tense nor a canonical aspect, may involve a second Topic Time—often referred to as the Perfect Time Span (Iatridou et al., 2003).

<sup>12</sup>Demirdache & Uribe-Etxebarria (2000) actually assume that the event time is syntactically projected as a variable over times; this introduces a number of syntactic and semantic puzzles (e.g. Asp<sup>0</sup> must semantically compose not with its sister but with the specifier of its sister), and so I adopt instead the structure in (23). For anyone interested in the technical semantic details: I assume that  $\llbracket \text{VoiceP} \rrbracket$  is an unsaturated predicate of events, whose open event argument is existentially closed by Asp<sup>0</sup>, which it then states that the runtime of that event (=ET) is a superinterval of another (still open) time interval (=TT). I assume that the open time argument of AspP is, in the normal course of events, saturated by T<sup>0</sup>, which is interpreted as a variable over times (restricted by PAST or PRES).



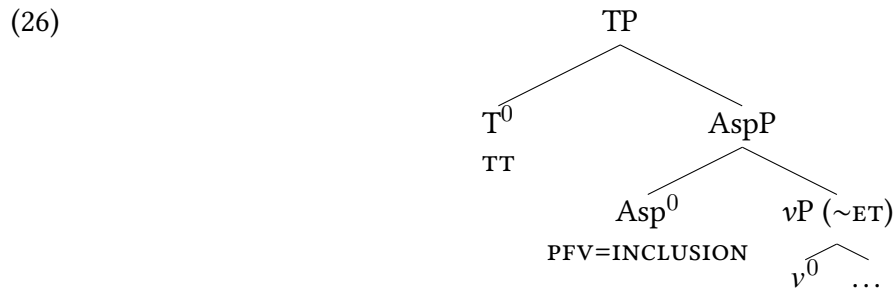
### What about **perfectives**?

- Demirdache & Uribe-Etxebarria (2000) propose that the perfective is simply the absence of imperfectivity—that it is “unmarked”.
- Coon (2013) builds on this, arguing that perfective aspect would correspond to a typologically unattested prepositional head.

- (24) a. A is in B.  
*meaning:*  $\boxed{B \boxed{A}}$
- b. A is blip B. (*claimed to be unattested*)  
*potential meaning:*  $\boxed{A \boxed{B}}$

- But we have already seen a natural language relation meaning the reverse of “in”: the possessive relation of **inclusion**, discussed above in relation to possessive modality.<sup>13</sup>

- (25) A **has** B:  $\boxed{A \boxed{B}}$
- a. My sister has green eyes.  
b. My sister has a bike.



- As we have already seen, INCLUSION can be expressed by oblique subject marking.

### Where do we find ourselves?

- The **imperfective** expresses a relation between times that, when it exists between individuals, involves an oblique predicate-internal DP.
- The **perfective** and the **perfect** express a relation between times that, when it exists between individuals, involves an oblique predicate-external DP.

*However...*

- For parallelism to hold, we would expect viewpoint aspect to somehow involve oblique-marked *temporal* arguments.

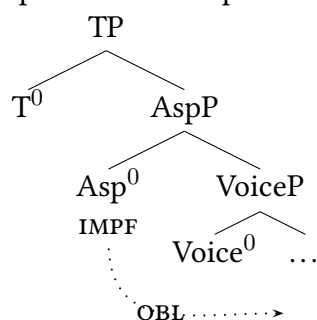
(What would an oblique ET or TT even look like?)

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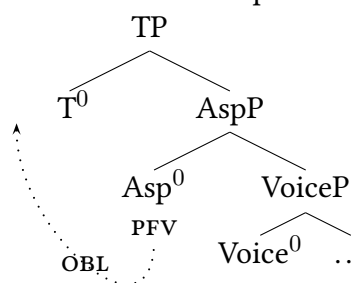
<sup>13</sup>Regarding the relationship between the perfective and the perfect, see Larsson (2009) for a proposal that HAVE-perfects can also be accounted for in terms of inclusion between two times (though here with the Perfect Time Span interval in addition to TT), with possible variation in auxiliary selection languages.

- But just as with possessive modality, instead they involve oblique DP arguments.

(27) a. Imperfective: oblique DOWN



b. Perfective: oblique UP



**The same problem:** How does this case assignment **work**, given the structural discontinuity of  $\text{Asp}^0$  and the argument structural domain of the clause.

**A new problem:** How does perfective  $\text{Asp}^0$  have access to all subjects (in at least some languages), while imperfective  $\text{Asp}^0$  is restricted to internal arguments?

- $\text{Asp}^0$  is **always** higher than the base position of both subjects and objects.

### 3.3 Interim Summary

**In this section:** illustrating the interaction of aspect and case, which provides a broader illustration of the puzzle for inherent case assignment presented by grammaticalized case patterns.

**Next:** looking towards a different way of thinking about inherent case licensing.

## 4 Implications for Case Licensing

Back to **inherent** vs. **structural** case:

**Structural Case:** case that appears on an argument in virtue of its structural position in a clause, e.g. nominative subjects, accusative objects.

**Inherent Case:** case that appears on an argument in virtue of its semantic relation to the predicate, e.g. dative experiencers, ergative agents.

A puzzle for grammaticalization:

- Both **possessive modality** and **aspect-case correlations** can be fruitfully understood as the generalization of a **common representation**.
- But when that common representation involves case patterns, the standard view of case seems to force us to say that this case marking is inherent in the origin context—but structural (but a mysterious kind of structural) in the target.

**Can we do better?**

## 4.1 Reassessing the mechanisms of inherent case

**A place to start:** the mechanisms through which structural and inherent case are assigned.

**Structural Case:** reflection of abstract dependencies in the syntax.

- nominative on  $T^0$  (on some views absolutive as well)
- accusative on  $v^0$

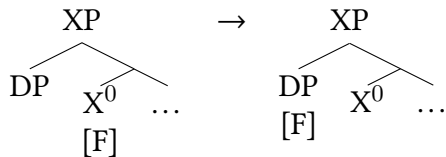
**Inherent Case:** assigned by a head to a DP that first merges in its specifier.

...but **how** this happens often left unexplained.

- A Minimalist perspective: we don't want case features to appear out of nowhere.
  - e.g. nominative, accusative are licensed by  $T^0$ ,  $v^0$ —reinterpreted as realizations of (uninterpretable) tense, voice features on DPs (Pesetsky & Torrego, 2002).
- So when we say that inherent case is “assigned” → this must be due to some property (=feature) of the assigning head.
  - and pushing this logic further, if we need a feature that encodes the property of assigning case, then the simplest thing is to say that that feature **is** the case feature.

Inherent case is assigned in specifiers, so we're looking for a mechanism like the following.

(28) Feature Transfer:



- This is similar (though not identical) to the mechanism of **Morphological Merger** in Distributed Morphology:

(29) Morphological Merger (Marantz, 1988)

At any level of syntactic analysis (d-structure, s-structure, phonological structure), a relation between X and Y may be replaced by (expressed by) the affixation of the lexical head of X to the lexical head of Y.

- The difference is that (28) involves the movement of a **feature**, rather than the head itself.

Could this mechanism be restricted to **first** merge?

- This would be the traditional domain of inherent case.
- But it's not obvious that a general mechanism can be so restricted—especially if Move is simply (Re)Merge.

This gives us a way to talk about the grammaticalization of inherent case:

- When a feature (e.g. [INCLUSION]) grammaticalizes, you preserve its morphosyntactic properties.

– **realization rules**

e.g. [INCLUSION] → hæv / v<sup>0</sup>

[INCLUSION] → (*dative case*) / DP

– but also **feature transfer**

e.g. [ DP [ v<sup>0</sup> [INCLUSION] ] ] → [ DP[INCLUSION] [ v<sup>0</sup> ] ]

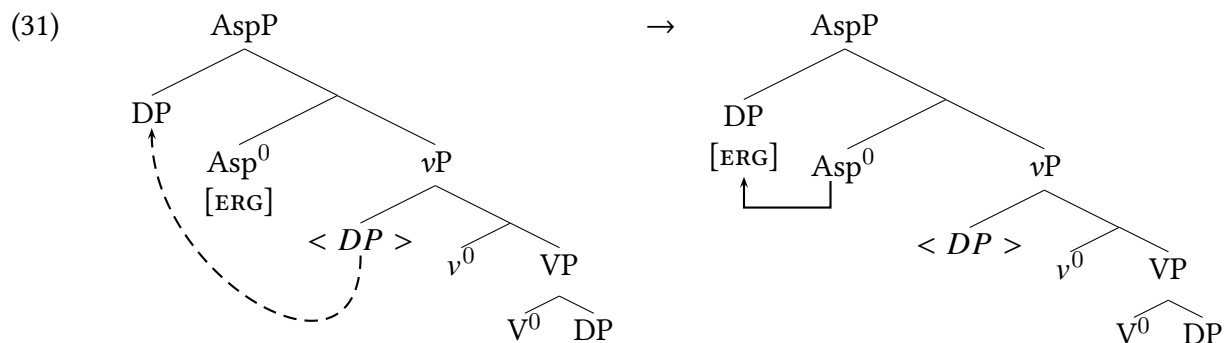
Any **evidence** that this is the right way to look at inherent case?

**Hindi-Urdu: frozen scope of ergative subjects**

- Anand & Nevins (2006) observe that ergative subjects in Hindi-Urdu have **fixed** scope with respect to other clausal elements.
- Specifically, ergative subjects as in (30b) must take **wide** scope.

- (30) a. koi shaayer har ghazal likhtaa hai  
 some poet.NOM every song-ACC write.M.IMPF be.PRES  
 ‘Some poet writes every song.’ (∃ > ∀, ∀ > ∃)
- b. kisii shaayer-ne har ghazal likhii  
 some poet-ERG every song.NOM write.F.PFV  
 ‘Some poet wrote every song.’ (∃ > ∀, \*∀ > ∃)

- Anand and Nevins argue that this is due to the fact that ergative subjects **cannot reconstruct** to their base position.
- They assume that ergative in Hindi-Urdu is inherent case assigned in Spec-*v*P, and so propose a general ban on reconstructing to inherent case positions. What is unclear on their account is why such a ban would exist.
- If inherent case is **feature transfer**, by contrast, then the contrast in (30) can be explained if ergative case is assigned to DPs in Spec-AspP (Bjorkman, 2015).





- Morphological/competition-based approaches to case (Marantz, 2000, et seq.):

$\emptyset \rightarrow [\text{OBL}] / \text{DP c-commanded by IN}$

- Agree-based approaches to case.

(Chomsky 1998; Bjorkman & Zeijlstra 2015; Craioveanu 2014 on Finnic)

Is there evidence that oblique subjects and oblique objects are **different**?

**Georgian: interaction with oblique *indirect* objects:**

- Harris (1981): Georgian indirect objects are usually marked with **dative** case—as are imperfective objects, perfect subjects, and experiencer subjects.
- But dative **objects** behave differently from all dative **subjects**: only the former can co-occur with dative indirect objects.

|              | Transitive               | Unergative | Unaccusative |               |
|--------------|--------------------------|------------|--------------|---------------|
| IMPERFECTIVE | ABS-DAT-(DAT)            | ABS        | ABS          | (=Series II)  |
| PERFECTIVE   | ERG-NOM-(DAT)            | ERG        | ABS          | (=Series I)   |
| PERFECT      | DAT-NOM-(- <i>tvis</i> ) | DAT        | ABS          | (=Series III) |

Table 2: Argument Marking in Georgian (Harris, 1981)

- Proposal: a clause can only contain **one** argument with inherent dative (=dative assigned in a specifier via feature transfer).
  - dative objects escape this restriction because their oblique marking has a different (non-inherent) source.

### 4.3 Summary

**Revised framework for inherent case: feature transfer**

- local configuration
- can result from movement
- evidence: scope freezing in Hindi-Urdu

**A different mechanism for oblique objects: c-command**

- non-local configuration
- can be disrupted by movement
- evidence: differential interaction with thematic dative indirect objects in Georgian

## 5 Conclusions

Grammaticalization as a **window** into abstract representations:

- Possession and necessity as **inclusion**.
- Aspect as **locative** and **possessive** relations.

But this raises more **general questions** about syntactic representations:

- How can we understand the grammaticalization of case patterns?
- Reveals puzzles surrounding the mechanisms of **inherent case**.

Used this puzzle to motivate a **more concrete** theory of inherent case assignment:

- Assignment of case to specifiers via **feature transfer**, distinct from Agree.
- But a residue: oblique objects remain licensed in a c-command configuration (whether via Agree or morphological calculation).

**Future directions:**

- Pushing on **inherent case**:
  - Dative subjects of (non-grammaticalized) modal predicates.
  - The inherent vs. structural status of ergative, dative goals.
  - Scope-freezing effects.
- Pushing on the syntax and semantics of **aspect**
  - Perfective / perfect as inclusion.
  - Semantic variation: collapse of perfect/perfective/past, interpretation of perfect.
  - Relationship of inclusion to auxiliary selection.

**Thank you!**

## A Inclusion as a feature, not a head

Why do we have to analyze INCLUSION as a semantically interpretable feature, rather than as the meaning of a “lexical item”/head?

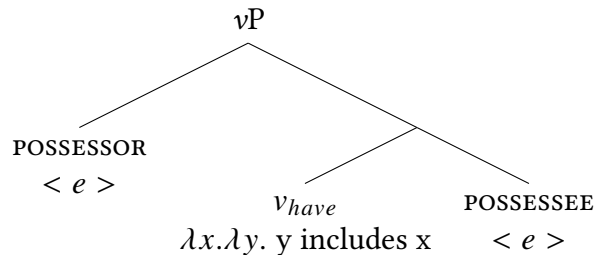
### What grammaticalizes is not a “lexical item”:

- Traditional view: unit is the verb *have* (or *tener*, *haber*, etc.) [ $\rightarrow$ ] the “lexical semantics” of *have* would be what changes in grammaticalization.
- **Problem:** in realizational approaches to morphology<sup>14</sup> *have* isn’t something that occurs in the syntax, it’s the **realization** of some more abstract syntactic representation.
- And indeed: possessive modality in English involves not only *have*, but other means of expressing predicative possession, e.g. *have got*.

### What grammaticalizes is not a head:

- What happens if we simply plug the arguments of a necessity modal into the structure given in the text for the possessive head  $v_{have}$ ?
- **A problem:** even if possession and necessity involve the same semantic relation, the syntactic configuration of their arguments is very different.

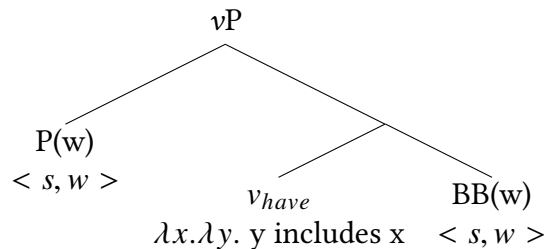
(35) a. Structure of possession with  $v_{have}$ :



b. *Aiming for:* The children have to do their homework.

(i)  $P(w) (= [[\text{the children do their homework}]]): \text{POSSESSOR} :: \text{BB}(w): \text{POSSESSEE}$

(ii) \*



(iii) \*[(that) the children do their homework] has (to).

### So what grammaticalizes must be something smaller than a head: a feature

<sup>14</sup>Realizational approaches include not only Distributed Morphology (Halle & Marantz, 1993, 1994, et seq.), but also Nanosyntax Starke (2010), and Paradigm Function Morphology (Stump, 2001).



## B Evidence for Raising in Hindi-Urdu

- The analysis outlined above requires raising into a position that is assigned oblique case.
- An alternative analysis might be that the subject is base generated in the matrix clause – related to **dative experiencer** constructions.
- Bhatt provides several pieces of evidence in favour of raising in Hindi-Urdu:

1. The subject of the possessive modality construction need not be the direct bearer of the obligation.

(36) illustrates this for Bengali: in (36) it is not the obligation of the room to clean itself.

(36) Ghor-ṭa-ke porijkar korte ho-be  
 room-DEF-DAT clean do-INF be-FUT  
 ‘The room has to become clean.’ [Bengali: Neil Banerjee p.c.]

2. In Hindi-Urdu, promoted subjects – i.e. passive and unaccusative subjects – can surface with (null) absolutive case marking. They do not permit ergative *-ne* (Mohanani, 1994):

(37) Ram(\*-ne) giraa.  
 Ram(\*-ERG) fall.PERF  
 ‘Ram fell hard.’ [Mohanani 1994, 71]

When an unaccusative verb occurs in a possessive modality context, the matrix subject can be similarly unmarked. This is predicted only if this DP moved to its surface position from within the embedded clause:

(38) yeh tehni kaṭ-nii hai  
 this branch.FEM be.cut-GER.FEM be.PRES  
 ‘This branch had/has to be cut.’ [Bhatt 1997, (24b-i)]

The same DP can also be marked with “dative” *-ko* – but this is ambiguous between “differential object marking” assigned in the embedded clause, and modal dative assigned in the matrix.

3. While gerunds elsewhere permit overt genitive subjects, this is not possible in possessive modality contexts:

(39) \*Roumi-ko [Leela-ka seb khaa-naa] hai  
 Roumi-DAT Leela-GEN apple eat-GER be.PRES  
*Intended:* ‘Roumi has an obligation that Leela eat the apple.’ [Bhatt 1997, (21)]

This can be explained if the matrix subject raises from the position the genitive would occupy.

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