

Successive-cyclic case assignment in Amis: evidence from case-stacking

Tingchun Chen, MIT, tchen@mit.edu

NELS48, Oct. 27, 2017

1 Introduction

- **Topic of this talk:** Does case assignment apply more than once in a clause?
 - Multiple case assignment has been proposed in several recent studies, e.g. Baker & Vinokurova 2010, Pesetsky 2014, Richards 2013, Levin 2017.
 - **Case-stacking in Amis exemplifies multiple case assignment.**
- * **Language profile:** Amis is a Formosan (Austronesian) language spoken in eastern Taiwan. The dialect reported here is the Central dialect.
- VSO, pre-nominal case, no agreement, no overt tense morphology
- **Data:** Empirically this talk aims to cover the range of data in (1)-(2)¹.
 - GEN marks agent of gerunds and DPs headed by bare roots, in addition to possessor.
 - NOM marks agent of imperfective main clauses.²
 - Contrastive topic agent surfaces with NOM and GEN at the same time.

- (1) a. **GEN: possessor**
 posi no wawa
 cat GEN child
 '(the) child's cat(s)'
- b. **GEN: gerund agent**
 Lipahak ko posi [to pi-liyas no wawa].
 happy NOM cat ACC AV-leave GEN child
 'The cat is happy about the child's leaving.'
- c. **GEN: bare root DP agent**
 [O³ liyas no wawa] ko sa-ka-lipahak no posi.
 O leave GEN child NOM IV-STA-happy GEN posi
 'The child's leaving is why the cat is happy.'

¹I follow the common practice in transcribing both [ʊ/u] and [o] with *o*. Most instances of *o* in this handout are pronounced as [ʊ/u]. The only exception is the *o* in *honi* 'moment'. Other letters in standard Amis orthography that differ from IPA: *c* = [ts], *d* = [ʃ], *ng* = [ŋ], *y* = [j], ' = [ʔ]. Abbreviations not included in the Leipzig Glossing Rules: AV=actor voice, IV=instrumental voice, LNK=linker, LV=locative voice, P=preposition, PV=patient voice, REDUP=reduplicant, STA=stative.

²I will only discuss imperfective clauses. Perfective clauses exhibit differential subject marking and interact with case-stacking in an interesting way. See Appendix A for some data but these are beyond the scope of this talk.

- (2) a. **NOM: agent of imperfective main clause**
 Mi⁴-liyas ko wawa i matini.
 IMPV.AV-leave NOM child P now
 'The child is leaving now.'
- b. **NOM-GEN stacking: Contrastive Topic (CT) agent**
 Mi-liyas ko-no wawa i matini.
 IMPV.AV-leave NOM-GEN child P now
 '[The child]_{CT} is leaving now. (But her mother isn't.)'

Roadmap

§2 Bare root DP: a lower level of case assignment - unmarked case is GEN

§3 Successive-cyclic case assignment: imperfective main clauses and gerunds impose another level of case assignment, which usually replaces the case assigned on the lower level

§4 Case-stacking: when a DP is a contrastive topic (CT), the cases assigned in §2 and §3 are both realized

2 Bare root DP and GEN as unmarked case

- Amis roots, whether they denote an entity or an event, behave in the same way with respect to selection and case marking.
 - This differs from the cross-linguistically more common pattern by which entity and event roots are separated into two groups: noun and verb.
- Case patterns of bare root DP are captured by the Dependent Case model (Marantz 1991):
 - Agent: GEN (unmarked)
 - Patient: ACC (dependent)
- Bare root DP exemplifies a lower level of case assignment that underlies finite clauses and gerunds.

2.1 No selectional differences between entity and event roots

- A variety of affixes treat entity and event roots as a group:
 - **Plural reduplication** attaches to either type of roots, yielding a plurality of entities or events.
 - **Voice morphology, stative, causative** also attaches directly to either type of roots.

(3) Plural reduplication

Entity	Event
tefos 'sugarcane'	cefos 'spray'
tefo<tefo>s 'sugarcanes'	cefo<cefo>s 'spray repeatedly'

³Descriptively, *o* attaches to nominals that do not receive case, including nominal predicates and fragment answers.

⁴I treat *m-* as an imperfective marker. *M-* attached to Actor Voice *pi-* surfaces as *mi-* and *m-* attached to stative *ka-* surfaces as *ma-*. These are glossed as IMPV.AV and IMPV.STA.

(4) **Voice morphology, stative, causative**

	Entity	Event
Actor Voice	pi -tefos ‘harvest sugarcanes’	pi -cefos ‘spray’
Stative	ka -tefos ‘sugarcanes harvested’	ka -cefos ‘sprayed’
Causative	pa -tefos ‘give sugarcanes to’	pa -cefos ‘let s.o. spray’

2.2 **Case patterns within bare root DP**

- **Bare root DP:** DP headed by unmarked root
- Entity root (possessive DP)

Possessor	(Complement)
GEN	(ACC)

(5) **Bare root DP: entity**

[O codad **no wawa** (to posi)] ko mi-sa-faloco'-an ako.
 O book GEN child (ACC cat) NOM IMPV.AV-IV-heart-LV GEN.1SG
 ‘The child’s book (about cats) is what I have in mind.’

- **Case patterns within bare event root DP parallel possessive DP in (5).**

	Agent	Patient
Transitive	GEN	ACC
Unaccusative		GEN
Unergative	GEN	

(6) a. **Transitive: GEN-agent ACC-patient**

[O tangtang **ni Kolas to orang**] ko sa-ka-faheka ako.
 O cook GEN PN ACC lobster NOM IV-STA-surprised GEN.1SG
 ‘Kolas’ cooking lobsters is why I’m surprised.’

b. **Intransitive: GEN/*ACC-patient**

[O leneng **no/*to tamina**] ko sa-ka-faheka ako.
 O sink GEN/*ACC boat NOM IV-STA-surprised GEN.1SG
 ‘The boat’s sinking is why I’m surprised.’

(7) **Contextual allomorphy of GEN⁵**

- GEN ↔ *ni* / ___ {personal name, kinship term}, e.g. *ni Kolas* in (6a)
- GEN ↔ *no* (elsewhere), e.g. *no tamina*’ in (6b)

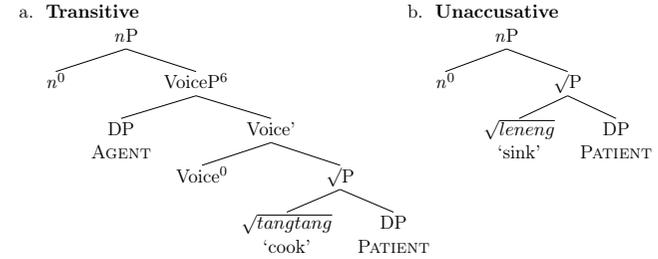
- **Assume in this talk:** Amis roots are category-neutral and are nominalized by n^0 above the root level and verbalized by v^0 (voice morphology, stative, causative).

⁴That an entity root can mark ACC is cross-linguistically rare (Baker 2015). Very few entity roots in Amis allow this and the consultants’ judgment on this varied to some extent.

⁵A third allomorph of NOM, GEN, ACC is used for plural nominals. I leave this aside.

o I will adopt overt category heads for this talk. This is not an indispensable part of the main proposal. Any alternative where unmarked case is sensitive to category and all arguments are present in the first case assignment would be sufficient.

(8) **Structure of roots**



2.3 **Case derivation: bare root DP**

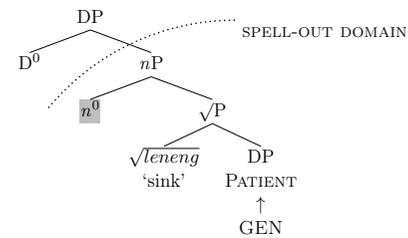
(9) **Amis case assignment rules**

- If there are two distinct DPs in the same phase such that DP₁ c-commands DP₂, and if DP₁ is unmarked for case, assign ACC to DP₂.
- If a DP does not receive dependent case, it is realized as GEN in a nominal domain, and NOM in a verbal domain.
- A spell-out domain is a nominal domain if the highest category head is n^0 , and a verbal domain if the highest category head is v^0 .

- **When:** Each time a phase head is merged, case assignment applies to its complement, the *Spell-Out domain*.

(10) **Phase head**⁷ | D⁰, v⁰, C⁰
Category head | n⁰, v⁰

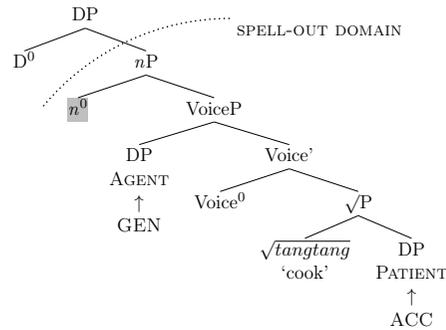
(11) **Case derivation: unaccusative bare root DP**



⁶Voice⁰ is the head that introduces the external argument (Kratzer 1996). Voice morphology is merged in v^0 .

⁷Some phase properties of DP in Amis: (i) Raising of gerund agent into the matrix clause is constrained by subadjacency. For example, a causee cannot raise unless a causer also raises. (ii) A DP-internal wh-word must move to the left edge of the entire DP, (iii) DP-internal arguments can topicalize to the left edge of the DP.

(12) Case derivation: transitive bare root DP



3 Successive-cyclic case assignment

- Each time a phase head is merged, case assignment applies to its complement, the *Spell-Out domain*.
 - Movement is not a prerequisite for multiple case assignment (contra Levin 2017).
- In a more complex structure that contains more than one phase head, case assignment applies more than once.
- I show how successive-cyclic case assignment derives case patterns of imperfective clauses and gerunds.

3.1 Imperfective main clauses

(13) Imperfective main clauses

a. Intransitive

Ma-foti' ci Kolas i matini.
 IMPV.STA-sleep NOM child P now
 'Kolas is sleeping now.'

b. Transitive

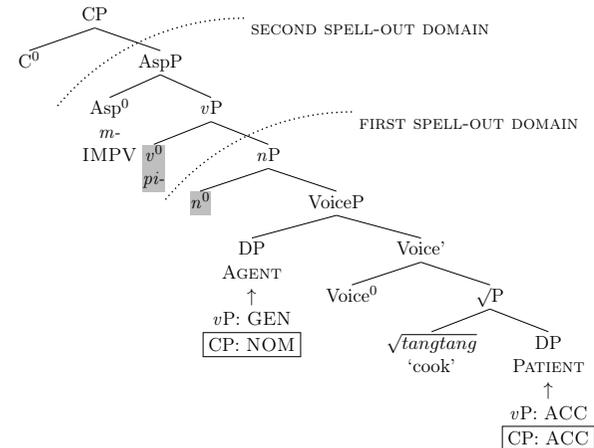
Mi-tangtang ko wawa to 'orang i matini.
 IMPV.AV-cook NOM PN ACC lobster P now
 'The child is cooking lobsters now.'

(14) Contextual allomorphy of NOM⁸

- NOM ↔ *ci* / ___ {personal name, kinship term}, e.g. *ci Kolas* in (13a)
- NOM ↔ *ko* (elsewhere), e.g. *ko wawa* in (13b)

- *nP* projected from the root is verbalized by v^0 in a clause or gerund.
- Voice morphology⁹, stative, causative are all instance of v^0 .
- Case assignment applies twice in a main clause:
 - 1st: when v^0 is merged, unmarked case = GEN
 - 2nd: when C^0 is merged, unmarked case = NOM

(15) Case derivation: imperfective transitive clauses



(16) One Case Rule: Delete all but the outermost case. (cf. *One Suffix Rule* in Pesetsky 2014)

- Apply the *One Case Rule* to (15):
 - Agent surfaces with NOM.
 - Patient surfaces with ACC.

⁸There are in fact reasons to think *ci* is not an allomorph of NOM. First, NOM and ACC on personal names share *ci*, e.g. *ci Kolas*, *ci Kolas-an*. Second, *ci* doesn't pattern with NOM *ko* in at least two ways. A common noun used as a nominal predicate is marked by *o* but a personal name used as a nominal predicate is still marked by *ci*. Moreover, when inside a PP headed by the preposition *i*, a common noun is not marked for case, e.g. *i wawa*, but a personal name appears in the ACC form, e.g. *i ci Kolas-an*. These suggest *ci* is likely not realizing NOM and might be, for example, a personal name marker. I stick to the simpler version in this talk. An analysis treating *ci* as a personal name marker is possible and doesn't significantly change the current proposal.

⁹I treat voice morphology only as a verbalizer in this presentation and leave aside the semantic contribution of different voices.

3.2 Gerunds

- Gerunds are DP externally.
 - Gerunds receive case.
 - Gerunds can be marked by a demonstrative, e.g. *ya* ‘that’ in (17).
- Gerunds are nominalized again by another n^0 , as in (18).

(17) Gerunds

a. Intransitive

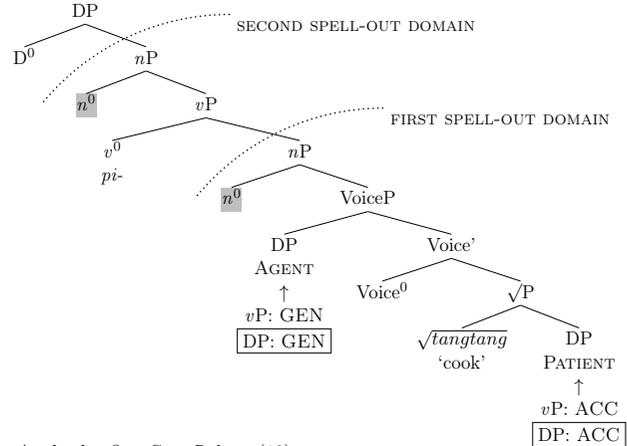
Lipahak ko posi [to-(ya) pi-liyas **no wawa**].
 happy NOM cat ACC-(that) AV-leave GEN child
 ‘The cat is happy about the child’s leaving.’

b. Transitive

Lipahak ko posi [to-(ya) pi-tangtang **no wawa to ’orang**.
 happy NOM cat ACC-(that) AV-cook GEN child ACC lobster
 The cat is happy about the child’s cooking lobsters.

- Case assignment applies twice in a gerund:
 - 1st: when v^0 is merged, unmarked case = GEN
 - 2nd: when D^0 is merged, unmarked case = GEN

(18) Case derivation: gerunds



- Apply the *One Case Rule* to (18):
 - Agent surfaces with GEN.
 - Patient surfaces with ACC.

4 Case-stacking

- Multiple case assignment seems superfluous given the discussion in §3 since the surface pattern always corresponds to the last case assignment.
- I show in this section that case-stacking exemplifies multiple case assignment overtly.

- Case-stacking is licensed when a DP is CT-marked.
 - Case-stacked DP can topicalize overtly and optionally co-occur with a resumptive pronoun matching in the stacked case.
 - I propose the constraint in (19).
 - ◊ This constraint competes with and is ranked higher than the *One Case Rule* in (9).¹⁰
 - **When a DP is CT-marked, it surfaces with both cases.**
 - See Appendix A for details justifying treating case-stacked DP in Amis as CT.

(19) **CT case preservation constraint:** A case attached to a CT-marked DP cannot be deleted.

- Case-stacking patterns to be discussed:
 - **NOM-GEN** agent of imperfective clause
 - **GEN-GEN** agent of gerund
 - **ACC-GEN-GEN** gerund agent raised to matrix clause
 - **ACC-GEN** patient of imperfective clause
 - See Appendix B for other contexts and more combinations.

4.1 Case-stacking: agent and unaccusative patient of imperfective clause

- **Data:** All the case-stacking examples below start with a question that sets up either a lone CT context or a CT+ Exh focus context.

- Agent and unaccusative patient of an imperfective main clause receives
 - GEN in the vP Spell-Out
 - NOM in the CP Spell-Out
- NOM-GEN is licensed when an imperfective agent or unaccusative patient is CT-marked.¹¹

¹⁰This admittedly is a stipulation. It’s a variant of the *Korean case preservation constraint* in Levin 2017. Ideally there could be a more principled reason why case-stacking correlates with CT or other focus contexts, but I won’t be able to solve this here.

(20) **Lone CT: agent**

- a. **Q:** ‘Are the doctor and the teacher drinking wine now?’
- b. **NOM-GEN: agent**
 Mi-epah ko-no ising. Kirami caay ho pi-epah ko-no singsi.
 IMPV.AV-wine NOM-GEN doctor but NEG yet AV-wine NOM-GEN teacher
 ‘[The doctor]_{CT} is drinking wine, but [the teacher]_{CT} is not drinking wine yet.’

(21) **CT: agent + Exh: patient**

- a. **Q:** ‘What are Kolas and Panay cooking now?’
- b. **NOM-GEN: agent**
 Mi-tangtang ko-ni Kolas to ‘orang.
 IMPV.AV-cook NOM-GEN PN ACC lobster
 Mi-tangtang ko-ni Panay to foting.
 IMPV.AV-cook NOM-GEN PN ACC fish
 ‘[Kolas]_{CT} is cooking [lobsters]_{Exh}. [Panay]_{CT} is cooking [fish]_{Exh}.’
- c. **Topicalized NOM-GEN with resumptive pronoun**
 Ko-ni Panay i mi-tangtang (ko-no nira) to foting.
 NOM-GEN PN TOP IMPV.AV-cook NOM-GEN GEN.3SG ACC fish
 ‘[Panay]_{CT}, she is cooking [fish]_{Exh}.’

(22) **Lone CT: unaccusative patient**

- a. **Q:** ‘Did the boat and the car sink yesterday?’
- b. **NOM-GEN: unaccusative patient**
 Ma-leneng ko-no tamina. Kirami caay ka-leneng ko-no paliding.
 IMPV.STA-sink NOM-GEN boat but NEG STA-sink NOM-GEN car
 ‘The boat sank, but the car didn’t.’

- Contextual allomorphy of NOM and GEN applies locally.
 - Only the inner case is sensitive to whether the attached DP is a personal name.
ko-ni Kolas instead of **ci-ni Kolas* in (21b)

- **Prosody:** clauses with case-stacking do not clearly differ from those without stacking.
 - Stress typically falls on the final syllable in Amis, with some (lexical) exceptions: *hóni* ‘moment’, all the wh-words, e.g. *máan* ‘what’, *hacówa* ‘when’.
 - Stress shifts to the penultimate syllable for words associated with an overt focus operator, e.g. *‘edeng* ‘only’, *halo* ‘even’.
 - Stress shift can but does not need to apply to case-stacked DPs. Besides this, prosodically a clause with case-stacking in situ doesn’t seem different from one without case-stacking.

¹¹Case-stacking (in situ) in Amis doesn’t alternate with just the inner case, unlike Korean (Levin 2017). For example, *ko-ni Kolas* in (21b) cannot alternate with *ni Kolas*. Marking the DPs in (20)-(22) with just the external case NOM is always grammatical, but since there isn’t a clear prosodic difference between clauses with case-stacking and those without, those examples might only indicate that the speaker chooses to not adopt a CT strategy even when prompted by a relevant context.

- **Non-initiality preference:** Case-stacking is often degraded in the first clause.

- Examples like (20)-(22), where both clauses contain case-stacking, improve when the consultants were asked to imagine a context in which they had to retrieve the information slowly, item by item for each CT.
- Non-initiality preference associated with CT marking is attested in other languages, e.g. Mandarin topic marker *ne*.
- For the rest of this handout, only the second clause of an example is included, unless otherwise specified.

4.2 **Case-stacking: gerund agent**

- Agent of a gerund receives
 - GEN in the *vP* Spell-Out
 - GEN in the DP Spell-Out
- GEN-GEN is licensed when a gerund agent is CT-marked.

(23) **CT: agent + Exh: patient**

- a. **Q:** ‘You’re surprised about Mayaw and Calaw’s breaking what?’
- b. **In situ GEN-GEN: gerund agent**
 Faheka kako [to pi-‘ari no-ni Mayaw to kaysing].
 surprised NOM.1SG ACC AV-break GEN-GEN PN ACC bowl
 ‘I’m surprised about [Mayaw’s]_{CT} breaking bowls.’
- c. **Topicalized GEN-GEN: gerund agent**
 Faheka kako [to no-ni Mayaw a pi-‘ari to kaysing].
 surprised NOM.1SG ACC GEN-GEN PN LNK AV-break ACC bowl
 ‘I’m surprised about [Mayaw’s]_{CT} breaking bowls.’

- Case-stacked gerund agent can topicalize to the edge of the gerund, as in (23c). Topicalized gerund agent is followed by the linker *a* instead of the clausal topic marker *i*.¹²
- Stacking GEN-GEN *no-no* for common nouns is ruled out.
- This can be explained by phonological haplogy.
 - When two identical syllables $\sigma_1\text{-}\sigma_2$, where σ_1 and σ_2 belong to two separate functional morphemes, are adjacent, delete one of the two syllables.

(24) **Phonological haplogy**

- a. *ano no ising* → *ano ising*
Ano (no) ising i o maa-maan ko mi-nanom-an i ...
 if (GEN) doctor TOP O REDUP-what NOM IMPV.AV-water-LV TOP ...
 ‘The doctor, whatever (s/he) drinks, ...’

- b. *ato to waco* → *ato waco*
 Ma-olah kako to posi ato (to) waco.
 IMPV.STA-like NOM.1SG ACC cat and ACC dog
 ‘I like cats and dogs.’ (other forms of ACC can appear after *ato*)

- Gerund agent can raise into the matrix clause.
 - In a non-CT context, the raised agent receives ACC, as in (25a).
- **Triple case-stacking ACC-GEN-GEN** is licensed when the raised agent is CT-marked, as in (25b-c).

(25) **Object raising and triple case-stacking**

- a. **ACC: raised agent in a non-CT context**
 Faheka kako ci Mayaw-an [to pi-'ari ___ to kaysing].
 surprised NOM.1SG ACC PN-ACC ACC AV-break ACC bowl
 ‘I’m surprised at Mayaw about (his) breaking bowls.’
- b. **In situ ACC-GEN-GEN: raised gerund agent**
 Faheka kako to-no-ni Mayaw [to pi-'ari ___ to kaysing].
 surprised NOM.1SG ACC-GEN-GEN PN ACC AV-break ACC bowl
 ‘I’m surprised at [Mayaw]_{CT} about (his) breaking bowls.’
- c. **Topicalized ACC-GEN-GEN: raised gerund agent**
To-no-ni Mayaw i faheka kako [to pi-'ari ___ to kaysing].
 ACC-GEN-GEN PN TOP surprised NOM.1SG ACC AV-break ACC bowl
 ‘Mayaw, I’m surprised at (him) about (his) breaking bowls.’

4.3 **Case-stacking: patient of imperfective clause**

- Patient of an imperfective transitive clause receives
 - ACC in the *vP* Spell-Out
 - ACC in the CP Spell-Out
- We predict that when the patient is CT-marked, stacking ACC-ACC should be licensed.
 - Stacking ACC-ACC is in fact ruled out.¹³
 - **Instead CT-marked patient surfaces with ACC-GEN.**
 - The inner GEN is sensitive to the personal name allomorphy as usual.

¹²One speaker did accept *i* for (23c) as a topic marker.

¹³Consultants have in fact (unknowingly) accepted or volunteered ACC-ACC for CT-marked personal names several times, but since examples with ACC-ACC by and large were rejected, I put these data aside for now.

(26) **Lone CT: common noun patient**

- a. **Q:** ‘Are you cooking lobsters and fish now?’
- b. **In situ ACC-GEN: patient of imperfective clause**
 Mi-tantang kako to-no/*to-to 'orang i matini.
 IMPV.AV-cook NOM.1SG ACC-GEN/*ACC-ACC lobster P now
 ‘I’m cooking [lobsters]_{CT} now.’

(27) **Lone CT: personal name patient**

- a. **Q:** ‘Are you looking at Kolas and Panay now?’
- b. **In situ ACC-GEN: patient of imperfective clause**
 Mi-nengng kako to-ni Kolas/*to-ci Kolas-an i matini.
 IMPV.AV-look NOM.1SG ACC-GEN PN/*ACC-ACC PN-ACC P now
 ‘I’m looking at [Kolas]_{CT} now.’
- c. **Topicalized ACC-GEN: patient of imperfective clause**
To-ni Kolas i mi-nengng kako to-no nira.
 ACC-GEN PN TOP IMPV.AV-look NOM.1SG ACC-GEN GEN.3SG
 ‘[Kolas]_{CT}, I’m looking at her/him now.’

- The phonological haplology that rules out GEN-GEN for common nouns is not sufficient.
 - ACC-ACC for common nouns (*to-to*) can be ruled out this way and we do see other instances of the same vowel deletion at work, e.g. (24b) above.
 - However, ACC-ACC for personal names (*to-ci Kolas-an*) is not accounted for.

- **Proposal:** ACC-GEN on CT-marked patient is a result of the *Dependent Case Impoverishment Rule* in (28), a repair for the markedness constraint in (29).
- As a result of the impoverishment, the inner case is spelt out as an unmarked case.

(28) **Dependent Case Impoverishment Rule:**

When a DP contains two valued case features, delete the value of the inner case feature.

(29) **Syntagmatic Dependent Case Markedness:**

A given DP cannot contain two valued case features.

- (28) and (29) are implemented in a more fine-grained case valuation model.¹⁴
- **Case valuation:** At each Spell-Out, a case feature on a DP is either valued as [K: DEP] or remains unvalued [K: ___] (Preminger 2014).
 - [K: DEP] ↔ ACC (dependent case)
 - [K: ___] ↔ GEN or NOM (unmarked case)
 - Every time a DP remains caseless at the end of a Spell-Out is recorded (Levin 2017).
- Vocabulary Insertion applies at DP and CP.

(30) **Deriving ACC-GEN on CT-marked patient**

Derivation	Case Value: Patient
vP Spell-Out	[K: DEP]
CP Spell-Out	[K: DEP] [K: DEP]
CT case preservation	[K: DEP] [K: DEP]
Dep. case impoverishment	[K: DEP] [K: _____]
VI	ACC-GEN

5 **Summary**

- We set out at the beginning to investigate whether case assignment applies more than once in a clause.
- I first illustrated that there is a lower level of case assignment where unmarked case is realized as GEN.
- I then showed how we can derive the case patterns of imperfective clauses and gerunds by successive-cyclic case assignment.
- I concluded that *case-stacking in Amis overtly exemplifies multiple case assignment*.
- Future work: why is there a correlation between case-stacking and CT?
 - Several previous studies (Schütze 2001, a.o.) argued that case-stacking in Korean is licensed when a DP is focused.
 - Some arguments are: case-stacking in Korean can be used in correction contexts and as answers to wh-questions.
 - Amis case-stacking is infelicitous on exhaustive answers or in correction contexts.
 - CT is not incompatible with non-exhaustive answers. To know if Amis and Korean case-stacking are truly licensed in different information structural contexts, it'd be more informative to test whether Korean case-stacking also resists exhaustivity.

A **CT properties of case-stacked DP in Amis**

A.1 **Background: contrastive topic**

- Core meaning of CT: Use of CT indicates a discourse strategy the speaker chooses to address a given question (Büring 2003, Constant 2014).
 - Specifically, CT indicates that instead of resolving the question in one step, *the speaker chooses to divide the question into (minimally two) alternative subquestions that vary by the CT-marked element*.

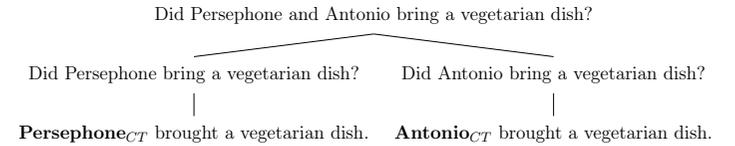
¹⁴The current proposal is compatible with approaches that decompose case into bivalent features (Arregi & Nevins 2012) or into a privative representation where different classes of case correspond to different levels of containment (Caha 2009).

- **Notation:** I indicate CT as $[\cdot]_{CT}$ and exhaustive focus as $[\cdot]_{Exh}$. t

(31) **Lone CT on subject**

- a. **Q:** Did Persephone and Antonio bring vegetarian dishes? (Constant 2014: p.23(15))
 b. **A:** [Persephone]_{CT} brought one...

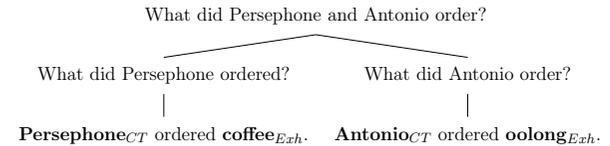
c. **D-tree for (31b)**



(32) **CT on subject + Exh on object**

- a. **Q:** What did Persephone and Antonio order?
 b. **A:** [Persephone]_{CT} ... ordered [coffee]_{Exh}.

c. **D-tree for (32b)**



- Various studies (Büring 2003, Constant 2014, Tomioka 2010a/b, Wanger 2012) treat CT as a type of focus, instead of an independent information structure category.
 - Some of these studies rule out lone CT entirely, e.g. Wagner 2012. Lone CT is well attested across languages, however, e.g. Mandarin (Constant 2014), Japanese (Yabushita 2017), Amis.
- Overt CT marking: languages adopt various ways to indicate CT.
 - Prosody: English B-accent (Jackendoff 1972)
 - Displacement: English topicalization
 - Morphological particle: Mandarin *ne*, Japanese *wa*
 - Case-stacking: Amis

A.2 CT properties of case-stacked DP in Amis

- Case-stacked DP can topicalize and optionally co-occur with a resumptive pronoun matching in case.¹⁵
- Case-stacking is infelicitous on exhaustive answers.
- Case-stacking is infelicitous on non-referential quantified DP.

(33) Case-stacked DP can topicalize overtly (based on (21b))

a. Topicalized NOM-GEN (based on (21b))

Ko-ni **Panay** i mi-tangtang to foting.
 NŌM-GEN PŃ TOP IMPV.AV-cook ACC fish
 '[Panay]_{CT}, (she) is cooking [fish]_{Exh.}'

b. Topicalized NOM-GEN with resumptive pronoun

Ko-ni **Panay** i mi-tangtang **ko-no nira** to foting.
 NŌM-GEN PŃ TOP IMPV.AV-cook NŌM-GEN GEN.3SG ACC fish
 '[Panay]_{CT}, she is cooking [fish]_{Exh.}'

A.2.1 No case-stacking on exhaustive answers

- CT marking is infelicitous on exhaustive answers.
- Having CT marking on exhaustive answers violates the presupposition that CT indicates minimally two alternative subquestions.

(34) English: CT-accent is infelicitous on exhaustive answers

- a. **Q:** Who won the race? (Constant 2014: p.49 (46))
 b. **A:** # [Persephone]_{CT} did ... (assuming Persephone is the only winner)

(35) Amis: Case-stacking is infelicitous on exhaustive answers

- a. **Q:** 'Are Kolas and Panay sleeping now?'
 b. #Ma-foti **ko-ni** **Kolas** ato (**ko-ni**) **Panay** i matini.
 IMPV.STA-sleep NŌM-GEN PŃ and NŌM-GEN PŃ P now
 Intended: 'Kolas and Panay are sleeping.'
 c. Hai. Ma-foti' ci Kolas ato ci Panay i matini.
 yes IMPV.STA-sleep NOM PN and NOM PN P now
 'Yes, Kolas and Panay are sleeping now.'

A.2.2 No case-stacking on non-referential quantified DP

- The most salient interpretation of CT-marked quantified DPs is one where we contrast pluralities instead of proportions.

¹⁵When topicalized, a NOM-GEN DP can surface with just the inner case GEN but not just the external NOM, whereas an ACC-GEN DP can alternate with only the external ACC or only the inner GEN. Judgments on these haven't been entirely consistent, however.

- As a result, CT marking on non-referential quantified DPs are infelicitous, unless a context that strongly supports contrasting proportions is salient.

(36) English: CT accent is infelicitous on non-referential quantified DP

- a. **Q:** Where do the grads live? (Constant 2014: p.176 (13))
 b. **A1:** [Some]_{CT} of them ... live [in Amherst]_{Exh.}
 c. **A2:** # [Few]_{CT} of them ... live [in Amherst]_{Exh.}

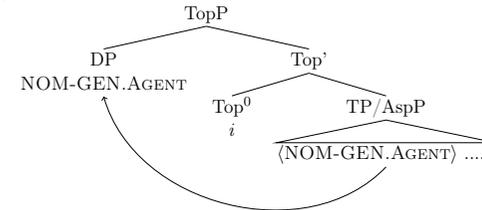
(37) Amis: case-stacking is infelicitous on non-referential quantified DP

- a. **Q:** 'Have the doctors and the teachers arrived?'
 b. **Case-stacking is infelicitous on *mamang* 'few'**
 #Tahira-to **ko-no mamang** a singsi.¹⁶
 arrive-ASP NŌM-GEN few LNK teacher
 Intended: '[Few]_{CT} of the doctors have arrived.'

A.3 CT raising

- **CT raising:** a CT-marked DP must move to SpecTopP, either overtly or covertly.¹⁷
 - I intend CT raising to be the semantically motivated *Topic Abstraction* in Constant 2014.
 - In situ case-stacking is Spell-Out of the lower copy of CT raising.
 - Resumptive pronoun is also a realization of the lower copy.
 - The topic marker *i* realizes Top⁰.

(38) CT raising



¹⁶(37b) is a felicitous answer to 'How many teachers came?'.

¹⁷Given CT raising, an alternative to the constraint in (19) could be treating CT as simply another instance of focus and is not fundamentally different from Exh focus. We further assume that any F-marked DP can move to SpecTopP. Exh focus would be ruled out because it violates the presupposition associated with CT. An alternative constraint on case-stacking would be stated as: *A case attached to a DP that undergoes CT raising cannot be deleted.* We might be able to go one step further and replace CT raising in the constraint with non-operator A'-movement or non-operator movement across a phasal boundary, since besides CT raising, Amis might have only two other types of DP movement: null operator movement (pseudo-cleft wh-questions and relativization) and TP-internal scrambling. Neither interacts with case-stacking.

- Besides case connectivity, scope behavior of case-stacked DP supports CT raising.¹⁸
 - DP without case-stacking can scope above or below negation.
 - DP with case-stacking, whether in situ or topicalized, only scopes above negation.

(39) **Scope relative to negation**

a. **Non-stacked DP is ambiguous**

Caay ka-tolo' ko 'emin a wawa.
 NEG STA-fall NOM all LNK child
 'All of the children didn't fall./Not all of the children fell.' (¬ > ∀, ∀ > ¬)

b. **Case-stacked DP takes wide scope over negation**

Caay ka-tolo' ko-no 'emin a wawa.
 NEG STA-fall NOM-GEN all LNK child
 'All of the children didn't fall.' (*¬ > ∀, ∀ > ¬)

- Other movement diagnostics are not entirely converging at the moment.
 - Case-stacking seems to be constrained by coordinated DP island.
 - Case-stacking doesn't seem to be constrained by complex DP island.
 - Judgments varied and a variety of factors seem to come into play.

B More case-stacking

- I describe below several case-stacking combinations not discussed in the main text.

B.1 NOM-GEN: agent of perfective clause

- I argued in separate works that non-AV clauses in Amis are perfective.
- In a non-CT context, agent of perfective clause receives GEN and patient receives NOM.
- When the agent is CT-marked, it surfaces with NOM-GEN and at the same time the patient appears with ACC.

¹⁸The scope data should be read with caution, however. CT-marked quantified DPs typically only have the referential (type <e>) reading, as discussed in Appendix A. Therefore, they are in effect scopeless and might say nothing about movement. This is also a potential confounding factor for the comparable Korean data reported in Levin 2017. In addition, at least one speaker (inconsistently) reported that the narrow scope interpretation of case-stacked DP is still available, although once topicalized, all speakers agreed only the wide scope interpretation is possible. It would be interesting to see if the narrow scope reading is possible only when the CT-marked quantified DP is interpreted as contrasting proportions instead of pluralities. If wide scope correlates with the plurality reading and narrow scope with the proportion reading, this would be another property of Amis case-stacking that is common for CT across languages.

(40) **Agent of perfective clause**

a. **Non-CT context**

Tangtang-en ni Kolas ko 'orang i honi.
 cook-PV GEN PN NOM lobster P moment
 'Kolas cooked lobsters a moment ago.'

b. **NOM-GEN: CT-marked agent of perfective clause**

Tangtang-en ko-ni Kolas to 'orang i honi.
 cook-PV NOM-GEN PN ACC lobster P moment
 '[Kolas]_{CT} cooked lobsters a moment ago. ([Panay]_{CT} cooked fish.)'

B.2 NOM-ACC: patient of perfective clause

(41) **Patient of perfective clause**

a. **Non-CT context**

Tangtang-en ni Kolas ko 'orang i honi.
 cook-PV GEN PN NOM lobster P moment
 'Kolas cooked lobsters a moment ago.'

b. **NOM-ACC: CT-marked patient of perfective clause**

%Tangtang-en ni Kolas ko-to 'orang i honi.
 cook-PV GEN PN NOM-ACC lobster P moment
 'Kolas cooked [lobsters]_{CT} a moment ago. (S/he didn't cook [fish]_{CT}.)'

B.3 NOM-GEN and ACC-GEN: possessor raising

(42) **NOM possessive DP**

a. **Non-CT context**

Ma-tangtang ako ko tali ni Panay.
 IMPV.STA-cook GEN.1SG NOM taro GEN PN
 'Panay's taros were cooked by me.'

b. **NOM-GEN: topicalized possessor**

Ko-ni Panay i ma-tangtang ako ko tali.
NOM-GEN PN TOP IMPV.STA-cook GEN.1SG NOM taro
 '[Panay's]_{CT} taros were cooked by me. ([Kolas']_{CT} taros were cooked by someone else.)'

(43) **ACC possessive DP**

a. **Non-CT context**

Mi-tangtang kako to tali ni Panay i matini.
 IMPV.AV-cook NOM.1SG ACC taro GEN PN P now
 'I'm cooking Panay's taros now.'

b. **ACC-GEN: topicalized possessor**

To-ni Panay i mi-tangtang kako to tali i matini.
ACC-GEN PN TOP IMPV.AV-cook NOM.1SG ACC taro P now
 'I'm cooking [Panay's]_{CT} taros now. (I'm not cooking [Kolas']_{CT} taros.)'

C External case of case-stacking is not a focus particle

- Korean NOM *ka/i* have been argued to be focus particles instead of case (Schütze 2001).
 - Korean case-stacking can mark answers to wh-questions, as in (44a).
 - Korean case-stacking can occur in correction contexts, as in (44b).

(44) Korean case-stacking

- a. **Case-stacking on correction to ‘Swunhi seems to like Chelswu.’**
Aniya, Yenghi-eykey-ka Chelswu-ka coha.
no PN-DAT-NOM PN-NOM likes
‘No, Yenghi likes Chelswu.’ (Schütze 2001: (14))
- b. **Case-stacking on answer to wh-question ‘Who has such a lot of money?’**
Chelswu-eykey-ka ton-i kulekhey manchi.
PN-DAT-NOM money-NOM so has.much
‘Chelswu has such a lot of money.’ (Schütze 2001: (15))

- Amis case stacking is not licensed in either of these two contexts.
 - Amis case-stacking cannot mark exhaustive answers, as (35b) shows.¹⁹
 - Amis case-stacking is also not licensed in correction contexts, as (45) shows.

(45) Amis: case-stacking is infelicitous in correction contexts

Caay. #Mi-tangtang **ko-no** **Kolas** to ‘orang.
NEG IMPV.AV-cook NOM-GEN PN ACC lobster
‘No, KOLAS is cooking lobsters.’ (intended as correction to ‘Panay is cooking lobsters.’)

References

- Arregi, Karlos, and Andrew Nevins. 2012. *Morphotactics: Basque auxiliaries and the structure of spellout*. Dordrecht, the Netherlands: Springer.
- Baker, Mark C., and Vinokurova, Nadya. 2010. Two modalities of case assignment: case in Sakha. *Natural Language & Linguistic Theory* 28: 593-642.
- Baker, Mark C. Nouns, verbs, and verbal nouns: their structures and their structural cases. In *How categorical are categories? New approaches to the old questions of noun, verb and adjective*. eds. Blaszczak, Joanna, Dorota Klimek-Jankowska, and Krzysztof Migdalski. Berlin: Mouton de Gruyter.
- Büring, Daniel. 2003. On d-trees, beans, and b-accent. *Linguistics and Philosophy* 26(5):511-545.
- Caha, Pavel. 2009. *The nanosyntax of case*. Doctoral dissertation, University of Tromsø.
- ¹⁹That case-stacking can occur on answers to wh-questions is not by itself sufficient evidence against treating case-stacked DP as CT. CT marking on wh-words is possible and indicates alternative yes-no questions that vary by the set of elements denoted by the wh-word (i.e. the wh-question needs to be D-linked). What’s more informative is whether case-stacking is felicitous on exhaustive answers to wh-questions.
- Constant, Noah. 2014. *Contrastive topic: meanings and realizations*. Doctoral dissertation, University of Massachusetts Amherst.
- Kratzer, Angelika. 1996. Severing the external argument from its verbs. In *Phrase structure and the lexicon*. 109-137. Dordrecht, the Netherlands: Springer.
- Levin, Theodore. 2017. Successive-cyclic case assignment: Korean nominative-nominative case-stacking. *Natural Language & Linguistic Theory* 35:447-498.
- Marantz, Alec. 1991. Case and licensing. In *Eastern States Conference on Linguistics (ESCOL)*, eds. Germán Westphal et al. Vol. 8, 234-253. Ithaca: CLC.
- Pesetsky, David. 2014. *Russian case morphology and the syntactic categories*. MIT Press.
- Preminger, Omer. 2011. *Agreement as a fallible operation*. Doctoral dissertation, MIT.
- Richards, Norvin. 2013. Lardil “case stacking” and the timing of case assignment. *Syntax* 16:42-76.
- Schütze, Carson T. 2001. On the nature of default case. *Syntax* 4:205-238.
- Tomioka, Satoshi. 2010a. Contrastive topics operate on speech acts. In *Information Structure: Theoretical, Typological, and Experimental Perspectives*, eds. Malte Zimmermann and Caroline Féry, 115-138. Oxford University Press.
- Tomioka, Satoshi. 2010b. A scope theory of contrastive topics. *Iberia* 2(1):113-130.
- Wagner, Michael. 2012. Contrastive topics decomposed. *Semantics and Pragmatics* 5(8):1-54.
- Yabushita, Katsuhiko. 2017. Partition semantics and pragmatics of contrastive topic. In *Contrastiveness in information structure, alternatives and scalar implicatures*, eds. Lee, Chungmin, Ferenc Kiefer, and Manfred Krifka. Dordrecht, the Netherlands: Springer