How many underlying objects in object-sharing serial verb constructions? New evidence from suspended pro-drop in Akan

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Introduction

Serial Verb Constructions (**SVCs**, see a.o. Aikhenvald 2005; Bisang 2009; Haspelmath 2016; Veenstra and Muysken 2017; Lovestrand 2021):

(1) A téi$_1$ **dí** **fáka** kóti$_2$ **dí** **beée**
3SG take DET knife cut DET bread
Lit.: "He took the knife (and) cut the bread."
"He cut the bread with the knife."
(Sarámàccan, Veenstra and Muysken 2017: 4)

- monoclausal constructions that contain at least two (in)transitive verbs with the same subject
- verbs (V_1, V_2, ...) are juxtaposed **without an overt linker**
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Q Do SVCs involve **parataxis or hypotaxis** (subordination) of the serialized verbal projections? ⇒ both options have been proposed

Introduction

SVCs can involve **object sharing (= OS-SVCs)**

(2) a. ò dà $\boxed{\text{sɛ́}}_1$ lá nɛ́nè $\boxed{\text{ɔ̀ɔ̀}}_2$
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"Asiba ate a lot of rice." *Gungbe, (Aboh 2009: 1)*

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Research questions

Q1: What is the underlying syntactic structure of OS-SVCs?

Q2: How is object sharing created? How many underlying objects?

Aims

- We propose a **new** (morpho-phonological) **diagnostic** that identifies the number of underlying objects in OS-SVCs: **suspended pro-drop** syntactically present but usually silent objects are forced to surface

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- We **apply this diagnostic to** (i) non-idiomatic (i.e., compositional) OS-SVCs and to (ii) idiomatic **OS-SVCs in Akan** (Kwa, Ghana)

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Mè [gyè-è]$_1$ nó [dì-ìɛ̀]$_2$
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- evidence for **language-internal variation** (Campbell 1996; Osam 2003): (3) has more than one underlying object, while (4) has a single object
- the **results** of the new morphological diagnostic are **in line with semantic and syntactic diagnostics**

Roadmap

1. Two approaches to object sharing in SVCs
   - True vs. surface sharing
   - Prediction: the possible number of overt objects
2. OS-SVCs and *pro*-drop in Akan
3. Applying the new diagnostic to Akan
   - Suspended *pro*-drop in OS-SVCs
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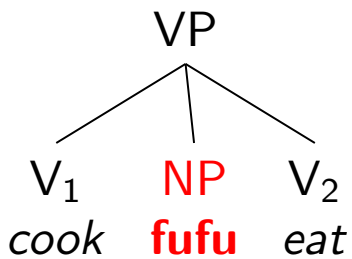
Two approaches to object sharing

True sharing: a single underlying object is linked to all Vs in the SVC

(4) a. double-headed VP
(e.g., Baker 1989; 1991;
Baker and Stewart (2002)):



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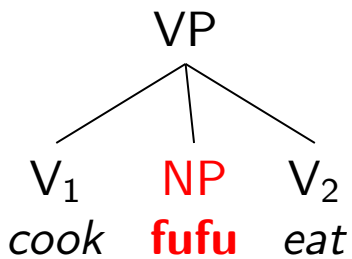

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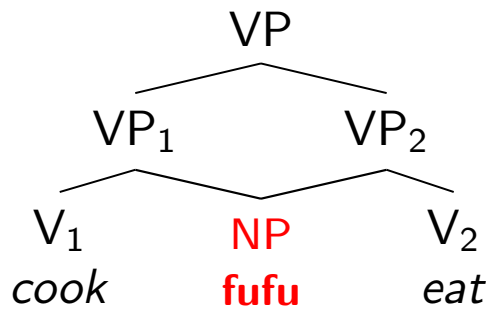

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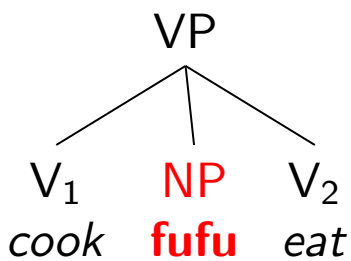

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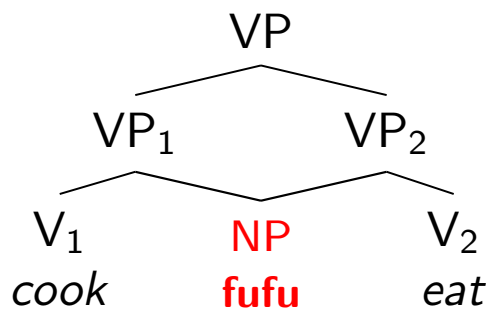

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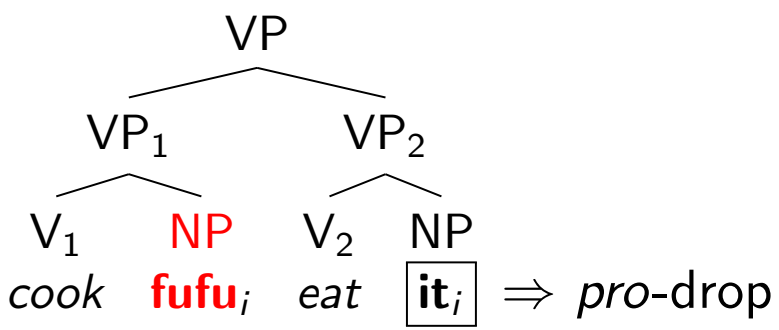

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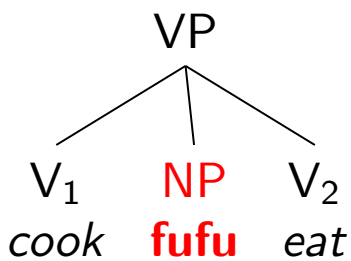

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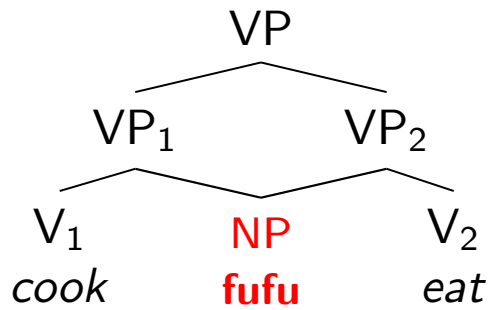

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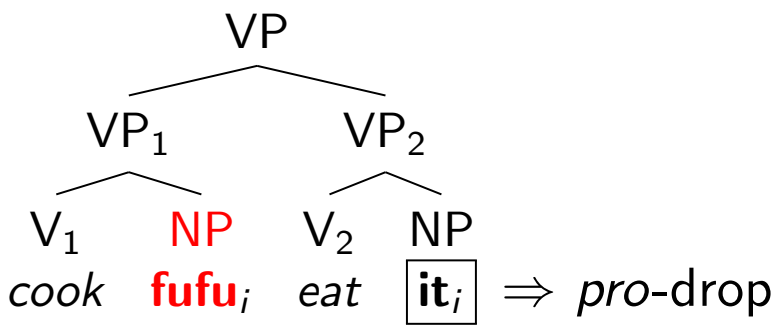
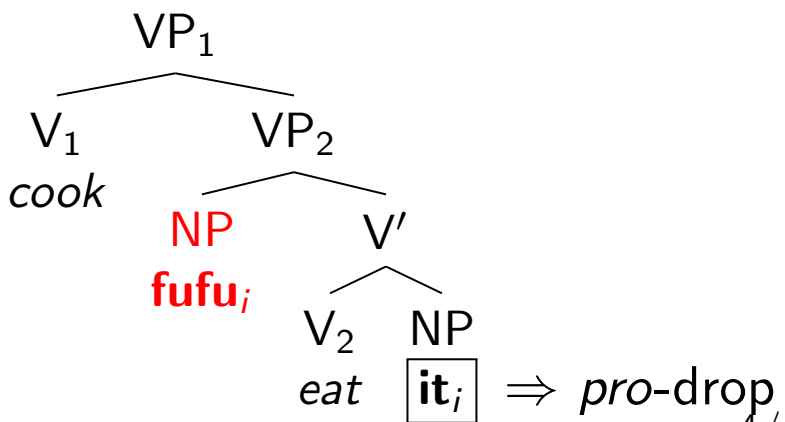


b. subordination
(e.g., Collins 1997; Déchaine 1993):



Prediction

- **Starting point:** true and surface sharing make **different predictions regarding the possible number of overt objects**
  - surface-sharing: more than one object could surface (1 per lexical verb)
  - true sharing: there can only ever be a single object on the surface

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  - *pro*-drop is subject to language-specific constraints (conditioned, e.g., by the ϕ-features of the antecedent, its discourse-status, ...)

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A new diagnostic (suspended pro-drop) and its predictions:

- **put an OS-SVC in a context where pro-drop is blocked**

$\Rightarrow$ surface sharing: the object of each lexical verb can surface

$\Rightarrow$ true sharing: we will still see only 1 object (in the same position)

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Akan grammar (Christaller 1875/1964; Riis 1854; Saah 1994; Osam 1994)

(6) Kófí boá-a Afíá ɛ́nóra
Kófi help-PST Afia yesterday
"Yesterday Kófi helped Afia." (Marfo 2005: 9)

- basic word order: SVOX; EPP on T (Saah 1994; Campbell 1998)

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- verbs inflect, e.g., for tense and aspect (Armenante 2024)
- no argument-verb agreement, case morphology only in pronouns

(7) Object pronouns (Saah 1994: 89, Osam 1994: 149):

	sg	pl
1	me	yɛn
2	wo	mo
3 anim	no	wɔn
3 inanim	**no**	**no**

- tone language: H (á), L (à), downstep, grammatical tone (Dolphyne 1988; Kügler 2016)

OS-SVCs in Akan (Amaechi et al. 2023)

- OS-SVC (non-idiomatic):

(8) Kwékù kù-ù$_1$ àkókɔ́ nó nòá-àɛ̀$_2$
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- OS-SVCs (idiomatic):

(9) Mè gyè-è$_1$ nó dì-ìɛ̀$_2$
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It is impossible in both OS-SVCs to add an overt object pronoun after V_2!

Pro-drop in Akan

Generalization (incomplete)
(see Riis 1854; Christaller 1875/1964; Osam 1996; Korsah 2017):

Non-human object pronouns in Akan must be dropped.

(10) Non-human object antecedent:

a. Me hu-u adaka no
1SG see-PST box DEF
"I saw the box."

b. Me hu-uɛ̀ ***no** / **✓Ø**
1SG see-PST 3SG
"I saw it (= the box)."

(11) Human object antecedent:

a. Me hu-u Kófî
1SG see-PST Kófî
"I saw Kófî."

b. Me hu-u **✓no** / ***Ø**
1SG see-PST 3SG
"I saw him (= Kófî)."

(Saah 1994: 91)

Suspended *pro*-drop in Akan

Generalization (final version)

Non-human object pronouns in Akan must be dropped **unless they are** ...

1. **followed by a clause-final adverb** (Saah 1994)

(12) Mè hù-ù ✓**nó** / *Ø ànɔ́pá
1SG see-PST 3SG morning
"I saw it (the box) in the morning."

2. **selected by a change-of-state predicate** (Osam 1996)

(13) Kófî bù-ù ✓**nó** / *Ø
Kófî break-PST 3SG
"Kófî broke it."

3. **the argument of a secondary predicate** (Korsah 2017)

(14) a. Kuukua té *nó / ✓**Ø**
Kuukua pluck 3SG
"Kuukua plucks it (a flower)."

b. Kuukua té ✓**nó** / *Ø mónó
Kuukua pluck 3SG fresh
"Kuukua plucks it fresh."

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Procedure

(15) Kwékù [kù-ù]$_1$ àkókɔ́ nó [nòá-àɛ̀]$_2$
Kwékù kill-PST chicken DEF cook-PST
"Kwékù killed the chicken and cooked it." (OS-SVC baseline)

- **NOVEL**: We embed the target sentence in a context in which the shared object is pre-mentioned

  ⇒ This will allow us to pronominalize the object of V_1, too!

  Can both object positions be affected by *pro*-drop? ⇒ no overt OBJ?
- We add the contexts that block object *pro*-drop *to each VP* → can an object pronoun (not) surface after V_1 and/or V_2?
- The data were collected in elicitation sessions with 1 main consultant in Potsdam.

Clause-final adverbs in non-idiomatic OS-SVCs

(16) Context: Two weeks ago, Kwékù got a chicken for his birthday.

a. ɔ [kù-ù]$_1$ **nó** énóra [nòá-à]$_2$ **nó** ànɔ̀pá
3SG.SUB kill-PST 3SG yesterday cook-PST 3SG morning
"He killed it yesterday and cooked it in the morning."

b. ɔ [kù-ù]$_1$ **nó** énóra [nòá-àɛ̀]$_2$ **Ø**
"He killed it yesterday and cooked it."

c. ɔ [kù-ùɛ̀]$_1$ **Ø** [nòá-à]$_2$ **nó** ànɔ̀pá
"He killed it and cooked it in the morning."

d. ɔ [kù-ùɛ̀]$_1$ **Ø** [nòá-àɛ̀]$_2$ **Ø**
"He killed it and cooked it."

Note: Here and below we show the possible pronoun forms (overt *nó* vs. silent Ø) in the examples; the respective other form is ungrammatical.

Change-of-state (CoS) predicates in non-idiom. OS-SVCs

(17) Context: Kwámè has a key chain on his backpack. Walking to school ...

ɔ [tete-e]$_1$ **nó** [bubu-u]$_2$ **nó**

he tear-PST 3SG break-PST 3SG

"He tore and broke it." *(CoS V_1+V_2)*

(18) Context: Kwámè held the broken key chain on the way home.

ɔ [bubu-u]$_1$ **nó** [kura-ɛ]$_2$ **Ø**

he break-PST 3SG hold-PST

"He broke it and held it." *(CoS V_1)*

(19) Context: Kwámè's mother saw the broken key chain.

ɔ [gye-ɛ]$_1$ **Ø** [siesie-e]$_2$ **nó**

she collect-PST repair-PST 3SG

"She took and repaired it." *(CoS V_2)*

(20) Context: Kófi bought a chicken for dinner.

ɔ [noa-eɛ]$_1$ **Ø** [di-eɛ]$_2$ **Ø**

he cook-PST eat-PST

"He cooked and ate it." *(no CoS V)*

Secondary predicates in non-idiomatic OS-SVCs

Context: Yesterday, Kófi bought meat at the market.

(21) Kófi [nòá-à]$_1$ **nó** sáá [dì-ì]$_2$ **nó** hỳèhỳèèhỳè
Kófi cook-PST 3SG fresh eat-PST 3SG hot
"Kófi cooked it fresh and ate it hot ."

(22) Kófi [nòá-à]$_1$ **nó** sáá [dì-èɛ̀]$_2$ **Ø**
Kófi cook-PST 3SG fresh eat-PST
"Kofi cooked it fresh and ate it."

(23) Kófi [nòá-àɛ̀]$_1$ **Ø** [dì-ì]$_2$ **nó** sáá
Kófi cook-PST eat-PST 3SG fresh
"Kófi cooked it and ate it fresh."

(24) Kófi [nòá-àɛ̀]$_1$ **Ø** [dì-ìɛ̀]$_2$ **Ø**
Kófi cook-PST eat-PST
"Kófi cooked it and ate it."

Result: We found evidence for **surface sharing in non-idiomatic OS-SVCs**: the (distinct) object of each V surfaces when *pro*-drop is blocked

Blocked pro-drop with animate objects

Aligning with the Generalization...

Human-object pronouns cannot be dropped

No *pro*-drop with animate objects – each lexical verb has an overt object.

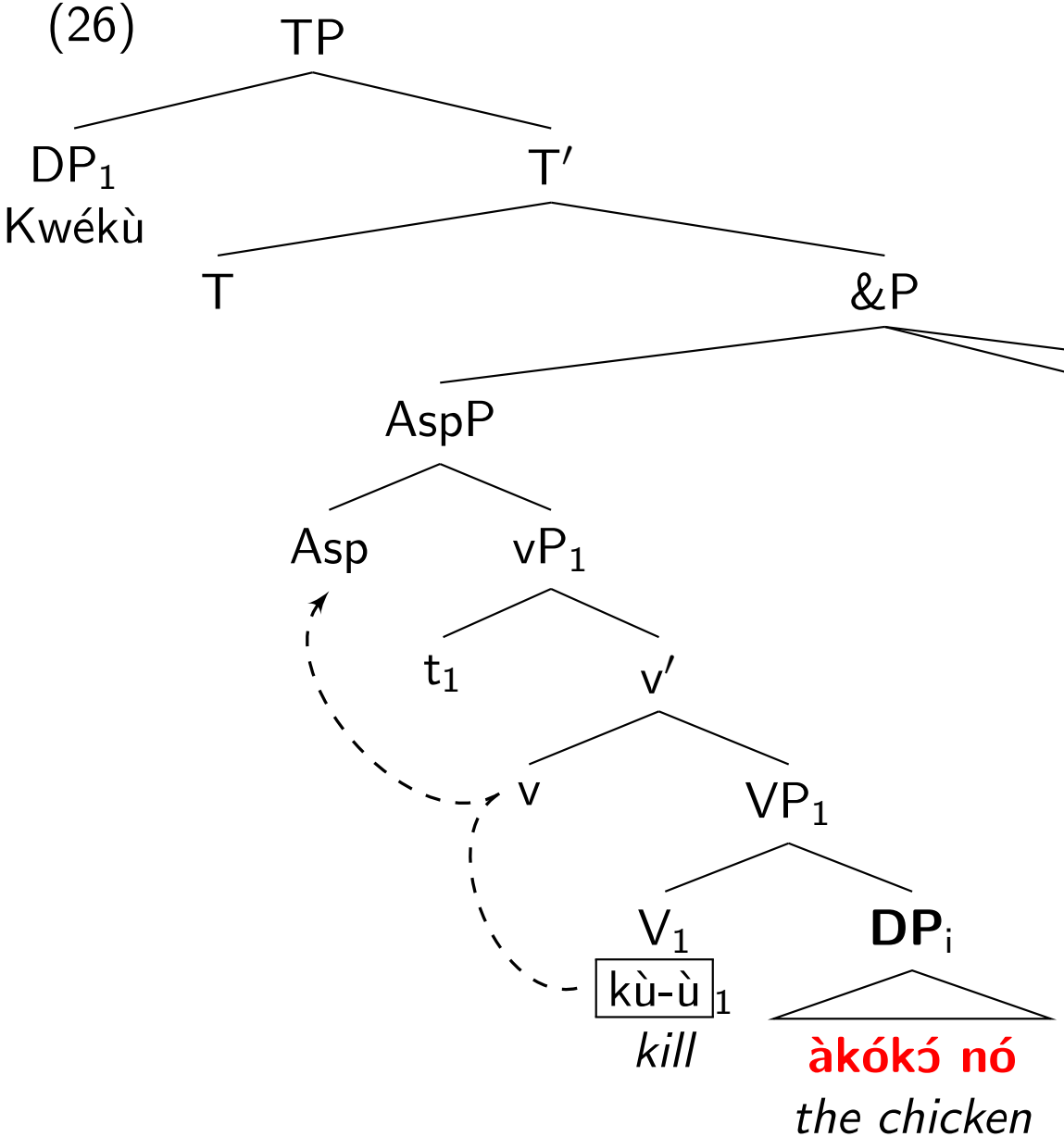
(25) Kófî [hù-ù]$_1$ nó [bísà-á]$_2$ nó
Kófî see-PST 3SG ask-PST 3SG
"Kófi saw and asked him."

The animacy feature distinction of pronoun surfacing was already described in Saah (1994).

Further examples can be found in the literature, see, e.g., Campbell (1996: 90), Osam (2003: 17), Ameka (2004: 14), Owusu (2022: 169).

Structure of non-idiomatic OS-SVCs

(26)



- AspP-coordination (&P to be motivated below), each V combines with an object (see also Owusu 2022), V-to-Asp-movem.
- each conjunct has its own external argument (*pace* Owusu 2022) +ATB-EPP-movem.

Idiomatic OS-SVCs

idiom: 'to collect eat' = 'to believe'

(27) Mè [gyè]$_1$ [dì-èɛ̀]$_2$
1SG collect eat-PST
"I believed it."

non-human object → no pronoun after V_1, V_2

(28) Mè [gyè-è]$_1$ nó [dì-èɛ̀]$_2$
1SG collect-PST 3SG eat-PST
"I believed him/her."

human object, but **overt pronoun only after V_1!** → suggests true sharing

Note: *nó* is possible after V_2 but only with the literal meaning.

(29) Mè [gyè-è]$_1$ nó [dì-ì]$_2$ nó
1SG collect-PST 3SG eat-PST 3SG
"I collected him and ate him."

Idiomatic OS-SVCs in contexts that block pro-drop

Further evidence for true sharing: no overt pronoun after V_2 with

- a secondary predicate
- a clause-final adverb

(30) Mè [gyè]$_1$ [dì-èɛ̀]$_2$ paa
1SG collect-PST eat-PST strong
"I believed it strongly."

(31) Mè [gyè]$_1$ [dì-èɛ̀]$_2$ ànɔ́pá nò
1SG collect eat-PST morning DEF
"I believed it in the morning."

- Adding the overt pronoun before the sec. predicate/the adverb in (30) and (31) is possible, but only with the literal meaning
- It is not possible to add an adverb or a secondary predicate after V_1 with the idiomatic reading (only literal reading then)
- We cannot replace the verbs in the idiom with CoS-verbs (loss of the idiomatic reading)

Structure of idiomatic OS-SVCs

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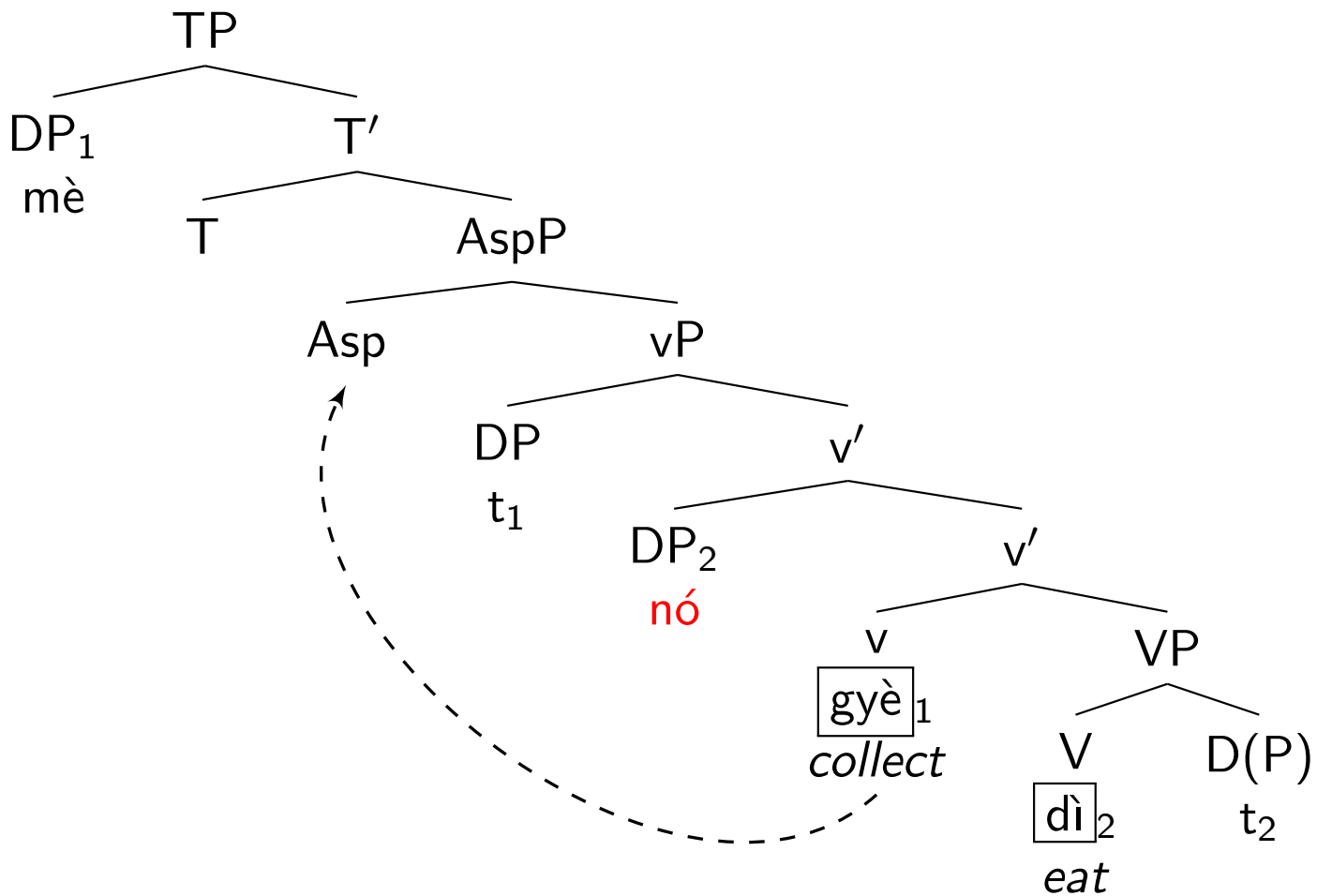

- a single vP, a single (originally complex) event
- V_1 is of a functional nature and sits in v (cf. Aboh 2009)
- OBJ moves to SpecvP, v moves to Asp

Further support from semantic diagnostics

- **Contrary adverbs/adverb asymmetries**:

  True OBJ-sharing idiomatic SVCs do not structurally license the occurrence of two adverbs (33-b), contrary or not, unlike non-idiomatic SVCs with and w/o overt OBJ PRON, which do (33-a):

(33) a. Kwékù [kù-ù]$_1$ àkókɔ́ nó$_i$ ǹtɛ́m só [nòá-à]$_2$ nò$_i$/
Kwékù kill-PST chicken DEF quickly TOP cook-PST 3SG
nòá-àyɛ̀ Ø$_i$ ǹkàkrákàkrá
cook-PST slowly
"Kwékù killed a chicken quickly and cooked it slowly."

b. Mè [gyè-è]$_1$ nó (* ǹtɛ́m só) [dì-eɛ̀]$_2$ ǹkàkrákàkrá
1SG collect-PST 3SG quickly TOP eat-PST slowly
"Bit by bit, I believed (in) him/her."

Further support from semantic diagnostics

- **Contrary temporal adverbs**:

  Contrary temporal adverbs can be added to non-diomatic SVCs with an overt pronominal object (34-a), as is expected on a unified covert conjunction analysis.

  In contrast, they are blocked from idiomatic SVCs (34-b):

(34) a. Kwékù [á-kù]$_1$ àkókɔ́ nó$_i$ ɛ̀nórà [rè-nòá]$_2$ nó$_i$
Kwékù PRF-kill chicken DEF yesterday PROG-cook 3SG
ànɔ̀pá yí
morning this
"Kwékù has killed the chicken yesterday and is cooking it this morning."

b.*Mè [gyè-è]$_1$ nó ɛ̀nórà [dì-ìyɛ̀]$_2$ ɛ̀nńɛ́
1SG collect-PST 3SG yesterday eat-PST today

Further support from semantic diagnostics

- The possibility of having different temporal specification in (34-a) suggests that we are dealing with two independent events as in the case of covert conjunction!
- The use of two adverbs with an overt object pronoun is acceptable to the speakers consulted with specific aspectual combinations, e.g., Perfect(ive) + Progressive.
- This diagnostic fails with LEN marking *past* on both V_1 and V_2, presumably due to interaction with the temporal sub-structure induced by tense marking: the same reference time cannot be located at different locations.

Further support from semantic diagnostics

- **A-quantification on V_2**:

  A-quantification on V2 is possible with non-idiomatic SVCs with an overt object pronoun (35-a), as expected for covert conjunction. With idiomatic OBJ-sharing (35-b), Q-ADVs modify the entire vP-predication.

(35) a. Kwékù [kù-ù]$_1$ àkókɔ́ nó$_i$ [nòá-à]$_2$ nò$_i$ m̀pɛ́ń pìì
Kwékù kill-PST chicken DEF cook-PST 3SG time many
"Kwékù killed the chicken and cooked it many times."

b. Mè [gyè-è]$_1$ nó [dì-ìɛ̀]$_2$ m̀pɛ́ń pìì
1SG collect-PST 3SG eat-PST time many
"I believed him many times."

Constituent containing V2 and Q-ADV in (35-a) denotes a proposition (clausal conjunct), not an event predication. V2 + Q-ADV does not denote an independent proposition in (35-b).

Further support from syntactic diagnostics

- different vP-constituency for idiomatic vs. non-idiomatic OS-SVCs
  → should be detectable by constituency-sensitive operations
- classic extraction-based constituency tests cannot be applied:
  - non-idiomatic OS-SVCs are &P-islands (*ex-situ VP_1/VP_2-focus)
  - displacing parts of idioms leads to a loss of the idiomatic reading

- **ideophone placement** (at the right edge of VP, Veenstra 1996): possible after V_1+OBJ in non-idiomatic OS-SVCs (with or without an overt object pronoun): ⇒ *kù-ù àkókɔ́ nó* forms an independent VP

(36) Adwoa [$_{VP}$ kù-ù$_1$ àkókɔ́ nó] wom nòá-à(yɛ̀)$_2$ (nò$_i$)
Adwoa kill-PST chicken DEF swiftly cook-PST 3SG
"Adwoa killed the chicken swiftly and cooked it."

The ideophone data support a uniform analysis of Akan non-idiomatic SVCs in terms of covert conjunction (+ *pro*-drop)

Conclusions

- a **new** (morpho-phonological) **diagnostic** of **suspended pro-drop** provides insight into the underlying object structure of SVCs: **two objects** in non-idiomatic SVCs and **one object** in idiomatics SVCs
- **constraints on pro-drop** force a syntactically present (but usually silent) pronoun to surface in blocked *pro*-drop contexts
- evidence for **language-internal variation**: Akan has SVC-constructions with *surface OBJ-sharing* and *true OBJ-sharing*
- the **results** of the new morphological diagnostic **receive independent support from semantic and syntactic diagnostics**

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A 4th context that blocks pro-drop

- cross-linguistically, *pro*-drop of pronominal conjuncts is prohibited; this also holds in Akan

(37) Overt inanimate object pronoun as a conjunct:
Kófì nòá-à [$_{\&P\text{-}DP}$ nó / *Ø ne bayérɛ́ nó]
Kófì cook-PST 3SG and yam DEF
"Kófì cooked it (the chicken) and the yam."

- If the shared object in an OS-SVC is a conjunct, the pronoun should surface – this is borne out:

(38) Kófì kù-ù$_1$ **àkókɔ́ nó** nòá-à$_2$ [$_{\&P\text{-}DP}$ nó / *Ø ne bayérɛ́ nó]
Kófì kill-PST chicken DEF cook-PST 3SG and yam DEF
"Kófì killed the chicken$_i$ and cooked it$_i$ and the yam."

The transitivity of V_2

(39) Kwékù $\boxed{\text{kù-ù}}_1$ àkókɔ́ nó $\boxed{\text{nòá-àɛ̀}}_2$
Kwékù kill-PST chicken DEF cook-PST
"Kwékù killed the chicken and cooked it."

- potential confound: maybe V_2 is used intransitively in (39)?
- evidence against this view: (39) cannot mean
"Kwékù killed the chicken and then he cooked (something else)."

Which clause-final elements block *pro*-drop?

(Saah 1994; **?**; Korsah 2017)

- **clause-final elements that block pro-drop**:
  - adverbs: manner, place, time
  - in situ interrogative adverbs like *how*, *when*
- **elements that do not block pro-drop**:
  - sentence-level and speaker-oriented adverb (e.g., *anɔkwálé* 'truly', which can only at the sentence-initial position
  - temporal adverbs when they occur at the left edge of the clause (not possible with adverbs of manner and place)
- **not just any overt material** that follows the verb **blocks pro-drop**; it is not blocked by the clause-final (i) imperative particle, (ii) the question particle, and (iii) the clausal determiner

$\Rightarrow$ it's not a prosodic condition, but **sensitive to hierarchical structure** (roughly: material attached below the C-domain)

What governs (y)ɛ-marking in Akan? (Kandybowicz 2015)

- *(y)ɛ* is inserted to avoid a vacuous VP with no prosodically overt material.
- VPs are vacuous in case of V-movement in the absence of other VP-internal material, i.e. (i.) with intransitive Vs, (ii.) with transitive Vs plus OBJ-fronting, or (iii.) **with transitive Vs plus object prodrop (relevant here)**, cf. (41):

(40) Yaw a-wɔ ⊘.
Yaw PERF-pound 3.SG.IA
'Yaw has pounded it.'

(41) Yaw wɔ-ɔ ⊘ *(yɛ).
Yaw pound-PST 3SG.IA yɛ
'Yaw pounded it.'

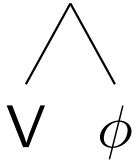
- No *yɛ* in the absence of V-movement (when blocked by filled Asp-head or Neg-head), cf. (40), or in the presence of other VP-internal material: e.g., overt object NPs, VP-internal adverbials, ...

What do the contexts that block *pro*-drop have in common?

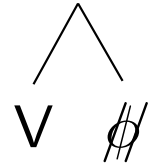
Korsah (2017: ch.2) proposes the following analysis (for Gã, which shows the same pro-drop pattern as Akan):

- LCA (Kayne 1994): asymmetric c-command translates into linear precedence
- problem: sister nodes like V and the DO are in a symmetrical relation → linearization conflict
- possible solution: *pro*-drop of the DO-pronoun – this is what happens in Akan inanimate object *pro*-drop

(42) a.



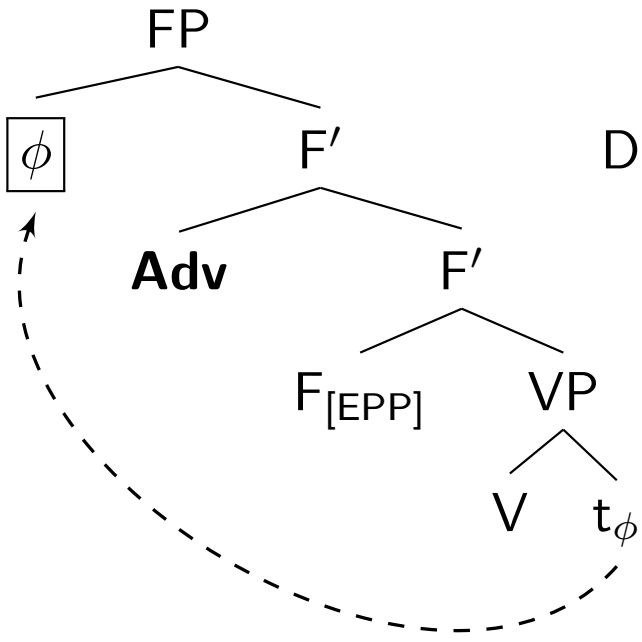
b.



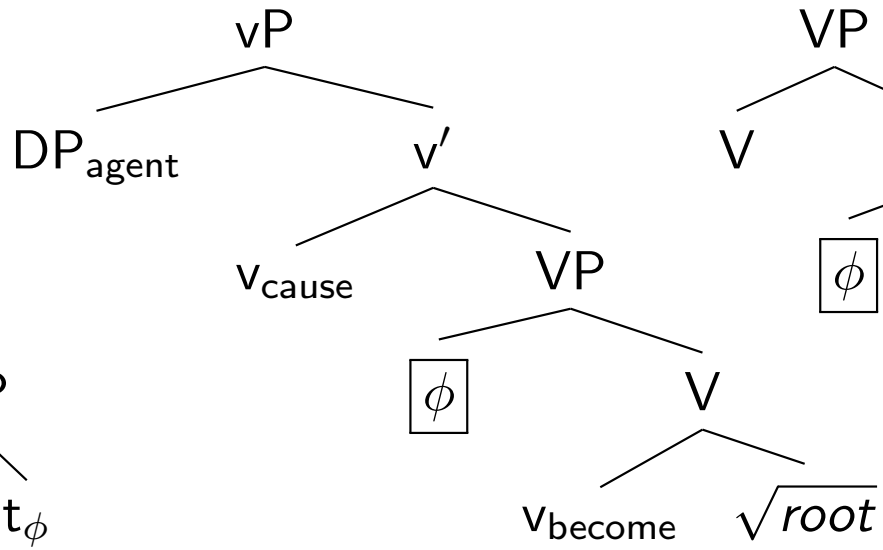
- when object *pro*-drop is blocked, the DO-pronoun either undergoes object shift to, or is base-merged in, a specifier position outside the VP, which restores asymmetry, and thereby avoids *pro*-drop

What do the contexts that block *pro*-drop have in common?

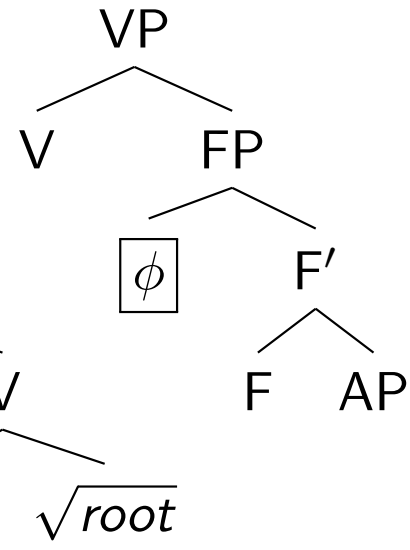
(43) Clause-final adverb:



(44) CoS-verbs:



(45) Secondary pred.:



DO moves to a Spec-position

DO base-merged in a Spec-position

DO base-merged in a Spec-position

\+ subsequent V-movement (which restores VO-order in (43) and (44))

▶ animate DOs move to SpecvP (attracted by a person+EPP-feature on v)

Overt vs. covert coordination

- Baker (1989) (see also Aboh 2009 for discussion) a.o.:
  OS-SVCs cannot involve (covert) coordination because unlike overt coordination, they do not allow for an overt object pronoun after V_2
- compare overt coordination in Akan with our OS-SVCs:
  both allow *pro*-drop of an inanimate object of V_2, so this argument against an &P-analysis does not apply to Akan

(46) Kófì [kù-ù]$_1$ àkókɔ́ nó **nà** ɔ̀- [nòá-àɛ̀]$_2$.
Kófì kill-PST chicken DEF and 3SG cook-PST
'Kófì killed the chicken and he cooked it.'

- further difference: the subject must be repeated with overt coordination (probably coordination at a higher level)

Negation of Akan OS-SVCs

- Osam (2003): "Generally, in an Akan serial construction, negating the sentence means each verb being morphologically marked by the negative prefix."

(47) Kófî [á-n-kù]$_1$ àkókɔ́ nó [à-n-nòáɛ̀]$_2$.
Kófî PST-NEG-kill chicken DEF PST-NEG-cook
'Kófi did not kill the chicken and cook it.'

- cannot be followed up by *', but he only killed it.'*
- Negation is situated lower and scopes over each conjunct.