Features and movement in Dinka

Coppe van Urk, Queen Mary

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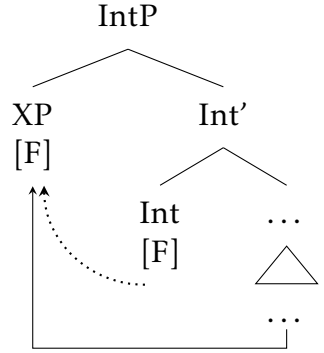
Two approaches to intermediate successive-cyclic movement within minimalism:[1]

1. Feature-driven intermediate movement:

- Intermediate movements involve a **featural relation** (Agree) between the attracting head and the moving phrase
- E.g. Chomsky (1995), McCloskey (2002), Abels (2012), Georgi (2014), Van Urk (2015)

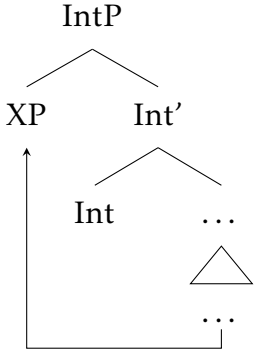
(1)



2. "Featureless" intermediate movement:

- Intermediate movement arise through **non-featural means**, by permitting free Merge of phrases with unsatisfied features
- E.g. Heck and Müller (2000, 2003), Bošković (2002, 2007), Chomsky (2013)

(2)



Question: *Can we distinguish these two approaches by their crosslinguistic predictions?*

[1] Of course, a third option is to deny intermediate movement, as in Neeleman and Van de Koot (2010) or approaches like HPSG, LFG, or CCG. But this kind of theory almost always posits intermediate features also, like feature-driven intermediate movement.

My claim in this talk:
The morphosyntax of long-distance dependencies (in Dinka, and crosslinguistically) suggests the presence of **extraction features** on intermediate heads.

What does Dinka tell us about the features involved in movement?

- Dinka has **two types of extraction marking**, in the form of a prefix on the highest verb/auxiliary and voice morphology:

  (3) Yè ŋo̤ yṳṳkṳ luêeel [$_{CP}$ **Ø-cí̤i** Bôl ___ câam]?
  be what HAB.1PL say.NF EXT-PERF.OV Bol.GEN eat.NF
  'What do we say [$_{CP}$ Bol has eaten ___]?' *Object Voice*

- I show that the distribution of this extraction marking and the fact that it occurs in a V2 system allows us to rule out accounts of extraction marking that do not make use of features (e.g. Preminger 2014:292).
- In addition, morphological alternations in the extraction prefix suggest that the features involved in terminal and intermediate movement may be **different** (e.g. Georgi 2014).

⇒ Dinka extraction marking provides a clear argument that intermediate successive-cyclic movement is **feature-driven** (e.g. Chomsky 1995, McCloskey 2002, Abels 2012).

1 Verb-second in Dinka

I start by providing an overview of the basics of long-distance movement in Dinka.

- Dinka is a **verb-second** language, in which movement to clause-initial position co-occurs with an **Austronesian-style** voice system.
- Verb-second is found in embedded clauses as well and long-distance movement satisfies the V2 requirement of every intermediate clause, providing evidence for intermediate successive-cyclic movement (Van Urk and Richards 2015, Van Urk 2015).

1.1 Verb-second and voice

Dinka is a Nilotic language spoken in South Sudan.[2] As described by Van Urk and Richards (2015) and Van Urk (2015), Dinka is a **verb-second** language.

- If any phrase is fronted, the verb inverts so that it is in **second position**:

(4) *Dinka is verb-second:*

a. Àyén **à-càm** cuiin nɛ̈ păal.
Ayen D.3S-eat food P knife
'Ayen is eating food with a knife.'

b. Cuiin **à-cɛ́ɛm** Áyèn ___ nɛ̈ păal.
food D.3S-eat.OV Ayen.GEN P knife
'Food, Ayen is eating with a knife.'

c. Păal **à-cɛ́ɛmɛ̀** Áyèn cuiin ___.
knife D.3S-eat.OBLV Ayen.GEN food
'With a knife, Ayen is eating food.'

d. *__À-càm__ Áyèn cuiin nɛ̈ păal.
D.3-eat Ayen.GEN food P knife
'Ayen is eating food with a knife.'

- It is the **highest verb or auxiliary** that is always second. If an auxiliary is present (e.g. perfect *cɛ̀*), it is the auxiliary that comes second:

(5) *Highest verb/auxiliary is second:*

a. Àyén **à-cɛ̀** cuiin câam nɛ̈ păal.
Ayen D.3S-PERF food eat.NF P knife
'Ayen has eaten food with a knife.'

b. Cuiin **à-cíi** Áyèn ___ câam nɛ̈ păal.
food D.3S-PERF.OV Ayen.GEN eat.NF P knife
'Food, Ayen has eaten with a knife.'

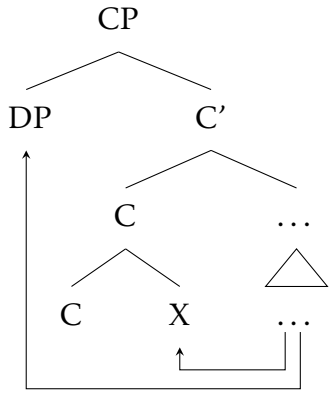
c. Păal **à-cíi** Áyèn cuiin câam ___.
knife D.3S-PERF.OV Ayen.GEN food eat.NF
'With a knife, Ayen has eaten food.'

d. *__À-cɛ̀__ Áyèn cuiin câam nɛ̈ păal.
D.3S-PERF Ayen.GEN food eat.NF P knife
'Ayen has eaten food with a knife.'

[2] The data reported here comes from elicitation work on the Dinka Bor dialect.

In Van Urk and Richards (2015) and Van Urk (2015, 2020a), I locate **Dinka V2 in the left periphery**, as a result of movement of a verbal head into a C head and phrasal movement into the specifier of this C head (Den Besten 1977):[3]

(6) *Proposed analysis of Dinka V2:*



An important difference between Dinka and other V2 languages

- One key difference between Dinka V2 and V2 in many other languages, though, is that Dinka has an **Austronesian-style voice system**.
- As in many Austronesian languages, the initial phrase is always **a nominal in the unmarked case**, with its grammatical function indicated on the V2 verb/auxiliary in the form of Voice morphology.

(7) *Dinka has Austronesian-style voice:*

a. Păal à-**bɛ̈́** dhuôoŋ.
knife 3s-PERF break.ITR.NF
'The knife will break.' *Subject Voice*

b. Păal à-**bɪ̈́i** Bôl dhôoŋ.
knife 3s-PERF.OV Bol.GEN break.NF
'The knife, Bol will break.' *Object Voice*

c. Păal à-**bɛ́nɛ̈̀** Áyèn cuɪ̈̂in câam.
knife 3s-PERF.OBLV Ayen.GEN food eat.NF
'With a knife, Ayen will eat food.' *Oblique Voice*

[3] See Van Urk (2020a) for a more detailed analysis of the extended left periphery in Dinka.

1.2 Long-distance movement and verb-second in Dinka

Van Urk and Richards (2015) and Van Urk (2015, 2018) show that Dinka has a number of **reflexes of successive-cyclic movement**.

Dinka embedded clauses are verb-second also. Embedded CPs permit fronting within them, with obligatory inversion of the verb (8a–c).

(8) *Dinka embedded clauses are V2 also:*

a. À-yu̱u̱kù̱ luêeel [$_{CP}$ Àyén **à-càm** cuı̱̂in nè̱ păal].
D.3S-HAB.1PL say.NF Ayen 3.DS-eat food P knife
'We say that Ayen is eating food with a knife.'

b. À-yu̱u̱kù̱ luêeel [$_{CP}$ cuı̱̂in **à-céɛm** Áyèn nè̱ păal].
D.3S-HAB.1PL say.NF food D.3S-eat.OV Ayen.GEN P knife
'We say that, food, Ayen is eating with a knife.'

c. À-yu̱u̱kù̱ luêeel [$_{CP}$ păal **à-céɛmè̱** Áyèn cuı̱̂in].
D.3S-HAB.1PL say.NF knife D.3S-eat.OBLV Ayen.GEN food eat.NF
'We say that, with a knife, Ayen has eaten food.'

Now look at what happens when you do **long-distance movement** in Dinka. The embedded verb/auxiliary now must be **initial** in the embedded clause and shows **Voice morphology** matching the extracted phrase:[4]

(9) *Long-distance movement and V2:*

a. Yè **ŋà̱** yu̱u̱kù̱ luêeel [$_{CP}$ ___ cé̱ ___ cuı̱̂in câam]?
be who HAB.1PL say.NF PERF food eat.NF
'Who do we say [$_{CP}$ ___ has eaten food]?'

b. *Yè **ŋà** yu̱u̱kù̱ luêeel [$_{CP}$ cuı̱̂in à-cíi ___ câam]?
be who HAB.1PL say.NF food D.3S-PERF.OV eat.NF
'Who do we say [$_{CP}$ has eaten food]?'

c. Yè **ŋò̱** yu̱u̱kù̱ luêeel [$_{CP}$ ___ cíi Bôl ___ câam]?
be what HAB.1PL say.NF PERF.OV Bol.GEN eat.NF
'What do we say [$_{CP}$ Bol has eaten ___]?'

[4]Note that the perfect auxiliary in an Oblique Voice clause exceptionally surfaces with Object Voice morphology, unlike main verbs (see Van Urk 2015 for detail).

d. *Yè **ŋ̈ó̤** yü̱ü̱kù̱ luêeel [$_{CP}$ Bòl à-cé̱ ___ câam]?
be what HAB.1PL say.NF Bol D.3S-PERF eat.NF
'What do we say [$_{CP}$ Bol has eaten ___]?'

e. Yè **tè̱̈nó** yü̱ü̱kù̱ luêeel [___ cíi wɔ́ɔk càm ___]]?
be where HAB.1PL say.NF PERF.OV WE.GEN eat.NF
'Where do we say [$_{CP}$ that we have eaten ___]?'

f. *Yè **tè̱̈nó** yü̱ü̱kù̱ luêeel [$_{CP}$ wɔ̀ɔk àcé̱ cuíin câam ___]]?
be where HAB.1PL say.NF we PERF.OV food eat.NF
'Where do we say [$_{CP}$ that we have eaten food ___]?'

⇒ Embedded V2 must be satisfied by the phrase undergoing long-distance movement, offering evidence for **intermediate successive-cyclic movement** into the left periphery.

2 Two kinds of extraction marking in Dinka

Alongside the V2 pattern, Dinka has two types of **extraction marking** on intermediate heads:

- As noted above, the V2 verb/auxiliary carries **Voice morphology**, which I show encodes an opposition between **subject/non-subject extraction**.
- In addition, the V2 verb/auxiliary carries a clause type prefix/particle, which is sensitive to extraction.

2.1 Dinka voice morphology

The first reflex of intermediate movement is that the V2 verb/auxiliary carries Voice morphology that corresponds to the function of the moving phrase:

(10) *Long-distance movement and V2:*

a. Yè ŋà yu̱u̱kù luêeel [$_{CP}$ **cé̱** ___ cuî̱in câam]?
be who HAB.1PL say.NF PERF food eat.NF
'Who do we say [$_{CP}$ ___ has eaten food]?' *Subject Voice*

b. Yè ŋó̱ yu̱u̱kù luêeel [$_{CP}$ **cíi** Bôl ___ câam]?
be what HAB.1PL say.NF PERF.OV Bol.GEN eat.NF
'What do we say [$_{CP}$ Bol has eaten ___]?' *Object Voice*

There are three such voices:

- **Subject Voice** is the default (see below).
- **Object Voice** is marked by lengthening the verb by one mora (short to long, long to overlong) and high tone overwriting (Andersen 1993).[5]
- **Oblique Voice** is a combination of Object Voice and the suffix *-(n)è̱*, which I argue in Van Urk (2015) signals an additional process converting an oblique into a nominal for extraction (i.e. it represents applicative structure or an incorporating preposition).

⇒ At its core, Dinka voice is **an opposition between Subject Voice and Object Voice**.

Object Voice is extraction marking

- In Dinka, Object Voice is strictly **linked to movement into the left periphery**.
- In a variety of contexts, Dinka permits verb-initial clauses without movement before the highest verb/auxiliary. These clauses have Subject Voice:[6]

(11) *Clauses without extraction have Subject Voice:*

a. **Cé̱** Áyèn cuî̱in câam?
PERF Ayen.GEN food eat.NF
'Has Ayen eaten the food?'

[5] In addition, the low vowel a in the verb root is raised to ɛ, as is typical of Grade 2 suffixes (see Andersen 1993, 2017 for more detail).

[6] Such examples let us rule out an approach that takes Dinka voice to reflect argument structure alternations, as has been suggested for some Austronesian languages (see Erlewine et al. 2017 for discussion).

b. **Cám** Bôl ŋ̈ó̱?
eat Bol.GEN what
'What is Bol eating?'
c. À-yü̱u̱kù luêeel [è̱ **cé̱** Áyèn cuïn câam].
D.3S-HAB.1PL say.NF C PERF Ayen.GEN food eat.NF
'We say that Ayen has eaten the food.'

Proposal:
Object Voice is the realization of an **extraction feature** on a C head, signaling **non-subject extraction**.

2.2 A clause type particle in Dinka

The Dinka V2 position is marked morphologically by a **clause type particle**, as pointed out by Andersen (1991). This prefix indexes three types of information:

1. **Clause type:** The prefix has different paradigms in *declaratives* and *interrogatives/relative clauses* (glossed EXT for extraction):

   (12) *Clause type marking on particle:*
   a. Àyén **à**-càm cuïn nè̱ păal.
   Ayen D.3S-eat food P knife
   'Ayen is eating food with a knife.'
   b. Yè ŋà [$_{CP}$ **Ø**-cé̱ cuïn câam]?
   be who EXT-PERF food eat.NF
   'Who has eaten the food?'

2. **Agreement:** The particle indicates the person and number of the phrase in clause-initial position. In declaratives, the prefix is silent with local persons (13a), *à-* with 3rd person singular nominals (13b), and *áa-* with 3rd person plural nominals (13d).

   (13) *Topicalization feeds agreement:*
   a. Yïin **Ø**-cïi môc tïiŋ.
   you D-PERF.OV man.GEN see.NF
   'You, the man has seen.'

b. Mìir **à**-càa tɪ̰̂iŋ.
giraffe D.3S-PERF.1SG see.NF
'A giraffe, I have seen.'

c. Miɛ̀ɛr **áa**-càa ké tɪ̰̂iŋ.
giraffes D.3P-PERF.1SG 3PL see.NF
'Giraffes, I have seen.'

In interrogatives/relative clauses, only the number of the fronted phrase is indicated, as evident in the *wh*-cleft in (14):

(14) *Number agreement in relative clause:*

a. Yè kɔ̂ɔc-kó [$_{CP}$ *Op* **ɛ́-kè**-thɛ̰̀t]?
be people.CS-which.PL PST-3P-cook
'Which people were cooking?'

b. Yè kɔ̂ɔc-kó [$_{CP}$ *Op* **ɛ́-kè**-cɪ́i Áyèn ké gàam gàlàm]?
be people.CS-which.PL PST-3P-PERF.OV Ayen.GEN 3PL give.NF pen
'Which people had Ayen given a pen to?'

3. **Tense:** The particle also distinguishes present and past tense, although this doesn't depend on Ā-syntax. Full paradigms for the *declarative particle* and *interrogative particle* appear in the tables below:

Declarative particle:

		SG	PL
PRESENT	1ST	∅-	∅-
	2ND	∅-	∅-
	3RD	*à-*	*áa-*

		SG	PL
PAST	1ST	*ɛ́-*	*ɛ́-*
	2ND	*ɛ́-*	*ɛ́-*
	3RD	*ée-*	*áa-kè-*

Extraction particle:

		SG	PL
PRESENT	1ST	∅-	∅-
	2ND	∅-	∅-
	3RD	∅-	∅-

		SG	PL
PAST	1ST	*ɛ́-*	*ɛ́-*
	2ND	*ɛ́-*	*ɛ́-*
	3RD	*ɛ́-*	*ɛ́-kè-*

Extraction marking on clause type particle

Importantly, every clause out of which movement takes place appears with the **extraction form** of the particle:

(15) *Intermediate movement gives rise to extraction particle:*

a. Yè ŋà yù̱u̱kù̱ luêeel [$_{CP}$ **Ø**-cé̱ ___ cuî̱in câam]?
be who HAB.1PL say.NF EXT-PERF food eat.NF
'Who do we say [$_{CP}$ ___ has eaten food]?'

b. Ye kɔ̂ɔc-kó [$_{CP}$ *Op* **é̱-kè**-yá ké tàak [$_{CP}$ **é̱-kè**-cíi Áyèn ké gàam gàlàm]]?
be people.CS-which.PL PST-EXT.3P-HAB.2SG 3PL think.NF PST-EXT.3P-PERF.OV Ayen.GEN 3PL give.NF pen
'Which people did (s)he think that Ayen had given a pen to?'

Proposal:
The extraction particle is another reflex of the presence of an **extraction feature** in the left periphery.[7]

3 Extraction marking in Dinka requires features

Can a "featureless" approach capture extraction marking?

- I argue that patterns of extraction marking like this require **extraction features**, as in an approach that says all movement is feature-driven.
- In this section, I discuss the alternative in a "featureless" account, making use of allomorphy along the lines of Preminger (2014:292). I demonstrate that the properties of the Dinka left periphery allow us to rule out such an account.

[7] This idea does not mean that it is necessary to posit more than one extraction feature. The extraction particle can be seen as an allomorph of C/T in the context of an extraction feature. In addition, the extraction particle paradigm neutralizes all person distinctions evident in the declarative particle. One option is to posit that the extraction particle reflects anti-agreement, as a result of an operation of Impoverishment in the context of an extraction feature (Baier 2018).

3.1 Extraction marking as allomorphy

Preminger (2014:292) points out that extraction marking **does not by itself require featurally distinct heads**. There is one way of generating extraction marking without a featural movement trigger, by positing **contextual allomorphy** of the intermediate head.

For example, Irish famously distinguishes between the declarative complementizer *go* and the "movement" complementizer *aL*:

(16) *Irish complementizers diagnose movement:*

a. an t-ainm [$_{CP}$ **a** hinnseadh dúinn [$_{CP}$ **a** bhí ___ ar an áit]]
the name ***aL*** was-told to-us ***aL*** was on the place
'the name that we were told was on the place'

b. *an t-ainm [$_{CP}$ **a** hinnseadh dúinn [$_{CP}$ **go** raibh ___ ar an áit]]
the name ***aL*** was-told to-us ***go*** was on the place
'the name that we were told was on the place'
(McCloskey 2002:185)

Preminger suggests that the difference between *go* and *aL* can be reduced to an allomorphy rule that spells out the complementizer as *aL* in the presence of a specifier:

(17) C → *go*
C → *aL* / SPEC ___

In this view, extraction marking would be similar to **number suppletion on roots**, in languages like Hiaki (Bobaljik and Harley 2017):

(18) *Number suppletion in Hiaki:*

a. Aapo **weye**
3SG walk.SG
'S/he is walking.'

b. Vempo **kate**
3PL walk.PL
'They are walking.' *Hiaki*

3.2 Evaluating the allomorphy account in Dinka

My claim: The unique constellation of movement reflexes in Dinka allows us to **rule out** this idea as a general account of extraction marking.[8]

What would an allomorphy account of extraction marking look like for Dinka?

Unlike Irish, Dinka is **verb-second** in all the relevant clauses! So, the spell-out rules in (18) aren't going to work, because the specifier of the relevant head is **always** filled.

I can see **two possibilities**, each with non-trivial issues:

1. **Reversing the allomorphy logic.**

   - One option may be to suggest that Dinka extraction marking reflects an **a phonologically empty specifier**:

     (19) (20) C → ∅ / SPEC ___
     C → ov

   - Since the relevant clauses are otherwise V2, intermediate movement is one way of ensuring that the intermediate head does not have an (overtly) filled specifier.[9]

   Problem: There are other ways of licensing an empty specifier in Dinka! Dinka permits *pro*-drop of 3rd person pronouns in the clause-initial position and this does not affect extraction marking:

   (21) *Pro-drop does not affect extraction marking:*
   a. *pro* **à**-càa tîiŋ.
   3S-PERF.1SG see.NF
   'Him/her, I have seen.'

[8] We may already be wary of such an account, given the crosslinguistic pervasiveness of extraction marking (e.g. Korsah and Murphy 2020, Chung 1982, Bennett et al. 2012, Clements et al. 1983, Abels and Muriungi 2008, Baier 2014, Torrence 2005), when it is still debated whether a specifier is local enough to a head to be capable of triggering allomorphy (see below).

[9] A potential problem arises with the timing of copy deletion here also, since the Bobaljik and Harley (2017) account of number-conditioned suppletion relies on the idea that copies left by movement can still trigger allomorphy. This assumption is needed for unaccusatives in which the underlying object moves to subject position.

b. Yèen **à**-càa tɪ̰̂iŋ.
3SG 3S-PERF.1SG see.NF
'Him/her, I have seen.'

In addition, we saw that verb-initial clauses do not show evidence of extraction marking, suggesting that extraction marking is not an elsewhere form.

2. **Featurally sensitive allomorphy.**

A second option might be to allow these allomorphy rules to be **featurally sensitive**, so that the spell-out of the intermediate head cares about the type of phrase that occupies the specifier.

- Indeed, in a relative clause, the realization of the clause type particle is the same in the matrix and intermediate clause:

(22) Ye kɔ̂ɔc-kó [$_{CP}$ *Op* **ɛ̰́-kè**-yá ké tàak [$_{CP}$ **ɛ̰́-kè**-cɪ́i Áyèn ké gàam gàlàm]]?
be people.CS-which.PL PST-EXT.3P-HAB.2SG 3PL think.NF PST-EXT.3P-PERF.OV Ayen.GEN 3PL give.NF pen
'Which people did (s)he think that Ayen had given a pen to?'

- We could then posit allomorphy rules that distinguish between relative operator and topics, for instance:

(23) C[3s] → *à-* / TOP ___
C[3s] → ∅- / REL ___

Problem: The extraction form of the particle also surfaces on intermediate heads in **long-distance topicalization**:

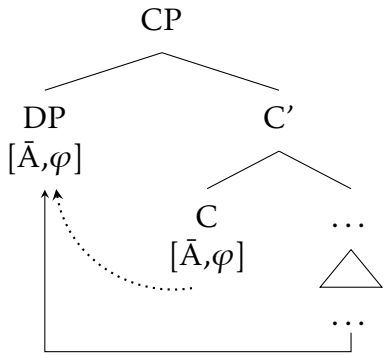
(24) *Intermediate extraction prefix with topicalization:*
Cuɪ̰̂in **à**-yàa tàak [$_{CP}$ kɛ̰̀ **∅-cɛ́ɛm** Áyèn].
food D.3S-HAB.1SG think.NF C EXT-eat.OV Ayen.GEN
'The food, I think Ayen is eating.'

If the extraction particle were an allomorph conditioned by the features of the moving phrase, the two particles **should be identical**, contrary to (24).

Conclusion: Heads that host intermediate movement must be able to carry **extraction features**, as in approaches to successive cyclicity that posit feature-driven movement (e.g. Chomsky 1995, McCloskey 2002).

Such accounts afford a straightforward account of Dinka extraction marking:

- Object Voice and the extraction particle **realize an extraction feature on C**, for example an Ā-probe:



- If we assume that movement triggers on intermediate and terminal heads may be **featurally distinct** (Georgi 2014), then we can capture the observation that the extraction prefix appears with intermediate topicalization.[10]

4 Concluding remarks

- I have presented a detailed look at **extraction marking in Dinka**: a clause type prefix and voice morphology.
- I argued that the morphosyntax of extraction marking in intermediate clauses requires an **extraction feature for intermediate movement**, as in approaches in which all steps of movement are **feature-driven** (Chomsky 1995, McCloskey 2002, Abels 2012).

[10] For instance, we could adopt the idea that the intermediate extraction feature is always uninterpretable and posit insertion rules like (i):

(i) C[3s, *i*Topic] → *à-*
C → ∅

What other morphosyntactic effects should we expect from intermediate extraction features?

In Van Urk (2020b), I provide evidence that **a range of predicted effects are attested**:

1. **Parasitic agreement.**
   Independent features on the same head may sometimes probe together (e.g. Coon and Bale 2014, Deal Monday, Bárány & Hartmann Tuesday, Scott yesterday). We can call this **parasitic agreement**.

   Intermediate extraction features should be able to participate in parasitic agreement. In Dinka, this effect is seen in the fact that φ-agreement on the clause type particle exclusively targets the moving phrase:

   (25) Ye kɔ̂ɔc-kó [$_{CP}$ *Op* ɛ̱-kè-yá ké tàak [$_{CP}$ **ɛ̱-kè**-cɪ́i Áyèn ké gàam gàlàm]]?
   be people.CS-which.PL PST-EXT.3P-HAB.2SG 3PL think.NF PST-EXT.3P-PERF.OV Ayen.GEN 3PL give.NF pen
   'Which people did (s)he think that Ayen had given a pen to?'

   See also agreeing complementizers in Wolof (Torrence 2005) and agreeing participles in Passamaquoddy (Bruening 2006).

2. **Inversion.**
   We might expect to see **independent morphosyntactic differences** between intermediate heads with and without extraction features.

   Indeed, in a number of languages, intermediate heads **trigger inversion**, such as in Belfast English and Romance (e.g. Kayne and Pollock 1978; Torrego 1984; Henry 1995):

   (26) *Inversion in Belfast English:*
   a. Who did John hope [$_{CP}$ **would** he see ___]?
   b. What did Mary claim [$_{CP}$ **did** they steal ___]?
   (Belfast English; Henry 1995:109)

   Since inversion as a process doesn't involve the moving phrase, this effect diagnoses heads with extraction features.

⇒ The **crosslinguistic morphosyntactic signature** of intermediate extraction features is predictable and consistent with the universal presence of such features.

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Appendix: Extraction marking as allomorphy

- We may wonder whether there are any examples of extraction marking that we do want to treat as allomorphy/suppletion.
- As evident in Table 1, extraction marking in many languages doesn't obviously involve allomorphy:

Table 1. Exponents of extraction marking.

Language	Exponent	Language	Exponent
Asante Twi	tone	Malay	*meN*-deletion
Chamorro	infix and nominalization, complementizer selection	Mapudungun	suffix
Defaka	suffix	Medumba	tone
Dinka	suffix	Sereer	suffix
Igbo	morpheme, tone	Shona	prefix
Irish	complementizer alternation	Welsh	mutation
Kîîtharaka	prefix	Wolof	prefix, complementizer
Kikuyu	tone		

- But I know of one case that may reflect allomorphy. In Welsh, extraction marking generally takes the form of initial consonant mutation. But the auxiliary *mae* 'be' has an irregular form *sy* used for subject extraction (Willis 2011):

(27) Pwy wy ti 'n feddwl [$_{CP}$ **sy/*mae** 'n gwybod yr ateb?]
who be.PRES.2s you PROG know be.EXT/be PROG know.INF the answer
'Who do you think knows the answer?' *Welsh*