

Clause-internal successive cyclicity: phasality or DP intervention?

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Abstract: The well-known requirement that movement must proceed successive-cyclically through intermediate landing sites is standardly attributed to the presence of locality domains (phases) along the extraction path. Correspondingly, the existence of clause-medial intermediate landing sites is commonly taken as evidence for the existence of a clause-medial phase. In this paper, we argue that successive cyclicity through clause-medial positions is better understood as the result of intervention by the external-argument DP, not phasehood. Building on recent proposals about the principles that govern the behavior of complex probes, we propose that C in these cases can only attract the structurally closest element. Elements separated from C by an intervening DP must first “leapfrog” around the intervening DP. In languages where such leapfrogging is impossible, a local-subject-only extraction restriction arises; in language where such leapfrogging is possible, extracting elements across the local subject is possible but must proceed through a clause-medial intermediate position, resulting in successive cyclicity. Evidence for this shift away from absolute locality domains like clause-medial phases to a DP-intervention account includes: (a) the reflexes of successive cyclicity are selective, arising with some elements but not others, (b) the distribution of the effect does not correlate with whether an element is vP-internal or vP-external, but with whether a DP intervenes between this element and C, and (c) extraction patterns in unaccusatives.

1. Introduction

According to standard phase theory (Chomsky 2000, 2001, 2008, with an important precursor in Van Riemsdijk’s 1978 Head Constraint), syntactic structure is subject to periodic *Spell-Out* (or *Transfer*), which renders it unavailable for further syntactic processes. Once a phase is completed, its complement is undergoes Spell-Out, which makes the phase complement inaccessible for all subsequent operations. Only the phase head itself and its specifiers (the so-called *phase edge*) remain accessible. This architecture results in the *Phase Impenetrability Condition* (or PIC) in (1).¹

(1) *Phase Impenetrability Condition* (Chomsky 2000:108)

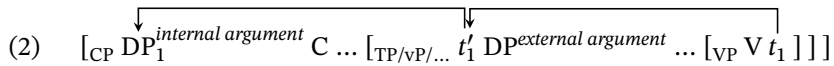
In phase α with head H, the domain of H is not accessible to operations outside of α , only H and its edge are accessible to such operations.

A key consequence of the PIC is that it leads to successive-cyclic movement: in order for an element in the phase complement to remain accessible, this element must first move to the phase edge to avoid Spell-Out.

¹ There exist at least two widely adopted versions of the PIC, which differ in when the syntactic structure becomes unavailable. The version in (1) states that the phase complement is spelled out once the next-higher head is merged (Chomsky 2000); the other version of the PIC is that Spell-Out takes place when the next-higher *phase* head is merged (Chomsky 2001). We will tentatively assume the former version here but our investigation of clause-internal successive cyclicity is not specifically tied to one choice over the other.

The PIC states the effect that a phase head has on the syntactic computation, but it does not, in and of itself, determine which domains count as phasal (and equivalently, which heads constitute phase heads). The question is empirical in nature. The traditional view (Chomsky 2000, 2001 and much subsequent work) holds that CPs and (transitive) vPs are phases, at least in the verbal domain (an idea that goes back to Chomsky 1986), but a number of alternatives have been explored in the literature, including that every phrase is a phase (Bošković 2002, Boeckx 2003, Müller 2004, 2010, 2011, Boeckx and Grohmann 2007; see also Manzini 1994 and Takahashi 1994), that every syntactic operation constitutes a phase (Epstein and Seely 2002), that phasehood is determined contextually (Bošković 2005, 2014, Den Dikken 2007, Gallego and Uriagereka 2007a,b, Takahashi 2010, 2011), and that CP is a phase but vP is not (Grano and Lasnik 2018, Keine 2020a,b, Mendes and Ranero 2021). Across these proposals, there is broad (though not universal, see Den Dikken 2017) consensus that CP is a phase, a view that goes back to Chomsky (1973, 1977, 1981). But the identity and distribution of other phase heads (e.g., vP, DP, PP) is less securely established and hence more controversial.

In this paper, we focus on the status of clause-internal phases (as opposed to clause-peripheral phases like CP). It is standardly assumed, following Chomsky (2000, 2001), that clauses contain a clause-medial phase, typically taken to be vP. Important empirical motivation for this view comes from clause-internal intermediate landing sites of movement, as shown in (2).



A standard phase-based account attributes the need for an intermediate landing site to the presence of a clause-medial phase in the verbal spine, which enforces movement through its edge along the lines just noted. A conceivable alternative approach is in terms of intervention by the external argument DP: the external argument DP intervenes between C and the internal argument DP and thereby blocks attraction. The internal argument must therefore move to a position above the external argument—so-called “leapfrogging” (see Bobaljik 1995, McGinnis 1998, and Branan 2022)—in order to be closer to C. These two approaches are stated in general terms in (3).

- (3) a. *Domain/phase-based approach:*
 Obligatory successive-cyclic movement through a clause-internal position is the result of a clause-internal phase.
- b. *DP-intervention approach:*
 Obligatory successive-cyclic movement through a clause-internal position is the result of leapfrogging around an intervening DP.

While clause-internal intermediate landing sites have predominantly received domain-based accounts that fall under (3a), recent work the locality of \bar{A} -dependencies in other domains paves the way for an analysis in terms of DP intervention in line with (3b). This work has argued that \bar{A} -probes may be specified in such a way that they may only attract the structurally closest DP (Aldridge 2004, Aldridge 2008a, Rackowski and Richards 2005, Branan and Erlewine 2021, Coon et al. 2021):

- (4) *\bar{A} -attraction of the closest DP*
 An \bar{A} -probe can be specified to only attract the structurally closest DP.

(4) has the effect that \bar{A} -probes may have a locality profile normally associated with A-probes.² (4) may be implemented in several ways, to which we will return in section 2 and beyond. The original motivation for (4) comes from movement restrictions unrelated to successive cyclicity, in particular patterns in which DPs other than the highest one are banned from undergoing \bar{A} -movement altogether, such as subject-only extraction restrictions (e.g., Keenan and Comrie 1977) and syntactic ergativity (e.g., Coon et al. 2021, Yuan 2022, and the references cited there). In addition, (4) also opens up a new account of successive cyclicity: in order for a lower DP to be attractable by C, it must first leapfrog over the subject DP if this is possible. In this case, we propose, (4) does not manifest as an extraction restriction but rather as the need for successive-cyclic movement.

In this paper, we develop this general approach on the basis of three case studies: (i) extraction restrictions in Standard Indonesian (section 2), (ii) successive cyclicity in Dinka (section 3), and (iii) successive cyclicity in Defaka (section 4). All of these patterns have been taken as evidence for vP phasehood in the previous literature; our goal is to assess to what extent they are amenable to a DP-intervention account based on (4). We will argue that not only is an analysis in terms of (4) possible; in several respects, such an analysis is in fact superior to a phase-based account conceptually or empirically. First, the analysis offers a unified account of both extraction restrictions (such as in Indonesian) and of successive cyclicity (such as in Dinka and Defaka). Second, at least in the case studies here, the position of the intermediate landing site seems to track not vP, but the canonical position of the subject. We argue that this is derived on a DP-intervention account but not on a phase-based analysis. Third, we show that the relevant effects arise only in the presence of an intervener of the right “kind” (to be made more precise). Because the nature of the intervener plays a central role on the intervention account but not the phase account, the former offers a more principled explanation of this observation. The general conclusion we draw is that successive cyclicity does not entail phasehood (a conclusion also reached on independent grounds by Legate 2012). DP intervention may give rise to superficially similar effects as phases, and care must be taken to differentiate between the two.

Before we proceed, some general remarks are in order. First, we emphasize that by “intervention” we specifically mean “intervention by a DP”, in line with (3b). There are several proposals that rethink some or all phase locality in terms of intervention by the phase head (e.g., Abels 2003, Rackowski and Richards 2005, Halpert 2019, Thivierge 2021). For our concerns here, intervention by a phase head falls under (3a). While these proposals offer a different rationale of why phases should induce a locality effect (with sometimes significant empirical differences), they nonetheless maintain the basic idea that this locality effect is the result of a phasal projection in the verbal spine. The DP-intervention hypothesis (3b) crucially differs in that it makes no reference to verbal projections at all, only to DPs along the extraction path. We return to the matter in section 5.

Second, phase locality and intervention are of course not mutually exclusive, and in fact it is standardly assumed that phase locality and minimality-based locality coexist. Here, we argue that certain patterns that have been analyzed as the result of phase locality might be better understood as the result of minimality. Of course, this does not necessarily entail that minimality completely replaces phase locality. We return to the relationship between the two in section 5.

² See Newman (2023) for a reanalysis of (4) according to which these probes *are* A-probes. As far as we can see, this reanalysis is fully compatible with our account here. What is crucial is the locality profile of the probe, not whether the movement it triggers has A- or \bar{A} -properties.

Third, all the empirical patterns we focus on here involve a subject/object asymmetry in the sense that object extraction causes the morphological reflex but local subject extraction does not. This asymmetry is often the key motivation for analyzing the pattern in terms of clause-internal (in particular, vP) phases. We will put aside empirical patterns that treat \bar{A} -movement of all DPs the same as these can be analyzed purely with reference to CP. As such, they do not unambiguously diagnose a clause-internal intermediate landing site and are therefore not clearly relevant for the choice between (3a) and (3b).³

The paper proceeds as follows: Sections 2–4 contain our core case studies: Section 2 investigates a subject-only extraction restriction in Standard Indonesian; section 3 discusses successive cyclicity in Dinka; and section 4 discusses successive cyclicity in Defaka. Across these three case studies, we argue that the relevant generalization can be productively understood in terms of DP intervention (rather than clause-medial phasality). Based on this conclusion, section 5 then raises the question of whether clause-internal phasehood is still required or whether DP intervention obviates the need for such phases more generally.

2. Voice and DP intervention in Standard Indonesian

In Indonesian and Malay, verbs in the active voice can be (or must be, depending on the variety) marked with the voice prefix *meN-*. Importantly, the presence of this voice prefix blocks \bar{A} -movement of a DP other than the local subject (for Indonesian, see Saddy 1991, Fortin 2006, Aldridge 2008b, Cole et al. 2008, Sato 2012, Georgi 2014, and Jeoung 2018; for Malay, see Cole and Hermon 1998, Soh 1998, and Cole et al. 2008). In this section, we will discuss the interaction between \bar{A} -extraction and voice in Standard Indonesian (SI), based on Cole et al. (2008) (for an analogous pattern in Sarolangun Malay, see Cole et al. 2008:1516–1523; for Acehnese, see Legate 2011; and for Balinese, see Wechsler and Arka 1998). By “Standard Indonesian”, Cole et al. (2008) mean prescriptive Standard Indonesian, which differs from other (standard-like) varieties commonly discussed in the syntactic literature in certain respects (some of which will be relevant here). We will follow Cole et al.’s (2008) terminology here, and we will briefly discuss varieties other than Standard Indonesian in section 5.2.

The crucial generalization in Standard Indonesian is that the only DP that may undergo \bar{A} -extraction in a clause is the subject (i.e., the highest DP) of that clause (related subject-only extrac-

³ For example, in Passamaquoddy, \bar{A} -movement of any DP over a verb allows this verb to optionally appear in an agreeing participial form. While this behavior has been analyzed in terms of vP phases (Bruening 2001, 2004) and sometimes been taken as evidence for vP phases (Van Urk 2016, 2020a,b), it seems equally possible to us to locate the effect in CP, with the added assumption that an effect in C may morphologically manifest on the verb (a standard syntax–morphology mismatch, familiar from, e.g., affix lowering in English).

Another instance of a morphological reflex that treats subject and objects alike is tonal marking in Asante Twi (Korsah and Murphy 2020). Here, there is evidence that the effect is syntactically quite high (in particular, it is (i) higher than the base position of the external argument, (ii) higher than adjunct PPs, (iii) higher than negation, and (iv) higher than progressive and perfective aspect), making a CP analysis at least viable. We note that Korsah and Murphy (2020) do argue that the effect is not as high as C, based on the generalization that the verb, negative prefix, and aspect undergo the tone shift, but tense suffixes and agreement prefixes do not. However, contra to Korsah and Murphy’s (2020) generalization, Marfo (2005a, 2005b:164–166) shows that the tone shift does spread onto agreement prefixes under the right circumstances and that the cases in which the tone does not spread are phonologically conditioned (the tone cannot spread across an onset). As far as we can tell, this purely phonological account covers Korsah and Murphy’s (2020) cases, and so we suggest that no appeal to a clause-internal landing site or vP phases is necessary to account for them.

tion patterns are also observed in other Austronesian languages, see, e.g., Keenan and Comrie 1977, Aldridge 2004, 2008a, and Rackowski and Richards 2005). The discussion in this section first serves to illustrate the kind of empirical pattern that motivates the closest-DP restriction on \bar{A} -probes (4). We then develop a DP-intervention account and compare it to a vP-phase account as proposed by Cole et al. (2008).

2.1. Subject-only extraction

In SI, the verb in active-voice clauses bears the prefix *meN-*. As shown in (5), omission of this prefix is ungrammatical (for transitive verbs).

(5) *Active voice*

Tono ***(mem-)**beli buku di toko buku.

Tono ***(ACT-)**buy book LOC store book

‘Tono bought a book at the bookstore.’

[Cole et al. 2008:1504, ex. (3), (4)]

The subject of an active clause must precede negation and temporal markers, as shown in (6).

(6) *Subject precedes negation and temporal markers*

a. **Kami** tidak akan mem-baca buku ini
we not will ACT-read book this
‘We will not read this book.’

b. *Tidak akan **kami** mem-baca buku ini
not will we ACT-read book this
‘We will not read this book.’

[Cole et al. 2008:1512, ex. (38), (39)]

Turning now to \bar{A} -extraction, the only DP argument that can be extracted is the subject (Cole et al. 2008:1505), as shown in (7).

(7) *\bar{A} -extraction of DPs is limited to subject*

a. **Siapa**₁ yang ____₁ mem-beli buku di toko buku?
who C ACT-buy book LOC store book
‘Who bought the book at the book store?’

b. ***Apa**₁ yang Tono mem-beli ____₁ di toko buku?
what C Tono ACT-buy LOC store book
‘What did Tono buy at the book store?’

[Yanti, p.c.]

This restriction is not limited to wh-movement, but also holds for other \bar{A} -movements, such as relativization, as shown in (8).

(8) a. Dia me-lihat perempuan itu
he ACT-see woman that
‘He sees the woman.’

- b. *_{[DP} Perempuan _{[CP} yang dia me-lihat ____] itu] men-angis
 woman that he ACT-see that ACT-cry
 ‘The woman that he saw cried.’ [Cole et al. 2008:1512–1513, ex. (32)–(33)]

Interestingly, \bar{A} -movement of elements that are not DPs is not subject to this restriction. Movement of PPs or adverbials is possible in the active voice even if the element originates within the vP, as illustrated in (9).

- (9) *\bar{A} -extraction of non-DPs is not restricted*
- a. **Kapan**₁ Ali mem-ukul Ahmad ____₁?
 when Ali ACT-hit Ahmad
 ‘When did Ali hit Ahmad?’ [Cole et al. 2008:1505, ex. (12)]
- b. **Kepada siapa**₁ Mary akan mem-beri buku itu ____₁?
 to whom Mary FUT ACT-give book the
 ‘To whom did Mary give the book?’ [Yanti, p.c.]

The generalizations so far characterize the active voice in SI. A second voice is the so-called *object voice* (Chung 1976a,b, Cole and Hermon 1998, 2005, Cole et al. 2008, Sato 2012).⁴ Object voice is illustrated in (10). In this voice, the verb does not bear *meN-* (Chung 1976a:51, Cole and Hermon 1998:232, Cole et al. 2008:1505, Sato 2012:34). The external argument (EA)—*kami* ‘we’ in (10)—is obligatorily present, but it must appear in the immediately preverbal position, following negation and temporal markers if these are present (Cole et al. 2008:1506–1507). The regular subject position (preceding negation and temporal markers) is occupied by the internal argument (IA)—*buku ini* ‘this book’ in (10).

- (10) *Object voice*
- a. *Buku ini* tidak akan **kami** baca
 book this not will we OV.read
 ‘This book will not be read by us.’
- b. **Buku ini* **kami** tidak akan baca
 book this we not will OV.read
 ‘This book will not be read by us.’ [Cole et al. 2008:1512, ex. (37)]

The previous literature has argued that in this construction (i) the agent is an argument DP rather than an adjunct (Alsagoff 1992, Guilfoyle et al. 1992, Arka and Manning 1998, Cole et al. 2008), and (ii) the preposed IA is in an A-position (Chung 1976a,b). For example, Arka and Manning (1998) show that the agent may bind a preposed reflexive IA, as in (11). Assuming, as is standard, that reflexive binding is possible only from DPs in A-positions, (11) shows that the agent is a DP and located in an A-position.

⁴ We adopt the term “object voice” from Cole et al. (2008), Yanti (2010), and Legate (2014). Chung (1976a,b) and Cole and Hermon (1998) refer to this construction as “object preposing”, Cole and Hermon (2005) as “Passive Type Two (P2)”, Guilfoyle et al. (1992) as “subjective passive”, and Arka and Manning (1998) as “objective voice”.

(11) *Agent is argument DP*

Dirinya mesti **dia** serahkan ke polisi
self must (s)he surrender to police
'(S)he must surrender herself/himself to the police.' [Arka and Manning 1998:7, ex. (16c)]

In addition, Chung (1976a,b) and subsequent work has shown that the preposed IAs may be PRO, as in (12), indicating that it occupies the subject position of the clause (the agent may not be PRO).

(12) *Preposed IA may be PRO*

Saja mem-bawa surat itu [untuk PRO dapat kau batja]
I ACT-bring letter the for can you read
'I brought the letter to be able to be read by you.' [Chung 1976a:47, ex. (20)]

We thus adopt Cole et al.'s (2008) clause structure for the object-voice construction in (13), according to which the IA moves to the subject position in [Spec,TP] and the EA remains in [Spec,vP] (also see Guilfoyle et al. 1992, Cole et al. 2008, Sato 2012, Legate 2014).

(13) *Object-voice clause structure*

[_{TP} buku ini_i [_{NegP} tidak [_{ModalP} akan [_{vP} kam baca *t*₁]]]]
book this not will we read

Like the active voice, the object voice exhibits an extraction restriction: the only DP that may be extracted is the subject (Cole et al. 2008:1508), in this case the IA. Extraction of the EA is ill-formed (also see Yanti 2010 and Legate 2014).⁵

(14) *Only subject may be extracted in object voice*

- a. **Apa**₁ yang ____₁ akan kamu lihat?
what that will you see
'What will you see?'
- b. ***Siapa**₁ yang buku ini akan ____₁ lihat?
who that book this will see
'Who will see this book?' [Cole et al. 2008:1508, ex. (22b,c)]

In line with the overarching subject-only extraction restriction, Cole et al. (2008) show that \bar{A} -extraction of an IA requires an object-voice source structure (or the passive voice, not discussed here) instead of an active-voice structure. The relevant evidence comes from word order considerations. The example in (15a) involves relativization of an IA. Such relativization is possible in (15a), but not in (15b). The placement of the subject *kami* 'we' to the right of *akan* 'will' makes it clear that (15a) involves an object-voice source, with movement of the IA relative operator to [Spec,TP], followed by

⁵ Cole et al. (2008) show that the restriction in (14b) stems from a constraint on movement. If the external argument is a wh-expression that does not move, the structure is grammatical.

- (i) Buku ini akan siapa lihat?
book this will who see
'Who will see this book?' [Cole et al. 2008:1508, ex. (22a)]

relativization from there. By contrast, in the ungrammatical (15b), the subject position is occupied by the EA *kami*, which relativization of the IA crosses. The resulting structure is ungrammatical even if *meN-* is not present (we already saw based on (8b) that object relativization is always impossible if *meN-* is present).

(15) *Only subject may undergo \bar{A} -extraction*

- a. [_{DP} Buku [_{CP} yang ____ tidak akan *kami* baca]] sangat menarik
 book that not will we read very interesting
 ‘The book that we will not read is very interesting.’
- b. * [_{DP} Buku [_{CP} yang *kami* tidak akan baca ____]] sangat menarik
 book that we not will read very interesting
 ‘The book that we will not read is very interesting.’ [Cole et al. 2008:1513, ex. (42)]

Thus, \bar{A} -extraction of a DP may proceed only from [Spec,TP], and IA extraction hence requires an object-voice base structure. (15) also shows that in SI, it is not *meN-* that blocks IA extraction in the active voice; instead, it is the presence of a structurally higher DP. Thus, \bar{A} -extraction is always limited to the DP in [Spec,TP] (i.e., the structurally highest DP), and the choice of voice head determines which DP ends up in [Spec,TP] (EA in the active voice, IA in the object voice).

It is important to note here that while this dependence of IA extraction on the object voice is also observed in other varieties and related languages (such as Sarolangun Malay, Balinese, and Acehese; see Cole et al. 2008:1516–1523, Wechsler and Arka 1998, and Legate 2011, respectively), it does not hold in other, more commonly studied (standard-like) varieties of Indonesian and Malay. In those varieties, IA extraction requires absence of *meN-*, but it does not require the object voice (see in particular Cole and Hermon 2005, Cole et al. 2008, and Yanti 2010 for relevant discussion). Thus, structures like (15b) are grammatical in those varieties (e.g., Cole and Hermon 2005:64). We will put such other varieties aside here but will return to them in section 5.3.

2.2. Extraction restriction and vP phases

Cole et al. (2008) develop an analysis of the SI extraction pattern that incorporates vP phases. In this section, we will briefly present their analysis and then compare it to one that invokes DP intervention instead of vP phases.

As noted, Cole et al. (2008) assume, in line with much of the literature on Indonesian and Malay, that the EA moves to [Spec,TP] in the active voice. For the object voice, they assume that the IA first undergoes movement to an outer [Spec,vP], from where it then moves to [Spec,TP].⁶ The EA remains in its [Spec,vP] base position in the object voice. Analogous structures are proposed by Legate (2014). Cole et al. (2008) furthermore propose that the v head is ordinarily realized as *meN-*, but that it is null if the IA moves to [Spec,vP].⁷ The view that *meN-* realizes v or Voice is also found in Aldridge (2008b), Sato (2012), Georgi (2014), and Legate (2014), among others. The schematic structures are given in (16).

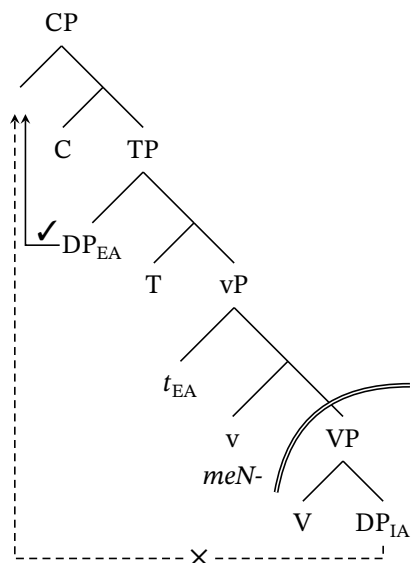
⁶ We abstract away from the distinction between v and Voice here, which is irrelevant for our concerns.

⁷ They furthermore suggest that this alternation is the result of agreement in case but this aspect of their account does not bear on what follows. See Legate (2011) for discussion.

- (16) a. *TP structure of active voice*
 $[_{TP} DP_{EA} T [_{vP} t_{EA} v (\Rightarrow meN-) [_{VP} V DP_{IA}]]]$
- b. *TP structure of object voice*
 $[_{TP} DP_{IA} T [_{vP} t_{IA} DP_{EA} v (\Rightarrow \emptyset-) [_{VP} V t_{IA}]]]$

We now turn to the extraction restrictions. We saw that in the active voice the EA is the only DP that may undergo \bar{A} -movement, as shown in (17).

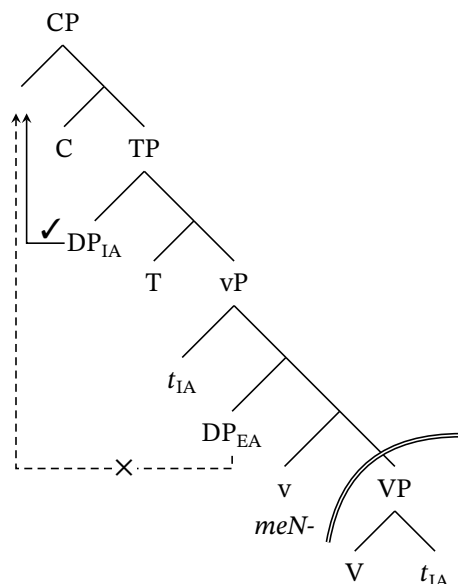
- (17) *\bar{A} -extraction limitation in active voice*



Cole et al. (2008) propose a vP-phase account of this restriction. As mentioned, on their account, *meN-* indicates that no object shift of the IA to [Spec,vP] has taken place and that the IA remains inside the VP in the active voice. \bar{A} -movement of the IA DP would thus violate the PIC and is hence correctly ruled out.

In the object voice, by contrast, the IA undergoes movement to an outer [Spec,vP] and then to [Spec,TP]. This extraction is correctly permitted by the PIC, as shown in (18).

(18) \bar{A} -extraction limitation in object voice



A vP-phase account thus successfully derives the fact that the IA may only undergo \bar{A} -movement in the object voice, not in the active voice. But this is only one half of the extraction restriction. What this account does not explain is why the EA cannot undergo \bar{A} -movement in the object voice (see (14)). The reason is that the EA is base-generated in [Spec,vP], and hence at the phase edge. The fact that it cannot undergo \bar{A} -movement therefore cannot be attributed to vP phasality. More generally, vP phases do not distinguish between the EA in the active voice (which may undergo \bar{A} -movement) and the EA in the passive voice (which may not)—both are located outside the Spell-Out domain of a vP phase, and, as far as vP phases are concerned, should therefore be able to undergo \bar{A} -extraction. Further assumptions are thus necessary to block extraction of the EA in the object voice (see Legate 2014:59–64 for a proposal). But there is a simple generalization across the two voices that a non-uniform account would miss: only the structurally highest DP may undergo \bar{A} -movement.

A second potential complication for a vP-phase account is that the extraction restriction applies only to DPs. PPs and adverbials may freely undergo \bar{A} -movement in the active voice, even if they originate within the vP (see in particular (9b)). Because vP phases require all extraction to proceed successive-cyclically through the phase edge, PPs and adverbials must likewise pass through [Spec,vP]. This raises the question why this option is not available for DPs, and it weakens the analytical link between successive-cyclic movement through [Spec,vP] and absence of *meN*-.

2.3. A DP-intervention analysis

In this section, we show that a DP-intervention account offers a more comprehensive analysis of the SI extraction restriction. The discussion serves two broader goals. First, it demonstrates that at least some extraction restrictions that have been analyzed as the effects of vP phases may be accounted for in terms of DP intervention. Second, we show that DP intervention effectively results in the need for successive-cyclic movement, albeit in a non-standard fashion. This conclusion then sets

the stage for a reanalysis of more standard instances of successive-cyclic movement in sections 3 and 4.

We follow Cole et al.’s (2008) analysis in tying the presence or absence of *meN-* to whether the IA shifts to an outer [Spec,vP]. We implement this distinction by postulating the two v heads in (19). The active-voice v head (19a) does not contain a movement-inducing feature and is realized as *meN-*, where the object-voice v head (19b) contains a movement-inducing feature that moves the structurally closest DP c-commanded by v to an outer [Spec,vP].

- (19) a. *meN-*: does not contain movement-inducing features
 b. \emptyset -: contains a movement-inducing [uD] feature

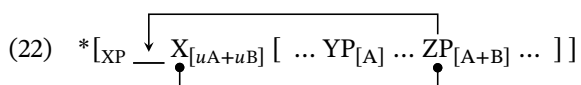
Furthermore, T in SI bears an EPP feature ([uD]) that attracts the structurally closest DP to [Spec,TP]. In the active voice, the closest DP is the EA; in the object voice, the closest DP is the IA (due to (19b)-driven object shift at the vP level).

The crucial difference between our analysis and Cole et al.’s (2008) is that vP is *not* a phase in our account. Based on the proposals in Aldridge (2004, 2008a), Branan and Erlewine (2021), Coon et al. (2021), we propose that C and T are subject to the closest-DP restriction in SI: C may only attract the structurally closest DP. More specifically, we adopt the proposal in Erlewine (2018), Coon et al. (2021), and Branan and Erlewine (2021) that an \bar{A} -probe may be specified not just for an \bar{A} -feature but also for a categorial feature (also see Baier 2018). We propose that C in SI has the makeup in (20) (to be extended below). (20) contains a complex probe that searches for both [$u\delta$] and [uD]. Following Miyagawa (2017), we use the cover term “[$u\delta$]-feature” to refer to movement-inducing information-structural features, including wh-movement, focus fronting, and relativization.

- (20) C: [$u\delta+uD$]

Erlewine (2018), Coon and Keine (2021), Coon et al. (2021), and Branan and Erlewine (2021) argue that complex probes of this type cannot attract a fully-matching goal over a partially matching one. This restriction is stated in (21) and schematized in (22). In (22), the probe [$uA+uB$] comprises the two segments [uA] and [uB]. YP contains only a matching feature [A], and ZP contains a full [A+B] match. It is then not possible for the probe to attract ZP over YP.

- (21) A complex probe cannot attract a fully-matching element across a partially-matching element.



Erlewine (2018:686–687) and Branan and Erlewine (2021) implement (21) at the level of the Agree operation: a complex probe that encounters a partially-matching element stops probing. It is therefore the Agree step in (22) that is illicit (and movement is thus impossible to begin with). Coon et al. (2021) derive this result from Coon and Keine’s (2021) feature-gluttony system, according to which the complex probe [$uA+uB$] enter into Agree with both YP and ZP, which rules out to the movement step in (22) (for details, see Coon and Keine 2021 and Coon et al. 2021). Both ways of deriving (22)

are compatible with what is to come. We will therefore focus on the effects of (21), rather than on the specific way (21) may be derived from deeper principles.

Both C and T may hence only attract the closest DP in SI. This entails that C can attract only the subject in [Spec,TP] and that the subject has to be whichever DP is highest inside the vP, which is in turn determined by the choice of head in (19). Applied to the constructions at hand, in the active voice, the EA is highest in the vP and hence moves to [Spec,TP]. If the EA bears $[\delta]$, it fully matches C's probe and is attracted to [Spec,CP] (23a). By contrast, if the IA bears $[\delta]$, it fully matches C's probe, but the EA constitutes a partially-matching intervener. By (21)/(22), the EA then blocks attraction of the IA to [Spec,CP] (23b). It follows that C can only attract the EA, not the IA, deriving the extraction restriction in the active voice.

(23) *Extraction in active voice*

- a. $[_{CP} \downarrow C_{[u\delta+uDP]} [_{TP} DP_{EA}^{[\delta]} T_{[uD]} [_{vP} t_{EA} \underline{v} (\Rightarrow meN-) [_{VP} V DP_{IA}]]]]]$
- b. $[_{CP} \downarrow C_{[u\delta+uDP]} [_{TP} DP_{EA} T_{[uD]} [_{vP} t_{EA} \underline{v} (\Rightarrow meN-) [_{VP} V DP_{IA}^{[\delta]}]]]]]$

Importantly, vP phases play no role in this account. The ban against \bar{A} -movement of the IA is not attributed to the presence of a clause-medial locality domain but rather to C's inability to extract a fully-matching goal over a partially matching one.

Let us now turn to the object voice, which involve the v head in (19b). As the result of vP-internal object shift, the IA is the closest DP to T and is hence attracted to [Spec,TP]. If the IA bears $[\delta]$, it is a full match for C's probe and undergoes movement to [Spec,CP]; if instead the EA bears $[\delta]$, intervention by the partially matching IA blocks movement (24).

(24) *Extraction in object voice*

- a. $[_{CP} \downarrow C_{[u\delta+uDP]} [_{TP} DP_{IA}^{[\delta]} T_{[uD]} [_{vP} t_{IA} DP_{EA} \underline{v} (\Rightarrow \emptyset-) [_{VP} V t_{IA}]]]]]$
- b. $[_{CP} \downarrow C_{[u\delta+uDP]} [_{TP} DP_{IA} T_{[uD]} [_{vP} t_{IA} DP_{EA}^{[\delta]} \underline{v} (\Rightarrow \emptyset-) [_{VP} V t_{IA}]]]]]$

This analysis unifies the extraction restriction in (24) with the restriction in (23): only the highest DP may undergo \bar{A} -movement. In this regard, the empirical reach of a DP-intervention account is thus wider than that of a vP-phase account, which fails to derive why EA extraction is impossible in (24b) despite the EA being located at the phase edge.⁸

The DP-intervention account also offers a new view on the non-DP extraction facts. As we saw in (9), extraction of adverbials and PPs is permitted in the active voice. This is particularly striking for (9b), where the PP is the goal argument of the verb and hence base-generated inside the vP. Clearly, then, such extraction is not subject to DP intervention. Indeed, there is evidence that \bar{A} -movement of DPs differs syntactically from \bar{A} -movement of PPs and adverbials in Indonesian/Malay, as a C-

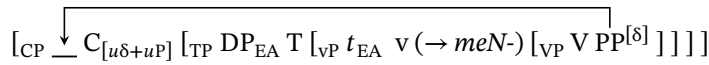
⁸ Our account also makes the prediction that if a double-object predicate appears in the object voice, only the higher of the two objects may become the subject of the sentence. This is because v in (19b) attracts the closest DP in its c-command domain to an outer [Spec,vP]. If this c-command domain contains two DPs, only the higher DP may thus move. This prediction seems to be borne out (Alsagoff 1992:54 for Malay).

head that attracts a DP can be realized in a different way than a C-head that attracts PP/AdvP.⁹ While \bar{A} -fronted wh-DPs can or must precede the complementizer *yang* depending on the register (Fortin 2007:50, Cole and Hermon 1998:224n5), fronted PPs and adverbials are incompatible with *yang* (Fortin 2007:51–53, Jeoung 2018:31). We thus propose that there are several flavors of C in Indonesian/Malay, which differ in their featural content and their phonological form, given in (25).¹⁰

- (25) a. $C_{yang}: [u\delta+uD]$ (= (20))
 b. $C_{\emptyset}: [u\delta+uP]$
 c. $C_{\emptyset}: [u\delta+uAdv]$

(25b) and (25c) attract focused PPs and adverbials, respectively. Importantly, nonfocused DPs do *not* constitute a partial match to either (25b) or (25c). Such DPs therefore do not cause an intervention effect, in line with (21) and (22). As a result, (25b,c) will never result in the intervention situation in (22). This explains why PP and adverbial extraction is possible in the active voice, as illustrated in (26).

(26) *One-fell-swoop PP extraction*



Assuming that vP is not a phase, the PP in (26) undergoes one-fell-swoop movement to [Spec,CP] without the need for an intermediate landing site in [Spec,vP]. This is of course in line with the observation that the form of v does not change—it is *meN-*, just as if no extraction had taken place. Disregarding vP from the analysis thus paves the way for a tighter link between the morphological form of v and the existence of movement through [Spec,vP]: *meN-* is absent if and only if an element moves to an outer [Spec,vP] (i.e., in the object voice).

On this account, it is not a coincidence that only DP extraction is subject to the restriction while non-DP extraction is not. The reason is that the intervening element (i.e., the EA) is a DP. Due to the intervention-nature of the account, it is if the moving element and the intervening element bear the same category specification that the intervening element is a partial match for the attracting probe, thus creating the intervention problem. The fact that DP extraction is subject to the restriction

⁹ Our thanks to an anonymous reviewers for pointing this out. Legate (2011, 2014) proposes a related account for Acehnese, according to which the *yang* C contains both A- and \bar{A} -features. The A-features are not inherited to T (so-called ‘under-inheritance’), and so a wh-subject DP can satisfy both while a PP cannot.

¹⁰ While the distinction between (25a) and (25b,c) is independently motivated, we are not aware of analogous independent evidence for the distinction between (25b) and (25c). A potential alternative account, proposed by Branan and Erlewine (2021), is to replace (25b,c) with a non-composite probe in (i).

- (i) $C_{\emptyset}: [u\delta]$

Because (i) is a flat probe, there can never be a partial match for it: any element that bears $[\delta]$ will fully match it. The key challenge for such an account lies in preventing (i) from triggering DP movement (if this was possible, DP extraction should not be subject to DP intervention either). Branan and Erlewine (2021) propose that \bar{A} -extracted DPs are subject to a special (case) licensing requirement that only the *yang* complementizer (25a) can satisfy. But this account is not entirely straightforward—most importantly, if DPs need to be licensed by (25a), then it is not clear why DPs that do not undergo \bar{A} -movement do not lead to ungrammaticality. For this reason, we will not adopt Branan and Erlewine’s (2021) account here.

whereas non-DP movement is not thus follows. As far as we can see, such a rationale is not available on a vP-phase account.

We draw a number of conclusions from this discussion. First, there is clear overlap in the empirical effects of vP phases and DP intervention: in particular, both rule out IA extraction in the active voice. But while a DP-intervention account extends to the extraction restriction in the object voice, a vP-phase account does not (at least unless additional assumptions are made). While it is in principle possible to combine DP-intervention with vP phases (see, e.g., Aldridge 2004), this is not necessary for at least the data considered here: DP intervention makes superfluous additional appeal to vP phasehood. This raises the question to what extent apparent effects of vP phases may be rethought as effects of DP intervention more generally.

Second, the SI discussion showed that DP intervention may result in successive cyclicity. Because C may only attract the closest DP, only an element in [Spec,TP] may be \bar{A} -extracted; and because T as well may only attract the closest DP, only an element in the outermost [Spec,vP] may become the subject. The result is successive cyclicity: an \bar{A} -extracted DP must pass through [Spec,TP], and, if it is base-generated below v, through [Spec,vP] as well. Thus, while successive cyclicity is typically analyzed in terms of phasehood, DP intervention may give rise to it as well.

SI wears the DP-intervention restriction on its sleeves: extraction of a DP other than the highest one is ill-formed. The next two sections consider systems that are more nuanced—extraction of DPs other than the highest one are well-formed, but they require a special morphological reflex. While it thus appears as if these systems are not subject to DP intervention, we argue that in fact they are, and that the morphological reflex is the result of DP intervention. The next two sections develop this line analysis for Dinka and Defaka. The basic analytical intuition is that C in these languages is subject to DP intervention, but that in these languages the head that hosts the subject (e.g., T) is equipped with a second feature that permits movement of a lower DP over the subject (so-called *leapfrogging*), thus putting it closest to C and allowing it to undergo \bar{A} -movement. The morphological reflex is then analyzed as the realization of the feature that triggered the leapfrogging. The overall result is successive-cyclic movement over the subject DP that is again the result of DP intervention rather than clause-medial phases.

3. Successive cyclicity in Dinka

One particularly strong and well-developed argument for successive cyclicity through [Spec,vP] and vP phasehood (and thus for clause-internal phasality) is presented by Van Urk (2015, 2018) and Van Urk and Richards (2015) for the Nilotic language Dinka. The argument is two-pronged. First, they argue that extraction has an empty-position effect within the vP; second, such extraction leads to the appearance of the clause-medial marker *ké*. In this section, we argue for a reanalysis of these patterns in terms of DP intervention and leapfrogging rather than vP phases. As in SI, C may only attract the closest DP, but unlike SI, we propose, Dinka permits the object to move over the subject feeding object \bar{A} -movement.

3.1. Empirical evidence

3.1.1. Empty-position effects

As illustrated in (27), Dinka is a V2 language, with exactly one constituent preceding a verbal element in the second position of the clause.

- (27) a. Àyén à-càm cuḷin nẹ pǎal.
Ayen 3P-eat food P knife
'Ayen is eating food with a knife.'
- b. Cuḷin à-céem Àyén nẹ pǎal.
food 3P-eat.OV Ayen.GEN P knife
'Food, Ayen is eating with the knife.'
- c. Pǎal à-céemè Àyén cuḷin.
knife 3P-eat.OBLV Ayen.GEN food
'With a knife, Ayen is eating food.'
- [Van Urk 2018:942, ex. (6a–c)]

Turning to the Dinka vP, Van Urk (2015, 2018) and Van Urk and Richards (2015) argue that here too we find a V2 property such that exactly one constituent precedes the verb in the vP. For example, in a transitive clause, the object must occur in a preverbal position, as shown in (28).

- (28) a. Yêen cé mìir t̩ḷ.
I PFV giraffe see
'I saw a giraffe.'
- b. *Yêen cé t̩ḷ mìir.
I PFV see giraffe
'I saw a giraffe.'
- [Van Urk and Richards 2015:122, ex. (14a,b)]

If the vP is ditransitive, one of the two objects must occupy the preverbal position, as (29a–b) illustrates. It is not possible for both objects to occur postverbally (29c–d), nor is it possible for both objects to occur preverbally (29e–f).

- (29) a. Yêen cé Ayén yiḷen kitáp.
I PFV Ayen give book
'I gave Ayen a book.'
- b. Yêen cé kitáp yiḷen Ayén.
I PFV book give Ayen
'I gave a book to Ayen.'
- [Van Urk and Richards 2015:122, ex. (15a,b)]
- c. *Yêen cé yiḷen kitáp Ayén.
I PFV give book Ayen
- d. *Yêen cé yiḷen Ayén kitáp.
I PFV give Ayen book
- [Van Urk and Richards 2015:122–123, ex. (16a,b)]

e. *Y̆ɛn cɛ́ [kítáp] [Ayén] yiɛ́n.
I PFV book Ayen give

f. *Y̆ɛn cɛ́ [Ayén] [kítáp] yiɛ́n.
I PFV Ayen book give

[Van Urk and Richards 2015:122n11, ex. (i.a,b)]

If there is no object, the preverbal position is empty. Adjuncts must appear postverbally, as in (30).

(30) a. Wɔ́k cɛ́ [] kɛ́t dòm-íc.
we PFV sing garden-in
'We sang in the garden.'

b. *Wɔ́k cɛ́ [dòm-íc] kɛ́t.
we PFV garden-in sing
'We sang in the garden.'

[Van Urk and Richards 2015:123, ex. (17a,b)]

Van Urk (2015, 2018) and Van Urk and Richards (2015) analyze this preverbal position as [Spec,vP]. As a preview, we will diverge from this view in our own analysis, and we will not associate the preverbal position with a single specific position in the structure ([Spec,vP] or otherwise). Rather, we will see that the word-order generalization falls out from independently-motivated constraints on the word order of the language. As such, we use the term “preverbal position” purely descriptively, without adopting the view that this position necessarily maps onto a unique position in the actual syntactic structure.

If there is a movement dependency, every [Spec,CP] and preverbal position along the movement path must be empty. This is shown for [Spec,CP] in (31) and for the preverbal position in (32) and (33). As (32a) and (33a) show, it is possible for movement to target the preverbal object in a ditransitive configuration. By contrast, (32b) and (33b) show that it is not possible to move the postverbal DP.

(31) a. **Yeṅà** cùkkù luéel, [_{CP} [] cɛ́ kítáp γ̀ɔ̀ɔc]?
who PFV.1PL say PFV book buy.TR
'Who did we say bought a book?'

b. ***Yeṅà** cùkkù luéel, [_{CP} [kítáp] (à-)cɛ́ γ̀ɔ̀ɔc]?
who PFV.1PL say book (3SG-)PFV.NSV buy.TR
'Who did we say bought a book?'

[Van Urk and Richards 2015:125, ex. (21a,b)]

(32) a. **Yeṅà** cɛ́ mɔ́c [] yiɛ́n kítáp?
who PFV.NSV man.GEN give book
'Who did the man give the book to?'

b. ***Yeṅò** cɛ́ mɔ́c [Ayén] yiɛ́n?
what PFV.NSV man.GEN Ayen give
'What did the man give Ayen?'

[Van Urk and Richards 2015:125, ex. (20a,d)]

(33) a. **Yeṅò** cɛ́ mɔ́c [] yiɛ́n Ayén?
what PFV.NSV man.GEN give Ayen
'What did the man give Ayen?'

- b. ***Yeṅà** cǐ mōc kítáp yiṅn?
 who PFV.NSV man.GEN book give
 ‘Who did the man give the book to?’ [Van Urk and Richards 2015:125, ex. (20b,c)]

Van Urk (2015, 2018) and Van Urk and Richards (2015) analyze both effects in terms of phases. (31) follows from CP phases. And based on the analysis of the preverbal position as [Spec,vP], (32) and (33) are attributed to vP phases: only an object that has shifted to [Spec,vP] is accessible for further movement to [Spec,CP]. One-fell-swoop extraction as would be necessary in (32b) and (33b) is therefore ruled out.¹¹

3.1.2. *Ké-morphology*

As investigated in detail by Van Urk (2015), Van Urk and Richards (2015), and in particular Van Urk (2018), in addition to this empty-position effect, \bar{A} -extraction out of vP in Dinka yields special morphology, as we now discuss. With the exception of local subjects, whenever a plural element is moved out of vP in Dinka, the element *ké* (or *kêek*) must appear to the left of every verb that is crossed by the movement. This element is homophonous with (and, depending on the analysis, identical to) the 3rd person plural pronoun. The appearance of *ké* is illustrated in (34), where \bar{A} -movement of *yeyiṅà* ‘who.PL’ and *kêek* ‘them’ requires a preverbal *ké*, which is impossible in the absence of such movement.

- (34) *Object \bar{A} -movement triggers ké*
- a. **Yeyiṅà** cǐ Ból **ké** t̩ṅ?
 who.PL PFV.NSV Bol.GEN PL see
 ‘Who all did Bol see?’ [Van Urk and Richards 2015:127, ex. (23b)]
- b. **Kêek** áa-cǐ Áyèn **ké** t̩ṅ.
 them 3PL-PFV.OV Ayen.GEN PL see.NF
 ‘Them, Ayen has seen.’ [Van Urk 2018:947, ex. (19c)]

Van Urk (2015, 2018) shows that *ké* is associated with movement and not a resumptive pronoun in the standard sense. First, resumptive pronouns in Dinka are normally limited to PP positions (Van Urk 2015:151–154). Second, displacement with *ké* still shows island sensitivity and allows for reconstruction of the displaced element (Van Urk 2018:951–952). Third, genuine resumptive pronouns are not limited to plural DPs (like *ké* is) but appear with singular DPs as well (Van Urk 2015:77, 152). We therefore follow Van Urk (2015, 2018) in treating *ké* as the reflex of a movement dependency.

The marker *ké* is restricted to the clause-medial region—it cannot appear in C or [Spec,CP] (Van Urk 2018:974–976). Furthermore, *ké* is φ -sensitive in that it only appears if the moving element is plural, as (35) demonstrates, where the corresponding 3SG element *yé(en)* may not occur and *ké* would also be ungrammatical.

¹¹ Note that this analysis requires that *yeyô* ‘what’ in (32b) and *yeyà* ‘who’ in (33b) cannot pass through a second [Spec,vP] on their way to [Spec,CP], a restriction that the theory in Van Urk (2015) and Van Urk and Richards (2015) derives.

(35) *Movement of singular DPs does not trigger a corresponding SG marker*

Yè **ɲà** cji Ból (***yé(en)**) t̥iŋ?
 be.3SG who PFV.OV Bol.GEN (*3SG) see.NF
 ‘Who has Bol seen?’

[Van Urk 2018:940–941, ex. (5a,b)]

Extracted 1st and 2nd person plural DPs likewise trigger *ké*:

(36) *Ā-movement of 1st/2nd plural DP triggers ké*

Wòk/Wèek cji Áyèn **ké** t̥iŋ.
 1PL/2PL PFV.OV Ayen.GEN PL see.NF
 ‘Us/You all, Ayen has seen.’

[Van Urk 2015:225, ex. (62a,b)]

The appearance of *ké* exhibits the hallmark property of successive cyclicity: it appears in every clause that is crossed by movement, as (37) illustrates.

(37) *ké appears in every clause crossed by movement*

Yeyiŋà yé **ké** tâak, [_{CP} cji Ból **ké** t̥iŋ]?
 who.PL HAB.2SG PL think PFV.NSV Bol.GEN PL see
 ‘Who all do you think Bol saw?’

[Van Urk and Richards 2015:128, ex. (25b)]

There is furthermore a subject-object asymmetry in that \bar{A} -extraction of a local subject does not lead to *ké*, as (38) shows. But in crossclausal \bar{A} -extraction of a plural subject, *ké* appears in higher clauses, as in (39).

(38) *Ā-movement of local subject does not trigger ké*

Ròòòr áa-cé (***ké**) y̥iŋ t̥iŋ.
 men 3P-PFV (*PL) you see.NF
 ‘The men have seen you.’

[Van Urk 2018:950, ex. (25a)]

(39) *Ā-movement of nonlocal subject triggers ké in higher clauses*

Ròòòr áa-yùùkù **ké** tàak [_{CP} cé (***ké**) y̥iŋ t̥iŋ].
 men 3PL-be.1PL PL think.NF PFV (*PL) you see.NF
 ‘The men, we think have seen you.’

[Van Urk 2018:950, ex. (26a)]

Finally, certain adjuncts that contain a plural DP also trigger *ké*. This is shown in (40a,b) for movement of *thèek-kò* ‘(at) which times’ and *più kê-dí* ‘(with) how much water’, respectively.

(40) *Ā-moved adjunct PPs trigger ké*

a. Yè **thèek-kò** cji Ból **ké** b̥ò j̥àal?
 be times-which PFV.OV Bol.GEN PL go.NF leave.NF
 ‘At which times has Bol left?’

[Van Urk 2015:218, ex. (49a)]

b. Ye **più kê-dí** cji Ból **ké** bàmbèe thàal?
 Q water much.how PFV.NSV Bol.GEN PL sweet.potatoes cook.TR
 ‘With how much water did Bol cook sweet potatoes?’

[Van Urk and Richards 2015:130, ex. (30b)]

Note that (40b) shows that *ké* is not always immediately preverbal. If the verb takes a preverbal object (*bàmbèe* ‘sweet potatoes’ in (40b)), *ké* appears to the left of this object.

In the next section, we briefly present the vP-phase-based analysis of *ké* developed by Van Urk (2015, 2018) and Van Urk and Richards (2015). We then explore an alternative account of the pattern that attributes it to DP intervention rather than vP phasehood.

3.2. vP-phase account

In a nutshell, Van Urk (2015, 2018) and Van Urk and Richards (2015) propose that *ké* is the realization of an intermediate copy in [Spec,vP], and given that *ké* is obligatory, they conclude that vP must therefore be a phase. Abstracting away from the details of the implementation, they treat the preverbal object position as [Spec,vP], as already mentioned. Because *v* has an EPP requirement, this position must be filled if an object exists. Due to vP’s phasehood, an element that is to be moved out of the vP must first move to this [Spec,vP], from where it can then continue to move to [Spec,CP].¹² If it is plural, this intermediate copy in [Spec,vP] is then realized as *ké*. Because of vP’s phasehood, movement through [Spec,vP]—and hence *ké*—is required in every clause crossed by movement.

This account is elegant and insightful, and it constitutes strong evidence for obligatory successive cyclicity, and vP phases provide a potential analysis. But at the same time, the account faces a number of challenges. The first complication is that \bar{A} -extraction of a local external argument does not lead to *ké* (see (38)). All else being equal, this is surprising given that external arguments are typically taken to be base-generated in the phase edge (i.e., [Spec,vP]). As a consequence, they too should leave a copy in [Spec,vP], which we would then expect to be realized as *ké*, contrary to fact. Van Urk (2018:943n5) briefly discusses this challenge and suggests two possible analyses. One is that the external argument is not actually base-generated in [Spec,vP], but in a higher specifier (see also Van Urk 2015:81–82), in contrast to the standard assumption that it is vP that introduces the external argument. The other analysis suggested by Van Urk is that only copies of elements that appear in [Spec,vP] as a result of attraction by (i.e., Agree with) *v* are realized as *ké*. This analysis raises the question how the morphological realization of a copy in [Spec,vP] can be conditioned by whether Merge of this copy was the result of attraction by *v* or not. While these complications are of course surmountable, it is clear that resolving them increases the complexity of the account. What is most significant for our purposes here is that the asymmetry between subjects and objects (with only objects leading to *ké*) does not follow from the vP-phase account as such but requires additional assumptions. In other domains (such as Defaka, to be discussed in section 4), the existence of a subject–object asymmetry is the key motivation for invoking a clause-medial phase, but at least in Dinka, this asymmetry itself does not seem to directly implicate such a phase.

A second complication concerns the status of unaccusative vP. In Dinka, \bar{A} -extraction of an internal argument of an unaccusative verb does not lead to *ké*, as shown in (41), where movement of *p̣ɛɛl-kó* ‘which knives’ does not leave a *ké*.

¹² Though see Keine (2020b:283–288) for some critical discussion of the role of vP phasehood in this account. Keine argues that the intermediate landing site in [Spec,vP] is already required by *v*’s EPP requirement and that additional appeal to vP phasehood does not make a substantive contribution to Van Urk and Richards’s (2015) and Van Urk’s (2015) account. Here we develop a much more significant reanalysis of the Dinka facts.

(41) *Argument movement out of unaccusative vP does not lead to ké*

Yè **pěeɛl-kó** bɛ́ (***ké**) dhuòŋ?
 be knives-which FUT (*PL) break.NF
 ‘Which knives will break?’

[Coppe van Urk, p.c.]

At first glance, this restriction might be taken to indicate that unaccusative vP is not a phase and hence that there is no intermediate copy in [Spec,vP] (Chomsky 2000, 2001, contra Legate 2003).¹³ However, \bar{A} -extraction of an adjunct out of such vPs does lead to *ké*, as (42) demonstrates, where movement of *thèek-kó* ‘at which times’ leads to *ké*.

(42) *PP-adjunct movement out of unaccusative vP leads to ké*

Yè **thèek-kó** bɛ́i pèɛl **ké** dhuòŋ?
 be times-which FUT.OV knives PL break.NF
 ‘At which times will the knives break?’

[Van Urk 2015:168, ex. (81)]

If *ké* is the realization of an intermediate copy in [Spec,vP], as Van Urk and Richards (2015) and Van Urk (2015, 2018) argue, the distribution of *ké* in (41) and (42) would seem to suggest that arguments of unaccusatives must exit vP in one-fell-swoop whereas adjuncts must do so successive-cyclically. vP phases themselves do not account for this difference. This holds regardless of whether unaccusative vP is treated as a phase or not, simply because (41) and (42) involve the same unaccusative vP.¹⁴

¹³ In addition to the empirical point in the main text, it is worth noting that the criterion that phases are propositional units (Chomsky 2000:107, 2001:12) does not differentiate between agentive and unaccusative vPs as both are Θ -complete. Chomsky (2001) thus proposes that unaccusative vP is a “weak” phase, which does not induce PIC effects. This distinction between “weak” v and “strong” v does not follow from anything else. Hence, if the absence of *ké* in (41) is attributed to vP being weak here, this is itself a stipulation, and furthermore one that seems to have no counterpart in the CP phase. As we will see, the shift from vP phases to DP intervention will allow us to dispense with the strong/weak distinction for phases, thereby eliminating the stipulation.

¹⁴ One potential analytical direction is to assume that only a copy in [Spec,vP] left by \bar{A} -movement is realized as *ké* (many thanks to Coppe van Urk and Julie Legate for discussion). On this account, *pěeɛl-kó* ‘which knives’ in (41) would pass through [Spec,vP] but because it subsequently A-moves to [Spec,TP] prior to \bar{A} -movement, this copy would remain unpronounced. This would produce the right cut, but as far as we can tell, it is incompatible with the overall account presented by Van Urk and Richards (2015) and Van Urk (2015, 2018). First, Van Urk (2015, 2018) proposes (building on Richards 2001, 2016, Boeckx 2003, and Landau 2007) that the realization of the copy in [Spec,vP] as *ké* is the result of a *spell-out instruction* associated with [Spec,vP]. Because this spell-out requirement is an inherent property of this position, it is immaterial to this spell-out requirement whether the copy in this position is left behind by movement to [Spec,TP] or to [Spec,CP], *ké* should appear with both, contrary to fact. Second, Van Urk (2015) proposes that A- and \bar{A} -movement are not movement to specific A- or \bar{A} -positions, but triggered by A- or \bar{A} -features. Such an account would therefore seem to require that PF has access to the syntactic derivational history because in order to determine whether to pronounce a copy, the system must inspect whether this copy was left behind by movement that was triggered by an A or an \bar{A} -feature.

A variant of this account, suggested by Coppe van Urk (p.c.), would be to assume, following Van Urk and Richards (2015) and Van Urk (2015), that v bears an A- and an \bar{A} -feature that can result in movement to [Spec,vP], but that only the \bar{A} -feature imposes a spell-out instruction on the position it creates. If it is furthermore assumed that movement that is triggered by an \bar{A} -feature cannot be followed by movement that is triggered by T’s A-feature, movement of *pěeɛl-kó* ‘which knives’ to [Spec,vP] in (41) would have to be triggered only by v’s A-feature and hence not result in a pronounced copy in [Spec,vP]. This account would involve lookahead because in order to determine what feature triggers movement to [Spec,vP] in any given structure, it would be necessary to know whether or not the attracted element will undergo A-movement at a later stage of the derivation. It is also at odds with Van Urk and Richards’s (2015) Multitasking and Van Urk’s (2015) Best Match principles, which force checking of all features that can be checked at any given point.

The absence of *ké* in (41) also poses a problem for the analysis of why external arguments do not trigger *ké*. As just discussed, Van Urk (2018) sketches two possible approaches to the latter generalization: either (i) the external argument is generated outside of vP or (ii) only copies in [Spec,vP] that are the result of *movement* are realized as *ké*. Neither account derives the fact that unaccusative subjects also do not lead to *ké* because they are clearly generated vP-internally and move to [Spec,vP]. Further stipulations are therefore necessary to derive the full distribution of *ké*. As we show in section 3.3, an account of *ké* in terms of DP intervention and leapfrogging generalizes more naturally to the unaccusative facts.

Third, while extraction of a DP argument requires the preverbal position to be empty—which Van Urk (2015) and Van Urk and Richards (2015) take as evidence for an obligatory intermediate landing site in [Spec,vP]—Van Urk and Richards (2015:129–130) observe that PP extraction is permitted even if this position is filled, as shown in (44), which Van Urk and Richards (2015) analyze as involving \bar{A} -movement of a PP (see Van Urk 2015 for additional discussion).

(43) *DP extraction requires empty preverbal position*

a. Yeŋà cǐj mōc yiɛn kitáp?
 who PFV.NSV man.GEN give book
 ‘Who did the man give the book to?’

b. *Yeŋà cǐj mōc kitáp yiɛn?
 who PFV.NSV man.GEN book give
 ‘Who did the man give the book to?’

[Van Urk and Richards 2015:125, ex. (20a,b)]

(44) *PP extraction does not require empty preverbal position*

a. Yeŋó cǐj yin kòor nɔ̀ɔ̀k?
 what PFV.NSV you lion kill
 ‘What did you kill a lion with?’

b. Yétenô cénnè Ból Dèŋ tuɔ̀ɔ̀c?
 where PFV.OBLV Bol Deng send
 ‘Where did Bol send Deng?’

[Van Urk and Richards 2015:130, ex. (29b,c)]

If the obligatory preverbal gap with DP extraction in (43) is taken as evidence for an obligatory intermediate landing site in [Spec,vP], then the absence of such a gap with PP extraction in (44) would seem to show that PP extraction does not need to pass through [Spec,vP]. This would constitute evidence *against* vP phases because vP phases would constrain DP and PP movement in the same way. To resolve this paradox, Van Urk (2015) and Van Urk and Richards (2015) propose that PP extraction as in (44) does pass through an intermediate [Spec,vP] but for PPs, this intermediate

Furthermore, it is not obvious how to state a ban on movement from a position created by an \bar{A} -feature to a position created by an A-feature in this account, and as before, within Van Urk’s (2015) featural account of the A/ \bar{A} -distinction, it would require access to previous steps of the derivation to determine whether a given copy was created by an A- or an \bar{A} -feature.

Our main point here is not so much that the contrast between (41) and (42) could not be accounted for on a vP-phase account but that this contrast requires significant complications to the account. As we will see, this is not the case for a DP-intervention account. In a nutshell, because (42) involves \bar{A} -movement over a subject DP whereas (41) does not, the contrast will follow without additional assumptions.

[Spec,vP] is an outer [Spec,vP], which coexists with a DP in an inner [Spec,vP] (*kôor* ‘lion’ and *Dèŋ* ‘Deng’, respectively). DP extraction, on the other hand, cannot pass through an outer [Spec,vP] and so the preverbal position must remain empty in (43) (this difference is derived from Van Urk and Richards’s 2015:132 *Multitasking* principle or Van Urk’s 2015:173 *Best Match*). While this is a feasible and insightful analysis, the fact remains that empirically, the empty-position effect that constituted part of the argument for vP phases fails to obtain for PP extraction (Van Urk 2015 and Van Urk and Richards 2015 show that the empty-position effect at CP, as illustrated in (31), does not exhibit this DP–PP split). We note that we observed an analogous asymmetry between PPs and DPs in SI, suggesting that this is not purely a Dinka-internal quirk.

Fourth, if *ké* analyzes the realization of a lower copy, it is somewhat surprising that only copies in [Spec,vP] are realized in this way, but not intermediate copies in [Spec,CP]. This account thus requires an additional stipulation to prevent copies in [Spec,CP] from being realized as *ké* (Van Urk 2018:975–976 appeals to impoverishment in CP).

3.3. DP-intervention analysis

Because Van Urk’s (2015, 2018) and Van Urk and Richards’s (2015) argument for vP phases in Dinka involves (a) an empty-position effect (section 3.1.1) and (b) *ké*-morphology (section 3.1.2), our alternative analysis will need to address both.

We first consider the obligatory emergence of *ké* under \bar{A} -extraction of the object of a transitive clause is moved. We follow Van Urk (2015, 2018) and Van Urk and Richards (2015) in analyzing *ké* as a reflex of successive-cyclic movement, but we will argue that this successive cyclicity is better understood as the result of DP intervention rather than phasehood. Just as for SI, our analysis is based on the guiding view that C in Dinka may only attract the structurally closest DP. Because Dinka is a V2 language and movement to [Spec,CP] is hence obligatory, we will adopt what seems like the simplest implementation: C bears an EPP property that is nondiscriminating—it does not search for elements with a specific \bar{A} -feature but is instead matched by any DP. The requirement that C attract the closest goal then leads to (45), which is basically an instance of relativized minimality (Rizzi 1990) in Dinka. Alternatively, C in Dinka could contain a complex probe akin to what we proposed for SI (Erlewine 2018, Branen and Erlewine 2021, Coon et al. 2021). But the V2 character of C in Dinka makes a simpler, purely EPP-based account viable, which we will therefore adopt here.

(45) Dinka C bears an [EPP] feature that may attract only the structurally closest DP.

At first glance, (45) appears empirically incorrect. Clearly, it is possible for elements other than the local subject (which is structurally closest to C) to occupy [Spec,CP]. But it is precisely in such cases that *ké* must appear, which suggests that the two are connected. We thus propose that such cases involve leapfrogging: the lower DP first moves across the external argument, after which it can then be attracted by C. We then analyze *ké* as the reflex of the probe that gives rise to this leapfrogging. Thus, while both Dinka and SI require C to attract the closest DP, the availability of this inversion mechanism in Dinka has the effect that (i) Dinka does not exhibit a subject-only extraction pattern, and (ii) non-subject extraction is associated with special morphology.

To develop this idea, we assume, following Van Urk (2015), that subjects undergo movement to [Spec,TP] in Dinka. Van Urk (2015:86–87) shows that subjects that occur in the middle field (that is,

subjects that do not raise to [Spec,CP]) follow the verb in the V2 position, irrespective of whether the verb is unaccusative, unergative, or transitive, as illustrated in (46).

- (46) a. Bẹ̣ **lẹc** dhuôŋ?
 FUT.SV stick.GEN break.NF
 ‘Will the stick break?’
- b. Bẹ̣ **Bôl** cà m (ẹ̣ cụjìn)?
 FUT.SV Bol.GEN eat.AP.NF P food
 ‘Will Bol eat food?’ [Van Urk 2015:86–87, ex. (55a,c)]

Furthermore, this position of the subject precedes vP-level adverbs such as *dâac* ‘quickly’:

- (47) Bẹ̣ **lẹc** dâac dhuôŋ?
 FUT.SV stick.GEN quickly.NF break.NF
 ‘Will the stick break quickly?’ [Van Urk 2015:87, ex. (56a)]

Van Urk (2015:87) suggests that these placement facts are explained if subjects move to [Spec,TP] in Dinka, a view that we adopt here as well. Associating middle-field subjects with a designated position also offers an account of the fact that they appear with genitive case (Van Urk 2015, 2018) (or oblique case, see Andersen 2002, 2007), but objects do not (Van Urk 2015:71–73, 86–89). If genitive case is assigned to elements in [Spec,TP], then the claim that middle-field subjects move to [Spec,TP] provides an immediate explanation for why they uniformly bear genitive case. We therefore assume that T bears a standard [*u*D] feature that is satisfied by moving a DP into its specifier.¹⁵

In light of the restriction in (45), movement of an element other than the subject is possible only if this DP is the closest DP to C. Extraction of a non-subject DP thus requires that this DP first move over the intervening subject (leapfrogging), by assumption to an outer [Spec,TP]. Because we will analyze as *ké* as the reflex of the probe that triggers this leapfrogging step, and because *ké* appears only if the leapfrogged element is plural, we propose that the leapfrogging probe is a strong φ -probe [*u* φ]. By assumption, [*u* φ] is optionally present on T, and if it is, it probes after [*u*D], hence after movement of the subject to [Spec,TP]. [*u* φ] then agrees with the closest φ -bearing element c-commanded by T and attracts this element to an outer [Spec,TP]. Thus, we treat *ké* as the realization of T; specifically, as the realization of plural agreement with [*u* φ], as stated in (48), which is analogous to Van Urk (2018:962).

- (48) /*ké*/ ↔ [PL]

In contrast to Van Urk (2015, 2018) and Van Urk and Richards (2015), we hence do not analyze *ké* as the realization of an intermediate copy, but rather as agreement on T.¹⁶ We treat the form identity

¹⁵ It does not matter for our analysis why or how elements in [Spec,TP] receive genitive case. Perhaps the most straightforward option is that genitive is assigned by T in Dinka and hence correlates with movement to the subject position. Alternatively, Van Urk (2015:86–92) proposes that genitive case is assigned by a silent P head that is late-merged to a DP in [Spec,TP] as a last-resort mechanism to assign case. A third possibility, pointed out to us by a reviewer, is that these clauses are in fact nominalized and genitive case is licensed by this nominalizing structure. Because case does not play a role in our analysis of the *ké*-facts, nothing hinges on the choice between these options.

¹⁶ Van Urk (2015:217, 2018:948) notes that treating *ké* as the realization of a verbal head implies a violation of the Head Movement Constraint (Travis 1984) because V2 movement of the main verb must skip *ké*. However, recent work has

between the pronoun *ké* and the successive-cyclicity marker *ké* as an instance of syncretism: despite the fact that the two are syntactically distinct, they are both realized by the vocabulary item in (48), which realizes a [PL] feature but is underspecified with respect to the part of speech of the node (D vs. T). As such, the identity between the two elements is not an instance of accidental homophony, but it is stated at the level of the vocabulary item, not at the level of the syntactic structure that it realizes. Note that we locate *ké* in a marginally higher projection than do Van Urk and Richards (2015) and Van Urk (2015, 2018) (T instead of the outermost [Spec,vP]). Given the proximity of the two positions, this change is not empirically significant, as far as we can tell.

Importantly, *ké* is not triggered by plural subjects. We account for this by imposing an ordering on the two probes [*uD*] and [*uφ*] (if the latter is present): [*uD*] must probe first, followed by [*uφ*] (see, e.g., Müller 2009, Georgi 2014, 2017, and Hoover 2021 for other accounts that involve extrinsic ordering of Merge and Agree features on a single head). [*uD*] has the standard effect of moving the closest DP to the subject position; [*uφ*], if present, leads to leapfrogging of the next-higher DP around the subject. There are then at least two principled explanations for why [*uφ*] cannot agree with the subject. First, if Agree is downward-only (Chomsky 2000, 2001), a probe on T must agree with an element in its c-command domain, hence within the vP. Because probing by T's [*uD*] applies before probing by [*uφ*], it moves the external argument out of [*uφ*]'s c-command domain, and [*uφ*] can never agree with the external argument. Second, as already noted, it is a general property of Dinka that subjects that occur in [Spec,TP] bear genitive case. If φ -Agree is case-discriminating (Bobaljik 2008, Keine 2010, Preminger 2014; and also Schütze 1997 and Rezac 2008) and may not target genitive DPs, then it also follows that [*uφ*] cannot be valued by a subject in [Spec,TP].

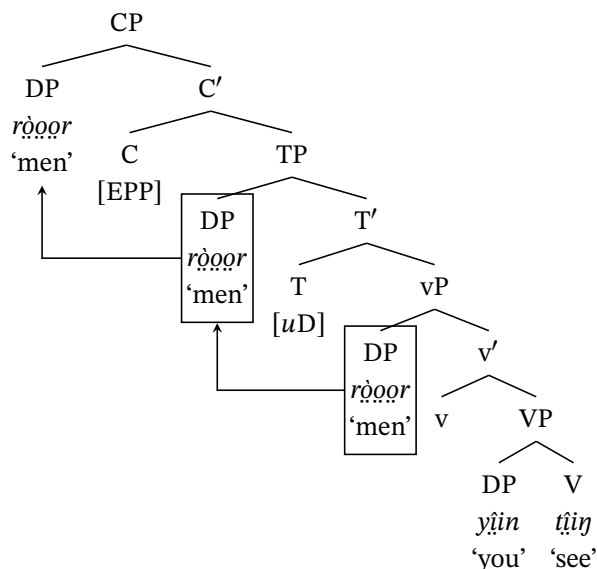
Let us first consider an example in which [*uφ*] is absent, which leads to movement of the subject to [Spec,CP] with no *ké*. An example is provided in (49), and the corresponding structure is shown in (50). Importantly, we treat the Dinka VP as head-final, resulting in OV word order in (50). In this we diverge from Van Urk and Richards's (2015) and Van Urk's (2015) accounts, which treat the OV order as derived from a VO base order by obligatory movement of the object to [Spec,vP]. Our account does not postulate such movement.¹⁷

- (49) **Ròòòr** áa-cé (***ké**) yîin tîij.
 men 3P-PFV (*PL) you see.NF
 'The men have seen you.' [Van Urk 2018:950, ex. (25a)]

documented several cases of head movement that violate the Head Movement Constraint (e.g., Rivero 1994, Roberts 1994, Harizanov 2019, Harizanov and Gribanova 2019), and some authors extend such long head movement to V2. For example, Harizanov and Gribanova (2019:500–502) propose an analysis of Danish V2 in which the verb moves to a left-peripheral position, skipping over intervening functional projections, and they propose more generally that only postsyntactic head movement (which V2 movement is not) is subject to the Head Movement Constraint. Similarly, Roberts (1991) proposes an excorporation analysis of V2 (also see Roberts 2010). These analyses can thus be extended to Dinka V2: C attracts the closest verbal element, thus skipping heads like T. Also potentially relevant are particle verbs in Dutch and German, which permit V2 movement of just the verb, stranding the particle (e.g., Zeller 2002).

¹⁷ Van Urk and Richards (2015) and Van Urk (2015) do not provide independent empirical evidence that the OV base order must be derived from a VO base order.

(50) Derivation of (49)



In (50), T bears only [*uD*], which leads to standard raising of the external argument *ròòòr* ‘men’ to [Spec,TP]. Because T does not bear [*uφ*], T does not agree with another element, and it does not establish φ -Agree with a DP. As a result, *ròòòr* is the closest DP to C, and as a result it is attracted to [Spec,CP] to satisfy C’s [EPP] feature.

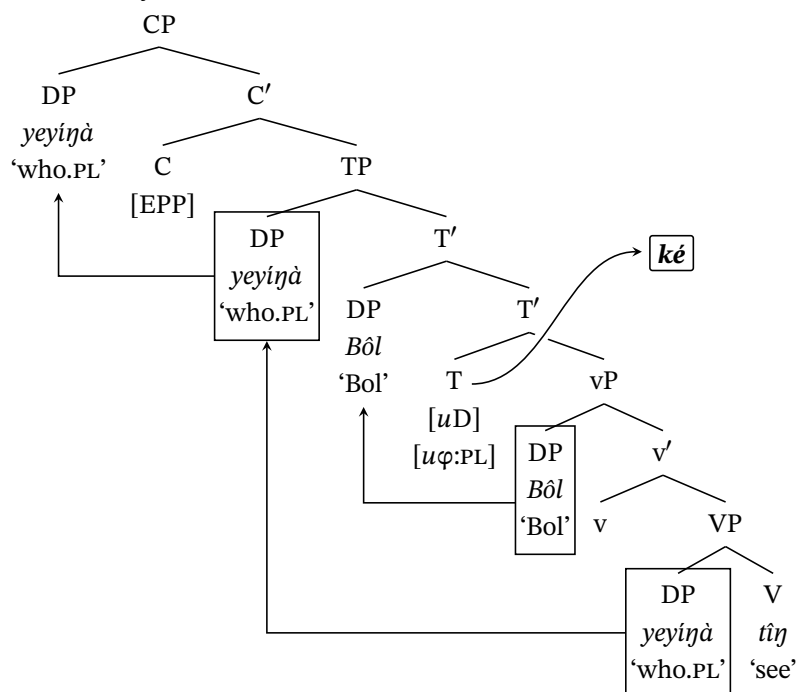
Next, we contrast this derivation with one in which T bears not only [*uD*], but also [*uφ*]. As we show, this setup will lead to movement of an element other than the subject to [Spec,CP] and to *ké* if this element is plural. A sentence that illustrates such a structure is repeated in (51).

(51) **Yeyíṅà** cǐj Ból **ké** tǐṅ?
 who.PL PFV.NSV Bol.GEN PL see
 ‘Who all did Bol see?’

[Van Urk and Richards 2015:127, ex. (23b)]

As shown in (52), [*uD*] on T triggers movement of the external argument *Ból* to [Spec,TP], as before. Because in this case T additionally bears [*uφ*], [*uφ*] subsequently agrees with the closest DP in its c-command domain—in this case the internal argument *yeyíṅà* ‘who.PL’—and attracts it to an outer [Spec,TP]. This leapfrogging is accompanied by plural agreement on [*uφ*], realized as *ké*. Finally, C attracts the structurally closest element, which in (52) is the leapfrogged object *yeyíṅà*.

(52) Derivation of (51)



As noted, $[u\phi]$ cannot agree with the subject (either because Agree is downward-only or due to case discrimination). It follows, therefore, that $[u\phi]$ only agrees with DPs that are leapfrogged over the subject. This analysis of *ké* as the realization of plural agreement on *v* also accounts for the fact that while *ké* appears only if the \bar{A} -extracted element is plural, it is insensitive to the person of the moving element, and also appears with 1st and 2nd person plural objects (see (36)).

We emphasize that our analysis does not involve lookahead. $[u\phi]$ may be either present on or absent from T, the choice being free but with different outcomes in each case. If T does not bear $[u\phi]$, then (i) no ϕ -Agree will be established and hence *ké* will be absent, (ii) no leapfrogging of an element over the subject takes place, and as a result, (iii) it is the subject that is attracted to [Spec,CP]. Conversely, if T bears $[u\phi]$, then (i) the highest non-subject element will control ϕ -Agree on T, leading to *ké* if it is plural, (ii) this element will leapfrog over the subject to an outer [Spec,TP], and (iii) being closer to C than the subject, it is this leapfrogged element that moves to [Spec,CP]. Thus, if T carried $[u\phi]$ in (50), it would trigger leapfrogging of the object *yîin* 'you' above the subject (with [SG] agreement, hence of *ké*), followed by movement of *yîin* to the clause-initial position.

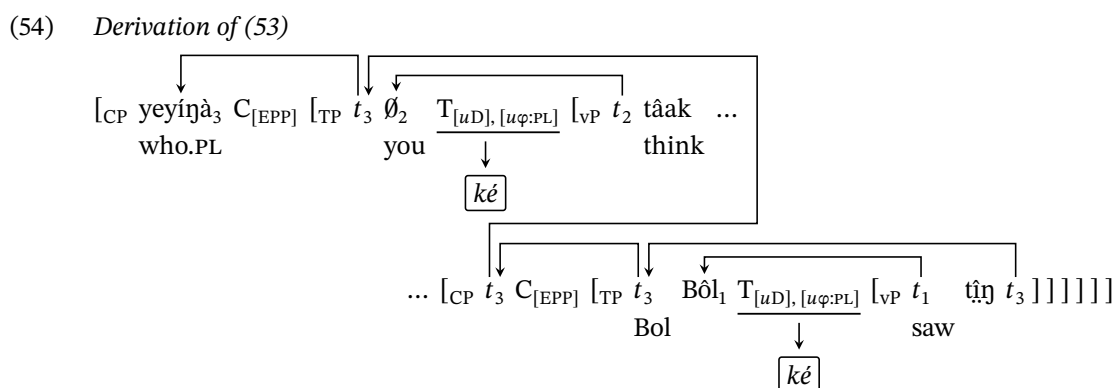
Our analysis of *ké* as the realization of a verbal ϕ -probe that is connected to movement of the goal is reminiscent of patterns we find in a number of other languages. First, Romance (past) participle agreement is tied to extraction of the goal out of the *vP* (see Belletti 2017 and references cited there). Such participle agreement appears in a range of configurations, which Kayne (1989) correlates with A-extraction of the internal argument (as an instance of Spec-Head agreement, Kayne proposes). Our analysis of *ké* is similar in this regard. Second, Arabic subject-verb agreement (where only preverbal subjects control number agreement; Harbert and Bahloul 2002) provides a related example of ϕ -agreement that correlates with movement (also see Zeijlstra 2012 and Bjorkman and Zeijlstra 2019). Third, in Bantu verb agreement is always controlled by a preverbal element and Carstens

(2005) proposes an analysis in which a φ -probe that bears an EPP property triggers movement of the agreeing DP.¹⁸

This analysis also derives that *ké* appears in every clause that is crossed by movement (except in the lowermost clause if the extracted element is the subject of that clause), as shown in (37), repeated here as (53).

- (53) **Yeyiŋà** yé **ké** tâak, [_{CP} cîi Bôl **ké** tîŋ]?
 who.PL HAB.2SG PL think PFV.NSV Bol.GEN PL see
 ‘Who all do you think Bol saw?’ [Van Urk and Richards 2015:128, ex. (25b)]

The reason is that *yeyiŋà* ‘who.PL’ must leapfrog over the subject in order to be closest to C in each clause, as schematized in (54).¹⁹



Note that treating *ké* as the realization of T immediately explains why *ké* does not also appear in the CP region in (53). As we saw, this fact requires additional assumptions if *ké* is analyzed as the realization of an intermediate copy.

Let us turn next to the empty-position effect, seen most clearly with ditransitive verbs (see section 3.1). Recall that in such constructions, one object must appear before the verb and one following the verb (see (55)). Furthermore, if \bar{A} -movement of an object out of this vP takes place, it must empty the preverbal position and cannot empty the postverbal position (see (56)).

¹⁸ The connection between our analysis of *ké* as φ -agreement and Carstens’s (2005) analysis of φ -agreement in Bantu is particularly noteworthy. On these two accounts, the crucial differences between Bantu and Dinka *ké* are that (i) the φ -probe is only optionally present in Dinka, and (ii) the φ -probe coexists with [*uD*] and so creates a second specifier.

¹⁹ Note that (54) involves movement from [Spec,CP] to an outer [Spec,TP], hence possibly a violation of the ban on improper movement (Chomsky 1981). Importantly, however, Van Urk (2015:ch. 4) argues that [Spec,CP] in Dinka is in fact a mixed A/ \bar{A} -position. This might be sufficient to permit subsequent movement to [Spec,TP] even on traditional assumptions about improper movement (i.e., the ban blocks only movement from a pure \bar{A} - to a pure A-position).

Additionally, if our account of Dinka is adopted, it is no longer clear that [Spec,CP] in Dinka needs to have any \bar{A} -properties. As Van Urk (2015:109–113) shows, movement to [Spec,CP] is not subject to WCO and feeds anaphor binding, and in this respect it hence shows the properties of A-movement. In addition to information-structural effects, Van Urk’s primary motivation for treating [Spec,CP] as a partial \bar{A} -position is primarily locality: such movement can descriptively skip intervening DPs, and it may cross clause boundaries. On our account, movement to [Spec,CP] cannot actually cross intervening DPs (and this is why leapfrogging is required), and successive-cyclic movement does not proceed CP-to-CP (see (54)). Our analysis thus has implications for the typology of movement types as well, which we will however not discuss further here.

- (55) a. Yêen cé Ayén yiên kitáp.
I PFV Ayen give book
b. Yêen cé kitáp yiên Ayén.
I PFV book give Ayen
'I gave Ayen a book.' [Van Urk and Richards 2015:124–125, ex. (19a,b)]
- (56) a. Yeŋà₁ cǐi môt ____₁ yiên kitáp?
who PFV.NSV man.GEN give book
'Who did the man give the book to?'
b. *Yeŋó₁ cǐi môt Ayén yiên ____₁?
what PFV.NSV man.GEN Ayen give
'What did the man give Ayen?' [Van Urk and Richards 2015:125, ex. (20a,d)]

As noted in section 3.1, Van Urk (2015, 2018) and Van Urk and Richards (2015) analyze this restriction in terms of vP phases. On their analysis, v bears an EPP property, requiring one of the two objects to move to [Spec,vP]. Subsequent \bar{A} -movement can then only target this element, not the VP-internal object that is left behind. Because the empty position follows the subject, we cannot simply analyze it as created by the leapfrogging step. Instead, we will now suggest that the empty position is not an intermediate landing site at all, but instead the base position of the object. This analysis completely dissociates the distribution of the empty position from clause-medial successive cyclicity.

We take as our starting point Van Urk's (2015:151–154) proposal that structures like (55a,b) derive from different base configurations. He provides evidence for the two ditransitive structures in (57) and (58) (Van Urk 2015:153, 154). In both configurations, the structurally closer DP moves to [Spec,vP].

- (57) *Van Urk's (2015) structure for (55a)*

$$[_{VP} \text{Ayén } v^0 [_{AppIP} t \text{ AppI}^0 [_{VP} \text{yiên kitáp}]]]$$
 Ayen give book
- (58) *Van Urk's (2015) structure for (55b)*

$$[_{VP} \text{kitáp } v^0 [_{VP} t \text{ yiên } [_{PP} P^0 \text{Ayén}]]]$$
 book give Ayen

As noted above, our account does not postulate object movement to [Spec,vP]. While we adopt Van Urk's (2015) base structures in (57) and (58), we thus propose that both objects remain in their respective base positions in both structures. Against this background, we suggest that [$u\phi$] on T may only agree with the closest ϕ -bearing element, a standard instance of relativized minimality, as stated in (59).

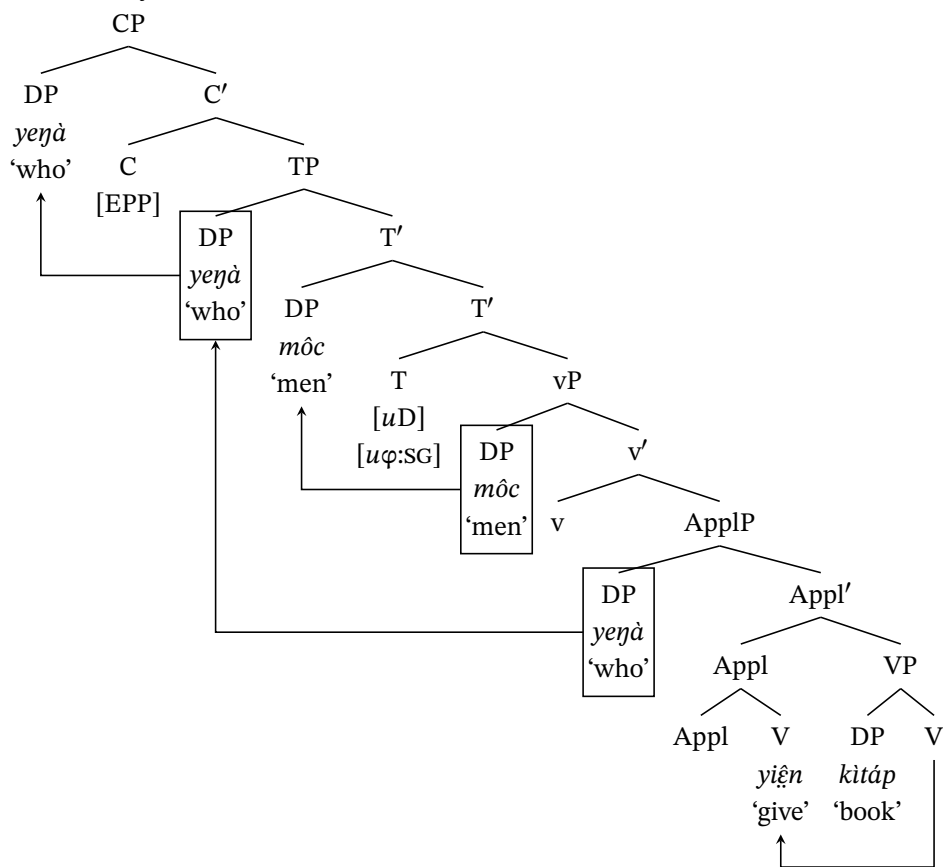
- (59) [$u\phi$] on T attracts the structurally closest ϕ -bearing element in its c-command domain.

Recall that the external argument does not count for (59), either because it is attracted to [Spec,TP] by [uD] before [$u\phi$] probes its c-command domain, or because its genitive case prevents it from

being attracted by $[u\varphi]$. We also note that (59) is analogous to the “closest” requirement of C in Dinka (45) and SI (21). This generalizes the core of our account to heads other than C.

(59) has the consequence that if v 's search space contains two φ -bearing DPs, only the higher one may be attracted and hence leapfrog over the external argument. In ditransitive constructions, only the higher object may therefore move to [Spec,CP] (as such movement requires leapfrogging over the external argument). This is schematized in (60), where $[u\varphi]$ may only attract the higher object *yeyà* ‘who’ to the outer [Spec,TP], yielding (56a). The postverbal object could not be attracted by $[u\varphi]$ due to intervention by the higher object, correctly ruling out (56b). This derives the contrast in (56) from Van Urk’s (2015) structure for ditransitives and relativized minimality in the probing of $[u\varphi]$ (i.e., (59)), and it explains why extraction can only produce a preverbal gap in (56). As noted, unlike Van Urk’s (2015) and Van Urk and Richards’s (2015) account, we identify this gap with the base position of the object, not an intermediate landing site.

(60) Derivation of (56a)



This treatment of extraction in ditransitive constructions raises a question about the placement of the verb relative to other elements, to which we now turn. In transitive sentences without movement of the object, the verb follows the object (e.g., (28)). But in a ditransitive structure, the verb is sandwiched between the two objects (e.g., (29)). We suggest that this difference is the result of verb raising in ditransitive constructions.²⁰ Specifically, the Appl head that is present in double-object

²⁰ We thank a reviewer for suggesting this analysis.

constructions triggers head movement of V to it, resulting in VO word order, as indicated in (60). Monotransitives do not contain an Appl projection and so V remains in its base position, yielding an OV order.

Our proposal that the immediately preverbal gap position that arises under object \bar{A} -movement as in (61), repeated from (56), is not [Spec,vP] but simply the base position of the object, not only simplifies the syntax underlying object placement in Dinka, it also allows us to account for the appearance of the preverbal gap position in (61a) without appeal to intermediate movement through [Spec,vP] and hence vP phases. The reason that extraction is blocked if the preverbal position is occupied in (61b) is thus not that the vP-phase escape hatch is occupied (as Van Urk and Richards 2015 and Van Urk 2015 propose), but (59): because the DP that occupies this position intervenes for probing of T's [$u\phi$], it prevents leapfrogging of lower elements over the subject.

- (61) a. Yeŋà₁ cǐ mōc ____₁ yiɛ̃n kítáp?
 who PFV.NSV man.GEN give book
 ‘Who did the man give the book to?’
- b. *Yeŋó₁ cǐ mōc Ayén yiɛ̃n ____₁?
 what PFV.NSV man.GEN Ayen give
 ‘What did the man give Ayen?’ [Van Urk and Richards 2015:125, ex. (20a,d)]

This analysis extends to PP-object constructions like (55b), in which the preverbal position is occupied by the theme argument and the goal appears postverbally. Here as well, only the preverbal object may undergo \bar{A} -movement (see Van Urk and Richards 2015:125, ex. (20c,d)). We draw again on Van Urk’s (2015) analysis of these constructions, assuming the base structure in (62) (but without movement to [Spec,vP]). See Van Urk (2015:151–153) for evidence that the postverbal element in these constructions is a PP rather than a DP. Following Van Urk (2015), the structure does not contain an ApplP, and therefore no movement of the verb takes place.

- (62) [_{VP} kítáp [yiɛ̃n [_{PP} P⁰ Ayén]]]
 book give Ayen

As before, due to (59), [$u\phi$] on T can attract only the higher object. Consequently, the lower PP object cannot leapfrog over the subject and hence cannot undergo \bar{A} -movement, deriving the pattern in (33).

Again, some remarks on the linearization of the elements are necessary, in particular why the verb’s PP complement is linearized to the right in (62) instead of to the left. As it turns out, this is a general property of PPs in the language, also observable outside of ditransitive constructions. We already saw this for locative PPs in (30), repeated here as (63). The same holds for PPs that cooccur with direct objects, as in (64).

- (63) a. Wɔ̀ɔk cé kɛ̀ɛt **dòm-íc**.
 we PFV sing garden-in
 ‘We sang in the garden.’
- b. *Wɔ̀ɔk cé **dòm-íc** kɛ̀ɛt.
 we PFV garden-in sing
 ‘We sang in the garden.’ [Van Urk and Richards 2015:123, ex. (17a,b)]
- (64) a. Àyén à-cé cuḡin câam [PP **nɛ̀ pǎal**]
 Ayen 3SG-PFV food eat.NF P knife
 ‘Ayen has eaten food with a knife.’
- b. *Àyén à-cé cuḡin [PP **nɛ̀ pǎal**] câam
 Ayen 3SG-PFV food P knife eat.NF
- c. *Àyén à-cé [PP **nɛ̀ pǎal**] cuḡin câam
 Ayen 3SG-PFV P knife food eat.NF [Van Urk 2015:79–80, ex. (42a–c)]

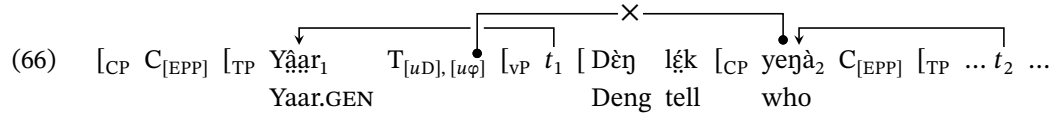
Thus, PPs are linearized to the right when they occur inside vP (this account is analogous to what Van Urk and Richards 2015:135 propose for the linearization of CPs in Dinka). This general property of PPs then immediately explains the word order in (62).²¹

The restriction in (59) that, like [EPP] on C, [$u\varphi$] on T can only agree with, and attract, the structurally closest element explains not only the extraction restrictions in ditransitive constructions, but also extends to constraints on crossclausal extraction. As (65a) shows, it is possible for the verb *lɛ̀k* ‘tell’ to take a CP argument and a structurally higher indirect object (*Dɛ̀ɛ*). (65b) then demonstrates that long \bar{A} -movement out of the embedded CP cannot cross the intervening *Dɛ̀ɛ*.

- (65) a. Yâar à-cé **Dɛ̀ɛ** lɛ̀k, [CP yè Bòl à-cé Ayén tuòɔc wúut]
 Yaar 3SG-PFV Deng tell C Bol 3SG-PFV Ayen send cattle.camp.LOC
 ‘Yaar told Deng that Bol sent Ayen to the cattle camp.’
- b. *Yɛ̀ɛ̀à₁ cɛ̀i Yâar **Dɛ̀ɛ** lɛ̀k, [CP yè cɛ̀i Bòl _____₁ tuòɔc
 who PFV.NSV Yaar.GEN Deng tell C PFV.NSV Bol.GEN send
 wúut]?
 cattle.camp.LOC
 ‘Who did Yaar tell Deng that Bol sent to the cattle camp?’
 [Van Urk and Richards 2015:133, ex. (37a,c)]

Our DP-intervention account derives the ungrammaticality of (65b) from (59), as shown in (66). Movement of *yɛ̀ɛ̀à* to the matrix [Spec,CP] requires leapfrogging around the matrix subject *Yâar*, hence Agree with the matrix [$u\varphi$]. But because the indirect object *Dɛ̀ɛ* intervenes between [$u\varphi$] and *yɛ̀ɛ̀à* inside the embedded CP, [$u\varphi$] cannot agree with *yɛ̀ɛ̀à*. As a result, matrix C cannot attract *yɛ̀ɛ̀à*, ruling out (65b).

²¹ A reviewer notes a potential connection between this proposal about the linearization of PPs in Dinka and the linearization of *di*-phrases in Romance. Here, similar to English, nominalized verbs take their arguments as PPs headed by *di*, and in this case the arguments invariably follow the head noun (e.g., Cinque 1980).



Our analysis thus attributes the crossclausal extraction restriction in (65) to the same constraint that restricts extraction in ditransitive constructions (56)—only the DP closest to T can undergo leapfrogging to an outer [Spec,TP]. And this restriction is in turn due to the same constraint that gives rise to the need for leapfrogging in the first place—the relevant probes on C and T can agree only with the structurally closest element (i.e., (45) and (59)).²² As expected, in the absence of an intervening DP in the higher clause, long \bar{A} -movement is possible (see (53) and the corresponding structure in (54)).

On our analysis, then, the empty preverbal position created by \bar{A} -movement of a DP—one of the key arguments for clause-medial phasehood presented by Van Urk (2015) and Van Urk and Richards (2015)—does not reflect an intermediate phase edge after all, but the base position the DP. An important advantage of this shift in perspective is that it immediately resolves a puzzle that arises with PP extraction. As discussed in section 3.2, PP extraction differs from DP extraction in that it does *not* empty the preverbal position (Van Urk and Richards 2015:129–130). In the examples in (67), movement of the PPs *ye\eta\grave{o}* ‘(with) what’ and *y\acute{e}ten\acute{o}* ‘where’ is possible despite the preverbal position being filled by *k\acute{o}qor* ‘lion’ and *D\grave{e}\eta* ‘Deng’, respectively. The fact that PP extraction does not require the preverbal position to be empty in (67) directly contrasts with ditransitive constructions like (56). (We will return to the absence of an overt preposition with *ye\eta\grave{o}* ‘(with) what’ in (67a) shortly.)

²² Notably, if *D\grave{e}\eta* in (65b) follows the main verb, extraction out of the embedded clause is permitted, as shown in (i):

- (i) $Ye\eta\grave{a}_1 \quad c\acute{i}i \quad Y\check{a}ar \quad l\acute{e}k \quad D\grave{e}\eta, \quad [_{CP} \quad ye \quad c\acute{i}i \quad B\acute{o}l \quad \underline{\quad}_1 \quad tu\acute{o}c \quad w\acute{u}t \quad]?$
 who PFV.NSV Yaar.GEN tell Deng C PFV.NSV Bol.GEN send cattle.camp.LOC
 ‘Who did Yaar tell Deng that Bol sent to the cattle camp?’ [Van Urk and Richards 2015:133, ex. (37b)]

We interpret the difference between (65) and (i) as reflecting the two structures available for ditransitive constructions postulated by Van Urk (2015) in (57) (minus movement to [Spec,vP]). The two options are given in (ii):

- (ii) a. $[_{AppIP} DP \text{ AppI}^0 [_{VP} V CP]] \Rightarrow$ *Word order:* DP V CP (see (65))
 b. $[_{VP} CP V^0 [_{PP} P^0 DP]] \Rightarrow$ *Word order:* V DP CP (see (i))

As indicated, (65) involves the base structure in (iia), with DP preceding V. As shown in (66), the DP *D\grave{e}\eta* blocks \bar{A} -extraction out of the CP due to DP-intervention, ruling out (65b). By contrast, (i) derives from the structure in (iib). Here, P is null (as it is in ditransitives, see (57)), but for other verbs the PP structure is overtly reflected (Van Urk 2015:158, ex. (62c)). Following Van Urk and Richards (2015:135), CPs are always linearized to the right even in specifier positions so that the embedded CP linearly follows *D\grave{e}\eta* in (iib). Because *D\grave{e}\eta* does not structurally intervene between the CP and the matrix T in (iib), it does not block leapfrogging of *ye\eta\grave{a}* over *Y\check{a}ar* in (i).

Relatedly, it is worth noting that Van Urk and Richards (2015) attribute the ungrammaticality of (65b) to a requirement for CP out of which extraction takes place to agree with the matrix v head (in order to “unlock” them for this extraction). This Agree results in obligatory movement to the preverbal position. Our intervention-based account does not need to appeal to phase unlocking through Agree in order to rule out (65b).

- (67) a. Yeŋó cǐ yìn **kôŋ** nɔ̀k?
 what PFV.NSV you lion kill
 ‘What did you kill a lion with?’
- b. Yétenô cénnè Ból **Dèŋ** tuɔ̀c?
 where PFV.OBLV Bol Deng send
 ‘Where did Bol send Deng?’ [Van Urk and Richards 2015:130, ex. (29b,c)]

On Van Urk and Richards’s (2015) and Van Urk’s (2015) vP-phase account, where the preverbal position is [Spec,vP] and must be targeted by intermediate movement due to vP phasehood, the fact that PPs apparently do not need to pass through this [Spec,vP] requires additional assumptions. On the account we propose here, (67) follows without additional assumptions to this effect. This is because the base position of these PP elements, like that of all PPs (see (63)–(64)), is invariably postverbal, as shown for *tuɔ̀c* ‘send’ in (68).

- (68) a. Ból à-cé Dèŋ tuɔ̀c **wúut**.
 Bol 3SG-PFV Deng send cattle.camp.LOC
 ‘Bol sent Deng to the cattle camp.’
- b. *Ból à-cé **wúut** tuɔ̀c Dèŋ.
 Bol 3SG-PFV cattle.camp.LOC send Deng
 ‘Bol sent Deng to the cattle camp.’ [Van Urk and Richards 2015:129, ex. (28a,b)]

If the preverbal gap in (56) does not reflect an intermediate landing site in [Spec,vP] but instead the base position of the extracted element, as we have proposed, then it follows without further ado that PP extraction does not give rise to a preverbal gap, simply because the base position of a PP can never be preverbal. The relevant gap in (67) is thus necessarily in a postverbal position and does not affect the order of preverbal elements. This explanation is of course available only if the empty-position effect in cases like (56) is dissociated from vP or vP phasehood.

While PP extraction hence does not result in a preverbal gap, it does yield *ké* if the element is plural, as shown in (69).

- (69) *PP extraction leads to ké*
- a. Ye **più** **kê-dí** cǐ Ból **ké** bàmbèe thàal?
 Q water much.how PFV.NSV Bol.GEN PL sweet.potatoes cook.TR
 ‘With how much water did Bol cook sweet potatoes?’
- b. Ye **bègi** **kô** cénnè nyánkàí **ké** wànmáth tuɔ̀c?
 Q villages which PFV.OV sister PL brother send
 ‘Which villages did my sister send my brother to?’ [Van Urk and Richards 2015:130, ex. (30a,b)]

Van Urk (2015:218n17, 2018:949n13) observes that the fact that extraction of these PPs triggers *ké* if their lexical noun is plural entails that they are generated vP-internally, hence below the subject (an assumption also made by Van Urk and Richards 2015).²³ The reason that *ké* appears here is

²³ Van Urk suggests that this low generation site is a general property of PPs that contain a lexical noun in Dinka. Like the vP-phase account developed by Van Urk and Richards (2015) and Van Urk (2015, 2018), our account predicts that

thus the same as with DP extraction: in order for the PP to be attracted to [Spec,CP], it must be the closest element to C. This requires leapfrogging over the subject and hence Agree with T's [$u\phi$]. One question that arises, of course, is why [$u\phi$] should be able to agree in number with a PP. This is likely related to another curious property of PP \bar{A} -movement in Dinka, discussed in detail by Van Urk (2015). As Van Urk shows, these elements appear with a preposition in their postverbal base position, but if they undergo \bar{A} -movement, the preposition disappears. This is illustrated in (70). In (70a), *nɛ tɔɔny* 'with a pot' appears in its base position and bears the preposition *nɛ* 'with'. (70b) shows that if this element is \bar{A} -moved, this preposition disappears.

- (70) a. Bòl à-thɛt **nɛ tɔɔny**.
 Bol 3P-cook.SV P pot
 'Bol is cooking with a pot.'
- b. **Tɔɔny** à-thɛtɛ Bòl.
 pot 3P-cook.OBLV Bol.GEN
 'A pot, Bol is cooking with.' [Van Urk 2015:105, ex. (25a,b)]

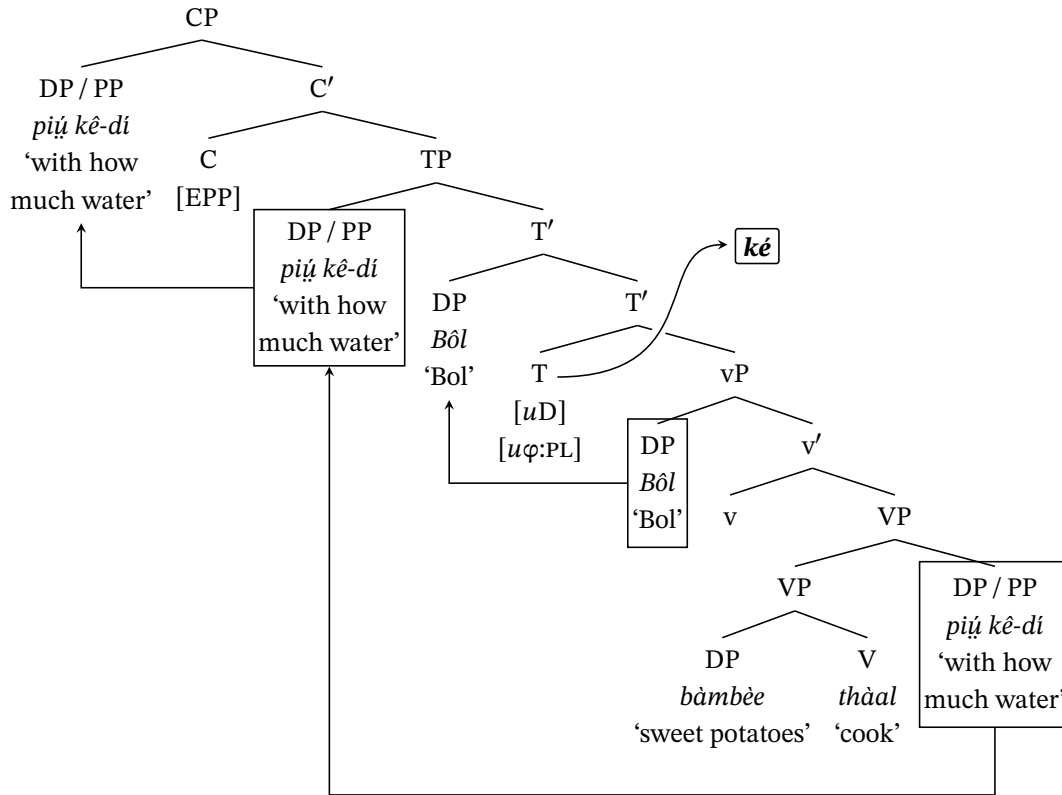
Van Urk (2015:74–78) proposes that the preposition *nɛ* incorporates into C while the DP moves into [Spec,CP]. Another possibility, mentioned in Van Urk (2015:77–78, 2018:949n13), is that *tɔɔny* in (70) is base-generated as a DP in an applicative construction (and that such a configuration violates the Case Filter unless the DP is extracted to [Spec,CP]). The exact choice does not matter for our analysis as long as the number feature of the lexical noun is accessible to T's [$u\phi$] probe.

Assuming, therefore, that [$u\phi$] can agree with DPs embedded in PPs under \bar{A} -movement (in whichever way these are derived), our analysis derives *ké* in (69) as follows. To illustrate using (69a), in order for C to attract *piɔ́ kɛ́-dí* '(with) how much water', this element needs to be moved over the external argument, which in turn requires Agree with T's [$u\phi$]. In (71), *piɔ́ kɛ́-dí* '(with) how much water' is the structurally closest ϕ -bearing element to T and so it is attracted to an outer [Spec,TP], from where it undergoes movement to [Spec,CP]. Since *piɔ́ kɛ́-dí* '(with) how much water' is plural, *ké* results. Note that, in line with (59), T attracts the structurally closest ϕ -bearing element in (71). The direct object *bàmbèè* 'sweet potatoes' intervenes linearly but not structurally.²⁴ The structure does not contain an ApplP, and so no movement of the verb takes place, yielding the OV order.

elements that are base-generated above the subject should not trigger *ké* when extracted. Because *ké* is only ever triggered by plural elements, hence elements that contain a lexical noun, this prediction is impossible to test in Dinka if Van Urk's suggestion is correct. In any case, the issue is orthogonal to the choice between phases and DP-intervention.

²⁴ On our account, *ké* is thus in the same position in all its occurrences, namely in T. This differs from the account in Van Urk (2015, 2018) and Van Urk and Richards (2015), which locates *ké* in an inner [Spec,vP] if the moving element is a DP but in an outer [Spec,vP] if the moving element is a PP. We do not know of a way to empirically distinguish between these two views.

(71) Derivation of (69a)



We note that the presence of an adjunct does not interfere with \bar{A} -movement of an object (see Van Urk 2015:61, 2018:942). This follows from the assumption that the base position of adjuncts is variable and in particular that a cascading structure is available, in which the position of the adjunct is below the position occupied by the verbal arguments (see Larson 1988, 2004, Pesetsky 1995, Lechner 2003, Legate 2003, Csirmaz 2005:90–98).²⁵

Note that because the leapfrogging probe on T may only attract the closest φ -bearing element, the extraction in (67b) and (69b) requires that the PP argument of *tuðɔc* 'send' is (or may be) closer to T than the theme argument. In this regard, *tuðɔc* 'send' differs from verbs like *yiɣn* 'give', which, as Van Urk (2015:151–153) argues, may take a postverbal goal argument that is a PP (62). Here, the PP argument may not extract (see (33b)), which we derived from (59). The contrast is interesting and not well-understood but we believe orthogonal to the analytical choice between vP phases and DP intervention. For example, Van Urk (2015:169, 216, 220) analyzes the PP that occurs with *tuðɔc* 'send' as an adjunct. This treatment can be carried over into our account, in which case (67b) and (69b) have a syntax analogous to that of (67a) and (69a) (see (71)). Alternatively, one might assume a structure in which the PP is an argument generated above the theme DP (and linearized to the right,

²⁵ A conceivable alternative account is that the position of adjuncts is fixed and always above the object, but that adjuncts may be merged late (see Lebeaux 1988, Lebeaux 2000, Nissenbaum 1998, 2000 Fox and Nissenbaum 1999, Stepanov 2000, 2001, Fox 2002, Bošković 2004, Bondarenko and Davis 2023, and others). That is, if the adjunct PP is merged late in (71), it does not intervene for leapfrogging of an argument DP, and so T attracts this argument DP. If the adjunct is merged early, T attracts the adjunct instead.

as PPs always are in Dinka, as discussed above). In either case, the DP does not intervene between T and the PP, and so the PP may leapfrog over the subject.²⁶

Finally, this leapfrogging account resolves the problem that unaccusative structures pose for a vP-phase account. Recall from (41), repeated here as (72), that \bar{A} -extraction of the subject of an unaccusative does not lead to *ké*.

- (72) Yè **pě̀ɛɛl-kó** bɛ́ (***ké**) dhuôŋ?
 be knives-which FUT (*PL) break.NF
 ‘Which knives will break?’ [Coppe van Urk, p.c.]

At the same time, extraction of an adjunct out of an unaccusative vP does induce *ké* if plural, as shown again in (73), repeated from (42).

- (73) Yè **thè̀ɛk-kó** bɛ́i pè̀ɛl **ké** dhuôŋ?
 be times-which FUT.OV knives PL break.NF
 ‘At which times will the knives break?’ [Van Urk 2015:168, ex. (81)]

Van Urk (2015:218n17, 2018:949n13) observes that the fact that extraction of *thè̀ɛk-kó* ‘at which times’ triggers *ké* entails that *thè̀ɛk-kó* ‘at which times’ is generated vP-internally, and we will follow him in this assumption.

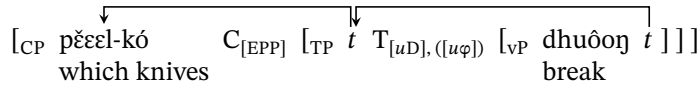
As noted in section 3.2, on a vP-phase account, the contrast between (72) and (73) is puzzling. If *ké* indicates successive-cyclic movement through [Spec,vP], then (72) would show that unaccusative vP acts as a phase for extraction of the unaccusative subject in (73), but not for the extraction of the adjunct in (72). This would result in a contradiction: how can the same vP act as a phase in (73) but not in (72)? Because our leapfrogging account attributes the emergence of *ké* to intervention rather than to phasehood, it offers an immediate solution to this puzzle. The derivation of (73) is analogous to (71) in the relevant respects, as shown in (74). The unaccusative subject *pè̀ɛl* ‘knives’ moves to [Spec,TP], where it intervenes between C and *thè̀ɛk-kó* ‘which times’. In order for *thè̀ɛk-kó* ‘which times’ to be movable to [Spec,CP], it must leapfrog around the subject and hence agree with [$u\phi$] on T, resulting in *ké*.

- (74) *Derivation of (73): leapfrogging required*
-

By contrast, in (72), it is the unaccusative subject itself that undergoes movement to [Spec,CP]. The relevant derivation for (72) is shown in (74). In this case, it is irrelevant whether T contains [$u\phi$] or not (indicated with parentheses in (74)). In either case, [uD] applies first, moving the DP *pè̀ɛl-kó* ‘which knives’ to [Spec,TP], followed by movement to [Spec,CP]. If T contains [$u\phi$], it fails to agree in (74) because its c-command domain (i.e., the vP) does not contain a licit agreement target. Consequently, no *ké* arises regardless of whether [$u\phi$] is present on T in (74) or not.

²⁶ At first glance, the account in Van Urk and Richards (2015) would appear simpler because it only distinguishes PPs from DPs and assumes that both arguments of *yî̀ɛn* ‘give’ are DPs. But this account does not handle Van Urk’s (2015:151–153) arguments that the postverbal argument in (29b) is a PP as well, which nonetheless cannot extract (33b). The DP/PP distinction alone is hence insufficient.

(75) Derivation of (72): no leapfrogging required



3.4. Section summary

To summarize this section, the alternative analysis we proposed does not appeal to clause-medial phases in any way but instead derives the pattern from intervention and the concomitant need for leapfrogging. As in our account of SI, the key component of the analysis is that C in Dinka may only attract the closest goal. While this restriction manifests as a subject-only extraction restriction in SI, Dinka has the option of leapfrogging the object over the subject. This leapfrogging enables non-subject extraction and manifests morphologically: *ké* is the realization of the leapfrogging probe. We furthermore proposed that the empty-position effect that Van Urk and Richards (2015) and Van Urk (2015) analyze as an intermediate landing site in [Spec,vP] is better understood as the base position of the moving element (and hence irrelevant for the assessment of clause-medial successive cyclicity). Because this analysis does not involve a clause-internal phase, the Dinka pattern no longer provides evidence for the existence of such a phase. We showed how the shift from phasehood to DP-intervention allows us to (i) explain why local subjects do not lead to *ké* under \bar{A} -movement, which we saw requires additional assumptions on a vP-phase account, (ii) understand the otherwise paradoxical behavior of unaccusative vPs with respect to *ké*, and (iii) derive without further assumptions why *ké* does not also appear in the CP region. We also showed that the extraction restriction in ditransitive constructions can be given an analogous account—[*uφ*] on T may only attract the structurally closest DP. The crucial locality property of C thus also holds for other heads in the language, paving the way for a uniform account of the various components of Dinka’s complex \bar{A} -extraction system in terms of DP intervention.

4. Extraction morphology in Defaka

An important difference between a phase-based account of clause-medial successive cyclicity and our intervention-based reanalysis is that on a phase-based account, on traditional assumptions about phases, the intermediate landing site is expected to be constant across languages, at least if the identity of the phase heads are.²⁷ Our intervention-based account of Dinka locates the intermediate landing site in [Spec,TP] immediately above the canonical subject position, and it predicts that the landing site could be even higher if the subject is. In this section, we argue that this is the case in Defaka (Bennett 2009, Bennett et al. 2012).

4.1. Empirical evidence

Defaka (Ijoid) is an SOV language that allows focus fronting of maximally one XP. This fronting has morphological effects. As shown in (76b), when a local subject is focus-fronted, it bears a focus

²⁷ This does not equally apply to dynamic notions of phasehood, in which the phasal nature of a head is in principle variable (e.g., Den Dikken 2007, Gallego and Uriagereka 2007b, Bošković 2014, Harwood 2015). See section 5.3 for discussion.

marker *kò*; the verb morphology remains unaffected. When any element other than the local subject undergoes focus fronting, two reflexes arise, illustrated in (76c). First, the fronted XP bears the focus marker *ndò*. Second, the verb bears the special morphological marker *kè*. In what follows, we simply gloss *kè* as “KE” in the examples. We follow Bennett (2009) and Bennett et al. (2012) in glossing *kò* as “FOC.SBJ” but as we will see immediately below, *kò* appears only if it is the *local* subject that has undergone focus fronting.²⁸

- (76) a. *No focus-fronting*
 ì Bòmá ésé-kà-rè
 I Boma see-FUT-NEG
 ‘I will not see Boma.’
- b. *Local-subject focus*
 ì **kò** Bòmá ésé-kà-rè
 I FOC.SBJ Boma see-FUT-NEG
 ‘I will not see Boma.’
- c. *Object focus*
 Bòmá **ndò** ì ésé-kà-rè-**kè**
 Boma FOC I see-FUT-NEG-KE
 ‘I will not see Boma.’ [Bennett et al. 2012:294, ex. (1)–(3)]

Importantly, the split sets local subjects apart from all other fronted elements. That is, fronting of adjuncts patterns like fronting of objects, as shown in (77): the fronted XP bears *ndò*, and the verb bears *kè*. This includes locative adverbs and temporal adverbs.

- (77) *Adjunct focus* → *kè*
- a. [ándù kikià] **ndò** à èbèrè rì bòi-mà-**kè**
 canoe under FOC the dog KE hide-NFUT-KE
 ‘The dog is hiding under the canoe.’ [Bennett et al. 2012:296, ex. (15)]
- b. òmòmò **ndò** Bòmá ìbò tìnà árí-**kè**
 now FOC Boma big fish catch-KE
 ‘Boma caught a big fish just now.’ [Bennett 2009:18, ex. (59b)]
- c. [nùmá bíò] **ndò** ò à tìnà árí-**kè**
 that river FOC he the fish catch-KE
 ‘He caught the fish in that river.’ [Bennett 2009:18, ex. (61b)]

Long focus fronting is possible, and in this case, *kè* arises in the way just described on all verbs crossed by movement. If an object is moved nonlocally, both the embedded verb and the matrix verb bear *kè*, as (78) shows.

²⁸ In order to stay as close as possible to the original examples as possible, we maintain Bennett’s (2009) and Bennett et al.’s (2012) convention of indicating focus by means of underlining in the free translation.

(78) *Nonlocal-object focus*

ándù₁ **ndò** Bòmá fàà-**kè** [_{CP} iní ____₁ été-**kè**]
 canoe FOC Boma say-KE they have-KE

‘It’s a canoe that Boma said that they have.’

[Bennett et al. 2012:297, ex. (21)]

If an embedded subject is fronted nonlocally, *kè* does not appear on the embedded verb, but it must appear on the matrix verb. Additionally, *ndò* must appear in the matrix clause rather than *kò*. This is illustrated in (79).

(79) *Nonlocal-subject focus*

Bruce₁ **ndò/*kò** Bòmá jírí-*(**kè**) [_{CP} ____₁ á ésé-mà]
 Bruce FOC/*FOC.SBJ Boma know-*(KE) her see-NFUT

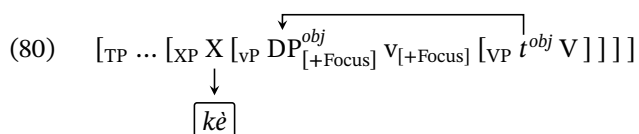
‘Boma knows (that) Bruce saw her.’

[Bennett et al. 2012:297, ex. (18)]

The fact that the fronted embedded subject in (79) must be marked with *ndò* and cannot be marked with *kò* makes it pattern with fronted objects. This makes it clear that the choice between *ndò* and *kò* does not draw the distinction between subjects and nonsubjects per se, but between local subjects and everything else—the same distinction that conditions the appearance of *kè*. In other words, *kè* appears whenever the fronted element is accompanied by *ndò*, and *kè* and *ndò* are mutually exclusive with *kò*.

4.2. vP-phase account

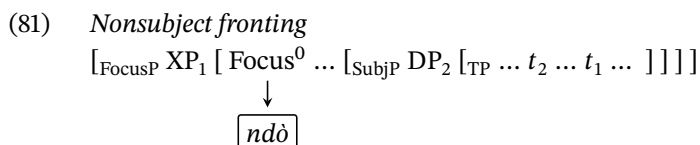
Bennett (2009) and Bennett et al. (2012) argue that the distribution of *kè* provides evidence for vP phases (also see Van Urk 2016, 2020a,b). They propose that focus extraction of any element that is not located at the vP edge requires it to first move to [Spec,vP] in order to leave the vP phase. *Kè* is then analyzed as reflecting such intermediate movement. Such movement is required for nonsubjects and nonlocal subjects but not for local subjects, which are base-generated at the vP edge. Importantly, however, Bennett (2009) and Bennett et al. (2012) argue that *kè* is *not* located within the vP but within a higher head (which they dub “X⁰”) that is located between vP and TP. The reason is that they attribute the sentence-final position of *kè* to fronting of the vP to [Spec,TP] (along the lines of Kayne 1994). In order for *kè* to occur in a sentence-final position, vP-movement must not move *kè* along, and as a consequence *kè* must be located outside of the vP. Bennett (2009) and Bennett et al. (2012) suggest that *kè* selects for a vP that bears a [+Focus] feature (which attracts an element to its edge). Thus, if v attracts a [+Focus] element to its edge, then the next-higher head is realized as *kè*, as schematized in (80).²⁹



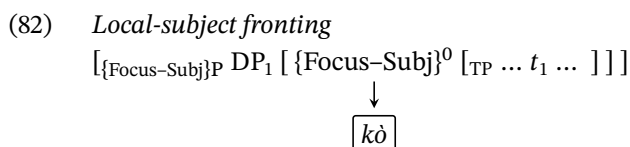
²⁹ For the sake of exposition, we do not represent in (80) the movement of the vP to [Spec,TP] that Bennett’s (2009) and Bennett et al.’s (2012) analyses assume. In our own analysis, we take the head that hosts *kè* to be head-final, so that no vP movement is necessary to derive the final position of *kè*.

On Bennett’s (2009) and Bennett et al.’s (2012) analysis, the link between vP phasehood and *kè* is thus only indirect: *kè* is not a direct reflex of movement to [Spec,vP] or the feature that underlies it.

Next, in order to account for the distribution of *ndò* and *kò*, Bennett (2009) and Bennett et al. (2012) locate these elements in the left periphery. Concretely, they propose that the clausal spine contains one projection that licenses a subject (“SubjP”) and a higher FocusP projection. If any element other than the local subject is fronted, this element occupies [Spec,FocusP] while the local subject is located in [Spec,SubjP], as shown in (81). In this case, Focus⁰ is realized as *ndò*.



Building on work by Giorgi and Pianesi (1996) and others, they then propose that if a local subject is focus-fronted, these two projections are combined into a joint {Focus–Subj} projection, whose specifier is occupied by a fronted local subject, as shown in (82). This {Focus–Subj} head is then realized as *kò*.



They furthermore assume that if a joint Focus–Subj projection is possible, it must be used, making *kò* obligatory with local-subject extraction.

Bennett’s (2009) and Bennett et al.’s (2012) analysis is insightful, and we will preserve several key aspects of it in our own account, but also faces a number of concerns, to which we now turn. First, while Bennett (2009) and Bennett et al. (2012) appeal to vP phasehood to derive the distinction between local subjects (which originate at the vP edge) and objects (which must move, hence triggering *kè*), it is not at all clear that this analysis handles adjuncts correctly. As shown in (77), adjunct fronting likewise triggers *kè*. On a vP phase account, this would require that *all* adjuncts are base-generated within the VP so that they must move to [Spec,vP] in order to be extracted to CP. Bennett (2009) and Bennett et al. (2012) do not provide independent support for the claim that all relevant adverbs originate VP-internally. The fact that even locative and temporal adverbs that generally have to be vP-external given their scopal behavior behave in this way and would hence need to be generated inside the VP constitutes a serious challenge for this account. This is particularly pressing for adverbs that are deictic and make reference to the utterance time, like *òmòmò* ‘now’ in (77b), and that therefore require access to T.³⁰

To put the problem somewhat differently, vP phases derive a distinction between elements at the vP edge and VP-internal material. But empirically, the crucial split in Defaka is between local subjects on the one hand and everything else on the other. If only local subjects and objects are considered, these two line up. But once adjuncts are brought into the picture, the empirical split

³⁰ Note that we assumed that in Dinka, the adverb *thèèk-kó* ‘at which times’ originates vP-internally (see (73) and fn. 23), following Van Urk (2015, 2018). This does not invalidate our argument for Defaka because ‘at which times’ is not deictic in nature—unlike ‘now’, it does not make reference to the utterance time and therefore does not require access to T.

between local subjects and everything else does not correlate (under standard views about the position of adjuncts) with the distinction between VP-internal and VP-external material that vP phases give rise to. We take this as an indication that it is not vP that underlies the split.

In addition, the vP-phase analysis faces a conceptual problem as well. As shown in section 4.1, the distribution of *kè* correlates with that of *ndò*, which marks fronted XPs other than local subjects. Despite the fact that the two markers appear under the same conditions, Bennett’s (2009) and Bennett et al.’s (2012) analysis treats them separately: *kè* is analyzed in terms of vP phases, while *ndò* is attributed to properties of higher functional projections. In light of the similarities in the distribution of *kè* and *ndò*, one might wonder whether it is not possible to analyze *kè* in terms of higher functional projections as well. Note that such a more unified analysis would also be consistent with Bennett’s (2009) and Bennett et al.’s (2012) observation that *kè* realizes a vP-external and, in fact, sentence-final head. In the next section, we will develop such an analysis. This analysis is based on DP intervention and as we will show not only links *kè* and *ndò* more directly, it also obviates the need for vP phases.

4.3. DP-intervention analysis

The analysis we develop preserves Bennett’s (2009) and Bennett et al.’s (2012) key idea that the distribution of *ndò* and *kò* is conditioned by whether the projection that hosts the subject and the Focus projection are conflated into a single projection or not. But we show that this line of analysis can be extended to *kè* once it is framed in terms of DP intervention instead of vP phasehood. Additional appeal to phases is then unnecessary. We follow Bennett’s (2009) and Bennett et al.’s (2012) view that the subject raises to a specifier of a phrase higher than TP, which they dub “SubjP” (a term we adopt for convenience without making particular commitments to its exact nature). For this, we assume a simple CP > SubjP > TP > vP > VP clause structure, as before. C is responsible for focus-fronting an XP, and in line with our accounts of Indonesian/Malay and Dinka, C may only attract the closest DP. As a result, if a nonsubject is to be \bar{A} -extracted, it must first move to an outer specifier of SubjP in order to be attractable by C. We also follow Bennett (2009) and Bennett et al. (2012) in the assumption that if Subj and C would have the same element in their specifiers, they are conflated into a single {C–Subj} projection that comprises the features of both Subj and C.³¹

Against this background, we propose that *ndò* and *kò* are the realization of C and that *kè* is the realization of Subj. Their precise specifications are given in (83). All three realize [*uFoc*] features,

³¹ We adopt the conflation aspect of Bennett’s (2009) and Bennett et al.’s (2012) account for two reasons. First, it allows for an easier comparison between the two approaches, demonstrating that it is possible to dispense with vP phases while leaving other aspects of their account intact. Second, the idea that certain heads can be conflated has been independently proposed for heads in the TP domain (Bobaljik 1995, Thráinsson 1996, Giorgi and Pianesi 1996, 1997, Bobaljik and Thráinsson 1998), in the CP domain (Bianchi 1999), across these two domains (Gallego 2017), and in the vP domain (Pylkkänen 2002, 2008, Harley 2017). Additionally, Legate (2011, 2014), Martinović (2015, 2022), and Erlewine (2018) have argued that C and T can be conflated into a single head for Acehnese, Wolof and Toba Batak, respectively. Finally, Hsu (2016, 2021) develops a general theory of head bundling across a number of domains.

Another analytical option, noted by a reviewer, is to adopt Bošković’s (to appear) claim that wh-subjects are located in a lower position than wh-objects (but still higher than the position of non-wh-subjects). Instead of using conflation, we could then associate *kò* with the presence of an element in this lower wh-position. This seems like a viable approach but in order to ease comparison with Bennett’s (2009) and Bennett et al.’s (2012) accounts, we adopt conflation here.

but they differ in the context of this [*uFoc*] feature.³² First, *ndò* in (83a) realizes [*uFoc*] on a C head in the context of an overt specifier (that is, *ndò* is not triggered by an intermediate landing site). Second, *kò* in (83b) realizes [*uFoc*] on a conflated {C-Subj} head, also in the context of an overt specifier. Third, *kè* in (83c) realizes [*uFoc*] on a Subj head, the feature responsible for leapfrogging. The restriction of *ndò* and *kò* to heads with an overt specifier is to limit their appearance to the final landing site of the movement chain. We assume that vocabulary insertion follows chain reduction (see Georgi and Amaechi 2022 and the references cited there) and hence that the information about whether a copy is overt or not is available to vocabulary insertion. See, e.g., Georgi (2017, 2019) and the references cited there for cases in which intermediate and terminal landing sites have different morphological effects.

- (83) a. /*ndò*/ ↔ C_[*uFoc*] / [_{CP} XP ____
 b. /*kò*/ ↔ {C-Subj}_[*uFoc*] / [_{{C-Subj}P} XP ____
 c. /*kè*/ ↔ Subj_[*uFoc*]

The claim that *kè* realizes a structurally high head (higher than TP) is independently motivated by morphological considerations. As (76c) illustrates, *kè* is separated from the verb root by tense and negation. In line with the Mirror Principle (Baker 1985), this ordering indicates that *kè* realizes a head higher than T and Neg, all of which are head-final and hence realized as suffixes.

As in our analyses of SI and Dinka, we assume that C in Defaka may only attract the closest element, even in cases where an intervening element is not focused. Because fronting is associated with a focus interpretation in Defaka, we broadly adopt the analysis of SI, according to which C bears a complex probe. Unlike SI, however, intervention is not category-specific in Defaka. Fronting of PPs and adverbs requires *kè* and hence leapfrogging. We therefore propose the complex probe in (84).

- (84) C: [*uFoc+uX*]

³² While nothing crucial hinges on this, we assume that the crucial movement-inducing feature in Defaka is [*uFoc*] rather than [*uδ*] (as we did for SI). The reason is that in Defaka the distribution of the morphological reflex is more narrow: it appears if the moving element is “emphasized or pragmatically salient” (Bennett 2009:1), which leads Bennett et al. (2012:294) to associate it with focus movement only.

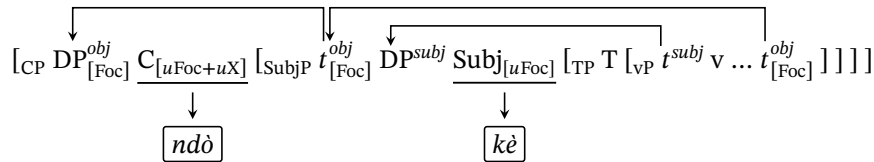
A reviewer points out that it is possible that *kè* is not restricted to focus fronting and provides the examples in (i). (ia) involves focus fronting of a PP (for reasons unclear to the reviewer, the P is dropped), along with *ndò* and *kè*, as expected. Interestingly, (ib) involves PP fronting without *ndò*. The reviewer suggests that (ib) might involve locative inversion. Notably, *kè* still appears on the verb. This might suggest that *kè* is not confined to focus fronting after all. This is in principle compatible with our analysis because the PP must still leapfrog over the subject in (ib) but it would suggest that Subj bears [*uδ*] instead of [*uFoc*]. In light of the uncertainty about how general the pattern in (ib) is, we restrict ourselves to the pattern as discussed by Bennett (2009) and Bennett et al. (2012) here, with *kè* arising with focus movement.

- (i) a. ányó bàà ndò Bòmá ré ibi-lèm-kè
 fire side FOC Boma re see-lem-KE
 'Boma is sleeping by the fire side'
 b. ányó bàà tè Bòmá ré ibi-lèm-kè
 fire side P Boma re see-lem-KE
 'Boma is sleeping by the fire side.'

Here, the feature $[uX]$ is a “catch-all” feature that is not category-specific but can instead be matched by a variety of categories, including DPs, PPs, and adverbs. In this respect, it is similar to the attracting feature in V2 languages, where a variety of elements may be used to satisfy the V2 requirement.³³ In a way, then, (84) combines aspects of our analyses of Dinka and of SI. Recall from the analysis of SI that complex probes like (84) cannot attract a fully-matching element over a partially-matching one (Erlewine 2018, Coon and Keine 2021, Coon et al. 2021). As a consequence of (84), C cannot attract a focused element over a nonfocused subject. This results in the need for leapfrogging in the by now familiar way.

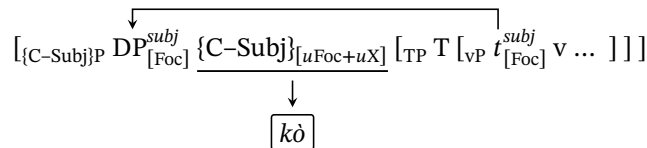
Let us consider a number of specific configurations. We begin with local-object \bar{A} -movement, illustrated in (85). In this configuration, the object bears a $[\text{Foc}]$ feature. After the subject A-moves to $[\text{Spec,SubjP}]$, it intervenes between C and the focused object. The complex probe (84) can therefore not attract the object from its base position. Object extraction thus requires leapfrogging of the object to an outer $[\text{Spec,SubjP}]$ above the subject, triggered by $[u\text{Foc}]$ on Subj. C can then attract the object to $[\text{Spec,CP}]$ because the object matches both $[uX]$ and $[u\text{Foc}]$. Given the items in (83), the derivation in (85) results in Subj being realized as *kè* and C as *ndò*. To derive the sentence-final appearance of *kè*, we assume that Subj is head-final and linearly follows its complement. To aid readability here and throughout, we show Subj to the left of its complement in the bracket structures.

(85) *Local-object fronting*



Next, consider \bar{A} -fronting of a local subject, schematized for an external argument in (86), but the mechanism is exactly the same for unaccusatives. Following the proposal in Bennett (2009) and Bennett et al. (2012), in this case C and Subj are conflated into a single $\{\text{C-Subj}\}$ head that subsumes the featural content of both C and Subj. Movement of the focused subject to $[\text{Spec,}\{\text{C-Subj}\}\text{P}]$ simultaneously satisfies Subj’s EPP requirement and C’s $[u\text{Foc}+uX]$.³⁴ In line with the items in (83), the $\{\text{C-Subj}\}$ head is realized by *kò*.

(86) *Local-subject fronting*

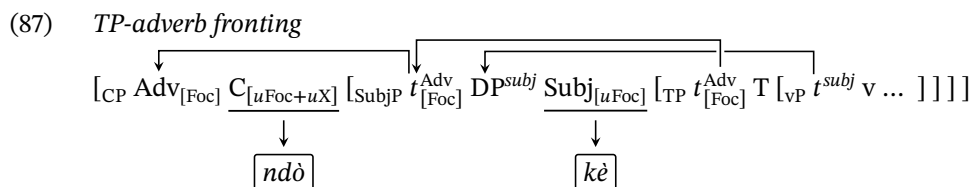


³³ $[uX]$ in (84) could therefore be thought of as a maximally underspecified category feature. This conception raises the question why the SubjP does not intervene for Agree between C and an XP in its specifier. One plausible explanation is that SubjP is too local for attraction by C (Abels 2003, 2012) and that elements that are too local are simply ignored for the operation of probes (Preminger 2019). Another possible explanation is that SubjP and a DP in $[\text{Spec,SubjP}]$ are equidistant from the probe (see Chomsky 1995), which voids intervention.

³⁴ See also Van Urk (2015) for the general proposal that a single movement step may satisfy both A- and \bar{A} -features on a head.

This account predicts that no *kè* arises with \bar{A} -movement of the sole argument of an unaccusative verb because no leapfrogging is necessary. As a reviewer informs us, this prediction is borne out.³⁵

Third, let us consider a configuration in which an adjunct to SubjP is \bar{A} -extracted, such as the temporal adverb in (77). The structure is schematized in (87). As we take all adjuncts to be base-generated below SubjP (as adjuncts are generally base-generated in non-peripheral positions), the temporal adverb is base-generated at TP in (87). [*uFoc*] on Subj attracts the adverb to an outer [Spec,SubjP], leading to *kè*, as above. The adverb then undergoes focus movement to [Spec,CP]. As a result, Subj is realized as *kè*, and C is realized as *ndò*.



Next, let us turn to long-distance movement of an object. Such movement results in *kè* in every clause that is crossed by movement and in *ndò* in the clause that hosts the criterial position of the moved DP. The relevant structure is given in (88). Because CP is a phase, extraction out of the embedded clause must proceed through [Spec,CP], which we assume is triggered by a noncriterial counterpart of (84) on the intermediate C.³⁶ As in the previous cases, the [*Foc*]-bearing object is attracted by the embedded Subj, leading to leapfrogging over the subject. After subsequent movement to the embedded [Spec,CP], the object is then attracted by the matrix Subj’s [*uFoc*], from where it is then attractable by the matrix C. Because both clauses contain a Subj with a checked [*uFoc*] feature, *kè* appears in both. By contrast, *ndò* appears only in the matrix clause because [*uFoc*] on the intermediate C is not in the context of an overt element in [Spec,CP], and insertion of *ndò* is therefore not licensed.³⁷

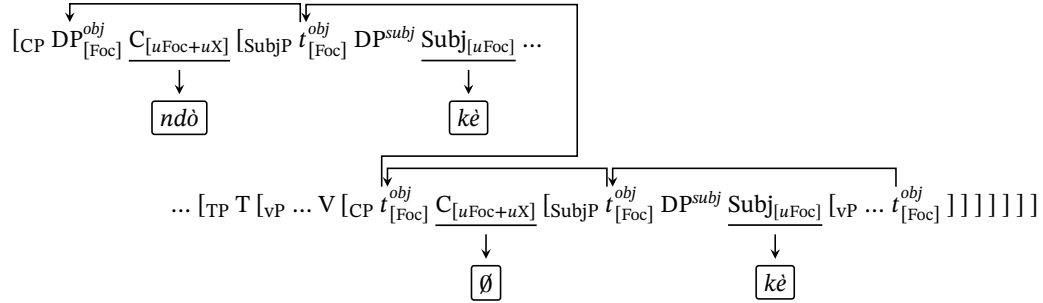
³⁵ The reviewer also notes that for some speakers, focus movement with unaccusative verbs marginally allows for *ndò* (rather than the expected *kò*) “under the right circumstances”. What these circumstances are is unclear, and so we have no new insights to offer. Notably, however, *kè* is still impossible even if the fronted element is marked with *ndò* in these cases. This is predicted by our account.

³⁶ Other implementations of obligatory movement through the CP phase edge are of course possible so long as these are restricted to the highest element in the clause, thus requiring leapfrogging over the embedded external argument.

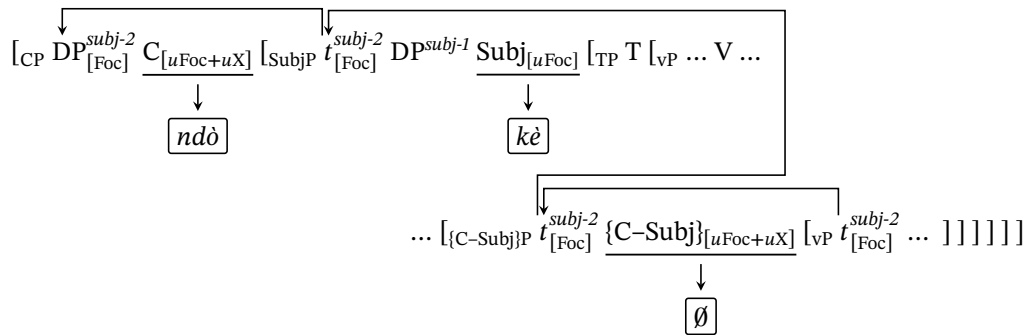
³⁷ Of course, nothing prevents the embedded C from bearing a *criterial* [*uFoc*] feature. In this case, \bar{A} -movement to the embedded [Spec,CP] is terminal and not followed by movement into the matrix clause (Rizzi 2006, 2010, 2015). The result is embedded focus fronting that is accompanied by an embedded *ndò* and *kè*. This is correct, as (i) shows (the matrix *kò* in (i) is the result of local fronting of the matrix subject *Bòmá*, an instance of the derivation in (86)).

(i) Bòmá 'kó fàà-mà-(*kè) [CP ándù_i ndò iní ____₁ été-kè]
 Boma FOC.SBJ say-NFUT-(*KE) canoe FOC they have-KE
 ‘Boma said it’s a canoe that they have.’

[Bennett et al. 2012:297, ex. (22)]

(88) *Nonlocal-object fronting*

Finally, this account also handles nonlocal-subject extraction (see (79) for an example). In this case, the fronted embedded subject bears *ndò*, and *kè* appears on the matrix verb but not the embedded verb. The corresponding structure is given in (89). Due to CP phasehood, the embedded subject ($DP_{[Foc]}^{subj-2}$ in (89)) must first move to the edge of the embedded clause. Just as in (86), the embedded CP and SubjP are conflated into a single projection, which attracts the external argument to its specifier. From this position, the embedded subject must then move to an outer matrix [Spec,SubjP] in order to be attractable by the matrix C (due to intervention by the matrix subject DP^{subj-1}). It hence agrees with Subj's $[uFoc]$, followed by Agree with matrix C. In line with (83), the matrix C is realized as *ndò*, the matrix Subj as *kè*, and the embedded {C-Subj} as \emptyset because it is not in the context of an overt specifier.

(89) *Nonlocal-subject fronting*

In sum, this alternative account of the Defaka facts derives the pertinent facts in section 4.1, but without appeal to vP phasehood or successive-cyclic movement through [Spec,vP]. The move away from vP phases offers an account of why \bar{A} -fronting of temporal and locative adverbs requires *kè* without needing to stipulate that such adverbs must be base-generated at VP. As such, unlike the vP-phase account, our account derives the crucial empirical split between local-subject movement and movement of everything else. If the local subject is \bar{A} -moved, SubjP and CP conflate, bleeding both *kè* and *ndò*. If any other element is focused, it must first move to an outer [Spec,SubjP], leading to *kè*. In addition, our account establishes a closer connection between *ndò* and *kè*. As discussed in section 4.2, because *ndò* is clearly located in a structurally high position, it cannot be analyzed in terms of vP phases. Bennett's (2009) and Bennett et al.'s (2012) phase account therefore handles *kè* and *ndò* in an unrelated manner, despite the fact that their distribution is largely conditioned by the same factor (the presence of \bar{A} -movement of an element other than the local subject). By locating

both effects higher than vP, our analysis ties them together more closely. *Ndò* appears when an element other than the local subject is attracted to C, and these are the elements that first undergo leapfrogging over the local subject, yielding *kè*. Finally, the order of morphemes in Defaka provides evidence that the location of the morphological reflex *kè*—and hence the landing site of clause-internal successive cyclicity—may be higher than both vP and TP, complementing our account of Dinka. This finding conforms to the expectations of a DP-intervention account: the position of the landing site tracks the position of the subject.

5. Consequences and outlook

5.1. Extraction and the source(s) of locality

Locality effects are commonly taken to fall into two groups: absolute locality domains and intervention/minimality. We investigated the distinction on the basis of clause-internal successive cyclicity. On the one hand, absolute locality domains render an entire syntactic constituent opaque to syntactic processes (90a). On the other hand, intervention-based locality effects involve the presence of a specific intervening element that prevents a dependency between two other syntactic elements (90b). Phases (and their precursors barriers in Chomsky 1986) are an example of the former; relativized minimality (Rizzi 1990) is an example of the latter. While some proposals blur the distinction between the two types of account (e.g., Abels 2003 attributes phase locality to intervention by the phase head) or attempt to dispense with one type of constraint in favor of the other (e.g., Müller 2004, 2011 reanalyzes apparent intervention effects in terms of phases), the two types of constraints are commonly taken to coexist. This raises the question whether any given locality effect is best analyzed in terms of domain-based locality or in terms of intervention-based locality.

- (90) a. *Domain/phase-based approach:*
Obligatory successive-cyclic movement through a clause-internal position is the result of a clause-internal phase.
- b. *DP-intervention approach:*
Obligatory successive-cyclic movement through a clause-internal position is the result of leapfrogging around an intervening DP.

In this paper, we considered this overarching question for clause-internal successive cyclicity. Such effects are standardly taken as evidence for the existence of a clause-medial phase (commonly vP). But recent work on the locality conditions of \bar{A} -movement has proposed that \bar{A} -probes can be specified in such a way that they can only attract the closest DP (Aldridge 2004, 2008a, Rackowski and Richards 2005, Branan and Erlewine 2021, Coon et al. 2021), a restriction that may itself be derivable from the internally-complex structure of such probes. Such proposals make available an intervention-based account of successive cyclicity, according to which C may only attract the closest DP. Ordinarily, this results in a transparent extraction restriction: if the subject is the highest DP, only the subject may undergo \bar{A} -movement, yielding a subject-only extraction restriction (as in Standard Indonesian). But if the language permits optional leapfrogging of the object over the subject, all extraction is permitted, but non-subject extraction must be successive-cyclic.

We developed this approach for the subject-only extraction restriction in Standard Indonesian (SI) and for successive cyclicity in Dinka and Defaka. We argued that a DP-intervention account affords a principled explanation of the pertinent generalizations in these languages. First, the requirement for successive cyclicity is selective: in SI, PPs and adverbs do not trigger the reflex (emptying the subject position and absence of *meN-*) even if they cross vP; in Dinka, PP adjuncts do not trigger the empty-position effect. Second, the distribution of the effect does not seem to correlate with an element's structural relationship to vP. In Defaka, adjuncts that are arguably VP-external but not TP-external (and hence should not have to pass through [Spec,vP] on their way to [Spec,CP]) nonetheless trigger the effect. In SI, movement of an external argument is not restricted in the active voice (where the external argument is the highest DP), but movement of the external argument is restricted in the object voice (where the external argument is *not* the highest DP in the vP), despite the fact that the external argument is in the same structural position in both cases. Third, the analysis accounts for the facts that extraction of DP arguments of unaccusative verbs does not trigger the morphological reflex in either Dinka or Defaka. This follows from a DP-intervention account (since no DP needs to be crossed), but it must be stipulated on a phase-based account (e.g., unaccusative vP happens to not have phasal properties, see Chomsky 2000, 2001 and fn. 13; for arguments to the contrary, see Legate 2003). Finally, in Dinka unaccusatives, while DP extraction does not trigger the reflex, PP extraction does. This poses a puzzle for a vP-phase account, but it follows directly on a DP-intervention account: the PP must first leapfrog over the DP subject.³⁸

Because our intervention account focuses on the role of the subject DP, it differs substantially from intervention-based reanalyses of phase locality. For example, Abels (2003) develops an intervention-based conception of phasehood according to which the phase head acts as an intervener for all dependencies across it (also see Rackowski and Richards 2005, Halpert 2019, and Thivierge 2021 for other intervention-based accounts of phase locality). This derives that the phase edge remains accessible to such dependencies but elements c-commanded by the phase head do not. Our account shares with this analysis the view that successive cyclicity arises from the need to move around an intervener. In other respects, the two accounts differ fundamentally. First, for Abels (2003), the intervener is a functional head in the verbal spine (i.e., the phase head); for us, the intervener is the subject DP. Second, Abels treats the intervention of the phase head as non-selective in the sense that the phase head is an intervener for *all* syntactic dependencies. By contrast, on our analysis the intervention is selective in that a DP can intervene for movement of another DP but not movement of a PP, as in SI.

A more general characteristic of our DP-intervention analysis is that it makes available a unified approach to both clause-medial successive cyclicity and extraction restrictions, such as subject-only extraction patterns (Keenan and Comrie 1977), Austronesian voice systems (Aldridge 2004, Rackowski and Richards 2005) and potentially also syntactic ergativity (on accounts that attribute it to movement of the object over the subject; see Coon et al. 2021 and the references there for Mayan,

³⁸ As Gereon Müller (p.c.) notes, our accounts of Dinka and Defaka also differ from previous phase-based accounts in another important respect. These accounts treat the special morphology that arises with extraction (i.e., *ké* in Dinka, *ké* in Defaka) as a *reflex* of the movement. By contrast, our account in a way treats the morphology as a *precondition* of the movement, that is, the realization of a feature that triggers the movement in the first place. While this is a clear point of divergence, we believe that it is largely orthogonal to the choice between phases and DP intervention (see, e.g., McCloskey 2002, Müller 2011:225–238, and Korsah and Murphy 2020 for phase-based accounts that likewise treat special morphology as the realization of the trigger of movement).

and Yuan 2022 and the references there for Inuit). In all of these cases, C may attract only the closest DP, and an extraction restriction results if the closest DP is invariably either the subject or the object. Crucially, if object movement over the subject is possible but optional, object \bar{A} -movement is possible, but it must be successive-cyclic. In other words, on the view we have proposed, obligatory successive-cyclic movement of non-subjects follows from the same principle that underlies extraction restrictions, but combined with variability in which argument is closest to C as the result of leapfrogging. Clause-medial successive cyclicity then emerges as an instance of a significantly more general class of syntactic phenomena based on relativized minimality/intervention (see Rackowski and Richards 2005 for another, though technically very different approach).

5.2. Other arguments for clause-medial phases

As already alluded to above, clause-medial successive cyclicity has standardly been taken as empirical support for the existence of a clause-medial phase. With the shift to the intervention-based account argued for here, at least the patterns discussed here now no longer provide unambiguous evidence for clause-medial phases. And while DP intervention and vP phasehood are certainly compatible with each other (see, e.g., Aldridge 2004 for an account that involves both), our extension of DP intervention to successive-cyclic movement highlights that there is significant overlap between the two. This raises the question whether it is possible to dispense with clause-medial phases altogether or whether the two constitute independent constraints on syntactic dependencies. That is, we can now ask whether (90b) replaces (90a) or whether both coexist. While this question is much too large to attempt to answer comprehensively here, we will offer some remarks on it.

An immediate place to consult for evidence regarding the status of (90a) is previous arguments for the presence of a clause-medial phase. One classical argument for the presence of an intermediate landing site in a clause-internal position (typically taken to be [Spec,vP]) is based on reconstruction and due to Fox (1999), Legate (2003), and Sauerland (2003) (also see Agüero-Bautista 2001). The argument involves configurations like (91). In this example, the \bar{A} -moved DP contains (i) the pronoun *he*, which is bound by *every student* and (ii) the R-expression *Ms. Brown*, which is coindexed with the pronoun *her*. Fox (1999) reasons that the moved constituent cannot be interpreted in either its base position or its surface position. This is because in the base position, the R-expression *Ms. Brown* is c-commanded by *her*, which would violate Condition C; in the surface position, *he* is not c-commanded by *every student*, which is incompatible with the bound reading of the pronouns. Fox concludes that the moved DP must be interpreted in an intermediate position that is located lower than *he* (to allow binding) but higher than *Ms. Brown* (to escape Condition C). Fox identifies this position as [Spec,vP]. (91) then shows that it is possible for an \bar{A} -moved element to create an intermediate landing site at vP.

- (91) [Which of the books that **he**₁ asked **Ms. Brown**₂ for] did **every student**₁ ___ get from **her**₂
 * ? [Fox 1999:174, ex. (40a)]

Crucially, the intermediate landing site in (91) must be below the position of the subject. While this discourages a DP-intervention analysis, it is far from clear that these facts necessitate vP phases either. The reason is that the availability of the relevant reading in (91) provides evidence that it is *possible* for the moved element to reconstruct into an intermediate position. This does not entail that

the moving element *must* pass through a clause-internal intermediate position, only that it *may* do so (Keine 2020b). Thus, data like (91) do not constitute unequivocal evidence for vP phasehood. As an alternative, as long as wh-movement can apply to the output of another movement step (see in particular Kotek 2014, 2019 and Poole 2017 for English; and also Grohmann 1997, Wiltschko 1997, and Fanselow 2004 for German, and Takahashi 1993 for Japanese), the possibility of this first movement step is sufficient to permit an intermediate landing site, without appeal to phases. One implication of this alternative analysis is that such intermediate landing sites should not be limited to one specific position like [Spec,vP]. This seems correct. Fox (1999:175n32) notes that it is possible to use the reconstruction evidence to diagnose an intermediate landing site in every maximal projection. If the intermediate landing site is created by a separate movement step rather than vP phasality, then this variability in the position that this movement step may target yields the desired flexibility in the location of the reconstruction site. As a general conclusion, then, arguments that merely establish the *optional* presence of an intermediate landing site do not bear on the choice between the hypotheses in (90).

A similar line of reanalysis is available for other purported arguments for vP phases, including QR and ACD (Legate 2003:509–510), parasitic gaps (Nissenbaum 2000:48–53, Legate 2003:510–511, Abels 2012:43–47), and potentially quantifier float (McCloskey 2000, Henry 2012). We conclude that data that only establish the optional presence of an intermediate landing site are too weak to bear on the choice in (90).

While some of the previous arguments for clause-medial phases may therefore also be handled without such phases, there are still remaining arguments for clause-medial phases that will need to be reanalyzed if such phases are dispensed with entirely. In the interest of space, we will not attempt to do so here, but we will nonetheless mention some relevant arguments. One argument is presented by Manetta (2010, 2011) on the basis of wh-scope marking in Hindi. Without going into the details of the argument or Manetta’s analysis, we point the reader to Dayal (2017) for a reply and to Dayal (1994, 1996) and Lahiri (2002) for an alternative account of these constructions that does not involve vP phases. Another important argument for vP phases comes from Abels’s (2003, 2012) stranding generalization, according to which complements of phase heads may not be moved. Abels shows that VP may not be moved if it is embedded under a vP, as predicted if vP is a phase. If vP is not a phase, this argument is in need of reanalysis, which we leave for future work. Other arguments for clause-medial phases are based on empirical patterns other than successive cyclicity. For example, Legate (2003), Kratzer and Selkirk (2007), Bošković (2016), and others argue that phases have prosodic reflexes as well and that vPs exhibit such reflexes. Bošković (2014) and Harwood (2015) propose that phases constrain ellipsis and consequently that the possibility of clause-internal ellipsis provides evidence for clause-medial phasehood. To what extent these arguments can be reconciled with the absence of clause-medial phases remains to be seen. It is worth noting that these arguments are based on clause-medial domains being the domain of application for prosodic and ellipsis processes, not locality domains for syntactic operations. This might suggest a possible avenue of reconciling these arguments with our conclusions here, a suggestion which we leave for future work as well.³⁹

³⁹ Interestingly, a reviewer notes that in complex examples with multiple auxiliaries, the options of VP ellipsis do not correlate with the distribution of floated quantifiers. Sag (1976:31) observes the ellipsis options in (i), which on phase-based accounts to ellipsis like Bošković (2014) and Harwood (2015) indicates that the clause-medial phase is around *been* in this example.

5.3. Successive cyclicity and the position of subjects

One particularly clear difference between a phase account and a DP-intervention account concerns the location of the intermediate landing site. Because on a DP-intervention account, the need for successive-cyclic movement arises from the need to leapfrog over the highest DP (typically the subject), this account makes the strong prediction that the intermediate landing site should target the projection that hosts the subject across languages and constructions. For Dinka and Defaka, our accounts are in line with this prediction: not only does our analysis locate the intermediate landing site in a different projection in the two languages, this location furthermore correlates with the position of the subject. The phase account makes no such prediction: if successive-cyclic movement is the result of a clause-medial phase, then it must target whichever projection constitutes this phase, regardless of where the subject is located. While it is possible for the position of the phase to vary across languages, either because languages differ in which heads are phasal or because phase locality might slide up through various mechanisms (Bošković 2014, Harwood 2015, Den Dikken 2007, Gallego and Uriagereka 2007a,b), any correlation with the position of the subject would be coincidental.

The position of the intermediate landing site is thus a key factor that differentiates the two lines of analysis. To illustrate the issues at stake, we will briefly consider \bar{A} -extraction in varieties of Indonesian/Malay other than the prescriptive variety discussed in section 2 (see Saddy 1991, Cole and Hermon 1998, 2005, Soh 1998, Fortin 2006, 2007, Aldridge 2008b, Cole et al. 2008, Sato 2012, Georgi 2014, Jeoung 2018).⁴⁰ The core paradigm is illustrated with the Malay examples in (92). As in SI, the verb bears the prefix *meN-* in the active voice (92a). Non-subject extraction is prohibited if *meN-* is present (92b) while subject extraction is permitted (92c). The crucial difference between these varieties and SI is that non-subject extraction *is* possible if *meN-* is deleted (92b) (Saddy 1991:185–188, Cole and Hermon 1998:230–233, Soh 1998:295–298, Fortin 2006:49–50, Fortin 2007:48–53, Aldridge 2008b:1442, 1450, Cole et al. 2008:1504–1505, Sato 2012:33–36). Note in particular that the EA in (92b) precedes the aspectual marker *telah*, indicating that (92b) does not derive from an object-voice source (compare in particular (15)). Other aspect, tense, and negation markers also appear between the EA and verb. The same overall pattern holds for relativization (Cole and Hermon 2005).

-
- (i) Betsy must have been being hassled by the police, and Peter ...
- *must Δ too.
 - must have Δ too.
 - must have been Δ too.
 - *must have been being Δ too.

The distribution of floated quantifiers differs, as (ii) shows (Ethan Poole, p.c.; Zyman 2022 observes analogous facts for floated *exactly*).

- (ii) The children must {all} have {all} been {*all} being {*all} interviewed.

While both quantifier float and ellipsis have been argued to provide evidence for the existence of a clause-internal phase, these arguments actually seem incompatible with each other. We believe that this encourages an approach to these generalizations that is not in terms of vP phases.

⁴⁰ Many thanks to Julie Legate for very helpful comments on the issues discussed in this section.

(92) *Malay*

- a. Ali telah mem-baca buku itu.
Ali PFV ACT-read book the
'Ali has read the book.'
- b. **Apa-kah**₁ yang Ali telah (*mem-)baca ____₁?
what-Q that Ali PFV (*ACT-)read
'What has Ali read?'
- c. **Siapa-kah**₁ yang ____₁ telah mem-baca buku itu?
who-Q that PFV ACT-read book the
'Who has read the book?'

[Soh 1998:296–297, ex. (6), (9)]

The crucial difference between SI and the Malay examples in (92) is thus that in SI, extraction of the IA requires the IA to become the subject first (hence use of the object voice), whereas no such requirement exists in (92), as long as *meN-* is absent.

What is particularly interesting about this pattern is that the subject is located in [Spec,TP] (preceding *telah* in (92)), but that the morphological reflex (deletion of *meN-*) appears within vP. If the locus of the morphological reflex faithfully reflects the position of the intermediate landing site, then the location of the intermediate landing site appears to be *lower* than the position of the subject. All else equal, this would be surprising on an account of (92) in terms of DP intervention.

Several analytical paths exist at this point. One is to maintain a close link between the position of the reflex and the location of the intermediate landing site. On this view, because the reflex affects voice morphology, the intermediate landing site must be located at vP, hence lower than the subject. If so, (92) supports a vP-phase account (see Aldridge 2008b, Cole et al. 2008, Sato 2012, Georgi 2014, Jeoung 2018 for relevant accounts, and also Chomsky 2004:116): movement to the vP edge leads to deletion of *meN-*. This line of account would then support the view that vP phases (90a) and DP intervention (90b) coexist. The principal way of distinguishing between their effects is then whether the location of the intermediate landing site is just above the subject (indicating DP intervention) or below (indicating vP phases).

Interestingly, Indonesian and Malay nonetheless exhibit the same kind of challenges for a vP-phase account we observed for SI. First, extraction of non-DPs does not require *meN-* to be absent (Cole and Hermon 1998:231–232, Soh 1998:313–314, Fortin 2006:49–50, Fortin 2007:51–53, Cole et al. 2008:1505, Sato 2012:35–36). Second, extraction of the EA in the object voice is ill-formed (Legate 2014:75–76 for Indonesian, Hooi Ling Soh (p.c.) for Malay, Yanti 2010:50 for Tanjung Raden Jambi Malay, and Legate 2014:56 for Acehnese). So a vP-phase account is not entirely straightforward either (though see Legate 2014:59–64 for an extension of a phase account to the ban on EA extraction in the object voice). This invites a DP-intervention approach to (92).

The analytical alternative to vP phases is thus to maintain DP intervention but to contest that the locus of *meN-* deletion necessarily corresponds to the location of the intermediate landing site. Concretely, suppose that leapfrogging does target an outer [Spec,TP] in (92b) and is hence driven by a probe on T, but that this probe conditions the morphology on v non-locally, for instance via the

impoverishment rule in (93).⁴¹ Assuming that leapfrogging is triggered by an optional δ -feature on T, (93) deletes v’s active-voice feature, bleeding *meN*- (94).⁴²

(93) $[\text{active}]_v \rightarrow \emptyset / T_{[u\delta]} \text{ ___}$

(94) $/\text{meN-}/ \leftrightarrow [\text{active}]$

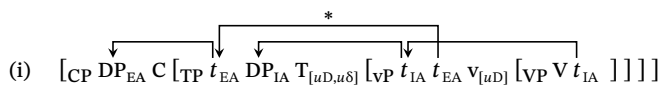
This account thus loosens the connection between the position of the intermediate landing site (at TP) and the position of the morphological reflex (at v), allowing the intermediate landing site in (92) to be above the subject after all. If this line of account is feasible, DP intervention might replace the need for clause-medial phases for these cases as well. We will leave the choice between the two analyses open.

5.4. Implications for the distribution of phases

The discussion so far as focused almost exclusively on clause-medial phases. But of course the general question we raise—to what extent can apparent phase effects be rethought as DP-intervention effects?—likewise applies to clause-peripheral phases. Specifically, we can now ask to what extent an intervention-based account generalizes to successive cyclicity through [Spec,CP]. We cannot investigate this question here, but there are a number of possible situations that could arise. First, *if* clause-medial phases can be dispensed with more generally, and if successive cyclicity through CP can be handled without appeal to phase-based locality, then this would raise the possibility that phases in the standard sense can be dispensed with altogether (that is, successive-cyclic movement would then never involve (90a)). Alternatively, it could be that CPs are phases in the traditional sense but vPs are not (that is, (90a) would be relevant for CPs but not for vPs). In this case, we expect to find locality asymmetries between CPs and vPs. Some recent work has indeed argued for such asymmetries and concluded that CP is a phase but vP is not (Grano and Lasnik 2018 and Keine 2020a,b; as well as Zeijlstra 2004, 2012 for asymmetries involving negative concord, and Poole 2022 for case assignment). A third conceivable situation is that traditional phase locality still has a role to play for both vP and CP alongside intervention-based locality (that is, (90a) and (90b) are both complementary constraints in both domains).

⁴¹ This rule is inspired by Georgi’s (2014) account of *meN*-deletion in Indonesian, which also employs impoverishment of v’s voice feature (albeit triggered by v’s specifier rather than T). Impoverishment of one head that is triggered by features on another head has been proposed by, e.g., Müller (2006), Arregi and Nevins (2007, 2012), Harley (2008), and Božič (2020).

⁴² As it stands, an account based on (93) and (94) accounts for *meN*-deletion with non-subject extraction in the active voice, but it does not derive the ban on EA extraction in the object voice. This is because leapfrogging of the EA to an outer [Spec,TP] is in principle still permitted, as schematized in (i). Here, the object-voice v (which is identical to (19b)) triggers inversion of the IA over the EA within the vP, followed by IA becoming the subject (this is analogous to our analysis of object voice for SI in section 2). Then T’s δ -feature triggers movement of the EA over the IA, feeding EA movement to [Spec,CP]. The problematic TP leapfrogging step is indicated with “*” in (i):



Because EA extraction is banned in the object voice, (i) must be blocked. One possible account is to capitalize on the fact that (i) involves crossing of movement paths (in contrast to well-formed IA extraction in active voice, which involves nesting dependencies). Constraints against crossing dependencies, such as Pesetsky’s (1982) *Path Containment Condition*, thus correctly rule out (i).

While the question is primarily an empirical one, it has a conceptual dimension as well. Müller (2004, 2011) notes that there is an inherent tension between absolute locality domains like phases and relative notions of locality like minimality or intervention. He points out that intervention presupposes search space: such constraints have an effect only if the search space contains at least two elements that have the relevant property (so that one can intervene for movement of the other). By contrast, absolute locality domains like phases have the effect of limiting search space because they constrain the amount of structure that is simultaneously accessible at any given point. Müller (2004, 2011) proposes that intervention-based locality constraints should therefore be dispensed with in favor of absolute locality constraints like phases. To the extent that it is generally desirable to dispense with one type of locality constraint in favor for the other, our results here suggest the opposite direction of elimination—weakening the overall role of phasehood (either by reducing the number of phase heads or by eliminating it entirely) and placing greater emphasis on intervention in the account of successive cyclicity.

Abbreviations used in glosses

ACC	accusative	LOC	locative	PFV	perfective
APPL	applicative	NEG	negation	PL	plural
ERG	ergative	NFUT	nonfuture	P	preposition
FOC	focus	NF	nonfinite	QUANT	quantifier
FUT	future	NOM	nominative	Q	questions particle
F	feminine	NSV	nonsubject voice	SBJ	subject
GEN	genitive	OBLV	oblique voice	SG	singular
HAB	habitual	OV	object voice	SV	subject voice
INF	infinitive	PAST	past	TR	transitive

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