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Motivating successive-cyclicity: A and A' movements in Classical Greek *Prolepsis**

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1. Introduction

Movements like that of *what* in the English *wh*-question (1), *dêmon* in the Classical Greek¹ sentence (2) look like long-distance movements.²

- (1) [CP₁ What do you [VP₁ ~~what~~ think [CP₂ ~~what~~ that Mike [VP₂ ~~what~~ bought ~~what~~?
- (2) Kai **dêmon** ár' oísta tí dêmos estin?
and people-ACC Q-ptc you.know what is
'And do you know, then, what the people consists of?' (Xen. Mem. 4.2.37)

Note that English *wh*-movement is precluded when the Spec, CP of the embedded clause is occupied by a *wh*- like *who* in (3). This is evidence that the *wh*P does not move in one-fell swoop, but stops at the edge of the embedded clause (see Chomsky 1973 for an early analysis of the phenomenon).

- (3) *What_i do you wonder who bought ~~what~~?

This matter is complicated if we assume Phase Theory. According to this framework, a clause is built stepwise, and an element has to end up at the very edge of the phase

* I'd like to thank the audiences of the Harvard Linguistics Circle Colloquium, NELS49 and the syntax seminar of my lab. for valuable comments. All remaining errors are mine.

¹ I take Classical Greek to be Attic Greek, spoken in the 5th and 4th Centuries BCE. Translations of the examples are taken from the website <http://www.perseus.tufts.edu>. Transliterations as in Giannakis (2014).

² That there is movement is not controversial for the English sentence, where the generation site of *what* is the rightmost struck-out copy. The intermediate movements (other struck-out copies) are discussed directly. Note that in the Greek example the uppermost copy is in the accusative (*dêmon*), whereas the lower copy is in the nominative (*dêmos*) (more on this in Section 3.1 and Conclusion).

when the phase is complete to be able to move into the next phase (4).

(4) *Phase impenetrability Condition (PIC) (strong version)*

In phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations. (Chomsky 2000)

At the clause level, phases are vP and CP. This means that in (1), *what* has to go through vP2 and vP1 on top of the intermediate movement at the edge of CP2 (see the intermediate copies). It moves successive-cyclically from its base position to the matrix CP in four steps. Note that vP-steps are theory-dependent and not data-grounded here, but there is abundant evidence for them in other languages (e.g., in Dinka, our example 19).

Consider now the Classical Greek phenomenon illustrated with example (2), another type of A'-movement: Anticipating the movement analysis presented in Section 3.1, a DP has risen from the embedded clause to a topic position in the matrix (position above the interrogative *C ár(a)*). This movement is interesting in that it is highly constrained: It is only possible if the base-position is the subject position of the embedded verb and the DP **is Case-marked in the matrix**, a phenomenon called *Prolepsis*.³ As we shall see, in contrast with English *wh*-movement, this Case-marking, along with other elements, gives us crucial information about the intermediate steps and how they are triggered.⁴

On the basis of Classical Greek Prolepsis, the present paper gives more evidence in favor of the strong version of Phase theory and addresses three well-known challenges it faces when it comes to successive-cyclic movement. First, **only the last step seems to be motivated**, which means that the intermediate steps are purely formal and made to feed the last one. Second, in the frame of phase theory, the first two movements occur before the last phase head is merged, i.e. before anything triggers them in the first place. They are **look-ahead movements**. Finally, they have to travel alternatively through CP and vP positions, i.e. A' (non-argumental) and A (argumental) positions, which is precluded by the theory (**improper movement**, as formulated in Chomsky 1973: fn. 24; rule 110c).

I am going to argue that, at least in cases of A'-movements like (2), the three issues can be overcome by a single solution,⁵ namely that each step is independently motivated by an A'-feature, thus casting doubt on the non-motivation of successive-cyclicity and independently reaching results close to those put forth in (Alboiu and Hill 2016, van Urk 2015).

The article is organized as follows: *Prolepsis* is first described in detail and put in contrast with a close phenomenon (Topicalization, Section 2), showing that it is a case of successive-cyclic movement (Section 3), the furthest-going version of which is precluded

³ *Prolepsis* has parallels in many languages: Japanese and Passamaquoddy (Bruening 2001), Madurese (Davies 2005), Dinka (van Urk 2015), Romanian (Alboiu and Hill 2016) and more (see Wurmbrand, to appear for a crosslinguistic study). However, there are no two languages where *Prolepsis* (or whatever it is called) displays exactly the same set of properties. For this reason, we shall be cautious in using analyses based on other languages.

⁴ The competing analysis that there is no movement is discarded in Section 3.

⁵ For space reasons, we do not discuss a solution in terms of labeling (Cecchetto and Donati 2015, Chomsky 2013), which in our view can account for the first two problems but not for improper movement.

if the DP is not Case-marked in the matrix (Section 4). In Section 5, the theoretical problems are addressed and more evidence is adduced that the intermediate steps are motivated. Section 6 draws some conclusions and suggests future paths of research.

2. *Prolepsis* vs. Topicalization

This section is devoted to the contrastive description of two phenomena in Classical Greek: *Prolepsis* and (simple) Topicalization. Both are cases of extractions out of a finite clause, which can be illustrated with (5) and (6).⁶ Note that (6) displays an interrogative verb *erōtáō* ‘ask.’ This is not an option for *Prolepsis*.⁷

(5) *Prolepsis*

édei **autòn** hóti meson autòs ékhoi.
 he.knew him-ACC that in.the.middle was
 ‘He knew that he (the king) was in the middle.’ (Xen. Anab. 1, 8, 21-2)

(6) *Topicalization*

Eroû nûn me [**opsopoía;** hētis ~~opsopoía~~ moi dokēi tékhnē eînai]
 ask now me cookery-NOM what to.me seem art to.be
 ‘Ask me now what art I take cookery to be.’ (Plato, *Gorgias*, 462d)

In both cases, the subject of the embedded verb does not show up in the subordinate clause, but at its edge, above the complementizer. However, the two phenomena present us with a number of differences, summarized in Table (7).

(7) *Properties of Prolepsis and Topicalization*

	Prolepsis	Simple Topicalization	Example
Complement clauses	✓	✓	(5), (6)
Adjunct clauses	*	✓	Thuc. 3.57.3
Any phrase	*	✓	PP in Plato, <i>Protagoras</i> , 353a-b
Case-marked in the subordinate	*	✓	(6)
Case-marked in the matrix	✓	*	(5)
Spec, (matrix) CP	✓	*	(2)
Spec, (embedded) CP	✓	✓	(5), (6)

However, in *Prolepsis* the DP is Case-marked in the matrix (note the change from *autós* (nominative) to *autón* (accusative)), while in Topicalization it preserves the Case acquired in the embedded clause. Crucially, configurations like (2), with the DP further

⁶ In the examples, the embedding verb (if any) is in italics, the proleptic DP is in bold, and the subordinate clause is underlined. Here *autós* is used as the nominative counterpart of *autón* for ease of presentation, although I am aware that it is not accurate. It should rather be a silent *pro*.

⁷ This selection limitation is addressed in much detail in Faure (2018).

fronted in the matrix, is only accessible to Matrix Case-marked, i.e. Proleptic DP.⁸ On its way, it must stop in Spec, embedded CP, which is shown in the next section.

3. *Prolepsis in the matrix VP*

This section is devoted to the examination of the derivational properties of *Prolepsis*. *Prolepsis* is a stepwise movement through the embedded Spec, CP (where it can finish its journey), the matrix vP and finally the matrix Spec, CP.

3.1. *Prolepsis is movement*

Base-generation is posited for proleptic DPs in (Faure 2010, Milner 1980) for Greek (see fn. 3 for other languages). It is also implicit in theories for which the proleptic DP is either an object of the matrix verb that bears the thematic role Topic (Chanet 1988), or an adjunct, equivalent to an ‘about’-phrase (*accusativus relationis*, accusative of respect’, Dal Lago 2010, Sibilot 1983).⁹ But the latter is unlikely, since the *accusativus relationis* is never a topic in Classical Greek. Rather it is limited to body parts (Plato, *Respublica*, 462d). Moreover, Greek does have ‘about’-phrases:

- (8) Ho Astuágēs (...) *deisas* **perí** **te** **toû** **huiou**
the Astuages fearing about ptc the son
kaì **toû** **Kúrou** **mè** páthoien **ti**. (Xen. *Cyr.* 1. 4. 22)
and the Cyrus that suffer something
‘Astyages (...) being afraid that something might happen to his son and Cyrus,’

The former view, that the proleptic DP is an object of the matrix verb, is also difficult. For its proponents, assuming a derivation would otherwise amount to the DP carrying two thematic roles, Topic and that corresponding to what is assigned in its original position by the embedded verb, which is precluded by the Θ -criterion (Chomsky 1981). They must defend the idea that the DP is base-generated in the object position. Their argument is that verbs of attitude have an optional topical object (even when not followed by a complement clause). Leaving aside the problem of optionality, this does not account for *Prolepsis* with non-attitudinal verbs, which never take a topical object, like *epimeloûmai* ‘take care,’ despite the variety of its constructions (cf. ‘*take care of something about something,’ in Liddell and Scott 1996).

Prolepsis is best accounted for if we posit movement. That this is the right analysis¹⁰ can be seen from Noun-Stranding (9) (and also Quantifier-floating as in Plato, *Laws*, 761a).

⁸ Exceptions are rare and involve bridge verbs, as in Plato, *Respublica* 403e.

⁹ See also Davies (2005) on Madurese and Salzmann (2017) for cases of resumption with a predicational analysis in German.

¹⁰ As originally argued for by Kühner and Gerth (1898-1904), who also claim that it is a case of raising-to-object, something I disagree with: “das Subjekt des Nebensatzes in den Hauptsatz herübergenommen und hier zum Objekte gemacht wird” ‘The subject of the subordinate clause is raised to the matrix, where it is made object.’

- (9) *Noun Stranding*
Epideîxai *kai* *hóti* *pseúsetai*
 to.show both that he.will.lie
kai [**tèn dikaían**]_i *hētis* *estin* ~~*hē*~~ ~~*dikaía*~~ ***apología***.
 and the honest-ACC what is defense-NOM
 ‘to show both that he is going to lie and what an honest defense is.’ (Dem. 19.203)

Classical Greek has the ability to split a DP into two pieces,¹¹ stranding the noun and raising the group [article+modifier] (Bakker 2009), as in (9), where the original DP was *hē dikaía apología* ‘the honest defense.’ That such a DP must be construed is visible from ϕ -feature agreement (singular, feminine). Moreover the adjective *dikaían* must be read *de dicto*, since the speaker intends to show what an honest defense is in his opinion, in contrast with his opponent’s, which points towards the DP originating within the subordinate clause. Note however that the raised part is in the accusative, whereas the stranded NP is in the nominative.¹² I take this example and the following to be instances of case-stacking to be investigated in future research (see the remarks in conclusion).

3.2. *Prolepsis is raising to Spec, CP, not raising to object*

We have just seen that the proleptic DP originates in the embedded clause. Linearly, it surfaces either after or before the matrix verb. Let us focus now on cases where it surfaces after the verb. Two landing positions are possible in principle: Either the proleptic DP is a case of raising-to-object (henceforth RTO) and is in an object position, or it is still in the embedded clause and occupies a Spec, CP position (in which case it looks like a type of Exceptional Case Marking). Here I am going to argue against the RTO stance. First, there is *a priori* no obvious position where the proleptic DP could land between the matrix verb and the subordinate clause. Second there is abundant evidence that it forms a constituent with the embedded CP. These two possibilities and their syntactic predictions are summed up in Table (10).

(10) *Predictions of the two possible landing sites of the proleptic DP*

A	Raising- to- object	[VP V [VP DP [VP [CP...]]]]	⇒	✓	[VP V [VP DP ... [VP [CP...]]]]
B				✓[CP...]	[VP V [VP DP [VP [CP...]]]]
C				✓[DP]	[VP V [VP [DP] ... [VP [CP...]]]]
D				✓[VP DP [VP [CP...]]]	[VP V [VP DP [VP [CP...]]]]
E	Spec, CP	[VP V [CP DP [C' ...]]]	⇒	*	[VP V [CP DP ... [C' ...]]]
F				*[C' ...]	[VP V [CP DP [C' ...]]]
G				✓[DP]	[VP V [CP [DP] [C' ...]]]
H				✓[CP DP [C' ...]]	[VP V [CP DP [C' ...]]]

¹¹ An alternative solution is entertained in Faure (2010), which posits a nul N in the DP *tèn dikaían*. However, under this (less economical) explanation, I fail to see how the articleless subject of the embedded verb (*apologia*) gets its definiteness.

¹² A parallel case of Q-float with case-discrepancy is found in Janitzio P’urhépecha (Zyman 2017).

- (12) *iden_j tin_i o Jannis t_j óti t_i efiyen*
 saw her-ACC the Ianni-NOM that left
 (Context: You don't have to tell him!) 'Giannis SAW that she had left.'

The other counter-example to my generalization is (13), for which I cannot offer an explanation for the moment. Nevertheless, note that the intervener is once again the subject, along with the verb.

- (13) [Hóti epistēmēn tinà ho iatrōs ékhei] *gnōsetai*
 that science some has he.will.know
 ho sófrōn [[tòn iatrōn] hóti epistēmēn tinà ho iatrōs ékhei]
 the temperate the doctor-ACC
 'The temperate man will know, indeed, that the doctor has a certain science.'
 (Plato, *Charmides* 171a)

Be that as it may, the (quasi-)absence of interveners between the Proleptic DP and the embedded CP is no proof that the DP is in Spec, CP, but a hint in this direction, since non-adjacency would be expected to arise sometimes under the RTO analysis.

Second, structure B is totally absent from my corpus. Whenever the embedded CP is itself topicalized in the matrix, it always carries along the proleptic DP as visible from (14).¹⁶ This obligatory pied-piping is only understandable under the DP-in-Spec, CP structure.

- (14) [Heautōn_j hostis heautōn_j esti] *pánta tina*
 Himself-ACC what is each one
 enómizon ánthrōpon_j *eidénai* heautōn_j hostis heautōn_j esti
 I-think man know-INF
 'I thought that everybody knows who he himself is.' (Xen. *Cyr.* 7.2.21)

3.2.2. Evidence in favor of Spec, CP positioning of the proleptic DP

But there is also positive evidence in favor of the DP-in-Spec, CP analysis. First, in the operation just reviewed, where the proleptic DP is pied-piped, the structure can be resumed with a single pronoun like *toút(o)* in (15). If *toús theatàs* and *ei kainotomeîn ethelésousin* were independent, they should be resumed with two distinct pronouns.

- (15) [Toús theatàs ei kainotomeîn hoí theatai ethelésousin]; (...)
 The spectators-ACC if to.revolutionize they.will.want
toút'_i ésth' hò málista *dédoika* toús th. ei kainotomeîn hoí th. ethelésousin
 this is what the.most I.fear
 'lit. [Wondering] about the public whether it will accept to innovate, this is what I fear most.' (Ar. *Ecclez.*, 585)

¹⁶ In (14) the proleptic DP is a reflexive pronoun. Since there is no nominative form, I just reduplicate the accusative form as a copy in the subordinate clause. I am aware that this cannot be accurate and use it as a presentation trick. To avoid confusion, the subject of the displaced embedded clause is doubly struck through in the lower copy of the clause (see already 13).

Another piece of evidence that the DP and the CP form a constituent comes from coordinated structures. In (9), the conjunction of *tèn dikaían hētis...* and *hóti pseúsetai* indicates that they are structurally identical, i.e. CP.

3.3. Interim summary

In this section, we saw that, when not fronted in the matrix, the proleptic DP forms a constituent with the CP from which it is extracted.¹⁷ It is hosted in the embedded CP left-periphery in a high projection that is above the interrogative layer (see 9 and 14), is a phase edge and serves as an escape hatch. It was shown elsewhere that this layer is not present in selected embedded questions (introduced by interrogative verbs like *erōtáō* ‘ask’), but (among other clause-types) in unselected embedded questions (introduced by factive predicates and verbs of speaking, Adger and Quer 2001, Faure 2019). Interestingly, the former, but not the latter excludes *Prolepsis* (Section 2.3, Faure 2018). An extra CP-layer being necessary for *Prolepsis* to happen is an additional proof that proleptic DPs must stop (or at least stop over) in the embedded clause CP.

I follow Chanet (1988), Christol (1989), Kühner and Gerth (1898-1904), Sibilot (1983) in taking *Prolepsis* to the embedded CP to be an operation of topicalization, an uncontroversial stance (see also Bertrand 2010, Fraser 2001, Milner 1980).

4. *Prolepsis* in the matrix CP

What we have seen so far does not entirely account for *Prolepsis*. In Introduction, we saw an example of “high” *Prolepses* featuring DPs in a topic position in the *matrix* clause (2). Note that the topic interpretation is not more controversial than for “low” *Prolepses* (Panhuis 1984),¹⁸ so that we will take this result for granted and no more elaborate on it.

The goal of the present section is to describe the syntax of this second type of *Prolepsis* and show that it is also the product of a movement and not base-generated. Tying the limitation of this apparently long-distance movement to proleptic DPs together with Phase theory, I attempt to give a theoretical explanation.

4.1. *Prolepsis* in the matrix is movement

A good argument comes from the examples of split DPs (see Section 3.1) that high *Prolepses* feature as in (16) (see also Xen. *Cyr.* 2.1.7):

- (16) [Tòn sòn] *pithésthai* [tòn-sòn paíd’] hópōs ho sēs país estì kakós.
 your-ACC to.believe child-ACC how is bad
 ‘to believe your son was guilty.’ (Eur. *Hipp.* 1251)

¹⁷ For examples of languages with the same structure, see Wurmbrand’s (to appear) crosslinguistic study, mostly based on SOV languages. She provides tests that we cannot apply here (position with respect to adverbials within the embedded CP, shifted indexicals). See her fn. 6 for an overview of which language can moreover involve additional movement to the matrix.

¹⁸ Nonetheless, theoretically, nothing prevents “high” *Prolepses* to be foci, since focus positions in the matrix can be fed by the first step of the derivation. (16) could be a case of this subtype.

In (16), the DP *tòn sòn paíd(a)* ‘lit. the yours child’ is split into two pieces. The noun *paíd(a)* is stranded at the edge of the embedded clause, while the group [article+possessive marker] is moved past the verb. This example importantly shows that high *Prolepsis* is also due to movement and is fed by the step at the edge of the embedded CP. Note that it cannot be seen as partial movement, since the two movements are independently motivated (see Section 4.3 below).

Another argument comes for Condition A of binding theory. Consider Example (17):

- (17) *heautòn_i* PRO_i *episkepsámenos_i* [_{CP} *heautòn_i* *hopoíós* *heautòn_i* *esti*
 himself considering what.kind is
 pros *tèn* *anthrōpínēn* *khreían*, ... (Xen. *Mem.* 4.2.25)
 regarding the human use
 ‘(the man) who considers what sort of a creature he is for human use...’

In (17), the subject of the embedded clause is raised to the matrix clause before the verb. It takes the form *heautòn* ‘himself,’ a *bona fide* reflexive pronoun. Its usage is licensed only if it was at some point bound by the co-indexed PRO, the subject of the participle, i.e. was in its c-command domain. I consider that the relevant stage is represented by the copy in the specifier of the embedded CP.¹⁹ Note that it cannot be the lowest copy, which is too deeply embedded to be accessible to PRO.²⁰

Summing up, it was demonstrated that *Prolepsis* is a derivation phenomenon that displays an extraction from a subject position in a complement clause to a topic position in its CP domain, and then to a topic position in the matrix CP domain. Evidence for this derivation comes from split DPs, from *Prolepsis* being banned in complement clauses that do not have an extra CP-layer, and binding theory (Condition A). A property of *Prolepsis* has not been explored yet: Its case-marking seems to be a necessary condition for movement into the matrix. I argue that this marking provides evidence for more intermediate steps.

4.2. Long-distance movement, Case-marking and vP as a phase

Recall that long-distance extraction is blocked in the case of Topicalization (no matrix Case-assignment to the DP) and with verbs like interrogative verbs that do not assign Case to their second argument.²¹ Moreover, this kind of movement excludes phrases that

¹⁹ (14) is another example in which a movement of the reflexive *heautón* must be posited, since its binder is the (split) DP *pánta tina anthrōpon*, which surfaces below it. But in that case, the reflexive was pied-piped with the whole subordinate clause hosting it. Ar. *Clouds*, 842 is an example of the intermediate stage in Spec, embedded CP with a reflexive marker.

²⁰ Unless one admits an exempt anaphor/logophoric approach (see Charnavel, to appear for the most recent view). Note however that the exempt anaphor/the logophoric term should alternate with a simple pronoun depending on the affective center, which is not the case: The pronoun is invariably reflexive.

²¹ Similar observations in Dal Lago (2010), Fraser (2001) and further analyses in Faure (2018).

cannot be assigned Case, like PPs.²² Put otherwise, matrix Case-assignment is mandatory for long-distance extraction, as in *Prolepsis*. If we assume with Chomsky (2001) that Spec, vP is the place where the Case feature of the object DP is checked (maybe as a side-effect of ϕ -feature valuation), the explanation for this distribution must revolve around the access to this position.

Interestingly, in Introduction, we independently pointed out that, in the frame of Phase theory, Spec, vP is theoretically expected to be a stopover position on the way from vP to CP. The mandatory Case-marking is evidence for this intermediate step. With Case-assigning verbs, the proleptic DP has access to Spec, vP. In this position, it remains available for further movement when the next phase head (Matrix C) is merged and the complement of v is sent to Spell-out.

4.3. Interim summary: Improper movement

This section was devoted to *Prolepses* in the matrix. We saw that this apparent long-distance movement is the product of a stepwise journey through Spec, embedded CP and Spec, matrix vP to the matrix CP. Case-marking is indirect evidence for this intermediate step.

We also noted that the three steps are independently motivated (see the analysis of example 16). The derivation goes as in (18), starting with stage (0). The first step is triggered by a Topic feature1 on the embedded C, the second step by a Case feature K on the matrix vP, the third step by another Topic feature2 on the matrix C (relevant moving items are in bold, checked (uninterpretable) features are struck out).

(18) *Derivation of (16)*

- (3) [CP[**tòn sòn**]_[TOP2] C_[TOP2]
 (2) [vP [[~~tòn sòn~~]_[TOP2] **paíd'**]_{[K],[TOP1]} [_{v'} *pithésthai*+v_[K]]
 (1) [CP [[~~tòn sòn~~]_[TOP2] **paíd'**]_{[K],[TOP1]} C_[TOP1] [CP *hópōs* C_[+WH]]
 (0) [IP[[~~hō sōs~~]_[TOP2] **país**]_{[K],[TOP1]} ...

Note that when the DP reaches the embedded Spec, CP, it avoids Rizzi's (2007) criterial freezing, since other features are yet to be checked. This derivation also eschews look-ahead, since every step is locally motivated.

Be that as it may, this model of derivation is not satisfactory, for it yields a non-uniform chain of A' (the two [+TOP] Spec, CP) and A ([K] Spec, vP) positions, thus running into an improper movement issue. This problem is tackled in the next section.

5. Ruling out improper movement in *Prolepsis*

The improper movement issue is recurrent in *Prolepsis*-like phenomena. Three families of solutions were explored to account for it. The first one assumes that the language has the possibility to either derive or to base-generate the DP in Spec, embedded CP (e.g., Bruening 2001 on Japanese and Passamaquoddy). In the latter case, improper movement is avoided because the first step (to vP) is an A-movement, followed by an A'-movement. We shall not pursue this option any further for we do not have evidence for base-

²² Similar observation for Dinka in van Urk (2015).

generation in Greek, and we'll assume a uniform (derivational) treatment for parsimony.

The second option assumes derivation, but posits that in some languages the embedded CP is an A position (Tanaka 2002 for Japanese). We have no means to test this hypothesis for Classical Greek. For instance, we are not aware of an example that permits to test scope-reconstruction (possible after A'-movement only).²³ Yet, the movement to Spec, CP being driven by a discourse-feature, we assume that it is an A'-movement.

In our view, more promising is the path taken by authors like Abels (2012) or van Urk (2015). These scholars argue for a featural view of the A/A'-distinction, which amounts to “abandoning the idea that A- and \bar{A} -movement are distinguished by the position they target.” In this approach, “Differences between movement types derive from independent properties of the feature(s) involved in Agree” (van Urk 2015). This conception can account for data close to what we saw for Classical Greek, such as long-distance movement in Dinka, which can be exemplified with (19) (from van Urk 2015, glosses as in original).

(19) *Intermediate movement through Spec-CP and then Spec-vP in Dinka*

Yè **ŋó** [CP cùùkù [vP ____ cɔ̀k [TPluêeel Ból
 be what PRF.1PL make.NF say.OV Bol.GEN
 [CP è__ cǐi Áyèn câam]]]?
 c prf.OV Ayen.GEN eat.NF
 ‘What have we made Bol say that Ayen has eaten?’

Both Clauses (CPs) and vPs are V2 in Dinka, i.e. the position right before the V must be filled. But crucially, when a DP is extracted long-distantly, all the slots must remain empty, an indication that it went through them. Under this analysis, *ŋó* ‘what’ in (19) went through all the underscored positions. Moreover, it triggers agreement on the verb(s) along the way, which points towards the intermediate steps in vP being motivated by φ -features, while steps in CP are motivated by *wh*-features.

On the basis of these observations, van Urk (2015), following (Abels 2012), argue for uniformity in movement, so that there is not difference between intermediate and final movements.²⁴ This conclusion is very close to what we found for Classical Greek *Prolepsis* and Dinka long-distance extraction also looks like improper movement.

However, van Urk (2015) adduces independent data showing that a head can carry A and A' features at the same time, which he calls a “composite probe” (e.g., topic and φ -features on C). More evidence for this is found in Romanian (Alboiu and Hill 2016):

(20) L-am ghicit **pe Mihai**_k că-și_k aranjează_k plecarea.
 him-have.1SG guessed DOM Mihai that-REF.DAT arranges leave.the
 ‘I figured out that Mihai is arranging his leave.’

²³ However, see Wurmbrand (to appear) for a recall of the reasons why Tanaka’s claim is doubtful for Japanese and other languages.

²⁴ Look-ahead is thus also avoided. Resort to extra technicalities is needed however: “All phase heads are merged with uninterpretable instances of all movement-driving features. It is important in this type of approach that Agree is fallible, in that it may fail without crashing the derivation. This allows for probing features to be present on intermediate heads without appeal to lookahead.” (van Urk 2015: 138)

In this language, Raising-to-object is only available when there is Differential Object Marking (DOM) on the DP (here *pe*) AND a shift from indirect to direct Evidentiality. This is another piece of evidence that A and A'-features can play a role at the same time.

Classical Greek has data pointing towards the same direction. Observe (21):

- (21) Hōs megála **Megareûsin**_[ConTop] [_{vP} enébale tà klaúmata **Megareûsin**.
How big to.the.Megarians fell.on the tears
'What bitter tears there will be among the Megarians!' (Ar. *Pax* 248)

In this sentence, the DP *Megareûsin* is moved from its base position to a preverbal position. According to (Bertrand 2010), this position can host narrow foci and continuous topics. In the example, we are dealing with a topic. This is important, since it means that *v* is endowed with discourse features along with Case and ϕ -features (see already Chomsky 2001 on Object Shift). The probe of the second step of *Prolepsis* (that from Spec, embedded CP to Spec, *vP*) is then a composite probe. Note that it is important that both features (Case and Topic) probe at the same time to explain the distribution of *Prolepsis*. If Case were just checked along the way as a parasite to Topic, Topic would be the only trigger and *Prolepsis* would be available more largely, for example with verbs not assigning Case or with PPs.

More puzzling is the fact that we have only indirect cues for this step, but we cannot prove that proleptic material is ever left there. I do not have a ready explanation for that, but this type of "never final" stop is also evidenced in Romance languages (Bošković 1997: chap. 3-4).

To sum up, in this section we addressed the issue of the improper movement (forming a mixed A and A'-chain) that *Prolepsis* displays. We saw evidence that at each step the movement of the proleptic DP is driven by a discourse feature. However, the movement to the *vP* in the matrix must be furthermore triggered by a Case feature.

6. Conclusions and Remaining issues

Classical Greek features a correlation between unbounded movement and Case in *Prolepsis*. Case indicates that the movement syntactically proceeds stepwise and has to pass through *vP* edges along with CP-edges.

Like DOM in Romanian and *wh*-movement in Dinka, every step of *Prolepsis* is independently motivated by a discourse feature. Consequently, it is not purely formal movement and it is not improper movement. Rather, the proleptic DP has the option to stop at the embedded CP edge or to move further away. An open question is why, unlike intrasentential topics, there is no uncontroversial evidence that the proleptic DP is able to finish its journey at the edge of *vP*. An answer to this question must certainly take into account the fact that a composite probe is necessary to drive its movement.

Theoretically, our analysis of Classical Greek *Prolepsis* provides good arguments for composite probes and a featural approach to the A/A' distinction *à la* van Urk (2015). It also represents a new step towards the elimination of successive-cyclic movement as involving unmotivated intermediate steps and look-ahead. Finally, the data adduced here

can be explained without resorting to the idea that phase heads are endowed with all the features (Abels 2012, see also fn. 24) and advocate a more constrained theory of movement. Rather, each step is independently motivated.

Preliminary results suggest that the approach taken here also works for *wh*-movement in interrogatives (Bertrand and Faure 2018). Further exploration is needed for *wh*-relativization. An issue that was not addressed is how a DP that is born in the nominative can get accusative or genitive case (see the split CP evidence in 9). This is probably a case of case-stacking (see for example Richards 2013, a.o.), a phenomenon in which stacking is ordered (ACC > NOM), which would explain why *Prolepsis* is limited to embedded subjects. More research is required to fully account for it.

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Motivating successive-cyclicity: ... Greek Prolepsis

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