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Author

Jenks, Peter

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Hyperraising from TP in Moro

Peter Jenks*

Abstract. This paper examines raising out of finite clauses, or hyperraising, in Moro, a Kordofanian language spoken in the Nuba Mountains of Sudan. This paper demonstrates that finite complement clauses that permit hyperraising are TPs. Evidence for this conclusion comes from the unavailability of complementizers, as well as special morphology that is more generally linked to clausal reduction. Parallel facts are shown to obtain for raising from nonfinite clauses, which similarly disallow complementizers. The Moro pattern provides evidence for a general ban on A-movement out of CP in Moro independent of the finiteness of the clause, which is attributed to a CP horizon on φ-probes in Moro, in the framework of Keine (2019, 2020), in conjunction with the claim that Moro is a language without abstract case licensing requirements for DPs.

Keywords. hyperraising; raising; A-movement; complement clauses; Case; Moro

1. Introduction. In classic analyses of raising from infinitival complements, cross-clausal A-movement is facilitated by two factors, both tracing back to at least Chomsky (1981). The first factor is structural size: raising must occur out of structurally reduced clauses, hence, out of a TP rather than a CP. Second, because nonfinite T does not Case-license the DP in its specifier, this DP can move into a Case-licensed position in the higher clause, as shown in (1):

(1) Fatimah$_i$ seems [TP t_i to have won the argument].

In English and similar languages, as is well-known, finite CPs and TPs block raising:

(2) *Fatimah$_i$ seems [CP (that) t_i has won the argument].

Example (2) is usually assumed to be impossible because CP is a phase (Abels 2012, among others), and movement through [SpecCP] – necessary to escape the lower CP – is only possible for constituents with A′-features.

However, this simple distinction between raising from an infinitive TP and the absence of raising from a finite CP is complicated by the existence in many languages of hyperraising, or A-movement out of a finite clause (Ura 1994; Nevins 2004; Zeller 2006; Nunes 2008; Ferreira 2009; Carstens & Diercks 2013; Halpert 2019, inter alia). We see an example of hyperraising in the following example from Brazilian Portuguese:

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(3) João$_i$ parece [$_{CP}$que t_i comprou um carro novo].
John seems that bought a car new
'John seems to have bought a new car.' (Ferreira 2009: 29; arrows and brackets added)

A central question for syntactic theory is why only some languages allow hyperraising. Both the exceptional locality properties of hyperraising and the apparent movement from a case position must be accounted for.

Beginning with case theory, the problem posed is that DPs that been assigned abstract case (= Case) are assumed to be unavailable for further A-movement, sometimes called the Activity Condition (e.g., Nevins 2004). If the embedded T in (3) assigns nominative case, A-movement to the higher clause should be impossible. Several solutions to this problem have been proposed. Some accounts of hyperraising focus on the deficiency or *φ*-incompleteness of embedded finite T heads in languages that allow hyperraising, assuming that they do not assign Case (e.g., Ura 1994; Nunes 2008; Ferreira 2009). Alternatively, it has been proposed that hyperraising involves a rule of "Kase-peeling", where the DP is moved out of its K(ase)P shell in the lower CP (Nevins 2004). Other work, particularly on Bantu languages, assumes that languages have different case assignment properties such that movement between A-positions is generally available (Zeller 2006; Carstens & Diercks 2013; Oxford 2017). A final proposal is that movement between case positions is in fact generally available, but that different locality constraints on movement in different languages are sufficient to account for the distribution of hyperraising (Halpert 2016, 2019). The Moro data in this paper is in principle compatible with any of these approaches, but in section 6 I suggest that Moro is plausibly a language where T does not assign structural case to its specifier, leading to the idea that deficient case assignment properties of finite T are a necessary factor in permitting hyperraising.

Turning to the question of why A-movement is possible out of CP in languages with hyperraising, two proposals have been made. One account is essentially diacritic: Nevins (2004) and Carstens & Diercks (2013) suggest that CPs in languages that allow hyperraising are "weak" phases, permeable to A-movement. Another alternative is pursued by Halpert (2019), who argues that the critical factor is whether hyperraising is possible is the presence or absence of vestigial *φ*-features in C. In languages like English, C contains such *φ*-features, perhaps inherited from the historical origin of the complementizers as demonstratives. As a result, English finite C heads intervene between *φ*-probes in the higher clause and DPs in the embedded clause by simple minimality considerations. In support of this proposal, Halpert points to the fact that Zulu disallows raising out of infinitival TPs, which are nominalized at the T level, rendering them impermeable to higher *φ*-probes.

This brings us to the case of hyperraising in Moro. In Moro, hyperraising is possible, but never out of a finite CP, only a finite TP. The simplest evidence for this claim is the fact that hyperraising complements cannot be introduced by complementizers. We see this in (4a) for hyperraising to subject, triggered by the aspectual verb *rə́mə́ṯ* 'continue', and in (4b) for hyperraising-to-object, with the perceptual verb *n*: 'hear' in the higher clause.[1]

[1]Abbreviations: ACC=accusative case; ADJ=adjectival final vowel; APPL=applicative; CL=weak noun class concord; COMP1/2=complementizer 1 (embedded declarative) and complementizer 2 (some control complements, relative clauses); DPC1/2=dependent clause 1 (subject relative clauses, some raising complements) and dependent clause 2 (non-subject relative clauses, complements of some verbs of communication); IPFV=imperfective;

(4) a. kúkːu g-a-rə́mə́ʈ̪-iə [(*ʈ̪á/*nə́) g-é-↓ʄə́ð-á ugi]
Kuku CLg-RTC-continue-IPFV (COMP1/COMP2) CLg-DPC1-chop-IPFV CLg.tree
'Kuku kept chopping the tree.'

b. oráŋ g-a-nːó kúkːu-ŋ [(*ʈ̪á/*nə́) g-é-lanɖ̪-ó ʌwúr]
man CLg-RTC-hear-PFV Kuku-ACC (COMP1/ COMP2) CLg-DPC1-close-PFV CLj.door
'The man heard Kuku close the door.'

Moro has two complementizers, the plain complementizer *ʈ̪á* (COMP1) and a relative complementizer *nə́* (COMP2); neither can occur in hyperraising complements. Embedded finite complements in hyperraising sentences also surface with a "subject extraction" prefix *é-*. While this prefix is also found in subject relative clauses (Rose 2013; Rose et al. 2014), I argue below that this prefix occurs whenever finite TPs lack a CP shell above them. We will also see that the prohibition on complementizers in raising complements applies both to raising from both finite and infinitival complements.

I argue below that the Moro facts, in particular the identical prohibition on CP complements of both hyperraising and raising predicates, support a new way of understanding the languages where hyperraising is allowed, one that places the locus of variation on the *φ*-probe rather than on the status of the complementizers in different languages. In short, the idea is that *φ*-probes in Moro and English are always blocked by a CP layer due to a lexically-specified C horizon, to use the terminology of Keine (2019, 2020). Such a restriction is absent in languages like Brazilian Portuguese or Zulu, where *φ*-probes simply lack a CP horizon (Ferreira 2009; Carstens & Diercks 2013; Halpert 2019). The Moro facts thus reveal that a complete typology of raising across languages must rely on probe-indexed locality restrictions – their selective opacity, in Keine's terminology – but otherwise follow from the size of clausal complements and the licensing profiles of DPs.

2. Hyperraising in Moro. Moro is a Kordofanian language indigenous to the Nuba mountains of Sudan, and is spoken by the Moro community there, as well as by a growing Moro diaspora, displaced by ongoing conflict and civil war in Sudan. Moro is internally diverse, with seven or eight distinct dialects. The examples in this article come from the Thetogovela dialect, described in detail in Jenks et al. (2023), and have been checked with two Moro speakers, Elyasir Julima and Angelo Naser.

Moro is strictly SVO in main clauses; verbs always index the person, number, and, in finite verbs, the noun class of the subject. Subjects and A′-positions are flagged with nominative case; object noun phrases are accusative, though case is only visible on pronouns, proper nouns, and some kin terms (see Jenks & Sande 2017, and section 6, for details).

Finite verbs in Moro are characterized by two separate domains, a preverb and a stem (Rose 2013; Jenks & Rose 2015). A simplified schema for finite verbs is in (5), where the stem is enclosed in square brackets, and the preverb is the prefixal material preceding it. The stem domain can include causative, applicative, and passive voice suffixes. Verb stems always terminate in a final vowel, which encodes perfective vs. imperfective aspect, as well as verbal deixis and other categories. Finite preverbs must include two components: subject agreement and a *clause vowel*:

(5) Moro finite verbs
S.AGR – **CLAUSE VOWEL** – [ROOT – VOICE – PFV/IPFV]

PAS=passive; PFV=perfective; PST=past tense; PL=plural; POS=possessive; RTC=root clause; SCL=strong noun class concord; SG=singular.

The clause vowel in Thetogovela marks the following three-way contrast:

(6) Clause vowels in Moro
   a. *a/ʌ-ː* Indicative root clauses with no extraction, 'root clause vowel' = RTC (7a)
   b. *é/í-ː* Clauses with subject extraction, 'dependent clause vowel 1' = DPC1 (7b)
   c. *ə́ -ː* Clauses with non-subject extraction, 'dependent clause vowel 2' = DPC2 (7c)

The high/low vowel pairs for (6a) and (6b) reflect root-dominant vowel-height harmony (Ritchart & Rose 2015). The distinctions in the clause vowels for ex-situ clefts and relative clauses are described in Rose et al. (2014) and Jenks et al. (2023, Ch. 12). I follow our earlier work in assuming that the preverb is the morphological reflex of T (and C_{fin} – see section 5), while the stem is the realization of the verb having moved through higher functional heads to Asp. I remain agnostic as to whether Asp moves to T, or whether the regular surface adjacency of the preverb and stem simply arise due to a postsyntactic cliticization process, for example. While I continue to refer to these clause vowel prefixes by the names in (6), I argue in section 5 that these prefixes only expone extraction as an epiphenomenon; in particular, I argue that the subject extraction vowel is the exponent of a reduced clause, a bare TP complement.

Examples of a root clause without extraction (7a) vs. a subject (7b) and then object (7c) relative clause is shown below. Note that non-subject relative clauses can include the relative complementizer *nə́* = 'COMP2', which can also be doubled on a DP subject and the lexical verb. The relative complementizer never occurs in subject relative clauses and attempts to insert it are rejected.[2]

(7) a. kúkːu g-ʌ-sʌtʃ-ú jamala
   Kuku CLg-RTC-see-PFV CLj.camel
   'Kuku saw the camels.'
   b. jamalʌ́ [-sː-↓í-sʌtʃ-ú kúkːu]
   CLj.camel SCLj-DPC1-see-PFV Kuku
   'the camels that saw Kuku'
   c. jamalʌ́ [-sːə (nə́↓=) kúkːu (nə́-↓)g-ə́-sʌtʃ-ú]
   CLj.camel SCL COMP2= Kuku COMP2-CLg-DPC2-see-PFV
   'the camels that Kuku saw'

The three-way distinction in (6) initially seems to resemble a case of *wh*-agreement, as in Philippine-style voice systems, where extraction morphology tracks the structural source of an extracted DP (Chen & McDonnell 2019; Polinsky & Potsdam to appear); such systems are found in nearby Nilo-Saharan languages, such as Dinka (van Urk 2015).

However, there are problems with analyzing the putative cases of *wh*-agreement as extraction morphology. In particular, both vowels are found in contexts without A′-extraction. For example, the non-subject clause vowel *ə́-* 'DPC2' occurs in finite complements of verbs of communication, even when there is no extraction from this clause (Jenks & Rose 2017).

(8) í-g-ʌ-lug-ə̱t̪-ú kúkːu-ŋ [t̪á ŋálːo g-ə́-↓nóan-á ðamala]
   1SG-CLg-RTC-say-APPL-PFV Kuku-ACC COMP1 Ngalo CLg-DPC2-watch-IPFV CLð.camel
   'I told Kuku for Ngalo to watch the camel.'

[2] Jenks & Rose (2017) represent a more comprehensive survey of control and raising in Moro, as well as some of the clause vowel contexts. Nearly all of the examples in this paper are taken from that earlier work.

Here we see that the embedded clause has its arguments in-situ and is introduced by the plain complementizer *t̪á*. Jenks & Rose (2017) examine the full distribution of clauses with the non-subject extraction vowel and conclude that it is a marker of irrealis or subjunctive mood. There are two analyses for this vowel: either it could be polyfunctional, exponing both *wh*-agreement for non-subjects in some contexts and irrealis mood in others, or these two clause-types could share some formal clause-typing feature.

Similarly, the subject extraction clause vowel *é-* 'DPC1' is also found in contexts without A′-extraction, in particular, the hyperraising contexts that are the topic of this paper:

(9) Hyperraising in Moro

a. kúkːu$_i$ g-a-rə́mə́t̪-iə [___$_i$ g-é-↓ʧə́ð-á ugi]
Kuku CLg-RTC-continue-IPFV CLg-DPC1-chop-IPFV CLg.tree
'Kuku kept chopping the tree.'

b. oráŋ g-a-nː-ó kúkːu-ŋ$_i$ [___$_i$ g-é-land̪-ó ʌwúr]
man CLg-RTC-hear-PFV Kuku-ACC CLg- DPC1-close-PFV CLj.door
'The man heard Kuku close the door.'

We can be confident that the complement clauses in (9) are finite because they follow the finite verb template in (5), including subject *φ*-agreement that includes noun class agreement, a clause vowel, and a perfective/imperfective distinction on the stem, all of which are absent on infinitival complements in Moro (Rose 2013; Jenks & Rose 2017).

Hyperraising in Moro is quite productive, occurring with at least the following predicates:

(10) a. **Perception (HR-t-O):** *nː* 'hear', *sʌ́tʃ* 'see', *wə́ndat̪* 'watch'
b. **Desiderative (HR-to-O):** *bwáŋ* 'want'
c. **Modal (HR-to-S):** *ánː* 'seem'
d. **Aspectual (HR-to-S):** *rə́mə́t̪* 'continue'

We will see more detailed evidence for the A-movement analysis of hyperraising in the following section.

Moro also allows standard raising, meaning A-movement out of infinitival complements clauses (Jenks & Rose 2017), as in the following example of raising-to-subject triggered by the negator *ń*: (11a) or raising-to-object triggered in the complement of the verb *bwaŋ* 'want, like' (11b):

(11) Raising from infinitives in Moro

a. ŋáw ŋ-a-nːá (*t̪á) áŋə́-↓d̪ə́n-é
CLŋ.water CLŋ-RTC-not.PFV COMP1 2SG.INF-rain-INF1
'It's not raining.' (Jenks & Rose 2017: (41))

b. é-g-a-bwáŋ-á ŋáw (*t̪á) áŋə́-↓d̪ə́n-é
1SG-CL-RTC-want-IPFV CLŋ.water COMP1 2SG.INF-rain-INF1
'I want it to rain.' (Jenks & Rose 2017: (33b))

Infinitival verbs in Moro are characterized by an infinitive subject agreement paradigm that indexes person and number but, unlike finite verbs, do not agree for noun class in the third person but instead show invariant third person singular and plural agreement (Rose 2013). Infinitival clauses additionally lack the imperfective-perfective distinction, a clause vowel, and do not allow tense or modal auxiliaries (Jenks et al. 2023). Infinitives are always complements and never subjects, suggesting they lack *φ*-features, a point to which we return below.

In all raising contexts in Moro, both finite and infinitive, complementizers are systematically banned. Moro has two distinct complementizers; both of which are typically optional, for example in regular finite complements or object relatives. The first complementizer *ʈá* 'COMP1' has the most general distribution, occurring with root complements (12a), subjunctive complements (12b), and some infinitival object control complements (12c).[3]

(12) Complement clauses with *ʈá*

a. é-g-a-ləŋéʈa [(ʈá) kúkːu kʌ́-g-ʌ-ʈunɖú]
1SG-CLg-RTC-know.IPFV COMP1 Kuku PST-CLg-RTC-cough.PFV
'I know that Kuku had coughed.'

b. é-g-a-mwandəðó kúkːu-ŋ [(ʈá) g-ə́ -↓noáná ðamala]
1SG-CLg-RTC-ask.PFV Kuku-ACC COMP1 CLg.DPC2-watch.IPFV CLj.camel
'I asked Kuku that he watch the camel.'

c. é-g-a-mwandəð-ó kúkːu-ŋ [ʈá áŋə́ -↓búgí ísːiə]
1SG-CLg-RTC-ask.PFV Kuku-ACC COMP1 3SG.INF-hit.INF1 CLj.fire
'I asked Kuku to shoot the gun.'

The second complementizer is *ná* 'COMP2', found in non-subject A′-extraction (13a) and some control clauses (13b); *ná* doubles before lexical subjects and the verb (13a) (Rose et al. 2014).

(13) Clauses with *ná* (which can double)

a. jamalʌ́ [=sːə (ná=) kúkːu ná= g-ə́-sʌtʃú]
CLj.camel =REL.OP COMP2= Kuku COMP2= CLg-DPC2-see.PFV
'the camels that Kuku saw'

b. kúkːu g-əndətʃínú [(n)= áŋə́-↓ləvə́tʃa ŋálːo-ŋ]
Kuku CLg.(RTC)-try.PFV COMP2= 3SG.INF-hide.INF2 Ngalo-ACC
'Kuku tried to hide Ngalo.'

However, we saw in both (9) and (11) that complementizers are not allowed in either context. The simplest explanation for this restriction is that raising and hyperraising complements in Moro are TPs, directly deriving the unavailability of complementizers in these structures.

3. Evidence for A-movement. This section presents several arguments for A-movement in hyperraising contexts, arguing first that the raised DP in the hyperraising examples such as (12) – subject position in (13a) and the object position in (13b) – is not assigned a theta role in the top clause, and second that it is in fact occupying an A-position in the higher clause. Again, many of these data and arguments are drawn from Jenks & Rose (2017).

A hallmark of raising predicates is that they do not assign a theta-role to the raised DP. Evidence to this effect can be seen first in that inanimate nouns are possible in raised positions:

(14) Inanimate nouns are possible in raised positions

a. ŋáw ŋ-a-rə́mə́ʈ-iə ŋ-ə́-↓ɖə́n-éə
CLŋ.water CLŋ-RTC-continue.IPFV CLŋ-DPC1-rain-IPFV
'It keeps raining.'

b. é-g-a-nːá ŋáw ŋ-ə́-↓ɖə́n-éə
1SG-CLg-RTC-hear-IPFV CLŋ.water CLŋ.DPC1-rain-IPFV
'I hear it raining.'

[3] See Jenks & Rose (2017) for evidence that these complements involve object control.

In both (14a) and (14b), *ŋáw* ‘water’ occupies the higher A-position. This demonstrates that this position is at least non-agentive.

Further evidence for movement specifically, and for the non-thematic nature of the raised argument position, comes from the observation that idiomatic or collocational interpretations of DPs are preserved under raising. The expressions *búgó ísíə*, literally ‘hit fire’ (one shot) and *pú ísíə* ‘beat fire’ has the idiomatic interpretation ‘to shoot a gun’ either once or continuously. This interpretation is preserved under both raising-to-subject (15a) and raising-to-object (15b).

(15) Idiomatic interpretations preserved after raising
a. ísːíə j-ʌ-rə́mə́n̪-iə j-í-p-ə́n-íə
CLj.fire CLj-RTC-continue-IPFV CLj-DPC1-beat-PAS-IPFV
‘The gun kept being fired.’
b. é-g-a-nː-ó ísːíə j-í-bug-ən-ú
1SG-CLg-RTC-hear-PFV CLj.fire CLj-DPC1-hit-PAS-PFV
‘I heard the gun be fired.’

Additionally, (15a-b) show that passivization can feed hyperraising, so the raised arguments must be interpreted within the lower *v*P.

Jenks & Rose (2017) demonstrate that this idiom provides a useful diagnostic for control vs. raising constructions in Moro. Hence, we see below that idiomatic interpretation of the same expression is lost with the subject control predicate *bwáŋ* ‘want’:

(16) Idiomatic interpretations lost under subject control
a. Kúkːu g-a-bwáŋ-á n-áŋə-↓pw-[á] ísːíə
Kuku CLg-RTC-want-IPFV COMP2-3SG.INF-beat-INF2 CLj-fire
‘Kuku wants to fire the gun.’
b. #ísːíə j-a-↓bwáŋ-á n-áŋə́ -↓pw-ə́ n-íə
CLj-gun CLj-RTC-want-IPFV COMP2-3SG.INF-beat-PAS-INF2
#‘The gun wants to be beaten.’ (and not ‘The gun wants to be shot.’)

The availability of the idiomatic interpretation in (15) suggests that the hyperraised argument originated in the lower clause.

While it lacks a theta-role assigned by the higher verb, the raised DP clearly occupies an A-position in the higher clause. This is obvious in the cases of hyperraising-to-subject in (14a) and (15a), as the raised subject controls finite *φ*-agreement on the verb.

In examples of hyperraising-to-object, the raised DP exhibits regular object properties in the higher clause. The first piece of evidence comes from accusative case marking (17), which is impossible for subjects.

(17) oráŋ g-a-nː-ó Kúkːu-ŋ [g-[é]-lan̪-ó ʌwúr]
man CLg-RTC-hear-PFV Kuku-ACC CLg-DPC1-close-PFV CLj.door
‘The man heard Kuku close the door.’

The second piece of evidence that the raised object is in the higher clause comes from the fact that it appears as on the higher verb when it is a human pronoun, cliticizing to the pre-stem position in imperfective clauses (cf. Jenks & Rose 2017).

(18) é-g-a-ŋó-nː-a [g-é-lág-á i-ki]
1SG-CLg-RTC-3SG.OM-hear-IPFV CLg-DPC1-cultivate-IPFV LOC-field
‘I hear him cultivating in the field.’

The third piece of evidence comes from complex predicates, in particular particle verbs, which consist of a lexical verb and an associated adposition, illustrated in (19) with the predicate *-bəð- =nano* ‘stumble across’, literally meaning ‘fall at, around’. When lexical objects appear with such predicates, they intervene between the verb and the particle; this is the case for the complex predicate in (19).

(19) é-g-a-bəð-ó Kúkːu-ŋ nano [g-é-lág-á i-ki]
1SG-CLg-RTC-fall-PFV Kuku-ACC at CLg-DPC1-cultivate-IPFV LOC-field
‘I stumbled across Kuku cultivating in the field.’

A fourth argument that the raised DP is in the object position of the higher verb comes from the higher verb’s ability to passivize the raised DP:

(20) Kúkːu g-a-bəð-ó [g-é-lág-á i-ki]
Kuku CLg-RTC-hear-PAS-IPFV CLg-DPC1-cultivate-IPFV LOC-field
‘Kuku was heard cultivating in the field.’

Despite surfacing as syntactic arguments of the higher verb, there is still evidence of the raised DPs association with the lower clause, particularly in that it always controls finite subject agreement on the lower verb. This can be seen most clearly in (14) and (15), where the noun class agreement on the lower verb tracks the noun class of the raised argument. While this could be attributed to a null *pro* in the embedded clause – and Moro does allow *pro*-drop – agreement in the lower clause is also expected under a hyperraising analysis where the raised argument always moves to the higher clause from the subject position of the lower clause.

These facts collectively demonstrate that while hyperraised DPs are thematic arguments of the lower verb, they nevertheless surface in argument positions in the higher clause, either as a subject or object. This is the typical profile of cross-clausal raising.

4. Against alternative analyses of hyperraising. Two alternative analyses of hyperraising in Moro can be set aside, one where the putatively raised DP is base-generated in the top clause, and another which involves A′-movement in the lower clause.

First, instances of putative hyperraising in some languages have been analyzed as copy raising or prolepsis (Ura 1994). Under such analyses, the raised DP is base-generated in an A-position in the higher clause despite lacking a thematic relationship with the main verb. The higher argument then binds a pronoun in the lower clause, as in the following English example, where binding is obligatory:

(21) John$_i$ looks like he$_{i/*j}$ is sick.

Moro productively allows I-drop, particularly for bound variable subjects, so an analysis of putative hyperraising as copy-raising with binding of a null subject pronoun must be excluded. Fortunately, the locality profile of copy raising or prolepsis is clearly distinct from raising and hyperraising. As A-movement, driven by a *φ*-probe, hyperraising is expected to always target the closest DP. Copy raising and prolepsis, on the other hand, allow non-subjects to be bound by the matrix DP, as in the example below of English copy raising:

(22) John$_i$ looks like Mary dumped him$_i$.

Moro hyperraising clearly shows the locality profile of typical A-movement, as the following example demonstrates: the raised *Kúku* cannot bind an object pronoun *óŋó* in the embedded clause:

(23) *é-g-a-bəð-ó Kúkːu$_i$-ŋ nano. [Káka g-í-pː-óŋó$_i$]
1SG-CLg-RTC-fall-PFV Kuku-ACC at Kaka CLg-DPC1-beat-3SG.OM
Intended: 'I stumbled across Kuku$_i$ like Kaka was beating him$_i$.'

Compare the minimally different but grammatical (19), where the subject of the lower predicate raises to the object position between the verb and particle.

Furthermore, Moro hyperraising does not seem to demonstrate semantic properties that have been associated with copy raising in other languages. In English, for example, copy raising produces direct evidence entailments, requiring that the speaker has a certain degree of epistemic certainty regarding the truth of the complement (Asudeh & Toivonen 2012). While this claim might be extended to some cases of hyperraising-to-object, which involve verbs of direct perception, the desiderative example below clearly fails to fall under any kind of epistemic certainty requirement.

(24) é-g-a-bwáŋ-á wʌs-ʌŋ-o [k-é-dát-toð-a ram]
1SG-CLg-RTC-want-IPFV CLg.wife-1SG.POSS-ACC CLg-DPC1-ITER-move-IPFV early
'I want my wife to get up early.'

While no clear examples of copy raising in Moro have been found that *do* exhibit direct evidence entailments, we can at least conclude that the hyperraising constructions in Moro lack one of the properties that has been associated with copy raising in English.[4]

Finally, while copy raising and prolepsis typically involve structurally complete complements without movement (e.g., Salzmann 2017; Lohninger et al. 2022), complementizers are impossible in hyperraising, suggesting they are TPs.

A different analysis of Moro hyperraising would be as operator-movement within the embedded clause. For example, Cinque (1995) suggests such an analysis for pseudorelatives in Romance, constructions where putative subject relatives occur modifying DPs in the complement of perception verbs (Cinque 1995: (1)–(2)).

(25) a. Ho visto [Mario che correva a tutta velocità].
AUX.1SG saw.PRT Mario COMP running at all speed
'I saw Mario running at full speed.' (Italian)
b. J'ai vu [Mario qui courait à toute vitese].
AUX.1SG saw.PRT Mario COMP running at all speed
'I saw Mario running at full speed.' (French)

The complementizer in these examples, Italian *que* and French *qui*, are those that would be expected in relative clauses. However, these constructions cannot be analyzed as relative clauses as the relative head is a proper name, which cannot usually be the head of restrictive relative clauses.

To account for the appearance of relative clause morphology, Cinque argues that Romance pseudorelatives involve operator movement inside the relative clause. The relative predicate is then predicated of the DP in a small clause structure, which the perception verb takes as its complement:

[4] This argument is admittedly weak, reminding me a piece of syntactic advising Masha conveyed to me on several occasions, namely that arguments originating from a different language constitute the weakest kind of syntactic argument.

(26) Ho visto [$_{SC}$ Mario [$_{CP}$ Op$_i$ che t_i correva a tutta velocità]].

The appeal of this analysis is that it would directly account for the subject extraction morphology on the relative complementizer (visible in French), as well as the unavailability of complementizers, which are also absent in subject relative clauses in Moro (2).

But an operator movement analysis falls to the same A-locality facts that doomed the base-generation-plus-binding analyses above, as operator movement is A′-movement. As such, operator movement should be freely available for non-subjects, as in *tough*-movement, for example, which involves operator movement similar to pseudorelatives (Chomsky 1981):

(27) John is easy [Op$_i$ PRO to talk to t_i].

Example (23) would be expected to be grammatical if Moro hyperraising was generated by operator movement, particularly because Moro generally requires pronominal resumption of extracted human objects, for example in clefts (Rose et al. 2014). The fact that (23) is ungrammatical, then, suggests that hyperraising does not involve operator movement.

Further evidence for the distinctness of hyperraising from structures involving A′-movement come from island extraction facts. While Moro subject relative clauses are islands for *wh*-movement (28b), hyperraising complements are transparent for *wh*-movement, as in the *wh*-cleft example in (29):

(28) a. Kúku g-a-bwáɲá madʒí-ki [g-war-ó ŋálo-ŋ]
Kuku CLg-RTC-like-IPFV man-REL.OP CLg.DPC1-insult-PFV Ngalo
'Kuku likes the man who insulted Nalo.'

b. *ŋwə́-dʒə́-ki Kúku g-a-bwáɲá madʒí-ki [g-war-ə́-ŋó]
FOC-who-REL.OP Kuku CLg-RTC-like-IPFV man-REL.OP CLg.DPC1-insult-PFV-3SG.OM
Intended: 'Who does Kuku like the man who insulted (him)?'

(29) ŋw-ʌ́ndʌ́-ki nə́=ŋálo g-ə́-setʃú kúku-ŋ [g-í-vəlíð-ə́]
FOC-who-REL.OP COMP2=Ngalo CLg-DPC2-see-PFV Kuku-ACC CLg-DPC1-buy-IPFV
'What did Ngalo see Kuku buy?'

The transparency of hyperraising complements for A′-extraction follows directly from their status as TPs, which we turn to now.

5. Hyperraising from TP. This section presents an analysis of Moro raising complements in Moro as TPs, whether finite or infinitive. The simplest piece of evidence in support of this analysis is that it automatically derives the observation that complementizers are impossible in raising complements, regardless of their finiteness. The proposal also dovetails with the conclusion that raising complements are TPs in many other languages, directly accounting for their transparency to A-movement under the assumption that CP is a phase. This is true not only of analyses of infinitival complements of raising predicates (Bošković 1997; Landau 2013), but also in some Luyia (Bantu) languages, where hyperraising is generally possible out of finite complements when they lack complementizers (Carstens & Diercks 2013).

A second argument comes from the observation that verbs of perception, which show the hyperraising-to-object pattern, can also take CP complements, but such complements prohibit raising. These complements surface with an intact complementizer, a main clause vowel rather than a subject extraction vowel, and the DP in the embedded clause (30a). These CP

complements do not allow raising, shown in (30b), in comparison with the licit raising structure in (30c).

(30) a. é-g-a-nː-ó [$_{CP}$ t̪á ísːíə j-ʌ-bug-ən-ú]
1SG-CLg-RTC-hear-PFV COMP1 CLj.gun CLj-RTC-strike-PAS-PFV
'I heard that the gun was shot.'

b. *é-g-a-nː-ó ísːíə$_i$ [$_{CP}$ t̪á t_i j-ʌ-bug-ən-ú]
1SG-CLg-RTC-hear-PFV CLj.gun COMP1 CLj-RTC-strike-PAS-PFV
Intended: 'I heard that the gun was shot.'

c. é-g-a-nː-ó ísːíə$_i$ [$_{CP}$ (*t̪á/*nə) t_i j-í-bug-ən-ú]
1SG-CLg-RTC-hear-PFV CLj.gun COMP1/COMP2 CLj-DPC1-strike-PAS-PFV
'I heard the gun be shot.' (15b)

Hence, the emergence of subject extraction morphology, the extraction of the subject, and the disappearance of the complementizer always occur in tandem in Moro.

Finally, an analysis of hyperraising in terms of clausal reduction permits a simple analysis of the subject extraction vowel *é-* as the reflex of a bare T head, thereby facilitating subject extraction by virtue of the absence of a CP boundary. I propose that the indicative root clause vowel *a-* and non-subject extraction clause vowel *ə́-* are the realizations of slightly larger composite head structure, consisting of a composite T and C_{Fin} head (cf. Martinović 2022):

(31) Moro clause vowels (cf. (6))
a. [T_{Fin}, C_{Fin}:Indicative] ⟷ /*a-*/
b. [T_{Fin}, C_{Fin}:Subjunctive] ⟷ /*ə́-*/
c. [T_{Fin}] ⟷ /*é-*/

All Moro T heads are bundled with φ-probes regardless of finiteness; the differences between finite and infinitive agreement can be directly attributed to reflexes of the finiteness feature on T. If the plain complementizer *t̪á*, a CForce head, selects for CFin, the incompatibility of that complementizer and the subject extraction vowel follows naturally. There are several pieces of evidence that clauses with the subject extraction clause vowel are structurally reduced. (I continue to refer to this prefix as the "subject extraction vowel", even though I am analyzing it as a simple reflex of finite T.) First, we can derive the requirement that this vowel is required for cases of subject A′-extraction. To see how this is so, we can begin with the observation that in clauses with the indicative main clause vowel (31a), the subject position has both A- and A′-properties. While thematic agents always surface as the subject in active sentences, suggesting that movement to subject position in Moro is driven by a simple *φ*-probe, the subject DP is associated with A′-properties. Evidence for this conclusion comes from the observation that while Moro generally allows *wh*-in situ for objects, *wh*-in situ is banned for subjects in main clauses; *wh*-subjects must be clefted (Rose et al. 2014):

(32) No in-situ subject *wh*-question
a. *ʌ́ndʒʌ g-í-t̪únd̪-ʌ?
who CLg-DPC1-cough-IPFV
Intended: 'Who is coughing?'

b. *ŋw-ʌ́ndʒʌ́-ki g-í-t̪únd̪-ʌ?
FOC-who-SCLg-OP CLg-DPC1-cough-IPFV
'Who is it that's coughing?'

This observation follows if the subject position in finite main clauses, i.e., those with the main clause vowel in (31a), is in fact a hybrid subject-topic position. Because *wh*-words cannot be topics as they are requesting new information, they are incompatible with this position.[5] The fact that only subjects can function as topics seems to be an instance of what Branan & Erlewine (2022) label A′-movement of the closest DP.

Unlike the main clause vowel, the subject extraction vowel *é-* is compatible with both regular DPs, as in hyperraising, or *wh*-words, as in an earlier stage in the derivation of the cleft in (32b). This means that subject extraction vowels fail to reject *wh*-words in subject position; this would follow if subject extraction clauses lack a topic requirement on their specifiers, explaining why they are required in clear cases of A′-extraction – necessarily cases where the DP has a REL or FOC feature.

The bare TP analysis of the subject extraction clause vowel extends to two other contexts where it occurs as well, contexts that pose similar problems for the idea that *é-* always marks *wh*-extraction from subject position. This clause vowel occurs, for example, in secondary predicates:

(33) é-g-a-ð-aʈ-ó kúkːu-ŋ í-kí g-é-tʃ=ánó kaŋ
1SG-CLg-RTC-find-LOC.APPL-PFV kuku-ACC INESS-CLg.field CLg-DPC1-bad=inside very
'I found Kuku in the field very angry.'

Such examples can be analyzed as bare TPs, with predicate abstraction over subject position; complementizers are similarly prohibited in such cases.

Finally, there is one context where the putative subject extraction vowel occurs but the subject surfaces in situ, namely temporal adjuncts typically translated as 'when'-clauses in English:

(34) é-g-a-vəʈ-ó lɜmú [é-g-é-d-ó um:iə
1SG-CLg-RTC-go.LOC.APPL-PFV Khartoum 1SG-CLg-DPC1-be-PFV CLg-boy
g-é-ʈ-á]
CLg-DPC1-small-ADJ
'I went to Khartoum when I was a small boy.'

This sentence has two subject extraction vowels. The second vowel, which can be found in the clause-final subject relative clause *géʈá* 'that is small', is irrelevant. The relevant subject extraction vowel for our purposes occurs in the copula, which is the main verb of the adjunct, *égédó*; this adjunct clause lacks subject extraction, as it has an intact subject pronoun prefix that is coindexed with the matrix subject; such clauses similarly allow full DPs in subject position. I posit that such clauses are again bare TPs, but with in-situ subjects. Further work on these examples are needed, but they are predicted to disallow complementizers if this is the case – indeed in available examples they never occur. Crucially, they show that the distribution of the putative subject extraction vowel *é* is independent from actual subject extraction, as would be expected if it is a reflex of a bare T head.[6]

A sketch of the analysis of hyperraising from a bare TP complement is given below.

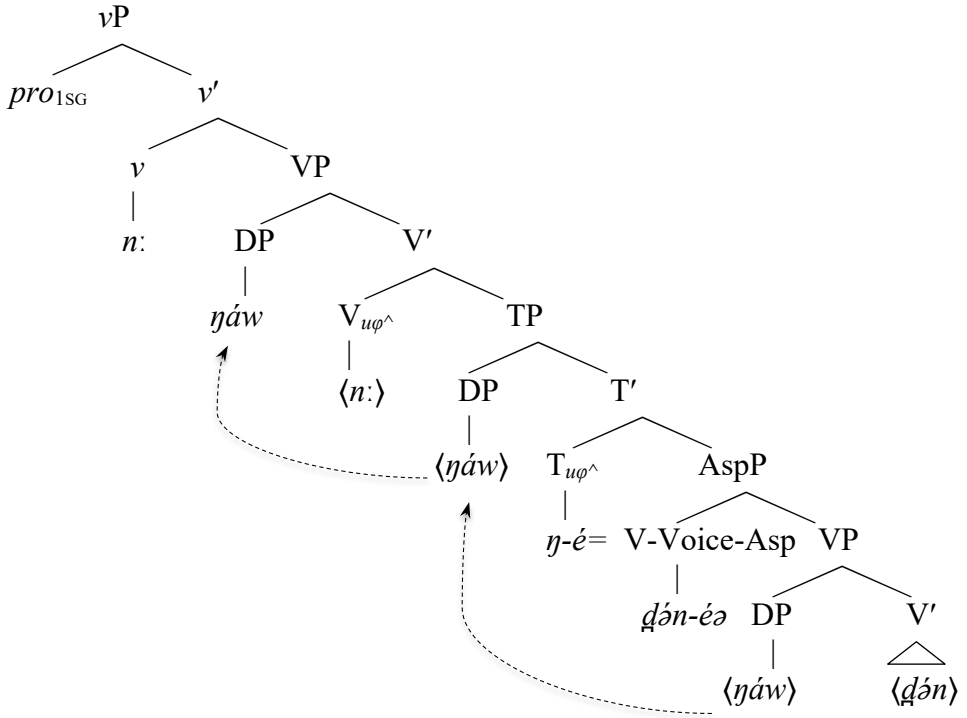
[5] Similar restrictions are relatively widespread in Bantu as well (e.g., Sabel and Zeller 2006), and also occur in Austronesian languages (Potsdam 2006).

[6] Rodrigo Ranero rightly asked whether there is additional evidence that the embedded clauses under consideration are structurally reduced, in particular evidence from the unavailability of left-peripheral positions in the embedded clause, or from tense connectivity effects between the two clauses, of the type provided in Mendes & Ranero (2021) for several Mayan languages. Unfortunately, such evidence is not available, but the predictions of the proposed analysis are clearly that left-peripheral positions should not be available in hyperraising complements.

(35) Hyperraising to object position from TP

a. é-g-a-nː-á ŋáw ŋ-ə́-↓ɖə́n-éə
1SG-CLg-RTC-hear-IPFV CLŋ.water CLŋ-DPC1-rain-IPFV
'I hear it raining.'

b.



The *φ*-probe on the embedded T head is strong, i.e., it is paired with an EPP feature (^), and hence triggers movement of the unaccusative argument *ŋáw* 'rain' to [SpecTP], copying its *φ*-features, which are reflected on the embedded clause in gender agreement. The matrix V, then, also contains a strong *φ*-feature, which probes into the embedded TP, triggering movement of the embedded subject into the main clause. Because the embedded TP demands a DP specifier, and this specifier will always be the closest one to the probing V, the A-locality profile of hyperraising is derived.

6. On the caselessness of Moro subjects. Clausal reduction is a necessary, but possibly not sufficient condition for hyperraising. For example, Wurmbrand (2017) argues that *that*-less complements in English lack a CP layer. Nevertheless, English plainly lacks hyperraising even in the absence of *that*:

(36) *Mary wants him$_i$ [t_i leaves].

In contrast, raising from the subject position of a nonfinite TP, which fails to assign subject case, is fine:

(37) Mary wants him$_i$ [t_i to leave].

The second factor, then, that seems to facilitate hyperraising in Moro is the fact that subjects of finite clauses are able to move to higher case positions. There is some evidence to support the idea that the subject position in Moro may not be associated with structural case, or at least is not a licensing position for DPs.

First, Jenks & Sande (2017) argue that Moro accusative case – only marked overtly on proper nouns and pronouns – is assigned by a dependent case rule under c-command by another DP. One simple argument for this proposal comes from the fact that Moro is a multiple accusative case language, where all *v*P-internal arguments are marked accusative. In ditransitives, for example, both objects are marked accusative:

(38) é-g-a-nac-ó ŋálo-ŋ kója-ŋ
1SG-CLg-RTC-give-PFV Ngalo-ACC Koja-ACC
'I gave Ngalo to Koja. / I gave Koja to Ngalo.'

This fact follows from the dependent case analysis of Moro accusative: the pivot of the cleft is not c-commanded on the surface by another DP, and accusative case is not assigned. Additionally, the case value of the clefted object is the unmarked, nominative case that is also found on subjects. The correct generalization is simply that accusative case is only marked on DPs that are surface-internal to the *v*P, where they are c-commanded by the subject. No Agree-based case rules linked to functional heads are necessary to describe the distribution of case in Moro.

Traditional accounts of raising from infinitives typically assume that the possibility of movement to a case position is available only because infinitive T does not assign structural case to the infinitive subject. Hence, the case licensing needs of the subject of the infinitive can be met in a higher clause. The general logic of this analysis can apply to Moro, with the crucial difference that Moro DPs either lack abstract case features entirely – making Moro a language without abstract case (cf. Diercks 2012) – or that Moro DPs are "self-licensing", as in the analysis of Zulu augments in Halpert (2015), and their morphological case properties are largely divorced from their licensing needs.

7. Clausal permeability and the typology of hyperraising. To summarize the earlier discussion, we can conclude that hyperraising in Moro involves a strong *φ*-probe on T (for raising-to-subject), or on V (for raising-to-object) (Lasnik 2003). A simple *φ*-probe derives A-locality profile without further stipulation: only the highest DP can move.

To be more concrete, I assume that finite verbs in Moro main clauses are always located in T (or higher) in the absence of an auxiliary. One point in favor of this point is that verbs can freely precede all adverbs in Moro, which freely intervene between verbs and objects. With this assumption in place, some sketches of Moro hyperraising are provided below.

(40) [$_{TP}$ ŋáw$_{[DP]}$ ŋa$_{[T:u\varphi\text{^}]}$ [$_{vP}$ rəmə́ʈiə… [$_{TP}$ ⟨ŋáw⟩ ŋə́-↓ɖə́n-éə]]]
water CLŋ.RTC continue water raining
'It keeps raining.' (Raising to Subject)

(41) [$_{TP}$ (*pro*) éga [$_{vP}$ nn-á [$_{VP}$ Kúku$_{[DP]}$ ⟨nn⟩$_{[V:u\varphi\text{^}]}$ [$_{TP}$ ⟨Kúku⟩ gélágá íkí]]]]
I 1SG.CLg.RTC hear Kuku cultivate in.field
'I hear Kuku cultivating in the field' (Raising to Object)

Now compare English, where A-movement is blocked out of finite complements regardless of whether the complementizer is present.

(42) a. *It$_i$ seemed [$_{CP}$ (that) t_i was raining]
b. *I expected Kuku $_I$ [$_{CP}$ (that) t_i cultivated in the field]

Thus, some fundamental syntactic difference must distinguish English-like languages and Moro-like languages that allow hyperraising.

We now can connect the Moro facts to the two central factors that Carstens & Diercks (2013) identify as central to allowing hyperraising. The first is permeability. Moro, like the Luyia languages discussed in Carstens & Diercks (2013), allows TP complements of raising predicates, and these are permeable for A-movement. The second factor is abstract case: Moro seems to be a language, like many Bantu languages, where DPs are "hyperactive", that is, they fail to deactivate for purposes of A-movement, particularly for A-movement from subject position. We have seen a plausible sketch of why this might be the case, namely that abstract case in Moro is not assigned by *φ*-probes.

Moro has an additional factor which Carstens (2011) conjectures is central for facilitating "hyperactivity", namely the presence of inherent gender features on every noun. Carstens argues that the uninterpretability of these gender features makes the nouns active for multiple instances of *φ*-agreement, and that the gender features on N in Bantu are accessible for clause-level probes due to N-to-D head movement, a process that is also characteristic of Moro (Jenks 2014).

As we have seen, then, the analysis of Bantu hyperraising can be extended without too much difficulty to Moro. But whether hyperraising out of CP is available is a point of further cross-linguistic variation. Halpert (2019) demonstrates hyperraising in Zulu can in fact cross CP boundaries with a complementizer in place; Carstens & Diercks (2013) observe that this is also possible in Lubukusu complements headed by the complementizer *mbo*; we saw in the introduction that this is also possible in Brazilian Portuguese. Halpert argues that the permeability of the CP in Zulu derives from the fact that the relevant Zulu C-head lacks *φ*-features, as it is derived from the verb 'say', and argues that the permeability of C heads to *φ*-probes in different languages might in fact be reduced to the presence vs. absence of residual *φ*-features on C in different languages, features that serve as defective interveners for A-movement when present.

However, the Moro C head *t̪á,* banned in hyperraising, is morphologically related to the verb 'say', like its Zulu counterpart. As such, there is no obvious explanation for why the Moro complementizer might be an intervener for hyperraising but the Zulu complementizer is not. In addition, we already saw in (11) that raising from infinitives is similarly impossible if *t̪á* is present. This is not due to a general ban on *t̪á* before infinitival clauses. For example, Jenks & Rose (2017) show that complementizers occur with infinitive complements in instances of what Landau (2013) refers to as "No Control" complements, where the embedded subject position is simply a bound *pro*:

(43) é-g-a-mwandəð-ó kúkːu-ŋ [t̪á áŋɔ́-↓búgí ísːiɔ́]
1SG-CLg-RTC-ask.PFV Kuku-ACC COMP1 3SG.INF-hit.INF1 CLj.gun
'I asked Kuku to shoot the gun.'

Such examples lack A-movement from the embedded CP.[7] Hence, it seems generally true that A-movement is possible from infinitival complements if they are TPs, but not if a complementizer is present.

I would like to suggest that the impossibility of A-movement across CP boundaries in Moro, for both finite and nonfinite clauses, is not due to a general ban on A-movement across CPs due

[7] While there is no space to make this argument further, these examples also provide novel evidence for the lack of a licensing requirement in Moro subjects, or at least that infinitive subjects are somehow able to license subjects. This is because examples like (43) are possible with an overt embedded subject. See Jenks & Rose (2017) for relevant examples.

to their phase-hood, but instead due to a Moro-particular locality constraint on *φ*-probes. In the terminology of Keine (2019, 2020), Moro *φ*-probes have CP *horizons*. Keine carefully demonstrates in his work that cross-linguistic differences in the locality profiles of Agree processes – both long-distance agreement, A-movement, and A′-movement – must be lexically specified on the probe. Keine demonstrates that different horizons must be specified for different types of scrambling and long-distance agreement in Hindi, for example.

The horizon of a probe uF with horizon G is notated uF|| = G. Under this theory, Moro strong *φ*-probes should be characterized as having C as their horizon: u*φ*^|| = C.[8] As a result, heads with *φ*-probes in Moro always halt probing when they encounter a C feature, meaning that CPs are in general impermeable to A-movement in Moro. While this analysis fails to derive the locality profile of Moro from any deeper syntactic parameter, it does successfully identify the locus of variation in the *φ*-probes that trigger A-movement themselves. This analysis also successfully derives the generalization that raising from finite and infinitive clauses in Moro are impossible across CPs in exactly the same way. Finally, such an account can provide a simple account of the arbitrary differences between languages like Zulu or Brazilian Portuguese, which allow hyperraising across CP: such languages simply lack a CP horizon on their *φ*-probes. This analysis is also able to still incorporate the idea that certain nominalized clauses might block probing into their interior, as Halpert argues is the case for Zulu infinitives. If the goal of minimalist analyses of crosslinguistic variation is to identify syntactic differences in the featural inventory of particular lexical items, the horizon-based analysis succeeds on all fronts.

To summarize, we have seen that there are two crucial factors in understanding the raising possibilities of particular languages: the locality profile of movement, in particular the presence or absence of a lexically-specified horizon on the relevant probe, and the case or licensing properties of the DPs themselves. In the case of Moro, A-movement is generally possible out of both finite and infinitival TPs, but impossible out of CPs. This, I proposed, is due to the fact that *φ*-probes are lexically specified with C as their horizons, restricting A-movement out of any constituent larger than TP. Second, Moro DPs lack licensing requirements akin to those in languages with clear activity-based restrictions on nominals, allowing them to freely move between putative case positions.

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[8] Scott (2023: Ch. 3) models Keine's horizons in the context of Deal's (2023) INTERACTION/SATISFACTION model of Agree, where the horizon is one part of a disjunctive satisfaction condition of the probe. Under this view, Moro *φ*-probes would have the specification [INT:*φ*,SAT:*φ*∧ C]. This implementation is preferable as horizons simply fall out from the normal logic of Boolean operators combined with Deal's model of Agree.

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