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Phases and the syntax of applicatives

Martha McGinnis
University of Calgary

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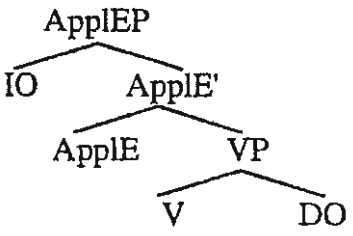
Until recently, cross-linguistic differences in the syntax of applicative constructions have been attributed to arbitrary variation (e.g. Baker 1988, Bresnan & Moshi 1990, Marantz 1993, Ura 1996). For example, it has been argued (McGinnis 1998a, 1998b) that A-movement, like A-bar movement, respects relativized minimality, and that cross-linguistic variations in the formation of the double-object construction arise from the presence or absence of an "escape hatch," which allows the lower object to leapfrog over the higher one to the subject position. Like other accounts that assume arbitrary variation, this account raises a serious learnability question: how could a child learn whether such an escape hatch is available? The present paper offers the beginnings of an answer to this question.

The central proposal is that a substantial amount of the cross-linguistic variation in properties of "applicative" constructions (such as the double-object construction) is reducible to a lexical parameter. The lexicon contains one or more applicative (Appl) heads, which may denote a relation between an event and an individual, or a relation between two individuals (Pylkkänen 2000). (1a) shows the first type, and (1b) shows the second.

(1) a.



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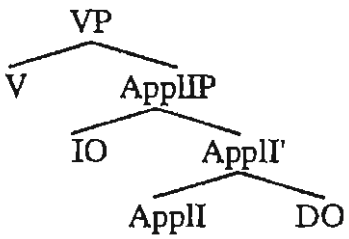

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The semantic distinction between E- and I-applicatives has consequences for phrase structure (note the different structures in (1)), and for locality domains, which in turn yield a wide range of consequences, relating to transitivity, A-movement, quantifier scope, wh-movement, and phonological phrasing.

1 Preliminaries

1.1 Asymmetries in applicatives

There are a number of asymmetries in the syntax of applicatives, both within and across languages. An example of the kind of variation that arises can be seen in the differences between Kinyarwanda Benefactive and Locative applicatives (Kimenyi 1980).

One well-known difference between the two types of applicatives is in their transitivity properties. An applied Benefactive can be added to a transitive (2a) or intransitive (2b) predicate. An applied Locative can also be added to a transitive predicate (3a), but not to an unergative one, even one with an implicit object (3b).

(2) a. Umugóre a-rá-som-er-a **umuhuûngu** igitabo.
woman SP-PRES-read-APPL-ASP boy book
'The woman is reading a book for **the boy**.' *AK (3,7)*[1]

b. Umugabo a-rá-som-er-a **umugóre**.
man SP-PRES-read-APPL-ASP woman
'The man is reading for **the woman**.' *AK (4,40)*

(3) a. Umuhuûngu á-r-íig-ir-á-ho **ishuûri** imibáre.
boy SP-PRES-study-ASP-LOC school mathematics
'The boy is studying mathematics at **school**.' *AK (5.4,12b)*

b. * Umuhuûngu á-r-íig-ir-á-ho **ishuûri**.
boy SP-PRES-study-ASP-LOC school
'The boy is studying at **school**.' *AK (5.4,8b)*

Another difference is in the A-movement properties of the two types of applicatives. In the passive of a Benefactive applicative, either the Benefactive (4a) or the Theme (4b) can raise to the subject position.

(4) a. **Umukoôbwa** a-ra-andik-ir-w-a *t* íbárúwa n'ûmuhuûngu.
girl SP-PRES-write-APPL-PASS-ASP letter by boy
'**The girl** is having the letter written for her by the boy.' *AK (6,3c)*

b. Íbárúwa i-ra-andik-ir-w-a **umukoôbwa** *t* n'ûmuhuûngu.
letter SP-PRES-write-APPL-PASS-ASP girl by boy
'The letter is written for **the girl** by the boy.' *AK (6,3b)*

In the passive of a Locative applicative, the Locative can become the subject (5a), but the Theme cannot (5b).

[1] Abbreviations for citations are as follows: *AK* (Kimenyi 1980), *AM* (Marantz 1984), *AS* (Seidl 2000), *BM* (Bresnan & Moshi 1990), *CF* (Falk 1990), *DK* (Dalina Kallulli, personal communication), *HT* (Thráinsson 1979), *HV* (Hyman & Valinande 1985), *KA1* (Kisseberth & Abasheikh 1974), *KA2* (Kisseberth & Abasheikh 1977), *LR* (Rizzi 1986), *OJ* (Olafur Jonsson, personal communication), *VM* (Massey 1992).

(5) a. **Ishuûri** ry-oohere-j-w-é-ho *t* igitabo n'úúmwáalímu.
school SP-send-ASP-PASS-ASP-LOC book by teacher
'**The school** was sent the book by the teacher.' *AK (5.4,19c)*

b. * Igitabo cy-oohere-j-w-é-ho **ishuûri** *t* n'úúmwáalímu.
book SP-send-ASP-PASS-ASP-LOC school by teacher
'The book was sent to **school** by the teacher.' *AK (5.4,24)*

The examples in (6) and (7) show a third potential difference between the two types of applicatives, namely a difference in their pronoun incorporation properties. When pronominal, either object of a Benefactive applicative (or both) can be incorporated into the verb (6). In a Locative applicative, only the Locative argument can be incorporated (7a); the Theme cannot (7b).

(6) a. Umugóre a-rá-**mu**-he-er-a *t* ímbwa ibíryo.
woman SP-PRES-OP-give-APPL-ASP dog food
'The woman is giving food to the dog for **him**.' *AK (4,56c)*

b. Umugóre a-rá-**bi**-he-er-a umugabo ímbwa *t*.
woman SP-PRES-OP-give-APPL-ASP man dog
'The woman is giving **it** to the dog for the man.' *AK (4,56a)*

(7) a. Úmwáalímu y-a-**ry**-oohere-jé-ho *t* igitabo.
teacher SP-PAST-OP-send-ASP-LOC book
'The teacher sent the book to **it**.' *AK (5.4,20)*

b. * Úmwáalímu y-a-**cy**-oohere-jé-ho ishuûri *t*.
teacher SP-PAST-OP-send-ASP-LOC school
'The teacher sent **it** to school.' *AK (5.4,25)*

1.2 Theoretical assumptions

Various accounts have been proposed for the set of asymmetries in Section 1.1 , but all have relied on a formal stipulation—LFG's functional requirements (Bresnan & Moshi 1990), GB's Case properties or government domains (Baker 1988, Marantz 1993), or Minimalism's "escape-hatch" EPP specifier positions (Ura 1996, McGinnis 1998a). However, Pylkkänen (2000) argues that transitivity properties of applicative constructions arise from a semantic difference, rather than simply from arbitrary syntactic variation. She argues that there are two types of applicatives, which we can call E-applicatives and I-applicatives.[2] The E-applicative head (ApplE) denotes a relation between an event and an individual, while the I-applicative head (ApplI) denotes a relation between two individuals.

As a consequence of its semantics, ApplE merges with a VP complement and a DP specifier, yielding the structure in (1a), while ApplI merges with a DP complement and a DP specifier, yielding the structure in (1b). Both types of structures have been proposed elsewhere in the literature as potentially universal representations of the double-object construction (e.g., by Marantz (1993) for (1a), and by Pesetsky (1995) for (1b)).

[2] E-applicatives are Pylkkänen's "high applicatives," and I-applicatives her "low applicatives." The terms adopted here reflect the assumption that the applicative heads differ not just in their position in the verb complex, but also in their intrinsic semantics. Thanks to Tony Kroch for clarifying this point.

The effects of the semantic difference between ApplE and ApplI can be seen in examples like those below. The Albanian Benefactive, an E-applicative, can be used even when no directional or "prospective possessor" relation obtains between the two objects. Thus, (8a) is fine, where the Benefactive *Dritës* 'Drita' is not a prospective Source or Recipient of the Theme *çanten time* 'my bag'. However, the English Recipient applicative cannot be used in such a context, since, as an I-applicative, it necessarily involves a relation between the two objects (8b).

(8) a. Agimi i mban **Dritës** çanten time.
A.NOM CL holds D.DAT bag.ACC my
'Agim holds my bag **for Drita**.' *DK (p.c.)*
(e.g., so she can put something in it)

b. *John held Mary the bag.

Pylkkänen's proposed structures for the two types of applicatives capture the observation that the semantic difference in (8) corresponds to a difference in transitivity properties. An Albanian-type applicative (ApplE) can be be used with unergative verbs, including those with an implicit object, since it merges with VP. An English-type applicative (ApplI) cannot be used with unergatives, since it merges with the DP object. Examples (2)-(3) show this contrast for Kinyarwanda Benefactive (ApplE) and Locative (ApplI) applicatives. Similarly, Benefactive applicatives in Kichaga (9) and Albanian (10) involve ApplE, so the Theme argument can be omitted. Recipient applicatives in English (11) and Icelandic (12) involve ApplI, so the Theme argument is obligatory.[3]

(9) a. N-ã-ĩ-lyì-í-à **ìm-kà** k-élyà.
FOC-1S-PR-eat-APPL-FV 1-wife 7-food
'He is eating food for/on **his wife**.' *BM (2)*

b. N-ã-ĩ-lyí-í-à **ìm-kà**.
FOC-1S-PR-eat-APPL-FV 1-wife
'He is eating for/on **his wife**.' *BM (12)*

(10) Drita i pjek **Agimit** (rrepat).
D.NOM CL bake A.DAT turnips.ACC
'Drita bakes (turnips) for **Agim**.' *DK (p.c.)*

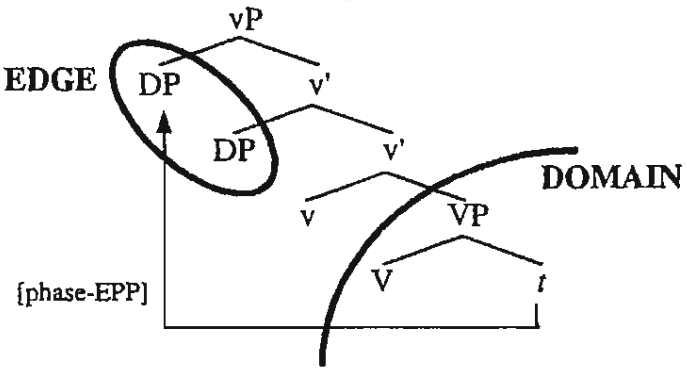
(11) Mary baked **Alicia** *(a cake).

(12) Ólafur bakaði **henni** *(köku).
O.NOM baked her.DAT cake.ACC
'Olafur baked **her** *(a cake).' *OJ (p.c.)*

[3] Woolford (1984) points out that there are ditransitive verbs in English for which, apparently, the Theme argument is optional (i). However, the nominalizations of such verbs may allow a Recipient argument (ii), unlike the nominalizations of other ditransitives (iii). This suggests that the Recipient argument in (i) and (ii) is an argument of the lexical root (cf. Marantz 1997), not an 'applied' argument. This account may not cover all of Woolford's examples (e.g., *write, tell*).
(i) I feed cows (hay). / I teach children (French).
(ii) the feeding {of hay to cows / of cows}, the teaching {of French to children / of children}
(iii) the baking {of cakes for Alicia / *of Alicia}, the gift {of a book to John / *of John}

Let us adopt Pylkkänen's proposals concerning the phrase structure and semantics of the two types of applicatives, and the consequences of these for their transitivity properties. Let us also adopt Chomsky's recent proposal that syntactic derivations undergo semantic and phonological interpretation in incremental chunks or *phases* (Chomsky 1999, 2000). Phases (i.e., "strong" phases) can be headed by C, D, or by active, theta-assigning *v*. Once a phase is complete, movement and agreement operations can target its head and constituents in its *edge*—adjuncts and specifiers, like those circled in (13)—but cannot target constituents in its *domain* (complement), marked off by the curved boundary in (13).[4]

(13)



In some cases, however, EPP features can be added to a phase before it is complete, allowing a constituent in its domain to move to the edge. For example, Chomsky proposes that Germanic object shift involves the movement of an object from the domain of *v*P to its edge to check phase-EPP features, as in (13).

2 Phases and the two types of applicatives

We can now proceed to our central proposal, according to which the different semantic properties of an applicative head affect not only phrase structure, but also *phase* structure. That is, different XPs may count as phases, depending on whether a clause contains ApplE, ApplI, or neither. (14) achieves this result.

(14) The sister of VP heads a phase if it assigns a theta-role to a syntactic argument.

The boundaries in (15) demarcate the domains of the phases resulting from (14). ApplE heads a phase, since it is the sister of VP and—perhaps in combination with VP—assigns a theta-role to the applied argument (15a). By contrast, ApplI is not a sister of VP, so it need not head a phase. Instead, here, as elsewhere, *v* heads a phase if it assigns a theta-role (15b). Assuming that unaccusative and passive *v* do not assign a theta-role to a syntactic argument, they also need not head phases.[5]

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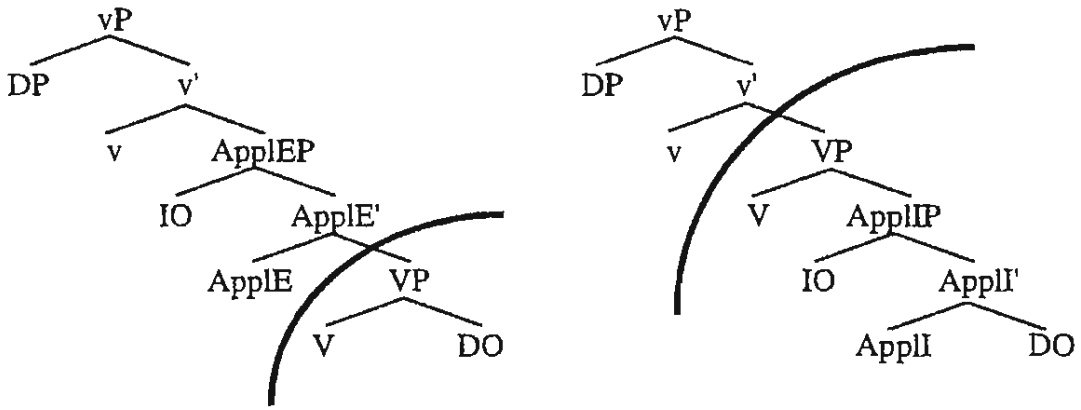
[4] It is assumed here that the domain of a phase is inaccessible to syntactic operations as soon as the phase is complete, rather than simply at the next phase. This view is supported by the arguments given below. The contrast between (i) and (ii) provides independent support for this view. Here, the NP *ship* originates in the domain of the DP phase *the ship*. If this domain is accessible until the next phase (CP), *ship* should be able to move to subject position in spec-TP, as in (i), assuming that the EPP feature of T can be checked by NP. However, (i) is out, suggesting that the domain of the DP phase is inaccessible as soon as the phase is complete. Of course, the entire DP phase can move to spec-TP, as in (ii).

(i) * $[_{CP}\ [_{TP}\ [_{NP}$ Ship$]\ [_{vP}$ sank $[_{DP}$ the $t]]]]$.

(ii) $[_{CP}\ [_{TP}\ [_{DP}$ The ship$]\ [_{vP}$ sank $t]]]$.

[5] See Embick (1997) for arguments against theta-assignment by *v* in unaccusatives and passives.

(15) a. *E-applicative* b. *I-applicative*



Ideally, (14) should be derived from some broader generalization. Chomsky (1999, 2000) proposes that a phase is a proposition; another possibility is that it is a domain of semantic predication, created by adding either an 'external' argument or an applied argument to the VP predicate. Another possibility is that the constituents here represented as V or N are really category-neutral lexical roots (Marantz 1997, Harley & Noyer 2000), and that the head responsible for determining a root's morphological category heads a phase. For example, if the lexical root is the sister of D, it is morphologically nominal; if it is the sister of *v* or of ApplE, it is morphologically verbal.

The latter proposal is supported by evidence that D does indeed head a phase. If derivations are strictly cyclic, a branching DP must be constructed separately before merging with a larger structure—a characteristic of phases (Chomsky 1999). Moreover, NP cannot be extracted from the complement position of a DP (see fn. 3 above). Supposing that DP is a phase, this observation follows from the claim that the domain of a phase is inaccessible to further operations once the phase is complete. Plausibly, then, D heads a phase because it determines the morphological category of the root, and *v* and ApplE behave likewise.

For the present, however, any broader understanding of (14) remains speculative. The focus here will be on the following distinction: in an E-applicative, ApplE heads a phase whose domain contains the Theme argument, while in an I-applicative, *v* heads a phase whose domain contains both the Theme argument and the applied argument.

3 Consequences

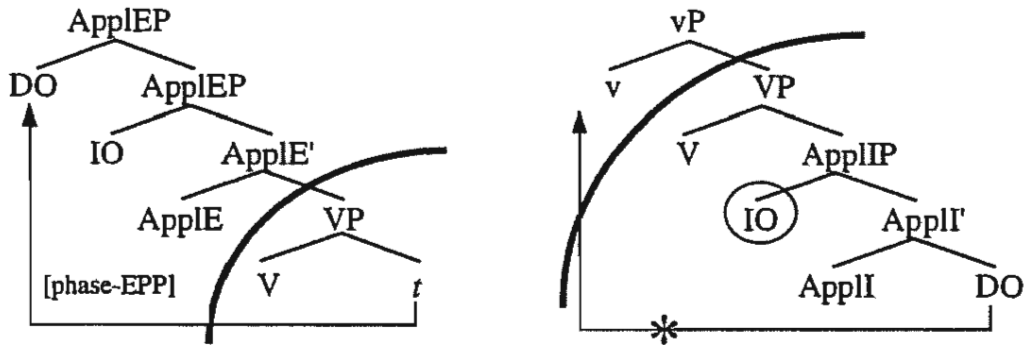
The proposal in (14) has consequences for A-movement and agreement (or pronoun incorporation). In an E-applicative, only the lower object (the Theme) is embedded within the domain of the ApplEP phase, so it can check an EPP feature added to this phase. In an I-applicative, both objects are within the domain of the *v*P phase, so if only one phase-EPP feature is added, it can be checked only by the higher, applied object.

3.1 A-movement

A-movement respects locality (relativized minimality). Thus, in a passive or raising I-applicative construction, only the higher, applied object can undergo A-movement to the subject position. Since the higher object is the DP closest to T, it blocks the lower object from undergoing A-movement to the specifier of T (16b). However, in a passive or raising E-applicative, a lower argument can raise to the subject position. This is because a

phase-EPP feature can be added to ApplE in the passive, allowing the lower argument to leapfrog over the higher one, as in (16a). Once the DO occupies a higher specifier of ApplE, it is the closest DP to T, so it can move to spec-T.

(16) a. *E-applicative* b. *I-applicative*



As noted above, Benefactives in Kichaga (17) and Albanian (18) are E-applicatives. These applicatives allow the lower DO (Theme) argument to leapfrog over the higher IO (Benefactive) to the subject position of a passive (17a)-(18a). Kichaga also allows the Benefactive argument to raise to the subject position (17b). This possibility may arise because the Theme remains in situ, or because it raises to a specifier of ApplE below the IO, rather than above it as in (16a). We return briefly to this issue in Section 4.1. The A-movement properties of Kinyarwanda Benefactives are like those in Kichaga, as shown in (4). Although word order in Albanian is fairly free, quantifier-pronoun binding indicates that the Theme is in an A-position c-commanding the Benefactive in (18a), while reverse is true in (18b).[6]

(17) a. K-èlyá k-ĩ-lyì-í-ò **ìm-kà** *t*.
7-food 7S-PRES-eat-APPL-PASS 1-wife
'The food is being eaten for **the wife**.' *BM (5c)*

b. **M-kà** n-ã-ĩ-lyì-í-ò *t* k-èlyâ.
1-wife FOC-1S-PRES-eat-APPL-PASS 7-food
'**The wife** is having the food eaten for her.' *BM (5b)*

(18) a. Secili libër iu kthye **autorit të tij** *t*.
each book.NOM CL returned.NACT author.DAT its
'Each book was returned **to its author**.' *VM (3,66)*

b. **Secilit djalë** iu dha *t* paga i tij.
each boy.DAT CL gave.NACT pay.NOM his
'**Each boy** was given his pay.' *DK (p.c.)*

Recipient applicatives in English and Icelandic are I-applicatives, so only the Recipient can raise to subject position. A phase-EPP feature added to *v* can be checked

[6] According to Dalina Kallulli (personal communication), (18b) is acceptable. However, Massey (1992) suggests that only the Theme can become the subject of the passive. This observation can be captured if the Benefactive has structural rather than inherent Case, but its Case feature must be morphologically dative and so cannot be checked on T (McGinnis 1998). It is unsurprising if the grammars of some Albanian speakers lack this arbitrary morphological constraint.

only by the higher argument, since this argument blocks the lower one from raising past it to spec-T. Since ApplIP is not a phase, no phase-EPP feature can be added to ApplI, to allow the DO to undergo A-movement to a specifier above IO.

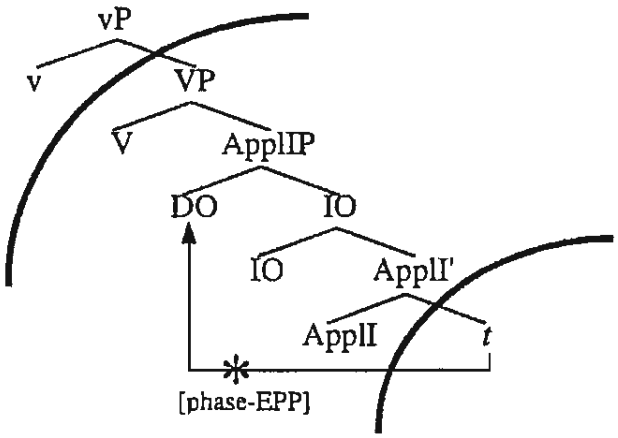
(19) a. **Alicia** was baked *t* a cake.
b. * A cake was baked **Alicia** *t*.

(20) a. **Honum** var gefin bókin.
him.DAT was given.NOM the book.NOM
'**He** was given the book.' *CF*

b. * Bókin var gefin **honum**.[7]
the book.NOM was given.NOM him.DAT
'The book was given to **him**.' *CF*

Suppose, contrary to what has been suggested above, that ApplIP is indeed a phase, but it has no phase-EPP feature added to it—or that such a feature cannot be checked by its complement, the Theme/DO (21). At first glance, this would seem to allow an alternative account of the ill-formedness of (19b) and (20b). The Theme would be trapped in the domain of the ApplIP phase, unable to escape via phase-EPP, while the Recipient would move to spec-T as described above.

(21)



However, there is considerable evidence that (21) is not the correct account of (19)-(20). Suppose that the DO cannot move past the IO, as in (21), simply because the complement of a head H cannot move to spec-H. Under this view, a lower DP that is not the complement of ApplI should be able to move to spec-ApplI. For example, in a raising construction with an Experiencer, the lower DP is an embedded spec-T, not the complement of ApplI. Under the proposal just stated, an embedded subject should always be able to move to spec-Appl. Instead, we see the familiar contrast between E-applicatives and I-applicatives in raising constructions. In Icelandic, the Experiencer can raise to the subject position (22a), but the embedded subject cannot leapfrog past it (22b). In Italian, by contrast, the embedded subject can move to the subject position (23). This difference follows if the Experiencer construction is an I-applicative in Icelandic, and an E-applicative in Italian. Since ApplIP is not a phase, there is no phase-EPP to allow the

[7] Although in some cases the nominative Theme can raise to the subject position of the passive in Icelandic, Falk (1990) argues that it can do so only if it is base-generated above the dative Recipient.

embedded subject to move over the Experiencer in (22). In (23), the embedded subject escapes the domain of the ApplEP phase via phase-EPP movement to spec-ApplEP.

(22) a. Jón telur [mér virðast *t* [Haraldur hafa gert þetta vel]].
J.NOM believes me.DAT to.seem H.NOM to.have done this well
'Jon believes Harald to seem **to me** to have done this well.' *HT*

b. * Jón telur [Haraldur virðast **mér** [*t* hafa gert þetta vel]]. *HT*

(23) Gianni non **gli** sembra [*t* fare il suo dovere].
G. not him.DAT seems to do his duty
'Gianni does not seem **to him** to do his duty.' *LR (22b)*

Further evidence against (21) comes from other types of movement. For instance, the Theme can undergo *wh*-movement and quantifier raising (QR), which would be impossible if the Theme were trapped within the domain of ApplIP. *Wh*-movement of the Theme is shown in (24).

(24) Which medal did Reuben award Ben Johnson *t* ?

Bruening (1999) argues that in examples like (25a), the Theme must undergo QR to resolve the antecedent-contained deletion (ACD) of the VP. As a result, the Theme takes wide scope over the intensional verb *refused*, as shown in the LF representation (25b).

(25) a. Reuben [$_{VP}$ refused to award Ben Johnson every medal that Eva did [$_{VP}$ ~~refused to award Ben Johnson~~]].

b. Reuben [every medal that Eva did [$_{VP}$ refused to award Ben Johnson *t* [$_{VP}$ ~~refused to award Ben Johnson~~]]].

To verify this claim, consider (26), which allows either a narrow-scope *de dicto* or a wide-scope *de re* reading for the quantifier. Under the *de dicto* reading, Reuben made a categorical refusal to award Ben Johnson any medals that Eva had told him to buy, without necessarily knowing which medals these were. Under the *de re* reading, Reuben refused to award Ben Johnson a set of medals, each of which Eva had told him to buy. In (25), *every medal* must take wide scope over *refused*. Thus the 'multiple refusals' *de re* reading is available for (25), but the 'categorical refusal' *de dicto* reading is not.

(26) Reuben refused to award Ben Johnson every medal Eva told him to buy.

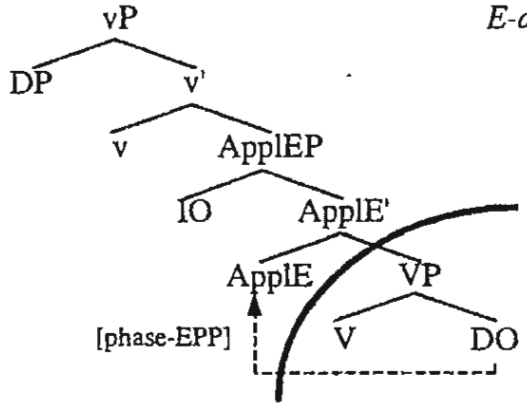
These examples show that the Theme of an English Recipient applicative can undergo syntactic movement, even though it cannot undergo A-movement to the subject position. Thus, we can conclude that the Theme is not trapped within the domain of an ApplI phase. We return to *wh*-movement and QR in Sections 4.2 and 4.3.

3.2 Object agreement

The phase account of applicatives can make predictions for object agreement as well. Suppose that in some cases, a phase-EPP feature is added to ApplE in the active voice as

well as in the passive. Alexiadou & Anagnostopoulou (1998, fn. 7) have suggested that an EPP feature can be checked by feature-movement. If phi-features of the Theme/DO move to check a phase-EPP feature on ApplE, this will appear as object agreement or pronoun incorporation (27). For example, in a Kichaga Benefactive, the Benefactive (28a), the Theme (28b) or both (28c) can undergo pronoun incorporation. This follows if Benefactive incorporation involves a checking relation with *v*, while Theme incorporation involves a checking relation with ApplE.

(27) *E-applicative (DO agreement)*



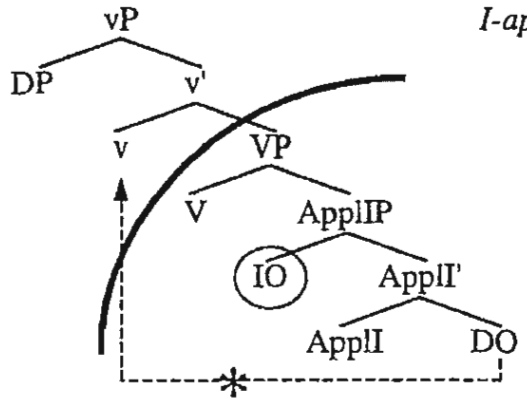
(28) a. N-ã-ĩ-**m**-lyì-í-à k-èlyâ.
FOC-1S-PR-1O-eat-APPL-FV 7-food
'He/she is eating food for/on **him/her**.' *BM (7a)*

b. N-ã-ĩ-**kì**-lyì-í-à **ìm-kà.**
FOC-1S-PR-7O-eat-APPL-FV 1-wife
'He/she is eating **it** for/on the wife.' *BM (7b)*

c. N-ã-ĩ-**kì**-**ì**m-lyì-ĩ-à.
FOC-1S-PR-7O-1O-eat-APPL-FV
'He/she is eating **it** for/on **him/her**.' *BM (7c)*

In an I-applicative, however, even if *v* has a phase-EPP feature, only the higher object can check it by feature-movement. Because of locality, the higher IO blocks *v* from attracting features from the lower Theme/DO (29).

(29) *I-applicative (*DO agreement)*



Examples are given in (30) from the Chi-Mwi:ni: Recipient applicative. Here the Recipient can trigger agreement (30a), but the Theme cannot (30b).

(30) a. Hamadi Ø-**wa**-pik-il-ile **wa:na** cha:kuja.
Hamadi SP-OP-cook-APPL-T/A children food
'Hamadi cooked food for the **children**.' *KA2, AM (7.12b)*

b. * Hamadi Ø-**sh**-pik-il-ile wa:na **cha:kuja**.
Hamadi SP-OP-cook-APPL-T/A children food
'Hamadi cooked **food** for the children.' *KA2, AM (7.20)*

4 Extensions

We have seen that asymmetries in transitivity, A-movement, and object agreement or pronoun incorporation can be derived from the semantic difference between ApplI and ApplE, in combination with the proposal in (14). We can now consider how this proposal can be extended to capture asymmetries in phonological phrasing, quantifier scope, and wh-movement in applicative constructions.

4.1 Phonological phrasing

Seidl (2000) makes the striking observation that phonological phrasing in Bantu languages is closely related to variation in the derivation of the passive. If an applicative allows symmetric passives, both objects are generally bracketed in the same phonological phrase with the verb. If only the higher object can become the subject of the passive, the two objects are generally in separate phonological phrases.

Example (31a) is from Kinande, a language with symmetrical passives. In Kinande, a process of Penultimate Vowel Lengthening (PVL) applies only at the right edge of a phonological phrase (Hyman & Valinande 1985). PVL applies to the Theme in (31a), but not to the Recipient. This indicates that the two objects are in the same phonological phrase ([V IO DO]). By contrast, the Chi-Mwi:ni: Recipient applicative has an asymmetric passive: only the higher object can raise to the subject position. In Chi-Mwi:ni:, a process of Vowel Length Shift (VLS) applies only at the right edge of a phonological phrase (Kisseberth & Abasheikh 1974). Since VLS applies to the Recipient in (31b), we can conclude that it is phrased separately from the Theme ([V IO] [DO]).

(31) a. [Tu-ká-βi-túm-ir-a omúkali valinánde]. →
Tu-ká-βi-túm-ir-a omúkali valiná:nde.
we-PAST-T-send-APPL-FV woman Valinande
'We have just sent Valinande to the woman.' *HV, AS (5.7)*

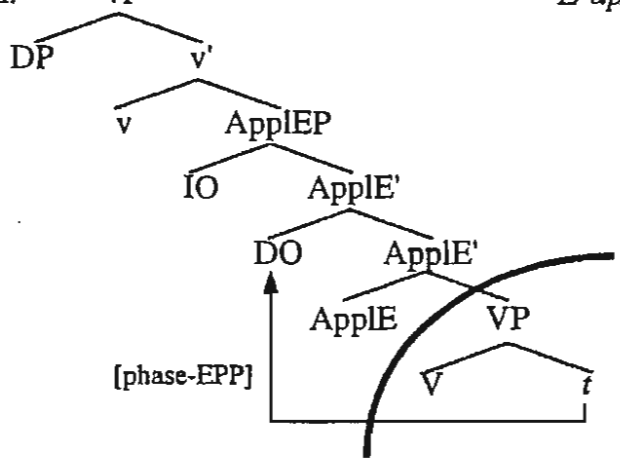
b. [Ni-mw-andik-il-ile nuru:] [xatí]. →
Ni-mw-andik-il-ile nu:ru xatí.
SP-OP-write-APPL-FV Nuru letter
'I wrote Nuru a letter.' *KA1, AS (5.9)*

To account for this generalization, Seidl argues that in a symmetric applicative (E-applicative), the DO raises to spec-Appl.[8] In an asymmetric applicative (I-applicative), the IO raises to spec-*v*, but the DO remains in situ. Under the account given here, the Theme/DO of an E-applicative raises to spec-ApplE to check phase-EPP (32a). In an I-

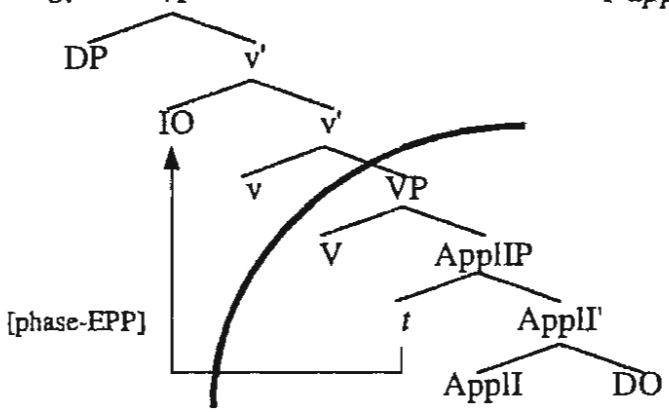
[8] Seidl also suggests that the IO moves to spec-*v* in symmetric applicatives, but this movement is unnecessary under the assumptions adopted here.

applicative, only the more local IO can raise to spec-*v* to check phase-EPP. The Theme/DO is left in the domain of the *v*P phase, while the IO is at its edge, as in (32b).

(32) a. *E-applicative (Symmetric)*



b. *I-applicative (Asymmetric)*



The phonological phrasing facts follow if we assume that the domain of a phase is phrased separately from its edge. The correlation between phases and phonological phrases supports the view that phases are units of the syntax interpreted separately by the phonological component.

This line of reasoning brings us back to an issue raised in Section 3.1. As we have seen (in (4) and elsewhere), an E-applicative may allow a 'short' passive, in which the higher object moves to subject position (4a), in addition to the 'long' passive made possible by a phase-EPP feature on ApplE (4b).

(4) a. **Umukoôbwa** a-ra-andik-ir-w-a *t* íbárúwa n'ûmuhuûngu.
girl SP-PRES-write-APPL-PASS-ASP letter by boy
'**The girl** is having the letter written for her by the boy.' *AK (6,3c)*

b. Íbárúwa i-ra-andik-ir-w-a **umukoôbwa** *t* n'ûmuhuûngu.
letter SP-PRES-write-APPL-PASS-ASP girl by boy
'The letter is written for **the girl** by the boy.' *AK (6,3b)*

Consider the possible accounts of the optionality in (4). One possibility is that the phase-EPP feature on ApplE is optional, so the DO remains in situ. Another possibility is that the phase-EPP feature on ApplE is obligatory, but that the DO can raise to a specifier either above or below the base position of the IO. When the DO raises to the higher

specifier of ApplE, it can become the subject of the passive. When the DO raises to the lower specifier, the IO can become the subject of the passive.

Two observations support the latter option, whereby phase-EPP on ApplE is obligatory, but the c-command order of the DO and IO in spec-ApplEP is free. First, many languages with symmetrical passives have both IO-DO and DO-IO order in the active voice. Secondly, recall that in an active E-applicative, phonological phrasing of the IO and DO does not simply vary optionally: generally, the two are phrased together. Under the account given above, this means that phase-EPP on ApplE is obligatory.[9] If phase-EPP on ApplE is obligatory in the active, we can assume that it is also obligatory in the passive.[10] We can now make the following proposal:

(33) a. A constituent can check a feature of a head H in a specifier either above or below a constituent base-generated in spec-H.

b. When a head has two features of the same type, the two constituents that check these features preserve their existing hierarchical order.

The optionality in (33a) allows the DO to check phase-EPP in a position either above or below the base-generated position of the IO in spec-ApplE.[11] The restriction in (33b) yields rigid ordering and scope effects discussed by Richards (1997), Bruening (1999), and Rezac (2000), among others. This proposal dispenses with the notion that specifiers of the same head are equidistant for the purposes of further syntactic movement. Rather, the highest specifier is the most local to a c-commanding head.

4.2 Quantifier scope

The phase account of applicatives also makes predictions for quantifier scope. It has long been observed that quantifier scope is 'frozen' in the English double-object construction (Aoun & Li 1989). For example, the double-object construction in (34a) allows the direct scope reading, in which the same child receives all the dolls, but not the inverse scope reading, in which each doll goes to a different child. This construction contrasts with the prepositional dative in (34b), which does allow an inverse scope reading in which each child receives a different doll.

(34) a. I gave a child each doll. $\exists \gg \forall$, $*\forall \gg \exists$
b. I gave a doll to each child. $\exists \gg \forall$, $\forall \gg \exists$

Bruening (1999) argues that quantifier scope is frozen because QR respects locality. Thus a lower quantifier cannot undergo QR over a higher one to take wide scope. Assuming that QR is a type of phase-movement, the restriction follows from the I-

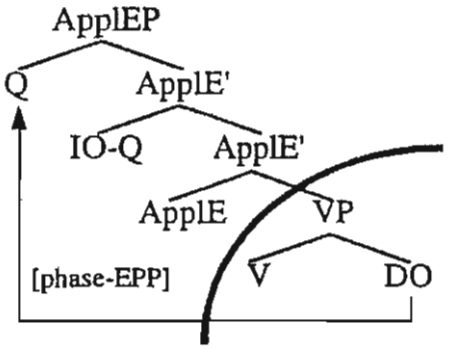
[9] However, there are cases in which ApplE lacks phase-EPP in active ditransitives with no movement of either object. For example, although the syntax and semantics of the Kichaga Benefactive indicate that it is an E-applicative, in the active its phonological phrasing is [V IO][DO]. As expected, Kichaga also disallows DO-IO word order.

[10] Thanks to Christina Tortora for raising this issue. According to Seidl (2000), the DO of an E-applicative remains in the same phonological phrase as the verb, even when the IO raises to the subject position. This phrasing supports the view that the DO raises to spec-ApplE in the passive. More surprisingly, however, the same phrasing arises in a passive I-applicative, where the DO is presumably still in the domain of the *v*P phase. One possibility is that the verb remains in situ in a passive I-applicative.

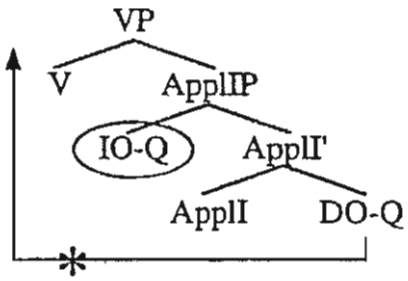
[11] Independent support for (33a) comes from the variable (S>O, O>S) order of the thematic subject and a shifted object in Icelandic transitive expletive constructions (Jonas 1996).

applicative structure given for English Recipient applicatives (35b). The DO cannot undergo QR over the IO to the edge of the *v*P phase.

(35) a. *E-applicative*



b. *I-applicative*



However, just as E-applicatives allow the lower object to raise to the subject position in a passive, they should also allow the lower object to take scope over the higher one. This prediction is borne out in Albanian (36). This example does allow the inverse scope reading, in which each book goes to a different student. Note that the inverse scope reading is available only when the direct object is clitic-doubled. This restriction can be accouted for if clitic-doubling of the lower object arises when its quantificational component raises to spec-ApplE. This phenomenon is comparable to object agreement with the lower object in E-applicatives (27-28).[12]

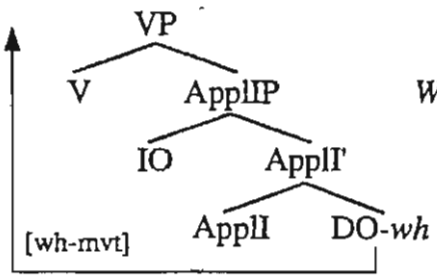
(36) a. Profesori i dha një studenti çdo libër. ∃ » ∀, *∀» ∃
professor.NOM CL gave a student.DAT every book.ACC
'The professor gave a student every book.' *DK (p.c.)*

b. Profesori i-a dha një studenti çdo libër. ∃ » ∀, ∀» ∃

4.3 Wh-movement

A final extension of the phase account can be made to account for cross-linguistic asymmetries in *wh*-movement, in particular an asymmetry noted by Marantz (1993). In languages with only I-type applicatives, like English, the lower object can undergo *wh*-movement past a non-*wh* higher object (see (24)). This follows from relativized minimality: since IO is a DP but not a *wh*-phrase, it blocks A-movement, but not *wh*-movement, of the DO. By hypothesis, phase-EPP features can be of different types. One type, involved in A-movement, targets nominal features (D or phi-features). Another, involved in *wh*-movement, targets a *wh*- or quantificational feature (37).

(37)



Which medal did Reuben award Ben Johnson t?

[12] Kallulli (1999) discusses Albanian clitic-doubling in more detail, as well as quantification.

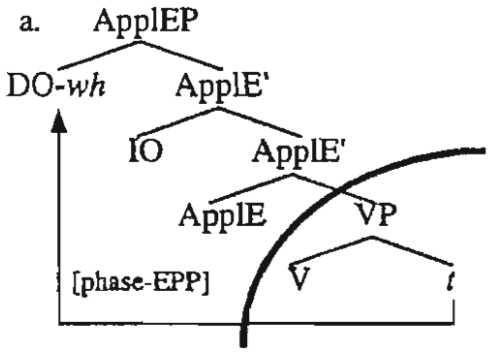
However, in a language with both an E-applicative and an I-applicative, like Kinyarwanda, the movement properties of the lower object differ in the two types of applicatives. The lower object of the E-applicative can undergo both A-movement and *wh*-movement, while the lower object of the I-applicative can undergo neither. The contrast in *wh*-movement possibilities is shown for the Kinyarwanda Benefactive (38a) and Locative (38b) applicatives.

(38) a. N-a-boon-ye igitabo [umuhuûngu ya-a-haá-ye umukoôbwa *t*].
SP-PAST-see-ASP book boy SP-PAST-REL.give-ASP girl
'I saw the book [that the boy gave to the girl].' *AK (4,62b)*

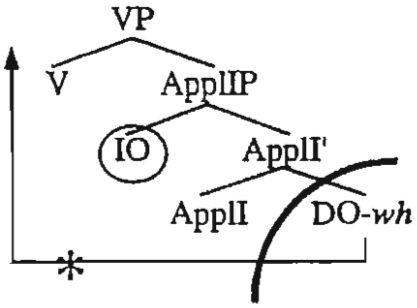
b. *Y-a-tw-eerets-e igitabo [úmwáalímu y-oóhere-jé-ho ishuûri *t*].
SP-PAST-OP-show-ASP book teacher SP-REL.send-ASP-APPL school
'He showed us the book [that the teacher sent to school].' *AK (5.4,26)*

This contrast follows if both ApplI and ApplE are phases in these languages. Suppose that phase-EPP features can be added to ApplE, allowing the lower object to escape the domain of the ApplE phase (39a), but no phase-EPP features are added to ApplI, so the lower object is trapped in the domain of the ApplI phase (39b).

(39) a.



b.



5 Concluding remarks

This is only a preliminary sketch of the kinds of syntactic properties connected to the semantic difference between E-applicatives and I-applicatives. It would be misleading to suggest that all applicatives fall neatly into this characterization. Still, it is clear that the phase account of applicatives makes it possible to express important new generalizations spanning the continuum from phonology to semantics. This account also makes it possible to formulate clear hypotheses about the kinds of evidence learners use to set the lexical parameter that underlies much of the cross-linguistic variation in the syntax of applicatives. As such, it constitutes a crucial step towards an explanatory account of such variation.

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Department of Linguistics
Social Sciences 820
University of Calgary
2500 University Drive N.W.
Calgary, AB T2N 1N4

mcginnis@ucalgary.ca