Against Feature Inheritance: Phase heads are not defined by unvalued phi features

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1. Introduction[*]

This squib distills some of the results and argumentation of Diercks (2011), building a targeted empirical argument that is relevant to the present state of syntactic theory: complementizer agreement constructions in a variety of African languages provide strong evidence against the notion that all phi-features originate on phase heads.[1] This argument responds to proposals by Chomsky (2008) and Richards (2007), among others, that T is lexically defective, bearing no phi-features of its own, and instead inherits its phi-features from the phase head C once C is merged atop T. Complementizer agreement constructions in Lubukusu (Bantu) provide a strong empirical challenge to this notion, however, as will be delineated in what follows. The core data that fuel this argument arise out of the paradigm shown in (1), where a declarative-embedding complementizer agrees with the subject of the matrix clause.

1) a. baba-ndu   ba-bol-el-a   Alfredi   ba-li   a-kha-khil-e[2] [Lubukusu]
       2-people   2S-said-AP-FV   1Alfred   2-that   1S-FUT-conquer
       'The people told Alfred that he will win.'

    b. Alfredi   ka-bol-el-a   baba-ndu   a-li   ba-kha-khil-e
       1Alfred   1S-said-AP-FV   2-person   1-that   2S-FUT-conquer
       'Alfred told the people that they will win.'

As (a) and (b) make clear, the only possible trigger for the agreement on the complementizer in both cases is the matrix subject. The next section will summarize very briefly the properties of this agreement and the analysis as presented in Diercks (2011). The third section discusses the standard conception of feature inheritance and the model of phase-level-operations presented in Chomsky (2008), and the last section argues that existence of agreement relations such as the Lubukusu complementizer agreement relation force us to conclude that phase heads are not defined by unvalued phi features.

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[1] This argument is presented in that paper in an abbreviated form – this paper spells out the argumentation more completely and precisely, with the purpose of presenting a targeted argument against this particular conception of feature inheritance within syntactic theory.
[2] DPs in Lubukusu, like most Bantu languages, belong to one of a variety of noun classes, which are labeled by number, where odd numbers are singulars (e.g. 1) and the immediately ascendant even number is that noun class' plural form (e.g. 2 is the plural of 1).

2. Summary of Lubukusu complementizer agreement

While I refer the reader to (Diercks 2010, 2011) for a full discussion of the empirical facts and theoretical analyses of the Lubukusu complementizer agreement relation, I will briefly summarize the empirical generalizations and theoretical analyses here as they relate to the issue at hand. In (Diercks 2011) I present evidence from a variety of syntactic contexts, including ditransitives, passives, split-antecedence, morphological and periphrastic causatives, and multiple embeddings which lead to the empirical generalization in (2) (Diercks 2011: 5):

2) Lubukusu Complementizer Agreement Generalization:
     Complementizers agree only with the most local superordinate subject

Selecting representative evidence that illustrates this generalization, (3) demonstrates that derived subjects in passives may trigger complementizer agreement, pointing to a structural, syntactic approach to the agreement relation.

3) Sammy   ka-bol-el-wa   a-li   ba-keni b-ola
    1Sammy   1S-say-AP-PASS   1-that   2-guests 2S-arrived
    'Sammy was told that the guests arrived.'

In addition, multiple embeddings like the one shown in (4) demonstrate that the agreement is clause-bounded, that is to say, the lower complementizer can only agree with the intermediate clause's subject, and cannot appear as *ali*, agreeing with the matrix subject *Alfredi*.

4) Alfredi ka-a-loma a-li   baba-andu ba-mwekesia ba-li   omu-keni k-ola
    1Alfred 1S-PST-say 1-that 2-people   2S-revealed   2-that 1-guest   1S-arrived
    'Alfred said people revealed that the guest arrived.'

Both (3) and (4) are illustrations of the generalization in (2); I refer the reader to (Diercks 2011) for a much more extensive discussion of the empirical support for (2), as well as diagnostic evidence in support of the analysis, which is presented in (5):

5) Indirect Agree Analysis of Complementizer agreement in Lubukusu
    [$_{TP}$ Subject$_1$ … [$_{CP}$ OP$_1$ [… C …] …] …]
                └─────────────────┘ └──────┘
                    Binding   *Agree*

My claim in (Diercks 2011) is that the agreement relation between the complementizer and the matrix subject is in fact indirect, such that agreement on the complementizer is triggered locally by a null subject-oriented anaphor (labeled OP above), which in fact has similar properties to overt anaphoric clitics cross-linguistically. I refer the reader to the cited paper for extended argumentation and analysis; what is relevant for our purposes here is that this agreement relation values (previously) unvalued phi features on C, with

features acquired (indirectly) from the matrix subject. It is worth noting that this sort of agreement relation has been reported for 4 other Bantu languages (Kawasha 2007), so it is clear that this phenomena is not an idiosyncratic phenomenon restricted to this particular language variety.[3] As I summarize the core feature inheritance ideas in the next section, it will become clear how the agreement relation reported here for Lubukusu complementizers bears directly on phase theory as it relates to feature inheritance.

3. Derivation by Phase, and Feature Inheritance

While a lot of excellent work has arisen out of the feature inheritance proposals of Chomsky (2008) (e.g. Ouali 2008, 2010, Putnam and Chocano 2010 , others), this squib focuses on the central and influential proposals of Chomsky (2008) and Richards (2007). To my knowledge the subsequent work building on these founding ideas does not alter them in any way that invalidates the argument presented here, and as such I restrict my comments to these earlier proposals.

It is well-known that there is a close connection between complementizers and the T heads that they select, one illustration being "the long-standing observation that raising/ECM (exceptional Case marking)-infinitial T, which lacks C, also lacks phi-features … and independent tense" (Richards 2007: 563). Chomsky (2008) proposes that this relationship is succinctly explained if T in fact always lacks phi-features, and instead the features that it bears in the course of a derivation originate from its selecting C. According to Richards, "[t]his, in turn, allows a uniform characterization of phase heads (C, v*) as the locus of uninterpretable features, as is desirable on computational grounds" (563).

Based on the assumption that uFs, once valued by Agree, are indistinguishable from lexically-interpretable features, Richards (2007) concludes that valuation of features and Transfer to the interfaces must happen simultaneously to avoid positing a mechanism in the syntax to 'look back' at the origin of particular features within a derivation. Syntactic operations are therefore claimed to all take place at the phase level. Richards therefore concludes that "[i]t thus follows from the SMT [Strong Minimalist Thesis] that uninterpretable (unvalued) features can only be a property of phase heads, that is, those heads that trigger Spell-Out/Transfer" (567).

Richards goes on to demonstrate that since phase edges are escape hatches, phase edges must Transfer separately from the nonedge (complement) of the phase head. Richards then argues that these premises necessitate feature inheritance from a phase head to its complement. If phase edges transfer separately from phase complements, however, this predicts that the features on a phase head will be valued in an Agree operation by some syntactic element within the phase complement, but will not be transferred until some higher phase head is merged. This therefore derives feature inheritance, as a phase head must pass its features to its complement in order to ensure that valuation and transfer are in fact simultaneous.

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[3] And to expand on that point, various other CP-level agreement phenomena in Bantu languages may point to a similar analysis, though their particular analyses must be examined on their own merit (Carstens 2008).

While there is more to be said about the empirical support for all syntactic operations occurring simultaneously at the phase level (particularly, the various sorts of evidence presented in Chomsky 2008), in this squib I focus on the claim that phase heads are the locus of uninterpretable features, and that valuation and transfer of these features must happen simultaneously. Given the nature of the empirical evidence considered here, I restrict my comments to the C-level phase, though certainly the conclusions are generalizable.

4. Against Feature Inheritance[4]

Taking (1)a by manner of illustration, it is immediately apparent that the Lubukusu agreeing complementizer runs counter to the predictions of the Feature Inheritance model as discussed laid out in the preceding section. In Lubukusu it is impossible for the complementizer to agree with the embedded subject; it instead agrees only with the superordinate subject (matrix subject in single-embeddings). Clearly, then, the phi-features on C are completely unrelated from the phi-features on its complement T, precisely the opposite prediction of the feature inheritance account. This surface fact is of course not enough to cast aside a feature inheritance model, however, and as such I will consider here a variety of analyses of these facts that could in principle be employed to 'save' any feature inheritance analysis that relies on a strict correlation between uninterpretable phi-features and phase heads. This discussion will demonstrate, however, that no version of these analyses can preserve the idea that unvalued phi features (and all Agree operations) are necessarily introduced at phase heads.

First of all, it is still possible to posit that C bears two sets of unvalued phi-features, one of which is passed to the T complement, the other of which undergoes an Agree relation with the anaphoric operator in its specifier. Beyond being an unfalsifiable claim, however, this undermines the argumentation that derived feature inheritance in the first place – at least one set of phi-features on C clearly were not valued at the point of Transfer, breaking the strict relationship between unvalued features, phase heads, and simultaneous operations at the phase level.

Another angle to preserve a feature inheritance analysis that allows the phi features on T to originate on a phase head would be to propose a more complex structure to the left periphery, at least for these cases of the agreeing complementizer in Lubukusu. Under this approach, a lower CP-level head (Fin, presumably, see Rizzi 1997) would bear phi-features and be defined as a phase head, which therefore would necessarily pass its phi-features to embedded T. The derivation would therefore proceed at the phase level as envisioned by Chomsky (2008). This account therefore requires that the agreeing complementizer in sentences like those in (1) be merged at a higher CP-level, which I

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[4] There are a variety of objections about the feature inheritance account. For example, while Chomsky (2008) states that "[s]ometimes the features of C are morphologically expressed, as in the famous West Flemish examples" (fn. 26), Haegeman and van Koppen provide strong evidence from those same West Flemish varieties that feature inheritance cannot explain a variety of facts involving agreement with conjoined subjects. I will not attempt to make a claim here based on a broad range of work like this, but instead will build a singular argument based on the Lubukusu complementizer agreement construction noted above.

will assume to be Force for the sake of argument. While this would leave the feature-inheritance model of T inheriting phi features intact, it raises the question of whether the phi-features on Force also originate on a phase head. The most obvious candidate would perhaps be $v*$ of the selecting clause, as it bears a relationship with the matrix subject and is already widely-assumed to be phasal. But this proposal runs into a variety of problems. Force is not the complement of $v*$--parallelism with the C-T account requires that V inherit phi features from $v*$, not the complement of V. Proposing that $v*$ passes features to C results in nothing more than an unwarranted stipulation (i.e. justified only because that is where the data shows the phi features to be). Additionally, since not all complementizers in Lubukusu agree, and not all verbs select for complement clauses, it's unclear what would happen to these phi-features on $v*$ in non-complementizer-agreement contexts.

Alternatively, it could be claimed that there is an additional phase head high in the CP above Force, which passes phi-features to Force which result in complementizer agreement. This is of course stipulative as well, as there is no evidence that there are multiple CP-level phases in Lubukusu or in other languages (to my knowledge). Such a proposal is theoretically undesirable as well, as proposing multiple phases within the CP subverts the original computational parsimony of the derivation-by-phase account.

We are forced to conclude, therefore, one of two things. The first option is that the phi-features on C are unrelated to the phi features on T (on a simplex-CP account), which entails that T can bear phi-features independently of C. This account entails that there is no feature inheritance, and unvalued phi features are not properties only of phase heads. The second option to account for these facts is that these are instances of a complex CP where feature inheritance proceeds as has been proposed by Chomsky (2008) and Richards (2007) on a low (phasal) Fin head, whereas the agreeing complementizer occurs independently in a higher position. This approach *also* entails that unvalued phi features are not properties only of phase heads, though it does not in principle rule out some version of feature inheritance explaining the relationship between Fin and T.

I conclude, therefore, that Lubukusu complementizer agreement disconfirms the prediction of Chomsky (2008) and Richards (2007) that phases ought to be defined as the locus of unvalued phi features in the syntax, and that unvalued phi features are constrained to only appearing on phase heads. This is not the only argument in this vein that can be made from languages that display prolific phi-feature agreement, like the Bantu languages. For example, Carstens and Diercks (2011) come to a similar conclusion about feature inheritance based on independent evidence concerning a variety of agreement in manner question words in some Luyia languages, and the argument can perhaps be built from other similar agreement relations in related languages.

While it is perhaps possible to set aside the facts presented here as somehow non-core, and therefore irrelevant for the Feature Inheritance proposals, it is clear that if we are attempting to collapse all feature-sharing relations in language to a single operation (Agree), we surely cannot consider overt manifestations of agreement in language 'non-core' in an effort to preserve an elegant but ultimately flawed notion of abstract manifestations of the properties that same syntactic operation. This squib certainly does not provide arguments against the existence of phases, or even against particular

unvalued features (that serve independent syntactic purposes) as defining phase heads. What it does argue, however, is that unvalued phi features cannot be considered to be the 'identifiers' of a phase head, and that unvalued phi features do not find their locus in a single phase head. While in ways this draws apart the tightly constrained system of Chomsky (2008) and Richards (2007), from another perspective these results allow a more universal notion of Agree that accounts for the sorts of agreement relations that occur across a broad range of languages, a desirable result given the central role that Agree plays in current Minimalist conceptions of the architecture of the human faculty of language.

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