On Co-occuring Plurals and Classifiers in Khmer

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1 Introduction

This paper examines Khmer (Cambodian) plural morphology and its manifestation within the DP structure. Khmer is an understudied language generally as well as within the group of classifier languages. The Khmer data offers an opportunity to add to the understanding of the behaviour of classifier languages. The plural paradigm this paper focuses on is particularly interesting, because the Khmer plural manifests by reduplicating adjectives. The proposed structure will draw on the derivation of plurals as proposed by Borer (2005) and make use of Local Dislocation (Embick, 2006; Embick and Noyer 2004, 2001) to derive the surface linear order. We will see that, contrary to Borer's prediction, the Khmer DP structure allows plural morphology and a classifier to surface together, as seen in (1).

(1) Pu   mien kon.srey toiʔ.toiʔ   bey niəʔ.
     Uncle has   daughter small.small.PL three person.CL
     'Uncle has three small daughters.'

In this example, the noun is modified by a reduplicated adjective, which also indicates a plural reading of the phrase. In addition, a cardinal, *bey* 'three', and the classifier *niəʔ* also modify the noun. According to Borer (2005) classifiers perform division in the languages that have them (e.g. Chinese), I will show that the Khmer classifier does not provide this necessary division property, leaving the task to something else. The Khmer strategy appears to be reduplication of the adjective.

This paper will answer the questions: (i) why does the adjective appear to expone plural, but the noun does not, and (ii) why can the plural morphology and classifier surface together? I posit that a reduplicative morpheme (RED) that concatenates with the adjective at PF giving rise to the reduplicated adjective. The classifiers that Borer describes always modify the noun. There are cases of classifiers that modify numeral quantifiers or cardinals instead. I argue the Khmer Classifier is this type and not the Borer type. The Khmer classifiers are therefore, not prohibited from surfacing together with the plural.

Section (2) will introduce the Khmer DP and provide the data. Section (3) will discuss the theoretical background in conjunction with the puzzles that Khmer presents. In Section 3.1 a parallel problem in Nez Perce (Deal, 2016) is discussed, comparing a plural paradigm in Nez Perce with the Khmer data. In Section 3.2 Borer's 2005 proposal is discussed in further detail and the problem that Khmer poses for that work. And in Section 3.3 a survey of Southeast Asian languages and their internal nominal domain is discussed in relation to the linearization of the Khmer nominal structure (Simpson, 2005). Section (4) will provide the solution and the derivation for the Khmer DP. And Section (5) concludes the paper.

2   Nominal Structure of Khmer

Khmer is the official language of Cambodia and has 15 million speakers world wide. It is a member of the Mon-Khmer language family. The word order is SVO, as shown in (2), and the syntactic structure is head initial.

(2)   sva   ɲɑm svai.
      monkey throws mango.

      'The monkey throws one or more mangos.'

The DP surface linear order is head final, example (1) repeated below as (3). Khmer word order is fixed and cannot be scrambled.

(3)   Pu   mien kon.srey toiʔ.toiʔ   bey niəʔ.
      Uncle has   daughter small.small.PL three person.CL

      'Uncle has three small daughters.'

The order in (3) is NP>AP>Cardinal> Classifier. The verbal system, like Mandarin, is unmarked (morphologically) for *phi* features, tense, or aspect. Tense and aspect are marked by adverbial aspect markers or serial verb constructions. There is no gender distinction or morphological marking of case or agreement within the DP.

2.1   Bare Nouns

This section first discusses the properties of bare nouns that are specified GENERAL NUM-BER and the interpretational properties of GENERAL NUMBER. Then shows that Khmer nouns are specified for GENERAL NUMBER. In the literature it has been observed that languages with bare nouns specified for GENERAL NUMBER also have classifiers and lack plural (Chierchia, 1998a). In Mandarin nouns are bare and they are modified by classifiers, but there is no observed plural. Cherchia (1998) hypothesizes that Mandarin nouns are all mass and require classifiers in order to be counted. However, there are problematic examples for this hypothesis. One being Persian, which has been shown to have both plural morphology and classifiers (Ghomeshi, 2003; Gebhardt 2009). Khmer joins the group of languages that have both bare nouns (specified for GENERAL NUMBER) and classifiers. Section 2.2, will introduce the Khmer classifier.

Khmer nouns are bare. They are interpreted as GENERAL NUMBER, meaning they do not inherently have a semantic number (i.e. an inherently plural or singular reading). They are neither singular nor plural, but can be roughly translated as meaning 'one or more X' (Rullman and You, 2006). In order to illustrate this kind of underspecification, Rullman and You (2006) offer this thought experiment.

(4)   John saw a child and Mary did too. (Rullman and You, 2006)

In (4) there are 4 possible scenarios: two in which John and Mary saw the same gender children and two in which they saw different gender children. All of these possible scenarios

are true for (4). This illustrates that *child* does not give any information regarding gender: gender is not encoded in *child* and therefore gender has no effect on the interpretation of example (4). This, Rullman and You argue, is exactly how GENERAL NUMBER should be interpreted: singular/plural is not encoded with the bare noun and therefore has no effect on the interpretation, as illustrated in (5) below.

(5)   Vearya tiŋ səpʰo hai Moly kə   tiŋ dai.
        Vearya buy book and Moly also buy too.

        'Vearya buys one or more books and Moly does too.'

In this example, (5), the number of books is unspecified by the noun. Vearya could have bought many books or just one and the same is true of Moly. This illustrates that, just like *child* in (4), the number is not encoded, so the interpretations that are available are unrestricted with respect to number. Jenks (2011) presents data that shows Thai behaves in the same way, although he attributes it to 'vagueness' rather than a lack of encoded number. Rullman and You (2006) present several ways that the interpretation of GENERAL NUMBER bare nouns differ from indefinite (singular) nouns. These include scope, discourse anaphora, and scalar implicatures. I illustrate how these do or do not, in the case of scalar implicatures and discourse anaphora, manifest in Khmer.

In languages with an indefinite singular, under the scope of negation the indefinite noun has two scope interpretations, wide and narrow. For example (6), consider the English example in (6):

(6)   Mary didn't see a student.

In this example, *a student*, can refer to a particular student that Mary saw (narrow scope) or that Mary saw many people, but none of them were students (wide scope). Rullman and You (2006) show that in GENERAL NUMBER languages, only the narrow scope interpretation is available for bare nouns. Khmer follows this pattern too. This is seen in (7), which shows Khmer bare nouns only allow a narrow scope reading under the scope of negation.

(7)   a. kɲom kʰoiŋ kon səh   moui.
          I   see   child student one.

           'I see a student.' (indefinite)[1]

      b. kɲom kʰoiŋ kon səh.
          I   see   child student.

           'I saw one or more students.'

      c. kɲom aʔ kʰoiŋ kon səh   te.
          I   neg see   child student neg.

           'I didn't see one or more students.' (narrow)

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[1]Khmer appears not to have an interpretation like the English wide scope in (6). When the numeral *moui* modifies the noun under negation, the interpretation is not wide, but rather specific. The interpretation is only a specific student was seen, with emphasis on only.

Example (7a) has an indefinite interpretation, constrained to singular by the numeral *moui* 'one'. Example (7b) is interpreted as GENERAL NUMBER, there is no number information provided by the noun. In example (7c), under the scope of negation the bare noun can only have a narrow scope interpretation, aligning Khmer with the behavior of other GENERAL NUMBER languages.[2]

2.2 Classifiers

Canonically classifiers sort NPs into different semantic or grammatical classes (Borer, 2005). For example, there is a Mandarin classifier that assigns NPs into a semantic group of pair-like objects (pairs of shoes, two bowls of soup etc). These classifiers are analyzed as ranging over NPs, thereby dividing them into these semantic groups. The Mandarin classifiers are called numeral classifiers, because cardinals depend on overt classifiers for grammaticality, see example in (8), from Bale and Coon (2014).

(8) liâng *(**zhang**) zhuuozi.
     two   CL   table.
     'Two tables.'   (Bale and Coon, 2014)

The cardinal *liâng* 'two' is not grammatical unless the classifier *zhang* is overt; hence, numeral classifiers. However, Chierchia (1998a) and Borer (2005) both argue that these classifiers have a close relationship with nouns. They argue that the properties of the classifiers that arise from that relationship are what is responsible for their behavior with respect to cardinals. Chierchia (1998a) argues that Mandarin nouns are inherently mass and that classifiers make the Mandarin nouns into count nouns, allowing the cardinals to range over the nouns. Crucially, Chierchia argues that languages without classifiers have the mass/count distinction that is lacking in Mandarin. Borer agrees that Mandarin nouns should be analyzed as mass and that the classifiers provided the count reading, but Borer argues that all languages lack inherent lexical count nouns. I will discuss this further in Section 3.

The Khmer classifier appears to be dependent on an overt cardinal for grammaticality, as the examples (9a-9c) show.

(9) a. Pu   mien kon.srey bey.
         Uncle has daughter 3.
         'Uncle has three daughters.'

     b. Pu   mien kon.srey bey niə?
         Uncle has daughter 3   person.CL
         'Uncle has three daughters.'

---

[2]Neither discourse anaphora nor scalar implicatures work diagnostic tests for general number in Khmer. Discourse Anaphora do not work, because in Khmer anaphoric objects are either full repetitions of the noun, or they are null *pro* objects. The scalar implicatures do not bare out, because the necessary scalar terms are not readily available in Khmer. Of the canonical scales in the literature, I have been unable to find their equivalents in Khmer.

    c. *Pu   mien kon.srey niəʔ
       Uncle mien daughter person.CL
       'Uncle has daughter/daughters.'

In examples (9a) the noun *kon srey* 'daughter' and cardinal *bey* 'three' surface together. Example (9b) adds the classifier *niəʔ* 'person' to the same phrase. Both utterances are grammatical. However, example (9c) shows only the noun *kon srey* 'daughter' and the classifier *niəʔ* 'person' and this utterance is ungrammatical. The Khmer classifier requires the cardinal to be present in order for the utterance to be grammatical.

    This relationship with cardinals is not unexpected, Bale and Coon (2014) explore a similar phenomenon in Quechua and Mi'gmaq. It is important to make clear that the classifier in Mandarin does not need an overt cardinal to be grammatical, but Khmer does.

    Although this variation has been noted in parts of the literature, a concrete hypothesis explaining this variation has not been proposed.

2.3 Adjectives

Adjectives appear to the right of the verb in the surface linear order, as in (10). They can also appear to the left of the noun, as in (11), but in this context the interpretation is verbal or copula like.

(10)   kɲnom kʰoiŋ tʃəkia kʰəmau moui.
       I   see   dog   black   one.
       'I see a black dog.'

(11)   lieŋ ktʃum dahl.tai   kʰəmau mok ah.
       play coal   until.only black   face completely.
       'Playing with cool made your face all black.'

In (10) the adjective, *kʰəmau* 'black', modifies the noun, *tʃəkia* 'dog', in the canonical way. In example (11), the adjective, *kʰəmau* 'black', has the interpretation of making the noun black. The interpretation is similar to when in English we say the *sky is darkening*.

    Here we will concentrate on the adjectives that appear after the noun. These adjectives can also be reduplicated and when they are reduplicated they can have two different interpretations: the first, in (12), has a plural or 'more than one' reading; and the second, in (13), has an intensification reading.

(12)   a. srey   toiʔ.
          woman small.GENERAL NUMBER.
          'One or more small girls.'

       b. srey   toiʔ.toiʔ
          woman small.small.PL
          'Small girls.'

(13) a. Pu   mien kon.srey toiʔ.toiʔ   moui (niəʔ).
          Uncle has   daughter small.small.(INT) one   (person.CL).
          'Uncle has one very small daughter.'
      b. mek krahom.krahom
          sky red.red.(INT)
          'a really read sky/a reddish sky'

In example (12) the noun is modified by an adjective. In the first instance, (12a), the noun is interpreted as GENERAL NUMBER and the modification by the adjective does not change that interpretation. In the second instance, (12b), the adjective is reduplicated and the noun now has a plural interpretation. This plural interpretation is novel. It contrasts with the examples (13a) and (13b). In these examples, when the adjective reduplicates the interpretation is of intensification: *toiʔ.toiʔ* 'really small' or *krahom.krahom* 'really red'. I will focus on just those cases where the interpretation of the noun becomes plural, as in (12) and leave the other interpretations to future investigation. Here, I will only say that the contexts where the intensification reading is available are all constrained by context to being singular entities.

3   Theory and Puzzle

The Khmer DP, laid out in Section 2, presents several problems. This first problem, and the focus of this paper, is the way an utterance receives a plural interpretation in Khmer. The noun, itself, never shows any overt agreement morphology. However, when an adjective is present in the structure and it is reduplicated, the utterance has a plural reading. The second problem is that in Khmer the adjective that triggers the plural interpretation, the classifier, and the noun can surface together. This behavior contradicts the typological predictions in Borer (2005). And finally the surface linear order of the Khmer DP is at odds with the expected underlying structure. This section will discuss each of these puzzles and the solutions will be discussed in Section 4.

3.1   Plural

This section overviews the cross-linguistic range of variation in reduplicated adjectives that license plural readings. When the Khmer adjective reduplicates and the noun is then interpreted as plural, rather than GENERAL NUMBER. The reduplication itself is not unsurprising, however it is unusual that the adjective would mark plural morphologically. There are many cases of reduplication marking plural, but usually it is the noun that reduplicates. Jenks (2011) presents one such case of noun reduplication from Thai.

Another case of reduplication marking plural is an analysis of Nez Perce presented by Deal (2016). In Nez Perce adjectives reduplicate, as well as mark plural. Furthermore, in certain conditions, the noun does not receive plural marking, making the adjective the

only element to expone plural in the derivation. Deal argues that this reduplication pattern is best captured by the linearization process Local Dislocation. [3]

A final example of adjectives exclusively exponing plural (by means of reduplication) comes from Affia and Ghomeshi (2019). In Nigerian Pidgin English adjectives reduplicate to indicate a plural reading, but the nouns are not morphologically marked for plural.

3.2 Plural, Classifier, Cardinal

Borer (2005) proposes a fundamental shift in structure, moving work from lexical indexing to functional structure. Borer motivates this move by observing that structure is always well defined and narrow with respect to its syntactic behavior, but words on the other hand have an ability to be fluid: a word can function as a verb or a noun, depending on how it is merged into the structure. Borer's strong argument is that structure is what provides meaning.

In a response to and a critique of Chierchia (1998a), Borer posits that all nouns have a default mass interpretation. Borer argues that nouns are all 'undivided' when they enter the structure. In order to become count or countable, nouns must be divided by something in the structure. Borer argues count or number on nouns is inherently grammatical and tied to the structure, rather than lexical indexing. Under Borer's analysis plural is a structural position in the derivation that can house, not only canonical plural morphology, in the form of agreement affixes, but also any case where a noun appears to be divided into countable entities. Borer posits a Div^o, a divider head, merged above NP and responsible for the division of nouns. With this proposed structure plurals are 'stuff dividers', as are other number type elements, such as the classifiers we find in Mandarin. They both assign range to an open value in the head of DivP.

Following from the function of the Div^0 Borer proposes that plural morphology and classifiers will never surface in the same structure together, although a language may exhibit them either separately or with an overt cardinal. Plural and classifiers are posited as giving range to the same open value in Div^0, hence they are in complementary distribution. Borer presents data from Armenian as an example of this distribution.

Considering this robust claim and demonstrated typological power, the question that is at the heart of this paper is how can the Khmer plural data be reconciled with Borer's typological prediction? Repeating the example (9c) from section 2 repeated below as (14a), we see that the typological prediction does not hold for Khmer. In Khmer the plural and the classifier are grammatical even when they appear in the same utterance.

(14)   a. Pu   mien kon srey   toiʔ-toiʔ   bey niə ʔ
           Uncle has   child woman small-small.PL 3   person.CL
           'Uncle has three daughters.'

Either Borer's typology is wrong, which is unlikely as the claims it makes for languages

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[3]I refer readers to Deal, 2016 for the full discussion of the data. There is not space here to do the full pattern justice.

like Mandarin are robust and significant, or in Khmer the classifier and plural are somehow not in complementary distribution. This means that in Khmer one or both the plural and the classifier must range over a different head other than Div^o. In Section 4 the function of DivP will account for the Khmer plural reading.

3.3 Linearization

The final puzzle that Khmer presents is how to derive the linear order from the underlying syntactic structure. The surface linear order does not fallout from the proposed syntactic structure. This mismatch is a general tendency in Southeast Asian languages. Simpson (2005) presents a descriptive typology of Southeast Asian languages, demonstrating that what appears to be significant variation in fact can be explained by XP-movemnt within and out of the DP structure.

4 Solution

This section presents the derivation of the Khmer nominal domain under a plural interpretation. I argue the plural interpretation is induced by a reduplicative morpheme and the Khmer classifier merges in the head of #P, rather than the head of DivP, because the classifier is in a closer syntactic relationship with cardinals or quantifiers, than with the noun. Finally, the linear order mismatch is solved by both movement of the NP and by appealing to Local Dislocation, targeting the adjective and the noun. The section is organized by the order of the derivation. I will first discuss the syntactic derivation and then discuss how Local Dislocation applies to that structure at PF.
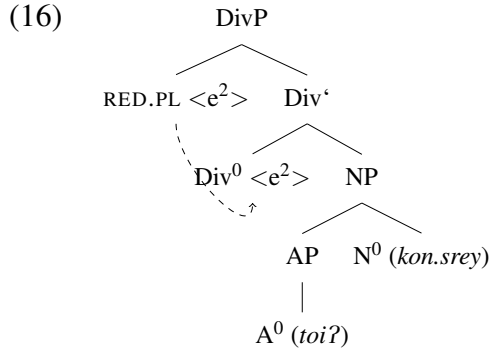
4.1 Syntactic Derivation

An exclusively plural interpretation is triggered in Khmer when an adjective, that is reduplicated, modifies the noun. No other morphological indication of plural is overtly marked in Khmer. Example (1) from Section 1 is repeated below as example (15) for reference.

(15) Pu   mien kon srey   toiʔtoiʔ   bey niəʔ.
     Uncle has   child woman small-small.PL three person.CL
     'Uncle has three small daughters.'

I propose that, following Borer (2005), the individuation of the noun, takes place in Div and that something must give range to the open value in the Div^0. Further, the element that gives range to Div must also trigger reduplication on the adjective. I posit that the plural is a covert reduplicative, RED, morpheme merged into the specifier of DivP. The adjective is a direct modifier of the noun and is merged in the specifier of NP (Alexiadou, 2014; Cinque, 2010). After vocabulary insertion the RED morpheme requires a lexeme with phonological material to fulfill the reduplication requirement. The adjective is the closest head within

the structure, and via the process of Local Dislocation the RED morpheme concatenates with the adjective. I will elaborate on this part of the derivation further in section 4.2. This portion of the derivation is pictured in the tree structure in (16).

(16)

```
                        DivP
                   ╱          ╲
          RED.PL <e²>          Div'
               ╲            ╱        ╲
                ╲      Div⁰ <e²>      NP
                 ╲_↑          ╱    ╲
                            AP    N⁰ (kon.srey)
                            │
                           A⁰ (toi?)
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In this structure the noun is in base position in N^0 and the adjective is merged in its specifier. The Div phrase divides the noun into a plural, by virtue of the plural RED morpheme merged in the specifier of DivP, ranging over the open value in Div^0.
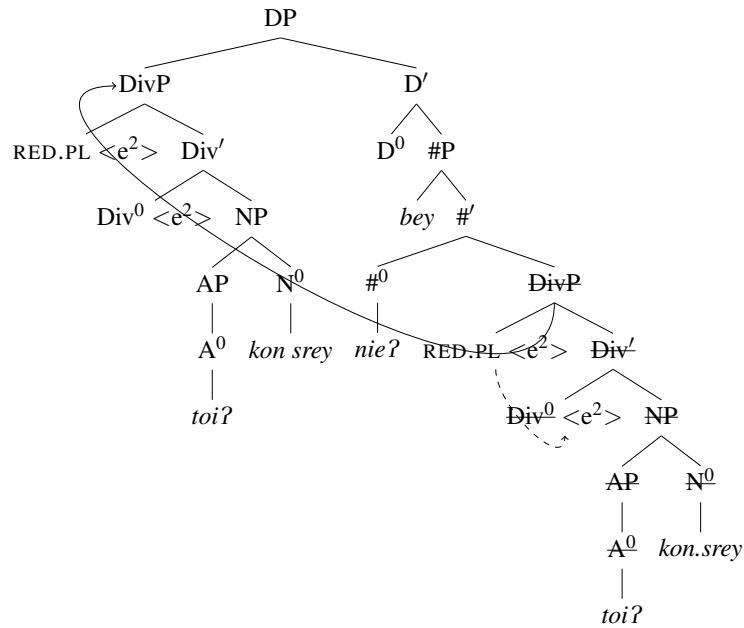
The next stage of the derivation merges the classifier into the head of #P. This diverges from Borer's proposal, which merges classifiers in Div^0. The divergence here is supported by the difference in the behavior the Khmer classifier exhibits and the behavior of the classifiers examined by Borer. As discussed in Section 2 and 3, the Khmer classifier is ungrammatical unless it occurs with an overt cardinal (or indeed a quantifier). The Mandarin type classifiers condition the grammaticality of cardinals: in Mandarin if the classifier is not overt the numeral is ungrammatical.

Following from Bale and Coon (2014) I posit that the Khmer classifier must be in a close structural relationship with the cardinal and numeral type quantifiers. These counting elements (cardinals and quantifiers) merge in the specifier of #P, or the counting phrase (Borer, 2005). The cardinal then gives range to an open value on the head of #P and licenses an overt classifier, also located in the head of #P.

Finally, following the Southeast Asian literature (Simpson, 2005; Jenks, 2011; and others), which argues that at least the noun must move to the specifier of the DP, I propose that in Khmer it is the whole DivP, including the adjective and the noun that moves to the specifier of D, pictured in (17).

9

(17) a. Pu mien kon.srey toiʔ.toiʔ bey niəʔ.
    Uncle has daughter small-small.PL three person.CL
    'Uncle has three small daughters.'

b.

DP
├─ →DivP
│ ├─ RED.PL <e²>
│ └─ Div′
│   ├─ Div⁰ <e²>
│   └─ NP
│   ├─ AP — A⁰ — *toiʔ*
│   └─ N⁰ — *kon srey*
└─ D′
 ├─ D⁰ — *nieʔ*
 └─ #P
   ├─ *bey*
   └─ #′
     ├─ #⁰
     └─ DivP
       ├─ RED.PL <e²>
       └─ Div′
         ├─ Div⁰ <e²>
         └─ NP
           ├─ AP — A⁰ — *toiʔ*
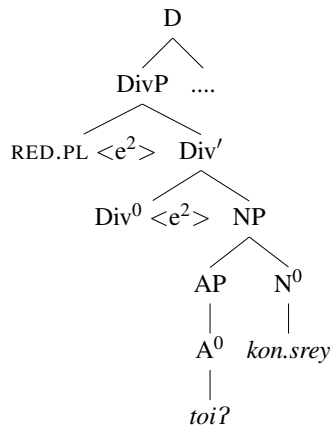   └─ N⁰ — *kon.srey*

This structure follows Simpson's observation that the cardinal and the classifier are the only constituents that are base generated. The surface linear order clearly shows that the noun, adjective, and the plural morpheme all move to the front of the phrase. These three elements must be in proximity at vocabulary insertion, otherwise the surface order can never be derived: any later interaction, during the process of local dislocation, between the noun, adjective, and the reduplicative morpheme would be impossible. The structure in (17) is as far as the purely syntactic process derives the Khmer nominal domain. The surface order this generates is still not the order we find in Khmer. We have now, Adj > N > Num > CL. The next section will tackle the concatenation process that gives rise to the final order.

4.2 Local Dislocation

The structure produced by the syntax is represented in (18). This structure is collapsed and the phonological material is inserted at Vocabulary Insertion. Only at this stage does Local Dislocation apply. The operation has two targets in the Khmer nominal domain: the RED plural morpheme must have phonological material to reduplicate, triggering it to merge with the nearest available lexical item, namely the adjective. And the second target is the concatenation of the noun and the adjective. The process is detailed below.

(18)

```
                          D
                        /   \
                     DivP    ....
                    /    \
           RED.PL <e²>   Div′
                        /    \
                  Div⁰ <e²>   NP
                             /   \
                           AP     N⁰
                            |      |
                           A⁰   kon.srey
                            |
                          toiʔ
```

(19)   Vocabulary Insertion and Linearization:

    a. [$_{\text{DivP}}$ [RED] [$_{\text{NP}}$ [$_{\text{A}}$ *toiʔ*] [$_{\text{N}}$ *kon.srey*]]

    b. [[RED] * [[$_{\text{A}}$ *toiʔ*]* [$_{\text{N}}$ *kon.srey*]]

(20)   Local Dislocation - RED and *toit*:

    a. String-vacuous: (RED⌢*toiʔ*)

    b. Non-string-vacuous: (*toiʔ*⌢RED)

(21)   Local Dislocation - *toit* and *kon.srey*

    a. String-vacuous: (*toiʔ*⌢*kon.srey*)

    b. Non-string-vacuous: (*kon.srey*⌢*toiʔ*)

The base structure generated in the syntax is represented in (18) on the left. On the right, in (19) the vocabulary insertion and the linearization statements are represented. In (20) Local Dislocation is applied to the vocabulary items RED and *toiʔ*. Local Dislocation can apply in two ways: string vacuously as in (20a) or non-string-vacuously as in (20b). The first would result in re-bracketing and the second would result in a linear inversion. In (20) either string-vacuous or non-string-vacuous Local Dislocation could apply. One variable that influences the choice is the way that the phonology applies its reduplication rules: where does the phonology require the RED morpheme to be concatenated with the phonological material it is going to reduplicate? The other variable is what status the concatenated vocabulary items must have after this application of Local Dislocation. After the process applies either the adjective is subsumed under the RED morpheme and becomes a sub-word (a part of the RED morpheme) or the adjective subsumes the RED morpheme, which becomes a sub-word. The consequence of the choice is that only like categories may concatenate further.

In this instance we know that the adjective and the noun must switch places to derive the surface order and for the adjective to concatenate with the noun it must not be a sub-word, or part of the RED morpheme. Therefore, here the Local Dislocation process must be non-string-vacuous and the RED morpheme must become a sub-word attached to the adjective.

Further evidence that the RED morpheme concatenates with the adjective in a non-string vacuous process involve the actual reduplication. In Local Dislocation one clue that two morphemes have undergone the process, is that they will show a *phonological closeness*. Here it is obvious that the adjective shows phonological closeness with the RED morpheme, because the adjective reduplicates. If the RED morpheme subsumed the adjective, we would expect to see evidence of this dominance. For example if after concatenating with the adjective, the RED then concatenated with the noun and subsumed it, we might expect to see both the adjective and the noun reduplicate. This is not the case, therefore once the Local Dislocation process has applied in (20), the RED morpheme becomes a sub-word attached to the adjective.

The next step is the concatenation of *toiʔ*, the adjective, and *kon.srey*, the noun. First,

here I propose that *kon.srey* 'daughter' is what would be called canonically a compound word. Although there does not seem to be a difference in stress, semantically and syntactically *kon.srey* behaves like one word. The words literally translate as 'child woman', but semantically they are only understood to mean 'daughter' or 'girl'. Syntactically they may not be separated.

I will treat the utterance as being one head. This is relevant when considering the concatenation of the adjective with the noun. If *kon.srey* were not one word then one possible outcome of the Local Dislocation process would be that the adjective could concatenate directly after *srey*. This is not what is found in the data. I argue that the correct application of Local Dislocation in this case is a non-string-vacuous concatenation of *kon.srey* and *toiʔ*. This results in an inversion of their order and gives the correct surface linear order. Local Dislocation allows us to maintain a head-initial structure in the nominal domain, while also deriving the unexpected word order. The local dislocation derivation of the reduplicated adjective also explains the unexpected plural reading triggered by the reduplicated adjective.

5 Conclusion

This paper explored several puzzles presented by the nominal domain in Khmer. First, this analysis of the Khmer nominal domain reconciled the co-occurence of the classifier and plural, by positing: i) that the classifier is a type I, that depends on a cardinal for grammaticality, as opposed to a type II classifier where the converse holds; and ii) that the plural is a covert RED morpheme that concatenates with and reduplicates the adjective. The analysis follows the framework introduced by Borer (2005): plural is universally derived by the structure. Nouns enter the derivation un-individuated, undivided. They are then divided by either a classifier in the head of the Division phrase or by a plural morpheme in the specifier of that same phrase. Either of these positions may give range to an open value in the head of the Division phrase, but crucially they may not do so at the same time. This is what prohibits classifiers and plural morphology from surfacing together in one utterance. This, too, is what suggests that the classifier in Khmer must be different than the classifiers Borer analyzes.

The Khmer classifier is ungrammatical unless it appears with an overt cardinal or quantifier. Along with the fact that the classifier can appear with the plural and with further evidence from the close relationship it has with the cardinal, which Borer assumes is in a different projection than the DivP, leads to the conclusion that it must be in a different structural position, than the one proposed by Borer. I posit that the classifier merges in the head of #P and is therefore in a closer structural relationship with numerals or cardinals. Following Borer the cardinals are merged in the specifier of #P. A logical step in this research program would be to analyze and determine what the relationship between the classifier and the cardinal is and discover why the classifier is ungrammatical without the cardinal.

The second problem that Khmer poses is a mismatch between the syntactic structure and the surface linear order. Two operations solve this mismatch. First, Simpson (2005) argues that nouns in many, if not all, Southeast Asian Languages, move to higher positions in the DP. The surface linear order does not match the underlying syntactic structure. Thai and Khmer, Simpson argues, move the NP to the specifier of the DP. I posit that the DivP, including the NP and AP, move to the specifier of DP. The classifier and the cardinal remain in base position. The second operation, Local Dislocation, applies at the interface between syntax and phonology, after vocabulary insertion.

There are two targets for Local Dislocation in Khmer, the RED plural morpheme concatenating with the adjective and the adjective concatenating with the noun. First the RED morpheme concatenates with the adjective, the nearest head in the derivation. The RED morpheme requires phonological content to reduplicate and the adjective provides that material. Second, the adjective concatenates with the noun and exchanges position via non-string-vacuous Local Dislocation. These operations combined with fronting the DivP give rise to the correct surface linear order.

This analysis of Khmer adds to the cross-linguistic data on both plural forms and classifier types. The paper also supports Borer's framework, while showing that not all classifiers are the divider types classifiers. By positing a different kind of classifier the integrity and strength of the framework is preserved while making room to be able to encompass more diverse data.

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