

# The Pre-prefix in Nata: An Interface Account

Joash Johannes Gambarage

The University of British Columbia

## 1. Introduction

In some Bantu languages, the pre-prefix has been claimed to mark definiteness (Bleek 1869; Mould 1974, Givón 1978). In these analyses, the PPF is equated to the English definite article ‘the’ while the absence of PPF is equated to the indefinite English article ‘a’. In this paper I show that pre-prefixed (augmented) Noun phrases (DPs) surface in a variety of indefinite contexts and thus definiteness cannot be their inherent semantic feature. I also show that PPFs may be used in specific or non-specific contexts. I argue that Nata PPFs are weak determiners which do not show any binary contrast of definiteness/indefiniteness and whose construal depends on the interaction between context-of-use and various overt operators or modifiers<sup>1</sup>. Specifically, PPFs are interpreted with respect to quantifiers, operators (i.e. polarity operators such as negation and *wh*- morpheme, modals), and variables such as an Object Marker (OM). When these operators/variables/modifiers are absent the augmented noun is consistently ambiguous between definite and indefinite reading. I argue that uniqueness and familiarity (for singular entities) or maximality (for mass and plural), which are the hallmark of definiteness (Heim 1991; Matthewson 1997; 1998; 1999; Kratzer 1998; Krifka 2003; Ionin 2001; Lyon 1999; Lyons 2011, are presupposed when an object noun co-occurs with the OM or when a noun is used with deictic demonstratives which are inherently definite (see Visser 2008; Bresnan and Mchombo (B&M) 1987 for an account of OM in Bantu). I argue that PPFs (overt or non-overt) share in common the denotation of non-emptiness of a set except where material used with them in a sentence presuppose or assert an empty set (i.e., negative polarity contexts).

## 2. The Meaning and the distribution of pre-prefixes in Nata

### 2.1. *What is a Pre-prefix?*

As with many Bantu languages, Nata (E.45, Guthrie 1948) has a set of noun prefixes (N-prefix) that mark the class of the noun stem (N-stem). For example, the N-stem -gheso ‘knife’ occurs with the class 7 prefix *ki-*, (1a). In addition, prefixed N-stems occur with an element called a pre-prefix or augment

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\* Joash J. Gambarage, is a PhD candidate at The University of British Columbia. Contact: joashj2010@gmail.com. I am very grateful to Rose-Marie Déchaine for both presenting this paper on my behalf at the 43<sup>rd</sup> Annual ACAL Conference and reviewing various aspects of it. This paper would not be in this shape without her valuable comments. However, any error should remain my own. I am also indebted by John Lyons for giving his time to read and meet with me to discuss various aspects of this paper. I also like to thank Mama Helena Mrigo and Gambarage Witare: my parents for correcting my judgments on the interpretation of PPF construal. What a privilege to work with parents-language consultants! I also thank Andrei Anghelescu and Natalie Weber (my fellow UBC graduate students) for proofreading this paper. I specifically thank Lisa Matthewson for encouraging me to develop my Ling. 525 squib to this stage. It is a hell of a trial to forget to mention Josephat Rugemalira who exposed me to the PPF concept for the first time. I also thank an anonymous reviewer for his valuable comments.

<sup>1</sup> In Okanagan Salish, Lyons (2011) offers an analysis of the determiner *i?*, in which he argues that its interpretation relies on the intersection between context of use and the syntax-semantics of the language. The term “weak determiner” is borrowed from his work.

(cf. Maho 1999). For example, the prefixed N-stem *ki-gheso* ‘C7-knife’ occurs with the pre-prefix *e-*, (1b). *Nata* has 21 noun classes (N-classes) (Johannes 2007) and lexically all nouns appear with a PPF<sup>2</sup>.

- |     |    |                             |    |                                   |
|-----|----|-----------------------------|----|-----------------------------------|
| (1) | a. | <i>ki-gheso</i><br>C7-knife | b. | <i>e-ki-gheso</i><br>PPF-C7-knife |
|-----|----|-----------------------------|----|-----------------------------------|

The shape of the PPF is decided on the basis of vowel harmony (Johannes, 2007). That is, the PPF vowel harmonizes with the vowel of the N-prefix. PPF in class 9 and 10 predictably do not harmonize with their N-prefixes because the latter lack a vowel. Moreover, all PPFs except for those in class 10, are vowels. The class 10 PPF is a CV form<sup>3</sup>.

## 2.2. The distribution of *Nata* pre-prefixes

PPFs have a restricted syntactic distribution; they cannot appear in the c-command domain of operators such as negation, question morphemes, the weak epistemic modal *hamwe* ‘might’, and the modifier ‘-nde’ ‘certain’. I describe N-stems that occur without a PPF as having a “null PPF”, or “non-overt PPF” and more specifically a null/non-overt weak D. *Nata* non-overt PPFs are polarity sensitive and they have a more restricted syntactic distribution than overt PPFs as they can only appear in polarity contexts such as negation, question morphemes, and the positive polarity item ‘-nde’ ‘certain’ (see also Progovic 1993 on Kinande (a Bantu language); and Matthewson 1999 on St’át’imcets (a Salish language) in the same spirit). Additionally, nouns obligatorily appear with an overt PPF in the following contexts: with deictics, strong epistemic modals, universal quantifiers (V-quantifier) *-ose* ‘every’/‘all’, habitual aspects, object markers (OM), and for new discourse entities. This is summarized in table (1)<sup>4</sup>.

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<sup>2</sup> The one exception to the generalization that all nouns appear with a PPF is a restricted set of class 5 ‘nouns. For nouns in this class phonological reasons determine whether they occur with a PPF or not i.e., in monosyllabic roots PPFs cannot delete when they are in complete harmony with the prefix vowel (compare examples i and ii) or when tone falls on the ultimate syllable (example iii). The researcher is not aware of any dialectal differences within *Nata*. However, *Nata* speakers bordering *Ikoma* (a sister dialect of *Nata*) are reported to maintain the use of PPF in contexts such as (ii).

- |     |  |      |                                      |       |                                    |
|-----|--|------|--------------------------------------|-------|------------------------------------|
| (i) | *Ø/e-ré:-to<br>PPF-PF-person<br>‘person’ | (ii) | *e/Ø-rí:-to<br>PPF-PF-leaf<br>‘leaf’ | (iii) | *Ø/e-ri:-só<br>PPF-PF-eye<br>‘eye’ |
|-----|--|------|--------------------------------------|-------|------------------------------------|

<sup>3</sup> Class 10 PPF stands out from all other PPFs in a number of respects. It marks plurality i.e., *a-m-borí* ‘goat’ ~ *ca:-m- borí* ‘goats’. It bears a high tone i.e., *a-Ø-ŋwí:na* ‘crocodile’ ~ *cá:-Ø-ŋwí:na* ‘crocodiles’. It has a CV form. It is phonologically unpredictable. It marks N-V agreement. Since these attributes are of N-class prefixes, I suggest that class 10 PPF should be described with a double nature: as a PPF and as a prefix.

<sup>4</sup> The contexts/tests are compiled from works such as Krifka (1993); Matthewson (1998); (1999); Visser (2008); Déchaine and Tremblay (2011) and Lyons (2011).

Table 1: Context for Null and Overt PPFs

Tests/ operators	Null PPF	Overt PPF
Negation	✓	✗
Question morpheme	✓	✗
Weak epistemic ‘ <i>hamwe</i> ’	✓	✗
<i>-nde</i> ‘certain’ modifier	✓	✗
Strong epistemic modal	✗	✓
New discourse entity	✗	✓
Number word <i>umwe</i> ‘one’	✗	✓
∃-construction <i>-nyiho</i> ‘there is’	✗	✓
Demonstratives	✗	✓
Object Marker	✗	✓
∀-quantifier ‘ <i>-ose</i> <sup>5</sup> ’	✗	✓
Habitual aspect	✗	✓

Table (1) clearly shows that there is a considerable amount of overlap in the interpretation of N-stems occurring with null and overt PPF. The absence of PPF in contexts such as the weak epistemic modal, for instance, seems to be independent of a definiteness/indefiniteness contrast. Furthermore, a PPF in environments other than where it is used with the deictic or OM does not necessarily encode definiteness. However, as I will argue below, the PPF in Nata is not semantically vacuous. For instance, it becomes clear that in all polarity contexts PPFs are obligatorily interpreted as indefinites and non-specific. I hypothesize the following about the Nata PPFs:

- i) In the absence of operators overt PPFs are ambiguous between definiteness and indefiniteness.
- ii) PPFs do not encode definiteness unless they are used with deictics, OM or in certain discourse contexts.
- iii) Polarity PPFs and quantified PPFs are interpreted with respect to scope order.
- iv) Non-overt PPFs contribute to assertion of a non-empty set except where they are used in contexts whose semantics deny assertion of a non-empty set (i.e., negative polarity contexts).

### 3. Interpretation of Pre-prefixes

In this section I show that Nata PPFs don’t encode definiteness. I provide an argument that Nata PPFs are weak determiners behaving as indefinites (specific or non-specific) in a variety of contexts. Unlike English indefinites, I show that Nata PPFs are interpreted with respect to modifiers/ operators with inherent definite, neutral or indefinite features. The grammatical function of PPF/D (overt or non-overt) is assertion of existence or non-emptiness of a set except where a DP is used in negative polarity context whose semantics does not presuppose or assert existence non-emptiness of a set. Since non-overt PPFs/Ds contribute to assertion of existence/non-emptiness of a set, I take this as evidence for a non-overt PPF over the absence of a PPF. For that matter, I abandon the usage of the term “unaugmented N” as it strikes me as confusing and inconsistent with the Nata data. Specifically, I assume that all Nata argument nouns are have a DP shell (overt or covert).

<sup>5</sup> The universal quantifier *-ose* ‘every’ in Nata is used interchangeably with a Swahili loan word *kila*, pronounced in Nata as *kira* (see also Krifka and Zerbian 2008). When the Swahili form is used in Nata it is placed before a noun; and a noun appears without a PPF. This may be due to the affect of Swahili structure as Swahili has no PPFs and the universal quantifier *kila* ‘every’ always precedes a noun. Nata has other types of generalized quantifiers like *-ose* ‘all’ and *ke-umwe* ‘each one/ one by one’. Nata lacks the overt existential quantifier ‘some’ and its place is taken by the overt PPF (if there is no interference of other operators in a sentence). Interestingly, Nata uses the form *-ose* to mark both universal quantifiers ‘every’ and ‘all’. The only difference between these universal quantifiers is that ‘every’ is used to quantify singular Ns while ‘all’ is with plural Ns. In this paper I will be concerned with only the quantifiers ‘*-ose*’. I choose to use the truly Nata universal quantifier over the Swahili one.

### 3.1. Defining definiteness and indefiniteness

The English definite D ‘the’ is associated with an iota ( $\iota$ ) operator or with the Maximality operator for plurals which when mapped to a predicate yield the greatest individual(s)<sup>6</sup> (cf. Sharvy 1980; Krifka 2003:194; Heim 2011). For example the denotation of the DP, ‘the dog’ in ‘the dog ran’ and the DP ‘the dogs’ in ‘the dogs ran’ are interpreted with the definite construal as, (2) and (3) respectively:

- (2)  $\lambda x [\iota[\text{DOG}(x)]]$  (adopted from Krifka 2003:194)  
 (3)  $\lambda x [\text{MAX}[\text{DOG}(x)]]$

For that matter, (2) talks about the salient dog and (3) talks about the salient number of dogs in a possible world  $w$ . On the other hand, the English indefinite article  $a$  is analyzed as an existential ( $\exists$ ) quantifier. For instance, the DP ‘a dog’ in a sentence like ‘a dog ran’ can be represented as, (4).

- (4)  $\lambda P. \exists x [\text{Dog}(x) \ \& \ P(x)]$

(4) is generally interpreted with the indefinite construal and it expresses a proposition that there is at least one non-salient dog as opposite to a salient dog in (2). In English the presence of overt determiners (‘a’, ‘the’) restricts the free application of operators  $\exists$  and  $\iota$ , or (MAX) for plural referents, (see Krifka 2003).

Heim (1991) gives an informal definition of definiteness/ indefiniteness that the major distinction between definite and indefinite determiners is a familiar-novel distinction. I claim with Heim (1991); Mathewson (1998); Lyons (1999); Krifka (2003) and the many others that familiarity (and uniqueness) are definite features while novelty, non-familiarity, (and non-uniqueness) are indefiniteness features of Nata DPs. Here, definiteness requires both the speaker and the hearer to be familiar with the discourse referent.

### 3.2. A Wrinkle in the definiteness story of Bantu PPFs

In Nata (see also Progovic 1993 for similar argument on Kinande) PPFs do not encode any binary distinction of definiteness/indefiniteness. When there is no overt operator/modifier to condition the N construal the overt PPF is ambiguous between a definite and indefinite reading. When there are operators/modifiers with definite, neutral, or indefiniteness feature the overt PPF will be interpreted with respect to those features.

#### 3.2.1. An unconditioned overt PPF is ambiguous between definite and indefinite reading.

- (5) a. \* $\emptyset$ -sesé ikayâra  
 b. &a-sesé i-ka-yâra  
 PPF-C9-dog SA-PAST-run-FV  
 = (i) ‘the dog ran’  
 = (ii) ‘a dog ran’

I show that the context-of-use is used in Nata to tease apart the ambiguity conveyed by (5). I argue that context-of-use provides a value for PPF interpretation. The augmented N is interpreted with a definite construal in context such as 6(a) and it is interpreted with an indefinite construal in contexts such as 6(b).

<sup>6</sup> Mass nouns are not associated with the concept of specificity or uniqueness and instead are associated with concepts such as inclusiveness or totality or partiality (see Lyons 1999). Krifka (1993) uses the operator ‘maximality’ in mass nouns to derive a specimen of kind reading.

- (6) a. asesé ikayâra [X shooed a dog in the presence of Y. After 30 min. X says 6a to Y]  
       ‘the dog ran’  
       b. asesé ikayâra [X narrating a tale to Y about a/some dog]  
       ‘a dog ran’

If overt PPFs were definite a noun in (6) would not be ambiguous between the two readings. Note that a similar effect would occur with a noun appearing in the object position.

### 3.2.2. *The DP is definite if a PPF co-occurs with the object marker*

The OM morpheme in Bantu is equated to the pronoun (Bresnan & Mchombo 1987). An object DP used with the OM, as in (7), refers to the salient referent in the context. Indices indicate coreference:

- (7) a. \*Sabhití n-a-ko-ghí-som-a ø-ghí-tabho  
       b. Sabhití n-a-ko-ghí<sub>i</sub>-som-a e-ghí-tabho<sub>i/\*j</sub>  
       Sabhiti ?-3SG-PROG-OM-FV PPF-C7-book  
       Sabbiti is reading the book.

The OM in (7) co-refers the object DP e-ghí-tabho. The combination of the OM and the DP with the PPF yields a definite DP. It is possible to propose that OM here exactly stands as an overt realization of an iota operator. This follows straightforwardly from the fact that DPs in Nata do not possess an inherent definite feature (cf. Visser 2008). The argument here is that languages that lack definiteness contrast like Nata, use OMs to reinforce or clarify the weakened definiteness contrast (cf. Matthewson 1998; 1999 for the same argument).

### 3.2.3. *The DP is definite if PPF is used in context of deictic demonstratives*

Deictic demonstratives are generally considered to be inherently definites (Lyons 1999; Krifka 2003; Visser 2008 etc). Nata deictic demonstratives require a PPF on a noun. I argue that the presence of a deictic demonstrative induces the DP in (8) to be interpreted with a definite construal<sup>7</sup>:

- (8) a. \*Ø-mu-kári ú-no/ u:-ri/ uuu-ri a-ka-rór-a Lucía  
       b. O-mu-kári ú-no/ u:-ri/ uuu-ri a-ka-rór-a Lucía  
       PPF-C1-woman C1-this/C1-that/ C1-that over there SA-PAST-see-FV Lucia  
       ‘This/that woman/that woman way over there saw Lucy’

Nata PPFs are not sensitive to deictic force as both distal and proximal demonstratives can co-occur with an augmented noun regardless the syntactic position (subject or object) in which the noun occurs. (8) shows, however, that nouns occurring with deictic demonstratives in Nata express definiteness<sup>8</sup>.

<sup>7</sup> In Nata deictic demonstratives are accompanied with ostension by hand or lips. Nata and English depart in terms of their morphological restriction. While the use of deictic demonstratives blocks the English indefinite D (Déchaine & Tremblay 2011) this is not the case with Nata. Nata seems similar to Salish languages where the deictic demonstratives also do not block determiners; also that determiners are not induced by the deictic force (see Matthewson 1998/ 1999 on St’át’imcets; Lyons 2001 on Okanagan).

<sup>8</sup> Scholars such as Ionin (2006: 184) presents arguments about the English demonstrative ‘this’ arguing that this is also used in indefinite contexts. Referring to a sentence like “I want to see this new movie. I don’t know what it is about...” she argues that this here denotes a noteworthy property not uniqueness. Lyons (2011: 20) on Okanagan adduces that ‘the Okanagan determiner *i?* denotes non-specificity/ indefiniteness even when it is used with the deictic demonstratives. He cites an example: “Two cups on a table, equidistant from the speaker. Consultant’s comment: Then I’d pass you one of the cups. Nata, however, presents a different case of deictic as both distal and proximal deictic are accompanied by an ostension with hand or lips. This is in line with Lyon (1999) who mentions that when deictic demonstrative are used ‘speaker’s preparedness towards the referent may count in the deictic’s construal.



The context adopted from Ludlow and Neale (1993: 181) makes it clear that a DP in (12) would have a specific reading.

Context: Sabiti is a student and he has been given a book by a female teacher he knows (Wakuru) who he does not expect the hearer of (12) to know. In this contexts the DP *'umwalimu'* is used specifically.

- (12) u-mw-alimú a-ka-h-á e-ghí-tabho ichó  
 PPF-C1-teacher 3SG-PAST-give-FV PPF-C7-book yesterday  
 A teacher gave me this book yesterday.

Example (12) can be summarized as in (13) below:

- (13) a. Speaker's ground: Wakuru a-ka-h-a e-ghi-tabho icho  
 b. Propositions Meant: u-mw-alimu a-ka-h-a e-ghi-tabho icho  
 c. Proposition Expressed: u-mw-alimu a-ka-h-a e-ghi-tabho icho

As seen in (12, 13), unlike definiteness where both the speaker and hearer's knowledge is crucial for encoding definiteness, specificity relies on only the speaker's knowledge and not the hearer's. In a situation where Sabiti was not given the book by any teacher, and instead he bought it from the bookshop, then the negative construction like  $\emptyset$ -*mwalimú wowóse taaheeré ghitabho* 'no teacher gave me this book' would render  $\emptyset$ -*mwalimu* unspecified. I will now turn to polarity and non-specificity licensing.

### 3.3.2. Polarity 1: Negation

Overt PPFs cannot occur in the scope of the negation because the object DP is c-commanded by the Negation. Narrow scope with respect to negation is unambiguously rendered by the polarity non-overt PPF (the covert PPF). The DP in this context is interpreted as non-specific when it scopes under the NEG operator, (14).

[Context: Students visited a bookshop. It was their choice either to buy or not to buy books. Some students bought a book but some didn't. One student says (14)].

- (14) a. Musá ta:-ghor-íre  $\emptyset$ -ghí-tabho  
 Moses NEG-buy-PAST C7-book  
 'Moses didn't buy any book'  
 i. ✓Moses didn't buy any book  
 ✓ $\neg$  [ $\exists$ x [book (x) & [buy (x) (Musa)]]]  
 ii.  $\neq$  There is a book that Moses didn't buy  
 $\neq$  $\exists$ x [book (x) &  $\neg$  [buy (x) (Musa)]]  
 b. \*Musá ta:-ghor-íre [e-ghí-tabho]

In (14) we only get the polarity reading. In this case the book under discussion is non-specific. The Nata example parallels the English case. In (15) the discourse context allows the non-overt PPF to be interpreted with a wide scope over the NEG operator to create a specific reading.

[Context: Students visited a bookshop. Every student was supposed to buy an English textbook by the author Mangi. Moses didn't have any money. Students are in class and one student says (15)].

(Adopted from Matthewson (1998: 95-97))<sup>11</sup>.

<sup>11</sup> Discourse contexts in (15) was used by Matthewson (1998) as a test for specificity in indefinite English and St'át'imcets determiners. It is important to note some differences between Nata, English and St'át'imcets about the behavior of indefinite Ds. With St'át'imcets all non-polarity indefinites take obligatorily wide scope but without the specific construal (see Matthewson 1998; 1999 for a fuller treatment). English and Nata are parallel except that some interface factors (certain morpho-syntax or syntax-semantics) block certain readings to Nata.

- (15) a. Musá ta:-ghor-íre  $\emptyset$ -ghí-tabho  
 Moses NEG-buy-PAST C7-book any  
 ‘Moses didn’t buy a book’
- i. ✓ There is a book that Moses didn’t buy  
 ✓ $\exists x$  [book (x) &  $\neg$  [buy (x) (Musa)]]
- ii.  $\neq$  Moses didn’t buy any book  
 $\neq \neg$  [ $\exists x$  [book (x) & [buy (x) (Musa)]]]
- b. \*Musá ta:-ghor-íre e-ghí-tabho

I will argue that 15(a) the null PPF is syntactically located in wide-scope position in Logical Form. It is clear, at least from this example, that a subset of Nata PPF are interpreted with a wide scope reading just like English indefinites, which also display the wide scope (specific reading) reading of non-polarity NPs (cf. Krifka 1993; Kratzer 1998; Matthewson 1998; 1999; D&T 2011 to mention a few).

### 3.3.2.1. The overt NPI ‘o-ose’ blocks the wide scope effect of the non-polarity PPF

I present evidence from the syntax-semantics ground that certain overt operators block some scopal behaviors. The Nata overt negative polarity item (NPI) ‘o-óse’ blocks the wide-scope reading of the non-polarity DP. It is felicitous to use ‘o-ose’ in context (14), repeated in (16).

[Context: Students visited a bookshop. It was their choice either to buy or not to buy books. Some students bought some book but some didn’t. One student says 16].

- (16) Musá ta:-ghor-íre  $\emptyset$ -ghí-tabho ky-o-ky-ose  
 Moses NEG-buy-PAST C7-book C7-?-C7-any  
 ‘Moses didn’t buy any book’
- i. ✓ Moses didn’t buy any book  
 ✓ $\neg$  [ $\exists x$  [book (x) & [buy (x) (Musa)]]]
- ii.  $\neq$  There is a book that Moses didn’t buy  
 $\neq \exists x$  [book (x) &  $\neg$  [buy (x) (Musa)]]

If we add the overt NPI *o-ose* ‘any’ in context (15) repeated in (17) the sentence is infelicitous:

[Context: Students visited a bookshop. Every student was supposed to buy an English textbook by the author Mangi. Moses didn’t have any money. Students are in class and one student says:]

- (17) #Musá ta:-ghor-íre  $\emptyset$ -ghí-tabho ky-o-ky-ose  
 Moses NEG-buy-PAST C7-book C7-?-C7-any  
 ‘Moses didn’t buy any book’
- i.  $\neq$  Moses didn’t buy any book  
 $\neq \neg$  [ $\exists x$  [book (x) & [buy (x) (Musa)]]]
- ii. There is a book that Moses didn’t buy (unavailable reading)  
 $\exists x$  [book (x) &  $\neg$  [buy (x) (Musa)]]

(17) does not allow the wide scope reading with the use of an overt NPI. Nata presents a different system than that described in Progovic (1993), who argues that in Kinande, the null PPF is an NPI. The point of departure between the overt NPI and the null PPF is that the overt NPI blocks the wide scope reading (quantificational interpretation) of the non-overt PPF while the null NPI allows a wide-scope interpretation<sup>12</sup>.

<sup>12</sup> Fodor & Sag (1982) dismiss the idea that indefinites in English are quantificational due to their tendency of being unconstrained by the island principle. I have not worked Nata sentences containing islands to see whether or not this is true of Nata.



### 3.3.3. Polarity 2: Question morphemes

In Nata the wh-question and yes-no question differ in the way they manipulate PPFs. While in wh-questions the referent is completely non-specific, in yes-no questions the polarity PPF is non-specific when scoped under the yes-no question operator but specific when a wide scope N denotes the assertion of existence.

#### 3.3.3.1. Wh-question morpheme

In Nata wh-questions, the question operator *-ké* does not license the use of PPF on a noun. When the operator *-ké* c-commands a DP *∅-mo-súbhe* ‘man’ (in factual contexts), it yields a non-assertion of existence incompatible with 18(c). However, when the noun is interpreted in non-polarity context we yield an assertion of existence compatible with 18(c). The latter is compatible with Matthewson (1998 and references there in) who adduces that wh-question presupposes the content of a non-questioned portion<sup>13</sup>.

- (18) a.  $\emptyset$ -mo-súbhe-ké u-mw-ná a-tém-ire?  
C1-man-WH PPF-C1-child SA-PASS-PERF  
‘Which man did a/the child beat?’
- b. \*o-mo-súbhe-ké a-tém-ire?
- c. There is some man (the) a child beat but I don’t know which one it is.  
[ $\exists xy$  [child (x) & man (y) & x beat y]]

The N modified with the wh-word *-ké* must be interpreted with the non-specificity construal. My analysis is compatible with Visser (2008) who argues that wh-words in isiXhosa inherently possess a lexical-semantic feature of non-specificity, which induces the interpretation of an the DP with a non-overt PPF. However, in non-factual situations (A/the child didn’t beat any man) the DP will be interpreted with a non-assertion of existence reading.

#### 3.3.3.2. Yes-no Questions morpheme.

When a noun is used in polarity contexts in yes-no questions it can only surface with a non-overt PPF. For that matter the speaker refers to a specific referent in the discourse (19). Otherwise the overt PPF will not be used, (20).

- (19) a. \*Ango no-ku-ror-a [ $\emptyset$ - $\beta$ a-na] ha-yo?<sup>14</sup>  
b. Ango No-ku-ror-a [a- $\beta$ a-na] ha-yo?  
Q SA(2s)-PRES/PROG-see-FV PPF-C2-child C16-there  
‘Do you see (the) children there?’

<sup>13</sup> Reinhart (1997), Petesky (1987) and others, propose a Quantifier Raising (QR) analysis to derive the meaning of wh-questions. I will not attempt to use a QR approach in the present work. It would be interesting to examine the possibility that Nata wh-questions use a QR as there are no wh-words that are in-situ in this language. 18(c) is compatible with the prevailing literature, which argue that wh-words can be interpreted with the existential restrictor yielding a non-empty set roughly equivalent to ‘someone’.

<sup>14</sup> The word ‘*ango*’ in Nata is used to start a yes-no sentence. It can also be used with wh-questions but not as commonly as in yes-no question. The reasons for this may be that yes-no question in Nata have no overt yes-no question operator. The function of this word is usually to cast doubt on what the speaker is enquiring. This means that you can use it when s/he does not believe his/her assertion is true. It can also be used in reported speech (X said that). It is not really the *ango* that precludes the use of PPF on a noun it precedes but other factors, i.e., the amount of doubt, speaker knowledge, etc.

- (20) a. \*Ango no-ku-ror-a [a-βa-na] ha-yo?  
 b. Ango no-ku-ror-a [∅-βa-na] ha-yo?  
 Q SA(2s)-PRES/PROG-see-FV C2-child C16-there  
 'Do you see any children there?'

In example (19) the yes-no question operator licenses the PPF in context of assertion of the existence while in (20) where there is a non-assertion of existence the PPF not licensed. I argue that PPFs in Nata encode non-emptiness of a set, which explains the choice of overt PPF in (19).

These cases indicate clearly that morphosyntax and semantics/ pragmatics play crucial roles here.

### 3.3.4. Polarity 3: Modals

There is an interaction between epistemic modal operators and the interpretation of the PPF construal. I examine two modals here: weak epistemic and strong epistemic.

#### 3.3.4.1. Strong Epistemic Modal

The strong epistemic modal licenses a PPF. The use of PPF with a strong epistemic modal encodes the speaker's assertion of existence.

- (21) a. \*n-o-ku-βón-a [∅-βa-nafunzí] mo-o-∅-shuré  
 b. n-o-ku-βón-a [a-βa-nafunzí] mo-o-∅-shuré  
 ?-2s-FUT-find-FV PPF-C2-student LOC-PPF-C9-school  
 You must/will find (some/\*any) students at school'

The augmented NPs in strong epistemic modal sentences are interpreted with the strong existential force denoting assertion of existence by the speaker. In this context, particularly, the speaker's evidence/ knowledge is used to ascertain the presence of children at school at the time of the utterance. The object DP here is interpreted with the existential quantifier (some) because the PPF is not licensed in a polarity context. If we mark (21) with OM it will yield a definite reading. This sentence is a typical case of specific indefinite PPFs.

#### 3.3.4.2. Weak Epistemic Modal

Contrastively, if we mark (21) with a weak epistemic modal modifier '*hamwe*' the noun may not occur with an augment, (22).

- (22) a. \*Hamwe o-(ghótorá) kubhóna abhanafunzí mo-o-∅-shuré<sup>15</sup>  
 b. Hamwe o-(gho-tór-a) kú-bhon-a ∅-bha-nafunzí mo-o-∅-shuré  
 maybe 2s-(INFT-be able-FV) FUT-find-FV PPF-C2-student LOC-PPF-C9-school.  
 You might (be able to) find students at school'

In (22), two readings are available. When the DP with a non-overt PPF takes wide scope the non-polarity PPF encodes an assertion of existence. The non-polarity PPF at LF is interpreted with the existential force, which presupposes the assertion of existence. In this case the PPF is specific. On the other hand, when the modal operator takes wide scope the sentence presupposes the non-assertion of existence. The PPF in this case is an example of a non-specific indefinite PPF. If OM is marked within a verb (22) will encode definiteness.

<sup>15</sup> In (22) the modal *oghótorá* 'be able'/'might' is completely optional when you use the modifier *hamwe* 'maybe'. *Hamwe* is also used to cast doubt on the existence of an entity. There is no overt realization of the strong epistemic modal; tone marked on the verbal root; the nasal enclitic prefixed on the subject agreement, and future tense are used to contrast with the weak epistemic modal which has an overt modal marker.

### 3.4. Quantificational PPFs are non-specific

Quantificational determiners are determiners that occur in  $D^0$  position. The English example in (23) is from Matthewson (1998: 44-45).

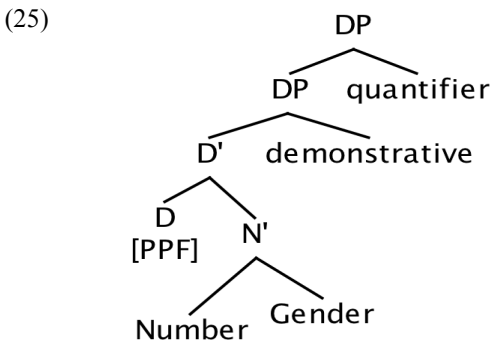
- (23) a. [Every man] loves hockey                      [(*\*the*) every (*\*the*) man] loves hockey  
 b. [No man] loves hockey                            [(*\*the*) no (*\*the*) man] loves hockey  
 c. [Most men] love hockey.                         [(*\*the*) most (*\*the*) man] loves hockey

As seen from these examples, quantificational determiners are in complementary distribution with D for languages with one D head in each DP. I follow the spirit of Bantuists like Visser (2008), Z&K (2008) to argue that PPF are D functional heads. However, quantifiers in Nata do not sit in  $D^0$  position. I give the following examples to qualify my argument.

- (24) a. [u-mw-aná wo-osé] a-ka-bhábhar-a  
 PPF-C1-child SA-every SA-be.sick-FV  
 ‘every child got sick’  
 b. [ta-nyího  $\emptyset$ -mw-aná] a-bhábhe-ere  
 NEG-there is PPF-C1-child SA-die-PERF  
 ‘(there is) no child got sick’  
 c. [a-bha-aná bho-osé] bha-ka-bhábhar-a  
 PPF-C1-child SA-every SA-be.sick-FV  
 ‘all children got sick’

Unlike English, in Nata quantifiers, demonstratives, or modifiers are located phrasal finally (see examples 24(a) & 24(c). 24(b) the NEG is affixed in the copula and thus does not sit in the DP. There is enough evidence that the NegP sits above the light verb ( $vP$  node). The Nata DP internal structure is given in (25).

Figure 1: The Nata DP internal structure



The structure in (25) shows that Nata exhibits multiple DP positions. The order between demonstratives and quantifiers is not rigid. The PPF/D node can be occupied by either the overt or non-overt PPF. Now I turn to show that quantificational PPFs are non-specific.

#### 3.4.1. The PPF quantified by $\forall$ -quantifier is non-specific

PPFs interact in scope with generalized quantifier. The DP contained within the  $\forall$ -quantifier is non-specific.

- (26) a. \*a-n-gúghe yo-osé ye-:ku-r-í e-ghí-toke  
 b.  $\emptyset$ -n-gúghe yo-osé ye-:ku-r-í e-ghí-toke  
 C9-baboon C9-every C9-FUT-eat PPF-C7-banana  
 Every baboon is eating a banana

The quantified DP takes distributive reading when it has wider scope over a non-quantified PPF.

- (27) a. ✓Every baboon ate its own banana  
 ✓ $\forall y$  [baboon (y)  $\rightarrow$   $\exists x$  [banana (x) & y ate x]]  
 b. ≠There is a banana that every baboon ate [Unavailable]  
 ≠ $\exists x$  [banana (x) &  $\forall y$  [baboon (y)  $\rightarrow$  y ate x]]

The case in (27) suggests that the Nata singular ‘-ose’ is the distributive operator D that applies to an individual to generate a universal quantifier over singular individuals (cf. Winter 1997). However, when the quantified DP takes a narrow scope with respect to the lower DP, it yields a collective reading, (28).

- (28) a. ✓There is a banana that every baboon ate  
 ✓ $\exists x$  [banana (x) &  $\forall y$  [baboon (y)  $\rightarrow$  y ate x]]  
 b. ≠Every baboon ate its own banana  
 ≠ $\forall y$  [baboon (y)  $\rightarrow$   $\exists x$  [banana (x) & y ate x]] [Unavailable]

### 3.4.2. PPF Quantified by the Strong Quantifier –ose is non-specific

I show that some quantifiers in Nata do not allow the subject DP to be interpreted with the distributive reading<sup>16,17</sup>. If we replace the  $\forall$ -quantifier in (26) with the strong quantifier –ose, ‘all’ the subject-wide-scope reading is unavailable and the object wide-scope reading is obligatory, (29).

- (29) cha-n-gúghe ch-osé n-ce-:ku-r-í e-ghí-toke  
 PPF-C10-baboon C9-all ?-C10-FUT-eat-FV PPF-C7-banana  
 All (the) baboons are eating a banana

Here, an overt PPF behaves like the St’át’imcet determiners, where non-polarity definites obligatorily take wide-scope reading (cf. Matthewson 1999). This is a case of specific indefinite DPs. The reading can only be definite if we mark the object NP with OM.

### 3.5. Non-Polarity PPFs encode the assertion of existence

It is now clear that overt PPFs are absent in contexts where there is non-assertion of existence such as in polarity contexts, where a speaker casts doubts on the existence of an entity or where a noun is used with a modifier/ overt operator that marks indefiniteness i.e., -ndé ‘certain’. I claim in this part that the non-polarity PPFs (covert/ overt) encodes the assertion of existence.

#### 3.5.1. PPFs co-occurring with imwe ‘one’ encode the assertion of existence/non-empty set.

I assume with Visser (2008) that in Bantu the word for ‘one’ has an inherently neutral lexical semantic feature with respect to (in)definiteness. The use of *imwe* denotes that there is a non-empty set with no more than one entity. In other words, as is the case with the English one, Nata *imwe* ‘one’

<sup>16</sup> The reviewer asked if a sentence such as *three baboons teased a zebra* would be interpreted as one event, where the baboons gang up on the zebra, or can it refer to a series of three events involving a certain zebra in which a different baboon teases the zebra. The answer is that both interpretations are available in Nata. This suggests, as also s/he proposed, that the former interpretation welcomes the analysis of quantification over sets (or plural individuals) while the latter introduces events into the ontology. The concrete analysis lies on the future researcher.

<sup>17</sup> Like ‘-ose’ and OM quantified PPF with numerals like ‘two’, ‘three’ etc. are also not compatible with the subject distributive reading. An analysis of these quantifiers is offered by Matthewson (1999) who utilizes the existential closure (closed at the highest level) over a choice function for non-polarity wide scope indefinites, which she argues are not specific (contra, Kratzer 1998). A subset of Nata PPFs (those interpreted with –ose, numeral quantifiers) is compatible with this analysis but with an additional stipulation that interface factors play a role in PPFs interpretation. Based on the data in Nata I argue that the wide-scope object DP can be specific or non-specific depending on the discourse context.

forces Gricean scalar implicature, so that in (30) only one calabash was broken and not more than one<sup>18</sup>.

- (30) a. \*Ø-ghi-kó kí-mwe ki-gha-aték-a  
 b. e-ghi-kó kí-mwe ki-gha-aték-a  
 PPF-C7-calabash C7-one 7SA-PAST-break-STAT-FV  
 ‘one calabash was broken’

### 3.5.2. The $\exists$ -construction *-nyiho* ‘there is’ encodes the assertion of existence

The modifier ‘*-nyiho*’ asserts the existence of a non-empty set. A ‘there is’ construction is considered to be equivalent to an  $\exists$ -quantifier ‘some’ which also forces the existential readings (see also F&S (1982)<sup>19</sup>. In (31) the noun must surface with a PPF, a marker of a non-empty set.

- (31) a. \*N-a:-nyiho Ø-mo-to ime:rir-e anchi  
 b. Np-a:-nyiho o-mo-to ime:rir-e anchi  
 COP-3SG-there PPF-C1-person standing-FV outside  
 ‘There is a man standing outside’

### 3.5.3. The Null PPF used with the modifier *-ndé* ‘certain’ encodes the assertion of existence

The Nata *-ndé* modifier is an indefiniteness marker always forcing the specific indefinite reading. When the *-ndé* modifier is used with a noun the noun must occur with a PPF. The unaugmented N used with this modifier encodes non-emptiness of a set.

- (32) a. \*o-mo-súbhe wó-nde a-hét-ire há-no  
 b. Ø-mo-súbhe wó-nde a-hét-ire há-no  
 C1-man SA-certain 3pl-pass-PERF C2-here  
 ‘a certain man passed here’

I claim that the modifier *-ndé* is an operator which applies to the predicate to yield a specific individual corresponding to the speaker’s description. It is clear that the interaction between the syntax and the semantics/pragmatics determines the construal of a PPF in Nata.

## 4. Conclusion

In this paper I have argued that PPFs in Nata are weak Ds that assert the existence of an entity and that they do not assert or presuppose familiarity or uniqueness/maximality. Nata PPFs/D (both overt and non-overt) share in common the property of assertion of existence of an entity. I have shown that overt PPFs are definite if they are interpreted with definite material such as OMs, demonstratives, or possessives. With regard to non-overt PPFs, I have argued that their interpretation highly depends on

<sup>18</sup> In English, the number word one cannot occur with the indefinite a. It is agreed that the indefinite a evolved from the number word one (Krifka 2003).

- (i) a. a calabash was broken  
 b. one calabash was broken  
 c. \*a one calabash was broken  
 d. the one calabash was broken

In i(d), the definite the denotes that there is a unique and salient singleton calabash, the reading that Nata has to use pragmatic factors to achieve. In Nata, it is felicitous to use a PPF in singular nouns with the number word *imwe* ‘one’, (30).

<sup>19</sup> F&S’s analysis adduces that ‘there is’ insertion is used both quantificationally and referentially. They argue that referential reading emerges when a large amount of descriptive content modifies an indefinite NP. That is to say, such sentences are ambiguous between quantificational and referentiality. However, some scholars argue against F&S’s analysis by postulating that it is possible to assume a choice function approach (Reinhart 1997; Winter 1997; Kratzer 1998) to obtain such readings.

context of use and/or the material available in the sentence just like their overt PPFs counterpart. Although it is clear from the data I presented that both overt and non-overt PPFs are interpreted with respect to context of use and/or the presence of local elements in a sentence, the formal syntactic/semantic analysis of PPFs remains the object of further research. I have submitted that Nata arguments must be analyzed as DPs and PPFs as weak Ds. This step provides insights in the characterization and description of Nata PPFs. I have argued that the interpretation of PPF draws heavily from various interface correlates (morpho-syntax, syntax-semantics/pragmatics).

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