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### **Definite indefinite stacking in Akan**<sup>1</sup>

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## **1** Introduction

- In many languages, the definite and the indefinite determiner cannot co-occur
  - (1) \*A the / the a boy who came here is my favorite.
- Different accounts for the co-occurrence restriction:

Syntactic: the determiners are both instantiations of the same head and are therefore in complementary distribution.

Semantic/Pragmatic: principles such as Heim's (1983) *Novelty/Familiarity Condition* and *Maximize Presupposition* (Heim, 1991) also rule out the co-occurrence of these determiners

Phonological (Lyons, 1999)

## Puzzle:

- Akan allows definite indefinite stacking in either other; the definite determiner may precede the indefinite determiner *NP bí nó* (2) or the indefinite determiner precede the definite determiner *NP bí nó* (3).<sup>2</sup>
  - Papa bí nó bisa me me noma.
     man INDEF DEF ask-PST 1SG 1SG.POSS number
     After the party, that certain man asked me for my number. (Bombi *et al.*, 2019,

<sup>&</sup>lt;u>187)</u>

<sup>&</sup>lt;sup>1</sup>This work is part of my dissertation on definiteness in Akan. Thank you to my committee Veneeta Dayal, Viviane Deprez, Malte Zimmerman, and my chair Simon Charlow. Special thanks also to the semantics reading group at Rutgers (SURGE), to my colleagues Lydia and Ang and to my consultants Felix, Sampson, Joyce, and Samuel.

<sup>&</sup>lt;sup>2</sup>(Kwa, Niger Congo —spoken in Ghana and Cote d'Ivoire )

(3) Nkorofo nó bí ka-a sε p-re-m-pene.
 people DEF INDEF say-PST COMP 3PL-PROG-NEG-agree
 'Some of the people said they will not agree.' (Amfo, 2010, 1796)

### Goal of this talk

Present the meaning contributions of each determiner and how they meanings combine when the determiners co-occur. Sketch a preliminary compositional analysis of the cooccurrence facts.

## 2 Outline of Talk

- Introduction
- The nominal definite determiner
  - Uses of the nominal definite determiner
  - Analysis
    - \* I argue that *nó* encodes a familiarity and non-uniqueness presupposition
    - \* I propose that that nó does not lexicalize iota
- The indefinite determiner
  - Bí as a specific indefinite
  - Analysis
    - \* Skolemized choice function with a skolem world variable
  - The ignorance inference of bi
- The co-occurrence of the definite and indefinite determiners
  - Bí nó—- the definite interpretation
  - Nó bí the partitive interpretation

# **3** The Akan definite determiner

- Akan has a particle *nó* that is assumed to be the translational equivalent of the English definite determiner *nó*. The English sentence (4) is translated in Akan as (5).
  - (4) The man came here.
  - (5) Papa **nó** ba-a ha. man DEF come-PST here 'The man came here.'
- Analyses of *nó* can be divided into the *uniqueness-analysis* (Amfo, 2006, 2007; Fretheim & Amfo, 2008; Amfo, 2010; Bombi, 2018) and the *familiarity-analysis* (Arkoh & Matthewson, 2013)

The analysis I will present in this talk falls under the **familiarity analysis** — $n\delta$  encodes the presupposition that there is a discourse referent in the context with similar descriptive content.

## 3.1 Uses of the *nó*

Classification of uses of definite descriptions (Hawkins, 1978, 2015). Hawkins (1991) identifies four uses of definite determiners: *anaphoric, immediate situation, larger situation,* and *associative anaphora uses*.

- Anaphoric use: depends on a linguistic antecedent
  - (6) Ama hu-u okyerekyereni bi ne sogyani bi. o-kyea-a
    Ama see-PST teacher INDEF CONJ soldier INDEF 3SG.SUBJ-greet-PST sogyani nó.
    teacher DEF
    'Ama saw a teacher and a soldier. He greeted the soldier.'<sup>3</sup>
- Immediate situation use: the antecedent is in the utterance situation, visible or not visible.

<sup>&</sup>lt;sup>3</sup>This is a variation of the examples in Arkoh & Matthewson (2013).

(7) Context: A man and a woman are arguing in the street. Ama and Kwame are sitting in front of their house where they can see but not hear them. Kofi walks in and sees them staring. He says oh...

Papa **nó** de maame **nó** ka. man DEF owe woman DEF debt 'The man owes the woman money.'

- Larger situation use: the antecedent is part of the shared experiences of the discourse participants, the referent may or may not be in the immediate discourse context.
  - Country, community: we can talk about the president (of Ghana), a chief of a town,
    - (8) The president (of the US) will be here.
    - (9) omanpanin (#nó) bε blame obi.
       president DEF FUT. blame someone
       'The president will blame someone.'<sup>4</sup>
  - Global: *sun* and *moon*

In English the definite determiner is obligatory (10)

(10) The sun is shining.

The definite determiner is optional in (11); optionality cannot be attributed to salient/non-salient context distinction.

(11) Context: Afia is sitting on a bus, when a woman she doesn't know sits down beside her. The woman says:

> Ewia (**nó**) re-bo εnnε. sun DEF PROG-hit today 'The sun is shining today.' (Bombi, 2018, 150)

<sup>&</sup>lt;sup>4</sup> The use of the definite determiner here has an emotive reading similar to what is described by Lakoff (1974) for English demonstratives

## True optionality?

Are bare nouns and definite determiners equally accepted in all contexts? No.

- (12) Ewia (nó) yε nsoroma.
   sun DEF COP star
   'The sun is a star. '
  - a. Context 1: The beginning of a documentary on the solar system

 $\Rightarrow$  **nó** = *infelicitous* bare = *felicitous* 

- b. Context 2: A parent is showing a child a book on the solar system. They open a page with a picture of the sun...  $\Rightarrow$  **nó** = *felicitous* bare = *felicitous*
- (13) Context: There is a children show on TV about colors. They have a picture of the sun but it is painted green. A parent points to the sun on the TV and says...

Ewia (**nó**) yε green. sun DEF COP green 'The sun is green. '

- a.  $\mathbf{n}\mathbf{\acute{o}} \Rightarrow$  True! Interpreted as a statement about the sun in the book.
- b. Bare  $\Rightarrow$  False! Interpreted as a statement about the sun in the world.

If a context forces the referent of *sun* to be the unique sun in our solar system, the bare noun is used.<sup>5</sup>

## 3.2 The semantics of nó

Main Claim: *nó* is nominal modifier (type  $\langle \langle e, st \rangle \langle e, st \rangle \rangle$ ), which encodes a familiarity and non-uniqueness presupposition.

• Familiarity presupposition captures the anaphoric and immediate situation uses of nó

 $<sup>{}^{5}</sup>$ For (11) it is possible that speakers differentiate between the unique sun in the solar system and the sun of today vs the sun of tomorrow

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• Non-uniqueness presupposition captures the incompatibility with inherently unique nouns

 $\llbracket \mathsf{n} \mathsf{o}_y \rrbracket = \lambda P \lambda x : x = y \land \exists s's \leq s' | \{x \mid P(x)(s')\}| > 1. \lambda s. P(x)$  *Presuppose that there is x is familiar and that the cardinality of P in an extended situation (s') is not greater than 1* 

$$\begin{split} & \operatorname{NP}\langle e, st \rangle \\ \lambda x : x = y \land \exists s's \leq s' |\{x| \operatorname{soldier}(x)(s')\}| > 1. \ \lambda s.\operatorname{soldier}(x)(s) \\ & \overbrace{\mathsf{N}\langle e, st \rangle}^{} & \operatorname{\mathsf{N}}\langle e, st \rangle \\ \lambda x \lambda s \operatorname{soldier}(x)(s) \quad \lambda P \lambda x : x = y \land \exists s's \leq s' |\{x \mid P(x)(s')\}| > 1. \ \lambda s. \ P(x) \end{split}$$

• *Nó* does not encode *iota*; *iota* is introduced by a covert D head. Covert D introduces a situation pronoun, which is set to the default situation

 $\begin{array}{c} \mathrm{DP}_{e} \\\\ \iota x:x=y\wedge \exists s's\leq s'|\{x\mid \mathrm{soldier}(x)(s')\}|>1. \ \mathrm{soldier}(x)(s) \\\\ &\overbrace{\mathbf{D}'\langle\langle e,st\rangle,e\rangle} \\\\ \lambda P.\iota x.P(x)(s) \quad \lambda x:x=y\wedge \exists s's\leq s'|\{x|\mathrm{soldier}(x)(s')\}|>1. \ \lambda s.\mathrm{soldier}(x)(s) \\\\ &\overbrace{\mathbf{D}\langle\langle s,\langle e,st\rangle\rangle,e\rangle} \\\\ &\overbrace{\mathbf{N}\langle e,st\rangle} \\\\ \lambda s\lambda P.\iota x.P(x)(s) \\\\ &\lambda x\lambda s \ \mathrm{soldier}(x)(s) \\\\ &\lambda x\lambda s \ \mathrm{soldier}(x)(s) \\\\ &\lambda P\lambda x:x=y\wedge \exists s's\leq s'|\{x\mid P(x)(s')\}|>1. \ \lambda s. \ P(x) \\\\ \end{array}$ 

• Familiarity:

•

- definite descriptions denote entities that are "known to discourse participants (Christophersen, 1939)
  - \* Anaphoric: familiar definites are licensed by linguistic antecedents (Schwarz, 2009, 2013)

\* Weak familiarity: familiar definites are licensed by linguistic antecedents, perceptually accessible antecedents and antecedents made available by sensory or cultural experience (Roberts, 2003, 2010).

### Non-uniqueness:

- the demonstrative may not be used when its referent is known to be the only entity which fits its descriptive content in the domain of reference. (Robinson, 2005, 50)

### Summary of the properties of *nó*

- *Nó* is licensed by an linguistic antecedent or a non-linguistic antecedent in the immediate discourse situation
- The antecedents that license the use of *nó* is a hybrid between those that license the English *the* and the German strong definite determiner (Schwarz, 2009, 2013)
- Nó encodes two presuppositions: familiarity and non-uniqueness

# 4 The indefinite determiner *bí*

Akan has two strategies to mark indefinites — bare nouns and the indefinite determiner bi

- (14) a. Me-re-kɔ-tɔ mpaboa bí. 1sG-PROG-go-buy shoes INDEF 'I am going to buy a (certain) pair of shoes.'
  - b. Me-re-kɔ-tɔ mpaboa. 1SG-PROG-go-buy shoes 'I am going to buy a pair of shoes. (Amfo, 2010, 1787)
  - Previous analyses of *bi* include Amfo's (2010) quantificational analysis and Arkoh's (2011) choice function analysis

## 4.1 Bí and specificity

- Epistemic-specific: speaker has a particular referent in mind (Karttunen, 1968; Farkas, 1994; von Heusinger, 2011).
  - (15)Sukuuni **bí** Kofi class a-wia adee. YE-fre no wэ a. student INDEF be.located Kofi class PERF-steal thing 3PL-call 3SG.OBJ Kofi. Kofi 'A (certain) student in Kofi's class stole something. He is Kofi." b. Sukuuni **bí** wb Kofi class a-wia adee. Nanso student INDEF be.located Kofi class PERF-steal thing but
    - student INDEF beliocated Kon class PERF-steal thing but
      me-n-nim nipa koro.
      1SG-NEG-know person one
      'A student in Kofi's class stole something. But I do not who it is.'
- Scopal specificity: wide-scope readings (Fodor & Sag, 1982; Farkas, 2002a; Reinhart, 1997; Winter, 1997; Kratzer, 1998; Matthewson, 1999; Schwarz, 2001, 2013; Schwarzschild, 2002; Charlow, 2014, 2019, among others).
  - (16) Sε **spanyin bí** ba a, yε-bε-hyε mmra nó.
     if elder INDEF come COND 1PL-FUT-force law DEF
    - a. *Wide scope reading*: For a certain elder; if that elder comes, the law will be passed.
    - b. *Narrow scope reading*: If any of the elders come, the law will be passed (Bombi *et al.*, 2019, 192)
  - (17) obaa biara kane-e nhoma bí.
     woman every read-PST book INDEF
     'Every woman read a book.'
    - a. Wide scope reading:  $\exists y[book(y)] \land \forall x[woman(x) \rightarrow x \text{ read y}]]$
    - b. *Narrow scope reading*:  $\forall x [woman(x) \rightarrow \exists y [book(y) \land x read y]]$
- Referential-specificity

(18)	Ama pɛ	SE 38	okyerekyereni	bí	ware	nó.
	Ama want	COMP	teacher	INDEF	marry	3sg.obj
	'Ama wan	ma wants a teacher to marry her.'				(Bombi et al., 2019, 192)

- a. *Transparent*: Ama dislikes most teachers, but she knows one teacher, Kwame, that she likes very much, and she wants him to marry her.<sup>6</sup>
- b. *Opaque*: Ama doesn't know any teacher, but she believes that she would be happy as the wife of a teacher no matter which teacher.
- Discourse prominence
  - (19) Da #(bi), ɔ-bea #(bi) ne ne ba ɔsoɔdenfo #(bi) tena-a day INDEF woman INDEF CONJ 3SG.POSS child stubborn INDEF stay-PST ase.
    under
    'Once upon a time, there was a certain woman and her stubborn child'
    (Lit: A certain day, a certain woman and her stubborn child lived.) (Amfo, 2010, 1786)

## 4.2 Semantics bí

## Main Claim: nó is a skolemized choice function with implicit world arguments

- The so-called narrow-scope readings in the scope of quantifiers are functional readings derived when the quantifier binds the individual skolem index.
- *Bi* has an implicit world variable that can be bound or remain free (Mirrazi, 2019). When the world variable is bound, the indefinite receives a narrow scope reading.

*bí* is skolomized choice function with both individual and world skolem variables  $\|\mathbf{b}\mathbf{i}\| = \lambda P.f(P)$ 

<sup>&</sup>lt;sup>6</sup>Unlike the English sentence with a, (25) is not compatible with a context where Ama does not know that Kwame is a teacher.

- Choice function analyses of indefinites include Reinhart (1997); Winter (1997); Kratzer (1998); Matthewson (1999).
  - (20) A function f is a choice function (CH(f)) if it applies to any non-empty set and yields a member of that set.

## 4.3 An ignorance reference

- Some indefinites signal a speaker's ignorance or indifference about some property of the witness of an existential claim (Becker, 1999; Farkas, 2002b; Kratzer & Shimoyama, 2002; Alonso-Ovalle & Menéndez-Benito, 2003; Aloni & Port, 2011; Aloni, 2012)
- *bt* has an ignorance inference, according to Owusu (2019). The use of *bt* signals that the speaker has a particular referent in mind, but is ignorant of important identifying characteristics about the referent.
- Aloni & Port (2011, 2015) based on Aloni (2001, 2008) propose epistemic indefinites are licensed when what is required to identify a referent in a context differs from the one introduced by the indefinite.
  - (21) Scenario: You are visiting a foreign university and you want to meet a professor.

Me- re- hwehwe professor **bi**, ono na o- ye head of department, me-1SG- PROG- search professor IND, 3SG FOC. 3SG- COP. head of department, 1SGn- nim ne din. NEG- know 3SG-POSS name.

'I am looking for some professor, he is the head of department but I don't know his name.'

Speaker-can-identify  $\rightarrow$  [Description], unknown  $\rightarrow$  [Naming]

In this scenario, the method of identification contextually required for knowledge is naming, but the referent of the epistemic indefinite can only be identified by description. Summary of the properties of bí

- *Bi* NPs patterns with English *a*, not specific indefinites such as the Salish no-polarity indefinites (Matthewson, 1999) and English *a certain* (Kratzer, 1998).
- *Bí* is a specific indefinite, which is analyzed as a skolemized choice function with implicit world arguments
- Bí has an ignorance presupposition inference

## 5 Co-occurrence of *nó* and *bí*

- Akan allows the co-occurrence on the definite and indefinite determiners in either order.
  - (22) Bí nó

Papa **bí nó** bisa me me noma. man INDEF DEF ask-PST 1SG 1SG.POSS number After the party, that certain man asked me for my number. (Bombi *et al.*, 2019, 187)

(23) Nó bí

Nkorofo **nó bí** ka-a sɛ ɔ-re-m-pene. people DEF INDEF say-PST COMP 3PL-PROG-NEG-agree 'Some of the people said they will not agree.' (Amfo, 2010, 1796)

## 5.1 *Bí nó*- the definite interpretation

- Bí nó cannot introduce new discourse referents
  - (24) Context: At the beginning of a story ...
    - a. #Papa **bí nó** bisa me me noma. man INDEF DEF ask-PST 1SG 1SG.POSS number 'That certain man asked me for my number.'

b.	#Papa	nó	bisa	me	me	noma.
	man	NO	ask-PST	1sg	1SG.POSS	number
	'ATh	e pa	rty, the r	nan a	asked me fo	or my number.'

- c. Papa **bí** bisa me me noma. man INDEF ask-PST 1SG 1SG.POSS number 'A certain party, some man asked me for my number.'
- Bí nó is licensed by a previously introduced discourse referent (26).
  - (25) Context: Dufie and Priscilla go to a party. During the party, they watch one man dancing. The following day, Dufie says to Priscilla:
    - a. Papa **bí nó** bisa me me noma. man INDEF DEF ask-PST 1SG 1SG.POSS number 'That certain man asked me for my number.'
    - b. Papa **nó** bisa me me noma. man NO ask-PST 1SG 1SG.POSS number 'The man asked me for my number.'
    - c. #Papa bí bisa me me noma.
      man INDEF ask-PST 1SG 1SG.POSS number
      'A certian party, some man asked me for my number.'
- Bí nó patterns with definites and not indefinites (Amfo, 2006; Bombi et al., 2019)
- But  $bi n o \neq n o$
- Not every context that license nó but licenses NP bí nó.
  - (26) Context: Dufie and Priscilla go to a party. During the party, they watched one man dancing. At the end of the party, they realized that the man was their former classmate, Kofi. Later in the evening, the man gave his number to Dufie. The following day, Dufie says to Priscilla.<sup>7</sup>
    - a. Abrantie **nó** bisa me me noma. man NO ask-PST 1SG 1SG.POSS number The man asked me for my number.

<sup>&</sup>lt;sup>7</sup>Slightly modified variation of the context in Bombi *et al.* (2019)

- b. #Abrantie **bí nó** bisa me me noma. man INDEF NO ask-PST 1SG 1SG.POSS number That certain man asked me for my number.
- What is the difference between the context in (25) and (26)? An ignorance implication

### Summary of the properties of bí nó

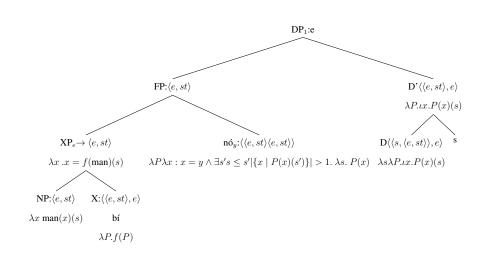
- Inherits the familiarity presupposition from nó
- Inherits the ignorance implication from bi

#### **Previous analysis**

- Bombi *et al.* (2019, 188) argue that the *bí nó* NP "receives the additional import that the addressee has to make an effort to retrieve the referent (so called 'recognitional use' of the definite ..."
- The recognitional use helps to highlight the piece of information that is already common knowledge which has some significance to the present conversation (Himmelmann, 1996)

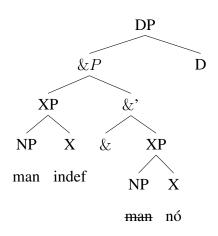
### Syntactic Sketch

- Probable syntax but wrong semantics
  - (27)

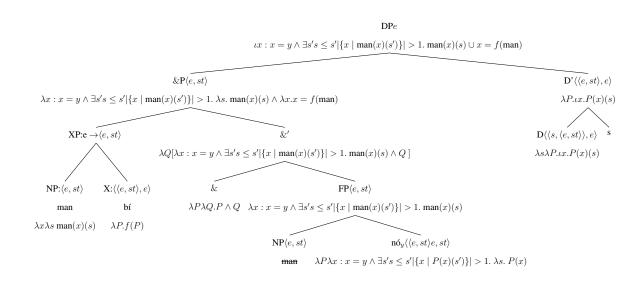


• Possible LF for interpretation <sup>8</sup>





(29)



## 5.2 Nó bí-the partitive interpretation

The NP bí nó order has a partitive reading parallel to partitives in English.

- (30) a. Some of the boys are weak.
  - b. <u>One of the issue</u> has been solved.

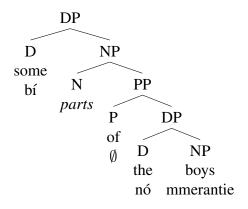
<sup>&</sup>lt;sup>8</sup>Thank you to Veneeta Dayal for proposing this syntax

- c. <u>All the students</u> are present.
- (31) a. Mmerantie nó bí ka-a sε p-re-m-pene.
   pl.boy DEF INDEF say-PST COMP 3PL-PROG-NEG-agree
   'Some of the boys said they will not agree.'
  - b. Mmerantie **nó** mu **bí** ka-a sε p-re-m-pene. pl.boy DEF in INDEF say-PST COMP 3PL-PROG-NEG-agree 'Some of the boys said they will not agree.'

## **Features of partitives**

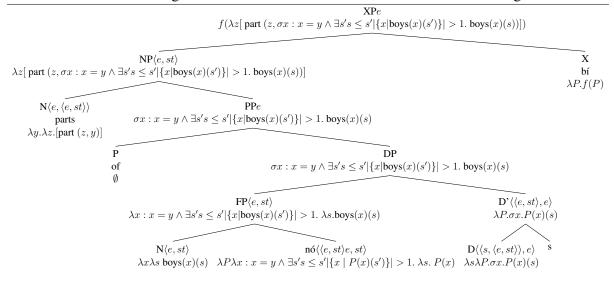
- The inner determiner is a definite (Jackendoff's (1968) Partitive Constraint )
- A null nominal head, *parts*, a relational noun in partitives, which takes the PP as complement.(Chierchia, 1997; Arsenijević, 2006)
- *of* is semantically void (Chierchia, 1997) or its is the source of the partitive meaning (Barker, 1998)

(32)



The composition of the partitive construction in Akan proceeds as in (34).

(33)



## 6 Conclusion

- Akan allows the stacking of the definite determiner nó and the indefinite bí in a DP
- When the indefinite determiner precedes the indefinite, the sequence has a familiarity presupposition from the definite and an ignorance inference from the indefinite
- The order, definite indefinite is a partitive construction with a null preposition.

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