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On rank and successor relations: numerical and non-numerical expression of relative position in Akan

Clement Kwamina Insaadoo Appah, University of Ghana

There are two principal means of expressing relative position/rank in ordered sequences – numerical and non-numerical means. For Akan, Christaller (1875) subsumed both of them under the heading of ordinal numerals. Based on data drawn from a variety of sources, we attempt to make a clear distinction between the two in this paper, noting that a numeral must express the properties of empirical object by means of numbers. We find this to be true of only one class of the constructions. Therefore, they are qualified as ordinal numerals and they can refer to the exact ranks of ordered items numerically. The other construction type, which refers to successor relations non-numerically, are clearly identified and their properties discussed. It is shown that the two kinds of constructions divide any sequence of ordered items, called the ordinal space, differently. Ordinal numerals partition the ordinal space into two, first position and others, excluding the last, which are referred to specifically by means of cardinal numeral constituents. The successor relation constructions divide the ordinal space into three (first, last and others in-between) or two (first and next) where the speaker deliberately avoids mentioning the expression for the last position in a set of ordered items. Ideas and formalism from Construction Morphology are employed for the analysis and presentation of the data.

Keywords: Akan, Construction Morphology, Constructional Idiom, Ordinal numeral, Rank, Schema, Successor relation

1. Introduction

This paper deals with how rank within ordered items and succession between items in a sequence are expressed in Akan. It shows that the expression of rank and succession are done numerically and non-numerically respectively and that the constructions employed tend to partition any sequence of ordered items differently. The basis of the distinction is *number assignment*, which refers to the use of number to assess properties of empirical objects in different contexts, so that relations between numbers are associated with relations between empirical objects (Dehaene 1997, 2001a, 2001b; Wiese 2003a).

Three basic types of number assignments are distinguished – *cardinal*, *nominal* and *ordinal* number assignments (Wiese 2007: 759-760). Of the three, the one that is specifically relevant to the focus of this paper is *Ordinal number assignment* (e.g., *set 4*) which associates the ordering relation in a number sequence ('<' or '>') with the relative ranks of objects in an empirical sequence. For example, as Wiese (2003a) observes, in relation to the ranks of runners in a race, the relation '>' is associated with 'finish faster than', so that if person **A** finishes as the sixth runner and person **B** comes in as the eighth runner, then "**A** > **B**" means **A** was faster than **B**. In *cardinal number assignment* (e.g. *five houses*), the empirical relation 'has more elements than' (represented by the numerical relation '>'), expresses a relation between sets, so that the more elements a set has, the higher the number it receives. In this way, positions in

the number sequence can be said to identify the size or cardinality of empirical sets.¹ In *nominal number assignment*, the numeral relation ‘=’ (or ‘≠’) is associated with the empirical relation ‘is identical (or non-identical) with’. This is how numbers come to identify elements within a set, making the number a label (Wiese 2003a). An example is how a particular route that is plied by a bus comes to be known simply by the bus number.

Consistent with the observation that “[n]ot all languages have a separate series of ordinal numerals” (Hurford 2000:71), Christaller (1875: 54) observed that the kind of ordinal numerals in European languages which denote the place that any item holds in a series, do not exist in Akan. In their place, various types of verb phrases (VPs) are employed. Christaller then identifies several exemplar VPs which he calls ordinal numerals. He observes that the first position is expressed as *di kan* (1). It is formed from the verb *di*, which has many meanings of which the relevant one is “to occupy”, and its complement *kan* which is a noun denoting “the first or foremost (or former) place or time in a series of places or events”.

- (1) *di* *kan*
 occupy front
 ‘to occupy front/be first’

The second person in a series of people, according Christaller, is rendered as *nea odi hɔ* (2a), as found in *odi hɔ*, lit. ‘he occupies the (next) place there’; the second thing in a series of things is rendered as *nea edi hɔ* (2b). Also, for the persons in second, third, fourth, etc., positions Christaller provides, respectively, the constructions *nea otia* (2c) or *ɔto so abien*, *abiesa*, *anan*, etc., (2d). The meaning of the verb *tia* is ‘to add (in order to fill up or make up a sum)’, while the meaning of the phrase *to so* is rendered as ‘to lay (or lie) above or upon’.

- (2) a. *nea*² *o-di* *hɔ*
 person.who 3SG-occupy there
 ‘person who occupies the next place there/the second person’
- b. *nea* *e-di* *hɔ*
 thing.which 3SG-occupy there
 ‘thing which occupies the next place there/the next thing’
- c. *nea* *o-tia* *abien*
 person.who 3SG-add up to make two
 ‘the second person’
- d. *nea* *ɔ-to* *so* *abien*
 person.who 3SG-lie upon two

¹ A common way of verifying cardinal number assignment is *counting*, which establishes a one-to-one mapping between the elements of a set and an initial sequence of natural numbers. Thus, we end up using exactly as many numbers as there are objects so that the counted set and the set of numbers used in the count have the same cardinality. Wiese (2003a: 385) argues that “[b]ecause the numbers form a fixed sequence, we always end up with the same number for sets of the same cardinality. Hence, this number can be used to identify the cardinality of a set, ... owing to its position in the number sequence”.

² According to Saah (2010), the form *nea* results from the fusion of the noun which is modified by the relative clause (like *nipa* ‘person’/ade ‘thing’) and the relativizer *a*.

‘lie upon two/be second’

For the final position, Christaller provides constructions like *odi akyiri* ‘he occupies the backpart’ (3a), *ɔka akyiri* ‘he remains behind’ (3b), *otwa to* ‘he cuts off the hind end’ (3c), etc.

- (3) a. *o-di* *akyiri*
3SG-occupy back
‘S/he occupies the backpart’
- b. *ɔ-ka* *akyiri*
3SG-remain back
‘S/he remains behind’
- c. *ɔ-twa* *to*
3SG-cut.HAB hind
‘S/he cuts off the hind end’

The structure of these constructions is explained further below, in sections 5 and 6, where it is shown that there may be multiple means of expressing the same ordinal meaning in Akan. Indeed, the presence of multiples expressions in a language for positions in ordered sequences is well attested cross-linguistically (see, for example, Mel'čuk 1994, Veselinova 1997, Stump 2010, Stolz & Veselinova 2013). Thus, Christaller's presentation on ordinal numerals in Akan is generally consistent with prevailing approaches to delineating what counts as an ordinal numeral, where all kinds of constructions, including those that do not contain number words, are regarded as ordinal numerals to the extent that they refer to relative ranks of items in ordered sets, such that there is no distinction between numerical and non-numerical reference to ordered items (cf. Corbett 1978, Hurford 1987 and Stolz & Veselinova 2013). However, a close look at the set of constructions that Christaller calls ordinal numerals reveals that we can distinguish between constructions that express relative rank by means of number words and those that express succession without the use of number words. The former remains called ordinal numerals and the latter, successor relation constructions or succession constructions.

There are objections to the grounds for the proposed distinction. It has been argued that the absence of a number word is not a sufficient criterion for a linguistic unit not to count as a numeral. We share this position too. However, fundamental to the distinction made in the present paper is the notion of number assignment which associates the relationship between numbers with the relation between empirical objects, described as the use of number to assess properties of empirical objects. For ordinal expressions, this property is the rank of objects in a sequence (Wiese 2003a, 2003b, 2007; Appah 2019). Therefore, whatever construct is classified as an ordinal numeral or is purported to be used for ordinal number assignment must be a numeral, defined as a linguistic expression (word or phrase) with a primary function of expressing a unique number, and must identify a specific property of an empirical object, either collection or sequence (Veselinova 1997: 445).

Thus, for the purpose of this paper, an ordinal numeral is a numeral which identifies a specific rank within a sequence, much in agreement with the observation that “[a] numeral is used with ORDINAL MEANING when applied to an individual object in an ordered sequence, often in connection with a singular noun” (Hurford 1987:168). That is where the class of successor relation constructions fail to qualify as ordinal numerals in Akan. They simply

express non-specific successor relations within ordered sequences. They are not primarily numerals in that they are not dedicated to the expression of unique numbers and there is no evidence that, in their current form, they are on the lexicalization/grammaticalization path to becoming numerals. Hence, they can be used for any position at all relative to an already existing position. Additionally, as discussed in section 6, we may have actual ordinal numerals formed from them by the addition of number words.

The rest of the paper is structured as follows: In section 2, I briefly present the methodology, outlining where and how the data were obtained. In section 3, I briefly present Construction Morphology, the theoretical framework from which I employ formalism for the analysis and presentation of the data. In section 4, I present what Appah (2019) calls the ordinal space, a characterization of any sequence of ordered items or positions. In section 5, I review what Appah (2019) presents about Akan ordinal numerals, constructs which express rank numerically and can refer to unique positions in the ordinal space. I also show another means of expressing ordinal first which had not been previously reported in the literature. Section 6 deals with successor relation constructions, focusing on a detailed description of their form and distribution. For each class of constructions in sections 5 and 6, I show how they partition the ordinal space. Section 7 concludes the paper.

2. Data and methodology

Data for this study were drawn from a variety of sources, including the Akan translations of the Holy Bible (Fante & Akuapem dialects) and a grammar (Christaller 1875), and were supplemented by my native speaker intuitions. The data on ordinals that were collected from Christaller (1875), as shown in (1) – (3) above, formed the primary basis for the analysis, given that he clearly identified almost all the classes of construction that referred to succession and rank in Akan. The Akan translations of the Holy Bible were looked up for contexts in which the numerals occurred, as shown in sections 5 and 6. A principal reason for choosing illustrative constructions from the Bible was that direct free translations could be found in the English Bible, New King James Version (NKJV), thus, eliminating any possibility of mistranslation.

Except otherwise stated, all the examples cited come from the Fante dialect of Akan. However, the analysis and the claims made therein apply to all the dialects of Akan because, as far as the constructions at issue are concerned, the relevant differences between the dialects tend to be mainly phonological (cf. Dolphyne 1988). For example, ordinal *first*, which is realized as *dzi kan* in Fante, is rendered as *di kan* (1) in Akuapem and Asante, while *fifth*, is realized as (4a) in Fante, and as (4b) in Akuapem and Asante. The dialectal variation in the realization of the relator noun *do* (Fante) versus *so* (Akuapem/Asante) is purely phonological.

- | | |
|--|--|
| (4) a. <i>tɔ do enum</i> (Fante) | b. <i>tɔ so nnum</i> (Asante) |
| lie on five | lie on five |
| ‘lie in position/come in at number five/be 5 th ’ | ‘lie in position five/be 5 th ’ |

There could be semantically motivated phonological differences too. For example, the ordinal numerals are integrated into the grammar of the NP by relativization because they are VPs and cannot directly modify the head noun. Thus, the VP forms part of the sentence which is introduced by the relative marker <a>, in (5).

(5) a. *Nipa a o-di kan no*
 person REL 3SG-assume front CFD_[Clause Final Determiner]
 ‘the first person’

b. *nwoma a e-di kan no*
 book REL 3SG-assume front CFD
 ‘the first book’

We observe a difference in the quality of the third person singular (3SG) pronoun between the animate subject <o-> in (5a) and the inanimate subjects <e-> in (5b). This animacy distinction is observed in the Asante and Akuapem dialects only.

We will not comment any more on these dialectal differences because they are not relevant to the specific issues that are discussed in the rest of the paper.

3. Construction Morphology

As noted above, we employ ideas and formalism from Construction Morphology (CxM) in the analysis and presentation of the data. CxM is a theory of linguistic morphology whose goal is to present a framework in which the differences and commonalities of sentence-level and word-level constructs are accounted for adequately and consistently, thus, providing “a better understanding of the relation between morphology, syntax and lexicon and of the semantic properties of complex words” (Booij 2010a: 543).

Central to CxM, is the notion *construction* as developed in Construction Grammar (Goldberg 1995, 2006; Fillmore et al. 2003; Michaelis & Lambrecht 1996; Jackendoff 1997, 2002, 2008), which is characterised as a pairing of form and meaning, formed by means of schemas, which are abstractions over sets of actually existing complex forms. Thus, schemas first express predictable properties of existing constructions and also serve as blueprint for assembling other constructions of comparable complexity (Booij 2007, 2010b; Appah 2013). This is shown by the schema in (6) which generalizes over all right-headed compounds.

(6) $\langle [[a]_{X_i} [b]_{Y_j}]_{Y_k} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k \rangle$

The upper-case variables *X* and *Y* stand for the major lexical categories (N, V & A). The lower-case variable *a* and *b* stand for arbitrary strings of sound segments, whilst *i*, *j* and *k* are indexes for the matching properties of the compound and its constituents.

Schemas and their instantiating constructions co-exist in a hierarchically structured lexicon, where two types of relations hold – “instantiation”, which exists between a schema and a construction that is formed by the schema, and “part of”, which obtains between a construction and its constituents. These are illustrated in (7), where each dominated constructional schema is an instantiation of the one that dominates it and the individual constituents, *school* and *bus* are ‘part of’ the compound *school bus*.

A schema in which at least one of the constituents is lexically fixed or prespecified is called a constructional idiom (Jackendoff 2002; Booij 2002). Here, the form that fills the slot lexically is deemed to be part of the constructional schema, so that it is only the variable slot that would be available, on occasion, to be filled to form different instantiations of the construction. The idea of constructional idiom will be employed in the analysis to show that

the general properties of the various classes of constructions discussed in this paper may be captured straightforwardly in schemas and constructional idioms that abstract over the properties of the ordinal and succession constructions at issue in this paper.

$$\begin{array}{c}
 (7) \quad \langle [[a]_{Xi} [b]_{Yj}]_{Nk} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k \rangle \\
 \quad \quad \quad | \\
 \quad \quad \quad \langle [[N]_i [N]_j]_{Nk} \leftrightarrow [SEM_j \text{ meant for } SEM_i]_k \rangle \\
 \quad \quad \quad | \\
 \quad \quad \quad \langle [[school]_i [bus]_j]_{Nk} \leftrightarrow [bus_j \text{ meant for school}_i]_k \rangle \\
 \quad \quad \quad / \quad \quad \backslash \\
 [school]_N \quad \quad [bus]_N
 \end{array}$$

The constructionist view of the lexicon is what Jurafsky (1992) characterises as the *constructicon*, a lexicon populated by all types of constructions. Therefore, constructions can inherit all kinds of properties from other sanctioning constructions. In this paper we will argue that Akan ordinal numerals and successor relation constructions do inherit their formal structure from VPs in Akan.

An important property of constructions is that they are not expected to be compositional. Rather, they are expected to be predictable, and they can have properties that do not emanate from the properties of their constituents, called holistic properties (Booij 2010b, 2012; Appah 2013, 2015, 2017). In CxM, therefore, both compositional and extra-compositional properties of constructions can be accounted for straightforwardly, obviating the need to posit abstract categories to carry extra-compositional semantic components of constructions (cf. Jackendoff 1997, 2008, Goldberg & van der Auwera 2012, Appah 2013, 2016, 2017, Lawer 2017, Dugas 2018, De Wit 2018, Broohm 2019).

4. The ordinal space

In Appah (2019), the idea of the ordinal space was introduced. Presented graphically as a line with various positions marked, as shown in **Figure 1**, it is meant to be a pre-theoretic characterisation of any ordered sequence of positions that are, for example, assigned values in ordinal number assignment (cf. Wiese 2003b). This will be equivalent to Hurford’s context-given sequence, as contained in the observation that “to interpret an expression containing an ordinal numeral, a particular ordered sequence of objects must be present, explicitly or implicitly, in the context in which the expression is used. I will call such a sequence the ‘context-given’ sequence” (Hurford 1987: 170).

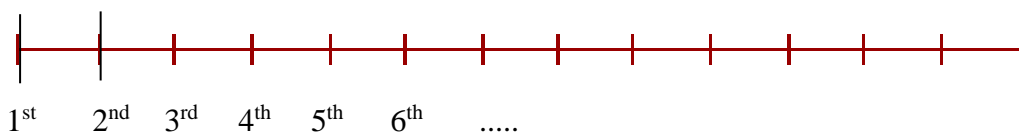


Figure 1: The ordinal space

As Appah (2019) observes, assigning values to positions in the ordinal space facilitates reference to the positions. However, reference to a position in the ordinal space must not necessarily be by means of a number, if the intention is not to be specific, as the discussion

below shows. The first position in the ordinal space is always known (marked with *eer-ste* in Dutch and *first* in English). However, if the items in the ordinal space do not constitute a finite set, then there would be no non-arbitrary way of determining the terminal position in the ordinal space (Appah 2019). This is because, whilst it is clear that no one ever counts *ad infinitum*, one cannot rule out the possibility of someone counting one more than any current terminal number (cf. von Mengden 2010; Stampe 1976). That notwithstanding, given the possibility of a finite set, languages make provision for identifying the final position in an ordered set, sometimes with a dedicated lexical item like *last* in English.

The next two sections deal with two classes of Akan constructions used for expressing relative position in the ordinal space. In the discussion, we show graphically how the various constructions partition the ordinal space.

5. Akan ordinal numeral constructions

The first group of constructions for expressing relative position are ordinal numerals. They are the default constructions for expressing the rank of items (first, second, third, etc.) in any ordered sequence (Stump 2010), so that a particular element of a set is assigned a place within that fixed order (Stampe 1976: 600; von Mengden 2010: 21). In their description of the functions of ordinal numerals, Stolz and Veselinova (2013), observe that typically ordinal numerals identify the position that a member of a set occupies relative to other members of the same set (e.g. the fourth day). They go on to argue that the main functions of ordinal numerals comprise the identification of ranks within a hierarchy and the temporal order in a sequence of events or the like. This hierarchy/temporal order is referred to as “context-given sequence” (Hurford 1987: 170) or the ordinal space (Appah 2019).

As noted above, Akan ordinal numerals take the form of VPs and the *first* position is expressed as *dzi kan*, as shown in (8). It is found occurring in the Akan translation of the names of the books of the Holy Bible which come in sets, such as the books of Samuel, the first of which is rendered as shown in (9).

- (8) *dzi* *kan*
 occupy/assume front
 ‘to be first’ [lit. to occupy the front/to lead]

- (9) *Samuel* *nwoma* *a* *o-dzi* *kan* *no*
 Samuel book REL 3SG-assume front CFD
 ‘the first book of Samuel’ (lit. the book of Samuel which leads) (Appah 2019: 6-7)

Clearly, this construction is not a numeral *sensu stricto* because it neither contains an actual number word nor is it dedicated solely to the expression of the relevant number. Therefore, it cannot be said to involve the use of number to express a quantitative property of an empirical object, as is required of numeral constructions in the context of number assignment (cf. Wiese 2003a, 2003b, 2007). It is worth noting, however, that Akan is not unique in employing a construction which is neither a numeral nor contains an actual number word for ordinal *first*. Indeed, the idiosyncratic nature of the Akan construction for *first* is consistent with the observed nature of expressions for *first* cross-linguistically (cf. Barbiers 2007; Booij 2009; Stolz & Veselinova 2013).

A noteworthy feature of the phrase *dzi kan* is its meaning; on its own, this construction simply means ‘to lead’ or ‘to assume the front positions’. This also is consistent with the meanings of constructions that are employed for the expression of ordinal first. As Veselinova (1997:430) observes, commonly noted meanings with the term for first include ‘foremost’, ‘earliest’, ‘best’ and ‘most important/eminant’. Hence, the literal meaning of the construction in (9), which contains the ordinal *first*, is ‘the book of Samuel which leads’. This point, coupled with the fact that the construction does not contain an actual number word, makes it compelling to argue that the ordinal meaning does not come from the VP *dzi kan* per se. Rather, it has to be regarded as a property of the whole construction which is embedded in the larger construction by means of relativization (cf. Appah 2019). Thus, for the CxM representation, we posit the schema in (10) with the semantic specification on the right end of the double arrow, where ORD is a semantic operator with scope over the meaning of the entire construction. Through co-indexation of the VP with the meaning of the whole construction we capture the intuition that the ordinal meaning is a holistic property of the construction (cf. Appah 2019).

$$(10) < [[dzi]_i [kan]_j]_k]_l \leftrightarrow [ORD [SEM]_k]_l > \quad \text{‘first’}$$

We notice that it may be possible to have the word *kan* ‘front’ alone expressing first. This is found in the Akan translation of 2 Kings 1:14, as shown below in the Akuapem (11a) and Fante (11b) dialects. The context is that the king sent three captains with their troops of fifty soldiers with the mandate to arrest the prophet Elijah. The first and second captains and their troops had been consumed by fire, at the command of the prophet (2 Kings 1:9-14). Therefore, fearing for his life, the captain of the third group came to plead with the prophet to spare their lives, given that fire came down and burned up the first two captains and their fifty soldiers.

- (11)a. *Hwε, ogya a-fi soro [...] a-bε-hyew kan*
 look, fire PERF-come.from above [...] PERF-come-burn **first**
eduonum so asafohene baanu no ne wɔn eduonum [...]
 fifty over captain two DEF CONJ 3POSS fifty [...]
 ‘Look, fire has come down from heaven and burned up the first two captains of fifties with their fifties’ (NKJV)
- b. *Hwε, ogya fi sor siane-e bε-hye-ew nkan no*
 look, fire come above descend-PAST come-burn-PAST **first** DEF
eduonum do asafohem-fo beenu no nye hɔn eduonum [...]
 fifty over captain-PLU two DEF CONJ 3POSS fifty [...]
 ‘Look, fire came down from heaven and burned up the first two captains of fifties with their fifties’ (NKJV)

This use of (*n*)*kan* alone for ordinal first has not been previously reported in the literature on Akan numerals. This might be because the word is used adverbially elsewhere in the grammar with the meaning ‘previously/in the past’. However, as the examples in (11) show, it can be used for ordinal first, where it occurs before the noun or, in the present case, the numeral that it modifies. Again, the adverbial meaning of (*n*)*kan* ‘previously’ accords well with the meanings commonly associated with terms for first, including ‘earliest’ (Veselinova 1997: 430;

Greenberg 2000: 780). Thus, what appears to be the lexicalization of a form meaning ‘front’ for ordinal *first* is consistent with observed cross-linguistic patterns.

Unlike the construction for *first* which does not contain a number word, beginning from *second*, Akan ordinal numerals identify unique positions in the ordered set by means of cardinal numerals. Thus, any position, between first and last, may be specifically referred to numerically and the relevant Akan numeral constructions take the form of VPs, as noted by Christaller (1875) and consistent with the view in Appah (2019) that the VP structure of Akan ordinal numerals, suggests that Akan numerals inherit their formal structure from already existing structures in the language.³

Two subtypes of VP-ordinal numerals are identified. The first is built around the verb *tsia* [tɕiã] ‘to pile/to add (in order to fill up or make up a sum)’ and a cardinal numeral that identifies the relative position in the ordinal space, resulting in [V NUM]_{VP}, as shown in (12).

- (12) a. *tsia ebien*
 pile.on two
 ‘added to make two (2nd)’
 c. *tsia anan*
 pile.on four
 ‘added to make four (4th)’
 b. *tsia du*
 pile.on ten
 ‘added to make ten (10th)’
 d. *tsia awɔtwe*
 pile.on eight
 ‘added to make eight (8th)’

As noted in Appah (2019), this class of ordinals occur in the Akan translation of the names of certain books of the Bible, such as the Pentateuch, the first five books of the Bible which are attributed to Moses. The last four of the books are named as shown in (13).

- (13) a. *Moses nwoma a o-tsia ebien a wɔ-frɛ no Exodus No*
 Moses book REL 3SG-piles.to.make two REL 3PL-call 3SG Exodus CFD
 ‘The second book of Moses which is called Exodus’
 b. *Moses nwoma a o-tsia ebiasa a wɔ-frɛ no Leviticus No*
 Moses book REL 3SG-piles.to.make three REL 3PL-call 3SG Leviticus CFD
 ‘The third book of Moses which is called Leviticus’
 c. *Moses nwoma a o-tsia anan a wɔ-frɛ no Nkanee*
 Moses book REL 3SG-piles.to.make four REL 3PL-call 3SG counting
 ‘The fourth book of Moses which is called Numbers’
 d. *Moses nwoma a o-tsia enum a wɔ-frɛ no Deuteronomy No*
 Moses book REL 3SG-piles.to.make five REL 3PL-call 3SG Deuteronomy CFD
 ‘The fifth book of Moses which is called Deuteronomy’

As noted above, these constructions are integrated into the grammar of the noun phrase by means of relativization. This is because, being VPs, they cannot be direct modifiers of the head noun (cf. Appah 2019).

³ This may be true of numeral constructions in other languages of the world also (cf. van Katwijk 1965; Brainerd 1966, 1968; Brandt Corstius 1968; Corbett 1978; von Mengden 2010).

The constructional schema for the group of ordinal numerals that are built around the verb *tsia* is a subschema of Akan transitive VPs, a constructional idiom, in which the first constituent is pre-specified as *tsia* and the second constituent is required to be a cardinal numeral, as shown in (14).

$$(14) \quad < [[[tsia]_i [NUM]_j]_k]_l \leftrightarrow [ORD [SEM]_k]_l >$$

Like the construction for *first*, the ordinal semantic operator in (14) has scope over the meaning of the entire construction which contains the cardinal numeral. This makes the semantic operator in question function differently from the ordinal suffix (-*th*) found in the English ordinal numeral *twentieth* (20th). This is a modification of the position assumed in (Appah 2019) where the semantic operator ORD was said to have scope over the cardinal numeral constituent only. It is worth stressing that the ordinal reading in these constructions is possible only when the transitive VP contains a cardinal numeral second constituent. As Appah (2019) observes, we find VP constructions built around the verb *tsia* with non-numerals in complement position elsewhere in the grammar of Akan. However, the relevant VPs do not have the ordinal semantics at all. This is exemplified in (15), where the verb *tsia* with the noun *sika* ‘money’ form a VP which means ‘to save money’.

- (15) *tsia* *sika*
 pile money
 ‘to save money’ (cf. Appah 2019: 8)

This fact supports the point made about the constructions that Christaller classifies as ordinal numerals, but which are rejected as ordinals in this paper because they do not contain the relevant distinguishing element – the cardinal numeral constituent. That is, there may be constructions which look and/or function like numerals, but may not be classified as such because they fail to meet the twin-expectation that they are numerals and that they are used to assess quantitative properties of empirical objects (cf. Wiese 2003b, 2007). It is in this sense that even the Akan construction for *first* does not qualify as a numeral. However, as noted above, the idiosyncrasy of ordinal *first* appears to be a crosslinguistic feature (cf. Barbiers 2007; Booij 2009; Stolz & Veselina 2013).

The second type of Akan ordinal numeral constructions have the structure *to do* ‘lie in position/come in at position ...’ and a cardinal numeral that refers to a position in an ordered set, as exemplified in (16).

- (16) a. *to* *do* ***enum***
 lie on five
 ‘lie in position (comes in at number) five (5th)’
- b. *to* *do* ***du***
 lie on ten
 ‘lie in position ten (10th)’
- c. *to* *do* ***dubiako***
 lie on eleven
 ‘lie in position eleven (11th).’

- d. *tɔ do ɔha*
lie on hundred
'lie in position hundred (100th).'
- e. *tɔ do eduanan ebien*
lie on forty two
'lie on position forty-two (42nd).'
- f. *tɔ do aha esia eduonum esia*
lie on hundred six fifty six
'lie in position six hundred and fifty-six (656th).'
- g. *tɔ do m-pem ebien na eduosuon awɔtwe*
lie on PL-thousand two CONJ seventy eight
'lie in position two thousand seventy-eight (2078th). (cf. Appah 2019: 8)

A construction which has one of these ordinal numerals occurring in it is found in the quotation from the verse 13 of the first chapter of the second book of kings (2 Kings 1:13), as presented in (17), from the Akuapem dialect.

- (17) *Na ɔ-san soma-a aduonum so safohene*
and 3SG-return send-PAST fifty over captain
a ɔ-tɔ so abiesa ne n'-aduonum
REL. 3-fall on three CONJ 3POSS-fifty
'Again, he sent a third captain of fifty with his fifty mean' (NKJV)

As the data in (16) show, the numeral constituent may be simplex or complex. However, the numeral constituent on its own does not express ordinality. It is only in conjunction with the other elements of the construction that the ordinal meaning is expressed. Again, *tɔ do/so* in these constructions has the structure of a typical VP. Therefore, as noted by Appah (2019), with the addition of the numeral (e.g. *tɔ do anan* '4th'), the construction comes out as a kind of ditransitive construction, with the structure [V NP Num]. There are alternative analyses of this construction type (cf. Appah 2019: 11, n. 9) and a reviewer questions whether it is felicitous to suggest that the resultant construction is ditransitive. However, we believe that the choice of terminology is supported by the observation that "[b]eside appearing as nominal modifiers, numerals also occur independently of any nominal, as NPs in their own right ... Such bare numerals can occur as subjects and objects of sentences" (Hurford 1987: 158).

Working with the assumption that these ordinal constructions are ditransitive, we can assume further that they inherit their structure from a ditransitive construction with the second dependent slot pre-specified to be a cardinal numeral. Thus, because we know what the other constituents of the construction are, we can posit a constructional idiom in which the first two constituents (*tɔ, do*) are pre-specified, and the only variable slot is also specified to be a numeral, as shown in (18).

- (18) $\langle [[[tɔ]_i [do]_j [Num]_k]_l]_q \leftrightarrow [ORD [assume\ position\ NUM]]_l]_q \rangle$ (cf. Appah 2019)

Finally, it is worth pointing out that these constructions may replace the constructions from the first set which occur in the names of the books of the Bible, as given in (11). Also, the Fante translation of the quotation from 2 Kings1:13 uses ordinal numeral of the first kind presented in (11), as shown in example (19).

- (19) Na bio *ɔ-soma-a* *eduonum* *do* *safohene* *a*
 and again 3-send-PAST fifty over captain REL.
 ɔ-tsia *ebiasa nye* *n'-eduonum*
 3-piles.to.make three CONJ 3POSS-fifty
 ‘Again, he sent a third captain of fifty with his fifty mean’ (NKJV)

5.1 Ordinal numerals and the partitioning of the ordinal space.

The foregoing discussion shows that ordinal numerals impose a two-way partition on the ordinal space, as shown graphically in Figure 2. The first position (numbered 1 and shaded black) is rendered as *dzi kan* or *kan* alone in appropriate context, as described above. All other positions after first (numbered 2 and shaded grey) are referred to by means of ordinal numerals which contain number words such as *tsia ebien/to do ebien* ‘be second’. Here, because they include numbers, they can refer to specific positions or ranks in the ordinal space, all of which come subsequent to the first position. *Last* is excluded, as the final position in the series will equally be identified by a specific numeral occurring in the relevant construction type – [*tsia* NUM] or [*to do* Num].

1	2					
(<i>dzi</i>) <i>nkan</i>	<i>tsia ebien</i> <i>to do ebien</i>	<i>tsia ebiasa</i> <i>to do ebiasa</i>	<i>tsia anan</i> <i>to do anan</i>
‘1 st ’	‘2 nd ’	‘3 rd ’	‘4 th ’			

Figure 2: How ordinal numerals partition the ordinal space

6. The successor relation construction

The second means of expressing relative position within sets of objects is a class of VPs, which we refer to as the successor relation constructions or succession constructions. These ordinal-like VPs may be used to express the relative position of items in ordered series, much like ordinal numerals. They were, therefore, previously classified as ordinal numerals (cf. Christaller 1875). However, it is argued in this paper that they are not ordinal numerals for two reasons. First, unlike ordinal numerals, they are not numerals and they do not contain actual number words either and so they cannot be involved in number assignment. Secondly, the subset of ordinal numerals discussed in (16), which are built around the verb *to*, are constructed on the basis of a subclass of the construction in this group by the addition of a cardinal numeral like *ebien* ‘two’, as in *to do ebien* ‘be second’. In the rest of this section, we discuss the structure and distribution of these successor relation constructions and how they partition the ordinal space.

Three positions are distinguished, as far as the successor relation constructions are concerned. These are *first* (rendered as front), *last* (rendered as back/hind end) and every other position in-between. The first position is expressed as *dzi kan* (or just *nkan*, in appropriate context), which is also the construction for ordinal *first*, as noted in (8) above and shown to occur in the Akan translation of the name of the first book of Samuel in (9). For convenience, those examples are repeated here as (20) and (21), respectively.

- (20) *dzi* *kan*
 occupy/assume front
 ‘to be first’ [lit. to occupy the front/to lead]
- (21) *Samuel* *nwoma a* *o-dzi* *kan* *no*
 Samuel book REL 3SG-assume front CFD
 ‘the first book of Samuel’ (lit. the book of Samuel which leads)

Using the successor relation constructions, the second and any subsequent position before the final position in a set is expressed as *dzi ho* (22), *tsia ho* (23) or *to do* (24). Because these expressions do not contain any numeral, various locatives and relational nouns (cf. Osam et al. 2011) are employed to express the relative position of entities in ordered sets.

- (22) *dzi* *ho*
 occupy there
 ‘occupy the (next) place there/be next’
- (23) *tsia* *ho*
 pile there
 ‘be the next in the pile/be next’
- (24) *to* *do*
 fall on
 ‘to follow (lit. fall on)/be next’

One effect of the absence of actual numeral constituents in these constructions, compared to ordinal numerals, is that they do not refer to unique positions. Rather, they may be used for any consecutive position relative to a given position within an ordered set. In this sense, constructions (22), (23) and (24), which may be regarded as synonymous constructions, are all ruled out of expressing the first position because, in principle, there has to be an entity/position in place before another can be expected to follow. Thus, their semantics, which may be rendered in general terms as ‘be next’ or ‘follow’, prevents them from being used to express the first position in any set.

Using the successor relation constructions, the final position in a series is normally expressed as either *dzi ekyir* ‘occupy the back part’ (25) or *dzi ewiei* ‘occupy the end’ (26).

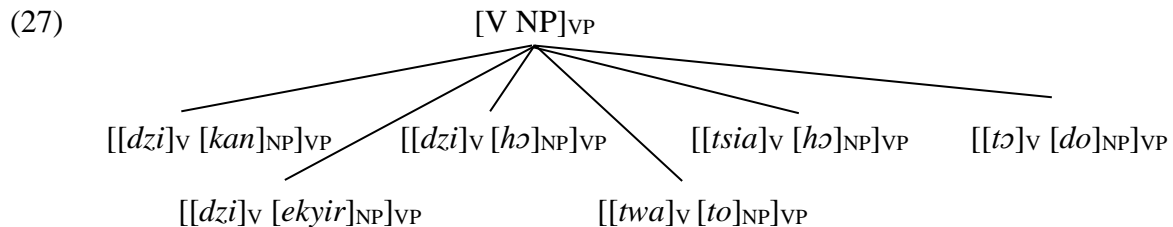
- (25) *dzi* *ekyir*
 occupy/assume back/hind
 ‘to occupy the back-part/to be last’

- (26) *dzi* *ewiei*⁴
 occupy/assume end
 ‘to occupy the end/to be last’

It is worth pointing out that the construction in (25) may also be used to code consecutive position, as in ‘the one that assumes the position behind/follows another’. Thus, it could be used interchangeably with the constructions in (22) - (24) in appropriate contexts. In fact, these constructions may be used for even the final position/item in a series, as if one had not come to the end of the sequence. This will be the case, for instance, when calling a position “last” is deemed inappropriate, politically incorrect, face-threatening, etc. For example, when kindergarten children have finished a 20-meter race, the teacher handling them may avoid saying a little child was “last” because it is potentially discouraging. Again, at a meeting where the persons present were competing to raise funds for a project, the one announcing the result avoided using the expression “last” in relation to the group that raised the least amount, although the person used *dzi kan* ‘be first’, *tɔ do* ‘be next’, etc. The decision not to use the Akan expression for last was a pragmatic one because it would have been face-threatening to use the construction for last.

We have argued that the constructions in (22) - (24) and even (25) may be used for any position after *first* and that this is due to the absence of number words (cardinal numeral) constituents which would have restricted them to the expression of unique positions within the set. Thus, the absence of a numeral in the construction correlates with the possibility of a construction being used for any position after the first. The absence of actual numeral constituents also means, as noted above, that the successor relations constructions are not numerals and so they are not involved in number assignment. Indeed, where there is the need to be specific, a cardinal numeral has to be introduced to form a proper ordinal numeral as shown in (16). This is what was referred to in the introduction, where it was indicated that one reason for arguing that successor relation constructions are not ordinal numerals, contra previous characterization, is that actual ordinal numerals may be built on these ordinal-like successor relation constructions. Hence, we can clearly distinguish them from Akan ordinal numerals which must contain actual numbers, as discussed in Section 5, the only exception being *first*, which generally tends to be different cross-linguistically.

Just like the ordinal numerals discussed above, the successor relations constructions make use of structural options already available in the language system for their formal expression. Thus, structurally, they are regular verb phrases, and so we may represent each of them as a specific instantiation of the VP construction in Akan, as shown in (27).



⁴ The noun *ewiei* is derived from the parasynthetic affixation of prefix *a-* and suffix *-i* to the verb *wie* ‘to finish’.

Again, as constructions, each expression is paired with a meaning specification, as shown in (28), and each one means ‘be next’, which could be second, third, sixth, etc. They do not refer to unique positions in the ordinal space.

- (28) a. $[[dzi]_V [kan]_{NP}]_{VP}$ ‘be first’
 b. $[[dzi]_V [hɔ]_{NP}]_{VP}$ ‘be next’
 c. $[[tsia]_V [hɔ]_{NP}]_{VP}$ ‘be next’
 d. $[[tɔ]_V [do]_{NP}]_{VP}$ ‘be next’
 e. $[[dzi]_V [ekyir]_{NP}]_{VP}$ ‘be last’
 f. $[[twa]_V [to]_{NP}]_{VP}$ ‘be last’

6.1 The successor relation constructions and the partitioning of the ordinal space

We observe, from the foregoing discussion, that successor relation constructions may be grouped into two, depending on how they partition the ordinal space. However, there is a common expression for ‘first’, *dzi kan* ‘occupy/assume front/to lead’. This is due to the fact that constructions like *dzi hɔ* and *tɔ do* cannot be used to refer to an initial position in a set, given their general meaning of addition to some already existing quantity/position. They refer to consecutive positions and, on occasion, can be used even for the final position, creating the impression that the reckoning continues. Thus, it would not be felicitous to refer to a first position by an expression which presupposes an existing value/position.

The partition imposed by the successor relation constructions exemplified in (22) - (26) may be represented graphically as **Figure 3**. The first subtype partitions the space into three, as shown on the top row of **Figure 3** – first position, rendered as *dzi kan* (numbered 1 and shaded black), last position rendered as *dzi ekyir/ewiei* (numbered 3 and shaded ash), and others in-between, rendered variously as *dzi hɔ*, *tsia hɔ*, or *tɔ do* (numbered 2 and shaded grey).

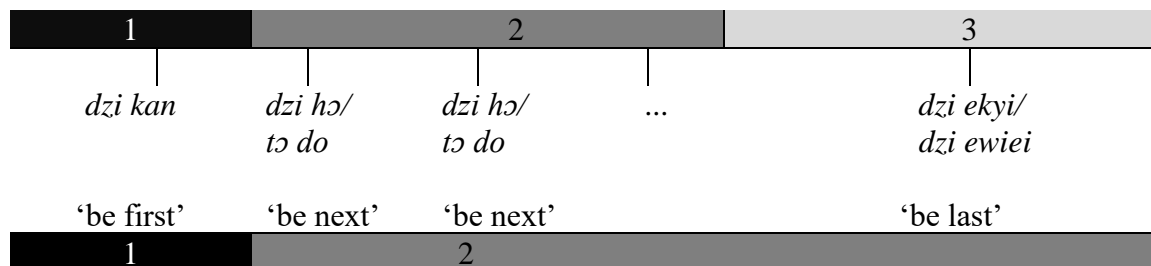


Figure 3: The partition of the ordinal space by successor relation constructions

The second subtype, as the bottom row of **Figure 3** shows, imposes a two-way partition – first position, rendered as *dzi kan* (numbered 1 and shaded black) and any subsequent position, including the last in a non-finite ordered set, realised as *tɔ do* (numbered 2 and shaded grey).

As noted in the introduction, there is vehement disagreement (from a reviewer) over the position taken in this paper that the constructions discussed in this section are not ordinal numerals. It is argued, among others, that the position assumed in this paper amounts to completely ruling out language variation for the encoding of one and the same concept. There is no gain saying that I disagree with the objections raised. Indeed, there will be no need for this paper, if I were to accept that even the successor relation constructions are all ordinal numerals, because I would not be saying anything different from Christaller (1875). It has been shown in the present paper that even within the same language there can be more than one

means of expressing ordinal meaning, as the discussion in section 5 shows. However, we have also shown that not all the constructions so classified previously are ordinal numerals. This is because we have clearly shown that, while they may refer to positions in ordered items, what we call succession constructions or successor relation constructions are different in substance from ordinal numerals because they may be the basis for the formation of a subclass of actual ordinal numerals.

Another point that is canvassed in opposition to the claim that the constructions discussed in this section are not ordinal numerals is that, like English *second* which derives from Latin *secundus* ‘second’ which also derives from *sequi* ‘follow-INF’ which means to follow (Veselinova 1997; Greenberg 2000:780), the verb phrases cited in this section could be seen as early variants of evolving alternative expressions for ‘second’. Whereas this sounds interestingly plausible, there is no evidence that the constructs are lexicalizing or grammaticalizing into ordinal numerals meaning second. Additionally, they are not used for second position only. As indicated above, any of the constructs discussed in this section could refer to the *second*, *third*, *sixth*, *seventh*, *tenth*, or even *hundredth*. What is required is that there exists some item or position, which could be any position at all, so that any subsequent one can *dzi hɔ* or *tɔ do* ‘be next to it’, .

7. Conclusion

In this paper, we have discussed the means by which positions in ordered sets are expressed in Akan. We started with Christaller’s classes of “Ordinal numerals” and went on to show that there is basis for distinguishing two kinds of constructions from the constructs reported in Christaller (1875), working with the idea of number assignment which has to do with using numbers to assess the properties of empirical objects. The first class has constructions that express rank or position of items (first, second, third, etc.) within ordered sequences numerically (Stump 2010). We have argued that they are actual ordinal numerals per the criterion of number assignment. In these constructions, the numeral makes it possible to refer to unique positions in the ordinal space. The second class has constructions that express successor relations non-numerically and so cannot refer to unique positions or ranks in ordered sets. They simply mean ‘be next’ or follow. We have argued that they are not ordinal numerals. Thus, the former can be differentiated from the latter because the former contain cardinal numeral constituents. Additionally, constructions from the latter group may be the base for the formation of actual ordinal numerals (Appah 2019). The distinction made in this paper makes Akan, to some extent like English which, in addition to ordinal numerals like *fourth*, *fifth*, etc., has items like *next*, *follow*, etc., which express succession. No one ever calls *next* an ordinal numeral because it is not a numeral and it does not participate in number assignment. The obvious difference is that English *next* is an adjective, but Akan Uses a VP which is part of a relative clause.

In the discussion, we showed that all the constructions have the structure of VPs. Thus, following Appah (2019) we argued that the constructions inherit their formal structure from already existing VP constructions in the language. We indicated that the two groups of constructions partition the ordinal space differently and we illustrated the different partitions graphically. We also indicated that the partitioning of the ordinal space may be influenced by pragmatic factors. For example, a potential three-way partition may be reduced to a two-way partition, if the speaker believes that it may be politically incorrect or potentially face

threatening to refer to the final position in a set by the construction for *last*. In that case, the expression for *next* would be used, as if the speaker had not come to the end of the reckoning.

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I would like to thank an anonymous reviewer of *Constructions+* whose suggestion of a need for a single focus in the review of Appah (2019) became the motivation for the present paper. I am most grateful. I am also grateful to the editors and two anonymous reviewers of SKASE JTL for their comments that helped to improve this paper, although I have been a bit stubborn in not accepting all their recommendations. Thus, I am solely responsible for any remaining shortcomings of the present paper.

Abbreviations

1	First person
3	Third person
CONJ	Conjunction
COMP	Complement
CxM	Construction Morphology
CFD	Clause Final Determiner
HAB	Habitual
Lit.	Literal meaning
N	Noun
NKJV	New King James Version
NP	Noun Phrase
NUM	Numeral/numerical value
ORD	Ordinal
PL	Plural
REL	Relative marker
SG	Singular
SEM	Semantics
V	Verb
VP	Verb phrase

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Clement Kwamina Insaadoo Appah
 Department of Linguistics,
 University of Ghana
 P.O. Box LG61
 Legon-Accra,
 Ghana
cappah@ug.edu.gh

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Endocentric and exocentric compounds in Kiswahili

Amani Lusekelo, University of Dar es Salaam

*The endocentric-exocentric dichotomy is the core of the discussion in this article. The discussion concerns the semantic classification of compounds in Kiswahili. The data substantiates the presence of the firm dichotomy of the endocentric and exocentric compounds. I establish that endocentric compounds split into left-headed, double-head and right-headed structures due to semantic contribution of the words which form the compounds. I suggest that exocentric compounds require special attention in that the head of the compound is projected from the semantic-pragmatic context in the speaker community. In the article, I show that Kiswahili compounds reveal grammaticalisation of the proto-item *-yánà 'child' to reflex mwana that means 'Specialist of X'. Also, Kiswahili data reveals the lexicalization of the proto-item *-ényé from the 'Possessive Pronoun' to left-most element of a compound mwenye 'Having X'. I argue that this is a kind of bahuvrihi compounding.*

Keywords: Compounds, Endocentric, Exocentric, Grammaticalization, Kiswahili

1. Introduction¹

Research on the dichotomy of exocentric and endocentric compounds has yielded contradicting outcomes, which require illumination by further research in Bantu languages such as Kiswahili. On the one hand, some researchers find a clear-cut distinction between endocentric compounds, whose resultant structure contains a head² that contributes the main meaning to the structure as a whole, and exocentric compounds, whose semantic content derive nothing from the combined roots but an extension or inference of meaning outside the combined words, hence becomes headless (Booij 2002, 2005; Haspelmath 2002; Bauer 2003; Bisetto & Scalise 2005; Dressler 2006; Mphasha 2006; Kageyama 2010; Ilonga 2016; Appah 2017). On the other hand, other researchers raise doubts about the existence of exocentric compounds owing to the metaphorical and metonymical inferences of the semantics of the compounds, which interpret exocentric compounds as a kind of endocentric compounds in word-formation (Benczes 2004, 2006, 2015; Bauer 2008). Based on a prototypical approach to semantics, Benczes (2015: 9) concludes that “the traditional endo- and exocentric distinction as a means of classification needs to be abandoned” because compounds should be placed into the prototypical cases at the core and metaphorical/metonymical in the periphery. I find this debate worth contributing to using compounding as a word-formation process in Kiswahili.

Apart from Turkana and Kayardild which have been reported to host only exocentric compounds (Bauer 2008), new evidence substantiates the presence of exocentric compounds as a separate category (Scalise et al. 2009). Researchers affirm that some languages host a large

¹ This article was written during my sabbatical stay in the Department of African Languages at the University of Stellenbosch (South Africa). I am grateful to the University of Stellenbosch for the accommodation and insuring very conducive research environment.

² Common terms in compounding include headed, double-headed, left-headed and right-headed. Slightly different terms include dependent (Haspelmath 2002), right-edge and rightmost word (Bauer 2008), no-head and two-heads (Scalise et al. 2009), headless and double-headed (Kageyama 2010), head element and right-hand element (Benczes 2015) and modifier-head (Heine 2019). I use the common terms together with element and modifier.

number of exocentric compounds which split into numerous sub-categories, some bearing semantic contents obtained through metaphoric and metonymic interpretations of the meanings of the two combining words, while other exocentric compounds have become lexicalized (Kageyama 2010; Appah 2017). Both Kageyama (2010) and Appah (2017) argue that Japanese and Akan contain many exocentric compounds which can be analysed metaphorically, metonymically and synthetically, hence there is no way the category can be dispensed with. Further research on the properties of compound words is required to establish whether the differentiation of exocentric and endocentric compounds can be plausibly correct or not.

A debate also arises about how to characterize endocentric and exocentric compounds. While some scholars postulate that even exocentric compounds may be treated as bearing a head which permits the assignment of inflectional affixes (Haspelmath 2002; Plag 2002; Dressler 2006; Katamba & Stonham 2006; Gichuru 2010), other scholars dispense with the morphological parameter in classification of compounds in favour of the semantic and cognitive approaches of classification of compounds (Bauer 2008; Kageyama 2010; Benczes 2015; Appah 2017). In the course of the presentation of data in this article, I want to argue that an interface is required in order to establish the properties of compounds in Kiswahili. While morphological operations are necessary in the formation of individual words, a semantic interface is required to assure that the combination of words yields a compound word with semantic content interpretable in the speaker community. Also, I want to suggest that based on argumenthood of nouns (Rapport-Havov & Levin 2010), the syntactic operations that surround clauses become necessary in defining the semantic-cum-syntactic properties of the various kinds of compounds in Kiswahili.

Specifically for Kiswahili, research outputs on compound words by Gichuru (2010), Lusekelo (2014) and Mashauri (2018) is not yet complete on two grounds. Firstly, the classification of compounds into two categories is amiss and would require illumination. Gichuru (2010), Lusekelo (2014) and Katikiro (2017) assume that Kiswahili contains two kinds of semantic interpretation of compounds, *vis-à-vis*: (a) overt meaning which derives from the meaning of the combined words, i.e. endocentric compounds, and (ii) silent (covert) meaning which is not related to the inherent meaning of the combined words, i.e. exocentric compound. The dichotomy of the semantics of resultant compounds is re-analysed and three kinds of endocentric compounds will be proposed in this article. In addition, the head of the exocentric compound is suggested to have been projected at both the morphosyntactic and semantic-pragmatic levels, rather than in separation, as has been assumed previously.

Secondly, Mashauri (2018: 9) points out that “the first word (among the words that form) be the semantic head of the compound noun”. This postulation considers the previous postulation by Gichuru (2010) and Lusekelo (2014) that compounds in Kiswahili are left-headed. There are questions that arise from the postulation that nominal compounds in Kiswahili are left-headed. I present evidence to substantiate that this postulation does not work in all resultant compounds in Kiswahili. Therefore, various kinds of exocentric compounds in Kiswahili require a combined morphological analysis and semantic interpretation in order to obtain the proper outcome. Consequently, I argue in this article that there are at least three structures of endocentric compounds in Kiswahili: double-head, left-headed and right-headed compounds.

In order to advance my argument smoothly, after this introduction, I organize this article as follows. In section two, I present the morphosyntactic analysis of nominal compounds in Kiswahili in order to highlight the headedness. Based on morphosyntactic perspective, I show that scholars assumed that the left-most noun becomes the head of compounds (Gichuru 2010;

Kula 2012). This suggest does not hold when semantic approach is used. In section three, I revisit the existing literatures and expand on the data that had been used. I highlight weaknesses about endocentric and exocentric compounds in previous works. Then I establish the boundary between double-headed, left-headed and right-headed compounds. I discuss the properties of endocentric and exocentric compounds in section four. I pay much attention on metaphorical, metonymical and synthetic interpretation of Kiswahili compounds. In section 5, I highlight the grammaticalisation path and lexicalization pattern of two elements, namely the grammaticalisation of the elements *-ana*³ ‘person/thing that has X’ and lexicalization of the possessive pronoun *-enye* to a lexical word *enye* ‘person/thing that has X’. The conclusion is in section six.

2. Morphosyntactic analysis of compounds

Nouns in Kiswahili constitute nominal prefixes and roots, which is a characteristic feature of Bantu languages (Carstens 1993; Contini-Morava 2000; Schadeberg 2001). Basically, these nouns show number in singular and plural pairings in the noun phrase. Also, nominal prefixes determine the pronominal prefixes which are affixed to the verbs in sentences (Contini-Morava 1994). The nominal and pronominal prefixes in Kiswahili are provided in Table 1.

Table 1: Noun class system for common nouns in Kiswahili

Class	Nominal prefix	Examples	Semantic classifications	Pronominal prefixes
1	mu-	<i>muuguzi</i> ‘nurse’	humans in singular	a-
2	wa-	<i>wauguzi</i> ‘nurses’	humans in plural	wa-
3	m-	<i>mbuni</i> ‘coffee tree’	plants in singular	u-
4	mi-	<i>mibuni</i> ‘coffee trees’	plants in plural	i-
5	ji-/ø	<i>jicho</i> ‘eye’	human body in singular	li-
6	ma-	<i>macho</i> ‘eyes’	human body in plural	ya-
7	ki-	<i>kiti</i> ‘chair’	small entities in singular	ki-
8	vi-	<i>viti</i> ‘chairs’	small entities in plural	vi-
9	N-	<i>mbuzi</i> ‘goat’	animate in singular	i-
10	N-	<i>mbuzi</i> ‘goats’	animate in plural	zi-
11	u-	<i>ubao</i> ‘board’	things (long/thin)	u-
14	u-	<i>utu</i> ‘humanity’	abstract nouns	u-
15	ku-	<i>kulima</i> ‘to farm’	infinitival nouns	ku-

There are possibilities of some basic semantic classifications of nouns in different classes. However, there are numerous overlaps in the classifications (Contini-Morava 2000). These overlaps arise out of the morphology of nominal prefixes and the semantic outcome of the combinations of nominal prefixes and roots.

³ The elements *-ana* ‘specialist of X’ and *-enye* ‘having X’ are generally represented as *mwana* ‘CHILD/SON’ and *mwenye* ‘WITH/HAS X’ in the literature (see Lusekelo 2014; Mpiranya 2015; Mashauri 2018). I use the roots *-ana* and *-enye* to refer to the grammaticalised and lexicalised parts of compounds in Kiswahili. Nonetheless, the lexical entries *mwana* ‘OFF SPRING’ and *mwenye* ‘WITH/HAS X’ are still useful in the language.

The examples of clauses with nominal and pronominal prefixes are given below. The example (1) indicates the singular nominal prefixes that manifest as *m-* (class 1) and the pronominal prefix *a-* (class 1). The example (2) shows the same prefix *wa-* occurs as nominal and pronominal prefix. Some prefixes syncretic to nominal prefixes occur on adjectives, as illustrated in (3-4). The example (3) shows the pronominal prefix *u-* in this example is different in morphology from the nominal prefix *m-*. The plural pattern is given in (4).

- (1) *Mu-uguzi a-me-m-beb-a m-gonjwa.*
 1-nurse SM1-PFV-OM1-carry-FV 1-patient
 ‘The nurse is carrying the patient.’
- (2) *Wa-uguzi wa-me-wa-beb-a wa-gonjwa.*
 2-nurse SM2-PFV-OM2-carry-FV 2-patient
 ‘Nurses are carrying patients.’
- (3) *M-buyu m-refu u-li-anguk-a jana.*
 3-baobab 3-tall SM3-PST-fall-FV yesterday
 ‘The tall baobab fell yesterday.’
- (4) *Mi-buyu mi-refu i-li-anguk-a jana.*
 4-baobab 4-tall SM4-PST-fall-FV yesterday
 ‘The tall baobabs fell yesterday.’

Compound nouns also bear the grammatical feature number, which is hosted in the nominal prefixes in Kiswahili. Table 2 provides the noun class system for the Kiswahili compounds. Example sentences appear in (5-8).

Table 2: Noun class system for compound nouns in Kiswahili

Class	Nominal prefix	Examples	Pronominal prefixes
1	mu-	<i>mfanyakazi</i> ‘worker’	a-
2	wa-	<i>wafanyakazi</i> ‘workers’	wa-
3	m-	<i>mdakakomba</i> ‘shrub (<i>Rutaceae</i>)’	u-
4	mi-	<i>midakakomba</i> ‘shrubs (<i>Rutaceae</i>)’	i-
5	ji-/ø	<i>garimoshi</i> ‘train’	li-
6	ma-	<i>magarimoshi</i> ‘trains’	ya-
7	ki-	<i>kipimajoto</i> ‘thermometer’	ki-
8	vi-	<i>vipimajoto</i> ‘thermometers’	vi-
9	N-	<i>njugumawe</i> ‘bambara nut’	i-
10	N-	<i>njugumawe</i> ‘bambara nuts’	zi-
11	u-	<i>ugonjwa mkuu</i> ‘epidemic’	u-
14	u-	<i>uanachama</i> ‘membership’	u-

An illustrative example (5) concerns the noun+noun (N+N) compound *garimoshi* ‘train’. This compound noun bears a zero nominal prefix. The zero nominal prefix obtained in nouns also unfolds in the adjective *kuu* ‘old’ that modifies the compound noun. Its plural counterpart in example (6) indicates the compound *magarimoshi* ‘trains’ that consists of the nominal prefix

ma- (class 6). The nominal prefix unfolds in its modifier *makuu* ‘old’. In both examples, the nominal prefix control agreement pattern for adjectives and nouns. The same is true for the agreement on the verbs.

- (5) *ø-garimoshi* *ø-kuu* *li-me-pinduka*
 5-train 5-old SM5PFV-overturn
 ‘An old train has overturned.’

- (6) *Ma-garimoshi* *ma-kuu* *ma-wili* *ya-me-pinduka*
 6-train 6-old 6-two SM6-PFV-overturn
 ‘Two old trains have overturned.’

- (7) *M-fanyabiashara* *a-li-zi-nunu-a* *njugumawe*
 1-traader SM1-PST-OM10-buy-FV 10-bambara-nuts
 ‘The trader bought bambara-nuts.’

- (8) *Wa-fanyabiashara* *wa-li-zi-nunu-a* *njugumawe*
 2-traader SM2-PST-OM10-buy-FV 10-bambara-nuts
 ‘Traders bought bambara-nuts.’

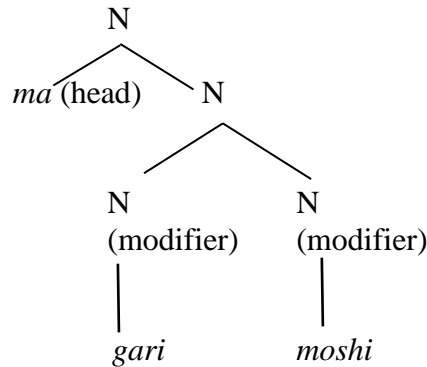
The difference is shown for the verb+noun (V+N) compound. The example (7) indicates that the nominal compound *mfanyabiashara* ‘trader’ derives from the verb *fanya* ‘do, work’ and noun *biashara* ‘trade’. Apart from combination of the two lexical entries in Kiswahili, its formation involves the insertion of nominal prefix *m-* (class 1). The plural counterpart is obtained by affixation of the nominal prefix *wa-* (class 2). In both examples, the nominal prefixes determine the subject agreement on the verb.

The post-verbal nouns behave like other nouns in Kiswahili. The nominal prefix determines the agreement with the subject. The compound noun *njugumawe* ‘bambara nut’ derives from *njugu* ‘nuts’ and *mawe* ‘stones’. The first noun hosts the nasal nominal prefix (class 10), while the second one bears the nominal prefix *ma-* (class 6). It is the nasal prefix which determines object agreement in examples (7-8). Therefore, the properties of the nominal prefixes are similar in both common and compound nouns in Kiswahili.

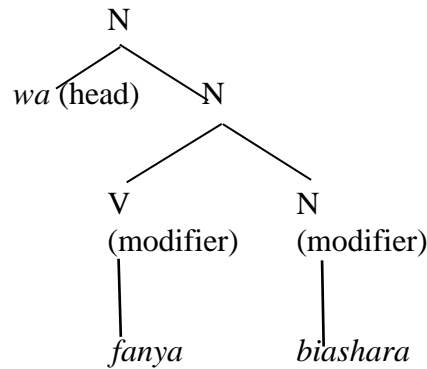
The morphosyntax of Kiswahili sentences reveal that nominal prefixes of both bare and compound determine the agreement in the noun phrases and to the verb system. It means that the nominal prefixes of the left-most noun in compounds determine the agreement patterns in noun phrases and to verbs. The nominal prefixes of the right-most nouns do not trigger any agreement.

Now on the basis of the agreement patterns described for compounds nouns, Gichuru (2010) and Kula (2012) suggest that the nominal prefix is assumed to be the head of compound nouns (see also Mphasha 2006; Musehane 2007a). In this article, I want to argue that based on morphosyntactic analysis, this claim holds. This is also supported by the analyses of the morphosyntax of common nouns by Contini-Morava (1994, 2000, 2007) and Carstens (1991, 1993, 2008). Based on these scholars, the structure of the N+N compound will be as in (9), while that of the V+N compound will be as in (10).

(9) The structure of the compound noun *magarimoshi* ‘trains’



(10) The structure of the compound noun *wafanyabiashara* ‘traders’



The suggestion that the left-most element determines the morphosyntax of compounds is not supported fully by all compounds in Kiswahili. Mpiranya (2015) points out that some compounds bear similar nominal prefixes for both nouns which are combined, e.g. *mwanamke/wanawake* ‘woman/women’ and *mwanamwali/wanawali* ‘maiden(s)’. The agreement pattern is exemplified below.

(11) *Mw-anamwali m-moja a-me-fik-a u-kumbi-ni*
 1-maiden 1-one SM1-PFV-arrive-FV 11-hall-loc
 ‘One maiden has arrived in the hall.’

(12) *Wa-anawali wa-tatu wa-me-fik-a u-kumbi-ni*
 2-maiden 2-three SM2-PFV-arrive-FV 11-hall-loc
 ‘Three maidens have arrived in the hall.’

The elements of the compounds *mwanamwali* ‘maiden’ and *wanawali* ‘maidens’ contain similar nominal prefixes. Notice that none of the nominal prefixes could be gauged openly to determine agreement. Based on this observation, I will argue in this article that the decision of the agreement depends on the inherent content of the entire compound now.

Kageyama (2010) and Appah (2017) opine that morphosyntax of compounds has to be approached separately from semantic approach otherwise the endocentric-exocentric

dichotomy can crumble. Moreover, Benczes (2015) suggests that the description of the classes of compounds can well be articulated using the cognitive approach of prototypes, rather than other approaches. In this line, I want to show evidence to substantiate that, semantically, even the right-most noun in a compound can become the head in Kiswahili. This is a different view point of headedness of compounds in Kiswahili.

In addition, I offer examples to substantiate that the inherent content of the noun-stem is pivotal in provision of semantic classification of nouns (Contini-Morava 1994). I will support the claim that the semantic and cognitive perspective of compounds holds in assigning meaning to compounds (Kageyama 2010; Benczes 2015; Appah 2017). The semantics of the compounds will then determine its headedness.

3. The data and previous analyses of compounds in Kiswahili

3.1 Formation of compounds in Kiswahili

The records of ancient Kiswahili, technically stored in poetic works of ancient poets, contain few compounds.⁴ The earliest publications for Kiswahili (Steere 1870, 1896) contain rare compounds; some are shown in (13). But Madan (1902) contains more compounds; some are shown in (14).

(13)	COMPOUNDS	DERIVATIONS	
	<i>mwanzuo</i> ‘student’	<i>mwana</i> ‘specialist of X’	<i>zuo</i> ‘school’
	<i>wanamume</i> ‘man’	<i>mwana</i> ‘having X’	<i>mume</i> ‘male’
	<i>mwanamuke</i> ‘woman’	<i>mwana</i> ‘having X’	<i>muke</i> ‘male’
	<i>mwanakupona</i> ‘poet’	<i>mwana</i> ‘having X’	<i>kupona</i> ‘to heal’
	<i>kifungua mlango</i> ‘door opener’	<i>fungua</i> ‘open’	<i>mlango</i> ‘door’
	<i>wafanyabiashara</i> ‘traders’	<i>fanya</i> ‘do’	<i>biashara</i> ‘trade’
	<i>wafua-vyuma</i> ‘iron smiths’	<i>fua</i> ‘forge’	<i>vyuma</i> ‘iron’
(14)	COMPOUNDS	DERIVATIONS	
	<i>mwuza nguo</i> ‘mercenary’	<i>uza</i> ‘sell’	<i>nguo</i> ‘clothing’
	<i>mshona nguo</i> ‘milliner’	<i>shona</i> ‘weave’	<i>nguo</i> ‘clothing’
	<i>mchanja kuni</i> ‘woodman’	<i>chanja</i> ‘chop’	<i>kuni</i> ‘firewood’
	<i>ugonjwa mkuu</i> ‘epidemic’	<i>ugonjwa</i> ‘disease’	<i>mkuu</i> ‘big’
	<i>mwanafunzi</i> ‘disciple’	<i>mwana</i> ‘specialist of X’	<i>funzi</i> ‘learning’
	<i>mwana chuoni</i> ‘student’	<i>mwana</i> ‘specialist of X’	<i>chuo</i> ‘college’
	<i>gari la moshi</i> ‘railroad train’	<i>gari</i> ‘automobile’	<i>moshi</i> ‘fume’
	<i>kondoo mhasi</i> ‘wether’	<i>kondoo</i> ‘sheep’	<i>mhasi</i> ‘castrated’
	<i>njugumawe</i> ‘bambara-nut’	<i>njugu</i> ‘nuts’	<i>mawe</i> ‘stones’
	<i>njugu nyassa</i> ‘ground-nuts’	<i>njugu</i> ‘nuts’	<i>nyassa</i> ‘lake’

⁴ Most compounds analysed in this article are nouns. As highlighted in section 2, the structure nouns in Kiswahili consists of the nominal prefix and nominal stem for each noun class (Contini-Morava 1994), e.g. *m-fua vyuma* ‘iron smith’ and *wa-fua vyuma* ‘iron smiths’. In the subsequent sections, I present the data without dividing the nominal structures. However, readers should be able follow the points made once they make reference to section 2.

The coinage of compounds began during the standardization of the language in the 1930s. For instance, the name of the rail (train) was not listed by Steere (1896) but appeared as *gari la moshi* ‘train’ in Madan (1902). Later this expression was compounded into *garimoshi* ‘train’, which is typically lexicalized in Kiswahili. The word thermometer is recorded as *kipande cha kuonya homa* ‘an instrument to detect sicknesses’, while in the current Kiswahili *kipimajoto* ‘thermometer’ (from *-pima* ‘measure’, *joto* ‘heat’) is commonly used.

In socio-economics and political science, some words are not recorded in the dictionary by Madan (1902). The word investment is listed as *gharama* ‘cost, charges’ and *malipo* ‘payment’. Contemporary Kiswahili makes use of *kitegauchumi* ‘investment’ (derived from *-tega* ‘trap’ and *uchumi* ‘economy’). The words exploitation and proletariat, which are related to accumulation of wealth and political power, are not recorded. In current Kiswahili is coined as *mwanasiasa* ‘politician’. The term politician is termed *mtu wa politics* ‘man of politics’, which is a combination of English and Kiswahili words. The words investment and politician acquired compound entries in the present-day Kiswahili.

The grammar book by Ashton (1944) contains few compound nouns. The examples in (15) show that the compound nouns formed by the prefixation of *mwana* ‘child/specialist of X’ are common. This is common but tracing the meaning of words such as *mwanafunzi* ‘pupil’ with the derivation element *-ana* gives plausible signs of grammaticalization.

(15)	COMPOUNDS	DERIVATIONS
	<i>mwanahewa</i> ‘airman’	<i>mwana</i> ‘specialist of X’ <i>hewa</i> ‘air’
	<i>mwanafunzi</i> ‘pupil’	<i>mwana</i> ‘specialist of X’ <i>funza</i> ‘learn’
	<i>mwanaume</i> ⁵ ‘man’	<i>mwana</i> ‘having X’ <i>ume</i> ‘manhood’
	<i>mwanamaji</i> ‘sailor’	<i>mwana</i> ‘specialist of X’ <i>maji</i> ‘water’

The formation of new terms in Kiswahili is noted for coining many compounds (King’ei 1999; Kishe 2003; Mpiranya 2015). Kishe (2003: 8) states categorically that “compounding is a device for creating terminology which in Kiswahili consists of two parts namely word compounding involving Kiswahili words only and word compounding involving Kiswahili and English words.” While King’ei (1999) argues that compounding is under-utilized, the dictionary of Standard Kiswahili contains numerous compounds. Examples in (16) comprise names of living organisms (TUKI 2014).

(16)	COMPOUNDS	DERIVATIONS
	<i>mjombakaka</i> ‘lizard sp.’	<i>mjomba</i> ‘uncle’ <i>kaka</i> ‘brother’
	<i>mkatafungo</i> ‘tree sp.’	<i>mkata</i> ‘cutter’ <i>fungo</i> ‘node, knot’
	<i>mkomamanga</i> ‘pomegranate’	<i>mkama</i> ‘local ruler’ <i>manga</i> ‘coast’
	<i>mkungumanga</i> ‘fig tree’	<i>mkungu</i> ‘almond tree’ <i>manga</i> ‘coast’
	<i>mnukauvundo</i> ‘shrub sp.’	<i>mnuka</i> ‘smeller’ <i>uvundo</i> ‘smell, stench’
	<i>mdonoakupe</i> ‘bird sp.’	<i>mdonoa</i> ‘pecker’ <i>kupe</i> ‘tick’
	<i>mgombakofi</i> ‘yam plant’	<i>mgomba</i> ‘banana’ <i>kofi</i> ‘slap’
	<i>kombamwiko</i> ‘cockroach’	<i>komba</i> ‘wipe clean’ <i>mwiko</i> ‘wooden spoon’

⁵ In earlier publications (e.g. Madan 1902), the word ‘man’ is *mwanamume* while Ashton (1944) has *mwanaume*. In the former, the derivation is *mwana* ‘having X’ and *mume* ‘male’, while in the latter it is *mwana* ‘having X’ and *ume* ‘manhood’. Mpiranya (2015) states that both representation is common in the language.

Mpiranya (2015) presents compounds for new terms. I highlight four points from his data. The first point concerns the role of the nominal root *-ana* in the formation of compounds in Kiswahili. Mpiranya (2015: 178) points out that “a great number of technical terms or terms referring to new occupations and entities are produced by compounding two different nouns, or a noun with an adjective or numeral”. Based on examples in (17), Mpiranya (2015) argues that “compound nouns based on *mwana/wana*, which means “specialist”, “member”, or “actor”, depending on the context, instead of “child/children; offspring(s)” (p. 178). I will use such examples to argue that the grammaticalization of *-ana* has occurred and these are obvious of the use of the root *-ana* to mean specialisation or occupation. I show in section five that these three occupations listed by Mpiranya are not the only ones.

(17)	COMPOUNDS		DERIVATIONS	
	<i>mwanachama</i>	‘member of part’	<i>mwana</i> ‘member’	<i>chama</i> ‘party’
	<i>mwananchi</i>	‘citizen’	<i>mwana</i> ‘member’	<i>nchi</i> ‘country’
	<i>mwanamaji</i>	‘sailor’	<i>mwana</i> ‘specialist’	<i>maji</i> ‘water’
	<i>mwanahewa</i>	‘aviator’	<i>mwana</i> ‘specialist’	<i>hewa</i> ‘air’
	<i>mwanaanga</i>	‘astronaut’	<i>mwana</i> ‘specialist’	<i>anga</i> ‘sky’
	<i>mwanasheria</i>	‘lawyer’	<i>mwana</i> ‘specialist’	<i>sheria</i> ‘law’
	<i>mwanariadha</i>	‘athletics’	<i>mwana</i> ‘actor’	<i>riadha</i> ‘athletics’
	<i>mwanamitindo</i>	‘model/artist’	<i>mwana</i> ‘actor’	<i>mitindo</i> ‘fashion’

The second point concerns the highlight by Mpiranya that *-enye* is pronominal which is used to derive compound nouns: “the presence of the pronouns *-enye* “with (that has/have)” and *-enyewe* ‘self/selves’ as shown in an example *mwalimu mwenye ujuzi* ‘a knowledgeable teacher (lit. ‘with knowledge’)” (Mpiranya 2015: 31). Mpiranya highlights that “*-enye* is unaccented, as it constitutes a “compound adjective” with the following noun, with one accent that falls on the second-to-last syllable of the group (here, accented vowels are marked with an acute accent).” (p. 31). I will show evidence in section five to substantiate that this element is also grammaticalised in Kiswahili.

The third point concerns the formation of “modern compound nouns based on *elimu* “knowledge; education”, as well as nouns created by combining nouns and adjectives or numerals (additional terms” (Mpiranya 2015: 179). Irrespective of its robust in use, the word *elimu* “knowledge; education” is not yet grammaticalised. (18) shows the regular patterns of compounds formed by this strategy.

(18)	COMPOUNDS		DERIVATIONS	
	<i>elimu lishe</i>	‘nutrition’	<i>elimu</i> ‘education’	<i>lishe</i> ‘(la ‘eat’) nutrients’
	<i>elimu misitu</i>	‘forestry’	<i>elimu</i> ‘education’	<i>misitu</i> ‘forests’
	<i>elimu jamii</i>	‘sociology’	<i>elimu</i> ‘education’	<i>jamii</i> ‘society’
	<i>elimu wadudu</i>	‘entomology’	<i>elimu</i> ‘education’	<i>wadudu</i> ‘insect’

The last point revolves around another regular pattern of V+N compounds in Kiswahili. Mpiranya (2015: 179) states that “many nouns referring to different functions and social statuses are formed by replacing the prefix *ku-* of the infinitive with an animate class prefix *mu-/wa-*.” Kiswahili lexicon has robust verb+noun compounds, as illustrated in (19) (Mpiranya 2015: 181).

(19)	COMPOUNDS	DERIVATIONS	
	<i>mwendesha mashitaka</i> ‘prosecutor’	<i>kuendesha</i> ‘conduct’	<i>mashitaka</i> ‘charges’
	<i>mtema kuni</i> ‘wood cutter’	<i>kutema</i> ‘cut’	<i>kuni</i> ‘wood’
	<i>mwekahazina</i> ‘treasurer’	<i>weka</i> ‘keep’	<i>hazina</i> ‘treasure’
	<i>mjasiriamali</i> ‘entrepreneur’	<i>jasiria</i> ‘do’	<i>mali</i> ‘wealth’
	<i>msemakweli</i> ‘honest person’	<i>sema</i> ‘say’	<i>kweli</i> ‘truth’

Gichuru (2010) and Katikiro (2017) discuss the properties of compounds in Kiswahili. The examples in (20) illustrate 2-word compounds. Both authors provide data for 3-word compounds which are re-analysed in section 3.2 below.

(20)	COMPOUNDS	DERIVATIONS	
	<i>alatuli</i> ‘immobile organs’	<i>ala</i> ‘tool/apparatus’	<i>tuli</i> ‘cool, calm’
	<i>kipaumbele</i> ‘priority’	<i>pa</i> ‘give’	<i>umbele</i> ‘front’
	<i>kidoletumbo</i> ‘appendix’	<i>kidole</i> ‘finger’	<i>tumbo</i> ‘abdomen’
	<i>rusha roho</i> ‘modern <i>taarab</i> music’	<i>rusha</i> ‘throw’	<i>roho</i> ‘soul’
	<i>mpigataipu</i> ‘typewriter’	<i>piga</i> ‘hit’	<i>taipu</i> ‘type’
	<i>kipimamvua</i> ‘rain gauge’	<i>pima</i> ‘measure’	<i>mvua</i> ‘rain’
	<i>mbwa mwitu</i> ‘wild dog’	<i>mbwa</i> ‘dog’	<i>mwitu</i> ‘wilderness’
	<i>elimu mimea</i> ‘botany’	<i>elimu</i> ‘education’	<i>mimea</i> ‘plants’
	<i>mpigania uhuru</i> ‘revolutionist’	<i>pigania</i> ‘fight for’	<i>uhuru</i> ‘freedom’
	<i>nguvukazi</i> ‘labour force’	<i>pima</i> ‘measure’	<i>mvua</i> ‘rain’

The foregoing presentation has shown that Kiswahili has numerous compound words. Most of the compounds involve the combinations N+N and V+N. In the subsequent section, I re-analyse some of these compounds. Also, in the analysis in section 4, more illustrative examples from these sources are re-analysed.

3.2 Re-analysis of Kiswahili compounds

Studies on the properties of compounds (see Benczes 2006; Libben & Jarema 2006; Lieber & Štekauer 2009; Scalise et al. 2009; Kageyama 2010; Scalise & Vogel 2010; Moyna 2011; Štekauer et al. 2012; Appah 2017) substantiate that compounds exist in the world’s languages as a mechanism of word-formation. The Kiswahili data provided in section 3.1 substantiates that compounds are robust in Kiswahili.

Research has shown that the semantic properties of compounds involve endocentric compounds with a head arising from one of the combined words, and exocentric compounds, with questionable head status (Scalise et al. 2009; Kageyama 2010; Appah 2017). Variations on the amount and properties of endocentric and exocentric compounds are also reported (Kageyama 2010; Appah 2017). This point is not explicitly stated in the previous studies of compounds in Kiswahili (Gichuru 2010; Lusekelo 2014; Katikiro 2017). With regard to this point, the discussion that follows highlights the areas that need to be re-defined.

The representation of the African languages in discussions about the endocentric-exocentric dichotomy is very limited (Appah 2017). Both Kosch (2006) and Miti (2006) present only in passing the compounding processes in Bantu languages. Even some specialised studies ignored the inclusion of the endocentric-exocentric dichotomy (Musehane 2007a, b; Gichuru 2010), though a few studies covered it (e.g. Mphasha 2006; Kula 2012; Ilonga 2016;

Katikiro 2017). Even though these studies suggest headedness as the main criterion towards the classification of compounds. I will draw illustrative cases from Kiswahili.

The resources for compounds in Kiswahili provide for 3-word cases given in (21) (Gichuru 2010; Mashauri 2018).

(21)	<i>alasauti zogezi</i> 'movable speech organs'	<i>ala</i> 'organ'	<i>sauti</i> 'sound'	<i>sogezi</i> 'movable'
	<i>pembetatu kali</i> 'acute triangle'	<i>pembe</i> 'corner'	<i>tatu</i> 'three'	<i>kali</i> 'acute'
	<i>mwanaisimu jamii</i> 'a member of speech community'	<i>mwana</i> 'son'	<i>isimu</i> 'linguistics'	<i>jamii</i> 'society'
	<i>mwanajamii lugha</i> 'a member of speech community'	<i>mwana</i> 'son'	<i>jamii</i> 'society'	<i>lugha</i> 'language'

Gichuru (2010: 81) argues that 3-word compounds in Kiswahili are left-headed and the left word determines the morphosyntax of the entire compound. Mashauri (2018) supports the idea based on the assumption that 3-word compounds reveal stress at penultimate syllable similar to 2-word compounds. This phenomenon is common in Kiswahili which “does not use tones (variations in pitch height that distinguish word meanings) but rather accents most words on the second-to-last syllable” (Mpiranya 2015: 5). However, I make two reservations from the illustrations in (21).

Firstly, the combination of three words does not always derive compounds in Kiswahili. Some examples reveal a combination of the compound noun such as *alasauti* ‘speech organ’ [*ala* ‘organ’ + *sauti* ‘sound’] and the modifier *sogezi* ‘movable’. The explanation by Gichuru (2010) is that usually the combination begins with the existing compounds to which another free morpheme is added yet to create another compound. In this article, I argue that these examples manifest as noun phrases, rather than compound words. Koopman (1984) argues that compound words with three words are rare. Other scholars do not provide 3-words compounds in Kiswahili (see Lusekelo 2014; Mpiranya 2015; Katikiro 2017). Due to this reason, as well as the fact that the expressions above are only technical terms, I argue that the compounding of three free morphemes is not yet available in Kiswahili. Strictly speaking, some of these examples do not constitute three free morphemes, since the component words include some bound morphemes.

Secondly, the combination of *mwanajamii lugha* ‘a member of a certain speech community’ is typically a noun phrase. It is composed of the compound *mwanajamii* ‘a member of a society’ [*mwana* ‘member’ + *jamii* ‘society’] and the modifier *lugha* ‘language’. Based on such cases, I would suggest that the compound *mwanajamii* ‘a member of a society’ is right-headed because the element *-ana* ‘CHILD/SON’ reveals absence of the semantic notion CHILD/SON. It has been grammaticalised to mean ‘specialist of X’, ‘works in/as Y’, ‘lives in Z’ or ‘acts as’. These senses are obtained through exocentric strategies discussed in section 4 below.

I want to re-iterate that the above examples could be analyzed differently from one another. For example, *pembetatu kali* (lit. ‘corner + three + sharp’) looks like just a compound noun *pembetatu* ‘triangle’ modified by the adjective *kali* rather than a 3-word compound. And even if they are analyzed as 3-word compounds, they all have hierarchical structure (as suggested by the cited author), i.e. as indicated by the orthography, *ala+sauti sogezi* (lit., ‘organ[s] + voice + mover’) consists of a compound ‘speech organs’ modified by another word ‘mover’ and not e.g. ‘organs of movable speech’. *Mwana-jamii-lugha* ‘child + society +

language’ would be divided into *mwana* ‘child/practitioner’ + ‘society-language’, not otherwise. Just describing them as 3-word noun phrases doesn’t acknowledge this.⁶

Katikiro (2017) suggests that Kiswahili contains many compound words whose meaning derive from the meaning of the individual words which form the compounds. It is unfortunate that Katikiro (2017) does not present the headedness of the compounds in the language. As I highlighted above, and will discuss in section four below, Kiswahili contains three kinds of endocentric compounds: head initial, head final and double heads.

Moreover, Katikiro (2017) argues that Kiswahili compounds realise covert semantic contents in that the meanings of some resultant nouns are totally different from the inherent semantic contents of the words which form the compound nouns. This is not a unique case to Kiswahili alone. Rather it is typically a case of exocentric compounds in that the meaning of the resultant compound is not derived from the words which form the compounds (Benczes 2006; Kageyama 2010; Appah 2017). Nonetheless, the suggestion that compounds such as *mwanaumume* ‘man, male’, *mwanaajeshi* ‘soldier’ and *mwanaumimba* ‘uterine pain’ are exocentric compounds is not clear. As I will argue in this article, the element *-ana* ‘person/thing that has X’ is undergoing grammaticalisation in Kiswahili. This is not unique to Kiswahili, as Heine (2019) highlights the possibility of a lexical word to change to a grammatical element due to semantic extension or semantic bleaching.

Lusekelo (2014) and Katikiro (2017) discuss the endocentric-exocentric dichotomy of compounds in Kiswahili. Some statistics can be generated for the sample of compounds re-analysed in this article. Based on Bauer (2008) and Scalise et al. (2009), the amount of compounds used help to establish the productivity of the two types of compounds. In the literature, the endocentric compounds outnumber, by far, the exocentric compounds in many languages of the world (Dressler 2006), but not always the case (Kageyama 2010; Appah 2017).

Kiswahili combines nouns, verbs, adverbs, and adjectives to derive compounds. Table 3 confirms the abundance of V+N and N+N compounds in the language. Also, the combination of noun-plus-adjective and *-ana* + N are also productive in the language. The limited combinations include the *-enye* + noun, verb + verb and noun + adverb. The combinations which involve *-ana* ‘having X/specialist of X’ and *-enye* ‘having X’ are discussed separately in the section of grammaticalization.

Table 3: Formation of compounds in Kiswahili⁷

Combinations	Gichuru (2010)	Lusekelo (2014)	Mpiranya (2015)	Katikiro (2017)	Total	%
V + N	24	18	26	23	91	33.82
N + N	9	11	13	52	85	31.59
<i>-ana</i> + N	7	16	18	8	49	18.21
N + ADJ	7	3	5	16	31	11.52
<i>-enye</i> + N	1	6	2	0	9	3.34
V + V	2	1	0	0	3	1.11
N + ADV	1	0	0	0	1	0.37
Total	51	55	64	99	269	99.96

⁶ This point was suggested by one of the reviewers. I am grateful for the highlighted point.

⁷ Compounding is very productive in Kiswahili. The list of compounds presented and analysed in this article cannot be claimed to be exhaustive.

The combination of nouns and adjectives comprises core adjectives such as *-zito* ‘heavy’ and *-ema* ‘honest’ in *ujauzito* ‘pregnancy’ and *raiamwema* ‘law abiding citizen’, derived adjectives such as *-pendwa* ‘liked’ in *riwaya pendwa* ‘popular fiction’, and lower numerals like *-tatu* ‘three’ in *pembetatu* ‘triangle’.

Based on Lusekelo (2014) and Katikiro (2017), most of the endocentric compounds are characterized by the combination of noun + noun and noun + adjective, while exocentric nouns are formed through verb + noun and *-ana* ‘person/thing that has X’ + noun. The formation of both exocentric and endocentric compounds is still productive in the language. This is confirmed in Table 4, which shows the statistical distribution of these compounds in the language.

Table 4: Amount of endocentric and exocentric compounds in Kiswahili

Semantic type of compounds	Total number	Percentage
Endocentric compounds	130	48.33
Exocentric compounds	139	51.67
Total	269	100

There is variation in the statistical distribution of endocentric and exocentric compounds in Bantu languages. For instance, Mphasha (2006: 208-2013) lists 140 (66%) endocentric and 109 (44%) exocentric compounds in Sesotho. This affirms that “endocentric compounds are by far preferred to exocentric compounds in the languages of the world, because they allow much easier access to the head” (Dressler 2006: 33). But Table 4 shows a slightly large percentage of exocentric than endocentric compounds in Kiswahili. The rationale for the dominance of exocentric compounds in Kiswahili is concerned with the predominance of metaphorical and metonymical strategies of naming in the language. Both Vierke (2012) and Kraska-Szlenk (2018) affirm the abundance of metaphors and metonyms in Kiswahili culture. This topic is discussed in detail in the subsequent section.

4. Endocentric and exocentric dichotomy

4.1 Endocentric compounds

Many endocentric compounds result from the combination noun-plus-noun. The examples in (22) show that some Kiswahili compounds are left-headed. The inherent semantic content of left-most noun spreads across the entire resultant noun. The right-most word becomes a modifier, as it offers extra information about the left-most word. I will use two examples to illustrate this point.

(22) COMPOUNDS		NOUN ₁	NOUN ₂
<i>askari kanzu</i>	‘spy’	<i>askari</i> ‘police’	<i>kanzu</i> ‘cassock’
<i>askari mgambo</i>	‘militia’	<i>askari</i> ‘police’	<i>mgambo</i> ‘guard, auxiliary’
<i>askari jela</i>	‘warden’	<i>askari</i> ‘police’	<i>jela</i> ‘prison’
<i>batamzinga</i>	‘turkey’	<i>bata</i> ‘duck’	<i>mzinga</i> ‘canoe’
<i>batabukini</i>	‘goose’	<i>bata</i> ‘duck’	<i>bukini</i> ‘grey’
<i>batamaji</i>	‘swam-duck’	<i>bata</i> ‘duck’	<i>maji</i> ‘water’

<i>njugumawe</i>	‘bambara nut’	<i>njugu</i> ‘nuts’	<i>mawe</i> ‘stones’
<i>njugupori</i>	‘wild peanut’	<i>njugu</i> ‘nuts’	<i>pori</i> ‘forest’

For instance, the noun *askari* ‘police’ is at the core of the meaning of the compound *askarikanzu* ‘spy, crime investigation officer’. However, the noun *kanzu* ‘cassock’ is inferred to metaphorically because a spy operates secretly and dress in civilian (plain) clothes rather than the police uniforms. In Zanzibar, where the compound is highly used, *kanzu* ‘cassock’ is a civilian dress whose meaning is inferred as spy’s dress. Almost all the compounds in (22) obtain metaphoric inference of the meanings of the modifiers.

The noun *bata* ‘duck, fowl’ is central in providing meaning to the three combinations in (22) above. First, head *bata* ‘duck, fowl’ is used with three modifiers to represent three different senses, vis-à-vis *mzinga* ‘canoe’ whose combination extends to mean ‘turkey’, *bukini* ‘grey’ that extends to mean ‘goose’ and *maji* ‘water’ that extends to mean ‘swam-duck’. The central meaning of the entire compounds depend on the meaning of the left-most word.

Some endocentric compounds result from the combination of verbs and nouns. The examples in (23) shows that Kiswahili contains endocentric compounds with the structure double-head. Both words contribute fully to the semantic content of the resultant compounds. Two reasons substantiate that none of the two words can assume supreme power over the meaning of the derived word. I will use one compound to illustrate these two points.

(23) COMPOUNDS		VERB	NOUN
<i>mfaniyakazi</i>	‘worker’	<i>fanya</i> ‘work’	<i>kazi</i> ‘job’
<i>mfanyabiashara</i>	‘trader’	<i>fanya</i> ‘do’	<i>biashara</i> ‘business’
<i>kitega uchumi</i>	‘investment’	<i>tega</i> ‘entrap, set’	<i>uchumi</i> ‘economy’
<i>kipimajoto</i>	‘thermometer’	<i>pima</i> ‘measure’	<i>joto</i> ‘temperature’
<i>kionambali</i>	‘binocular’	<i>ona</i> ‘see’	<i>mbali</i> ‘far’
<i>kipazasauti</i>	‘microphone’	<i>paza</i> ‘make loud’	<i>sauti</i> ‘sound, voice’
<i>kipaumbele</i>	‘priority’	<i>pa</i> give	<i>umbele</i> ‘ahead, front’

On the one hand, the combination of the senses in the verbs and nouns yields one semantic content of the resultant word. For instance, the compound *mfanyakazi* ‘worker’ for instance, obtains meaning from the verb *fanya* ‘do’ and the noun *kazi* ‘job’. A worker requires to have some kind of ability to perform the required task. Likewise, the job is necessary to be there for the worker to perform it. Thus, the combination of both senses contribute to the meaning of the compound.

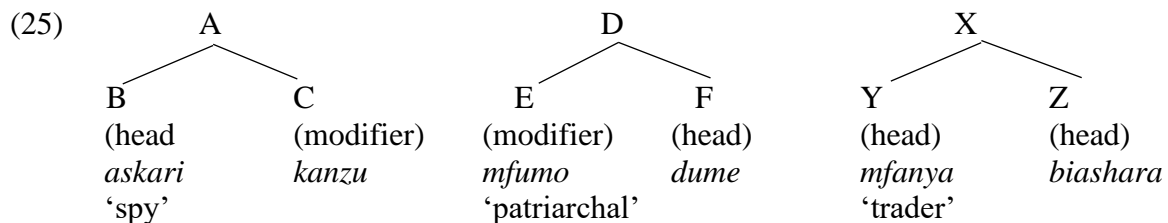
On the other hand, the use of nominal prefixes is required for the compounds which denote persons/humans. In this regard, Mpiranya (2015: 179) points out that “many nouns referring to different functions and social statuses are formed by replacing the prefix *ku-* of the infinitive with an animate class prefix *mu-/wa-*.” The compounds *mfanyakazi* ‘worker’ and *mfanyabiashara* ‘trader’ were generated this way. The semantic classification of the nouns in this category is +human hence they are prefixes with nominal affixes *m-* (singular) and *wa-* (plural).

An important point is underscored here. The nominal prefix is attached to the whole compound rather than the first entry. Therefore, I will argue that on morphological grounds both the first and second elements are regarded as the heads. The outcome will be double-head compounds.

Kiswahili also has compounds with the structure right-headed. Some of these resultant compounds are associated with specializations hence are new coinages (24). Even the element *-ana* ‘specialist of X’ is also used to derive such compounds. In these nouns, the element *-ana* ‘specialist of X’ does not exhibit grammaticalization. This results from the fact that most of the compounds are new coinages.

(24)	COMPOUNDS		NOUN ₁	NOUN ₂
	<i>mfumo dume</i>	‘patriarchal’	<i>mfumo</i> ‘system’	<i>dume</i> ‘male’
	<i>elimu mimea</i>	‘botany’	<i>elimu</i> ‘education’	<i>mimea</i> ‘plants’
	<i>elimu anga</i>	‘astronomy’	<i>elimu</i> ‘education’	<i>anga</i> ‘sky’
	<i>mwana mpotevu</i>	‘prodigal son’	<i>mwana</i> ‘child’	<i>mpotevu</i> ‘lost’
	<i>mwana siasa</i>	‘politician’	<i>mwana</i> ‘child’	<i>siasa</i> ‘politics’
	<i>mwana michezo</i>	‘sportsman’	<i>mwana</i> ‘child’	<i>michezo</i> ‘sports’
	<i>mwana isimu</i>	‘linguist’	<i>mwana</i> ‘child’	<i>isimu</i> ‘linguistics’

To summarize for this section, endocentric compounds in Kiswahili bear heads. Based on Kageyama (2010), the structures of the Kiswahili compounds will appear as in (25). Each of the type of endocentric compound is represented in the schemata.



4.2 Exocentric compounds

Exocentric compounds are technically a result of metaphoric interpretation of the combined words. The metaphorical expressions are a commonplace in Kiswahili speaking community, which are expressions of politeness construed cognitively (Vierke 2012). In many instances, the metaphors are used figuratively to achieve a certain purpose (Kraska-Szlenk 2018). In this section, the metaphorical interpretation of exocentric compounds does consider the social practise of the Kiswahili people who make use of figurative use of names.

4.2.1 Metaphoric exocentric compounds

The main source of the metaphoric exocentric compounds in Kiswahili is the combination verb + noun. The meaning of the resultant compound is achieved through metaphorical interpretation of the combined words, as discussed for the examples in (26).

(26)	COMPOUNDS		VERB	NOUN
	<i>kifauongo</i>	‘Memusa pudica’	<i>fa</i> ‘die’	<i>uongo</i> ‘lie’
	<i>mlalahoi</i>	‘proletariat, labourer’	<i>lala</i> ‘sleep’	<i>hoi</i> ‘exhausted’
	<i>mvujajasho</i>	‘day worker’	<i>vuja</i> ‘leak’	<i>jasho</i> ‘sweat’
	<i>kirukanjia</i>	‘prostitute’	<i>ruka</i> ‘jump’	<i>njia</i> ‘path’
	<i>kirukanjia</i>	‘night jar’	<i>ruka</i> ‘jump’	<i>njia</i> ‘path’
	<i>mdakakomba</i>	‘shrub (Rutaceae)’	<i>daka</i> ‘catch’	<i>komba</i> ‘bush-baby’

The plant name *kifauongo* ‘shame-plant (*Memusa pudica*)’ obtains its name in Kiswahili from its physiological behavior. It is a sensitive plant that responds to touch and other stimulation by rapidly closing its leaves and drooping. In Kiswahili, that behaviour is metaphorically interpreted as “fake death” or “false death”. The verb *-fa* ‘die’ and the noun *-uongo* ‘a lie’ combine to derive an inference which is linked to the physiological behavior of the plant.

The compound *mlalahoi* ‘proletariat’ emerged in Tanzania after the General Multiparty Elections in 1995. Politicians coined this label to represent labourers who remained poor in the country. Poor people go hungry due to low income and sleep exhausted due to hard labour. Therefore, the verb *lala* ‘sleep’ and *hoi* ‘exhausted’ are combined to infer to the poor labourers. Similarly, *wavujajasho* ‘day-workers’ is coined to represent a class of people who have no permanent jobs and keep looking for jobs on daily basis. They labour very hard but obtain small wages. The verb *vuja* ‘leak’ and the noun *jasho* ‘sweat’ combine to infer to the continued status of the day-worker.

The metaphorical interpretation of *kirukanjia* ‘sex commercial woman, prostitute’, which is also associated with breach of manners engraved in the community, obtains metaphoric name so as to maintain face (Vierke 2012). The verb *ruka* ‘jump’ is used to mean the proper custom of the community (hypothetically called *njia* ‘path’) had not been adhered to by the woman in question. In this case, the name is used metaphorically in order to avoid bad face in social communication.

The name *kirukanjia* ‘night jar’ is also associated with a bird species. These bird have short legs, short bill and short feathers. They feed on insects. It is very active at night. These features are metaphorically interpreted for persons who walk and/or work at night.

The plant species called *mdakakomba* ‘shrub (*Rutaceae*)’, which has thorns, obtains metaphoric meaning from the verb *daka* ‘catch’ that is used to mean get hold of *komba* ‘bush-baby’. The name here is figuratively used to the inability of the bush-baby to play around the branches of the shrub, as Kraska-Szlenk (2018) points out, otherwise it will get hold by the shrub’s thorns.

The combination of noun + noun also yield metaphoric exocentric compound nouns in Kiswahili (27). For instance, *changudoa* ‘sex commercial woman, prostitute’ derives its meaning metaphorically from the snapper-fish, which is a migratory fish species. Sex commercial persons also attract mobile male-customers, rather than permanent men. Likewise, *kichwamaji* ‘stubborn person’ is metaphorically derived from a head without good brain (but watery brain). Something watery cannot be easily convinced.

(27)	COMPOUNDS		VERB/NOUN ₁	NOUN ₂
	<i>changudoa</i>	‘prostitute’	<i>changu</i> ‘fish’	<i>doa</i> ‘spot’
	<i>kichwamaji</i>	‘stubborn person’	<i>kichwa</i> ‘head’	<i>maji</i> ‘water’
	<i>mpasuasanda</i>	‘bird (<i>Caprimulgidae</i>)’	<i>pasua</i> ‘tear’	<i>sanda</i> ‘shroud’
	<i>dondandugu</i>	‘gangrene’	<i>donda</i> ‘wound’	<i>ndugu</i> ‘relative’
	<i>kibiritingoma</i>	‘prostitute’	<i>kibiriti</i> ‘matchbox’	<i>ngoma</i> ‘drum’

Katikiro (2017) claims that the sources of the meaning of the compounds in (27) above cannot be traced. I argue that the metaphoric interpretation of these compounds will help to find a close connection between the words which form each of them and the resultant interpretation. This kind of analysis is suggested in the literature (Bauer 2008; Benczes 2015).

4.2.2 Synthetic exocentric compounds

Affixation is a common process to derive words in Kiswahili. Most synthetic exocentric compounds derive from a combination of a noun with a derived verb or adjective. The main source of the exocentric compounds in Kiswahili is the combination verb + noun. I use examples in (28) to illustrate the essence of synthetic exocentric compounds. I use the first two examples to talk of the metaphor of BECOME HEAVY.

(28) COMPOUNDS		VERB	NOUN
<i>ujauzito</i>	‘pregnancy’	<i>ja</i> ‘become’	<i>uzito</i> ‘heaviness’
<i>mjamzito</i>	‘pregnant woman’	<i>ja</i> ‘become’	<i>mzito</i> ‘heavy’
<i>mjasiriamali</i>	‘entrepreneur’	<i>jasiria</i> ‘struggle to’	<i>mali</i> ‘wealth’
<i>mshikadau</i>	‘stakeholder’	<i>shika</i> ‘hold’	<i>dau</i> ‘dhow, boat’

Bauer (2008: 64-65) introduces the compound *ujauzito*⁸ ‘pregnancy’ to describe compounds whose meaning is clear but falls in unexpected word class, hence they “look like instances of conversion or transposition.” With regard to the morphological behavior of Kiswahili, nouns change classes due to change in nominal prefixes (Contini-Morava 1994). The same is available in many other Bantu languages (Rugemalira 2014). This compound is typically synthetic exocentric compound which derives from the assignment of the nominal prefixes to the stative verb *-ja* ‘become’. The prefixation of noun classes realizes such nouns as *uja* ‘state of being/something that (be)comes’ and *waja* ‘those who are X’. Then the adjective agrees with the head-noun in number either as *ujauzito* ‘pregnancy’, *mjamzito* ‘pregnant woman’ or *wajawazito* ‘pregnant women’.

There is also some kind of metonymical interpretation involved in these words. The notion *ujauzito* ‘pregnancy’ entails that the woman has become heavier due to the state of carrying an unborn baby. A woman literally becomes heavier when she is pregnant. The same is true for the rest of the examples above in which affixation derives nouns from verbs, which in turn combine with the next nouns to yield metaphorical interpretation of the compounds.

In both words, *mjamzito* ‘pregnant woman’ and *ujauzito* ‘pregnancy’, the meaning is attained through metonymical inference. A pregnant mother gains weight due to the growth of the unborn baby in her womb. To maintain face, as Vierke (2012) highlighted, the speakers of Kiswahili will use the expression BECOME HEAVY to mean be pregnant.

There are other compounds in Kiswahili which require special attention. These compounds derive from the combination of the elements *-ana* ‘specialist of X’ and *-enye* ‘having X’, which shows apparent signs of grammaticalisation, as discussed below.

5. Grammaticalisation of *-ana* and lexicalization of *-enye*

Two related phenomenon are discussed in this section. On the one hand, grammaticalisation is associated with the change of lexical entries into grammatical morphemes (Nurse 1997). The element *mwana* ‘specialist of X’ displays properties of grammaticalisation (see section 5.1).

⁸ Lauri Bauer apparently indicates the source of the compound *ujauzito* ‘pregnancy’. Perhaps since it is marked by a noun class prefix and functions as a noun, it is not clear why it would be described as falling into an unexpected word class. Possibly Bauer was not aware of this because of the gloss ‘come’ for *uja*, which instead means ‘something that (be)comes’.

On the other hand, lexicalisation is likely to be a diachronic study of grammatical elements which change and become lexical entries (Brinton & Traugott 2005). Section 5.2 highlights this process using the element *enye* ‘possessive pronoun’.

5.1 From Proto-Bantu *-ná and *-yánà for CHILD to reflexes as SPECIALIST OF X

Kiswahili contain reflexes of the noun for CHILD/CHILDREN. Guthrie (1970: 19, 147) reconstructed these proto-items for Proto-Bantu. Both *-ná ‘child’ and *-yánà ‘child’ were placed in class 1/2 (for humans). The reflexes for *-ná ‘child’ include *muna* and *bana* ‘child/children’. Perhaps these reflexes arose with the loss of the first syllable of *-yánà ‘child’. Guthrie (1970: 147) provides the following reflexes of *-yánà ‘child’: *mwana/aana* ‘child/children’ in zone E55, *omwana/abaana* ‘child/children’ in zone E11 and *mwana/wana* ‘child/children’ in zone G42. It apparently becomes clear now that the element *mwana* ‘son/daughter, off spring’ is a reflex of Proto-Bantu items. This item reveal a grammaticalisation path towards becoming a prefix in Kiswahili.

TUKI (2014: 347) contains three kinds explanation about the lexical entry *mwana* (30). The third headword bears the feature of a prefixal material which is attached to other words in order to form new words.

- (30) *mwana*¹ noun (*wana* in plural): child, off spring
*mwana*² noun (*wana* in plural): general word used to denote son or daughter of:
mwanangu ‘my son or daughter’
mwana- noun (*wana-* in plural): prefix used to form words denoting people of
different professions, membership or classes:
mwanafalsafa ‘philosopher’

The discussion in the preceding sections highlighted that *mwana* ‘son/daughter, off spring, specialist of X’ is an independent word. The Institute of Kiswahili Studies (University of Dar es Salaam in Tanzania) has found that the entry has become an affix now. However, its form remains the same, with the nominal prefixes *mw-* (singular) and *wa-* (plural). With regard to my analysis in this article, the element *-ana* ‘specialist of X’ has been re-assigned its role to mean specialist, member, actor, actress etc., in short SPECIALIST OF X (specialization), e.g. *mwanaisimu* ‘linguist’, *mwanamuziki* ‘musician’, *mwanamgambo* ‘militia’ and *mwanamapinduzi* ‘revolutionist’.

The essence of the notion OFF SPRING is still reminiscent in the root *-ana*. Therefore, the bare noun *mwana* ‘child’ – *wana* ‘children’ is still used in Kiswahili speaking community. The example (31) indicates the use of the word in a genitive noun phrase. Both words *mtoto* ‘child’ and *mwana* ‘child’ are commonly used in Kiswahili. In this example, the element *mwana* is used as a head word of the genitive phrase. However, the same word is primarily used as an element in other expressions. For instance, (32) shows that in *mwanaapunda* ‘colt horse’ the element *mwana* is used to refer to ‘a young male horse’. In this regard, example (32) represents a grammaticalised one.

- (31) *Wa-toto* *wa-li-m-laki* *mw-ana* *wa* *M-falme*
2-child SM2-PST-OM1-meet 1-child ASSOC2 1-king
‘Children went out to meet the son of the King.’

- (32) *Yesu* *a-li-pand-a* *mw-ana-punda*
 1Jesus SM1-PST-mount-FV 1-child-donkey
 ‘Jesus came on a colt.’

The grammaticalised element allows metaphorical and metonymical interpretations of both human and non-human compound nouns. Compounds for humans are interpreted metaphorically while those for non-humans metonymically. For instance, *mwanamke* ‘woman’ and *mwanamume* ‘man’ contain *mwana* ‘having X’ and gender related terms of *mke* ‘female’ and *mume* ‘male’. These words can be used to derive the reproductive organs as *uuke* ‘vagina’ and *uume* ‘penis’. Although these body parts are generally taboo words in Kiswahili, speakers associate them with gender differentiation. Therefore, they are metaphorically interpreted to mean WOMAN and MAN respectively.

The meaning of the compound *mwanamimba* ‘uterine pain’ and *mwanandani* ‘curve in a burial pit’ has been extended metonymically. Both compounds contain *mwana* ‘having X’. the elements *mimba* ‘pregnancy’ and *ndani* ‘inside’ are metonymically used to refer to the pain associated with pregnancy and a space inside the pit, respectively.

The grammaticalised *mwana* ‘having X/specialist of X’ is commonly used to derive abundant compounds for new terms in Kiswahili. As I highlighted in previous sections, Mpiranya (2015: 178) points out that there are “compound nouns based on *mwana/wana*, which means “specialist”, “member”, or “actor”, as in *mwananchi* ‘citizen’”. Since *mwana* is grammaticalised, most of the specializations are derived in these way, e.g. *mwanajeshi* ‘soldier’ [*<jeshi* ‘army, military’].

5.2 Proto-Bantu *-nya and *-ényé ‘OWNER OF.../HAVING ...’

Kiswahili grammar contains an element *mwenye* with the interpretation of ‘owner of’ or ‘having X’. Meeussen (1967: 95) reconstructed the grammatical elements *-nya and *-ényé in such word as *munyanchi* ‘owner of a country’. The element *mwenye* ‘owner of/ having X’ is common in words such as *mwenyekiti* ‘chairperson’ and *mwenyemji* ‘head of family’.

TUKI (2014: 102) lists two lexical entries: *enye* [possessive pronoun] with meanings ‘having’, ‘possession’, and with’ and *enyewe* [adjective] with meaning ‘self’, ‘actual’, ‘owner’ and concerned’. The grammatical entity has now lexicalized to mean owner or possession. The combination of the lexicalized *enye* ‘owner’ and another element generates compounds. I will analyse the compounds formed by this strategy as part of the bahuvrihi compounds.

The properties of *bahuvrihi* compounds allow them to be treated as exocentric or endocentric. Barcelona (2008: 210) points out that *bahuvrihi* compounds “denote an entity by explicitly mentioning a reified characteristic physical or abstract property that the entity possesses (in a broad sense of possession).” Although *bahuvrihi* compounds are assumed to be generated cognitively as endocentric compounds (Booij 2005; Benczes 2015), Barcelona (2008: 211) suggests that “they are exocentric compounds where a characteristic property is used to denote a category not explicitly mentioned in the compound.”

Researchers agree that *bahuvrihi* compounds are metonymically generated with the interpretation “person/thing that has X” (Benczes 2015) or “having X” (Bauer 2008; Andreou & Ralli 2015). Specifically, Bauer (2008: 54) reports of the languages which developed the mechanism to derive exocentric-like expressions using “a suffix which may be glossed as ‘having ~’”. Similar combinations of nominal and adjectival roots result into *bahuvrihi* compounds across languages. For instance, in English, *bahuvrihi* compounds are generally

derived by the combination of adjective-plus-noun, e.g. *fathead* ‘rigid, having fixed head’ and *humpback* ‘hunchback, a person with a hump’ (Barcelona 2008), while Modern Greek contains these combinations: adjective + noun, noun + noun, numeral + noun, pronoun + noun, and pronoun + adjective (Andreou & Ralli 2015).

With regard to some kinds of *bahuvrihi* compounds, Booij (2005: 80) highlights that “the compound denotes the person who is in possession of the entity mentioned by the compound.” This claim is satisfied in Kiswahili because its *bahuvrihi* compounds are for humans (ex. 33). Therefore, the feature “having X” is achieved through metaphorical interpretation. This is possible because “they do not refer to the entity mentioned by the head of the compound” (Booij 2005: 80); rather the entity is projected from the context of use (Barcelona 2008).

Kiswahili examples in (33) provide metaphorical and metonymical interpretation of these *bahuvrihi* compounds. This compound obtains meaning from the first element which shows HAVING X and the second element is the possessed. Both elements give the interpretation “person/thing that has X” or “having X”, then they are treated as cases of exocentric compounds.

(33)	<i>mwenyekiti</i>	‘chairperson’	- <i>enye</i> ‘having X’	<i>kiti</i> ‘chair’
	<i>mwenyenacho</i>	‘bourgeoisie’	- <i>enye</i> ‘having X’	<i>nacho</i> ‘property of’
	<i>mwenyemali</i>	‘owner’	- <i>enye</i> ‘having X’	<i>mali</i> ‘property’
	<i>mwenyenzi</i>	‘Almighty’	- <i>enye</i> ‘having X’	<i>enzi</i> ‘eternity’

It is understandable that the previous scholars (Gichuru 2010; Lusekelo 2014: 151; Katikiro 2017) treated these elements as noun + noun compounds because of the nominal expressions *mwana* ‘child’ and *mwenye* ‘owner’. I analyse the examples in (33) above as clear cases of *bahuvrihi* compounds in Kiswahili.

The compound *mwenyekiti* ‘chairperson’ also attains its meaning metonymically. The element -*enye* ‘having X’ combines with the noun *kiti* ‘chair’. Since meetings are assembled and the main speaker sits, usually in front of the assembly, then he/she becomes the owner of the chair. Likewise, the compound *mwenyenacho* ‘bourgeoisie’ was coined to differentiate poor people from rich people. The element -*enye* ‘having X’ combines with the adjectival *nacho* ‘property of’ to derive metonymically the owner of property. In this regard, property becomes the central inference.

This does not rule out the fact that *enye* ‘possessive pronoun’ still functions as a grammatical entry in Kiswahili. Thus, on the one hand, it may occur independently as *enye* ‘owner’. On the other hand, it remains a linking element meaning ‘having’ and must always be followed by a noun. In this regard, it cannot occur on its own with the meaning ‘owner’; instead what is owned must be specified. Also -*enye* can be marked by any noun class prefix, depending on what is said to have what, for example *kitu chenye thamani* ‘thing having value’.⁹

⁹ One of the reviewers is not happy with the analysis of the element *enye* ‘possession’ as an independent entry. I argue that both the lexical entry *enye* ‘owner’ and possessive pronoun *enye* co-exist in the language.

6. Conclusion

In the foregoing discussion I pointed out that most compound words in Kiswahili are nominal. These compounded nouns are derived from the composition of noun-to-noun, verb-to-noun, and noun-plus-adjective. It becomes plausible to point out that the major lexical categories, namely nouns, verbs and adjectives (Baker 2003) are involved in the formation of compounds in Kiswahili. This is not unique to Kiswahili because other Bantu languages have been reported to derive compounds through combination of these major words, e.g. Sesotho (Mphasha 2006), Tshivenda (Musehane 2007a, b) and Bemba (Kula 2012).

The morphosyntax of compound nouns reveal that the left-most nominal prefix determines agreement within a noun phrase and to the verb. This claim is discredited as being important in determining the properties of compounds. Therefore, the endocentric-exocentric dichotomy is apparently attested in Kiswahili. On the one hand, endocentric compounds may obtain semantic content from the right-most word, the left-most word or both. On the other hand, the semantics of exocentric compounds is inferred metonymically or metaphorically. Therefore, there is no way one can suggest to dispense this dichotomy in Kiswahili, as suggested for English compounds (Benczes 2015). The split of compounds into endocentric and exocentric is apparently reported for Sesotho (Mpasha 2006) and Ruhaya (Ilonga 2016). Therefore, the findings in Kiswahili confirms the two open categories of compounds, namely endocentric and exocentric.

Kiswahili contains the element *-ana* ‘specialist of X’. It has been grammaticalised from the proto-item **-yánà* ‘child’. In the current use, it manifests as a modifier of compounds, which may be assumed to be right-headed. The grammaticalisation of the element *-ana* ‘specialist of X’ is obvious. Heine (2019: 6) suggested that the noun meaning child, in this case *mwana* in Kiswahili, is involved in the grammaticalisation to a derivational element in this path: “the first part of the chain of grammaticalization sketched (compounding > derivation) is well established”. This is true for Kiswahili in which *-ana* ‘child’ is now grammaticalised to refer to ‘specialist of X’. While this element is highly productive in the formation of exocentric compound nouns in Kiswahili, the noun *mwana* ‘child’ is also used to derive endocentric compounds as well. Therefore, the process of grammaticalisation to derivational prefix is not fully achieved. However, these compounds are either interpreted metaphorically or metonymically hence they become exocentric compounds. Based on Heine (2019), this element, which grammaticalised from the lexical word through bleaching, shows this path: nouns > compound > derivation. However, its grammaticalization process is not complete because Kiswahili still bears the noun *mwana* ‘child’. This kind of language behaviour is not reported for other Bantu languages (see Mphasha 2006; Ilonga 2016), though Heine (2019) found that the element related to CHILD had grammaticalised in Khoisan languages.

Also, Kiswahili contains the element *-enye* ‘having X’. This has been lexicalized. According to Brinton and Traugott (2005), the diachronic studies reveal that grammatical words may change into lexical entries. This happened for the possessive pronoun *-enye* in Kiswahili. It has developed into a lexical entry of OWNERSHIP. With regard to compounds formed with this element, they become further lexicalized. This is in line with the fact that compounds are associated with new coinages that arise in the speaker community (Moyna 2011). However, when time lapses, the compounds become lexicalized (Kageyama 2010; Moyna 2011; Heine 2019). In most cases the formation of new concepts is highly connected to the development, which use compounding as one of the strategies (King’ei 1999; Kishe 2003).

I pointed out in this article that the history of compounds in Kiswahili can be traced from the historical change of the language. The history of Kiswahili begins primarily in the 11th century when the coastal Bantu came into contact with Persians (Nurse & Spear 1985; Nurse & Hinnebusch 1993). Islamic religion was introduced. Consequently, the literacy for Kiswahili began in Arabic script. The Roman script, which is another written form of Kiswahili, began in the 1700s, during the Portuguese conquest. Since compounds emerge, develop and get grammaticalised over a period of time. One of the historical changes is the re-analysis of *mwana* from CHILD to ‘SPECIALIST OF X’. Likewise, the historical development of the language witnessed the re-analysis of the element *enye* from POSSESSIVE PRONOUN to a lexical element meaning ‘HAVING X’.

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Amani Lusekelo
Department of Languages and Literature
Dar es Salaam University College of Education
University of Dar es Salaam
alusekelo@duce.ac.tz

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Indefinite and Not-So-Indefinite DPs in Jordanian Arabic

Mohammad A. Alhailawani, University of Petra

*In this paper, I discuss the syntax of indefinite DPs in Jordanian Arabic (JA). I argue that in addition to the traditional definite vs indefinite DP split, there exists a third type of DPs headed by the cardinal numeral *waahad* (one), which functions as an indefinite specific marker when it occurs in prenominal position. I provide several arguments to show that *waahad* behaves similarly to other indefinite specific markers found in other languages such as English and Modern Hebrew. I put forward an analysis of *waahad*, where I show that *waahad* enters the derivation as the head of a classifier phrase, and that it ultimately raises to D. The data and analysis put forward in this paper further support the three-way split between definite, indefinite, and indefinite specific DPs.*

Keywords: Jordanian Arabic DPs, indefiniteness, specificity, classifiers, articles

1. Introduction

Beyond the traditional definite/indefinite dichotomy of nouns phrases, several researchers note that there are noun phrases that are neither wholly definite nor indefinite (e.g. Brustad, 2000; Givón, 2001; Borer, 2005; Ionin, 2006). For instance, in her study on the syntax of the spoken dialects of Arabic, Brustad (2000) shows that there are nouns that fall in between the definite/indefinite continuum. In (1), for instance, the inclusion of the cardinal numeral *waahad* (one) makes the reference of the noun *badwi* (bedouin) specific.¹

- (1) fi waahad badwi faat ʕal-matʕam (Kuwaiti Arabic)
there-is one.MS bedouin.MS entered.3MS to-the-restaurant.MS
‘There was a [certain] bedouin who went into the restaurant’ (Brustad 2000:20)

Similar facts are also found in Jordanian Arabic (JA henceforth). Nouns in JA could be definite or indefinite. Definite nouns in JA are marked via the prefix *l-* (the) (2), which corresponds to English *the*. Indefinite nouns, on the other hand, are not morphologically marked at all. In other words, there is no equivalent to the English indefinite article *a* in JA (3).²

- (2) l-ktaab
the-book.MS
‘the book’

¹ Brustad’s (2000) study is purely pragmatic in nature. She does not provide a formal account of specificity markers in Arabic.

² The data used in this paper are from JA, unless otherwise stated to the right of each example.

- (3) ktaab
book.MS
'a book'

Despite the fact the indefiniteness is not morphologically expressed in JA, the cardinal numeral *waahad* (one), which is otherwise exclusively postnominal (4), is optionally used to mark specificity and indefiniteness when it occurs in prenominal position, as seen in (5).³

- (4) duktuur waahad
doctor.MS one.MS
'One doctor'

- (5) a. rayih ajuuf duktuur la-yifhasni
going.1MS see.1MS doctor.MS to-examine-me.3MS
'I'm going to see a doctor to examine me'
- b. rayih ajuuf **waahad** duktuur la-yifhasni
going.1MS see.1MS one.MS doctor.MS to-examine-me.3MS
'I'm going to see a doctor to examine me (specific)'

There is a contrast in interpretation between the two examples in (5). On the one hand, the speaker in (5a) is going to look for any doctor without having a particular doctor in mind. On the other hand, the speaker in (5b) is going to see a specific doctor. That is, the reference of the noun *duktoor* (doctor) is specific in (5b) but not in (5a). The above examples show that use of *waahad* before an indefinite noun signals that the reference of the noun is specific.

In this paper, I discuss the syntax of prenominal *waahad* in JA. Applying the criteria proposed by Ionin (2006) to distinguish between indefinite and indefinite-specific noun phrases, I show that *waahad* exhibits all properties associated with the indefinite specific markers found in other languages such as English and Modern Hebrew. Regarding the syntax of *waahad*, I argue that DPs headed by *waahad* have the same structure as regular indefinite DPs. The difference between the two types of DPs lies in the movement operations involved in their derivation.

The organization of this paper is as follows. In the next section, I discuss the main properties of *waahad*. In section 3, I show that *waahad* exhibits all properties associated with indefinite specific makers drawing on evidence from English and Modern Hebrew. In section 4, I present my assumptions regarding the syntax of the DP to be adopted to account for the behavior of *waahad*. In section 5, I present my analysis of *waahad*, where I argue that *waahad*

³ In Modern Standard Arabic (MSA), indefinite nouns are marked with the suffix *n* (this process is called *nunation*) (i).

(i) *kitaabun* (MSA)
book-MS.NOM
'a book'

See Kremers (2003) for a detailed discussion of *nunation*. Also see Fassi-Fehri (1993) for an alternative analysis.

enters the derivation as the head of a classifier phrase, which then undergoes head movement to D. Section 6 concludes the paper.

2. Main properties of *waahad*

waahad inflects for gender: *waahad* is used with masculine nouns (6), whereas *waahdih* is used with feminine nouns (7).

- (6) rayih ajuuf waahad duktuur la-yifhasni
going.1MS see.1MS one.MS doctor.MS to-examine-me.3MS
'I'm going to see a doctor to examine me (specific)'

- (7) rayih ajuuf **waahdih** duktuura la-tifhasni
going.1MS see.1MS one.FS doctor.FS to-examine-me.3FS
'I'm going to see a female doctor to examine me (specific)'

In JA, the use of *waahad* is limited to singular indefinite nouns (both masculine and feminine). *waahad* is incompatible with plural nouns, as the ungrammaticality of (8) shows.⁴

- (8) *rayih ajuuf waahad dakaatra la-yifhasuni
going.1MS see.1MS one.MS doctor.MS to-examine-me.3MPL
'I'm going to see doctors to examine me (specific)'

Also, *waahad* occurs only with human nouns, as evident from the ungrammaticality of (9).

- (9) *iftariit waahad galam
bought.1MS one.MS pen.MS
'I bought a pen'

Finally, *waahad* is in complementary distribution with the definite article *l-*, as seen in (10).⁵

- (10) *l-waahad duktuur
the-one.MS doctor.MS
'he one doctor'

The following table summarizes the main properties of *waahad*:

⁴ There are two main types of plurals in Arabic: (i) sound plurals; and (ii) broken plurals. Sound plurals are of two types: sound masculine plurals and sound feminine plurals. The former is derived via the suffix *iin* and is only compatible with human nouns, whereas the latter is derived via the feminine suffix *aat* and is compatible with both human and nonhuman nouns. Broken plurals are derived via changing the vocalic melody of the root (*ktaab* 'book' → *kutub* 'books'). See Acquaviva (2008) for a detailed discussion of Arabic plurals.

⁵ Although see Turner (2013) for a discussion of definiteness marking in Moroccan Arabic, where *waahad* co-occurs with the definite article.

Table 1: Main properties of *waahad*

Criterion	<i>waahad</i>
Number Morphology	✗
Gender Morphology	✓
Human nouns	✓
Non-human nouns	✗
Definite	✗

3. *Waahad* as an indefinite specific marker

In her cross-linguistic study of specificity markers, Ionin (2006) shows that referential *this* (*this_{ref}* henceforth) in English functions as an indefinite specific marker. According to Ionin, DPs headed by *this_{ref}* has the following properties:

Properties of DPs headed by *this_{ref}*:

1. They are indefinite.
 2. They do not take narrow scope with respect to intensional/modal operators or negation.
- (Modified from Ionin 2006:181)

Building on the original insights of Prince (1981), Ionin (2006) notes that DPs containing *this_{ref}* are indefinite. This is based on the fact that *this_{ref}* cannot be replaced by the definite article *the*, but can be replaced by the indefinite article *a* (11).

- (11) a. I work in electronic and auto shows. Companies hire me to stay in their booth and talk about products. I have *this* speech to tell.
b. *...I have the speech to tell.
c. ...I have a speech to tell. (Prince 1981:233)

Moreover, DPs headed by *this_{ref}* can occur in existential *there* sentences; a classical test for indefiniteness (12).

- (12) "...A few years ago, there was *this* hippie, longhaired, slovenly. He confronted me. . ."
(Pince 1981:233)

In JA, *waahad* behaves in a similar fashion to *this_{ref}* in English. First, as mentioned above, *waahad* cannot occur with the definite article (10). Second, *waahad* occurs in existential sentences with the use of expletive *fii*, as in (13).⁶

- (13) fii waahad duktuur fi-l-maktab
there-is one.MS doctor.MS in-the-office.MS
‘There is a doctor in the office (specific)’

⁶ See Abdel-Ghafer & Jarbou (2015) for a discussion of expletive *fii* in JA.

Ionin (2006) notes that despite the fact that *this_{ref}* appears in indefinite contexts, its behavior is not identical to that of indefinite *a*. According to Ionin, indefinites with *this_{ref}* cannot appear in the scope of an intentional/ modal operator (14) and (15), or in the scope of negation (16).

- (14) a. Sarah wants to read ✓a/✓ this book about butterflies, but she can't find it.
 b. Sarah wants to read ✓a/# this book about butterflies, but she can't find it.
- (15) a. Jeff must read ✓a/✓ this book about butterflies for his class, but he can't find it.
 b. Jeff must read ✓a/# this book about butterflies for his class, but he can't find it.
- (16) a. Lorraine didn't read ✓a/✓ this book about butterflies because she couldn't find it.
 b. Lorraine didn't read ✓a/# this book about butterflies because she couldn't find it.

(Ionin 2006:180)

Ionin (2006) notes that in the (14a), (15a), and (16a), the indefinite DP is not in the scope of intensional/ modal operator or in the scope of negation, and both *a* and *this_{ref}* are allowed. In (14b), (15b), and (16b), on the other hand, the indefinite DP is in the scope of the operator and *this_{ref}* is disallowed.

Since *waahad* is only compatible with human nouns, I'm going to modify the above examples to show that the behavior of *waahad* is similar to *this_{ref}* in English. Consider the following examples:

- (17) a. sam biddu yifuuf duktuur/**waahad**-duktuur ʕfaan muʕkiltuh
 sam wants.3MS see.3MS doctor.MS/one.MS-doctor.MS for problem-his
 bas miʃ mlaagi
 but NEG find.3MS
 ‘Sam wants to see a doctor to check his problem, but he can't find (a doctor)’
- b. sam biddu yifuuf duktuur/***waahad**-duktuur ʕfaan muʕkiltuh
 sam wants.3MS see.3MS doctor.MS/one.MS-doctor.MS for problem-his
 bas miʃ mlaagi waahad
 but NEG find.3MS one.MS
 ‘Sam wants to see a doctor to check his problem, but he can't find one’
- (18) a. sam laazim yifuuf duktuur/**waahad**-duktuur ʕfaan muʕkiltuh
 sam must.3MS see.3MS doctor.MS/one.MS-doctor.MS for problem-his
 bas miʃ mlaagi
 but NEG find.3MS
 ‘Sam must to see a doctor to check his problem, but he can't find (a doctor)’
- b. sam laazim yifuuf duktuur/***waahad**-duktuur ʕfaan muʕkiltuh
 sam must.3MS see.3MS doctor.MS/one.MS-doctor.MS for problem-his
 bas miʃ mlaagi waahad

- . but NEG find.3MS one.MS
 ‘Sam must to see a doctor to check his problem, but he can’t find one’
- (19) a. sam ma faaf duktuur/**waahad**-duktuur fjaan muʃkiltuh
 sam NEG saw.3MS doctor.MS/one.MS-doctor.MS for problem-his
 liʔnu ma laga
 . because NEG find.3MS
 ‘Sam didn’t see a doctor to check his problem, because he couldn’t find (a doctor)’
- b. sam ma faaf duktuur/***waahad**-duktuur fjaan muʃkiltuh
 sam NEG saw.3MS doctor.MS/one.MS-doctor.MS for problem-his
 liʔnu ma laga
 . because NEG find.3MS
 ‘Sam didn’t see a doctor to check his problem, because he couldn’t find one’

As is the case with *this_{ref}*, the (a) examples above show that *waahad* is allowed when the indefinite DP *duktuur* (doctor) is not in the scope of the operator. In the (b) examples, however, the indefinite DP is in the scope of the operator and *waahad* is disallowed.

Further evidence for the view of *waahad* as an indefinite specific marker comes from Modern Hebrew. Following Borer (2005), Ionin (2006) argues that Modern Hebrew is a three-article Language with the following distribution of articles: one definite article *ha*, one specific article *exad* (one), and one underspecified article (20).⁷

- (20) a. baxura’ axa’t (Modern Hebrew)
 young-woman one.MS
 ‘one young woman’
- b. baxura’.xət
 ‘a certain young woman’ (Borer 2005:150)

Ionin (2006) notes that Modern Hebrew has a specificity marker with indefinite singular nouns derived from the numeral *exad* (one). She argues that *exad* has similar properties to that of *this_{ref}* in English. Based on Borer’s (2005) original study on *exad*, Ionin (2006) shows that indefinites with *exad* must take scope over a higher quantifier (21a), while underspecified indefinites must take narrow scope (21b).

- (21) a. kol geber raqad cim baxura’.xət (*ve- hi niʃga rag ‘oto)
 every man danced with woman.xit (*and she kissed only him)

⁷ There is a difference in the stress placed on *exad* when used as a specificity marker as observed by Borer (2005). Borer (2005:150) points out that “In contrast with the usual use of *exad*, ‘one’, on which it takes primary stress and occurs as a modifier of a noun which itself receives a secondary stress (cf. (20a)), when ‘one’ occurs as a specificity marker, it is unstressed and phonologically reduced, essentially a clitic on the head N, which in this case bears the primary stress, as illustrated by (20b)”.

‘Every man danced with one specific woman (*and she kissed only him).’
 (*narrowest;✓widest)

- b. kol geber raqad cim baxura (ve- hi nišga rag ‘oto/*=Rina)
 every man danced with woman (and she kissed only him /*=Rina)
 ‘Every man danced with a woman (and she kissed only him).’
 (✓narrowest;*widest) (Borer 2005:154)

As is the case in Modern Hebrew, indefinites with *waahad* always take wide scope over quantifiers (22a), as opposed to underspecified indefinites which always take narrow scope (22b).

- (22) a. kull zalamih ragas maʕ **waahdih** mara
 every man.MS danced.3MS with one.FS woman.FS
 (*u hi bas basatuh)
 . (*and she only kissed.3MS-him)
 ‘Every man danced with one specific woman (*and she kissed only him).’
 (*narrowest;✓widest)
- b. kull zalamih ragas maʕ mara
 every Man.MS danced.3MS with woman.FS
 (*u hi bas basatuh/*=Zaina)
 . (*and she only kissed.3MS-him/*=Zaina)
 ‘Every man danced with a woman (and she kissed only him).’
 (✓narrowest;*widest)

The above examples show that the behavior of *waahad* in JA and *exad* is similar to some extent. However, one difference between *waahad* and *exad* is that, unlike *exad*, *waahad* can only occur prenominally (23). Only cardinal *waahad* is allowed postnominally, as the example in (4) repeated here as (24) shows.

- (23) waahad duktuur
 one.MS doctor.MS
 ‘a doctor (specific)’

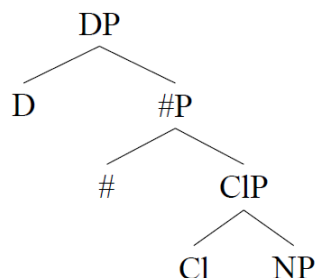
- (24) duktuur waahad
 doctor.MS one.MS
 ‘one doctor’

Summing up, the above observations show that the properties of *waahad* are very similar to the indefinite specific markers found in English and Modern Hebrew. As such, I argue that JA is a three-article language with the definite article *l-*, a null indefinite article, and *waahad* the indefinite specific marker. In the next section, I make specific assumptions regarding the architecture of the DP.

4. Theoretical assumptions

In this paper, I adopt Borer's (2005) structure of the DP seen in (25).

(25)



Following Abney (1987) and Szabolcsi (1994), I assume that DP is the maximal projection of the noun phrase, where reference is encoded. In JA, this projection is occupied by the definite article *l-* with definite nouns, whereas with indefinite nouns, I assume that D projects but is phonologically null. #P hosts weak quantifiers such as *some* and *few* (Borer, 2005). This projection quantifies over mass or count nouns depending on the value of the Cl head, which could be mass or count.

I assume that the Classifier Phrase (CIP) hosts classifiers and an interpretable number feature.⁸ Borer (2005) argues that the count vs mass distinction is not lexically specified, but is grammatically built. For Borer, the presence of classifiers, in languages that have them, brings about the projection of CIP and the DP is specified as count as opposed to mass. In Chinese, for instance, when classifiers are present, a count reading is available (26), whereas in the absence of a classifier, the reading is mass (27).

- (26) yi ge ren (Chinese)
 one CL person
 ‘One person’ (Borer 2005:86)

- (27) shenme qian (Chinese)
 what money
 ‘Much money (shenme: literally ‘what’)’ (Borer 2005:86)

The function of classifiers is to divide mass nouns into units, which then can be counted by numerals. In languages that lack classifiers (e.g. English), Borer (2005) argues that plural marking has a dividing function. In other words, plural marking in English has the same function of classifiers found in languages that have classifiers. This view is further supported by the fact that plural marking and classifiers seem to be in complementary distribution cross-linguistically (e.g. T’sou, 1976; Chierchia, 1998). Borer (2005) argues that the complementary distribution between plural marking and classifiers is accounted for under the assumption that plurals and classifiers compete for the same position: Cl.

⁸ Note that CIP is the equivalent of Ritter’s (1991) NumP.

Borer (2005) argues that functional heads come with an open value $\langle e \rangle$ (i.e. unvalued feature in the sense of (Chomsky, 2001)), which must be assigned range (i.e. valued) by an appropriate range assigner (i.e. valuer). For instance, Borer (2005) argues that D has an open value $\langle e \rangle_d$, and that articles (e.g. *the*, *a*, *that* etc.) can assign range to D's value, as seen in (28).⁹

(28) [DP *a/the* $\langle e \rangle_d$ [NP *cat*]]

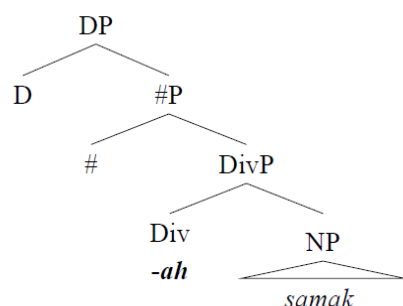
Under Borer's (2005) system every open value must be assigned range to yield a legitimate derivation. Take the CI head, for instance, according to Borer (2005), CI comes with an open value $\langle e \rangle_{CI}$ which needs to be assigned range via an appropriate range assigner. Borer (2005) shows that the possible range assigners to CI include: classifiers, plural marking, the indefinite article, and the noun itself in DPs lacking articles (e.g. indefinite DPs in Modern Hebrew). In what follows, I discuss the nature of the CI head in JA DPs and the possible ranger assigners to its open value.

Ouwayda (2014) argues that in Lebanese Arabic (LA) the suffix *-ah* acts as a classifier when added to certain types of mass nouns (e.g. food, animals, liquids, grains, materials etc.), giving rise to a count reading (29b).

- | | | | |
|------|----|--|-------|
| (29) | a. | akalt samak / tuffah
ate.1MS fish / apple
'I ate fish/apples' | Mass |
| | b. | akalt samak- ah / tuffah- ah
ate.1MS Fish-CLS.FS / apple-CLS.FS
'I ate a fish/an apple' | Count |

Ouwayda (2014) proposes the structure in (30), where the classifier *-ah* merges as Div (CI in the present analysis) with NP. The noun *samak* (fish) start as mass in Borer's (2005) sense, and then it undergoes head movement to Div/CI, where it combines with the classifier *ah* yielding *samak-ah* 'fish'.

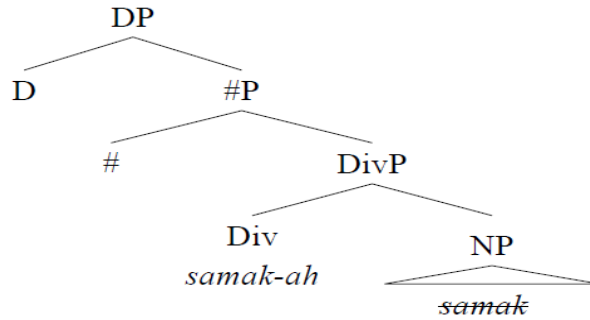
(30)



(Modified from Ouwayda, 2014 :51)

⁹ For simplicity, I ignore the intermediate projections between DP and NP.

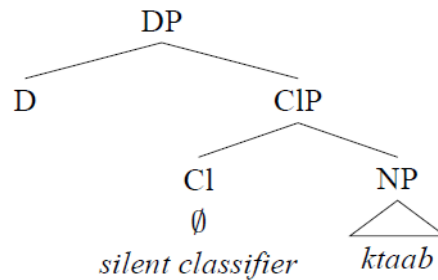
(31)



I extend this analysis to JA, and assume that *-ah* merges as Cl with NP. I assume following Ouwayda (2014) that in the absence of the overt classifier *-ah*, the classifier is instantiated by a null morpheme. In other words, the head Cl is instantiated by a silent classifier, as seen in (32).

- (32) a. ktaab
book.MS
'A book'

b.

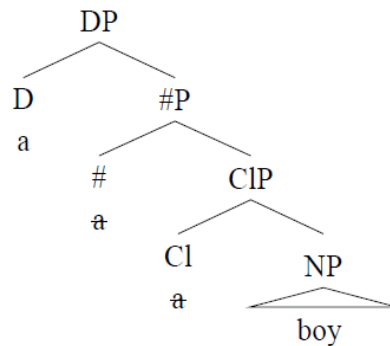


A number of researchers have argued for the existence of null classifiers in non-classifier Languages (Cinque, 2006; Zhang, 2011; Dékány, 2012). Dékány (2012) argues that Hungarian has both overt and null classifiers. She assumes that the classifier phrase is found in all languages, and that it is the (c)overtness of classifiers that distinguishes classifier languages from non-classifier languages. JA is a language with both overt classifiers (*-ah*) and null classifiers. All in all, the projection of ClP is obligatory in all count DPs. I assume that in (31) and (32) both the null and overt classifier combine with the noun in the narrow syntax via head movement.

5. The syntax of *waahad*

In this section, I discuss the syntax of *waahad*. I argue that *waahad* merges as Cl with NP. My analysis is based on Borer's (2005) analysis of the English indefinite determiner *a*. Borer (2005) argues that *a* is base generated in Cl/Div and that it subsequently moves to #P.¹⁰ Under this analysis, the absence of plural marking with the indefinite determiner (e.g. **a cats*) follows from the complementary distribution between the determiner *a* and the plural feature in Cl/Div. The structure of a DP headed by the indefinite article *a* is given in (33).

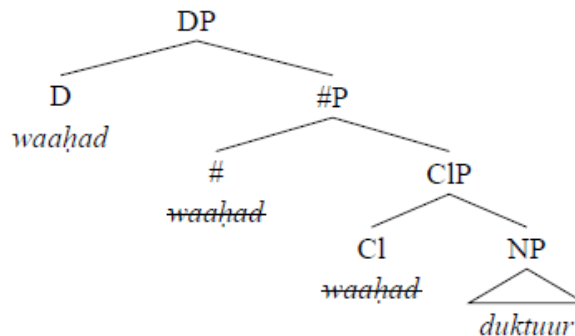
(33)



Building on Borer's (2005) analysis, I argue that *waahad* enters the derivation as Cl. *waahad* then moves to # and subsequently to D leaving copies behind. Thus, the structure of an indefinite DP containing *waahad* would be as in (35).

- (34) *waahad* *duktuur*
 one.MS doctor.MS
 'A doctor (specific)'

(35)



¹⁰ See Borer (2005) for a detailed discussion of division and quantification in the DP.

In what follows, I will show how the structure in (35) derives the properties of *waahad* highlighted in Table 1 above.

To begin with, the fact that *waahad* is incompatible with the definite article is due to the fact that both *l-* (the) and *waahad* compete for the same slot: D. As for the lack of plural morphology following *waahad*, I argue that this has to do with the fact that *waahad* enters the derivation as Cl. Thus, the presence of a plural feature in Cl is blocked due to the presence of *waahad*.

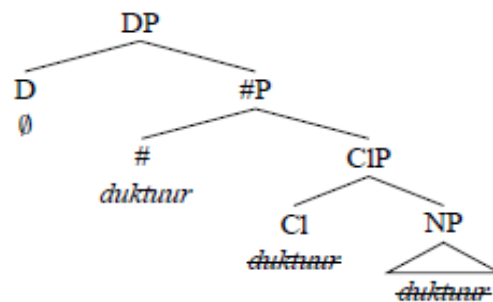
Now turning to gender morphology, it was mentioned above that *waahad* inflects for gender: *waahad* with masculine and *waahdih* with feminine nouns. To account for this behavior, I adopt the idea in Picallo (2008) that gender is a feature of Cl. Thus, the fact that *waahad* inflects for gender receives a straightforward explanation.

As concerns the animate versus inanimate distinction, it was shown above that *waahad* is only compatible with human nouns in JA, and is blocked with nonhuman nouns. I assume that this has to do with the presence of classifiers with nonhuman nouns and their absence with human nouns. In particular, I assume that the Cl head inside a DP containing a human noun does not contain a classifier be it overt or covert since such nouns require no division. As noted above, the classifier *-ah* is limited to certain classes of nouns (food, grains, liquids etc.). Moreover, the null classifier is attested with other nonhuman nouns. In both cases, the Cl head is instantiated (assigned range) via a classifier, which could be null or overt. By contrast, the open value of the Cl head with human nouns is assigned range via the noun through head movement, which subsequently assigns range to #.¹¹ The following structures illustrate the difference between human and nonhuman DPs with respect to range assignment to Cl.¹²

(36)

Human noun

- a. *duktuur*
doctor.MS
'A doctor'
- b.



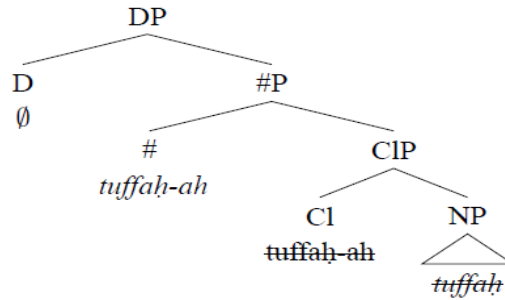
¹¹ Under Borer's (2005) analysis, a range assigner to Cl is also a range assigner to #.

¹² I assume that movement of the noun in (37) is due to the affixal nature of the classifier *-ah*.

(37)

Non-human nouns

- a. tuffaḥ
apple-CLS.FS
'An apple'
b.



As alluded to above, I assume following Borer (2005) that the head of every functional projection contains an open value $\langle e \rangle$, which needs to be assigned range. The question that arises here is what assigns range to the open value of D in (36) and (37). To answer this question, I adopt Borer's (2005) analysis of underspecified indefinite in Modern Hebrew, where she argues that D with underspecified indefinites is assigned range via existential closure. This view is further supported by the fact that underspecified indefinites are always existential in JA, and are never generic, as seen in (38).¹³

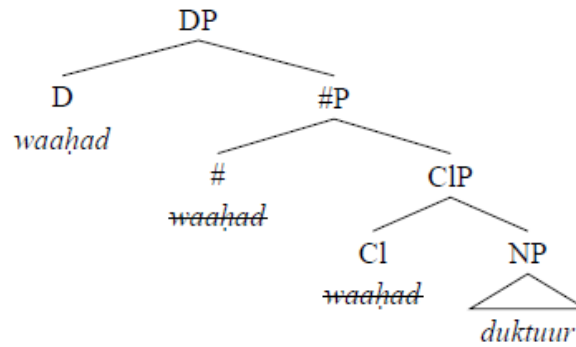
- (38) baḥib nimir
like.1MS tiger.MS
'I like a tiger'
= existential
≠ generic

As for DPs containing *waahad*, I argue that D is assigned range by *waahad* through movement, as seen in (35) repeated here as (40).

- (39) waahad duktuur
one.MS doctor.MS
'A doctor (specific)'

¹³ In order to obtain a generic reading in (38), the definite article *l-* must be present. See Fassi-Fehri (2007) for a discussion of generics and existentials in Arabic.

(40)



One piece of evidence that *waahad* raises as high as D comes from scopal asymmetries between underspecified indefinites and indefinites with *waahad*. Recall from section 3 that *waahad* indefinites always take wide scope over quantifiers as opposed to underspecified indefinites which can only take narrow scope. If quantifiers are taken to be merged DP internally (in Spec-#P), as argued for by Borer (2005), then the fact that *waahad* takes wide scope over quantifiers follows automatically. In particular, since *waahad* occupies the D position via movement, then *waahad* will always take wide scope over quantifiers, and it is predicted that it can never take narrow scope. On the other hand, if D remains null with underspecified indefinites, as alluded to above, then it is predicted that underspecified indefinites can never take wide scope over quantifiers. Both predictions are borne in (22) repeated here as (41).

- (41) a. kull zalamih ragas maʕ **waahdih** mara
 every man.MS danced.3MS with one.FS woman.FS
 (*u hi bas basatuh)
 . (*and she only kissed.3MS-him)
 ‘Every man danced with one specific woman (*and she kissed only him).’
 (*narrowest; ✓widest)
- b. kull zalamih ragas maʕ mara
 every Man.MS danced.3MS with woman.FS
 (*u hi bas basatuh/*=Zaina)
 . (*and she only kissed.3MS-him/*=Zaina)
 ‘Every man danced with a woman (and she kissed only him).’
 (✓narrowest; *widest)

In this section, I discussed the syntax of *waahad*. I argued that *waahad* enters the derivation as CI and ultimately ends up in D. I showed that the difference between underspecified indefinites and indefinites with *waahad* relates to the movement operations involved in the derivation of both DPs.

6. Conclusion

In this paper, I argued that JA has an indefinite specific marker derived from the cardinal numeral *waahad*, which occurs in prenominal position. I showed that *waahad* exhibit all properties associated with indefinite specific markers found in other languages such as English and Modern Hebrew. I put forward an account of *waahad* where *waahad* enters the derivation as Cl, which subsequently raises to # and ends up in D. I argued that the difference between underspecified indefinites and indefinites with *waahad* lies in movement steps involved in the derivation of both types of DPs. The generalization emerges that, by analogy to English and Modern Hebrew, JA DPs are divided into definite, indefinite, and indefinite specific DPs. The three-way split advanced in this paper further supports the proposal put forward in Ionin (2006), where she argues that in addition to the traditional definite/indefinite dichotomy, there exists a class of articles which function as specificity markers.

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Mohammad A. Alhailawani, Ph.D.,
 Dept. of English Language and Literature
 University of Petra
 P.O. Box 961343
 Amman 11196, Jordan
 Cell. (+962)791537939
 mohammad.alhailawani@uop.edu.jo
 m.alhaialwani@gmail.com

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Question Formation in the Oòdó Dialect of Yorùbá

Jelili Adewale Adeoye, Ekiti State University

*Interrogative constructions and their various mechanisms of derivation have attracted the attention of Yorùbá language scholars working on Standard Yorùbá and its dialects but there are no available works on interrogative constructions in the Oòdó dialect of Yorùbá. This paper therefore seeks to provide a detailed description of interrogative construction in the Oòdó dialect of Yorùbá. In this study, it is demonstrated that the polar question words in the Oòdó dialect are *Şé* and *dà...í/in*. It is also shown that there are five basic content question words in the Oòdó dialect while the others are derived through *kí* prefixation. Data in this study were obtained from native speakers of Oòdó dialect through oral interview and their responses were recorded. The study adopts Chomsky's (1995) Minimalist Program for its analysis. This research, we hope, will contribute to knowledge in no small measures in the area of dialectology.*

Keywords: Polar Question, Content Question, Oòdó dialect, Standard Yorùbá

1. Introduction

Researchers in the field of Yorùbá dialectology have carried out research works on interrogative constructions in standard Yorùbá and some of its dialects such as Àwòrì, Ìkálẹ̀, Ìgbóminà, Èkitì, Mòbà and Owé (Awobuluyi 1978, Bamgbose 1990, Ajiboye 2013, Akintoye and Adeoye 2014). It has been argued that interrogative sentences in Yorùbá are in two forms: polar and content questions. The two, as they have pointed out, differ in terms of their syntactic and semantic properties. They submit that polar question markers are introducers while the content question words are nominal. According to them, polar interrogative sentences demand yes/no answers as a response while content questions, on the other hand, demand elaborate answers. In addition, Bamgbose (1990), relying on the syntactic properties, groups polar question words in the Standard Yorùbá into three: sentence introducer, sentence modifier and conjunction. He further categorises content questions into three by considering their syntactic properties. The three categories are nominal, modifier and verbal. In a similar vein, Ajiboye (2013) considers the semantic properties of polar question markers and groups them into five categories. The five categories are confirmatory, expression of doubt, affirmative and negative, emphatic and rhetoric. However, there are no available works on Oòdó one of the dialects of Yorùbá. This present study therefore focuses on the Oòdó dialect and show, among other things, that the Oòdó dialect has two polar question markers. It is also demonstrated in the study that there are five basic content question words in the Oòdó dialect while the others are derived through *kí* prefixation.

2. Theoretical Framework

The Minimalist Program (henceforth **MP**) is the latest version of the transformational generative grammar. The program is developed on the economy of principles and derivations. The Minimalist Program is structured around three systems namely: the lexicon, computational system, LF and PF. The mechanisms of operation of the Minimalist are **select, merge and**

agree. MP assumes that the lexicon expresses items that have semantic, syntactic and phonetic features. Derivation in MP starts from the lexicon where items are selected directly through a numeration system called merge. Merge combines items in a pair wise manner. Merge is divided into two external merge and internal merge. External merge selects and combines items directly from the lexicon through numeration while internal merge applies to a merge operation that affects syntactic elements that are introduced into already derived convergent. Agree is an operation that establishes between two elements if they share certain grammatical features (Kremers 2003: 6). The operation consists of two elements **probe** and **goal**. The **probe**, in order to be able to enter into an agree relation must be active. It can be active if and only if it has unvalued feature so that it can value its feature by probing for an active **goal** that has the same matching features but valued (Al-Horas 2013). Probe is the functional element which serves as the highest head with [-interpretable] features while goal is lexical element with [+interpretable] feature.

3. Previous Studies on the Yorùbá Dialects

Works on interrogative construction in Yorùbá and its dialects include Bamgbose (1967, 1990), Awobuluyi (1978), Ajiboye (2011, 2013), Akintoye (2011), Akanbi (2011), and Akintoye and Adeoye (2014). These scholars agree that Yorùbá interrogative constructions are formed through the use of overt interrogative markers, content question phrase and raising of voice. Ajiboye (2013: 09) notes, among other things, that Standard Yorùbá (henceforth SY) has the following as the polar question words: *şé, òjé, àbí, şèbí, ha, bí, ha....bí* and *ni*. He also asserts that the following dialects of Yorùbá have the following polar question words:

- | | | |
|-----|----------|-------------------------------------|
| (1) | Àwóri | <i>şé, àbí, lá(à)</i> |
| | Ìkálẹ̀ | <i>şé, òjé, àbí. bé</i> |
| | Ìgbómìnà | <i>òjé, şé, àbí, şèbí, fẹ́ẹ, ni</i> |
| | Mòbà | <i>şé, àbí, şèbí, yá, ni</i> |
| | Owé | <i>şé, òjé, àbí, şèbí, há, un</i> |

He notes further that polar question words in Yorùbá dialects differ and they occur in sentence initial, medial or final position. See the examples 2a, b and c below.

- (2) a. **Standard Yorùbá**
Şé **Yàràduà dé?**
 Inter Y. arrive
 ‘Did Yaradua arrive?’
Òjé **Yàràduà dé?**
 Inter Y. arrive
 ‘Did Yaradua arrive?’
Şèbí **Yàràduà dé?**
 Inter Y. arrive
 ‘Isn’t that Yaradua arrive?’
Yàràduà **ha** **dé?**
 Y. Inter arrive

‘Did Yaradua arrive?’
Yàràduà dé bí?
 Y. arrive Inter
 ‘Did Yaradua arrive?’

b. **Ìgbómìnà dialect**

Ọ́ fée jeun?
 2sg Inter eat
 ‘Did you eat?’
Oúnjẹ fée ti dèlẹ̀?
 food Inter asp done
 ‘Is food ready?’

c. **Owé dialect**

Ẹ́jẹ̀ Bùnmi hé resi á?
 Inter B. Cook rice the
 ‘Did Bùnmi cook rice?’
Ṣé Bùnmi ghá un?
 Inter B. come
 ‘Did Bùnmi come?’

(cf. Ajiboye 2013) (The interlineal gloss is mine)

From these examples, one can see that *ṣé* is common to Àwòrì, Ìkálẹ̀, Ìgbómìnà, Mòbà and Owé while other polar question words such as: *Ẹ́jẹ̀*, *Ṣẹ́bí*, *ha*, that are present in SY are not attested in some dialects or better still have another form. For instance: ‘*ha*’ polar question in (SY) is realised as ‘*bé*’ in Ìkálẹ̀, ‘*fée*’ in Ìgbómìnà and ‘*yá*’ in Mòbà while it is completely missing in the Owé dialect. In the present study, we show that the marker is realised as *dà* in Oṅdó dialect. Interestingly, one unique thing about *dà* (polar question marker) that differentiates it from other polar question marker in other dialects of Yorùbá is that it must be obligatorily followed by a focus marker *i/in* that are conditioned by oral or nasal assimilation) at the sentence final position.

Akintoye and Adeoye (2014) show clearly that polar question words in Èkìtì are fewer than the Standard Yorùbá. They claim that Èkìtì uses ‘*Ṣé*’ and ‘*à*’ as its polar question words. They also assert that Èkìtì attests the following content question words *kí/rí* ‘what’, *ìsì* ‘who’ and *sí* ‘where’ which can be added to a noun to derive other question words that denote time, place, action, etc. For example, the dialect has *ibi sí* ‘which place’, *ònà sí* ‘which way’, *ùgbà sí* ‘what time’, *bẹ̀ẹ̀ sí* ‘how’, *òkàn sí* ‘which one’ etc. In addition, they claim that the content question words are moved to sentence initial position to form an interrogative sentence.

Having reviewed the previous works on question formation in SY and some dialects of Yorùbá with examples that show the question words and their positions of occurrences in sentences, the remaining sections of this work will be dedicated to the investigation of the Oṅdó dialect to discover the types of question words (polar and content) that are attested in the dialect and also investigate the mechanisms used in deriving the interrogative sentences.

4. Polar Interrogative Sentences in Oòdó Dialect

Polar interrogative sentences are questions whose expected response could be either yes/no. König and Siemund (2007: 271) assert that “polar interrogatives are typically used to inquire about the truth and falsity of the propositions they express”. They note further that different strategies are adopted by languages in forming polar interrogative sentences. They mention six methods that have been established typologically in forming polar interrogatives in languages. They are:

- i. the use of interrogative particles
- ii. a change of relative word order
- iii. the use of special intonation patterns
- iv. the addition of special tags
- v. the use of disjunctive – negative structures
- vi. the use of particular verbal inflection.

However, cross linguistic evidence has shown that languages differ in terms of the mechanism or strategies used in deriving polar interrogatives. Some languages such as Igbo and Urhobho use tone to derive their polar questions (see Ileanu 2010 and Aziza 2010) while some others e.g. Yorùbá and Dagbani use designated question words and raising of pitch (see Bamgboṣe 1967, 1990, Awobuluyi 1978 and Issah 2015). In this present study, we shall show that the Oòdó dialect adopts two mechanisms in forming its polar questions. The two mechanisms are:

- i) the use of interrogative particles such as *ṣé* and *dà...í/in* and,
- ii) raising of voice on declarative sentences.

Let us consider the examples in 2a-5b below:

(3) a. **Adé jẹ uṣu.**

Adé eat yam
'Adé ate yam.'

b. **Sé Adé jẹ uṣu ?**

Inter Adé eat yam
'Did Adé eat yam?'

(4) a. **Olù ti jeun**

Olù perf. eat
'Olù has eaten.'

b. **Sé Olù ti jeun?**

Inter Olù perf. eat
'Has Olù eaten?'

(5) a. **Adé bọ.**

Adé come
'Adé came.'

b. **Adé dà bọ í?**

Adé Inter come **Foc.**
'Is it the fact Adé has come?'

(6) a. **Olù ti jeun**

Olù perf. eat
'Olù has eaten.'

b. **Olù dà ti jeun ín?**

Olù Inter perf. eat **Foc**
'Is it the fact that Olù has eaten?'

In the examples (3b) and (4b), one observes that the question word occurs at the sentence initial position while in (5b) and (6b), the question marker/particle occurs at the medial position and it is accompanied by a focus marker at the final position. The response to the question in (3b), (4b), (5b) and (6b) may either be *en-en* 'Yes' or *én-én-én* 'No' depending on whether the statement is true or false. The answer to a large extent determines the truth based or falsity of the propositions made in the questions. For instance, when a polar question is posed to someone

and the response is *en-en* ‘Yes’ it clearly shows that the proposition is true. On the other hand, *en-en-en* response shows that the assumption is false. However, as stated earlier, voice can be raised on declarative sentences without polar question words to form polar interrogative sentences in the dialect. Ilori (2016) claims that the interrogative marker is a high pitch intonation which scopes over the whole of a declarative sentence to derive a polar question clause. The examples are shown in (7b) & (8b) below:

- | | |
|---|---|
| <p>(7) a. Adé jẹ uṣu.
 Adé eat yam
 ‘Adé ate yam.’</p> <p style="text-align: right; margin-right: 20px;">(Inter)</p> <p>b. Adé jẹ uṣu?
 Adé eat yam
 ‘Has Adé eaten the yam?’</p> | <p>(8) a. Adé bọ.
 Adé come
 ‘Adé came.’</p> <p style="text-align: right; margin-right: 20px;">(Inter)</p> <p>b. Adé bọ?
 Adé come
 ‘Has Adé come?’</p> |
|---|---|

Examples (3a), (4a), (5a) and (6a) are declarative sentences without the raising of voice and their counterpart polar questions are in (3b), (4b), (5b) and (6b). In (5b) and (6b), we observe that focus marker occurs at the sentence final position. One also notices that the focus markers have two forms: *í*, *ín* which are in complementary distribution. In example (5b) *í* occurs in the environment of oral vowel while *ín* occurs in the environment of nasal vowel as shown in (6b). The focus marker in this case focused the whole polar interrogative sentence. This is not strange as it is attested in the SY and Oñdó dialect; focus marker can focus a whole sentence when it occurs at the final position. See examples 9 a,b and c:

- | | |
|--|---|
| <p>(9) a. Adé lọ.
 Adé go
 ‘Adé went’</p> <p>c. Sé Adé lọ ní?
 Inter Adé go Foc
 ‘Did Adé go?’</p> | <p>b. Adé lọ ní.
 Adé go Foc
 ‘It was Adé that went’</p> |
|--|---|

Standard Yorùbá

- | | |
|--|--|
| <p>(10) a. Adé lọ.
 Adé go
 ‘Adé went’</p> <p>c. Adé dà lọ í?
 Ade Inter go Foc
 ‘Did Adé go?’</p> | <p>b. Adé lọ í.
 Adé go Foc
 ‘It was Adé that went’</p> |
|--|--|

Oñdó dialect

In 9b, *ní* focus the declarative sentence but in (9c) it focuses the polar question just like *í/ín* in the Oñdó dialect as shown in 10b and 10c. However, with examples 5b, 6b, 9b and 9c, it can argue that *ní* in SY is not a polar question marker as claimed in Ajiboye (2013) but a focus marker. We establish that where *ní* is purported to be a polar question word, the polar question particle has been deleted.

5. Content Interrogative Constructions in the Oñdó Dialect

A Content interrogative sentence demands elaborate answer as opposed to a polar interrogative sentence; but this is not to say that a polar interrogative cannot receive sentence answer. The Oñdó dialect has five basic content question words which are: *èsí* ‘who’, *èlú* ‘how much/many’, *kẹ̀* ‘where’ *sá* ‘where’ and *kí* ‘what’. However, *kí* can be added to nouns to derive other content question words that denote place, manner, selection, time and reason. For example, we can have *kése* ‘why’, *kíghi* ‘when’, *kíyi* ‘which one’, *kíwé* ‘how’ *kíbi/kíbè* ‘where’ and *kuše* ‘how’. These content interrogative words in Oñdó are nominal expressions, adverbs, and noun qualifiers that occur at the sentence initial position. See the examples (11-25):

- | | |
|---|--|
| (11) a. Kí _i wé fò ----- _i ?
Qw 2sg wash -----
‘What did you wash?’ | b. Wé fò kí in?
2sg wash Qw foc.
‘You washed what?’ |
| (12) a. Kí _i Adé gbà ----- _i ?
Qw DP collect
‘What did Adé collect?’ | b. Adé gbà kí in?
DP collect Qw foc.
‘Adé collected what?’ |
| (13) a. Èsí _i Adé lù ----- _i ?
Qw DP beat
‘Who did Adé beat?’ | b. Adé lù èsí in?
Adé beat Qw foc.
‘Adé beat who?’ |
| (14) a. Èsí _i Adé ri ----- _i ?
Qw Adé see
‘Who did Adé see?’ | b. Adé ri èsí in?
Adé see Qw foc.
‘Adé saw who?’ |
| (15) a. Èlú _i òrombó Olú rà ----- _i ?
Qw orange Olú buy
‘How many oranges did Olú buy?’ | b. Olú rà òrombó èlú un?
Olú buy orange Qw foc
‘Olú bought oranges how many?’ |
| (16) a. Èlú _i Adé san ----- _i ?
Qw Adé pay?
‘How much did Ade pay?’ | b. Adé san èlú un?
Adé pay Qw foc..
‘Adé paid how much?’ |

In (11a -16a), we observe that the content question word occurs at the sentence initial position, while in the counterparts in (11b-16b), it also observed that question words occur as the object of the verb and they are followed by a focus marker which normally assimilates the features of the last vowel of the question word. One also notices that when the question word is moved to sentence initial position the focus marker is deleted as shown in (11a -16a). However, there are instances where the content questions occur at the final position are not followed by a focus marker. See examples (17b and 18b) below:

- | | |
|---|--|
| (17) a. Kíbi _i Adé lọ ----- _i ?
Qw Adé go
‘Where did Adé go?’ | b. Adé lọ í kíbè?
Adé go Qw
‘Adé went where?’ |
|---|--|

(18) a. **Kíbi i Ọkẹ ti jà -----i?**
 Qw Ọkẹ Asp fight
 'Where did Oke fight?'

b. **Ọkẹ ja ní kíbẹ?**
 Ọkẹ fight in Qw
 'Ọkẹ fought where?'

In examples (17a & 18a), one can see that the question word is moved to sentence initial position and the last vowel of the question word is replaced by a front high vowel. Apart from the two instances above, there are also instances where adverb of time/reason that occurs after a verb becomes content question words when they are moved to sentence initial position. See examples (19a -25a) below:

(19) a. **Kíghì i Adé wa -----i?**
 Qw Adé come?
 'When did Adé come?'

b. **Adé wa náǎ.**
 Adé come evening
 'Adé came in the evening.'

(20) a. **Kíghì i Sọlá wá -----i?**
 Qw Sọlá arrive
 'When did Sọlá come?'

b. **Sọlá wá nà ago mẹta..**
 Sọlá come by three o'clock.
 'Sọlá came by three o'clock.'

(21) a. **Kése_i di Adé lù Ọjó -----i?**
 Qw did Adé beat Ojo?
 'Why did Adé beat Ojo?'

b. **Adé lù Ọjó toghí toghó.**
 Adé beats Ojo reason money
 'Adé beat Ojo because of money.'

(22) a. **Kése_i di Adé lo uli-----i?**
 Qw did Adé go home
 'Why did Adé go home?'

b. **Adé lọ Ulí toghí Ọjò**
 Ade go home reason rain
 'Adé went home because of rain.'

Moreover, there are cases where the nominal that occur after the verb becomes question words when they are moved to sentence initial position. This is demonstrated in 23a-25a

(23) a. **Kíyí i wé fẹ -----i ?**
 Qw 2sg want
 'Which one do you want?'

b. **Wò fẹ ìyí .**
 2sg want this
 'You want this.'

(24) a. **Kóna_i ghen gbà -----i?**
 Qw way pass
 'Which way did he pass?'

b. **Ó gbà ọnà-ẹn**
 3sg pass way that
 'He passed that way.'

(25) a. **Kúşe wé ti şe -----?**
 Qw 2sg asp. do
 'How did you do it?'

b. **Wò şe bí şiyí**
 2sg do like this
 'You did it like this.'

Based on the data presented in (11a-25a) above, we demonstrate that content interrogative words occur at the sentence initial position. However, the instances of the occurrence of the content question word at the sentence final position seen in (11b-16b) are cases of echo questions. The echo questions in Oñdó dialect such as (11b-16b) are used to express surprise or amazement or request that part of a sentence be repeated for clarity. The examples presented in (19-25) show clearly that they have no echo counterparts; the simple explanation for this is

that derived content question words most especially with *kí* prefix are not always accompanied by focus. As shown in examples (11a-25a) above, one will observe that the question words in Oñdó are not followed by a focus maker when they occur at the sentence initial position. Ajiboye (2006:29) shows that content question words in Mòbà dialect prohibit *in* focus marker when they are moved to the sentence initial position but the focus is overt in the echo questions. See the examples 26a and b:

- | | |
|---|--|
| (26) a. Kí Ikúnlé rà?
What NP buy
'What did Ikúnlé buy?' | b. Ikúnlé rà kím in?
buy what foc
'Kúnlé bought what?
(echo question)' |
|---|--|

In addition, we also observe that each of the question words in Oñdó dialect is a noun, an adverb or a noun-qualifier at their base before they are turned to content interrogative words at the sentence initial position.

However, apart from these stated facts above, one also notices that question words in Oñdó dialect are disyllabic except for *Kí* 'what' *kẹ* 'where' *sá* 'where'. We suspect that *èlú* 'how much' and *èsí* 'who' must have been derived through *è* prefix to the root. We also notice that when the morphemes in the two words *èlú* and *èsí* are divided, the morphemes will lose their meanings. Our explanation for this is that in the historical development of the dialect the meanings of the roots *lù* and *sí* have been lost in the present day usage. However, Èkìtì dialect has *sí* which can be attached to a noun to derive question words such as *omọ sí* 'which child' and *ona sí* 'which way' and it can take a prefix as well. Akintoye and Adeoye (2014) note a similar thing in some dialects of Yorùbá. Consider the examples 27:

- | | | |
|-------------------|---------------|-------|
| | | Gloss |
| (27) Èkìtì | ì sí | 'who' |
| Ègbá/Ìjẹbú | Lè sí | 'who' |
| Ìjẹṣà | Yè sí | 'who' |
| Ìtsẹkírì | Nè sín | 'who' |
| Ìyàgbà | Nè ghí | 'who' |

From the illustration in (27) above, one can argue that *èlú* and *èsí* must have been derived through *è* prefixation. This argument advanced here is supported by the fact that *èwó* 'which' and *mélòó* 'how many' in SY are derived through the process of prefixation:

- | | | |
|-----------------|-----------------|-------|
| (28) | | Gloss |
| è # wó | prefix + which | |
| mú # èló | take + how much | |

Based on this fact and the robust nature of prefixation as a morphological process in Ondo dialect, we can conclude that *èsi* 'who' is derived just like the examples in (28) while *èlu* (how much) is one morpheme just like *èló* 'how much' in SY that is not derived. Moreover, the disyllabic question words that are derived through *kí* prefixation as shown in (17a& 25a) are sustained in Oñdó dialect simply because there is no basic question word that denotes time, place, reason, manner and selection in the dialect. As a result, the dialect prefix *kí* which is the

basic question word to other nouns to derive the question words, thus, we propose these underlying forms for these question words:

(29)			Gloss
	Kí	# ibi/íbẹ̀	‘what + place’ (where)
	Kí	# ighi	‘what + time’ (when)
	Kí	# ùṣe	‘what + reason’ (how)
	Kí	# òṅà	‘what + road’ (which way)
	Kí	# ìyí	‘what + one’ (which one)

In (29) above, one observes that the basic question word is the *kí* that is attached to the nouns to derive other question words. In the Standard Yoruba, *wo* ‘which’ is often times added to nouns to derive other question words like *ilé wo* ‘which house’, *òṅà wo* ‘which way’ among others. Ajiboye (2006:33) notes the same situation in Mòbà dialect where noun is attached to *sí/sín* to derive the following question words:

(30)		Gloss
	Kàbi sí/sín	‘where’
	Èlò sí/sín	‘how much’
	Ùgbà sí/sín	‘when’
	Ùse sí/sín	‘how’

We see instances of vowel elision across morpheme boundary in the examples (17a-25a). According to Abiodun (2005), elision is a phonological process which involves the loss of a vowel in a word or across morpheme or word boundary. In (17a) and (25a), we notice that the vowel of the question word *kí* is elided before the noun that begins with a vowel. We also observe that the high tone of the front high vowel re-aligns with the first tone bearing unit of the noun that precedes it and then simplifies to a high tone.

5.1 Other Content Question Phrase Sentences in Oṅdó

Kẹ̀ and *sá* content question words/phrases in the Oṅdó dialect do not involve question phrase movement. The question markers have been traditionally analysed as verbs and there is no evidence of operator movement in their derivations. See examples 31 and 32:

- | | | | |
|---------|--|-----|--|
| (31) a. | Òun kẹ̀
3 rd sg Qw
‘How is he?’ | *b. | Òun ti kẹ̀?
3 rd sg asp. Qw |
| (32) a. | Òun sá ?
3 rd sg Qw
‘Where is he?’ | *b. | Òun ti sá?
3 rd sg asp. Qw |

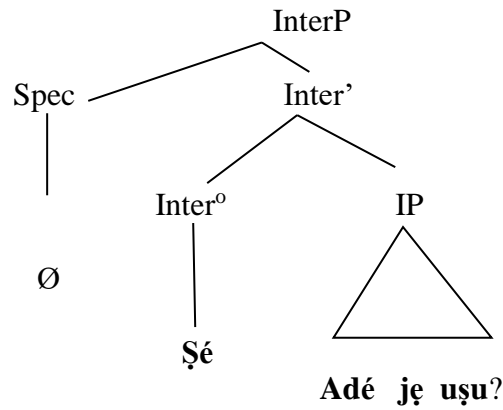
It must be noted that *kẹ̀* is used to show the situation of things while *sá* is used to show the exact location of things or people. Thus, the question word *kẹ̀* has the semantics of making inquiry about the welfare of the person in question. As expressed in Ilori (2010), there is no syntactic justification to show *dà* and *ńkọ̀* are verbal question phrases in Yorùbá. Also, in Oṅdó dialect, the phrases *sá* and *kẹ̀* have similar shape and same syntactic distribution. This study agrees with the position of Ilori (2010) because the question words cannot be preceded by a

preverbal particle, take DP or PP object and they cannot be reduplicated. Thus, the name question phrase/word is more plausible than verbal question word because they do not exhibit the features of verb in the examples. In this study, we adopt question phrase/word for **sá** and **kè** pending further proof.

6. Derivation of Polar Interrogative sentences in Oñdó Dialect

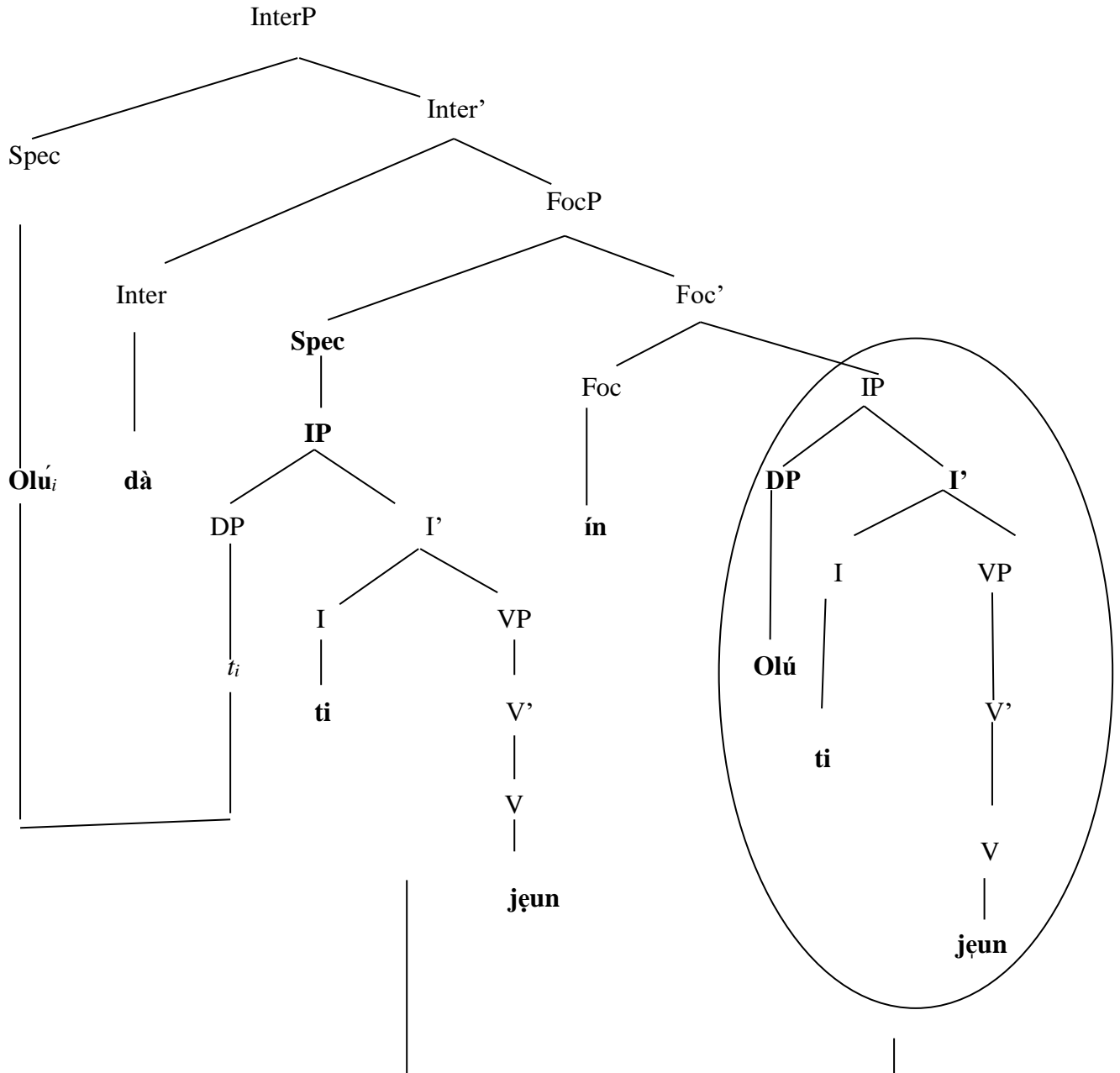
In deriving the polar interrogative sentence in Oñdó dialect, we proposed Inter head that selects Fin/IP to project maximally below ForceP. We observe that polar interrogative sentences where the polar interrogative marker is spelled-out at clause initial position; the marker/head remain in-situ. See the tree diagram in (33a) for the illustration.

(33) a.



However, for polar interrogative sentences where the polar question marker is spelled-out at medial position with a focus marker at the final position; it is argued that both the Inter head and the focus marker occur at sentence initial position, that is, the left periphery of the IP. Thus, we propose multiple CP layers above IP which are InterP and FocP. In this case, it logically follows that Foc head externally merges with Fin/IP which projects into Foc' and FocP. Thus, the Foc head becomes the probe which attracts the Fin/ IP which is the active goal to Spec FocP. The Fin/IP moves to Spec FocP to satisfy the EPP feature. Moreover, the Inter head externally merges with FocP, the Inter head becomes the probe which attracts the subject DP at the Spec IP which is the active goal to Spec InterP to satisfy the EPP feature. The tree diagram in (33b) illustrates the syntactic projection.

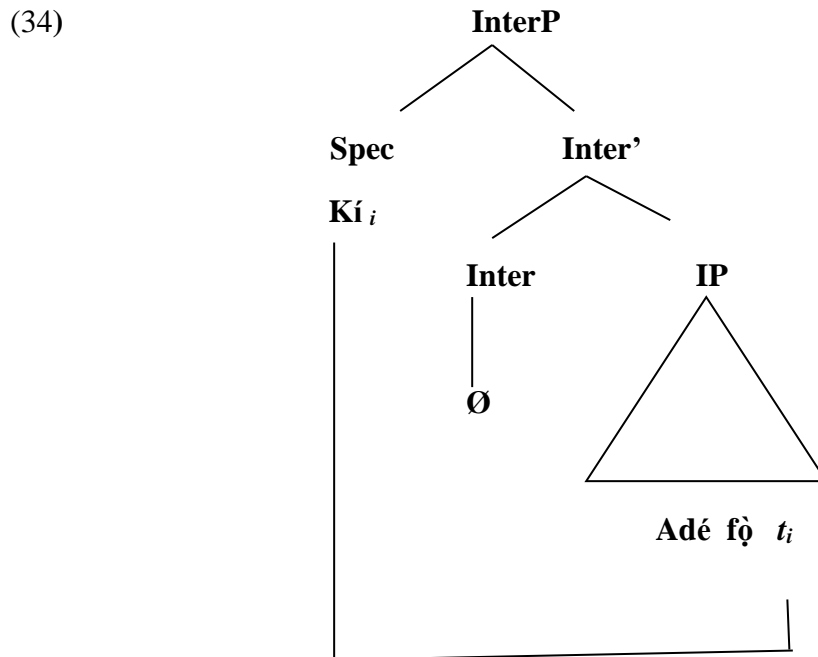
(33) b.



6.1 Derivation of Content Interrogative Sentences in Òndó Dialect

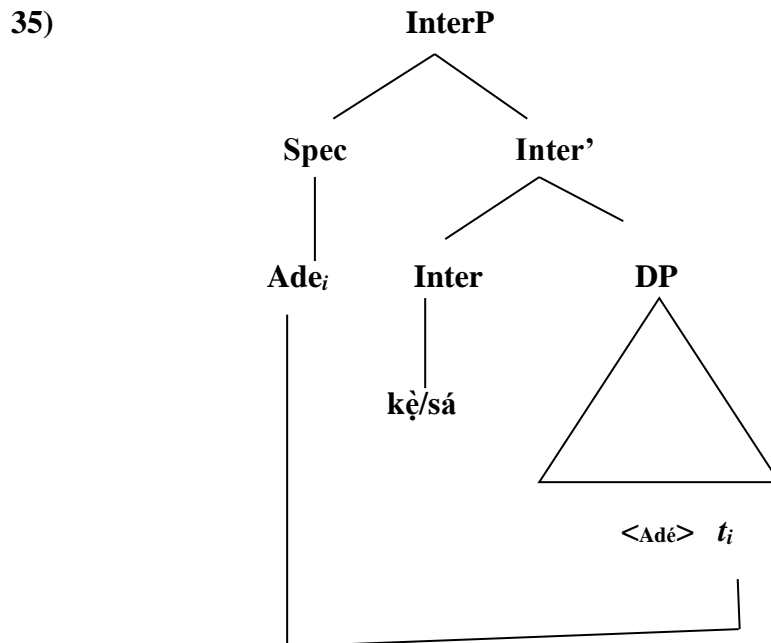
In the derivation of content interrogative sentences in the Òndó dialect, I adopted the movement analysis approach bearing in mind that the content question word head has a strong feature which must be checked before spell-out within the minimalist framework. Thus, the Wh-operators head feature must check the **Feature question (F_{Qst})** to eliminate the strong feature of **Question (Q_{st})** (Chomsky 1995:289). Given this fact, I proposed an **Interrogative Phrase (InterP)** where the content question phrase (Content Question Word operator) is raised to **Spec**

InterP, the **Inter head** position is phonetically empty and it selects **IP** as its complement. The structural derivation is presented in (34)



6.2 The Derivation of other Content Question Phrase Sentences in Oñdó

In accounting for the derivation of interrogative sentences with *kè/sá* interrogative words, I assume that the structure is a truncated IP, as a result, I proposed that **Inter head** merges with DP to project **Inter'** and **InterP** respectively. The **Inter head** which is the probe attracts the DP to **Spec- InterP**, the movement of the DP is licensed to satisfy the EPP and eliminates the strong feature of **Spec- InterP**. The structural derivation is presented in (35)



7. Conclusion

In this study, we have examined question formations in Oñdó dialect of Yorùbá, the structures and their derivations. We observed that the polar question words are *Şé/dà...í/in* and the mechanism of derivation follows the same pattern of the **SY** except for *dà* which is obligatorily followed by a focus maker. We have also shown that some of the content question phrases are formed through *kí* prefixation while others are not derived. We established that content interrogative sentences are derived through the movement of the content question word to the sentence initial position. It is also shown that when the content question phrases are moved they are not accompanied by focus marker.

Abbreviations

InterP	Interrogative Phrase
Inter ^o	Interrogative head
FocP	Focus Phrase
Foc	Focus
IP	Inflectional Phrase
I	Inflection

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Jelili Adewale Adeoye
Department of Linguistics and Nigerian Languages
Ekiti State University, Ado-Ekiti, Ekiti State
adeoyejelly@gmail.com

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Metadiscourse markers and gender variation in journal articles

Benita Saraswati and Truly Almendo Pasaribu
Sanata Dharma University

This study aims at analyzing interactive and interactional metadiscourse markers in humanity and science journal articles. Since metadiscourse markers are believed to represent writers' engagement with readers, this study also analyzes the possible link between the gender of the authors and the markers used in the journals. A corpus-based qualitative method was employed in analyzing 40 science and humanity journal articles written by 20 male and 20 female authors. The most common interactive markers in both science and humanity journals are transition markers (28.22%), whereas the least frequently used interactive markers are endophoric markers (1.83%). Moreover, the most common interactional markers are hedges (12.3%), while the least frequently used are boosters (4.06%). We argue that humanity journals employed more interactional metadiscourse markers because these markers are believed to alert readers about the author's perspectives on social phenomena. We elaborated that male and female authors tended to use metadiscourse markers in the same way, so there is no straightforward relation between gender and the use of metadiscourse markers in journal articles.

Keywords: metadiscourse markers, humanities, science, gender, journal article

1. Introduction

Metadiscourse markers are used not only to connect ideas in the texts, but also to establish a relationship between the writers and the readers. Hyland (2005) defines metadiscourse as “the linguistic expressions which refer to the evolving text and to the writer and imagined readers of that text.” Metadiscourse features in texts reflect how the writers organize the texts and engage with the readers. The use of metadiscourse markers to organize the flow of ideas and make persuasive arguments allows an effective engagement with the readers. Hyland (2005) elaborates that metadiscourse is actually based on the social engagement which “represents the writer's awareness of the text as discourse.”

Texts serve distinct social functions reflected in the use of different language features. First, the fields or the disciplines of the texts influence the choice of metadiscourse markers. Hyland (2005: 143) explains that “metadiscourse facilitates the social interaction to the knowledge within disciplines”. His study reveals that medical texts which are included in the branch of science evidenced less interactive metadiscourse markers. On the other hand, economics and linguistics, which belongs to the social and humanity fields, have less formalized text structure. Another study conducted by Minal & Biria (2017) showed that in “interactive metadiscourse category, the use of transitions, frame markers, and evidentials in social science articles were more frequent than those in medical science texts.” Considering these findings, there is a need for an investigation of the use of metadiscourse markers in different disciplines.

Another extra linguistic factor that may influence the choice of metadiscourse markers is gender. Studies suggest that gender plays a great role in language, including writing. Lakoff (1975:19) argues that “hedges, qualifiers, intensifiers and other devices... reduce the force of assertions or prevent the expression of strong statement.” Tse and Hyland (2008) suggest that

female authors use boosters to intensify praise. The concordance further reveals that boosting was associated with positive comments. On the other hand, male authors use boosters to underpin their confidence. The effect of gender on writing was also investigated by Ghafoori and Oghbatalab (2012) highlighting that code glosses, markers elaborating propositional meanings, are significantly used more by male writers, while evidentials, markers referring to information from other texts, are used mainly by female writers. Those characteristics make the texts written by women different from those written by men.

Considering these social factors, the present research examines the following: (a) how interactive and interactional metadiscourse markers are used in humanity and science journal articles; and (b) the relation between the use of metadiscourse markers and different social factors—disciplines and gender. The research was conducted by examining articles from different fields of studies (science and humanities) from 2009 up to 2017 which were collected from *Science Direct* and analyzing the data in the journals using Antconc (Anthony, 2016).

2. Metadiscourse Markers

Metadiscourse refers to the words used by a writer or speaker to mark the direction and purpose of a text. It can be broadly defined as “discourse about discourse” or parts of texts which affect the relations between authors and readers. Metadiscourse shows an important link between the text and its context since it refers to the reader’s expectation to form interaction and engagement (Hyland 2005). By using interactive and interactional metadiscourse markers, the writers acknowledge the presence of the readers (Duruk 2017). The writers engage the readers by using the interactive and the interactional dimensions (Hyland 2005). The subcategories of interactive dimensions (Hyland 2005) are transitions, frame markers, endophoric markers, evidentials, and code glosses. The other category of metadiscourse markers (Hyland 2005) is the interactional dimensions concerning the writer’s way to facilitate the interaction by concerning the message. Hyland (2005) classifies interactional dimension into several categories, namely hedges, boosters, attitude markers, self-mentions, and engagement markers. Table 1 displays the functions and examples of each category of metadiscourse markers.

Table 1: Interactive and interactional metadiscourse markers categories (Hyland, 2005:49)

Category	Function	Examples
Interactive	Help to guide the reader through the text	Resources
Transitions	Express relations between main clauses	In addition; but; thus; and
Frame Markers	Refer to discourse acts, sequences or stages	Finally; to conclude; my purpose is
Endophoric Markers	Refer to information in other parts of the texts	Noted above; see Fig; in section 2
Evidentials	Refer to information from other texts	According to X; Z states
Code Glosses	Elaborate propositional meanings	Namely; e.g.; such as; in other words
Interactional	Involve the reader in the text	Resources
Hedges	Withhold commitment and open dialogue	Might; perhaps; possible; about
Boosters	Emphasize certainty or close dialogue	In fact; definitely; it is clear that
Attitude Markers	Express writer’s attitude to proposition	Unfortunately; I agree; surprisingly

Self-mentions	Explicit reference to author(s)	I; we; me; our
Engagement	Explicitly build relationship with reader	Consider; note; you can see
Markers		that”

So far, metadiscourse studies have been mostly focusing on academic texts (Quin 2019), especially research articles (Hyland 2017). Adel (2010) adds the written/spoken mode to the literature and proposed metadiscourse taxonomy for both written and spoken discourse. Hyland (2017) notes the importance of exploring “a less well-trodden area” using metadiscourse framework. Therefore, the present study investigates the link between metadiscourse markers and extra-linguistic variables -gender and disciplines- to figure out how the markers socio-linguistically reflect the writer’s stance towards the contents or the readers.

3. Gender and Language

Literature suggests there is “a gendered discourse representing a male-dominated academic culture” (Tse & Hyland 2008: 234; cf. Cendra, Triutami & Bram 2019; Ratri & Ardi 2019; Pasaribu 2016). It means that language “encodes male values and works to exclude female academics and their preferred forms of interaction” (Kirsch, 1993). This condition makes academics apply masculine styles of writing, which impose gender identities. In the academic success, the writers need to perform a gender identity characterized as masculine and participate in academic genres (Bergvall 1999). In academic writing, the male style of writing is mostly used because male language is considered to be the right choice of language used in formal writing (Bergvall 1999). However, several studies reveal how male and female authors adopt different language use. The study conducted by Yeganeh and Ghoreyshi (2015) reveal that male writers employ more boosters to express their statements than their counterparts. On the other hand, female writers tend to use more hedges to state their findings than male writers. Furthermore, Tse and Hyland (2008) also elaborate some language differences in relation to gender. Their study shows that males use more hedges, boosters, transition markers, and code glosses, whereas females use more self-mentions and attitudinal lexis.

4. Different Fields in Academic Paper

A research article or academic paper is “a genre where an orientation to readers is crucial in securing rhetorical objectives” (Hyland 2005: 143). The readers should view the language as the ‘social justification of belief’. So, the writers should consider the readers, anticipate the background knowledge, process the problems, interests, and the interpersonal expectations (Rorty 1979: 170 as cited from Hyland 2005: 143). Furthermore, in the academic context, writing is how practitioners construct the disciplines (Bazerman 1993; Hyland 2000; Indrian & Ard 2019). Essentially, academic papers are used by researchers to brainstorm for ideas, find solutions, and strengthen arguments. They are direct sources of research references. We collected the academic papers as the data from Science Direct, a large database of scientific and medical research. As described in the website [<https://www.sciencedirect.com/>], Science Direct has four main classifications, namely “Physical Sciences and Engineering, Life Sciences, Health Sciences, and Social Sciences and Humanities.” We collected the journals by

searching some keywords, such as biology, medicine, chemistry, philosophy, law, and archaeology and selected those featuring our criteria explained in the methodology.

5. Methodology

This research analyzed metadiscourse markers in relation to gender and different fields of the articles. In this case, a descriptive qualitative method using Hyland's taxonomy (2005) was employed. First, we collected the journals from Science Direct website. We limited the journals to within the last eight years, from 2009 up to 2017. The journal articles are from humanities (philosophy, law, archaeology) and science (biology, chemistry, medicine). We also selected a single author, whether male or female, for each field (humanities and science). Each article ranges around 10-15 pages. First, we collected 10 science journal articles written by male, 10 science articles written by female, 10 humanity journal articles written by males, and 10 humanity journal articles written by females. In total, there were 40 journal articles collected. Table 2 presents the three first letters of the author's names and the numbers inside the brackets show the year of publication of the journal articles.

Table 2: List of humanity and science journal articles used as data source

#	Authors	Field	Specific Field	Author's gender
1	Dew(15)	Humanities	Philosophy	Male
2	Cur(16)	Humanities	Archaeology	Male
3	Rei (17)	Humanities	Archaeology	Male
4	Whi (17)	Humanities	Archaeology	Male
5	Rho (17)	Humanities	Law	Male
6	Rob (17)	Humanities	Law	Male
7	Rug (17)	Humanities	Law	Male
8	Sva (17)	Humanities	Law	Male
9	Wag (16)	Humanities	Law	Male
10	Wyg (17)	Humanities	Archaeology	Male
11	Fla (17)	Humanities	Archaeology	Female
12	Mir(15)	Humanities	Archaeology	Female
13	Aus(16)	Humanities	Law	Female
14	Lil(17)	Humanities	Law	Female
15	Roa(17)	Humanities	Law	Female
16	Son(17)	Humanities	Law	Female
17	Sto(14)	Humanities	Law	Female
18	Hob(14)	Humanities	Philosophy	Female
19	Mar(14)	Humanities	Philosophy	Female

20	Qui(16)	Humanities	Philosophy	Female
21	Cra(17)	Science	Biology	Male
22	Rey(16)	Science	Biology	Male
23	Sch(11)	Science	Biology	Male
24	Sch(12)	Science	Biology	Male
25	Kra(17)	Science	Chemistry	Male
26	Rei(17)	Science	Chemistry	Male
27	Win(15)	Science	Chemistry	Male
28	Gre(10)	Science	Medical	Male
29	Lin(17)	Science	Medical	Male
30	Tuc(16)	Science	Medical	Male
31	Ber(17)	Science	Biology	Female
32	Mai(16)	Science	Biology	Female
33	Vec(13)	Science	Biology	Female
34	Fas(17)	Science	Chemistry	Female
35	Deg(17)	Science	Medical	Female
36	Dun(17)	Science	Medical	Female
37	Har(17)	Science	Medical	Female
38	Joh(15)	Science	Medical	Female
39	Vak(17)	Science	Medical	Female
40	War(09)	Science	Medical	Female

Second, the metadiscourse markers were highlighted in each journal. Next, the researchers found the metadiscourse markers using Antconc. We took some steps to analyze the data. After reading the journals, we identified the authors, topics, and the numbers of words. The third step was to classify the data in the journals based on the types of metadiscourse markers in relation to different author's gender and fields, as seen in the examples below:

“**In summary**, this framework can be employed to predict the behavior of a transcription network once it is connected into a larger system.”

(FM, Sci-Female)

“I hope it is **obvious** that the applicability of these two inference patterns are sensitive to context.”

(CG, Hum-Male)

As seen in the examples, the metadiscourse markers were classified into FM (Frame Markers) and CG (Code Glosses). We also displayed the data based on extra-linguistic factors, namely fields (Hum for Humanities and Sci for Science) and gender. Other metadiscourse markers were also coded: Transition Markers (TM), Endophoric Markers (EndM), Evidentials (Ev), Attitude Markers (AM), Hedges (H), Boosters (B), Engagement Markers (EngM), and Self-mention (SM). Last, the researchers discussed the relations of metadiscourse markers and other extra-linguistic variables, gender and disciplines.

6. Findings and discussion

The findings indicated that the authors of humanities journal articles employed more interactive and interactional markers than those of the science journal articles. The authors of the articles in both fields are heavy users of transition markers and hedges. In addition, both genders applied those markers in the same way. The following sections discuss how authors from different disciplines and genders employ interactive and interactional markers.

6.1 Interactive Markers

Table 3 presents the results of the total of interactive metadiscourse markers used in humanity and science journal articles. The results showed that the authors of humanities journal articles use more interactive metadiscourse markers than those of science journal articles.

Table 3: The total and percentage of interactive markers in humanity and science journal articles

Field	Female		Male		Total	
	Σ	%	Σ	%	Σ	%
Humanities	5600	26.37	7573	35.67	13173	62.04
Science	4197	19.76	3865	18.2	8062	37.96
Total	9797	46.13	11438	53.87	21235	100

In the journal articles or research articles, the writers need to ensure that their arguments have the plausible relationship with reality in their discipline. Interactive markers are heavily used as they help both authors and readers signal relationship of the ideas and order materials so that the readers will probably find the discourse convincing and appropriate (Hyland 2005: 90). The use of interactive markers, i.e. transitions, frame markers endophoric markers, evidentials, and code glosses, to guide the reading process becomes the reason why research articles, both from or science fields, tend to employed interactive metadiscourse markers. Pasaribu (2017) also found out that “The (EFL) writers tended to elaborate the relation between ideas”. This is in line with Hyland’s findings (2005: 92) that the predominance “of interactive devices emphasizes the importance of guiding the reading process by indicating discourse organization and clarifying prepositional connections and meanings.” Authors use a considerable number of transitions to guide the readers in reading the texts systematically.

Table 3 displays the difference of the use of interactional markers by gender. Male authors used 11,438 markers, while female authors used 9,797 markers. Male authors of humanities journal articles (7573 or 35.67%) use more interactive metadiscourse markers than the female ones (5600 or 26.37%). On the other hand, in science journal articles, female authors use more interactive metadiscourse markers than the male authors. Considering the findings shown in Table 3, both male and female have the same tendency to use interactive markers. In academic writing, the use of metadiscourse markers is not directly affected by gender because the ways authors “use a language are not determined by gender but constructed through social practices” (Tse & Hyland, 2008: 1246). Furthermore, it is essential to know the total of each type of interactive metadiscourse markers in humanity and science journal articles. The results are presented in Table 4.

Table 4: Interactive Metadiscourse Markers
in Humanity and Science Journal Articles

Interactive	Humanities						Science					
	Female		Male		Total		Female		Male		Total	
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
Transition Markers	4084	19.23	5653	26.62	9737	45.85	3154	14.85	2839	13.37	5993	28.22
Frame Markers	347	1.63	632	2.98	979	4.61	333	1.57	404	1.9	737	3.47
Endophoric Markers	261	1.23	273	1.29	534	2.52	179	0.84	210	0.99	61	1.83
Evidentials	603	2.84	563	2.65	1166	5.49	316	1.49	214	1.01	530	2.5
Code Glosses	305	1.44	452	2.13	757	3.57	215	1.01	198	0.93	413	1.94
Total	5600	26.37	7573	35.67	13173	62.04	4197	19.76	3865	18.2	8062	37.96

The most frequent feature of interactive markers in both fields, humanities and science, as shown in Table 4, is the transition markers. The frequent use of these markers is aimed to help the readers to interpret the pragmatic connections and contrastive relations in the text (Hyland 2005: 50). These markers consist of addition, comparison, and consequence. Table 5 shows the use of each sub-category in humanity and science journal articles.

Table 5: Sub-categories of transition markers

Transition Markers	Humanities						Science					
	Male		Female		Total		Male		Female		Total	
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
Addition	4656	21.93	3496	16.46	8152	38.39	2356	11.09	2546	11.99	4902	23.08
Comparison	524	2.47	322	1.52	846	3.99	228	1.07	308	1.45	536	2.52
Consequence	473	2.22	266	1.25	739	3.47	255	1.21	300	1.41	555	2.62
Total	5653	26.62	4084	19.23	9737	45.85	2839	13.37	3154	14.85	5993	28.22

Table 5 shows that addition markers are the most frequent transition markers found in the data. These findings are also in line with Pasariibu's findings (2017) that both males and females used addition markers. The variants of addition markers are: *and*, *furthermore*, *in addition*, *moreover*, *likewise*, *in contrast*, *besides*, *in the same way*, *although*, *however*, *on the other hand*, *yet*, *but*, *despite*, and *on the contrary*. Even though the results showed that male authors in humanities journals and female authors in science journals used the markers more frequently, the use of addition markers between the genders are quite similar. Next, the use of comparison and consequence markers is almost the same. The reason why the authors in the journal articles used addition markers more is because the writers prefer to add more information for the readers. Here is an example of transition markers used in the journal articles.

“That is to say, homologous inferences are concerned only with the individual lineage containing the homologues: the inference follows a line of ancestry. **In contrast**, homoplastic inferences consider the case as an instance of a particular class the analogues are unified via a model coupling the lineages’ features.”
(Hum-Male)

The example above was taken from a humanity journal article written by male author. The transition marker is *in contrast* which is categorized as *comparison sub-category* of transition markers. The use of *in contrast* in that sentence means that the author wanted to compare between homologous and homoplastic inferences.

The findings showed that frame markers are also frequently used in the humanities and science journals. As the signals of text boundaries, frame markers are used more in writing a research article. Table 4 showed that the authors of humanity articles employed more frame markers than those of science articles. These findings are supported by Mina and Biria (2017) who argue that frame markers are used more in social science and humanities. The frequent use of frame markers in humanities aims to shift the topic and link the ideas in the articles logically.

In addition, the sub-categories of frame markers have each function. The Table 6 shows the use of each sub-category of frame markers.

Table 6: Sub-categories of frame markers

Frame Markers	Humanities						Science					
	Male		Female		Total		Male		Female		Total	
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
Additive Relations	353	1.66	190	0.89	543	2.55	161	0.76	177	0.83	338	1.59
Label Stages	29	0.14	26	0.13	55	0.27	17	0.08	12	0.06	29	0.14
Topic Shifts	204	0.96	113	0.53	317	1.49	224	1.05	142	0.67	366	1.72
Discourse Goals	46	0.22	18	0.08	64	0.3	2	0.01	2	0.01	4	0.02
Total	632	2.98	347	1.63	979	4.61	404	1.9	333	1.57	737	3.47

Based on the findings in Table 6, additive relations are the most frequent sub-categories of frame markers used. According Hyland (2005), some variants of additive relations are: *first*, *second*, *third*, *at the same time*, *next*. Interestingly, even though male authors used frame markers more, female authors also apply additive relations. The reason why this sub-category is employed more is because in the research article, it is important to show relations of the ideas in the discourse to guide readers, as seen in the example below:

“And so, we can identify two general kinds of comparative inference. **The first**, homologous inference, either infers traits from ancestry, or ancestry from traits. **The second**, homoplastic inference, supports models that couple features (sometimes traits to other traits, sometimes traits to environments) by appealing to analogues as data points.” (Hum-Male)

The example was taken from a humanity journal article written by a male author. The frame markers used in the sentence above are *the first* and *the second*. The markers used are included in *additive relations*. In the sentence above, those markers mean that the author gives explicit explanation of two general kinds of comparative inference.

6.2 Interactional markers

Table 7 presents the results of percentage and total of interactional metadiscourse markers in humanities and science journals.

Table 7: The total and percentage of interactional markers in humanity and science journal articles

Field	Female		Male		Total	
	Σ	%	Σ	%	Σ	%
Humanities	2306	22.51	4587	44.75	6893	67.26
Science	1723	16.8	1634	15.94	3357	32.74
Total	4029	39.31	6221	60.69	10250	100

The use of interactional markers (10,250) is fewer than the use of interactive markers (21,235) in both fields. Although both fields show the same tendency, it is important to note that interactional metadiscourse markers occur more frequently in humanities journal articles. These interactional resources involve the readers and give them opportunities to contribute by alerting about the author's perspectives. These markers help in controlling the level of personality in the texts (Hyland 2005: 52).

Table 8: Interactional metadiscourse markers in humanity and science journal articles

Interactional	Humanities						Science					
	Female		Male		Total		Female		Male		Total	
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
Hedges	876	8.55	1389	13.55	2265	22.1	601	5.86	660	6.44	1261	12.3
Boosters	297	2.9	619	6.04	916	8.94	230	2.24	187	1.82	417	4.06
Attitude Markers	251	2.45	475	4.63	726	7.08	207	2.02	224	2.19	431	4.21
Self-Mentions	474	4.62	957	9.34	1431	13.96	319	3.11	285	2.78	604	5.89
Engagement Markers	408	3.99	1147	11.19	1555	15.18	366	3.57	278	2.71	644	6.28
Total	2306	22.51	4587	44.75	6893	67.26	1723	16.8	1634	15.94	3357	32.74

The most frequent interactional markers used in both fields, as displayed in Table 8, are hedges. The findings revealed that hedges are the only items outside the interactive metadiscourse markers that become the top ranked items. The findings are in line with Hyland's findings (2005) in the analysis of metadiscourse markers in research articles. Hyland (2005) highlighted that the predominance of interactive devices denotes the necessity to guide the reading process. In contrast, the findings from Mina and Biria (2017) are different from Hylands' findings and the findings in this research. Their findings showed that medical science articles used more hedges than social science articles. Although Mina and Biria (2017) do not provide any qualitative explanation for having contradictory findings from Hyland (2005), Firoozian, Khajavy & Vahidnia (2012, in Mina & Biria 2017)) and Zarei and Mansoori's studies (2011), we propose that the gap occurs because of the wide possible interpretations of interactional markers.

Interestingly, the findings showed that males are the heavy users of hedges. In both fields, male authors used hedges more than female authors. The findings are in contrast with Yeganeh and Ghoreyshi's (2015) findings which showed that hedges are the markers which are frequently used by females due to the reason that the function is to apply a doubtful and cautious approach to the statements. However, the findings of this research follow Crismore et

al. (1993) who found that hedges are parts of males' writing which are aimed to show more interest in writer-reader's interaction as seen in the example below:

“There also **appear to be** biochemical differences, with RV myocardium being more optimized for rapid contraction, although whether differences in myosin heavy chain isoform composition explain this is uncertain, since RV-LV differences in myosin isoform expression **appear to be** present in rodents but not in dogs.”
(Sci-Male)

The example was taken from a science journal written by a male author. The hedges used in the sentence above appear in the phrase *appear to be*. The use of *appear to be* in the sentence means that the writer reduces the importance and news value due to its uncertain truth value (Hyland 2005: 98).

Based on Table 8, Engagement Markers were the second most frequently used markers in both fields. These devices address the readers to include them in the text or just to focus their attention (Hyland 2005: 53). The findings showed that these markers were used more in humanities. In line with the findings, Hyland (2005) also stated that engagement markers were found more in humanity discourse.

The differences of gender in the use of engagement markers were not really significant as both genders in humanities and science employed these markers. It is in line with the findings from Tse and Hyland (2008) that engagement markers were used by male and female in the same way. Wei, Li, Zhou & Gong (2016) also supported the findings by mentioning that both male and female used these markers in their writing. Engagement markers mainly consist of addressing readers and directives. The purpose of engagement markers is positioning readers into the discourse (Hyland 2005). Table 9 shows the total and percentage of those two sub-categories.

Table 9: Sub-categories of engagement markers

Engagement Markers	Humanities						Science					
	Male		Female		Total		Male		Female		Total	
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
Directives	548	5.35	209	2.04	757	7.39	149	1.45	147	1.43	296	2.88
Addressing Readers	599	5.84	199	1.95	798	7.79	129	1.26	219	2.14	348	3.4
Total	1147	11.19	408	3.99	1555	15.18	278	2.71	366	3.57	644	6.28

As can be seen from Table 9, the authors used directives such as modals (*have to, should, must*). The authors were also positioning readers by using the ‘addressing reader’ sub-category. The markers found in the journal articles are *you, your, we, our, and us*. Table 9 shows how humanities articles employ more directives than science articles, although both male and female authors used engagement markers in similar ways, as seen in this example:

“Researchers **should** direct emphasis toward locating and interpreting significant Denali complex occupations within three important eco zones: 1) the lowland taiga, 2) transitional montane zones, and 3) upland or alpine areas.”
(Hum-Female)

The example shows that the writer uses directives by using the marker *should*. The aim of using this marker is to focus the attention to certain argument. The use of directives in articles is

widespread (Hyland 2002). He argues that “directives are used for very different strategic purposes and indicates considerable variations in the ways they are employed across genres” (2002: 215).

Classifying the interactive markers, especially transitions, are less problematic as the functions of each transition is, e.g. to explain contrasting relationship among clauses, widely discussed (see Quin 2019; Pasaribu 2017; and Tse & Hyland 2008). Take a look at the use of *although* in this example:

At a meeting held within the unit several months later, the committee chairperson and one additional employee publicly lashed out at the unit director in a very rude

interactional MDM-Verb

and disrespectful way. Although other employees in attendance considered the

interactional MDM-Adj Interactive MDM-Transitions

behavior to be inappropriate in a work setting, few tried to stop the verbal

interactional MDM-Adj

confrontation.

Interactional MDM-Noun

However, it is more challenging to classify the interactional discourse markers. Some possible reasons are the sub-categories of the interactional discourse markers have not yet been well-explored. For example, the writers can use adverbs, adjectives, verbs, and nouns in showing attitudes. In the example above, the writer describes the negative evaluation of the situations using the nouns, adjectives and verbs. We can also trace the polarity from the metaphors of the words, such as ‘lashed out’. The functions of interactional sub-categories should be further explored and investigated as each marker in the subcategory is used to establish different purposes and relationships between the writers and the readers.

7. Conclusion

All interactional markers are used in humanities and science journal articles. However, the most frequently used markers by both fields are transition markers, frame markers, and evidentials. Transition markers assist readers in interpreting connections in an argument. The findings also revealed that authors of humanities journal articles used more interactive markers than those of science journal articles. The researchers found many kinds of transitions in the corpus and were able to classify them based on the sub-categories of transitions provided by Hyland, such as addition, comparison, and consequence. However, more investigations should be made to classify the sub-categories found in the interactional markers. For example, attitude markers can be classified not only based on the part of speech (verbs, adverbs, adjectives) but also based on the functions and the polarity. In this case, attitude is highly related to emotional responses towards ideas, characters, products or processes. Attitude markers serve as tools the authors’ positive or negative responses. Nouns as metaphors can also denote authors’ feelings towards particular matters. These wide possibilities of interpretations of attitude markers and other markers may be the reasons for the gap between Hyland (2005) and Mina & Biria’s study (2017). Further research should be explored to provide in-depth analysis of attitude markers and other interactional markers to answer this gap. Furthermore, although gender is believed

to be one of the factors that can affect the use of metadiscourse markers, this research revealed that both genders tend to use metadiscourse markers in the similar way. The ways males and females use a language are not determined only by gender but constructed through other extra-linguistic variables. Other possible factors affecting the use of metadiscourse markers other than gender are relations of power, particular social settings, and participation in disciplinary discourses. Since this study focuses on gender and field, future researchers can collect more data to know how other social factors play a role in the use of metadiscourse markers. The current research should also be viewed by considering some limitations. First, the corpus in the present research was limited. Other studies with more samples could be conducted to ensure the validity of the findings. Investigations on specific functions of individual markers can also be thought-provoking studies on metadiscourse markers.

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Benita Saraswati
benitasaraswati@gmail.com
Jl Affandi, Mrican Tromol Pos 29
Sleman, Yogyakarta
Indonesia

Truly Almendo Pasaribu
trulyalmendo@usd.ac.id
Perum Griya Selo Asri
Sleman, Yogyakarta
Indonesia

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Types and Functions of Foregrounding in the Contemporary Flash Fiction Stories

Alexander Yemets, Khmelnytsky National University

The theory of foregrounding occupies an important place in Stylistics. Foregrounding can be defined as the principle of text organization which is aimed at attracting the reader's (listener's) attention to the pragmatically significant parts of the message. In this paper, the techniques of foregrounding in the contemporary American flash fiction stories are investigated. As G. Leech singles out two aspects of foregrounding – quantitative and qualitative ones, the techniques of quantitative aspect such as stylistic convergence and parallelism in the stories are characterized. It is emphasized that convergence is the main technique of foregrounding in flash fiction. The components of convergences and the position of the foregrounded parts appear to be pragmatically important. The major type of qualitative aspect in the stories is deviation, mainly semantic and morphological deviation. The paper states that due to the presence of the foregrounded parts in strong positions the tropes in convergence acquire a conceptual character and become the conceptual metaphors of love, friendship, and sympathy. Thus, many of such stories can be described as modern parables. The prospects of further research of foregrounding are formulated.

Keywords: foregrounding, quantitative aspect, qualitative aspect, stylistic device, stylistic convergence deviation, parallelism.

1. Introduction

In his well-known book *Exploring the Language of Poems, Plays and Prose* (1996) Mick Short called the first chapter in a peculiar way: *Who is Stylistics?* Short explains the personification in the title by the fact that he considers Stylistics a friend of his. I have the same attitude to this science.

Stylistics is a classical linguistic discipline which has its roots in Ancient Rhetoric. Stylistics has a long-established terminology and classification, but the recent decades have shown that it is a dynamically developing science. Simpson justly states that Stylistics in the early twenty-first century is very much alive and well (2004: 2). There are several reasons of significance and popularity of Stylistics at the present period. Firstly, as Busse notes (2010: 33), the last decades have seen a further division of Stylistics into such branches as Cognitive Stylistics, Multimodal Stylistics, Corpus Stylistics, Historic Stylistics, and Pragmatic Stylistics. Feminist Stylistics (Simpson 2004: 2) can be added to this list. Moreover, Stylistics gave birth to the development of Cognitive Linguistics after the appearance of the fundamental book *Metaphors We Live By* written by Lakoff and Johnson (1980). Cognitive Poetics, which firstly developed as a branch of Stylistics, is now becoming an independent field of research due to the investigations of Stockwell (2002), Tsur (1992), Vorobyova (2004).

Secondly, Stylistics possesses a fundamental theoretical and methodological foundation which makes it possible to analyze new linguistic phenomena in the language of the Internet, mass media, and in modern literary fiction. One of such theories is **the theory of foregrounding**, the application of which to the investigation of contemporary short stories will be shown further on.

According to the definition of Busse and McIntyre, “Stylistics in the most general sense is the study of style in language and how this results from intralinguistic features of a text in

relation to non-linguistic factors such as author, genre, historic period, and so on” (Busse 2007: 6). In reference to literary texts, Leech characterizes Stylistics as the analysis of literary texts, using the linguistic technique (2007: 18). In such case, we deal with Stylistics of literary texts. In this article, I will apply the principles of stylistic analysis to the investigation of short stories. **The purpose** of the paper is to determine the types of the stylistic devices of foregrounding in the contemporary American flash fiction stories. **The significance** of the research lies in the fact that flash fiction as a genre of short stories is gaining a big popularity in the USA and other countries. These stories have not been investigated from the point of view of foregrounding effect. Therefore, such approach can help to determine the principles of emphasizing important ideas and their stylistic effect in the contemporary prose.

2. Methodology of research

The major contemporary scientists who contributed to the development of foregrounding theory are Short (1996), Leech (2007), Douthwaite (2000), Van Peer (2006), Arnold (2004). They suggested the classification of the types of foregrounding, describing some devices of foregrounding from stylistic and pragmatic viewpoints. My investigation of foregrounding is based, to a large extent, on the methodology of analysis of this stylistic phenomenon suggested by Douthwaite. He divided the process of analysis (or the algorithm) into three stages: 1) recognizing a foregrounded element; 2) identifying the linguistic nature of the foregrounding technique employed; and 3) interpreting the type of foregrounding in context (2000: 93).

In the process of investigating foregrounding, the following methods of analysis were employed. Firstly, the method of stylistic analysis of the foregrounded text parts. Foregrounded parts are “the parts of the text which the author, consciously or unconsciously, is signaling as crucial to our understanding of what he has written” (Short 1996: 36). Special attention was paid to such technique of foregrounding as stylistic convergence. Secondly, the elements of conceptual analysis were applied. The foregrounded text fragments contain stylistic devices which often acquire conceptual character. As Short puts it, when analyzing the text, “stylisticians try to discover not just *what* a text means, but also *how* it comes to mean what it does” (1996: 6). The foregrounded parts are stylistically and pragmatically significant to the author who, in such way, tries to emphasize his/her worldview, the picture of the world.

Thirdly, the method of contextual analysis was employed for determining the meanings of the foregrounded lexical units, in particular those used as lexical or semantic deviation. Also, the elements of statistical analysis were applied for characterizing the frequency of repetitions, what Short calls the cohesion of foregrounding (1996: 36-38). The statistical approach was useful for determining the most widely used techniques of foregrounding in the short stories. The genre of a very short story makes it possible for the writer to vividly realize his/her pragmatic intention as well as creativity and talent in a literary text. At the same time, the conclusion of Babelyuk seems very appropriate here. She considers that from the linguistic and stylistic points of view, “the conciseness of short texts is realized in the limited amount of foregrounding techniques per text unit, thus increasing the role of such techniques in the formation of the image-making and stylistic system of the text” (2009: 45).

3. Literature review

For the research of foregrounding, I chose the collection of short stories “Flash Fiction Forward”. I selected 28 stories out of 80 for analysis and interpretation. These texts contain the explicit manifestations of foregrounding. As it was mentioned, the investigation included determining the foregrounded parts (text fragments), identifying the type and the technique of foregrounding and interpreting the effect produced.

The theory of foregrounding is one of the foundations of Stylistics. The term “foregrounding” was borrowed from the art of painting where the foreground is the part of a painting which is the most prominent in the work of art. The theory owes much to the Russian formalists (Shklovsky 1917, 1988; Jakobson 1964) and the Prague School of Linguistics (Mukařovský 1964) who formulated the principle of making a literary text more noticeable. The suggested terms ‘vydvizheniye’ and, later, ‘aktualizace’, were translated into English by Garvin (1964) in 1960s as ‘foregrounding’. The theory of foregrounding was intended to explain and reveal the difference between poetic and everyday language.

Leading stylisticians give different definitions of foregrounding. Douthwaite gives a detailed definition: “Foregrounding is the general linguistic technique by which a marked linguistic expression is produced in order to make that expression convey a different meaning than its synonymic equivalent unmarked construction would have conveyed” (2000: 93). Another definition stresses the reader’s feedback: “Foregrounding is the ways of the text organization which focus the reader’s attention on certain elements of the message” (Arnold 2004: 99). In my opinion, the word “certain” in this formulation should be replaced by the words “significant” or “pragmatically important”. Thus, it is possible to state that foregrounding is the principle of a literary text organization which focuses the reader’s attention on the pragmatically important elements of the message.

There are several approaches to the classification of the foregrounding types. The first is suggested by Leech (2007: 38) and involves the division of this device into qualitative and quantitative aspects. **The qualitative aspect** is the deviation from the language code itself, a breach of some linguistic norm. **The quantitative aspect** involves the deviation of some expected frequency (Leech & Short 2007: 39).

The majority of stylisticians single out two basic principles of foregrounding – **deviation** and **parallelism** (Short 1996; Douthwaite 2000). Deviation can be phonetic, graphological, lexical, grammatical, and semantic (Short 1996: 36-58). Among the foregrounding techniques related to deviation, Van Peer & Hakemulder mention neologisms, live metaphors, oxymoron, paradox, archaisms, ungrammatical sentences (2006: 547). Parallelism is associated with the quantitative type of foregrounding. It involves the repetition of sentence structure and some words in several sentences. The quantitative aspect can manifest itself in not only syntactical, but also lexical and phonetic repetitions. The second approach involves determining the particular techniques of foregrounding. Arnold unites the most famous stylistic devices into a system and suggests that there are three major techniques (types) of foregrounding: 1) the effect of defeated expectancy; 2) coupling; 3) stylistic convergence (2004: 100-112).

The two classifications have much in common. Parallelism and coupling denote the same linguistic phenomenon – the use of the same or similar language units in similar positions. The effect of defeated expectancy (or anticipation) formulated by Jakobson (1964: 363) can be produced by different types of deviation, especially lexical deviation. The famous examples can be a well-known word *manunkind* created by Cummings (Arnold 2004: 136), the title of

the poem *Peoplization of America* by A. Lawrence devoted to the tragic events of September 11, 2001, or the most recent neologism *Brexshit* (mocking the word Brexit). However, in general, the effect of defeated expectancy is somewhat wider and can be observed in the unpredictable endings of humorous stories or detective novels.

The only difference in the two approaches is the device of **stylistic convergence**. According to Riffaterre, stylistic convergence is the accumulation of different stylistic devices which add expressiveness to each other (1967: 432). Convergences can include the combination of tropes with phonetical repetitions and/or syntactical structures, usually concentrated in one or several text fragments. My investigation of foregrounding in the poetical short stories by Kate Chopin and Dylan Thomas revealed that stylistic convergence is the most explicit example of the quantitative aspect of foregrounding, especially when original tropes interact with alliterations (Yemets 2012: 46, 55).

A significant factor in the investigation of foregrounding is the position of the foregrounded elements in literary texts. The famous formulation of strong positions (the title, the epigraph, the beginning, the ending) by Arnold (2004: 69-70) is very appropriate here. Strong positions are such text fragments where the language units acquire special importance. When convergences, parallelism, or different types of deviation are used in such strong positions as the beginning or the ending, it gives special emphasis to these text fragments.

4. Analysis of Foregrounding in Flash Fiction Stories

4.1 Stylistic convergence as a quantitative type of foregrounding

The American prose in the early 21st century reveals a clear tendency for creating shorter stories. Actually, it continues the tendency of the late 20th century with short-short stories, sudden fiction and, more recently, flash fiction. Three collections of flash fiction stories have been published in the USA and one in Australia – in 1992, 2006 and 2015. The collection *Flash Fiction Forward* (2006) includes the stories of the American writers, among them John Updike, Grace Paley, Don Shea. The 2015 collection *Flash Fiction International* contains the stories of writers from different countries, but the majority of them are British and American authors.

In this paper, I analyze the types and techniques of foregrounding from the collection *Flash Fiction Forward*. All the stories are written after the year 2,000. My choice is explained by the fact that this book contains real literary masterpieces and seems to be the best collection of stories of such genre.

A distinctive feature of foregrounding in these texts is that stylistic convergence functions mainly in strong positions, in particular in the endings (14 stories, or 78 per cent of the foregrounded texts) and in the beginning (4 stories, or 22 per cent). As flash fiction stories in the collection are small in size, mainly 2, maximum 3 pages long, the size of convergences is also small. In the majority of texts, convergences are contained in one or two last paragraphs, and only in the text *Travelling Alone* by Rob Carney the convergence embraces half a text.

At present, there is no detailed classification of stylistic convergence in scientific literature. I can suggest the following classification depending on the major components: tropeic-phonetic, tropeic-syntactic, tropeic-lexical. Thus, convergences can contain a minimum of two stylistic components – tropes (metaphor, simile, hyperbole, oxymoron, epithet); phonetic expressive means (alliteration, assonance, paronomasia); syntactic repetitions

(anaphora, enumeration, etc.); lexical stylistic devices (gradation, archaic words, neologisms, etc.).

In the collection *Flash Fiction Forward* tropeic-syntactic convergences prevail – 14 out of a total of 18 devices; 6 convergences include tropes and lexical devices, and only two convergences are tropeic-phonetic in the story *Travelling Along* by R. Carney.

The semantics of tropeic-syntactic convergences refers to human relations, emotions and feelings. One of the most touching flash fiction stories is “Bullhead” by Leigh Wilson. The narration reveals the feelings of pity and sympathy of the daughter to her mother. When the mother tells her a story of the love of her life, she always cries. Once a year, the mother rents a boat and goes out on the lake that drowned her hometown during the construction of the dam. The mother drops a coin in the water, just over the place where her old house could be and where she made love with the boy next door, the love of all her life. Later the boy moved with his family to Texas, and the mother never saw him. But the mother, a married woman with children, still remembers him and drops a coin as a symbol of memory every year. Fifty years – fifty coins. The last paragraph contains the tropeic-syntactic convergence which is not big in size: *Every story is true and a lie. The true part of this one is: Love and the memory of love can't be drowned. The lie part is that this is a good thing* (FFF 2006: 100). The most foregrounded element here is oxymoron *Every story is true and a lie* which reflects the paradoxical situation in the story and in many life situations. The quantitative aspect of foregrounding is also realized by the metaphors *love and the memory of love can't be drowned*, which are based on the transfer from abstract to concrete, parallel structures in two sentences and antithesis. Though the metaphor is not extended, it has conceptual character both in this paragraph and in the context of the whole story. The conceptual metaphor (CM) can be expressed as LOVE IS TIMELESS. The key word *love* is repeated in the story 10 times and creates cohesion of foregrounding.

One of the most brilliant flash fiction stories in this collection is *My Date with Neanderthal Woman* by David Galef. All the three foregrounding techniques are actualized in this text – deviation, parallelism and convergence. The stylistic convergence in the last strong position – the final paragraph – is not big in size either, but it contains various stylistic devices – metaphor, hyperbole, pun, antithesis and parallel constructions: *Yes, I know all the objections. Some couples are separated by decades, but we're separated by millennia. I like rock music and she likes the music of rocks. I'm modern Homo Sapiens and she's Neanderthal, but I think we can work out our differences if we try* (FFF 2006:111). In the whole story and in this fragment, the writer expresses the idea of tolerance and mutual understanding between people from different cultures. The contrast between the two people is shown ironically, especially in the description of Glenna, the Neanderthal woman: *She nodded, then pointed to the chocolate and rubbed her belly; In fact, the little loincloth Glenna wore, made me feel overdressed; Eventually, her hand crept into mine and nearly crushed it* (FFF 2006: 110-111). Despite the fact that antithesis becomes the leitmotif of the story, the final fragment, in its strong position, reflects the author's outlook most fully and suggests the idea of overcoming differences. Thus, the underlying CM can be expressed as CULTURAL DIFFERENCE IS NOT BARRIER TO LOVE.

In the story *A Patriotic Angel* by Mark Budman the tropeic-syntactic convergence also occupies the final position. The anthropomorphic metaphor DOLL IS LIKE HUMAN BEING becomes the leitmotif of the text. A lonely man talks with a doll, an angel in the supermarket, as if it were a human being. He asks questions typical for getting acquainted with a young

woman: “What will you play for me?”; “Are you working here? Or did they lay you off, too?” (FFF 2006: 157-158).

The device of gradation is at the center of the plot in *Oliver’s Evolution* written by John Updike. The author describes how a weak, vulnerable boy becomes a strong man, a backbone of the family when he feels the responsibility for his wife and his children. The stylistic convergence in the last paragraph is one of the smallest in size among the analyzed stories but it is very expressive: *You should see him now, with their two children, a fair little girl and a dark-haired boy. Oliver has grown broad, and holds the two of them at once. They are birds in the nest. He is a tree, a sheltering boulder. He is a protector of weak* (FFF 2006: 145). The convergence includes two metaphors, one of them extended, and parallel structures. The position of the foregrounding technique, the explicit, emotional expression of the writer’s attitude to the main character – all these factors make the metaphors not only very prominent, but also conceptual. This CM can be expressed as FATHER IS A STRONG TREE. Stylistic convergences in this story, like in the texts by Wilson and Galef, stress the spiritual family values in the artistic, image-making form.

Only in two flash fiction stories, can we see the tropeic-phonetic convergence – *Justice: A Beginning* by Grace Paley and *Traveling Alone* by Rob Carney. In Grace Paley’s text, the convergence is in another strong position – the beginning. The narrator, a member of the jury, describes the mother of the defendant with pity and sympathy: *She leaned on the witness bar, her face like a dying flower in its late-season, lank leafage of yellow hair, turning one way, then the other in the breeze and blast of justice. Like a sunflower maybe in mid-autumn, having given up on the sun, Faith thought, letting wind and weather move her heavy head* (FFF: 124). I give only the final part of the convergence, but the quantitative aspect of foregrounding is explicitly expressed by means of similes which develop into extended metaphors, and numerous alliterations in the adjacent components of tropes. Especially foregrounded is the repetition of the sound [l] in the similes. The tropes are conceptual in character as they reflect the conventional CM WOMAN IS A FLOWER, in particular its variety in relation to elderly women: OLD WOMAN IS A WITHERED FLOWER. The idea of pity, of tolerance and sympathy to the mother is the leitmotif of the story. At the same time, such combination of tropes and sound repetitions in the fragment make it a piece of poetical prose, very expressive and pragmatically significant.

While in the analyzed stories by Updike, Wilson, Galef, Paley as well as in majority of other texts of this collection (the stories by Don Shea, Dave Eggers, David Stevens), the quantitative type of foregrounding is actualized in the description of human emotions and relations, the story by Rob Carney reveals a man’s admiration of nature. It is in the description of such natural wonder as lightning that the writer creates stylistic convergence. The convergence is the biggest in size of all the stories and extends from the middle to the end of text (more than half a page): *Out the window was this giant cloud that looked like a lightning factory. You know, I mean, you should’ve seen it. It wasn’t shooting out lighting bulbs. They were all happening inside the cloud, so these areas would suddenly flash in the middle ... then somewhere else ...then pmm pmm pmm pmm pmm all in a row* (FFF: 224-225). The convergence begins with similes combined with alliteration and onomatopoeia; the other part of the convergence abounds in similes which continue as original extended metaphors creating some modern mythological picture: *And I mean, it really looked like a factory. [...] Like down there, in the middle, gods were working with hammers and anvils and bellows and wearing those helmets with a little strip of glass to look out of it. Like a cloudy furnace. Like the birthplace of light* (FFF: 225).

Here we can see that the tropeic-phonetic convergence also includes syntactic repetitions – polysyndeton, enumeration – and parallel structures. Actually, there are three techniques of foregrounding used in this convergence. But it proves that in a literary text the classification is not absolute. At the same time, in Carney's story the quantitative aspect of foregrounding is especially explicit, and the main role belongs to numerous similes and metaphors which have hyperbolic connotations. The natural phenomenon is shown as something majestic, immense and divine. The author seems to create modern mythology and the underlying conceptual metaphor actualized in this convergence can be expressed as **GODS ARE WORKERS**.

4.2. *Parallelism as a type of foregrounding*

Parallelism as a type of foregrounding is an important element of poetry, publicistic texts, and literary prose. In the collection of flash fiction stories the parallelism rule is especially evident in the story *To Reduce Your Likelihood of Murder* by Ander Monson. It is a very ironic text, a kind of warning or instruction to women and girls how to avoid being murdered. The following peculiarities can be observed in the use of parallelism. 1) The majority of sentences are imperative. Out of 60 sentences of the text, 28 sentences are negative-imperative and 10 sentences are imperative-emphatic with the verb *do*: *Do not go outside. Do not go outside, on dates, or to the store. Do not go on dates with men. Do not drive yourself to dates. Do carry mace. Do carry guns if you can get them* (FFF 2006: 142). 2) These parallel constructions also include another foregrounded device – syntactic anaphora, i.e. repetition of initial parts of sentences (*Do not ...*). 12 imperative sentences are parallel structures without anaphora: *Install alarm system on every window, every doorway in your house [...] Keep away from the windows at all times*.

This story is a brilliant example of the role of parallelism as the indicator of semantic synonymic relations between sentences and, as Short puts it (1996: 67-68), by relating the parts of the text together, it acts as a powerful device in the cohesion of foregrounding. Every sentence or every other group of parallel structures is emotionally stronger and shows a greater degree of reducing the possibility of murder: *Do not date your boy-friend. – Do not like so much. – Do not sleep deeply. – Do carry guns if you can get them. – Always travel in a crowd* (FFF: 141-142). Such technique of increasing alarm and tension creates **gradation** – an efficient stylistic device. Due to gradation, the situation seems absurd and ironic, it seems a young woman cannot live a normal life because she can be murdered.

The last paragraph of the story creates the effect of defeated expectancy: *Still you will be killed. You're born for it* (FFF: 142). So, the author concludes that all efforts in saving your life are futile. The ironic effect is created not only by the absurdity of advice (*Do not stay at home. Do not wear black*), but also by the redundancy of parallel structures which actualizes the quantitative aspect of foregrounding.

In the story by Stace Budzko *How to Set a House on Fire*, the main foregrounding technique is also parallelism. 16 out of 21 sentences are imperative, and 11 of them include polysyndeton, i.e. the repetition of conjunctions *before* and *after*: *Before you light the gas, light a cigarette [...]. Before this, walk through the ranch house with a miner's lamp [...]. Before leaving, make sure the hay bales drip with fuel* (FFF: 46.). Here parallel constructions underline some identity and sequence of actions.

Actually the same function – describing the sequence of actions, only in reverse order – is performed by parallel structures in the story *Currents* by Hannah Bottomy. Here the

cohesion of foregrounding is realized by syntactic anaphora in all paragraphs: *Before that, one of the girls held the hand of a wordless Filipino boy. – Before that, Gary saw the brown hair sink and resurface as the body bobbed* (FFF: 51-52). The story is tragic and tells about the emotions of people who tried to save a drowning boy.

An interesting example of parallelism on the text level can be seen in the story *Bullhead*. The first strong position, the initial paragraph, is connected with the last paragraph by frame repetition of the oxymoronic phrase *Every story is true and a lie*. I have analyzed the convergence in the ending with these words, so this connection is a manifestation of the cohesion of foregrounding. While in the initial fragment Wilson tries to surprise and interest the reader by the paradox, in the final paragraph conclusion is made as for positive and negative sides of such memory of love. However, the conclusion is somewhat ambivalent, and it is up to the reader to decide whether it is good or bad.

Frame repetition as a technique of foregrounding is realized on the macrolevel in Stacey Richter's story *Tiffany*. The initial words of the first paragraph "*Divide or die*" are repeated at the end of the paragraph: "*Divide or die*", *they elaborated* (FFF: 71). Similarly to the story by Wilson, here the cohesion of foregrounding helps to underline the main idea, the alternative for the main character.

Parallelism as a single type of foregrounding is not very typical for flash fiction, except the story by A. Monson. In some texts, parallelism is combined with extended metaphors, though it does not create convergence (the stories by Robert Coover, Eva Ginsburg and other texts): *The voices torment me [...]. – The voices used to talk to me about the Beatles [...]. – Sometimes the voices themselves don't know what they want* (Jack Handey, *The Voices in My Head*).

4.3 Deviation as a qualitative type of foregrounding

Deviation belongs to the qualitative type of foregrounding. It can be realized by means of different stylistic devices. However, in flash fiction stories, except semantic deviation, other types of this technique are observed only in some stories.

Semantic deviation is present in the paradoxical title of David Galef's story *My Date with Neanderthal Woman*. This title also realizes historical deviation, as people of two different periods cannot coexist. The oxymoron in the *Bullhead*, *Every story is true and a lie* has been discussed in this paper. A very peculiar example of semantic deviation can be observed in Don Shea's story *Jumper Down*. The author makes a paradoxical description of the man who committed suicide: *He was dead, but he hadn't died yet* (FFF: 18). The word *dead* here can be understood as "motionless": But further on, one more technique of qualitative aspect of foregrounding is used when one of the paramedics runs to the dying man and tells him the words of consolation: *"I just gotta tell ya, I wanted you to know, that jump was fucking magnificent"* (FFF: 19). This type of deviation can be called pragmatic paradox (Yemets 2012: 59-60), because a person talks to a dead man who can't hear the paramedic. At the same time, such paradox produces a tragic but positive effect on the dying person, as the last words he hears are the words of praise.

Short (1996: 40-41) and other linguists consider metaphor as a technique of semantic deviation. In this paper I pay more attention to metaphors and other original tropes as components of stylistic convergences. In such cases, the interconnection and interaction of different types and techniques of foregrounding enhances the stylistic effect. As a separate technique of qualitative foregrounding and as a case of semantic deviation, metaphors are

particularly important when they are extended, when they embrace the whole text, becoming a compositional metaphor. In a number of stories such role is played by anthropomorphic metaphors. The story *The Orange* by Benjamin Rosenbaum is based on the ironic metaphor: *An orange ruled the world*. The ending is humorous and produces the effect of defeated expectancy: *I bought the orange who ruled the world for 39 cents [...]. Today, he told me: "It is time", and I ate him* (FFF: 135-139). The pots and the kettle in the text *The Kettle* by Eva Ginsburg are described as human beings with their thoughts, hates and envies, while the short story of J. David Stevens *The Death of the Short Story* begins with the anthropomorphic metaphor *"The Story's death caught us all off guard"*. The metaphor extends through the whole text with the help of the words from the semantic field "Death": *eulogy, funeral, demise, outcry*, thus acquiring conceptual character.

5. Conclusions

The theory of foregrounding is one of the fundamental theories in stylistics. Two aspects of foregrounding are singled out – quantitative and qualitative aspects. Quantitative aspect can be realized by the redundancy of stylistic devices such as the concentration of these devices in some text fragments or by numerous lexical / syntactical repetitions. The most typical techniques of quantitative aspect of foregrounding are stylistic convergence and parallelism. Qualitative aspect often manifests itself as deviation represented by original tropes and lexical devices (neologisms, archaic words, etc.).

In this paper, the techniques of quantitative and qualitative aspects of foregrounding are analyzed in the contemporary American flash fiction stories. Flash fiction includes very short stories, 2-3 pages long, with mainly monological narration. Therefore, the techniques and effect of foregrounding are more explicit in these texts than in novels.

All in all, 28 stories in this collection include different types of foregrounding. The investigation shows that the major foregrounding technique is stylistic convergence which is realized in 18 texts. Parallelism in its different varieties is actualized in 11 stories. Various types of deviation as examples of the qualitative aspect of foregrounding can be found in 7 stories. In the stories by D. Galef, A. Monson, R. Carlson, L. Wilson, two techniques of foregrounding are employed.

The investigation showed that the most foregrounded device in these stories is stylistic convergence. Convergence functions in 18 out of 28 stories with foregrounding. A peculiar feature of convergences in flash fiction stories is that they are contained in strong positions, especially in the endings (14 stories). The endings of the texts often involve metaphors, antithesis, and syntactic repetitions, thus making the endings pragmatically significant and even poetical. The most common type of convergence is tropeic-syntactic (14 stories), where an important role is played by similes and metaphors, while tropeic-phonetic convergence is realized only in one story (R. Carney). What makes stylistic convergences especially meaningful is the conceptual character of metaphors in these foregrounded parts: LOVE IS TIMELESS (L. Wilson), WOMAN IS A FLOWER (G. Paley), FATHER IS A STRONG TREE (J. Updike), GODS ARE WORKERS (R. Carney).

Parallelism as a technique of foregrounding is particularly efficient when it is combined with polysyndeton and syntactic anaphora, as in the stories by A. Monson and S. Budzko. Frame repetition in the texts by L. Wilson and S. Richter creates the cohesion of foregrounding. However, in some stories parallel structures are components of convergences, and it

demonstrates the interaction of foregrounding techniques for producing a stronger aesthetic and pragmatic effect.

The most typical type of deviation as a technique of foregrounding in the analyzed flash fiction texts is semantic deviation. This deviation is realized in the strong positions – the paradoxical title of the story by D. Galef and in the tragic ending of the text by D. Shea. As a whole, semantic deviation is represented by the anthromorphic extended metaphors (the stories by B. Rosenbaum, D. Stevens).

As my investigation reveals, foregrounding, especially its quantitative aspect, is not only a device of attracting the reader's attention, but also a signal, a trigger of pragmatically important information, of the writer's outlook. Foregrounding in flash fiction stories also fulfils an aesthetic function as it makes the stories or their endings the pieces of poetical prose. Due to these features, I could call these stories modern parables, parables of love, friendship, sympathy.

The prospects of further research can involve the investigation of foregrounding in the contemporary novels and publicistic texts.

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Interview with
Martin Everaert

IG

It is already a tradition in this journal to start by asking every interviewee what drew them into linguistics in the first place. So I ask the same: why linguistics, and what else (if anything) could it have been?

ME

I started studying Dutch. It turned out that I didn't like literature very much, but in those days, every student of a language (Dutch, French, etc.) had to take a course in 'General Linguistics' as well. That course was really good, and it drew me in: I think what I particularly liked was the methodology – they thought about how to do science, how to do linguistics! Of course, there were also the fascinating ideas of generative grammar, but it was not only that – it was also a bit philosophy of science.

Linguistics in Utrecht was very good because it was a mix of people with different linguistics backgrounds (such as syntax, morphology, phonology, history of linguistics, sociolinguistics, etc.), but also people with a background in psychology and mathematics. So that's why I moved from Dutch to Linguistics.

IG

On every linguistic profile I can find, your top two research areas are listed as 'Syntax' and 'Lexicon'. You teach and write about syntax, but you were also the director of the Institute of Dutch Lexicology. What came first: syntax or the lexicon? And do they usually meet in the middle, or pull you in different directions?

ME

I really started out as a syntactician; my PhD was on syntax. Then I wrote a grant proposal to become a fellow of the Royal Academy, and I decided to do that on idioms (I was interested in the core-periphery distinction), which visibly moved my interest to the realm of the lexicon. Later on, because Tanya Reinhart came to work with us in Utrecht, I gradually moved from hardcore syntax, to what we now call the syntax/lexicon interface. But my interest in idioms is kept alive to this day.

For a very long time work on idioms was not very popular in theoretical grammar, it was more popular in psycholinguistics. But I kept doing it, and I am still working on it, and I still have the feeling that I have to write down the ultimate article, in which I explain to (theoretical) linguists how they should think about idioms, why they are mistaken about what idioms are, and so on.

Incidentally, this also meant that, when I became director of the Dutch Institute of Lexicology, I wasn't a total stranger to the domain.

I also have to admit that it helped that my wife is a translator, which made me, much more than the average linguist, I guess, be aware of the importance of the lexicon, and how difficult it is to find the right words, the collocational restrictions you need to be aware of when you need to translate. I also began to realize that English had these wonderful dictionaries, which were not available in Dutch - like the COBUILD, which has a lot of collocations and a lot of information that is actually very interesting for linguists, and they're most of the time forgotten in linguistic programs.

IG

Speaking of the Lexicon and dictionaries, one large-scale project that you chaired was the COST Action ENeL (European Network of e-Lexicography), with the main aim (among others) of setting up a 'European dictionary portal'. Why dictionaries? What makes them still necessary in the age of Google Translate?

ME

For me it was fascinating to be involved in a project that was focused on lexicographers – and let's face it, in the world of linguistics, lexicographers are sometimes perceived as on the periphery. I was seeing how they were struggling to keep dictionaries alive, because more and more people don't use them. I was brought up in a world where it was normal for every family to have the big Dutch dictionary in the bookcase. And then, this completely disappeared; you saw dictionary companies closing, and you saw people developing electronic dictionaries, but they were most of the time not really dictionaries – they were made the easy way, without too much effort. It was also not possible to make good electronic dictionaries commercially because in the digital age such information is supposed to be available for free. I saw how these lexicographers, who came from a world of making books, transitioned to a world where you have only electronic versions of dictionaries.

To answer your question, yes, dictionaries are still necessary, because people really don't realise how words can differ in their use and meaning across languages. I admit that it's not really crucial perhaps to use a dictionary of Dutch if you are a Dutch native, although it helps you to be aware that what you attach as a meaning to a word might not be the same meaning for other people. But especially across language dictionaries are a must, and people don't understand how misleading Google Translate is. On the one hand it's amazing to see how good it sometimes is – I can type in sentences and I can get a really good translation; on the other hand, polysemy is lost on Google Translate. (I'm actually constantly busy trying to beat Google Translate. Only last week I managed to come up with sentences that it was not able to translate well, but for an interesting reason. Google translate cannot deal with structure, and that is of crucial importance in translating.)

If people don't use a dictionary but use Google Translate, they don't realize that there might be more. If you open a dictionary, you might see that a word has ten different shades of meaning, and that in combination with some other word it actually gets a different shade of meaning. And that is something that is completely lost when you use Google Translate. But if you're travelling in China or Japan and you don't understand a sign you hold your phone up and it says 'Cafe' or such, then that's useful – it's good for approximations but not for nuances.

IG

I return a bit to your passion for idioms: linguists tend to regard them as a less 'creative' side of language. On the other hand, across papers in collaboration with Noam Chomsky, Bob Berwick, Riny Huybregts and others you always come back to the notion that, due to its infinitely recursive nature, language affords an infinity of novel expressions. What then is the appeal for you of this phenomenon, which does not seem to exhibit the 'creativity' you believe to be the essence of our language faculty? What overarching questions about language can it address?

ME

I once organized a conference in which Igor Mel'cuk was one of the speakers. And I'm fond of quoting one of the things that he wrote in his articles: 'we speak in phrasemes'. We speak in idioms, collocations. And Igor is absolutely right – we are not constantly creating novel

sentences, we are often repeating the same formulaic language. In practical terms it's important to learn idioms, collocations if you want to learn a language – but it's a mistake to think that that is the essence of language! The essence of language is that we are *capable* of NOT using idioms, we are capable of formulating novel thoughts. Look at what writers or poets are doing – they show what you can do with language, how you can create new meaning!

It might seem a bit problematic that I am interested in an aspect of language that we are not necessarily using every day. So, let me give you an analogy, an imperfect one, that I sometimes use in my class: let's say that you are interested in cars, a 'car-scientist'. You are looking for a car, as a means to get from one place to another. Now you look at a Ferrari – in the case of a Ferrari, more than in the case of a Volkswagen, the chances are low that you are using it simply as a means to move from A to B. You might have that car to show off – to make people realize that you are extremely rich, that you have good taste, etc. Of course as a theoretical 'car-scientist', I'm not interested in the fact that you might use the Ferrari to show off – rather I'm interested in the fact that the Ferrari *could*, technically, get to a speed of 350 km/h. There are many Ferraris who will never reach that speed, but they *could*. And in that sense, I look at language the same way: what you might see (performance) is not what you get (competence).

I'm looking at what we *could do* with language, although most of the time we are not doing it. That is why I study the recursive nature – or what you might call the 'creative' aspect – of language, which allows us to create something new.

Even if we focus on idioms, we have to realize that they are not 'only' fixed expressions. You just need to look at advertisements and you will see that people will want to be creative – they add words or they only take part of the idiom and refashion it. Take this Dutch advertisement from an airline company: *Lufthansa en United airlines zijn in alle staten!*, lit: 'Lufthansa and United airlines are in all states'. It refers to the fact they want to let us know that you can now fly to any state in the US. But it is doing this by using the idiom 'in alle staten zijn' which means 'be frenzied/agitated'. You can see that they are *aware* of the internal structure of the idiom and of its meaning. I'm interested in that – in the fact that they can play with idioms. So even in the most fixed aspects of language, there's still a creative component.

IG

One of your earliest (and most enduring?) research interests is reflexivity, which you worked on together with Eric Reuland and Tanja Reinhart, among many others. Over time you collected an impressive amount of data across many languages from West Frisian to Fijian, and showed that classical theories (Government and Binding, Head-driven Phrase Structure Grammar, Lexical Functional Grammar) could not account for all these phenomena, and your typology of anaphoric expressions showed how theories could be improved. What is the strength of good cross-linguistic data, and how much is this power harnessed in current linguistic research?

ME

To begin with, I want to stress that, contrary to what people think, formal syntacticians just like formal phonologists are actually working on many, many languages. It's of course very important to work on many languages – the problem is that it is also extremely difficult. For instance, together with Eric Reuland we are now working on Chinese, on a topic where we thought that everything that could be said has been said. And then, as our PhD student (and MA-students) made observations (which had actually been made a long time ago but then forgotten), we started to realize that things might in fact be a little bit different than previously assumed.

What this shows is that you need very detailed information to work on languages, and that is very difficult – especially if you are working on languages that don't have good grammatical descriptions. For Chinese this was not a problem, because many people worked on Chinese before. There are enough grammars and enough people around to do the work. On the other hand, if you are talking about non-documented languages, it's extremely difficult work and I can understand why people are not doing it. It would take forever to do the type of detailed work that I'm normally used to in my theoretical work. For instance, together with my colleague K.V. Subbarao, we are working on a Tibeto-Burman language – Kokborok. We get the data from the field-work and we start working on it – at some point I think 'this is interesting', because Kokborok is doing something that goes counter to a supposed strong cross-linguistic generalization. How come? So we go back and we get more data and it turns out that if you ask more questions, and get more details, that the picture is slightly different. But that takes a lot of time, and you need experienced linguists, like Subbarao, to do such work properly.

If I was looking at Dutch, I could go really deep into one phenomenon, because it is my native language. But I'm not capable of doing that at the same level with Kokborok – even if I think 'I now got it', I'm not sure if I really did. And I know this from Dutch as well: my dissertation is well-known for an observation that was, up to that point, ignored in traditional grammars. Traditional grammars simply had not noticed it. (It is not me who initially noticed it, it was my supervisor.) But you can see that even in a well-studied language like Dutch, it takes a very long time and a lot of hard work to derive the real and important generalizations. We should still do it – we should still work on many languages, but perhaps in a slightly different way than I see being done. If I look at the world of typology, I welcome the work of Greville Corbett, who does cross-linguistic work but limits himself to a small subset of languages, and tries to study them in detail. This is contrary to other typologists, who try to study one phenomenon in as many languages as possible – a work which, by its very nature, has to be at some point a little superficial. That being said, you need this wide scope as much as you need the focus – although I myself would rather go into more detail, and strive to be more precise.

IG

You also used your data on reflexivity to make a more general theoretical point in your reply to the famous Evans & Levinson (2009) paper, which attempted to discredit the long-held Chomskyan notion that languages are essentially similar in their abstract building blocks. What do you think drove their scepticism about 'language universals' (i.e. abstract properties that all languages share), and how can this scepticism be addressed?

ME

I must admit that I'm not particularly driven to prove that I'm *right* in a certain theoretical position. I may have strong opinions about whether people are right or wrong – but I want to understand their point of view. So I'm fascinated by Evans & Levinson (2009): to assume, as your starting hypothesis, that languages can vary without limit, I find that puzzling. I don't understand how you can take that as a starting point for your scientific endeavour. And then in their reply to our reply they discarded one of our claims as 'complex talk'. Also a remarkable formulation, in my eyes. In that sense I am truly a different type of scientist from Evans and Levinson.

IG

Because you cannot imagine how you can build on the assumption that everything varies without rhyme or reason?

ME

I think that Evans and Levinson are more inclined to an anthropological approach to linguistics, while my view is more inspired by the promise that you can do linguistics as if it were part of the sciences. In anthropology it's perhaps not that strange to say 'we study birth rituals, which vary in very unexpected ways'. What Pinker (1995) described as the Standard Social Science Model (SSSM): "[...] we hawk the anomalous, peddle the strange. Merchants of astonishment." (Clifford Geertz 2001).

In what regards languages, I accept that there is diversity, but I would be very surprised if there were not sparks of uniformity as well. And to be uninterested in what languages might share is amazing for me. You don't have to believe that we are born with some innate predisposition – but it is a great leap to make it the core assumption of your theory that languages can diverge without limit.

Methodologically, this also means that you will never be able to *see* what the similarities are – because by definition you make the differences rather than the similarities central to your theory. For myself, I would rather have a theory that is too restrictive, which keeps formulating commonalities between languages that later turn out to be wrong. By designing it this way you will eventually find out what the true commonalities are. But if you design your theory the other way around, you will never find anything.

IG

When did you first become interested in language evolution and why? And how does a linguist interested in syntax and the lexicon join forces with a scholar in zoology and psychology (Johan Bolhuis) to write a book about Birdsong, Speech and Language?

ME

Completely by chance. Hauser, Chomsky and Fitch (2002) had written their paper in *Science* (*The Faculty of Language: What is it, who has it, and how did it evolve?*) and there was a reaction (Gentner et al. 2006) to it, a paper which claimed to show that zebra finches were capable of doing something that they were not supposed to [i.e. that they were capable of learning structures which were meant to be unique to the human language faculty]. At some point, a radio programme decided to spend time of this, and they invited Johan Bolhuis, who is the birdsong specialist at this University. Because the debate has a linguistic aspect to it, he thought it would be great if there was a linguist involved as well – and somehow I was the one who was involved.

From that point onwards Johan and I started talking to each other. He had a whole group of collaborators who were interested in this topic, and wanted to talk to us linguists. We organized a conference, and out of that conference came this MIT book, *Birdsong, Speech and Language*. I was also the co-organizer of a conference on language evolution – *EvoLang* – which we hosted here in Utrecht, thanks to Rudie Botha. I knew Rudie Botha because we had had the same supervisor for our dissertations, and he was working on language evolution when he suggested to me that I should organize *EvoLang*.

One of the speakers at *EvoLang* was Bob Berwick – it was the first time that I met him and I liked him very much. He eventually stayed a little longer than planned because there was this volcano that had erupted in Iceland, which made it impossible for him to fly back. It turned out that Bob was, by training, a biologist, and he started talking to Johan Bolhuis. And from then on there was this group with Johan, Gabriel Beckers, Riny Huybregts and me in Utrecht

and Bob on the other side of the ocean, and we started working together. It was fun and sometimes also lightly frustrating, because it was a truly interdisciplinary team: there were two linguists, Riny Huybregts and me, there were two biologists, Gabriel Beckers and Johan Bolhuis, and there was Bob Berwick, who was neither a linguist nor a biologist – he considers himself a computational linguist – and who brought in the sort of expertise that none of us had. I found out that it is very difficult to write an article with 5 people because we each have such different ideas; it was also amazing to see how we could differ in opinion about what is important or how you should define something. For instance, we had to talk for more than 3 or 4 months about what 'compositionality' meant, which Riny and I considered quite simple, but the biologists didn't think was that straightforward. But I later realized that this was also extremely useful: by having to explain to a biologist this extremely fundamental notion of compositionality, we had to come up with relevant examples and think about it ourselves more in depth.

IG

So this collaboration, between people with extremely different backgrounds, is fruitful once everyone aligns themselves to clear definitions?

ME

Yes, but I must admit that I can afford to spend time on this. I am on the point of retirement, Riny Huybregts is already retired. I would not advise this kind of endeavour to younger researchers, because it requires a lot of energy and time, and the output is not sure. And that is one thing that is very frustrating: we keep telling younger people that they need to do interdisciplinary work, but this can be time-consuming, and highly dependent on chance – if you are lucky, it turns out well for your career, but if not it can frustrate your career.

IG

That is exactly what you were saying in one guest lecture you gave at the University PJ Safarik in Kosice. You joked: I would advise you not to do language evolution, it is endless, it is hopeless – then how do you see the future of this area of research? What are the methods you most trust to produce valuable insights (and what methods do you find less reliable)?

ME

As the original Hauser, Chomsky and Fitch (2002) article pointed out, one very useful avenue could be comparative biology: to look at one phenomenon, and see how that is realized in different species, and from that to draw conclusions about whether it is a feature unique to humans or not. This might eventually also allow you to refine your definition of the phenomenon itself.

Take for instance Theory of Mind [**Editor's note:** *the ability to understand the point of view, intentions or thoughts of a different individual, especially when they are different from one's own*]. It is a fascinating topic if you look at research on crows, apes and humans – it is good work, not at all endless or hopeless. It is best done from an interdisciplinary perspective: if you are doing research on Theory of Mind in crows, you should co-operate with a linguist, someone who works on language acquisition and knows a lot about Theory of Mind from that perspective. I think that this comparative research is reliable, and it can deliver valuable insights.

I am a bit more hesitant about the method of using artificially created 'grammars' [**Editor's note:** *studying the learning capacities of different species by exposing them to strings where are stimuli combined according to certain 'grammatical' rules, and then testing their ability to discriminate 'grammatical' from 'ungrammatical' strings*]. Artificial grammar

learning allows us to look at what animals and humans are able to learn: we are turning language into abstract patterns, and seeing if these patterns are, in principle, learnable. The problem is that if you say that the animal can ‘learn’ these patterns, you are still not sure what kind of mental representations they have of these patterns, how they represent the underlying grammar. Something that we know in linguistics is that you can have completely different grammars that can generate the same set of strings. So it is often difficult to interpret the findings, but I think it is absolutely one part of the puzzle.

The challenge is always in making the step from what we observe to what may be the underlying explanation.

IG

Apart from being a researcher yourself, you have also played a big role in – shall we call it – the management of research(/ers)? You’ve been director of the Netherlands Graduate School of Linguistics (LOT), of the Utrecht Institute of Linguistics OTS, and you have also been on the board Niels Stensen Foundation that offers research grants to promising young postdocs. What has been your vision of scientific research in all these capacities, the principles that guided you when overseeing a research institute or selecting between candidates for a research grant?

ME

Different aspects, depending on the different functions you’re referring to. When talking about the Graduate School of Linguistics, I thought that it was extremely important to make people realize that it is much better to (theoretically) disagree but still work together, than to disagree and oppose each other to such an extent that you are jeopardizing the whole enterprise.

For instance, I may fundamentally disagree with a functional linguist, but it is much better to still work together in order to advocate the position of linguistics in the whole domain of science. That was something that was really great in the Netherlands Graduate School of Linguistics, that we managed to work together across domains, across fields, phoneticians and syntacticians and pragmaticists alike.

Within the Utrecht research institute, this was also partly the case – it was important that people worked together, or were at least aware of each other’s research. But there I had another purpose as well: most of the times, national science foundations and universities want to impose a certain direction of research, top-down. They want bigger topics, they want the research to fit into certain general themes. So there I was constantly busy protecting people from that pressure from above.

I wanted to make sure that they could actually do what they want, and I would then reformulate it in such a way as to fit it to a general theme. The possibilities to occasionally fund research that was completely outside the boundaries of what was customary, that was the most rewarding. I once managed to spend some money on a very ‘quirky’ project that later turned out to be very fruitful, and it is very nice when that can happen.

In general it is very good if you can give the people the freedom to do what they actually want to do – as a researcher nowadays you don’t have that freedom as much as you did a few decades ago. To give you an example, nowadays the University does not have money to say to young people ‘whatever you want to research, write a good research proposal and we will fund it’. New PhD students are always part of an externally funded project, which means that they are not totally free in what they are doing, even if they did choose to work within that project. The boundaries of your dissertation are defined by that project as it was initially formulated, and if you want to change directions somewhere in the middle that is usually not possible. Still, some good supervisors allow these changes in direction.

As to the Niels Stensen Foundation, I found it very interesting to be part of a group of people with very different areas of expertise. I learned how a theoretical physicist looks at a

linguistics proposal. However, what is very frustrating is the differences in publication strategies: the attitude was sometimes that if a candidate is good, they cannot have just one journal publication, they should have 5 or 6. So I would have to explain that it depends on the field of linguistics, or if we were looking at a candidate from literary studies I would point out that this type of work isn't published in journals. That made me aware of such evaluation strategies, so I am now advising young students to try to publish as much as possible in journals – even if it is not a very prominent journal – rather than in an edited volume.

IG

You are currently the Head of the Department of Humanities at Utrecht University, and you coordinate a variety of courses on language structure, language theory and language evolution. How do you see the new generations of linguists that are coming up? How are their interests, expectations and aptitudes shifting (or are they?), and what does that predict for the study of linguistics in the future?

ME

The number of students in the Netherlands who are doing linguistics (i.e. not as part of a language program) has grown, but the population has also changed. In the period when we had 10 students, 4 or 5 of them would be interested in fundamental questions in linguistics. Nowadays, we have 60 students in a BA program, and you would be happy if the same number of students were interested in any fundamental issue (I am slightly exaggerating). You can persuade them to think about it in a course, but ultimately, they are looking for something that can be applied, which you can relate to the outside world.

The field is changing – more and more funding agencies stimulate a sort of linguistics that you can relate to societal issues. However, I still feel that there are enough people around who are on the one hand interested in quite fundamental issues, and on the other hand capable of showing how these relate to societal issues. And that is in itself a good thing, much better that it was before. I was rarely invited to think about how what I was doing related to the rest of society – and that is now very much in the focus of young researchers.

Ultimately, my role is to give my students a good training – and what they do with it is up to them.

IG

Finally, and to end the interview on a more personal note: what would you say has been your greatest satisfaction from your work? A moment, or project, or discovery, or change that you brought about which makes you most proud to be a linguist.

ME

I must admit that, if you look back, the thing that really gives you pleasure is if you see someone developing like s/he wants. I've supervised a few BA-theses in the last year, and there were a few where I thought 'Wow, this is really good work, this is someone who is asking the right questions'. And such a thesis makes you so happy, you forget about everything else.

So my greatest satisfactions were in teaching, or when I was a research director, in enabling PhDs and then seeing how some people simply found what they wanted to do.

Thank you very much for the interview.

Ileana Grama

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