

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

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*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.<sup>1</sup> 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 *tɔ so* is rendered as ‘to lay (or lie) above or upon’.

- (2) a. *nea*<sup>2</sup>                    *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

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<sup>1</sup> 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”.

<sup>2</sup> 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.  $\frac{o-di}{3SG-occupy} \quad \frac{akyiri}{back}$   
‘S/he occupies the backpart’

b.  $\frac{\text{ɔ-ka}}{3SG-remain} \quad \frac{akyiri}{back}$   
‘S/he remains behind’

c.  $\frac{\text{ɔ-twa}}{3SG-cut.HAB} \quad \frac{to}{hind}$   
‘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 <sup>th</sup> ’ | ‘lie in position five/be 5 <sup>th</sup> ’ |

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<sub>[Clause Final Determiner]</sub>  
 ‘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.

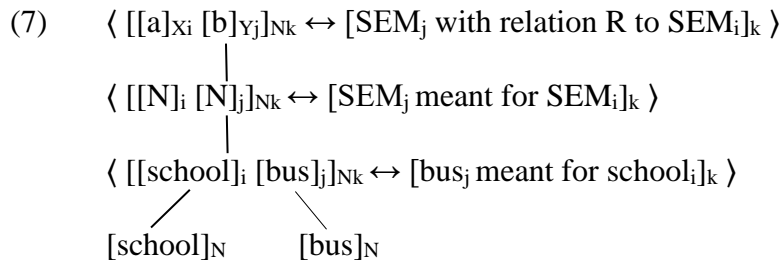
(6)  $\langle [[a]_{X_i} [b]_{Y_j}]_{Y_k} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k \rangle$

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.



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).

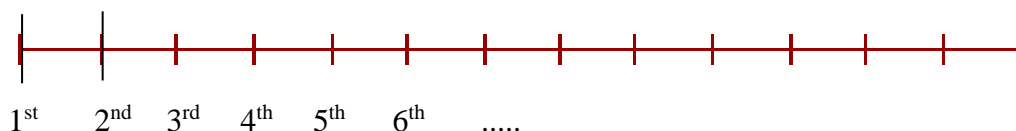


Figure 1: The ordinal space

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. Barbiere 2007; Booi 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/eminent’. 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)  $\langle [[dzi]_i [kan]_j]_k \rangle_l \leftrightarrow [ORD [SEM]_k]_l >$  ‘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. *Hwe, ogya a-fi soro [...] a-be-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. *Hwe, ogya fi sor siane-e be-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.<sup>3</sup>

Two subtypes of VP-ordinal numerals are identified. The first is built around the verb *tsia* [tsĩã] ‘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]<sub>VP</sub>, as shown in (12).

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

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).

<sup>3</sup> 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) < [[[tsia]<sub>i</sub> [NUM]<sub>j</sub>]<sub>k</sub>]<sub>l</sub> ↔ [ ORD [SEM]<sub>k</sub>]<sub>l</sub> >

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* (20<sup>th</sup>). 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 *tɔ 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. *tɔ do enum*  
lie on five  
‘lie in position (comes in at number) five (5<sup>th</sup>)’

b. *tɔ do du*  
lie on ten  
‘lie in position ten (10<sup>th</sup>)’

c. *tɔ do dubiako*  
lie on eleven  
‘lie in position eleven (11<sup>th</sup>).’

- d. *tɔ do ɔha*  
 lie on hundred  
 ‘lie in position hundred (100<sup>th</sup>).’
- e. *tɔ do eduanan ebien*  
 lie on forty two  
 ‘lie on position forty-two (42<sup>nd</sup>).’
- f. *tɔ do aha esia eduonum esia*  
 lie on hundred six fifty six  
 ‘lie in position six hundred and fifty-six (656<sup>th</sup>).’
- g. *tɔ do m-pem ebien na eduosuon awɔtwe*  
 lie on PL-thousand two CONJ seventy eight  
 ‘lie in position two thousand seventy-eight (2078<sup>th</sup>). (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* ‘4<sup>th</sup>’), 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) <[[[*tɔ*]<sub>i</sub> [*do*]<sub>j</sub> [*Num*]<sub>k</sub>]<sub>l</sub>]<sub>q</sub> ↔ [ORD [*assume position NUM*]<sub>l</sub>]<sub>q</sub>> (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 Kings 1:13 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*/*tɔ 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 [*tɔ do* Num].

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

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 *tɔ*, 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 *tɔ 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).

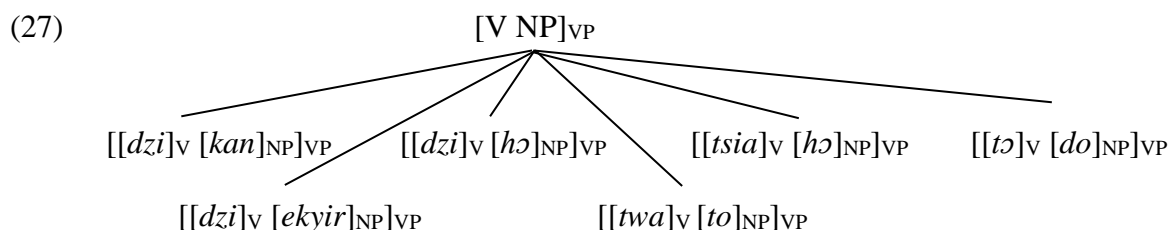
- (25) *dzi*                      *ekyir*  
 occupy/assume back/hind  
 ‘to occupy the back-part/to be last’

- (26) *dzi*                      *ewiei*<sup>4</sup>  
 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).



<sup>4</sup> 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).

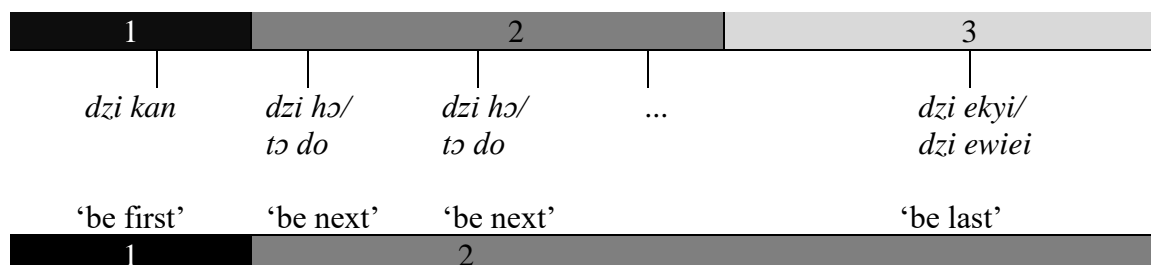


Figure 3: The partition of the ordinal space by successor relation constructions

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 *sequ-I* ‘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.

## Acknowledgements

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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