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Personal Attribute Nominals in Akan: A Constructionist Perspective[1]

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Abstract

This paper provides a constructionist account of Akan constructions of the form *àhòɔ̀déń* 'strength' and *àsòɔ̀déń* 'disobedience' which had been previously analysed as compounds. Through the analysis of previously cited examples in the relevant literature and additional examples collected purposively from written sources, it is shown that the constructions exhibit a constellation of formal and semantic/pragmatic properties that get masked in a straightforward compounding analysis. Also posited is a constructional idiom whose formal structure is motivated by a typical syntactic construction (predicate adjective construction) and a prefixation schema, through the process of template unification. Thus, some of the properties of this construction are motivated by already existing constructions, even though their properties may not be entirely predictable from those other constructions, confirming that language is a network. It is shown that the construction has limited productivity because of some stringent restrictions on possible constituents. Finally, a broad semantic classification of the constructions is provided and some properties of the major classes discussed.

Keywords: Akan, Construction Morphology, constructional idiom, nominal compound, schema

Muabɔsɛm

Krataa yi yɛ kɔnstrakhyen kwan so mpɛnsɛnpɛnsɛnmu wɔ Akan nsɛmfua bi te sɛ ahoɔden ne asoɔden a afoforɔ kyerɛ sɛ ɛyɛ mbɔho nsɛmfua no. Yɛpɛnsɛnpɛnsɛn mfatoho a ɛwɔ nkrataa a y'atwerɛ afa nsɛmfua a ɛtete saa yi ho nyinaa na yɛgyina so kyerɛ sɛ nsɛmfua yi wɔ semanteks/pragmateks su bi a, sɛ yɛsusu sɛ wɔyɛ mbɔho nsɛmfua a, ɛntumi ɛnna adi. Wɔ krataa yi mu no, yɛde nhyehyɛpono kyerɛ sɛdeɛ saa nsɛmfua yi teɛ ankasa ɛdefa wɔn nhyehyɛeɛ ne sɛdeɛ wɔne

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nsɛmfua afoforɔ di ahyia wɔ kasamu anaa kasamufa mu. Eyi kyerɛ sɛ nhyehyɛe bi a ɛwɔ hɔ dada na ɛma saa nsɛmfua yi wɔn su no bi, sɛ mpo saa nhyehyɛe a ɛwɔ hɔ dada no ntumi nkyerɛ nsɛmfua yi su nyinaa. Eyi ɛkyerɛ bio sɛ kasaa ayɛ te sɛ ntentan a ɛkyerɛ abusuabɔ a ɛda nsɛmfua ntam. Krataa yi da no adi sɛ nsɛmfua yi nnɔɔso esiane su a yɛhwehwɛ sɛ ɛbɛda adi wɔ saa nsɛmfua yi mu nti. Awieɛ no, yɛgyina nsunsuanso a afiri mpɛnsɛnpɛnsɛnmu yi mu aba no so ɛkyekyɛ nsɛmfua yi mu na yɛkyerɛ kuo akɛseɛ no su.

Nsɛmfua titiriw: Akan, Construction Morphology, nhyehyɛe, nhyehyɛpono, mbɔho edin

Introduction

The purpose of this paper is to argue that Akan (Niger Congo, Kwa) nominals, such as *àhòɔ́déń* 'strength' and *àsòɔ́déń* 'disobedience' which had been previously analysed as compounds (cf. Christaller, 1875; Dolphyne, 1988; Obeng, 2009), are not compounds, *sensu stricto*. I show that the straightforward compounding analysis masks (i) the degree of formal complexity of the nominals and (ii) the formal and semantic/pragmatic constraints on the constituents of the nominals, constraints which regular compound constituents are not subject to. I call them *personal attribute nominals* (PANs).

In this paper, I present the set of formal and semantic/pragmatic properties that differentiate them from regular Akan compounds. I also provide a Construction Morphology modelling of their derivation and properties. For this, I posit a constructional idiom, which inherits its formal structure from a copular construction and a prefixation schema, through the process of template unification/ conflation, the mechanism which makes it possible to combine constructions into increasingly larger ones (cf. Booij, 2005, 2007, 2010a, 2010b).Thus, some of the properties of PANs are motivated by already existing constructions in the language, even though their properties are not entirely predictable from those other constructions. The present account, therefore, differs from previous accounts not just in the constructionist perspective adopted, but also in showing that the constructions in question are not islands. Rather, they are related to other constructs in the language.

I briefly introduce Construction Morphology and the formalism to be used in this study. Next, I review literature on previous approaches to accounting for the properties of PANs. I discuss the general set of properties of PANs, as a way of motivating the proposed constructional account. I present the syntactic

distribution of PANs and a tentative semantic classification before concluding the paper.[2]

Data for this study were drawn first from the published materials referred to in this paper. Additional data were drawn from a variety of sources, including a primary school reader on fishing, the Akan translations of the Universal Declaration on Human Rights and an Akan translation of Plato's Apology of Socrates. It is worth noting that the points made about the data in this study hold true for all the three major dialects of Akan –Akuapem (Ak.), Asante (As.) and Fante (Fa.). Where some property is true of only one dialect or another, I indicate this specifically with the abbreviations.

Construction Morphology

Construction Morphology (CxM) is a theory of linguistic morphology which aims to provide 'a better understanding of the relations between morphology, syntax and the lexicon and of the semantic properties of complex words' (Booij, 2010b, p. 543). The main tenets of CxM are a theory of the notion *construction*, a theory of *word structure* and a theory of the *lexicon*.

In CxM, the notion *construction*, characterised as a form-meaning pair (cf. Goldberg, 1995, 2006; Michaelis & Lambrecht, 1996) is employed to develop a framework in which both the differences and the commonalities of word level and phrase level constructs can be accounted for (Booij, 2010a, p. 1). Complex words are morphological constructions that may have holistic properties (e.g. semantic properties that may not come from the constituents and/or constituents that may not contribute to the meaning of the whole) and are assumed to be formed by constructional schemas, which are abstractions over sets of existing complex words, showing systematic correlation between form and meaning (cf. Blevins, 2006). For example, speakers of English observing the paradigmatic relation between the adjectives (left column) and the nouns (right column) in (1), capture the systematic form-meaning variation in terms of word-internal structure like (2).

(1) bald baldness
big bigness
black blackness
British Britishness (Booij, 2010b, p. 543)

[2] Abbreviations used in this paper are: A = Adjective; Ak. = Akuapem; As. = Asante; CxM = Construction Morphology; Fa. = Fante; FUT = Future; N = Noun; NP = Noun Phrase; PAN = personal attribute nominal; PHYS = Physical; POSS = Possessive; Predictd = Predicated; PROG = Progressive; PRPTY = Property; SG = Singular; TP = Tonal Pattern; TBU = Tone Bearing Unit; TU = Template Unification.

(2) $[[\text{aware}]_{N}\textit{ness}]_{N}$ (Booij, 2010b, p. 544)

The pattern in (2) may in turn be conceptualized as a template or schema, like (3), which expresses generalizations about the form and meaning of existing deadjectival nouns and serves as a pattern for forming new words of comparable complexity. Thus, the speaker forms a new noun in *-ness* by replacing the variable *X* in the schema with an adjective. This is called *unification*, 'the basic operation, both at the word level and the phrase level, to create well-formed linguistic expressions' (Booij, 2010b, p. 544).

(3) $[[X]_{A}\textit{ness}]_{N}$ 'the property/state of A'

Constructions and the schemas by which they are formed coexist in the lexicon. Thus, the lexicon in CxM is not just the repository of irregular forms and their idiosyncratic properties (cf. Bloomfield, 1933; Di Sciullo & Williams, 1987). Rather, it is a structured repository of connected complexes, which is a generalisation over the lexical memories of speakers of a language (Booij, 2010b, p. 544; Jackendoff, 2009).

The items in the lexicon are organized into various hierarchies with constructions sharing two types of relations – *instantiation* and *part of*. A construction *instantiates* a dominating schema or is a *part* (i.e. constituent) of the dominating construction. This makes the lexicon look like a map (Michaelis & Lambrecht, 1996) and 'the only difference between a schema and its instantiations lies in degrees of specificity' (Lampert & Lampert, 2010, p. 38). In this sense, schemas contrasts with symbolic word formation rules that only serve as instructions for the formation of words, some of which do not actually exist (cf. Barlow & Kemmer, 2000, p. xxiii; Dąbrowska, 2000; Evans & Green, 2006, p. 546).

Each instantiation of the schema occurs as a subschema together with its idiosyncratic properties. For example, all binary-branching compounds may be represented as (4). 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 constituents of the compound and the compound as a whole.

(4) $< [[a]_{Xi}\ [b]_{Yj}]_{Yk} \leftrightarrow [SEM]_{k} >$

This schema is instantiated by a schema for N-N compounds which indicates that the compound signals a relation between two nouns in which the right-hand constituent is the dominant member, as in (5).

(5) $< [[a]_{Xi}\ [b]_{Yj}]_{Yk} \leftrightarrow [SEM]_k >$

$<[[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j \text{ with relation R to } SEM_i]_k >$

We can illustrate both the *instantiation* and *part of* relations with the compound *doormat*. The schema for the compound *doormat* instantiates the binary-branching right-headed N-N compound schema, whilst the constituents – *door* and *mat* – have a *part of* relation with (i.e., they are constituents of) the compound, as shown in (6).

(6) $<[[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j \text{ with relation R to } SEM_i]_k >$

$<[[door]_{Ni}\ [mat]_{Nj}]_{Nk} \leftrightarrow [mat_j \text{ for a door}_i]_k >$

[*door*] [*mat*]

The *part of* relation is what accounts for regular processes of upward percolation (cf. Booij, 2000, 2012) where properties of the constituents are inherited and become part of the set of properties of the constructions of which they are constituents.

The advantage of the view that actual constructions and the schema they instantiate occur in this hierarchically organised constructional space, called the *constructicon* (Jurafsky, 1992), is that nuances in the formal and semantic properties of complex forms are not difficult to account for since they can be related to regular patterns, by positing subschemas.

Again, schemas can be unified by means of template unification (TU), through multiple inheritances. This way, we can account for the observation that the structure of a construction may be motivated by already existing constructions in the language, thus confirming the view that language is a network (Goldberg, 2006; Goldberg & van der Auwera, 2012). TU accounts for the simultaneous application of multiple processes, skipping any intermediate step(s), so that two independent processes, none of which seems to be able to occur on its own, can apply simultaneously to form a multiply complex construction that can be said to have started a life of its own (Booij, 2010a).

I assume that TU occurs freely, to the extent that the properties of the unifying schemas do not conflict, and is enhanced when one schema has an open slot, with constraints that can be fully satisfied by the properties of the other schema. This possibility of unifying constructions freely to form actual expressions, as long

as they do not conflict, coupled with the existence of constructions with open slots makes it possible to capture Chomsky's (1957, 1965) intuitions about the creative potential of language.[3]

PANs in the Literature on Akan Nominals

Even though, for a long time, PANs have been noted to exist in Akan (cf. Christaller, 1875), very few studies on them exist and even those studies largely do not account fully for their set of properties, as the review of the literature in this section will show. This is because they are regarded simply as compounds. This approach masks the formal complexity of the nominals as well as the interesting restrictions on their constituents, restrictions that do not apply to regular compounds, like the similar looking noun-adjective compounds (cf. Appah, 2016).

Christaller (1875) on PANs

Christaller (1875, p. 19) describes PANs as compounds formed from 'two or more words, with the exclusion of, and in contradistinction from, its prefix'. Christaller later discusses ten classes of Akan compounds of which the nominals in question constitute the fourth. He characterises them as 'compound nouns of quality, made from the *subject* and the predicative adjective', where the latter is nominalised and the former functions as a qualifying *attribute in the possessive case* (Christaller, 1875, p. 27, emphasis added). In (7), are the three examples cited in Christaller (1875, p. 19, 27).

(7)	a. *à-hò-ɔ-déń*	b. *àsò-déń*	*c.à-bò-déń*
	Pref-self-be-hard	ear-be-hard	Pref-price-be-hard
	'strength'	'disobedience'	'dearness, high price'

There are three formal issues with Christaller's account. First, Christaller does not account for all the constituents of the nouns. He mentions the *subject* and the *predicate adjective* but not the intervening vowel (*-ɔ-*), which links the two but obviously does not belong to either. He, however, acknowledges it as the verb in the sentence whose subject and predicate adjective are 'compounded'. Secondly, Christaller does not say anything about the prefix that occurs on the nominals in (7a & c) although he acknowledges that the prefix is not part of the first constituent when he writes that the subject and the predicate adjective

[3] Booij has argued that TU does not lead to a complication of the grammar because the new template or schema is motivated by independently needed constructions in the language. However, as Appah (2013b) observes, we cannot rule out the possibility of the new schema getting entrenched and serving as the only schema known to some speakers for forming the relevant instantiating construction.

constitute a compound 'with the exclusion of, and in contradistinction from, its prefix' (Christaller, 1875, p. 19).[4] Thirdly, Christaller's claim that the predicate adjective forms a nominal on its own (making the nominal a right-headed noun-noun compound) does not seem to have any foundation, since the adjective occurs in its basic form with no nominalising affixes or any other marker of nominalisation. It has been shown that adjectives are nominalised either through prefixation or reduplication (cf. Appah, 2003, 2016; Osam, 1999). Additionally, Christaller is silent on how the meaning of the nominal is computed.

Dolphyne (1988) on PANs

Dolphyne (1988, p. 79) first presents the nominals under discussion as ternary-branching compounds that are made up of three independent stems. She cites, *ànìèdéń* 'haughtiness' which, she notes, has the stems *ànί* 'eye', *yέ* 'to be' and *déń* 'hard'. Dolphyne also categorises these nominals with compounds which have 'a vowel affix that occurs between the two stems of the compound' (Dolphyne, 1988, p. 80). This is an interesting twist in Dolphyne's assessment of the number of bases in the nominal, but she observes later that what looks like an affix occurring between the first and the last constituents is 'analysable as the copula verb *yɛ* 'to be' which is reduced to a vowel that takes the lip rounding position of the preceding vowel' (Dolphyne, 1988, p. 80), as shown in *ànìèdéń* 'haughtiness' and *àhòɔ̀fɛ̃* 'beauty' in (8).

(8)	a. *ànì-è-déń*	b. *à-hò-ɔ̀-fɛ̃*	**(As.)**
	eye-be-hard	Pref-self-be-nice	
	'haughtiness'	'beauty'	

Thus, Dolphyne (1988) identifies the major constituents of the nominals, showing that the nominals ultimately derive from sentences and that it is the copula verbs in the sentences that are realised as vowels in the nominals. However, Dolphyne does not account for the vowel prefix in (8b). Again, there is some confusion in Dolphyne's view of the status of the vowel that occurs between the two other constituents. Is it a stem or an affix?

Appah (2003) on PANs

Like Christaller (1875), Appah (2003, pp. 105-108) argues that the nominals we are concerned with are formed from predicate adjective constructions, through compounding and affixation, as shown in (9a-d) and (10).

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[4] This prefix forms abstract nominals in Akan. It usually occurs in deverbal action nominals like *à-sáẃ* 'act of dancing' and *è-dzìdzí* 'act of eating', which are formed from *sáẃ* 'to dance' and *dzìdzì* 'to eat' respectively.

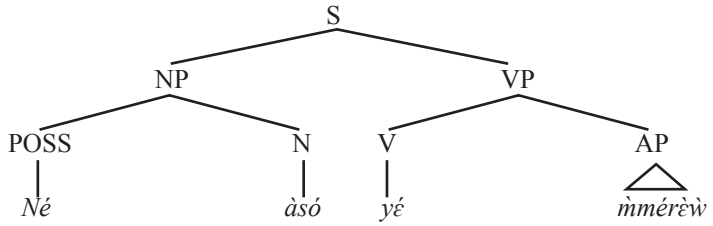
(9) a. *Né bó yɛ̀ dzɛ̀ǹ >àbòɔ̀dzɛ́ń* 'dearness' (**Fa**.)
3SGPOSS price be hard
'It's expensive (lit. Its price is hard)'

b. *Nè àsó yɛ́ dɛ̀ǹ >àsòɔ̀dɛ́ń* 'stubbornness' (**As**.)
3SGPOSS ear be hard
'she is stubborn (lit. His/her ear is hard)'

c. *Nè àsó yɛ́ m̀mérɛ̀ẁ >àsòɔ̀m̀mérɛ́ẁ* 'obedience' (**Ak**.)
3SGPOSS ear be soft
'She is obedient (lit. His/her ear is soft)'

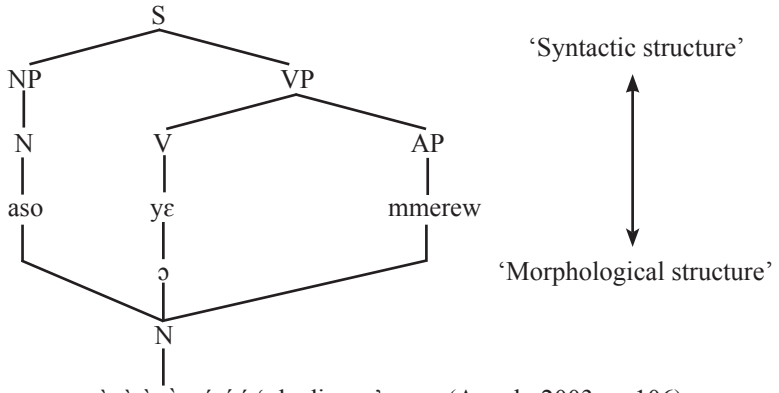
d. *Nè tírí mú yɛ́ dɛ̀ǹ > àtìrìmùɔ̀dɛ́ń* 'wickedness' (**As.**)
3SGPOSS head in be hard
'She is wicked' (lit. The inside of his/her head is hard)

(10)



Appah argues that, in forming the nominal, all the constituents of the construction, except the possessive are compounded and the copular is also reduced to [ɔ/ɛ], as the diagram in (11) shows.

(11)



àsò-ɔ̀-m̀mérɛ́ẁ 'obedience' (Appah, 2003, p. 106)

Crucially, Appah (2003) argues that the constituents of the predicate adjective constructions which become part of the nominal are necessary not just for the formal makeup of the nominals, but their individual meanings are also central to the semantic composition of the nominal. However, this assumption of direct compositionality cannot be sustained given the fact that literally, the predicate adjective expresses a physical property predicated of the body-part in subject position, but the meaning of the nominal is that of an attribute of the possessor of the body-part which is external to the construction. Again, it is not clear what semantic contribution the reduced form of the verb is purported to make to the meaning of the whole construction. Finally, even though Appah notes that the formation of the nominals involves affixation, the diagram in (11) does not show where the prefix actually features in the derivation.

The Problem with Previous Accounts

The foregoing literature presents PANs as formally and semantically transparent, and that is largely the case. However, there are a number of quirky things about PANs that escape accounting for if we assume strict compositionality. For example, what looks like a linking vowel occurring between the two prominent constituents of what scholars have tended to classify as compounds does not seem to contribute to the meaning of the nominal as its place in the construction is questionable, if the constructions are indeed compounds. This is because previous accounts do not show which of the other two constituents the vowel forms a constituent with. This is important because of the fact that Akan compounds are invariably binary-branching (Appah, 2013b). Thus, the vowel must necessarily form one constituent with one of the other constituents either to its left or its right. This means that there are two possible ways of slicing the putative compound àsò-ɔ-déń 'stubbornness' as shown in the table below, neither of which is felicitous.

	Constituent 1	Constituent 2	Compound
1	[[àsò]-[ɔ]]	[déń]	[[àsò-ɔ] [déń]]
2	[àsò]	[[ɔ]-[déń]]	[[àsò] [ɔ-déń]]

Thus, the morphotactics, and possibly, the semantic transparency of the nominals are somewhat compromised by the presence of a formal unit which does not contribute to the overall meaning of the construction. The meaning of the construction is thus, at best, only partially compositional. In addition, only a limited class of words with stringent restrictions on their individual properties can occur as constituents of the construction, restricting the productivity of the construction.

The General Properties of PANs

In this section, I explore further the formal make-up as well as the semantic/pragmatic properties of PANs that prime them for constructional analysis. I argue that given their set of properties, we have to posit a separate construction that is different from compounds. This would allow for an insightful account of all the properties of the nominals because, from a constructionist perspective, the correspondence between form and meaning is not expected to be one-to-one. Therefore, the presence of additional formal material like the intervening vowel, which does not contribute to the meaning of the construction, is not a problem to the extent that it can be shown to be a gestalt property of the whole nominal.

As noted above, PANs are formed from predicate adjective constructions (Appah, 2003, p. 105; Christaller, 1875, p. 19), which are constructions in which the main semantic content is embodied in the adjective because the verb is semantically vacuous (cf. Payne, 1997). In the case of the class of constructions we are concerned with, the verb (*yɛ́* 'to be') simply specifies the relationship between the subject and the predicate adjective.

In the nominal that is formed, it is a phonetically reduced form of the copula *yɛ́*, realized as [-ɔ-/-ɛ-] which occurs, linking what may be characterised as two open slots. The first open slot is filled by the subject noun (or NP), which designates a body-part, such as *kòkò* 'chest', *ànɪ́* 'eye', *ìtsɪ́r* 'head', *àsɔ́* 'ear', *hó* 'self/skin', etc. The only example that does not involve a body-part is the price of a commodity (9a) which may be said to have a similar kind of inalienable relation to the item as the body part to the human possessor. The second open slot is filled by a predicate adjective which expresses a physical attribute of the noun in subject position. These adjectives, including *hàr̀* 'swift', *dɛ̀ǹ* 'hard', *dùrù* 'heavy' and *hyɛ̀ẁ* 'hot', are all physical property adjectives (Dixon, 2004, p. 4; Osam, 1999).

Abstracting away from the individual nouns and adjectives that occur in the specific examples, the parts of the nominal may be summed up informally as (12). This shows that the nouns are schematic, with variables in the schema that can be substituted by specific words of the appropriate categorial and semantic description.

(12) $[[\textbf{body-part}]_N + [\textbf{TO\_BE}]_V + [\textbf{physical property}]_A]_S$

The selection of nominals in (13) exemplifies the structure and tonal pattern of the nominals. The right column shows the internal structure of each nominal.

(13) a. *à-kòkò-ɔ̀-dúŕó* > [à-[kòkò]$_N$ [ɔ̀] [dúŕó]$_A$]$_N$ (Ak./As.)
NMLZ-chest-be-heavy
'courage/bravery'

b. *ànì-è-déń* > $[[\text{ànì}]_N\ [\text{è}]\ [\text{déń}]_A]_N$ (**Ak**./**As**.)
eye-be-hard
'haugthiness'

c. *è-tsìr̀-m-ɔ̀-dzéń* > $[\ \text{è-}\ [[\text{tsìr̀}]_N\ [\text{mù}]_N]_{N(P)}\ [\text{ɔ̀}]\ [\text{dzéń}]_A]_N$ (**Fa**.)
NMLZ-head-in-be-hard
'wickedness'

d. *ànì-sò-ɔ̀-hyéẃ* > $[[\text{ànì}]_N\ [\text{sò}]_N]_{N(P)}\ [\text{ɔ̀}]\ [\text{hyéẃ}]_A]_N$ (**Ak**.)
eye-top-be-hot
'intrepidness'

f. *àsò-ɔ̀-déǹ* > $[[\text{àsò}]_N\ [\text{ɔ̀}]\ [\text{déń}]_A]_N$ (**Ak**./**As**.)
ear-be-hard
'stubbornness'

g. *à-hò-ɔ̀-háŕ* > $[\text{à-}[\text{hò}]_N\ [\text{ɔ̀}]\ [\text{háŕ}]_A]_N$ (**Fa**.)
NMLZ-self-be-swift
'swiftness'

h. *à-hò-ɔ̀-déń* > $[\text{à-}[\text{hò}]_N\ [\text{ɔ̀}]\ [\text{déń}]_A]_N$ (**As**.)
NMLZ-self-be-hard
'strength'

i. *à-hò-ɔ̀-yáẃ* > $[\text{à-}[\text{hò}]_N\ [\text{ɔ̀}]\ [\text{yáẃ}]_A]_N$
NMLZ-self-be-pain
'envy'

Thus, the only element that gets phonologically reduced in the nominal, compared to the same form in isolation or in the predicate adjective construction, is the copular which surfaces in the noun as a morphomic linker between the noun and the adjective in the first and second open slots respectively. The realisation of the copular is subject to the vowel harmony rules of Akan (Dolphyne, 1988). Thus, where the nearest preceding vowel is [-round], -ɛ- is chosen and where the nearest preceding vowel is [+round], -ɔ- is chosen.

It is not completely clear to me what triggers the reduction in the form of the copular verb. However, it seems to me that the reduction in form is aided by the semantic vacuity of the verb. That is, because the copular does not contribute much semantic information anyway, its formal reduction does not cause any comprehension difficulties.

Another interesting phonological feature of PANs is that they have a characteristic tone melody, where all the tone bearing units (hereafter, TBUs)

preceding the adjective bear low tones whilst the TBUs in the adjective bear high tones. This tonal melody seems to be typical of lexical items in Akan (cf. Dolphyne, 1988, pp. 120-123).[5]

The variables or open slots noted to occur in the schema in (12) signal the potential productivity of the construction (cf. Appah, 2013b, in prep). However, there are further noteworthy formal and semantic restrictions on the individual nouns and adjectives that occur in the predicate adjective construction which tend to restrict the productivity of the nominal that is formed from it. I point out some of these below.

First, the body-part noun that fills the first variable slot cannot be modified by an adjective. Hence, even though the construction in (14) is acceptable on its literal reading, it is completely ill-formed, if it is meant as the construction underlying the formation of the nominal *ètsìr̀mùɔ̀dzéɲ́* 'wickedness' which occurs to the right of the arrow.

(14) *Ìtsír̀ kèsé mù yè dzèǹ* => *è-tsìr̀-m-ɔ̀-dzéɲ́*
head big in be hard NMLZ-head-in-be-hard
'inside the big head is hard' 'wickedness'

Secondly, the noun cannot be definite. Hence, the marginally acceptable sentence in (15a) cannot be said to underlie the formation of the nominal that occurs to the right of the arrow. The same can be said for sentence (15b), even though the construction itself is acceptable.

(15) a. *Kòfí né kókò nó yè dùrù* => *à-kòkò-ɔ̀-dúró* (**AS**.)
Kofi 3SGPOSS chest DEF be heavy NMLZ-chest-be-heavy
'The chest of Kofi is heavy (≠ Kofi is brave)' 'courage/bravery'

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[5] Dolphyne identifies two types of Akan compounds based on their surface tonal melodies. In the first type (those with tonal pattern 1 [TP1]), all the TBUs in the first constituent bear low tones whilst the second constituent retains its underlying tonal melody. In the second (those with tonal pattern 2 [TP2]), the constituents seem to retain their underlying tonal melodies. Clearly, the constructions at issue pattern tonally like the first type of compounds identified by Dolphyne. This tonal melody could be one of the reasons why most previous accounts treated PANs as compounds. I believe, however, that TP1 is more aptly construed as a lexical tonal melody, so that if the speakers of Akan regard the construction as lexicalised, then they apply this tonal melody to it. In (1) below, the form *anibue* may bear either TP1 (a) or TP2 (b) and the choice seems to correspond to the extent of lexicalisation, as the meanings show. Hence, I call TP1 the lexical tonal melody. The claim here is that Akan seems to have a lexical tonal melody. This claim needs a more extended study which is beyond the scope of the present paper.

(1) a. ànì-bùé b. ànɪ́ˈbúé
eye-open eye-open
'civilisation' 'act of opening the eye'

b. *àní nó yɛ́ déń* => *ànì-è-déń* (**As**)
eye DEF be hard eye-be-hard
'The eye is hard' 'haughtiness'

It seems to me that a definite noun makes the construction lose the sense of idiomaticity. If that is the case, then it shows that PANs are actually formed from underlying idiomatic expressions. In other words, PANs are the nominalised versions of idiomatic predicate adjective constructions. This would be consistent with Mensah's (2003) treatment of such forms as body-part idioms.[6]

Thirdly, the predicate adjective, as indicated above, has to express a physical property which is predicated of the body-part noun in the subject position of the predicate adjective construction. If any other semantic class of adjectives (e.g., colour, value, dimension, etc. (Dixon, 2004)) fills the second slot, the sentence would be felicitous but no corresponding PAN can result from it. Hence, the nominals in (17), which have dimension and colour adjectives respectively in the second slot, are ill-formed, although those in (18) which have the same constituents but exclude the phonologically reduced copular, are well-formed. This is because the examples in (18) are simple cases of noun-adjective compounding (Appah, 2016).

(16) *a. Kwàámè né tsír yè kɛ̀sé* (**Fa**.)
Kwame 3SGPOSS head be big
'Kwame's head is big'

b. *Ádwóá né ényím̀ á-yè sákóó* (**Fa**.)
Adwoa 3SGPOSS face PERF-be pale
'Adwoa's face has become pale'

(17) a. **itsir̀-ɔ-kɛ̀sé* b. **ènyìm̀-ɔ-sákóó*
head-be-big face-be-pale
'big head' 'pale face'

(18) a. *ìtsìr̀-kɛ̀sé* (**Fa**.) b. *ènyìm̀-sákóó* (**Fa**.)
head-big face-pale
'big head' 'pale face'

In effect, the presence of this compounding alternative means of nominalizing the nouns and adjective restricts the productivity of PANs.

[6] The challenge with arguing that the presence of the definite determiner makes the construction lose its idiomatic feel, however, is that definite nouns do occur in idioms in other languages. An example is English *kick the bucket* 'to die' in which the definite determiner must occur in the idiom, so that **kick bucket* is ill-formed as an idiom.

The data in (17) and (18) show that PANs are not compounds. Indeed the properties discussed so far make the constructions look like encoding idioms (Makkai, 1969, 1972), idioms whose meaning the speaker can work out on hearing, even if s/he may not be able to predict its conventionality (Evans & Green, 2006, p. 644). They are also like idioms of encoding in the restrictions they impose on the types/classes of words that can occur in them and the strict order in which they must occur in the construction (cf. Booij, 2010a; Booij, 2010b).

Fourthly, although the compositional meaning of the predicate adjective construction is that of a body-part about which a certain physical property is predicated, the complex nominal expresses an attribute of the possessor of the body-part that occurs as the subject in the predicate adjective construction. In other words, the meaning of the nominal is that of a property of a human referent (except *àbòɔ̀déɲ́* 'dearness') who is the possessor of the body-part named in the construction. Thus, the referent of the nominal has only an indirect semantic link to one of its constituents. Again, although the body-part nouns in the first slots are concrete nouns, PANs are abstract nouns. Thus, the meaning of the construction is definitely not a strictly compositional function of the constituents. Outside of this construction, the words *kòkò* 'chest' and *dúr(ú)* 'heavy', when collocated, will express a physical property predicated of that body-part.

These facts mean that the meaning of the nominal has to be stated as a holistic property of the construction, much in agreement with the view that morphological constructions can have holistic properties (cf. Booij, 2009b, 2010a, 2010b).

In terms of pragmatics, it is worth noting that PANs are highly conventionalized constructions which may be used to express either negative or positive evaluation of the entity that possesses the attribute expressed by the nominal. For instance, the word *ànìèdéɲ́* (13b) which has undergone further derivation in (19) could be interpreted as 'haughtiness' or 'bravery' depending on the context of usage.

(19) a. *àbòfrá ànìèdéɲ́-fɔ́ɔ́*
child bravery-NMLZ$_{[person]}$
'a brave child'

b. *àbòfrá ànìèdéɲ́-fɔ́ɔ́*
child haughtiness-NMLZ$_{[person]}$
'a haughty child'

Thus the two different meanings of the expression in (19) are felicitous renditions of the same structure, depending on whether the attribute leads to the child in question fighting off an attack on his/her parents (19a) or exhibiting insubordination/insolence toward the parents (19b).

The Proposed Constructional Account

As observed above, taking the three main constituents of the predicate adjective constructions into account, the internal structure may be represented as (12), repeated here as (20), for ease of reference.

(20) $[[\textbf{body-part}]_N + [\textbf{TO\_BE}]_V + [\textbf{physical property}]_A]_S$

Again, based on the examples in (13), the internal structure of the individual instantiating nominals can be schematised as (21), which shows that the only constant element of the construction is the phonologically reduced form of the copular *yɛ́*, realized as [-ɔ-/-ɛ-]. The other slots are variable, but constrained.

(21)

a.	$[a\text{-}[\text{koko}]_N$	$[ɔ]$	$[\text{duru}]_A]_N$	↔ 'bravery'	(As.)
b.	$[[\text{ani}]_N$	$[ɛ]$	$[\text{den}]_A]_N$	↔ 'haughtiness'	(As.)
c.	$[a\text{-}[\text{ho}]_N$	$[ɔ]$	$[\text{har}]_A]_N$	↔ 'swiftness'	(As.)
d.	$[[\text{aso}]_N$	$[ɔ]$	$[\text{den}]_A]_N$	↔ 'stubbornness'	(As.)
e.	$[a\text{-}[\text{ho}]_N$	$[ɔ]$	$[\text{den}]_A]_N$	↔ 'strength'	(As.)

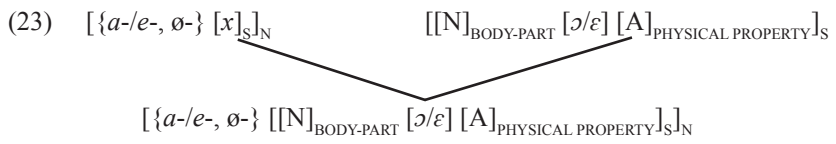
We see prefixes occurring before the noun in the first open slot in some of the constructions in (21). Those that do not seem to have the vowel prefix do have initial vowel sounds of the same quality as the vowel prefix(es). Thus, I assume that each construct in (13) and (21) bears a vowel prefix which is realised as *a*-or *e*-, but gets realised as zero (or deleted) when the noun constituent has an initial vowel that is identical in quality to the vowel prefix.

To account for these properties of the construction, I posit a constructional schema with only the phonologically reduced form of the copular pre-specified, as in (22).

(22) $[\{a\text{-}/e\text{-}, ø\text{-}\}\ [[\text{N}]_{\text{BODY-PART}}\ [ɔ/ɛ]\ [\text{A}]_{\text{PHYSICAL PROPERTY}}]_S]_N$

This schema is an abstraction over the observed similarities among individual instances of the construction; a course-grained image of the set of structures in (21). It results from the unification of the template for the predicate adjective construction and a prefixation schema, which yields a noun, as shown in (23).

(23)



The schema in (23) is paired with a specification of the general meaning of the construction, as shown in (24).[7] It states that whatever meaning the whole construction has (SEMq), is true of the entity which possesses the body-part named by the constituent that is indexed 'i'. It could also be true of any entity that possesses a body-part similar to the one named in the first open slot. In other words, I assume that the attributes named by the nominals (*stubbornness*, *swiftness*, *strength*, etc.) are predicated primarily of the possessor of the body-part in the first open slot. However, we cannot rule out the possibility of the nominal referring to any other entity in the universe of discourse, including non-human entities, as we find with the price of commodities *–àbòɔ̀déɲ́* 'dearness'.

(24)$<[\begin{Bmatrix} a - \\ e - \\ ø - \end{Bmatrix}[[\mathrm{N}]^{i}_{\text{BODY-PART}}\ [ɔ/ɛ]\ [\mathrm{A}]^{j}_{\text{PHYS\_PRPTY}}]_{S}]_{Nq} \leftrightarrow [\mathrm{SEM}^{q}$ predictd of poss. of $\mathrm{SEM}^{i}]_{q}>$

The schema in (24) is a *constructional idiom*, a multi-word expression that is idiomatic in nature but not completely fixed since one position in the schema is lexically filled whilst other positions are left open (Jackendoff, 1997, 2002).

Taylor (2003, p. 224) observes that constructional idioms are similar to idioms like *by and large* which exhibit unusual syntax and therefore cannot be generated by regular phrase structure rules. However, PANs are generally very regular, as the discussion of the general properties of PANCs shows. What is somewhat unusual is the assemblage of stringent restrictions on their possible constituents and their partial compositionality.

Taylor further observes that constructional idioms are productive, because different items can fill their open slots. With PANs, the stringent restrictions on the items that fill the open slots means that their productivity is severely restricted. Their productivity is further restricted by competition from the schema for N-A compounding, especially in the Fante dialect of Akan.

The relationship between the constructional idiom and the individual instantiating constructions is aptly captured in the hierarchical lexicon assumed in CxM. The idea of a hierarchical lexicon suggests that there can be 'intermediate schemas in between the individual words and the most abstract word formation schemas, which express generalizations about subsets of complex words of a certain type' (Booij, 2007, p. 24). In the hierarchical lexicon, 'properties of the higher nodes are percolated to lower nodes, unless the lower node has a contradictory specification for the relevant property' (Booij, 2009a, p. 206). This is the mechanism of default inheritance, by which the specific properties of the instantiating constructions override those of the dominating construction. Thus, the constructions inherit only their non-unique features from the constructional

[7] I use a superscript index where a subscript semantic specification is likely to mask a subscript index.

idiom in (24). This is illustrated in (25) and (26) with *àkòkòɔ̀dúró* 'bravery'and *àsòɔ̀déɲ́* 'stubbornness', in which we find an overt affix and a null affix respectively represented.

(25) $<[\begin{Bmatrix} a- \\ e- \\ ø- \end{Bmatrix}[[N]^{i}_{\text{BODY-PART}}\ [ɔ/ɛ]\ [A]^{j}_{\text{PHYS\_PRPTY}}]_{S}]_{Nk} \leftrightarrow [\text{SEM}^{q}\ \text{predictd of poss. of SEM}^{i}]_{k}>$

$[a\text{-}[[\text{koko}]_{Ni}\ [ɔ]\ [\text{duru}]_{Aj}]_{S}]_{Nk}$ 'bravery'

(26) $<[\begin{Bmatrix} a- \\ e- \\ ø- \end{Bmatrix}[[N]^{i}_{\text{BODY-PART}}\ [ɔ/ɛ]\ [A]^{j}_{\text{PHYS\_PRPTY}}]_{S}]_{Nk} \leftrightarrow [\text{SEM}^{q}\ \text{predictd of poss. of SEM}^{i}]_{k}>$

$[ø\text{-}[[\text{aso}]_{Ni}\ [ɔ]\ [\text{den}]_{Aj}]_{S}]_{Nk}$ 'stubbornness'

As noted above, constructions may inherit properties from their constituents by means of the 'part of' relation existing between constructions and their constituents, as illustrated in (27), where the two relations –' 'instantiation' and 'part of' obtain. The nominal *àkòkòɔ̀dúró* is an 'instantiation' of the constructional idiom at the top of the tree whilst the lexemes *kòkò* & *dúrú* form 'part of' *àkòkòɔ̀dúró* 'bravery'.

(27) $<[\begin{Bmatrix} a- \\ e- \\ ø- \end{Bmatrix}[[N]^{i}_{\text{BODY-PART}}\ [ɔ/ɛ]\ [A]^{j}_{\text{PHYS\_PRPTY}}]_{S}]_{Nk} \leftrightarrow [\text{SEM}^{q}\ \text{predictd of poss. of SEM}^{i}]_{k}>$

$[à\text{-}[[kòkò]_{Ni}\ [ɔ]\ [dúró]_{Aj}]_{S}]_{Nk}$ 'bravery'

$[kòkò]_{N}$ 'chest' $[dúrú]_{A}$ 'heavy'

The Distribution and Nominal Status of PANs

This section shows that the constructions at issue are nouns. This is clear from their syntactic distribution, which I illustrate with the nominal *àhòɔ̀fɛ̃́(ẃ)* 'beauty' in (28).

I indicated above that the nominal refers to an attribute of the possessor of the body-part in subject position. However, the nominal may be used as a proper name without a change in form and may undergo further derivation by suffixation, yielding nominals that refer to the possessor of the attribute rather than the attribute *per se*. For example, the nominal *Àhòɔ̀fɛ̃́* 'beauty' in (28a & 28bii) is the name of a person. *àhòɔ̀fɛ̃́(ẃ)* in (28c), (28d) and (28e) refers to an attribute, but in (28bi), *àhòɔ̀fɛ̃́* could refer to an attribute or the possessor of the

attribute. This might be seen as a metonymic extension of an attribute to refer to the possessor of the attribute. However, if we created a context in which (28bi) followed from (28a), then, given the fact that the referent in (28a) is engaged in some movement, the *possessor of the attribute* interpretation would be favoured.

(28) a. Subject of the verb (**As**.)
Àhòɔ̀fɛ́ *bé-bá* *há* *ɔ̀kyénà*
Beauty FUT-come here tomorrow
'Beauty (<the beautiful one) will come here tomorrow'

b. *Predicate nominal* (**As**.)
i. *È-yè* ***àhòɔ̀fɛ́***
it-be beauty
'It is beauty'

ii. *Mè* *díń* *dè* ***Àhòɔ̀fɛ́***
My name be.called Beauty
'My name is Beauty (<the beautiful one)'

c. *Object of the verb* (**Fa**.)
Áraba *wɔ* ***àhòɔ̀fɛ́ẉ***
A. be_in_possesion_of beauty
'Araba has beauty (Araba is beautiful)'

d. *Possessed element in a possessive construction* (**Fa**.)
Ámma *né* ***àhòɔ̀fɛ́ẉ*** *dà* *èdzì*
A. 3SGPOSS beauty lie open
'Amma's beauty is evident'

e. *Focused element in a focus construction* (**Fa**.)
àhòɔ̀fɛ́ẉ nà ɔ́-wɔ́
beauty FM 3SG-have
'It is beauty she has'

The examples in (28) do not bear any derivational affixes (The forms with final /w/ in (28c, d, e) are dialectal variants, not inflectional or derivational). The nominal in (29), however, undergoes further derivation by means of the human identity suffix (*-fɔ́ɔ́*) so that the resultant nominal just refers to the human possessor of the attribute designated by the base *àhòɔ̀fɛ́*.

(29) a. *Áraba yè* ***ɔ̀-hɔ̀ɔ̀fɛ̀-fóɔ́*** (**As**.)
Araba be SG-beauty-NMLZ$_{[person]}$
'Araba is a beautiful person'

b. ***ɔ̀-hɔ̀ɔ̀fɛ̀-fóɔ́*** *nó* *rè-bá* (**As**.)
SG-beauty-NMLZ$_{[person]}$ DEF PROG-come
'The beautiful person is coming'

The Akan nominal suffix [***-fóɔ́***] and its distinctly singular counterpart [***-nyí***] is attached to only nominal bases to form human nouns and so any form that serves as a base for ***-fóɔ́-*** derived nouns, is a noun prima facie (cf. Appah, 2013a, 2013b). Thus, one of the clearest signs of the nominal status of PANs is the fact that they can function as bases for ***-fóɔ́-*** derived noun in Akan.

Let us note that the prefix in (29) changes to ***ɔ́-***which marks singularity. Because the prefix ***a-*** derives/marks abstract nominals in Akan, this change in the prefix signals a change in the semantic class of the nominal from an abstract noun to a concrete noun. The presence of the human identity suffix calls for this particular prefix in the singular. For this reason, Abakah (2004) has analysed the ***ɔ̀-***… ***-fóɔ́*** sequence as a circumfix. However, that cannot be right because if they formed a circumfix (a single affix), we would expect the two to occur together all the time. But this is not what we find. Either affix may occur alone or in combination with other affixes. Indeed, the plural of ***ɔ̀-hɔ̀ɔ̀fɛ̀-fóɔ́*** (29) is ***à-hɔ̀ɔ̀fɛ̀-fóɔ́***, where plurality is marked by the prefix ***a-*** but the suffix remains the same. We note that this plural [*a-*] is different from the abstract nominal prefix [*a-*] as found in *a-hoɔfɛ* 'beauty' in (28).

The distribution of the affix sequence described above fits Fábregas and Scalise's (2012) characterisation of a process called *parasynthesis*, which they describe as "the situation where two different affixes – normally a prefix and a suffix – seem to be added simultaneously to the same base" (Fábregas & Scalise, 2012, p. 62). Thus, we may say that the attachment of the affix sequences is a case of parasynthesis rather than circumfixation.

A Tentative Semantic Classification of PANs

Given the semantics of PANs, we may group them into four classes, as shown in (30) – two major classes and two minor ones. The nominals in (30a) express physical attributes of the possessors of the body-parts in the first slots. The second (30b) expresses attitude or human propensity. The third expresses value (30c), while the outlier (30d) expresses emotional disposition.

(30) a. Physical attribute (appearance)

i. *àhɔ̀ɔ̀fɛ̀(ẃ)* 'beauty'
ii. *àhɔ̀ɔ̀déń* 'strength'

iii. *àhòɔ̀háré* 'swiftness' (e.g., of movement)
iv. *àhòɔ̀m̀méréẃ* 'infirmity/frailty'
v. *ànìmùònyáḿ* 'glory'

b. Attitude/habit (Human propensity)

i. *àsòɔ̀déń* 'stubbornness/disobedience'
ii. *àsòɔ̀m̀méréẃ* 'flexibility/pliability/malleability'
iii. *ànìèdéń* 'haughtiness/bravery'
iv. *ètsìr̀mùɔ̀dzéń* 'wickedness'
v. *ànìsòɔ̀hyéẃ* 'intrepidness'
vi. *àkòkòɔ̀dúró* 'boldness/courage'
vii. *ànìmùɔ̀háré* 'flippancy/frivolity'
viii. *àhòɔ̀yáẃ* 'envy'

c. Value

i. *àbòɔ̀déń* 'dearness'
ii. *àbòɔ̀m̀méréẃ* 'cheap (not expensive)'

d. Emotional disposition

i. *àsòɔ̀hyéẃ* 'emotional strain'

I observed above that PANs are generally not very productive and that their limited productivity is linked to the restriction on the kinds of items that can occur in them. This becomes even clearer in this section, as the size of the class reflects the restrictedness of the class of nouns that can fill the first open slot in the schema. Also, the body-parts involved in the formation of the nouns in the various classes seem to be associated with particular sections of the body.

We cannot say very much about the nouns that occur in the two small classes (30c-d), because of their limited numbers. However, regarding the two major classes, we can say that the nouns involved profile slightly different parts of the body with the base changing for members of different classes. For example, for the nouns that express physical attribute (30a), the body-parts involved tend to refer to broad areas of the exterior of the human frame, including *hó* 'skin/exterior' and *àní* 'face'. These profiled broad areas of the body also have other organs situated thereon. For example, the profiled body-part *àní* 'face' in *ànìmùònyam* 'glory' carries other body-parts like *ànó* 'mouth' and *àní* 'eye', which may, on their own, form part of PANs. The body-part nouns involved in the formation of the nominals that are classified as attitude/habit (human propensity) generally profile specific parts of the body, such as *àní* 'eye' as against *àní* 'face', *tírí-mú* 'inside the head' (lit. head-in) as against *tírí* 'head.

It is not totally clear at this stage whether these classes exhibit any more internal semantic coherence (shown by shared semantic properties) beyond the broad categories posited – physical property, attitude or human propensity, value and emotional disposition. It is again not clear to me whether members of the various classes have particular syntactic preferences in terms of adjacency or restriction on what morphological operations they may undergo. For example, although I mentioned above that PANs may undergo further derivation by the suffixation of *-fóɔ́*, yet this is true of only the members of the two major classes of PANs in (30a-b) but not the two other classes in (30c-d). Further research should reveal additional class-specific properties.

Conclusion

I have discussed a class of Akan nominals that had previously been treated as compounds. I have shown that the nominals have properties, including their partial semantic and formal transparency, that get masked in a straightforward compounding account, but are better accounted for in a constructional approach. I posited a constructional idiom in which the reduced form of the copular, realized as [-ɔ-/-ɛ-], is pre-specified as a constructional property.

Before presenting the constructional account, I discussed the properties of the individual constituents as a way of motivating the constructional analysis and showing that the construction at issue is not an island because its properties are motivated by other independently needed constructions in the language – predicate adjective construction and a prefixation schema. This is consistent with Goldberg and van der Auwera's (2012) perceptive observation that cases of constructions motivating other constructions are indicative of the fact that a given language is a system and not an idiosyncratic list of factoids.

I have noted that the productivity of PANs is affected by the stringent restrictions on the limited number of items that can fill the open slots in the constructional idiom. Another reason for the restricted productivity of PANs is the fact that there is competition between PANs and N-A compounding to nominalize the same set of constituent.

Finally, I have attempted a very course-grained classification of PANs. I hope that further research will reveal more significant patterns that can refine the tentative classification presented here.

References

Abakah, E. N. (2004). *The segmental and tone melodies of Akan.* (PhD Dissertation). Norwegian University of Science and Technology, Trondheim, Norway.

Appah, C. K. I. (2003). *Nominal derivation in Akan: A descriptive analysis.* (MPhil Thesis). Norwegian University of Science and Technology, Trondheim, Norway.

Appah, C. K. I. (2013a). The case against A-N compounding in Akan. *Journal of West African languages, 40*(1), 73-87.

Appah, C. K. I. (2013b). *Construction Morphology: Issues in Akan complex nominal morphology.* (PhD Dissertation). Lancaster University, Lancaster, UK.

Appah, C. K. I. (2016). Noun-Adjective compounds in Akan. *Lingue e linguaggio, XV*(2), 259-284. doi:10.1418/84978

Barlow, M., & Kemmer, S. (Eds.). (2000). *Usage-based models of language*. Stanford, CA: CSLI Publications.

Blevins, J. P. (2006). Word-based morphology. *Journal of Linguistics, 42*(3), 531-573. doi:doi:10.1017/S0022226706004191

Bloomfield, L. (1933). *Language*. New York: Holt, Rinehart and Winston.

Booij, G. E. (2000). Inheritance. In G. E. Booij, C. Lehmann, & J. Mugdan (Eds.), *Morphology. An International Handbook on Inflection and Word formation* (Vol 1, pp. 857-865). Berlin: De Gruyter.

Booij, G. E. (2005). Compounding and derivation: evidence for Construction Morphology. In W. U. Dressler, F. Rainer, D. Kastovsky, & O. Pfeiffer (Eds.), *Morphology and its demarcations* (pp. 109-132). Amsterdam: John Benjamins.

Booij, G. E. (2007). Construction Morphology and the Lexicon. In F. Montermini, G. Boyé, & N. Hathout (Eds.), Selected proceedings of the 5th Décembrettes: Morphology in Toulouse Cascadilla Proceedings Project (pp. 34-44). Toulouse: Cascadilla.

Booij, G. E. (2007). Construction Morphology and the Lexicon. In F. Montermini, P. Štekauer (Eds.), *The Oxford handbook of compounding* (pp. 201-216). Oxford: Oxford University Press.

Booij, G. E. (2009b). Morphological analysis. In B. Heine & H. Narrog (Eds.), *The Oxford handbook of grammatical analysis* (pp. 563-589). Oxford: Oxford University Press.

Booij, G. E. (2010a). *Construction morphology*. Oxford: Oxford University Press.

Booij, G. E. (2010b). Construction morphology. *Language and Linguistics Compass, 4*(7), 543-555.

Booij, G. E. (2012). *Inheritance and Construction Morphology*. Paper presented at the workshop on 'Default Inheritance', University of Kentucky, Lexington, KY, 21-22 May 2012.

Chomsky, N. (1957). *Syntactic structures*. The Hague: Mouton.

Chomsky, N. (1965). *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.

Christaller, J. G. (1875). *A Grammar of the Asante and Fante language called Tshi (Chwee, Twi) based on the Akuapem dialect with reference to the other (Akan and Fante) dialects*. Basel: Basel Evangelical Missionary Society.

Dąbrowska, E. (2000). From formula to schema: The acquisition of English questions. *Cognitive Linguistics, 11*, 83-102.

Di Sciullo, A.-M., & Williams, E. S. (1987). *On the definition of word* (Vol. 14). Cambridge, MA: MIT Press.

Dixon, R. M. W. (2004). Adjective classes in typological perspective. In R. M. W. Dixon & A. Y. Aikhenvald (Eds.), *Adjective classes: A cross-linguistic typology* (pp. 1–49). Oxford: Oxford University Press.

Dolphyne, F. A. (1988). *The Akan (Twi-Fante) language: Its sound systems and tonal structure*. Accra: Ghana Universities Press.

Evans, V., & Green, M. C. (2006). *Cognitive linguistics: An introduction*. Edinburgh: Edinburgh University Press.

Fábregas, A., & Scalise, S. (2012). *Morphology: From data to theories*. Edinburgh: Edinburgh University Press.

Goldberg, A. E. (1995). *Constructions: a construction grammar approach to argument structure*. Chicago: University of Chicago Press.

Goldberg, A. E. (2006). *Constructions at work: the nature of generalization in language*. Oxford: Oxford University Press.

Goldberg, A. E., & van der Auwera, J. (2012). This is to count as a construction. *Folia Linguistica, 46*(1), 109-132.

Jackendoff, R. S. (1997). *The architecture of the language faculty*. Cambridge, MA: MIT Press.

Jackendoff, R. S. (2002). *Foundations of language: Brain, meaning, grammar, evolution*. Oxford: Oxford University Press.

Jackendoff, R. S. (2009). The Parallel Architecture and Its place in cognitive science. In B. Heine & H. Narrog (Eds.), *Oxford Handbook of Linguistics Analysis* (pp. 583-605). Oxford: Oxford University Press.

Jurafsky, D. (1992). *An on-line computational model of sentence interpretation.* (dissertation), University of California, 1992. Report No. UCB/CSD 92/676, Berkeley.

Lampert, M., & Lampert, G. (2010). Word-formation or word formation? The formation of complex words in Cognitive Linguistics (29-73). In A. Onysko & S. Michel (Eds.), *Cognitive Perspectives on Word Formation*. Berlin: Mouton De Gruyter.

Makkai, A. (1969). The two idiomaticity areas in English and their membership: A stratificational view. *Linguistics, 7*(50), 44-58. doi:10.1515/ling.1969.7.50.44

Makkai, A. (1972). *Idiom structure in English*. The Hague: Mouton de Gruyter.

Mensah, E. (2003). *Akan verbal body-part idioms.* (MPhil Thesis). Norwegian University of Science and Technology, Trondheim, Norway.

Michaelis, L. A., & Lambrecht, K. (1996). Toward a construction-based theory of language function: The case of nominal extraposition. *Language, 72*(2), 215-247.

Obeng, S. G. (2009). Akan deverbal nouns. In S. G. Obeng (Ed.), *Topics in descriptive and African linguistics: Essays in honor of distinguished Professor Paul Newman* (pp. 96-110). München: LINCOM Europa.

Osam, E. K. (1999). Adjectives in Akan. *Afrika und Übersee, 82*(2), 189-211.

Payne, T. E. (1997). *Describing morphosyntax: A guide for field linguists*. Cambridge: Cambridge University Press.

Taylor, J. R. (2003). *Linguistic categorization* (3rd ed.). Oxford: Oxford University Press.