

KEYWORDS: Akan, Construction Morphology, headedness, noun-adjective compound, noun-adjective phrase.

The purpose of this paper is to discuss the formal and semantic properties of Akan Noun-Adjective compounds like *n̄sùò-nwúnú* ‘cold water’ (lit. water-

259

cold). Compounds are words that are made up of nouns and attributive adjectives, whatever the order in which they occur (adjective-noun or noun-adjective), have received considerable attention in English (cf., *inter alia*, Bauer 1983, 2004; Plag 2003; Giegerich 2004, 2005, 2008, 2009; Gagne & Spalding 2015). They have also been studied in other languages, including Danish (Bauer 2009), German (Schlücker 2016), Greek (Ralli & Stavrou 1998; Ralli 2013) and Italian (Mondini et al. 2002). Spencer (2011) deals with their semantics from a typological perspective, but he bases his analysis on data from European languages.

Two principal issues have engaged the attention of researchers. The first one is the semantics of the compound, specifically, the nature of the modification relation or attribution within the compound (Mondini et al. 2002; Giegerich 2005; Gagne & Spalding 2015; Schlücker 2016). Following Ferris (1993), it is observed that, in such compounds, the adjectives tend not to be ascriptive. That is, they usually do not express actual properties of the nouns they modify. For example, Bauer (2009: 403), observes that in Danish A-N compounds (e.g., *hvid-vin* ‘white wine’), the adjective always has a classifying function rather than the function of a genuine attributive modifier. In the same vein, discussing why the German compound *Rotwein* ‘red wine’ could be the name of a kind of wine that is not necessarily red, Spencer (2011: 501) argues that RED is not really in the compound *red wine* because it does not contain its meaning. The same is true of the English compound *blackbird* for which stating that X is a blackbird does not entail that the bird in question is black (cf. Plag 2003: 151). Thus, Spencer (2011: 501) argues that we have to conclude that A-N compounds in Germanic languages are semantically opaque.

This is consistent with the view that compositionality is a problem for compounding and linguistic morphology in general (Bauer 1979, 1983; Dressler 2005; Libben 2014; Gagne & Spalding 2015). Libben (2014: 22), for example, observes that, “[i]t seems [...] extremely rare that we can say that the meaning of a compound is determined by the meanings of its constituents. At best, constituent semantics enable good guesses at the whole word meaning.” This observation, however, should not be constructed to mean that compounds, and morphological constructions in general, are never compositional. Rather, it should be understood to mean that morphological constructions usually have some extra-compositional property that may, for example, be the result of lexicalization. This will become clear from the discussion in section 5.

The second important issue in the discussion of adjective-noun compounds is how to distinguish between them and the corresponding noun phrases whose constituents are nouns and modifying attributive adjectives

(cf. Ralli & Stavrou 1998; Giegerich 2005). This issue usually extends to the lexicalist-non-lexicalist divide in the debate on the nature of the morphology-syntax interface (Ralli 2013; Ralli & Stavrou 1998; Giegerich 2005, 2008, 2009).

The present paper is by no means the first study of Akan noun-adjective (hereafter, N-A) compounds. They have appeared in many existing accounts of Akan compounds dating back to Christaller (1875). Most of them, however, have been concerned with tone and other phonological processes that occur when such compounds are formed (cf. Dolphyne 1988; Marfo 2004; Abakah 2004, 2006). Very little is said about other properties of the compound, especially the semantics. There is a need, therefore, for a paper like the present one, studying the properties that have not received enough attention in the study of Akan N-A compounds.

The rest of the paper is organised as follows: in section 2, I briefly discuss the important issue of headedness in compounds, as it relates to Akan N-A compounds. In section 3, I deal with some issues in the literature on Akan N-A compounding, focusing on formal criteria, with minimal attention to the semantics, which is discussed later in section 5. In section 4, I present the data for this study and discuss their properties. Specifically, I deal with the form and the semantic classification of the individual constituents, showing that the constituents tend to be simplex bases and that there seems to be no restriction on the semantic classes of the nouns and adjectives that may occur in Akan N-A compounds. In section 5, I discuss the overall interpretation of the compounds, noting the extent to which the properties of the whole may be determined by the properties of the parts. I distinguish between transparent and lexicalized types of N-A compounds, as first posited in Marfo (2004). Section 6 concludes the paper.

In presenting the properties of the compounds, I use Construction Morphology (CxM) formalism. CxM is a theory of linguistic morphology, which “aims at a better understanding of the relation between morphology, syntax and lexicon and of the semantic properties of complex words” (Booij 2010a: 543). Hence, it allows for a systematic account of the similarities and differences between syntactic and morphological constructions. In CxM, complex words are morphological constructions, word-level form-meaning pairs that are formed by means of schemas, which are abstractions over sets of existing complex words and also serve as a recipe for forming other words of comparable complexity (Booij 2007, 2010b). Constructions can have properties that do not emanate from the constituents. These are referred to as holistic properties of the constructions themselves (Booij 2010b, 2012).

Thus, in CxM, all compositional and extra-compositional properties of morphological constructions can be accounted for without having to posit abstract categories as the source of extra-compositional semantic components.²

2. HEADEDNESS AND AKAN N-A COMPOUNDS

It is a well-established fact that compounds tend to be headed constructions (Bloomfield 1933; Scalise 1984, 1988; Bauer 1990; Štekauer 2000; Katamba & Stonham 2006; Scalise & Fábregas 2010). The head is the most important constituents of the construction. Among others, the head determines the syntactic category of the compound and the whole compound is supposed to be a hyponym of the head constituent (Allen 1978; Williams 1981).

Since Williams' (1981) proposal to extend the notion of head from syntax to morphology, there have been questions raised about the extent to which the notion is fully applicable in the domain of morphology, especially as it relates to affixal derivation (cf. Zwicky 1985, 1988; Bauer 1990; Štekauer 2000). With compounding, however, the idea of a head had existed much earlier, and formed the basis for the distinction between endocentric compounds and exocentric compounds (Bloomfield 1933; Arcodia 2012).³

Where a word is headed, Williams (1981) proposed that the head should occur on the right. This led to the positing of the so-called right-hand head rule, which was initially presented as an absolute universal and formulated as: “[i]n morphology, we define the head of a morphologically complex word to be the righthand member of that word. [...] Call this definition the Righthand Head Rule (RHR)” (Williams 1981: 248). However, many strands of research have since shown that right-headedness is not universal (Scalise 1984, 1988, 1992; Bauer 1990). Even the view that the position of the head is a parametric feature of individual languages has been found to be questionable because some languages have both left-headed and right-headed compounds in almost equal measure (Ceccagno & Scalise 2006; Ceccagno & Basciano 2009; Pepper 2010).

Akan compounds are predominantly right-headed (Appah 2009, 2013a, 2013b), much in agreement with the RHR. However, Akan N-A compounds, systematically defy the prediction embodied in the RHR because they are all

² The abbreviations used in this paper are: A = adjective, CxM = Construction Morphology, N = noun, NP = noun phrase, RHR = Righthand Head Rule, SEM = semantics.

³ The centrality of the head concept to compounding means that even the absence of a head constituent results in the positing of a subtype – the exocentric compound (Bloomfield 1933; Scalise & Guevara 2006; Bauer 2008, 2010; Scalise & Fábregas 2010; Ralli & Andreou 2012; Appah 2017).

left-headed nominal constructions. Even Akan N-A compounds that are not completely transparent can somehow be shown to be left-headed. For example, the compound *ɔ́báá-bínú* [woman-unripe] ‘virgin’ is headed by the left-hand nominal constituent, although its meaning cannot be derived fully from the meanings of the constituents. Such a distinction is made possible within the context of a deconstructed notion of head, yielding a distinction between a formal/syntactic head and a semantic head, which may not coincide (cf. Selkirk 1982; Di Sciullo & Williams 1987; Scalise & Guevara 2006; Scalise & Fábregas 2010).⁴

3. ISSUES IN THE LITERATURE OF AKAN N-A COMPOUNDING

Christaller (1875) sought to describe the constituents of Akan compounds in general and some of the formal changes that occur during the formation of compounds. He largely succeeded in that effort. For example, he grouped N-A compounds with those compounds in which “the qualifying component succeeds [...] the fundamental part” (Christaller 1875: 26). In contemporary parlance, this means that the compounds are left-headed, as noted in section 2. The examples he cites include those in (1), which are actual N-A compounds because each contains a noun and an adjective in that order (I retain the tone marks from the source).

(1)	COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a.	<i>adebòné</i>	<i>ade-bòné</i>	thing-bad	‘evil’
b.	<i>ɔ́ponkèsé</i>	<i>ɔ́pon-kèsé</i>	door-great	‘gate’
c.	<i>ayeforo</i>	<i>ɔ́yére-foforo</i>	wife-new	‘bride’

(Christaller 1875: 26)

However, portions of Christaller’s descriptions are unsustainable, given what is currently known about compounding. That is, Christaller’s exemplars include some constructs that should clearly be excluded from the list of N-A compounds because, as he himself observes, the right-hand constituents are either pronouns (2) or numerals (3). In the case of those in (3), Christaller-

⁴ The formal head shares its subcategorization and form-class information with the compound, so that the compound has the same distribution as the formal head. The semantic head, on the other hand, shares its lexical conceptual information with the whole, so that the compound is a hyponym of the semantic head (cf. Scalise & Guevara 2006; Scalise & Fábregas 2010). Because these kinds of heads may not coincide in the same constituent of the compound, even a compound that is not a hyponym of either constituent may be shown to be formally headed.

er acknowledges that they “might also be taken to class 2 or 3” (cf. Christaller 1875: 26), which are classes of noun-noun compounds. Surely, they are not N-A compounds.

(2)	COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a.	<i>babi</i>	<i>ba-bi</i>	place-some	‘somewhere’
b.	<i>daben</i>	<i>da-ben</i>	day-which	‘when’
c.	<i>dabi</i>	<i>da-bi</i>	day-some	‘someday’
(3)	COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a.	<i>fako</i>	<i>fa-ko</i>	side-one	‘one sided’
b.	<i>afanu</i>	<i>a-fa-nu</i>	PL-side-two	‘two sided’

(Christaller 1875: 53)

After Christaller (1875), we do not find much on N-A compounding in the literature on Akan (cf., inter alia, Balmer & Grant 1929; Welmers 1946; Boadi 1966) until, as far as I have been able to ascertain, Dolphyne (1988) who does a purely descriptive study of the phonological properties of Akan compounds. From there on, discussions of Akan compounds focused mainly on the phonological properties of compounds, including phonological processes that occur when compounds are formed. In this paper, I do not pay much attention to the phonology since that has been discussed extensively (Abakah 2004, 2006; Dolphyne 1988; Marfo 2004). I concentrate on the description of other properties of the individual constituents and the interpretation of the whole compound.

Again, previous studies have been generally source-oriented (Zager 1981; Appah 2015) in perspective, assuming that every property of the whole comes from the constituents. Thus, for examples, the tonology of Akan compounds is accounted for by means of various rules that alter the tonal melodies of the compounds by deleting, inserting and/or spreading the tones of the constituents (cf. Abakah 2004, 2006; Marfo 2004). However, as the discussion of the semantics of N-A compound will show, it is not the case that every property of the whole can be accounted for in the constituents. Sometimes, there are meaning components that are simply not in the constituents, a situation that has been noted to be characteristic of such compounds, as discussed in section 1 (cf. Giegerich 2005; Bauer 2009; Spencer 2011). At other times, the compound can only be interpreted by some figure of speech like metaphor or metonymy. Again, this is consistent with the observation that one needs to sometimes look beyond the semantics of the individual constituents and to look at general pragmatic principles in the interpretation of compounds (Bauer 1979; Benczes 2005a, 2005b; Libben 2014).

Because attributive modifiers in Akan occur to the right of the modified element, whether in morphology or syntax (cf. Boadi 1965; Saah 2004),

Abakah (2006: 16), for example, opens his account of the tonology of N-A compounds, arguing that “[i]n Akan, the noun stem and its adjectival modifier, be it attributive or predicative, can merge to form a compound”. Indeed, in terms of distribution the attributive use of adjectives in Akan compounds (4a) cannot be distinguished from their attributive use in phrases (4b), although the adjective is reduplicated in the phrase. Therefore, Abakah’s position may sound justifiable. However, the same cannot be said about the predicative use of adjectives (4c), which is distributionally distinguishable from the use of Adjective in compounds (note that the tonal patterns are also different in the compound and in the phrase).

- (4) a. ñsùò-nwúnú b. ñsúó nwùnwnúnú c. ñsúó nó yé nwùnù
water-cold water cold water DEF be cold
'cold water' 'cold water' 'the water is cold'

Thus, the claim that the compound results from a noun and an adjective in predicative modification relation (e.g., 4c) amounts to a rather bold claim about the phrasal provenance of the compounds at issue. Marfo (2004) makes the assumption about the phrasal provenance of N-A compounds even more explicit. He refers to N-A and N-N compounds as phrasal words or NP-internal constructions, describing them as “connected speeches of lexical units within the noun phrase” (Marfo 2004: 95). He argues further that constituent order in phrases is retained in compounds and that “for a compound word to materialize in Akan, the constituents involved should map into one prosodic phrase/domain” (Marfo 2005: 63). The problem with this view, however, is the suggestion that all compounds are formed from underlying phrases. This is because the literature on the semantics of compounds makes it clear that there are cases where even words like ‘bike’ and ‘girl’ which are not likely sisters in phrases, still combine to form clearly interpretable compounds like *bike girl* (Downing 1977; Spencer 2011). In the same way, the constituents of neoclassical compounds cannot be sisters in a syntactic phrase.

as the data in Table 1 show, but first constituents of N-A phrases are not like that, as the data in (4a-b) show. In addition, (4b) shows that there may be other differences in the form of the constituents. For instance, the adjective is reduplicated obligatorily in the phrase (4b). We find this pattern in other compounds like *àdwè̀m-pá* ‘good intentions/discretion’, *àsè̀m-pá* ‘good news’ and *àkwà̀n dzé̀n* ‘strong paddling (of a canoe)’ in (Table 1) whose corresponding phrases have reduplicated adjectives, as shown in (6).⁶

(6)	COMPOUND	ANALOGOUS PHRASES
a.	<i>àdwè̀m-pá</i> mind-good ‘good intentions/discretion’	<i>àdwé́n pá~pá</i> mind good ‘a good mind/intention’
b.	<i>àsè̀m-pá</i> news-good ‘goodnews (the Gospel)’	<i>àsé́m pá~pá</i> news good ‘a piece of good news’
c.	<i>àkwà̀n-dzé̀n</i> paddling-hard ‘strong paddling (of a canoe)’	<i>àkwá́n dzè́n~dzé́n</i> paddling hard ‘the strong paddling (of a canoe)’

Finally, Marfo (2004) makes the point that N-A compounds are not always compositional. He distinguishes between lexicalized N-A compounds like *àsè̀nhú́nú* ‘nonsense’ and non-lexicalized ones like *èkwà̀n-késéé* ‘big road’ and *dùàténén* ‘black cola’. However, because Marfo does not develop the classification of N-A compounds and he provides only one example of the former and two of the latter (the second of which seems mis-glossed),⁷ it is difficult to assess the extent to which the posited classes are internally coherent and useful to the task of understanding the properties of Akan N-A compounds. Notwithstanding this, it is interesting to note that the two adjectives in the non-lexicalized compounds are dimension adjectives, whilst the one in the lexicalized compound, is a value adjective. Does it matter that the adjectives in the two classes belong to the specified semantic types? The paucity of exemplars makes it difficult to determine. However, in the discussion of the properties of N-A compounds in section 4, it will become clear that there is, in principle, no restriction on the classes of nouns and adjectives.

⁶ This is not meant to suggest that there are no reduplicated adjectival stems in compounds. As noted above, *kánkán* ‘fetid’ in the compound *nsù-kánkán* ‘smelling water’ is inherently reduplicated. Rather, the point is to show that the only way some compounds and their corresponding phrases may be distinguished is by looking at the differences in the form of the constituents.

⁷ Unless it is a mistake, it is unclear why the composition of *dùà* ‘tree’ and *ténén* ‘tall’ yields a compound meaning ‘black cola’, yet Marfo (2004) classifies it as a non-lexicalized N-A compound.

tives that may occur in N-A compounds. Therefore, in response to the question above, there is no link between the degree of transparency of an N-A compound and the type of adjective that occurs in it.

Clearly, there are descriptively and theoretically interesting issues in the study of Akan N-A compounds, including how to distinguish between N-A compounds and N-A phrases and whether or not we can clearly distinguish between lexicalized and non-lexicalized subtypes. Again, the nature of the individual constituents has not been discussed. I will attempt to deal with these issues in the next section.

4. PROPERTIES OF AKAN N-A COMPOUNDS

The present study is based on a sample of 37 N-A compounds constituting approximately 8.4% of a dataset of 443 compounds, which was part of a collection of 1000 complex nominals; the rest are affix-derived complex words (see Table 1). They were collected from a variety of sources, including an elementary school reader on fishing, the Akan translation of the Universal Declaration on Human Rights and an Akan translation of Plato's apology of Socrates.

In this section, I discuss the formal (section 4.1) and semantic (section 4.2) properties of the individual constituents of Akan N-A compounds. The overall interpretation of the compounds is discussed in section 5, where I also show that some of the properties of N-A compounds are shared by some left-headed N-N compounds.

	A	B	C
1	<i>àfɔ̀wà-sín</i> sword-fraction 'penknife'	<i>nàm-kèsé</i> fish-big 'big fish'	<i>àdwèm-pá</i> mind-good 'good intentions/discretion'
2	<i>àsààsè-bóníni</i> earth-barren 'infertile land'	<i>ò-hèm-pòń</i> SG-king-great 'paramount chief'	<i>àdwènè-haré</i> mind-fast/light 'light-mindedness/perceptiveness'
3	<i>àdànsè-kúrúm</i> witness-crooked 'false witness'	<i>ñhwìròmà-tsén</i> whistle-straight 'sweet whistles'	<i>àsèm-pá</i> news-good 'goodnews (the Gospel)'
4	<i>bàsà-fá</i> arm-half 'half of an arm-length'	<i>n-kòtò pá</i> PL-crab good 'type of crab'	<i>n-nè-bòné</i> PL-thing-bad 'evil deeds'
5	<i>àbàsà-mú</i> arm-whole 'full-arm length'	<i>èkwàm-mòné</i> way-bad 'evil means/way'	<i>nsù-kánkán</i> water-fetid 'smelling water'
6	<i>duà-sín</i> tree-fraction 'stump'	<i>nsùò-nwúnú</i> water-cold 'cold water'	<i>àkwàn dzén</i> paddling hard 'strong paddling (of a canoe)'
7	<i>n-dù-pón</i> PL-tree-great 'huge trees'	<i>dìm-mòné</i> name-bad 'name name'	<i>àsèn-kèsé</i> matter-big 'big issue'
8	<i>ò-báá-pányín</i> SG-woman-elder 'elderly woman/matriarch'	<i>ò-báá-búnú</i> SG-woman-unripe 'virgin'	<i>ò-sɔ̀fò-pányín</i> SG-priest-elder 'chief priest/senior minister'
9	<i>bá!dwá ké!séé</i> assembly big 'General Assembly (UN)'	<i>àkwàn-tsén</i> way-straight 'highway/road'	<i>n-sèn-húnú</i> PL-matter-useless 'useless/senseless matter/talk'
10	<i>kwàn-sín</i> way-fraction 'mile/kilometre'	<i>kyè-húnú</i> arrest-vain 'arbitrary arrest'	<i>mán-sín</i> nation-fraction/half 'a district in a political system'
11	<i>sikà kókòó</i> money-red 'gold' (lit. money red)	<i>nà-pányín</i> mother-senior 'mother's elder sister'	<i>ntén-kyéw</i> judgement-crooked 'skewed judgment/miscarriage of justice'
12	<i>ò-kùn-pá</i> SG-husband-good 'good husband'	<i>àbóá-fún</i> SG-animal-corpse 'dead animal/carcass'	<i>n-sèm-fón</i> PL-matter-bogus 'nonsense'
13	<i>nà-kumá</i> mother-younger 'younger mother' (Uncle's wife, mother's younger sister)		

TABLE 1. AKAN N-A COMPOUNDS

4.1 Formal properties of the constituents of Akan N-A compounds

In discussing the formal properties of the constituents of Akan N-A compounds, I deal with whether the individual constituents can be derived complex words or they can themselves be compounds. I also note the presence of inflectional number markers on the noun constituents.

4.1.1 The noun constituents of Akan N-A compounds

According to Appah (2013b), in N-A compounds, neither constituent is a compound. This seems to be borne out by the data in Table 1, since neither constituent is a compound. It has to be pointed out, however, that the observation of non-compound nominal constituents might not be absolute. Given that compounding is a very productive word formation process in Akan and the output is invariably nominal (cf. Dolphyne 1988; Appah 2015), we may reasonably expect to find a compound as the left-hand constituent of an N-A compound, even though we have not found any yet.

The noun constituent can be a derived complex word, see Table 1, cells 8c, where *àsǎ!fó* is derived from the base *sór* ‘to worship’ and the agentive suffix *-fó*. Some noun constituents may also bear inflectional prefixes marking singular (cells 2B, 8A & 8C) or plural (cells 4B, 4C, 7A & 9C) number in the nominal base.⁸

4.1.2 The adjective constituents of Akan N-A compounds

The Adjectives found in the compounds include *kúrúm* ‘crooked’, *sín* ‘fraction/half’, *kèsé* ‘big’, *fá* ‘half’, *mú* ‘whole/full’ and *tsén* ‘straight’. We see that unlike the noun constituents, which can be derived complex words, the adjective constituents are all simplex bases.

I believe that we do not find complex adjectives in Akan N-A compounds because Akan does not have a really productive derivational means of forming adjectives. Besides, compounding is not available as a means of forming adjectives, because compounding in Akan is a nominalization strategy (cf. Dolphyne 1988; Appah 2013b, 2015).

⁸ I believe that these number markers serve some function. In the case of the nouns with singular markers, the referents tend to be unique in that there can be only one of their kind in any domain. For example, there can be only one *à-hè̀m-pɔ̀n* ‘paramount chief’ in a chiefdom and in a typical Akan extended family, there can be only one person qualified to be called *à-báà-pányín* ‘the matriarch’. In the case of the nouns with plural markers, they tend to be non-unique and non-referential. So I believe that the plural markers on the nouns serve to highlight the non-preferentiality of the relevant noun constituent. Thus, genericity is enhanced by the presence of the plural marker on the noun.

Boadi (1965) presents a contrary view on the derivation of adjectives in Akan, arguing that adjectives are formed from some subclass of nouns in Akan. Boadi (1965: 40-41) writes:

“[a]djectives are derived from a subclass of nouns some of whose members are *òtuntúm* ‘black, black one’, *ɔ̀kɔ̀kɔ̀* ‘red, red one’, *ɔ̀fɛɛfɛ* ‘beautiful, beautiful one’. The corresponding adjectives are *tùmm* ‘black’, *kɔ̀* ‘red’, *fɛ* ‘beautiful’. The nouns have a low tone-bearing prefix. [...] the derived adjectives, on the other hand, have no tone-bearing prefix. Morphologically, then, there is some justification for distinguishing between the two classes.”

Indeed, there is morphological justification for distinguishing between nouns and adjectives in Akan, as Boadi observes. However, his reading of the direction of derivation (nouns > adjective) in his examples is rather curious. First, there is overwhelming evidence that Akan speakers form nouns from other word classes but none, to the best of my knowledge, to show that the kinds of adjective he cites are formed from nouns (but see comment on Osam (1999) below). Second, by his line of argumentation, Boadi introduces truncation as a morphological process into Akan. That is, if we accept that those adjectives that Boadi cites are formed from nouns in the manner he suggests, we also have to accept that the putative nominal base, for example, *ɔ̀fɛɛfɛ* ‘beautiful, beautiful one’ is truncated or clipped to form the adjective *fɛ* ‘beautiful’. Third, and more importantly, the putative derived adjectives include basic colour terms, which cross-linguistically come underived (cf. Dixon 1977; Osam 1999). It is, therefore, difficult to work with Boadi’s views on the derivation of Adjectives in Akan.

Following Dixon (1977), Osam (1999: 193) lists a number of forms that he calls derived adjectives. They include those formed from nouns through reduplication as shown in (7).

(7)	BASE NOUN	GLOSS	ADJECTIVE	GLOSS
a.	<i>àbó</i>	‘rocks’	<i>àbò~ábó</i>	‘rocky’
b.	<i>àpɔ̀</i>	‘knots’	<i>àpɔ̀~ápɔ̀</i>	‘knotty’
c.	<i>ńkyén</i>	‘salt’	<i>ńkyè~ńkyén</i>	‘salty’
d.	<i>ànhwèá</i>	‘sand’	<i>ànhwèá~nhwèá</i>	‘sandy’
e.	<i>ńsú</i>	‘water’	<i>ńsù~ínsú</i>	‘watery’

Another group of derived adjectives is formed from verbs through the suffixation of a long front high vowel, which is realized in the orthography as either *-èé* or *-ii*, in agreement with Akan vowel harmony rules. They are said on a rising tone, as shown in the examples in (8) from the Fante dialect

of Akan (cf. Osam 1999: 194).⁹

(8)	BASE VERB	GLOSS	ADJECTIVE	GLOSS
a.	<i>gúáń</i>	‘to be dry’	<i>gùàn-èé</i>	‘dried’
b.	<i>hów</i>	‘to smoke (fish)’	<i>hòw-èé</i>	‘smoked’
c.	<i>tòtò</i>	‘to roast/grill’	<i>tòtò-èé</i>	‘roasted/grilled’
d.	<i>twúw</i>	‘to mash’	<i>twùw-ìì</i>	‘mashed’

We see then that, contra Boadi’s view, the only real instances of adjectives formed from nouns are the cases of reduplicated nouns, as shown in (7). As far as verbs are concerned, only the front high vowel suffix derives adjectives from some culinary verbs, as shown in (8). Thus, I believe that the proper construal of the derivational relation between the nouns and the adjectives that Boadi (1965) cites is that the nouns are formed from the reduplicated adjectival bases through prefixation, as shown in (9). This is consistent with Osam’s position on derived adjectives in Akan (Osam 1999) as well as the derivation of nouns in Akan (Christaller 1875; Appah 2003).

(9)	ADJECTIVE	GLOSS	DERIVED NOUN	GLOSS
a.	<i>tuntum</i>	‘black’	<i>ò-tuntum</i>	‘black one’
b.	<i>kɔkɔ</i>	‘red’	<i>ò-kɔkɔ</i>	‘red one’
c.	<i>fɛfɛ</i>	‘beautiful’	<i>ò-fɛfɛ</i>	‘beautiful one’

(examples from Boadi (1965: 40-41) re-analysed)

The data in Table 1 above show that the adjective constituent of Akan N-A compounds may be reduplicated. Even so, the only reduplicated adjective that occurs in the data (*kankan* ‘smelling’, cell 5C) seems to be inherently reduplicated so that the potential simplex form (**kan*) does not occur alone in an N-A compound, or anywhere else in the grammar, as far as I know. Thus, even this adjective may be considered simplex, confirming the observation that only simplex adjectives occur in Akan N-A compounds (Appah 2013b).

Indeed, Appah (2003, 2004) suggested that reduplicated adjectives may have the reduplication reversed when the construction they occur in is nominalized. For example, the adjective *pápá* ‘good’ always occurs reduplicated, whether in isolation or in a phrasal constructions. However, in compound constructions, only the simplex form occurs as we find in compounds like: *àdwèm-pá* ‘good intensions/discretion’ (1C), *ńkòtò-pá* ‘type of crab’ (4B) and *òkùn-pá* ‘good husband’ (12A), in Table 1. Now the observation that on-

⁹ In addition to the data in (7) and (8), Osam mentions a class he refers to as nouns used as adjectives. They include nouns like *ohiani* ‘poor person’, *sikanyi* ‘rich person’ and *ɔhɔhɔ* ‘visitor’.

ly simplex adjectives occur in Akan N-A compounds explains what was originally presented as the reversal of the reduplication in the relevant adjectives. This is because, like other researchers, Appah (2003, 2004) assumed that such N-A compounds ultimately derived from underlying phrases. The present study has shown that the adjectives in the relevant compounds were not reduplicated in the first place.

In this section, I have shown that the adjective constituents of Akan N-A compounds are invariably simplex. The nouns, on the other hand, can be derived complex words. However, neither constituent seems to be a compound. Given this, we can add a condition to any description of the class of Akan N-A compounds that neither constituent may be a compound.

4.2 Semantic types of the constituents of Akan N-A compounds

The noun constituents of the Akan N-A compounds in my dataset are semantically varied. They include: concrete objects, body parts, animals, human relations and abstract nominals, as shown in (10).

(10)	SEMANTIC TYPE	EXAMPLES
a.	HUMAN RELATIONS	<i>ná</i> 'mother', <i>òbá</i> 'child', <i>òkùnpá</i> 'husband'
b.	ABSTRACT NOMINALS	<i>àsém</i> 'news', <i>ntén</i> 'judgement', <i>àdánisé</i> 'witness'
c.	ANIMALS	<i>àbóá</i> 'animal', <i>kótó</i> 'crab', <i>nám</i> 'fish'
d.	BODY PARTS	<i>nán</i> 'leg', <i>tèkyèrémá</i> 'tongue', <i>àbàsá</i> 'arm'
e.	CONCRETE OBJECTS	<i>àsàásé</i> 'land', <i>àfòwá</i> , 'knife', <i>dùá</i> 'tree', <i>èkwán</i> 'way'

The adjective constituents also belong to diverse semantic classes. Following Osam (1999) we can identify adjectives that belong to semantic classes like value, physical property, dimension, human propensity and age, as shown in (11).

(11)	SEMANTIC TYPE	EXAMPLES
a.	AGE	<i>pànyín</i> 'elder', <i>kúmá</i> 'younger'
b.	HUMAN PROPENSITY	<i>háré</i> 'swift', <i>bónini</i> 'barren'
c.	DIMENSION	<i>sín</i> 'fraction', <i>kèsé</i> 'big', <i>fá</i> 'half', <i>mú</i> 'whole/full'
d.	VALUE	<i>pá</i> 'good', <i>bòné</i> 'bad', <i>pón</i> 'great', <i>húnú</i> 'useless/bogus'
e.	PHYSICAL PROPERTY	<i>kúrúm</i> 'crooked', <i>tsén</i> 'straight', <i>kánkán</i> 'fetid', <i>dzén</i> 'hard', 'cold', <i>búnú</i> 'unripe'

It is fair to stress that these semantic types of nouns and adjectives are the only ones that occur in our dataset and that probably with an expanded dataset we might find other types. Thus, in principle, there seems to be no restriction on the semantic types of nouns and adjectives that can occur in Akan N-A compounds. However, there should be some plausible relation between the meanings of the noun and the adjective. For instance, a dimension adjective should be found in composition with and modifying a noun that has dimensions in the appropriate sense (cf. Lieber 2004, 2009).

5. INTERPRETATION OF AKAN N-A COMPOUNDS

It would seem that the interpretation of N-A compounds would be a straightforward matter because they are each made up of a noun head which is modified by an adjective expressing some salient property of the referent of the noun. The data show that for a significant number of Akan N-A compounds, this might be the case. However, as shown in section 1, it is generally accepted that in such compounds the interpretation is usually not as straightforward as it might appear at first blush (cf. Mondini et al. 2002; Bauer 2009; Spencer 2011; Gagne & Spalding 2015; Schlücker 2016).

Indeed, the relative difficulty of interpreting N-A compounds, compared to phrases, is argued to be a criterion for distinguishing between N-A compounds and analogous N-A phrases (Appah 2013b). It is argued that adjectival modification in N-A compounds is such that the adjectives do not quite retain the core adjectival properties they have in isolation and in analogous phrases. That is, adjectives in phrases, are usually ascriptive in that they refer to actual properties of the nouns they modify, properties that are “valid for the entity instantiated by the noun” (Ferris 1993: 24). Adjectives in compounds, however, tend to function merely as classifiers (Bauer 2009; Spencer 2011). This might probably be due to the fact that nouns in compounds tend to be non-referential. Hence, the meanings of N-A compounds, unlike N-A phrases, are relatively non-transparent.

As first suggested by Marfo (2004), we may distinguish two types of Akan N-A compounds based on their relative transparency. They are the transparent type and the lexicalized type. The transparent compounds are usually hyponyms of their nominal head constituents and the adjective constituents express actual properties of the referent of the nouns (cf. Ferris 1993). Thus, the meaning of the whole may be worked out fully from the meanings of the parts, as shown by the compounds in (12). That is, *nàm-kèsé* ‘big fish’ (12a) is a type of ‘fish’ that is ‘big’, and that is all there is to it because the constituents retain their core semantics. Such a compound can be contrasted with another compound that expresses a contrary view to the de-

275

Following the observation that Akan N-A compounds are left-headed (Appah 2013b; Christaller 1875), I assume that the transparent N-A compounds instantiate the constructional schema in (13) which is the schema for left-headed compounds in Akan (Appah 2015). The schema shows that the whole compound is a subtype of the left-hand nominal constituent, so the relationship between the schema and the compound *nàm̀k̀è̀sè̀* ‘big fish’ may be represented as (14).

- $$(13) \quad \langle [[N]_i [A]_j]_{Nk} \leftrightarrow [SEM_i \text{ which is/has PROPERTY}_j]_k \rangle$$

- $$(14) \quad \langle [[N]_i [A]_j]_{Nk} \leftrightarrow [SEM_i \text{ which has PROPERTY}_j]_k \rangle$$

[[nà̀m-]_{Ni} [kèsé]_{Ai}]_{Nk} ‘big fish’

As noted above, the literature shows that compared to the corresponding N-A phrases, N-A compounds tend to be non-compositional. This is illustrated by the class we call lexicalized compounds. See (15).

(15)	COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a.	<i>ǎfòwà-sín</i>	<i>ǎfòwá-sín</i>	sword-fraction	‘penknife’
b.	<i>ǎdwènè-háré</i>	<i>ǎdwéné-háré</i>	mind-fast/light	‘perceptiveness’
c.	<i>nhwìròmà-tsén</i>	<i>nhwìrómá-tsén</i>	whistle-straight	‘sweet whistles’
d.	<i>ńkòtò-pá</i>	<i>ń-kòtò-pá</i>	PL-crab-good	‘type of crab’
e.	<i>dùà-sín</i>	<i>dùá-sín</i>	tree-fraction	‘stump’
f.	<i>bá’dwá ké’séé</i>	<i>bádwa kèséé</i>	assembly-big	‘General Assembly’ (UN)
g.	<i>ǎkwàn-tsén</i>	<i>ǎkwán-tsén</i>	way-straight	‘highway/road’
h.	<i>ǎkwán-sín</i>	<i>ǎkwán-sín</i>	way-fraction	‘mile/kilometre’
i.	<i>òbáá-búnú</i>	<i>ò-báá-búnú</i>	SG-woman-unripe	‘virgin’
j.	<i>mán-sín</i>	<i>mán-sín</i>	nation-fraction/half	‘a district in a political system’

These lexicalized N-A compounds are not totally non-transparent. They may also be hyponyms of their left-hand constituents. For example, *ɲkòtò-pá* (15d) is a type of *kótó* ‘crab’ and *bá’dwá kě’séé* ‘general assembly’ (15f) is a kind of *bá’dwá* ‘Assembly’. However, their meanings cannot be fully deduced from the meanings of their constituents. This is not too strange for compounds, because it is acknowledged that compositionality is usually a challenge for compounds (Libben 2014; Gagne & Spalding 2015).

One reason such compounds are not totally transparent is that some of the adjectives do not retain their core semantics, as noted above. For example, the adjective *pá* ‘good’ in (15d) cannot be interpreted literally because *ńkàtò-pá* ‘a type of crab’ [lit. good crab], does not contrast with *ńkàtò-bón* ‘bad crab’, as a literal reckoning of the meaning of the former would suggest. It is simply the name of a particular type of crab. Thus, we can say, following Spencer (2011) that the meaning of GOOD is not in the compound whose literal meaning is ‘good crab’. Rather, the adjectives *pá* ‘good’ has only a classifying function.¹⁰

A second reason why such compounds are not totally transparent, obviously related to the first one, is that sometimes there are meaning components that do not come from the constituents. For example, the compounds that have the adjective *sín* ‘fraction’ (16) refer literally to portions of the entities named by the noun constituents, but the idiomatic meanings are somewhat different. For instance, it is not just any portion of a knife (16a) or even any small knife that may pass for a penknife, just as we do not cut just any portion of a road and call it *àkwán-sín* ‘mile/kilometre’. The relevant portion must meet a certain measure, which is not expressly coded in the constituents of the compound.

(16)	COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a.	<i>àfòwà-sín</i>	<i>àfòwá-sín</i>	sword-fraction	‘penknife’
b.	<i>dùà-sín</i>	<i>dùá-sín</i>	tree-fraction	‘stump’
c.	<i>àkwán-sín</i>	<i>àkwán-sín</i>	way-fraction	‘mile/kilometre’
d.	<i>mán-sín</i>	<i>mán-sín</i>	nation-fraction/half	‘a district in a political system’

Thus, for these compounds, the meaning of the head noun (e.g. *dùá* ‘tree’) and that of the modifying adjective (e.g. *sín* ‘fraction’) are in the compound. However, to complete the meaning of the compound, some

¹⁰ There are noun-noun compounds that behave in the same way as the lexicalized N-A compounds (see examples below). For example, there is no reason why the combination *tèkyèrè-má* ‘tongue’ and *níní* ‘male’ (1a) should mean *sharp tongue*. In a phrase, the combination can only mean a *male tongue*, which will be meaningless since the human tongue is not gendered. So here too we can suggest that the meaning of *níní* ‘male’ is actually not in the compound.

COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a. <i>òwá-níní</i>	<i>òwá-níní</i>	snail-male	‘a large snail’
b. <i>tèkyèrè-má-níní</i>	<i>tèkyèrè-má-níní</i>	tongue-male	‘a sharp tongued’
c. <i>àkókó-níní</i>	<i>à-kókó-níní</i>	SG-fowl-male	‘cockerel/rooster’
d. <i>nàntwì-níní</i>	<i>nàntwì-níní</i>	cow-male	‘bull’

meaning component has to be supplied from the encyclopaedic knowledge of the item that the competent speaker possesses. This is consistent with the observation that “the meaning of a complex word, although based on the constituents, often contain information that is not directly inherited from the meanings of the constituents” (Gagne & Spalding 2015: 10).¹¹

A third reason why the so-called lexicalized compounds are not totally transparent is that some compounds have to be interpreted, on occasion, by means of some figure of speech like metaphor or metonymy. For example, the link between *ɔ́báá-bínú* (17) and its idiomatic meaning ‘virgin’ is indirect. The meaning is arrived at through the metaphorical extension of UN-RIPENESS to VIRGINITY.

(17)	COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
	<i>ɔ́báá-bínú</i>	<i>ɔ́-báá-bínú</i>	SG-woman- unripe	‘virgin’

Definitely, someone can be a virgin at age 45 years, but it would be inappropriate, in my opinion, to think that such a person is unripe. That is why this compound cannot be interpreted literally.

Given the foregoing, the question that comes up naturally is: how do we account for the properties of the lexicalized N-A compounds? Appah (2015) has suggested that one way of accounting for the properties of complex forms in which a meaning component does not come from its constituents, is to treat the extra-compositional meaning component as a semantic operator over the meaning of the whole construction or over the meaning of the constituent that it relates to. This approach works for situations where a number of constructions share the non-compositional semantic feature in question. We can illustrate this with the Akan compounds that contain *níní*, including *nàntwì-níní* ‘bull’ and *àkókóníní* ‘cockerel/rooster’ (footnote 11) for which the meaning [+ADULT] is not formally anchored in the compound. Here, we posit a constructional idiom, a schema which has one of its slots pre-specified or filled (Jackendoff 2002; Booij 2010b), like the one in (18), where the form *níní* already occurs in the schema. To form a compound, a

¹¹ Again, there are some left-headed noun-noun compounds that behave like this. For instance, whereas the referents of compounds containing the modifier *níní/nyíí* in the examples below are definitely male and hyponyms of their head constituents, there is usually an additional meaning component – [+ADULT] – that is not overtly coded in the constituents. For instance, *àkókóníní* ‘cockerel/rooster’ is not just any male fowl, but an adult male fowl.

COMPOUND	CONSTITUENTS	GLOSS	TRANSLATION
a. <i>ɔ́wà-níní</i>	<i>ɔ́wà-níní</i>	snail-male	a large snail
b. <i>nàntwì-níní</i>	<i>nàntwì-níní</i>	cow-male	bull
c. <i>àkókó-níní</i>	<i>àkókó-níní</i>	fowl-male	cock/rooster

nominal that is either the generic or the feminine name substitutes for *x*, as shown in (19).

$$(18) \quad < [[x]_i [níní]_j]_{Nk} \leftrightarrow [Adult_j \text{ which is } SEM_i]_k >$$

$$(19) \quad < [[x]_i [níní]_j]_{Nk} \leftrightarrow [Adult_j \text{ which is } SEM_i]_k >$$

$$\begin{array}{c} | \\ [[nàntwì]Ni [níní]Aj]Nk \text{ 'bull'} \end{array}$$

Clearly, the suggestion by Appah (2015) works for the compounds that contain *níní* because there is a clear pattern/schema emerging from the instantiating noun-noun compounds. The case of the lexicalized N-A compounds is somewhat different. Each one seems to be rather idiosyncratic in its semantic makeup and not schema-generated and the additional meaning is different for each N-A compound. Thus, for each one, the form has to be paired directly with the corresponding meaning, as in the compound *ɔ́báá-bínú* ‘virgin’, whose metaphorical interpretation is an idiosyncratic property.

In this section, I have dealt with the overall interpretation of Akan N-A compounds, introducing semantically transparent and lexicalized subtypes, as first broached in Marfo (2004). I have shown that the interpretation of the transparent type is quite straightforward. However, the same cannot be said about the lexicalized type for a number of reasons, principally because the adjectival constituents may not retain their core meanings, or there may be some additional meaning components that are not in the constituents, or the compounds may have to be interpreted by means of some figure of speech. Thus, to fully account for the compositional and non-compositional properties of Akan N-A compounds, we need to be able to distinguish between structures that are productive and schema-generated and those whose meanings are no more than individual lexicalised idiosyncrasies.

The foregoing observations about the adjective constituent in the N-A compound are consistent with the observed behaviour of adjectives in compounds cross-linguistically (cf. Mondini et al. 2002; Bauer 2009; Spencer 2011; Gagne & Spalding 2015; Schlücker 2016). We see that even what we call transparent compounds may not be wholly transparent. For example, *àdwè̀m-pá* ‘good intentions’ which we classify as transparent is not wholly so because the mind is more than just intentions. Thus, the nature of adjectival modification (and by reasonable extension, nominal modification) in compounds portrays the compounds as serving to identify culturally institutionalized entities/concept in a way that the corresponding phrases do not, unless they are lexicalized.

6. CONCLUSIONS

In this paper, I have discussed N-A compounds, showing that they are different from phrases and that they have properties that do not emanate from either constituent. I have discussed the properties of the individual constituents, showing that in terms of form, neither constituent is a compound, although the noun constituents can be derived complex words. The adjective constituents are invariably simplex. In terms of semantics, I have shown that both the noun and the adjective belong to varied semantic classes, with no restriction, in principle, on the semantic classes that may occur in the compound.

Regarding the overall interpretation of the compounds, I have shown that we can posit two subclasses of N-A compounds – transparent and lexicalized subtypes. The transparent subtype is fairly easy to interpret because they tend to be largely compositional, with the adjective constituent expressing actual properties of the head. The lexicalized ones are not so easy to interpret because, even where they are hyponyms of their head constituents, there is usually something unusual about the meaning contribution of the modifying constituents or there will be a meaning component that is external to the whole compound. Thus, it is suggested that the adjectives in such compounds have only classifying functions.

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