Closed adjective classes and primary adjectives in African Languages

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INTRODUCTION

The existence of closed adjective classes (henceforth CAC) has long been recognized for African languages. Although I probably haven't found the earliest mention of this property[1], Welmers' statement in *African Language Structures* is often quoted:

> "It is important to note, however, that in almost all Niger-Congo languages which have a class of adjectives, the class is rather small (...)." (Welmers 1973:250).

Maurice Houis provides further precision:

> "Il y a lieu de noter que de nombreuses langues possèdent des lexèmes adjectivaux. Leur usage en discours est courant, toutefois l'inventaire est toujours limité (autour de 30 à 40 unités)." (Houis 1977:35).

These two statements are not further developped by their respective authors. They are both quite approximative: Welmers only deals with – "almost all" – Niger-Congo languages; Houis gives three properties of adjective classes, probably only on the basis of his knowledge of Gur and Mande languages. It will be illustrated below that at least two of these properties are not at all systematic: there are African languages with an open adjective class (Mbum, Tikar, Tigrigna), and among those where the class is closed, the number of items ranges from 2 to more than 100 (2 for Kemantney or Kele, 101 for Dagbani[2]).

Subsequent mentions of CAC are found in Dixon (1977 revised 1982, 1999, 2004), and although he seldom refers to African languages, he has been repeatedly cited since. Yet there has been no attempt to provide a general overview of the phenomenon, and the present paper aims at filling this gap.

In this study, I will concentrate on those languages where the adjective class has less than 30 members or, if the adjective class is open, on the subset of adjectives which can be said to be 'primary', if such a subset exists[3]. This limit of 30 may be regarded as arbitrary, and is mostly due to practical reasons. When a language has more than 30 adjectives, it is likely that the author of the description has not listed all of them. Such languages are not rare, though: I could cite Mulwi and Bole for the Chadic branch of Afro-Asiatic (respectively 35 and 36 adjectives[4]), Dagara (~50 adj., Delplanque 1997) and Dagbani (101 adj., Olawski 2004) for the Gur branch of Niger-Congo, Dii for the Adamawa branch of the same phylum (56 adj., Bohnhoff 1991), Nyimang (30~40 adj., C. Rilly pers. com.) for Nilo-Saharan.

How to identify an adjective class?

There is no universally adopted definition of adjectives. The one given by Dixon (2004) mixes grammatical as well as semantic criteria, but in actual descriptions of languages this kind of method is only very reluctantly used by modern scholars. Usually, they prefer a merely morphosyntactic one. Since the data used for this study were taken mostly from published material, what will be called an 'adjective class' in what follows is almost always (if not always) defined on morphosyntactic criteria.

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[1] Givón (1969) is often cited, but I couldn't have access to it.
[2] A list of all the languages surveyed for this study and the corresponding references is given in Appendix 1, p. 15. A map showing the location of these languages is given in Appendix 2 p. 16.
[3] The terms 'adjective' and 'primary adjective' are defined below.
[4] References: Tourneux (pers. com.) for Mulwi; Gimba & Schuh (forthcoming) for Bole.

However, the actual criteria differ greatly from one author to another. What was looked for in this study was how languages isolate a small set of words, and what these words are. It is nevertheless useful to give a brief sample of the criteria used by some of the authors referred to in this study:

– Kom [Niger-Congo, Bantoid]

> "Possibly true adjectives include (...) words that never function as a verb (...). These words also do not occur with the noun class agreement suffix when used to modify head nouns of class 1, 2, 3, 6a and 9." (Schultz 1997:19).

– Gola [Niger-Congo, Atlantic]

> "Wirkliche Eigenschaftwörter, d.h. solche, die nicht als Zeitwörter behandelt werden können, werden mit dem Subjekt durch die Kopula *ya* 'ist' verbunden (...). Die Scheidung zwischen wirklichen Ew und solchen, die zugleich Zw sein können, ist nicht streng." (Westermann 1921:38).

> "A small group of words are distinct in predicative and attributive use." (Fachner 1990:30).

– Kare [Niger-Congo, Adamawa]

> "Ce que nous appelons noms qualificatifs sont des noms à valeur adjectivale qui servent à exprimer une qualité ou une caractéristique du nominal. Ils appartiennent à un inventaire lexical limité. (...)
> - ils peuvent assumer la fonction sujet dans un énoncé (...)
> - ils constituent le centre du syntagme nominal (...)
> - ils sont invariables (...)
> - dans une relation de détermination, ils sont toujours déterminants." (Lim 1997:152).

– !Xũ [Khoi-San]

> "Il existe en !xũ une douzaine d'adjectifs qui suivent le nom sans être reliés à lui par la copule de qualification /a/. Ce sont en partie des verbes adjectifs." (Köhler 1981).

– Hausa [Chadic]

> "Adjectives in Hausa are defined *syntactically* by their use as nominal modifiers or predicators and semantically by their meaning. Morphologically simple adjectives are generally indistinguishable from nouns (...).

> Adjectives can nevertheless be distinguished from nouns. First, there are some derivations (...) whose sole function is to create adjectives, not nouns. (...) Functionally, adjectives serve as noun modifiers rather than head words. (...) Moreover, gender and number in adjectives are agreement features determined by the category of the head noun (...).

> The so-called simple adjective class consists of morphologically nonderived words." (Newman 2000:22-23).

– Chichewa [Niger-Congo, Bantu]

> "There are a few elements which may be regarded as specifically adjectival, since they are distinct forms – not mechanically determined – that are employed in the qualificative construction only." (Watkins 1937:107).

– Basaa [Niger-Congo, Bantu]

> "(...) adjectives are characterized by nominal morphology in Basaá and will be referred to as 'adjectival nouns'. As such, they themselves have inherent gender and belong to one of six noun class pairings. (...) Class 1/2 adjectival nouns (...) may also follow the noun (...). These postposed forms can be identified as 'adjectives' even though almost all of them are either derived from or related to adjectival nouns in class 1/2." (Hyman 2003:273-4).

As one can see, adjectives are sometimes a subclass of verbs (Gola, !Xũ), but more often a subclass of nouns (Hausa, Basaa, most Bantu languages). Sometimes they are defined on morphological grounds (Basaa), sometimes on syntactical ones (Hausa, !Xũ). In noun class

languages, adjectives are often defined by their "(potential) occurrence in all noun classes" (Breedveld 1995:462). Generally, in languages where there is a head-modifier agreement, adjectives are often defined as lexical elements whose gender/class feature is not part of the lexical information.

Apparently, there is no relationship between the content of an adjective class and the criteria used to characterise it. A good example is given by a comparison between Bafia (NC, Bantu) and Krahn/Wobé (NC, Kru), two languages of the same phylum but very distant from each other in most respects. These two languages have exactly the same small set of adjectives:

	'black'	'white'	'red'
Bafia	**-fín**	**-púp**	**-ɓàŋ**
Krahn/Wobé[5]	**jle**[3]	**plu**[4]	**saEN**[44]

Table 1: adjective classes of Bafia and Krahn

Whereas in Bafia adjectives can have a predicative use (Guarisma 1997), in Krahn it is precisely the impossibility of being used predicatively that distinguishes adjectives both from nouns and verbs (Bing 1991:286).

A lot of languages can derive adjectives, mostly from verbs, but also from nouns and even from adjectives. In such cases, the adjective class is virtually open. Still, the class may include a few underived elements[6]. The underived adjectives are sometimes called 'true adjectives' in the literature. I call them 'primary adjectives', although this expression is not restricted to them, as will be seen below.

How to identify primary adjectives?

For many languages of the sample, the criteria used to identify an adjective class define a class with a limited number of members. In this case, I consider that these are primary adjectives. In other cases, primary adjectives are a subclass of adjectives, selected after more restrictive criteria than those used to establish the adjective class. Statistically, one of the most frequent of these criteria is without any doubt that of non-derivation (see Hausa above), but there are some exceptions: in Basaa for instance, primary adjectives are the only ones that can follow the noun, and in such a case they agree in class with the noun they modify, whereas 'adjectival nouns' precede the noun and bear their own class prefix (Hyman *op. cit.*). Even phonological features can be used: in Fulfulde, 'basic adjectives' are underived and accept only one type of consonant mutation grade, different from those used with derived adjectives. (Breedveld *op.cit.*). For a few languages, primary adjectives constitute a subset of an otherwise open class, like in Fulfulde, or even of a bigger but still closed class, as in Basaa, where the 7 'adjectives' are a subset of a class of 77 'adjectival nouns', and Samba Leko (7 underived adjectives *vs* 74 derived from verbs[7]). Those cases where a closed adjective class is further divided into subclasses are of different types, and the decision to consider one of the subsets as the 'primary' one may sometimes seem arbitrary. It does not depend on the number of elements in the subset: in Dagbani, there are 101 adjectives, divided into two subsets of 69 and 32 elements, and it is the biggest subset which is called 'primary' (Olawsky 2004). In Basaa (NC, Bantu A), the 7 primary adjectives are different from the others in that they may follow the noun, which is a classical feature for adjectives in Bantu.

If the adjective class can be considered as a *marked class*, in opposition to those of nouns and verbs (cf. Beck 1998), then the primary adjectives can be seen as *marked adjectives*, at least in the languages where they constitute a subclass of adjectives. Thus, the question that arises is: what exactly do languages tend to emphasize by isolating a small class of words?

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[5] Bing (1991). The numbers following the words indicate tone, 4 being the lowest.
[6] Actually, there seem to be very few languages where all the adjectives are derived ones. I know about Mey (Konyagi), an Atlantic language (Sachot 1996).
[7] Fabre (2003:83).

THE DATA

I have collected small sets of adjectives in 72 languages from all parts of Africa. These languages belong to the four language phyla of the continent. The choice of the sample depended mostly on the quality of the available data, and does not aim at scientific representativeness. It's worth noting, however, that the property of having a small class of adjectives is not restricted to Niger-Congo: in the sample, 7 languages are Nilo-Saharan, 4 are Afroasiatic and 2 are Khoi-San[8].

There have been several difficulties in gathering the data. A number of descriptions mention the fact that adjectives constitute a closed class. Some of them give a short list without precision about its completeness; others don't even give a list. Many simply don't say anything about the way they define the adjective category. When more than one description is available for a given language, it is not rare that the number and the values of the adjectival meanings contradict with each other. This is the case for Igbo, which has been cited dozens of times (after Dixon 1977) as an emblem of African languages with CAC. In the original source used by Dixon, i.e. Welmers & Welmers (1969), there are eight 'true adjectives', divided regularly into four pairs of antonyms: 'small'/'big', 'good'/'bad', 'new'/'old', 'black'/'white'. This has lead to the idea that the existence of CAC tends to imply that the meanings involved constitute a regular subsystem. However, in another and more recent source (Maduka-Durunze 1990), Igbo has only five adjectives: 'good', 'bad', 'white', 'black' and 'big', the latter being "suspect", according to the author. 'New' and 'old' have disappeared, and the internal structure of the CAC is not regular anymore because 'small' is now missing. The same kind of discrepancy stands for Ewe, for which two different sets are given. Pasch (1995) lists 7 adjectives: 'big', 'small', 'bad', 'white', 'red', 'young' and 'long', but Ameka (unpub.) does not include the last two. Since Igbo and Ewe are among the best described languages of Africa, I have included both sets for each language in my sample, considering them *de facto* as data from different languages. The bias introduced in the statistical results is small as compared with the number of languages in the sample. In another case, however, I couldn't make a decision: in Venda, there are 20 adjectives according to Dixon, (refering to Doke 1954, and referred to in Beck 2001), but 39 in Murphy's lexical database (1997). Even if we remove a few items from Murphy's list, such as numerals (see below) or the interrogative 'how many ?', 34 adjectives remain, thus exceeding the limit of 30 adjectives adopted for this study. As none of the sources for Venda mention any criteria for establishing the word-class of adjectives, no conclusion could be drawn, and Venda was left out of the sample.

Marginal sets: numerals, interrogatives, deictics

In language descriptions, cardinal numbers are generally treated separately from adjectives. This is sometimes justified, but in other cases, at least some of the cardinal numerals show exactly the same morphological and syntactical features as the adjectives. Small numbers are in general more likely to behave like adjectives. There is probably no universal limit, but for African languages it is not uncommon for numbers from one to five to be treated like adjectives. Yet numbers are not included in this study, due to a great discrepancy in the available sources. The same kind of reason lead me to exclude elements such as interrogatives or deictics, although they sometimes would have been entitled to be included. But I retained the words meaning 'all' or 'other', whose treatment in grammars is more consistent.

RESULTS

The data from the 72 languages were included in a large table: rows represent the languages, and each meaning encountered was included in a new column. Then, the cells were filled with the corresponding number of adjectives. This method allowed to calculate automatically the number of adjectives per language as well as the number of adjectives for each meaning. It soon appeared necessary to operate some groupings within the columns, i. e. the meanings. It became clear that I was not dealing with meanings, but rather with notions. But let me explain this:

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[8] Henceforth NC, NS, AA and KS respectively.

All meanings are virtually polysemous, even if they are rendered in English or in French with a single word. For example, 'red' can also have the meaning 'bright' in some languages. Furthermore, there is a potential overlap between two or more notions: 'old' and 'big' can be expressed by the same word in a given language, as can 'new' and 'young', or 'small' and 'young'. In addition, a language may have more than one primary adjective to express what is rendered here as a single notion. For example, Gula Zura only has the 5 following adjectives: 'petit', 'grand', 'petit~minuscule', 'grand~gros~aîné', 'grand~long'[9]. Another example, and an extreme one, is Gbaya, where in a 20-term list there are no less than 5 adjectives meaning either 'small' or 'very small', plus one meaning 'short':

ɓéɓɛ́	petit ('small')
ɓɔ̀sɛ́kɛ́	petit
gɛ̀k	petit
bégèɗɛ̀k	tout petit ('very small')
sór	tout petit
dɔ̌	court ('short')

Table 2: adjectives meaning 'small', 'short' in Gbaya

For Gbaya speakers, the three words rendered here as 'small' have different uses, as have the words meaning 'very small'. But for my purpose, there would be no advantage in considering all these meanings as different notions. That would make six columns, and I would be rather embarrassed with a language with only one adjective meaning 'small', not knowing in which of the six columns to put it. So in this case I retained only the notion 'small', and for Gbaya I put a '5' in the corresponding cell of the table.

The case of 'short' is a bit different. Not only are there a lot of languages where 'short' and 'small' both exist as adjectives (whereas 'small' and 'very small' scarcely co-occur), but there are also a few languages where only 'short' is an adjective. This is why 'short' had to be retained as a notion, independantly of 'small'. Another case, yet more difficult, was that of the meanings expressed in French by 'grand' and 'gros', roughly 'big, large, tall, high' and 'big, thick, fat'. In French these meanings are really thought of as different notions, so my first decision was to treat them separately. But it soon turned out that if a language had an adjective translated as 'grand', then it didn't have an adjective translated as 'gros'[10]. This fact was of course more readily visible in the French sources, which concern 46 languages of the sample. But even in the English (or German) sources where there were two or more adjectives meaning 'big', the difference, when available, was never similar to that between 'grand' and 'gros' in French. So I grouped together these two columns, and the resulting notion is 'gros, grand, important' in French and 'big, important' in English. The meaning 'important' has been added because it is very often associated with 'big' in the sources, and also because no language seems to have a specific adjective for 'important' which would be distinct from 'big'. One *a posteriori* justification of this grouping is that the number of adjectives in the 'big' column now equals the number of adjectives in the 'small' column. This is conform to Dixon's views, in which 'big' and 'small' are the two most frequent notions expressed by adjectives in the world languages.

There are several other sets of meanings for which it is difficult to decide whether they should be left as distinct notions or grouped together. One good example is that of the meanings 'new', 'young' and 'small'. In Bijogo, the word for 'small' also means 'young', i.e. there is no other word for 'young', while in Zulu the meanings 'new' and 'young' are expressed by one word[11]. In such cases, the decision to put the word in one column or the other relies on statistics: 'small' is more frequent than 'young' in general, so the Bijogo word falls in the 'small' column; 'new' is more frequent than

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[9] i.e. 'small', 'big', 'small~teeny', 'large~big~elder', 'big~tall~long'.
[10] The case of Gula Zura, mentionned above, and that of Gula Mere, another Gula variety, are the only exceptions.
[11] There isn't any language in the sample where 'small' and 'new' would be expressed by the same word.

'young' in general, so the Zulu word falls in the 'new' column. This kind of inavoidable bias leads to under-representation of some of the notions, in particular the less frequent ones.

Having commented upon the conditions of the study and the possible biases, we may now turn to the results, which I will present and comment following two main directions: statistics and semantics.

Statistical facts 1: languages

All the 72 languages in the sample have less than 30 primary adjectives, since it was the requirement to include them. With a total amount of 637 adjectives, the average is just under 9 adjectives per language. Only the 12 following languages have more than 15:

Ncam (NC, Gur)	27
Hausa (AA, Chadic)	26
Shingazidja (NC, Bantu)	26
Zaar (AA, Chadic)	25
Kinyamwezi (NC, Bantu)	24
Gbaya (NC, Ubangi)	20
Sango (NC, Ubangi)	20
Lega-Beya (NC, Bantu)	19
Doko (NC, Bantu)	18
Kare (NC, Adamawa)	18
Orig (NC, Kordofanian)	18
Bambara (NC, Mande)	17

There seems to be no particular regularity concerning the number of adjectives with respect to the genetic affiliation. For example, in the Gur branch of Niger-Congo, Kulango and Nateni[12] have 5 adjectives whereas Ncam has 27. In Bantu, where the presence of CACs is probably the most frequent, their number varies from 2 (Kele, zone B) to 26 adjectives (Shingazidja, zone G). In addition, it must be emphasized that languages that are very closely related may show considerable variation concerning adjective classes: in Bantu zone B, languages from subgroup B10 (Myene, Mpongwe) probably have an open class of adjectives, whereas most languages from subgroups B20 and B30 have from 2 to 6 and some B30 languages have no adjectives at all (Jacquot 1983). In the above list, the 12 languages represent 7 genetic groupings, the most frequent one being Bantu, which is also, and by far, the most represented one in the sample (30 languages out of 72[13]).

The map on appendix 2 p. 16 shows the locations of the languages of the sample. Each language is represented by a circle whose size depends on the number of adjectives in the language and whose color depends on the phylum it belongs to. It is clear from this map that the number of adjectives in a given language is not related to areal features. This number seems to depend mainly on language-internal factors. If we consider the case of Bantu zone B, where there are a lot of differences in a small and linguistically homogenous area, the number of primary adjectives is subject to quick change.

Statistical facts 2: notions

The 637 adjectives of the corpus cover some 118 notions, but these notions are very far from being equally represented. Let's begin with the most frequent ones. As can be expected since Dixon's works (1977/1982, 1999, 2004), there are some strong regularities in their distribution. Table 3 below shows the adjectives that appear more than 15 times with their number of occurrences (n) and the percentage of languages in which they occur[14]. The last column gives Dixon's semantic type:

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[12] Nateni has 2 primary underived adjectives, but 3 additional elements (either ideophonic or derived) are also considered here because they display the same morphosyntactic features (Nedellec pers. com.).

[13] See list on Appendix 1 p. 15.

[14] The percentages show a different order than that of absolute numbers of items, because a language can have several adjectives grouped into one notion. In the table, one can see that the most popular notion in terms of absolute frequency is 'small', but it is 'big' when the proportion of languages where it occurs is considered.

n	%	English	French	ST
71	78%	small	petit	DIMENSION
68	82%	big, important	grand, gros, important	DIMENSION
39	54%	new	nouveau	AGE
35	40%	good, nice, beautiful	bon, beau	VALUE
30	42%	bad, evil, ugly	mauvais, laid	VALUE
25	26%	unripe, green, raw	non mûr, frais, vert, cru	PHYSICAL PROPERTY
24	32%	high, long, far, tall	haut, long, loin	DIMENSION
22	29%	white, light	blanc, clair	COLOUR
21	26%	black, dark	noir, foncé	COLOUR
20	24%	old	vieux	AGE
18	25%	short	court	DIMENSION
16	22%	red	rouge	COLOUR

Table 3: 12 Notions occurring more than 15 times

These notions are remarkably close to the core adjectival notions as established by Dixon:

> "Comparison of small adjective classes across the languages of the world reveals a remarkable similarity of semantic content. A lexeme 'big/large' appears in virtually every closed adjective class, followed **in order of popularity** by 'small', 'long', 'short', 'new', 'old', 'good', 'bad', 'black', 'white', 'red' and 'raw, green, unripe'." (Dixon 1999:7)[15]

From the twelve notions listed by Dixon, not a single one is missing in our list of Africa's most popular adjectives. The order of popularity is of course different[16], but the list is the same. And from the bibliography given at the end of the article quoted, it seems that African languages counted for nearly nothing in Dixon's statement.

Is it a true universal tendency? is there a bias? The perfect coincidence of the two lists, yet obtained in different manners and from different languages, is a bit puzzling. Would it be influenced by the fact that Dixon and I share the same Western culture? For example, I grouped 'big' and 'large', and also 'raw', 'green' and 'unripe', exactly as he did, and on the mere basis of linguistic evidence. For the moment, these questions are left unanswered.

The 12 above notions, i.e. 10% of the notions, account for 62% of the occurrences. This shows how unevenly distributed the notions are. In particular, there are a lot of 'single notions', which deserve a special mention.

Single notions

Among the 118 different notions attested in the language sample, 52 (i.e. 44%) are attested only once. Let's call them Single Notions, hence SN. Nearly one half of the notions are unique: that seems contrary to Dixon's statement that "Comparison of small adjective classes across the languages of the world reveals a remarkable similarity of semantic content" (*Op. Cit.*). It could be objected that since we consider adjective classes of up to 30 elements, such large sets are likely to include rare notions. Would it be the same for language with, say, less than 10 adjectives? The answer is 'yes'. In the sample, there are 49 languages with less than 10 adjectives, and if we consider these languages alone, the adjectives divide into 45 notions, out of which 21 are single notions, i.e. 47%! That means that the proportion of SN does not depend on the size of the adjective class. In other words, a statement such as: "the smaller the adjective class, the closer to the semantic core the meanings of its members" is false. Yet there is another way to consider this distribution: the number of SN per language, i.e. 52/72, tells us that a language has an average of 0.72 single notion. Which means that generally speaking, a closed adjective class has less than one single notion, which seems to be very few. But, taken in a different way, this also means that in a language with a closed adjective class, this class has 72% chances of having a notion that other languages don't have. If we turn to langages with less than 10 adjectives, we find that these

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[15] Bold emphasis is mine.
[16] Dixon offers no explanation for his classification based on binary oppositions.

languages have now 40% chances of having an original notion. These measures show that, when smaller adjective classes are considered, the overall proportion of SN as compared to the number of notions doesn't change, but the chances for a language of having one decrease.

Semantic facts

As is now well known, the distribution of semantic values in closed adjective classes shows such a great regularity that it can be predicted. Especially, the most frequent notions seem to be extremely stable. Some possible objections to this have been made in the previous section; there are others: it has not been sufficiently emphasized that the closed adjective classes surveyed for this study are in only very rare cases presented as complete sets. The general statement that can be read about the content of closed adjective classes is something like: "the adjective class in Xxx is very small, and includes...". A short list generally follows, but nothing is said about its possible completeness. It is not surprising, then, if the first adjectives to be listed should be the core adjectival notions. Sometimes, however, the list is presented as complete. Even in such cases, it cannot be regarded as 100% reliable. Let me recall for instance that in Igbo, the size of the adjective class (i.e. 8 elements divided in four pairs of antonyms) as given by Welmers (1973), and widely quoted ever since, is not accepted by Maduka-Durunze:

> "The class of Igbo adjectives is a limited one, with only five basic elements (...)." (Maduka-Durunze 1990:237).

Despite all the possible biases, it is clear that some notions are more frequent than others. Without any doubt, 'big' and 'small' are more represented than any other notion, being almost twice as frequent as the ones that follow, i.e. 'new' and 'good'. Table 3 above (p. 7) shows the twelve most popular notions, and won't be further commented here.

Adjectival systems

What I wish to emphasize here is the internal organisation of CACs. Given the fact that they are closed sets, a kind of structure can be expected, at least in some cases. This structure could be based on various features but since we're dealing with lexical material it can be expected that the main type of feature is semantic. The question here may be formulated as: are there any 'adjectival systems'?

One type of internal organisation is that of binary oppositions, i.e., a set divided into pairs of antonyms. The case of Igbo has been very famous since it was described by Welmers & Welmers (1969) and Welmers (1973). But there are other descriptions of Igbo that don't show such a regular pattern:

úkwú	large	**ńtà**	small
ọ́hụ́'rụ́	new	**ócyê**	old
ọ́má	good	**ọ́jọ́'ọ́**	bad
ọ́cá	light colored	**ójí'í**	dark colored

Table 4: Igbo adjectives following Welmers & Welmers (1969)

ọma	good, beautiful, handsome
ọjọ̄	bad, ugly
ọcha	white, bright
ojī̄	black, dark
ukwu	big, large

Table 5: Igbo adjectives following Maduka-Durunze (1990)

Actually, sets made only of strict pairs of antonyms (i.e. 'symmetric' sets) are not so common. Besides two languages whith only 'big' and 'small', namely Kele and Northern Ndasa, both Bantu B20, I can mention Jaad (NC, Atlantic) and Babole (NC, Bantu C), with 4 items each, and Seki (NC, Bantu B20) with 6 adjectives:

| **ukoto** | vieux | **uwam** | neuf |
| **kuntumaa** | grand | **udaare** | petit |

Table 6: Jaad adjectives (Meyer 2001)

| **-bé** | bad | **-lámù** | good |
| **-sɔ́ní** | small | **-ngàtà** | big |

Table 7: Babole adjectives (Leitch 2003)

-sikɛ	petit	**-nɛni**	gros, important
-sɛßɔ	long, grand	**-yußuma**	court
-mba	bon, beau	**-be**	mauvais, laid

Table 8: Seki adjectives (Jacquot 1983)

However, a fairly great number of small sets are but irregularly symmetric, the most frequent type being sets where just one element is missing (or is in excess). A good illustration of this is the set found in Küküa (NC, Bantu B70):

-bve	bon, beau, faste	**-bí**	mauvais, laid, néfaste
-là	haut, long	**-pfì**	petit en hauteur, court
-nínì	gros, grand	**-k'èérè**	petit (en grosseur)
-kúlú	ancien, d'avant	**-ɲàrìgí**	neuf, nouveau
-k'úùrù	aîné	**-bùì**	jeune
-bĩ	frais, vert, cru, nouveau		

Table 9: Küküa adjectives (Paulian 1997)

In Ewe, the set is composed of five items: 'big', 'small', 'white', 'red' and 'bad'. Ameka (unpublished) notes that

> "(...) there is a hole in the system with respect to VALUE. The language seems to be responding to this with a derived form *nyúí* 'good', an antonym of 'bad', taking on the features of the underived forms."

In these strict or even pseudo-symmetric sets, not only do the notions belong to the core semantic types, but these are the core notions themselves, each of these being in the 12-item list of table 2 (p. 7). In Joola Kasa (NC, Atlantic) the adjectives composing the 10-item set are not the core ones, but can nevertheless be divided in pairs of quasi-antonyms:

-laʔ	noir	**-ʔum**	beige
-mec	tacheté	**-pab**	tacheté de blanc
-hun ~ -hunduun	gris	**-ŋiis**	gris clair
-ɲiil	jeune	**-haan**	vieux
-hiin	petit	**-aamak**	gros, grand

Table 10: Joola Kasa adjectives (Sambou 1979)

Pairs of antonyms show a strong tendancy to occur in CACs, but this is by no way a requirement. The presence of a notion in a CAC does NOT imply the presence of the reverse notion. Moreover, the tendancy seems to be uneven: for example, every language where the notion 'wide' is attested also has the notion 'narrow'. But the reverse is not true: in two languages, 'narrow' occurs while 'wide' doesn't. Other antonyms may as well occur separately, and this concerns even popular notions such as 'big' and 'small'. There are a few notions whose antonyms are never attested in CACs: 'empty', and 'raw', which are frequent, 'sharp' and 'expensive', which are rare. Finally, two semantic domains are never referred to by primary adjectives: that of TEMPERATURE, and that of HUNGER and THIRST.

There are other kinds of internal structures. For example, Bafia (NC, Bantu A) and Krahn (NC, Kru) have, as sole adjectives, words denoting the three colours 'black', 'white' and 'red' (see Table 1 p. 3), which would incidentally be best translated as 'dark', 'light' and 'bright'. There is no other example of an adjective class being restricted to one and only semantic type. But that

does not mean that an adjective class cannot be otherwise semantically homogenous. In Yulu (NS, Central Sudanic), most of the 18 primary adjectives denote what can be described as an 'initial state':

cíik(ə́)	autre (différent, d'un autre type)	other
kíl(ə́)	autre (identique, du même type), à part	other
tòoɗ(ə̀)	bon, correct, droit, vrai, authentique	good, true
dǎc(ə̀)	compact, dur, collant et impropre à la culture (sol)	sterile (land)
còɔng(ə́) (-ə̄ ?)	de forme rectangulaire	rectangle shaped
mùul(ɔ́)	dépourvu de cornes (dont les cornes n'ont pas poussé)	without horns
ngbùkp(ə́) (-ə̄ ?)	dépourvu des conditions habituelles, normales (sans sauce, sans préparation, sans explication, sans anesthésie, etc.)	lacking usual conditions (without sauce, preparation, explanation...)
ngbɔ̀ɔl(ə́) (-ə̄ ?)	entier, complet, non séparé, non brisé (grain, graine)	whole, complete
wóor(ə́)	éveillé, vivant	awake, alive
bǎay(ə̀)	nouveau, neuf	new
dɔ̀ɲ(ə́) (-ə̄ ?)	nu	naked
fiif(ɔ́) (-ə̄ ?)	nu	naked
kpɔ̀ɲ(ə́) (-ə̄ ?)	nu	naked
ngbə̀lūul(ə̀)	plein, non évidé (calebasse)	not emptied
bǎc(ə́)	sans acidité, insipide	tasteless
tïïb(ə́) (-ə̄ ?)	vert, non sec (végétal), non mûr, frais, cru (ex. viande)	green, unripe, raw
cɔ̀h(ə́) (-ə̄ ?)	vide (estomac)	empty (stomach)
hɔ̄l(ə̀)	vide, ouvert, inoccupé, nu	empty, open, bare

Table 11: Yulu adjectives

Without being at all genetically related to Yulu, Bambara (NC, Mande) shows a similar semantic unity:

ncínin	petit, étroit	small, narrow
làkika	pur, authentique	pure, true
mùmɛ	complet, en entier	whole
bèlèbele	grand	big
kúra	neuf	new
kúlukutu	nu	naked
kénɛ	cru	raw
bèsɛ	propre	clean
jálan	sec	dry
gánsan	pur	pure
lánkolon	vide	empty
sèbɛ	sérieux	serious
gánan	célibataire	single, bachelor
gèren	non mûr	unripe
wálan	moyen	middle-sized
mánkan	moyen	middle-sized
mána	sauvage	wild

Table 12: Bambara adjectives

In Bambara however, the class is not as homogenous, since it contains 4 items from the semantic type DIMENSION, plus the notion 'serious', which I cannot include in the 'initial states'.

The meanings of adjectives in Langi (NC, Bantu F30) do not really denote 'initial states', but rather some states where something is missing: size, age, taste, width, color...:

-dwi	petit (uniquement pour les humains)
-tʃu	fade
-ɛrʊ	blanc
-fya	neuf
-safi	propre
-fɛrɛfɛrɛ	léger
-fiɲufiɲu	étroit

Table 13: Langi adjectives

Finally, some languages seem to favour a closed adjective class with items denoting various meanings around a kind of 'core notion'. In Yoruba (NC, Kwa), the five adjectives all have a meaning related to 'importance', either on the side of dimension or on the side of a kind of moral feature:

rere	gentil, bon
ńlá	grand, important
gidi	vrai, véritable
àtàtà	important, vrai, véritable
pàtàkì	vrai, important

Table 14: Yoruba adjectives

Conclusion

We have examined closed adjective classes in 72 African languages. Statistical facts reveal that although the most popular notions are the same as in all the other world languages, our sample shows a fairly high diversity.

Closed adjective classes, like any other closed word classes, often display an internal structure. But every language is, in a way, free to choose its own structure. In fact, there seems to be no relationship between the size or nature of a closed adjective class and the genetic affiliation or the geographical location of the language. Some examples of possible internal structures of CACs were given, all based on semantic features: pairs of antonyms, single semantic type *à la* Dixon, 'core notion' as in Yoruba or vague semantic unity as in Yulu. There is no doubt that further research will find some more of these unifying features, but what is shown here is enough to consider these sets as typical adjectival systems.

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Nateni: Brigitte Nedellec	Sango: Marcel Diki-Kidiri
Yulu: Pascal Boyeldieu	Zulu: Michel Lafon
Bambara: Holger Tröbs	Basaa: Larry M. Hyman

APPENDIX 1: The 72 languages surveyed for this study

NIGER-KORDOFAN (58)
  Adamawa (3)
    Kare (Lim 1997)
    Mundang (Elders 2000)
    Samba Leko (Fabre 2003)
  Atlantic (9)
    Bijogo (Segerer, pers. data)
    Gola (Fachner 1990)
    Jaad (Meyer 2001)
    Joola Banjal (Bassène 2006)
    Joola Kasa (Sambou 1979)
    Joola Kwaatay (Payne 1992)
    Kobiana (Doneux 1991)
    Noon (Soukka 2000)
    Fulfulde (Breedveld 1995)
  Benue-Congo, Bantu (30)
    Akoose [A15] (Hedinger 1980)
    Babole [C101] (Leitch 2003)
    Bafia [A50] (Guarisma 1997)
    Basaa [A43] (Hyman p.c.)
    Bila [D32] (Kutsch Lojenga 2003)
    Bushong [C83] (Vansina 1959)
    Doko [C31] (Twilingiyimana 1984)
    Gweno [E65] (Philippson & Nurse 2000)
    Kele [B20] (Jacquot 1983)
    Kete [L21] (Kamba-Muzenga 1980)
    Kinyamwezi [F22](Maganga & Schadeberg 1992)
    Kota [B20] (Jacquot 1983)
    Küküa [B70] (Paulian 1997)
    Laadi [H16] (Jacquot 1982)
    Langi [F30] (Dunham 2005)
    Lega-Beya [D25] (Botne 2003)
    Makaa [A83] (Heath 2003)
    Mbangwe [B20] (Jacquot 1983)
    Mituku [D13] (Stappers 1973)
    Ndasa (Northern) [B20] (Jacquot 1983)
    Ndasa (Southern) [B20] (Jacquot 1983)
    Nen [A44] (Mous 2003)
    Ngom (Northern) [B20] (Jacquot 1983)
    Ngom (Southern) [B20] (Jacquot 1983)
    Pinji [B30] (Jacquot 1983)
    Seki [B20] (Jacquot 1983)
    Shingazidja [G44] (Lafon 1997)
    Tsogo [B30] (Jacquot 1983)
    Wumbvu [B20] (Jacquot 1983)
    Zulu [S42] (Lafon p.c.)

  Benue-Congo, other (3)
    Degema (Kari 2004)
    Kom (Schultz 1997)
    Mankon (Leroy 1997)
  Gur (3)
    Ncam (Bassar) (Cox 1998)
    Kulango (Elders, p.c.)
    Nateni (Nedellec, p.c)
  Kordofanian (3)
    Koalib (Quint, p.c.)
    Orig (Schadeberg 1979)
    Otoro (Stevenson 1943)
  Kru (1)
    Krahn/Wobé (Bing 1991)
  Kwa (5)
    Ewe 1 (Ameka unpub.)
    Ewe 2 (Pasch 1995)
    Igbo 1 (Maduka-Durunze 1990)
    Igbo 2 (Welmers & Welmers 1969)
    Yoruba (Sachnine 1997)
  Mande (1)
    Bambara (Tröbs, p.c.)
  Ubangi (2)
    Gbaya (Roulon-Doko p.c.)
    Sango (Diki-Kidiri p.c.)
NILO-SAHARAN (6)
  Central Sudanic (6)
    Bongo (Nougayrol p.c.)
    Gula Koto (Nougayrol 1999)
    Gula Mere (Nougayrol 1999)
    Gula Sara (Nougayrol 1999)
    Gula Zura (Nougayrol 1999)
    Yulu (Boyeldieu, p.c.)
AFRO-ASIATIC (4)
  Chadic (3)
    Hausa (Newman 2000)
    Miya (Schuh 1998)
    Zaar (Caron 2005)
  Cushitic (1)
    Kemantney (Zelealem 2003)
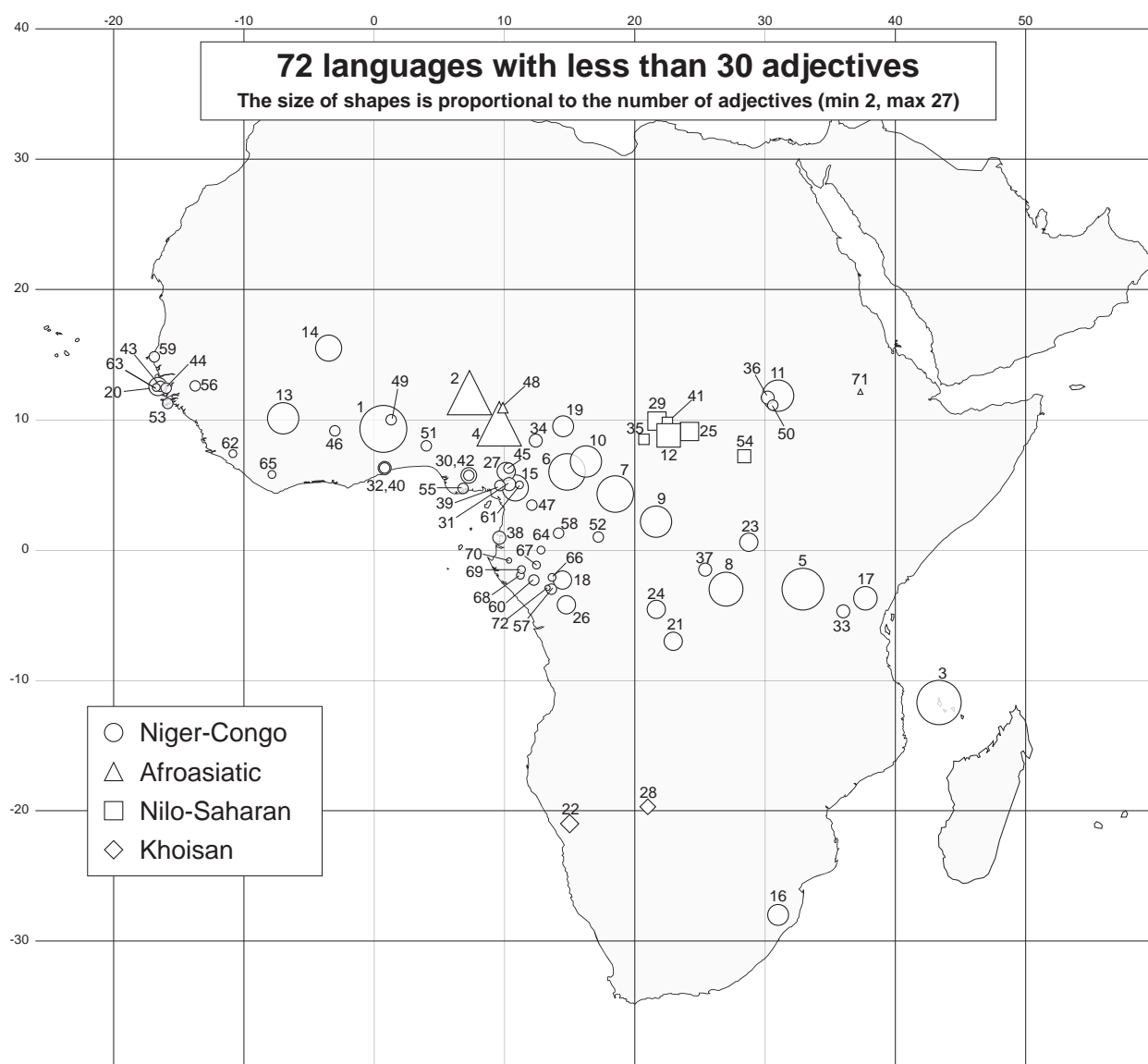**KHOI-SAN (2)**
  Central (1)
    Nama (Hagman 1977)
  Northern (1)
    !Xũ (Köhler 1981)

APPENDIX 2: Location of the languages

72 languages with less than 30 adjectives
The size of shapes is proportional to the number of adjectives (min 2, max 27)

Legend:
○ Niger-Congo
△ Afroasiatic
□ Nilo-Saharan
◇ Khoisan

1. Ncam (Bassar) [27]
2. Hausa [26]
3. Shingazidja [26]
4. Zaar [25]
5. Nyamwezi [24]
6. Gbaya-Kara-Bodoe [20]
7. Sango [20]
8. Lega-Beya [19]
9. Doko [18]
10. Kare [18]
11. Orig [18]
12. Yulu [18]
13. Bambara [17]
14. Fulfulde (Maasina) [15]
15. Tunen [14]
16. Zulu [11]
17. Gweno [12]
18. Kükua [11]

19. Mundang [11]
20. Joola Kasa [10]
21. Kete [10]
22. Nama [10]
23. Bila [9]
24. Bushoong [9]
25. Gula Sara [10]
26. Laadi [9]
27. Mankon [9]
28. !Xũ [8]
29. Gula Mere [9]
30. Igbo (*Welmers*) [8]
31. Basáa [7]
32. Ewe (*Pasch*) [7]
33. Rangi [7]
34. Samba Leko [7]
35. Gula Koto [5]
36. Koalib [6]

37. Mituku [6]
38. Seki [6]
39. Akoose [5]
40. Ewe (*Ameka*) [5]
41. Gula Zura [5]
42. Igbo (*Maduka-D.*) [5]
43. Joola Banjal [5]
44. Kobiana [5]
45. Kom [5]
46. Kulango [5]
47. Makaa [4]
48. Miya [5]
49. Nateni [5]
50. Otoro [5]
51. Yoruba [5]
52. Babole [4]
53. Bijogo [4]
54. Bongo [7]

55. Degema [4]
56. Jaad [4]
57. Ndasa (southern) [4]
58. Ngom (northern) [4]
59. Noon [4]
60. Wumbvu [4]
61. Bafia [3]
62. Gola [3]
63. Joola Kwaatay [3]
64. Kota [3]
65. Krahn/Wobé [3]
66. Mbangwe [3]
67. Ngom (southern) [3]
68. Pinji [3]
69. Tsogo [3]
70. Kele [2]
71. Kemantney [2]
72. Ndasa (northern) [2]