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NUMBER IN SOUTH-BAUCHI WEST LANGUAGES (CHADIC, NIGERIA)

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Abstract

South-Bauchi West (SBW) languages build a dialect continuum spoken in Northern Nigeria that has been classified as West-Chadic B. Their internal classification reveals a split between two subgroups: the northern subgroup (Geji, Polci) and the southern subgroup (Zeem, Dass, Saya). This genetic split is completed by a grammatical heterogeneity that surfaces in the morphological complexity of the Saya cluster, a subset of the Southern sub-group. The aim of this paper is twofold: (i) see if these differences are corroborated by the study of number; (ii) shed new lights on the genesis of SBW. To that effect, the first section presents an overview of SBW grammatical structure and genetic classification. The following two sections study number in Noun Phrases (noun plurals, modifiers), and in Verb Phrases (imperatives, pluractionals, and plural suffixes). The last section examines the relationship in SBW between number and related categories such as honorifics, associatives and singulatives. The conclusion introduces some nuances in this vision of a division between the northern and southern sub-groups, with the Dass cluster (e.g. Zodi) behaving like the Northern languages in that they share the same absence of nominal and adjectival plurals and pluractional derivation. The presence of those plurals in the other members of the southern sub-group (i.e. the Zeem and Saya clusters) seems to be an innovation departing from a situation where number is expressed only by the personal pronouns, the modifiers within the nominal system, and the imperative. Pluractionals, although they are widespread in many Chadic languages, seem to be an innovation of Zeem and Saya as well. These innovative features may have developed through the influence of plateau languages. The innovation has gone one step further in the Zaar language with the optional marking of number on noun modifiers. Finally, a marginal case of subject-verb plural agreement on the right periphery has appeared in four languages (Zaranda, Geji, Pelu and Diir), first in the 2nd plural, and then has spread to the 3rd plural in one of the languages (Pelu).

Abbreviations

1, 2, 3: 1st, 2nd, 3rd (Person); ANAPH: Anaphoric; AOR: Aorist; BEN: Benefactive; CAUS: Causative; CONT: Continuous; DEF: Definite; DIST: Distal; F: Feminine; FUT: Future; GL: Genitive Link; ICP: Intransitive Copy Pronoun; M: Masculine; NEG: Negation; NMLZ: Nominalizer; PERF: Perfect; PL: Plural; POS: Possessive; PRO: Pronoun; PROX: Proximal; REL: Relativizer; RES: Resultative; SBW: South-Bauchi West; SG: Singular; TAM: Tense-Aspect-Mood.

1. INTRODUCTION

When studying number in Chadic languages, one generally refers to Hausa, best known for its very complex plural morphology where one has often looked for remnants of the Semitic 'broken plurals'. Compared to Hausa, South Bauchi Chadic languages as a whole show a very different picture, with very few nouns having a plural form. In these languages, a noun can be used indifferently to refer to a concept, a class, a unit or several items. However, the Saya cluster of languages, e.g. Zakshi, Sigidi and Zaar, exhibit a difference in that they have developed a productive suffixed plural. This study of number in SBW languages, while offering new data and a new perspective on West Chadic languages, will give us the opportunity of checking the number system of those languages against their internal classification, thus shedding a new light on their genesis. The first section of the paper gives a quick overview of SBW languages. The following two sections study number in Noun Phrases (noun plurals, modifiers), and in Verb Phrases (imperatives, pluractionals, and plural suffixes). The fourth section examines the relationship in SBW between number and related categories such as honorifics, associatives and singulatives. In the conclusion, the main features of SBW number are reviewed in a diachronic perspective.

2. OVERVIEW OF SBW LANGUAGES

The 30 or so lects grouped into the South-Bauchi sub-group of Chadic languages constitute a language continuum that stretches over less than 100 kms in the south of Bauchi State (Nigeria), from the city of Bauchi to the south of the state (cf. map in Annex 1). The comparison of the basic vocabulary of South-Bauchi languages proves their genetic relationship, and provides the following internal classification (Shimizu 1978; cf. Annex 2): South-Bauchi languages are divided into two branches : South-Bauchi East, with 4 languages: Boghom, Kir, Tala and Guruntum ; and South-Bauchi West, with 11 languages (Geji, Zaranda, Dir, Polci, Chaari, Lushi, Baraza, Dott, Zakshi, Sigidi and Zaar). This paper deals with the South-Bauchi West branch (SBW).ⁱ Among SBW languages, only the Saya cluster, thanks to Sigidi and Zaar, is relatively less unknown (Schneeberg 1971, 1974; Caron 2001, 2005). Zaar itself is often used to characterise the whole group. However, various elements tend to set the Saya cluster (Zakshi, Sigidi¹ and Zaar) apart:

1. Contrary to the other SBW languages, which are either extinct (Zeem, Tulai, Lushi, Luri), severely endangered with less than 1 000 speakers (Bodu, Pelu, Zaranda, Chaari, Diir, Langas, etc.), or just surviving with less than 2 000 speakers (Geji, Zodi, Polci, etc.), Zaar has a relatively large number of speakers (around 150 000) and the language is widely used by the population, including younger speakers and the educated elite.
2. Sigidi and Zaar have a lavish and elaborate TAM system (6 aspects, 3 past and 1 future tenses, 3 moods, which can all combine) when compared to the other languages, such as e.g. Luri (a dialect of Polci) which has only 3 aspects (Caron 2004, 2005).
3. These facts have ethnographic and historical counterparts: the name *Baaraawaa* used by Shimizu (78) and Coper (89) to name the SBW group is not acknowledged by the Zaar and Sigidi people. If all the *Baaraawaa* agree to be closely related and all originate from the same area, viz. the Buli and Zaranda hills near Bauchi, the Zaars claim they came

¹ Historical and sociological reasons have separated the Sigidi and Zaar communities to the extent that they consider themselves as belonging to different 'tribes' and their idioms as constituting different languages. However, from a linguistic point of view, these should be considered as two dialects of the same language. Unless otherwise stated, what is said of Zaar in the text obtains as well for Sigidi.

from Bornu through Zaria and they settled in the hills South of Tafawa Balewa after some cohabitation with the Angas, Pyem and Jarawa. Some of these populations, both Chadic (Angas) and non-Chadic (Pyem, Jarawa) have been assimilated into the Zaar people, speaking the Zaar language, but are indentified, up till now, as clans.

For these various reasons, the Saya cluster (Zakshi, Sigidi, Zaar) must be set apart from other SBW languages and one must expect further differences in its grammatical properties. The study of number in SBW languages not only confirms this originality, but questions the genetic internal classification as well: from a genetic point of view, (Shimizu 78) has divided these languages into two sub-groups: the North sub-group (Geji and Polci clusters) and the South sub-group (Zeem, Dass and Saya clusters). However, as will be shown in this paper, Zođi nominal plurals side with the North sub-group and this leaves the South sub-group with only the Chaari and Saya clusters.

The pronominal system provides a simple and homogeneous picture of number in SBW languages: having lost the gender, inclusive/exclusive and dual categories which are found in some Afro-Asiatic languages, the system has only retained a person and a singular/plural number opposition. This is best observed in the paradigms of SBW independent pronouns:

TABLE 1: SBW INDEPENDENT PRONOUNS

Clusters	Languages	1s	2s	3s	1p	2p	3p
GEJI	Geji	<i>ami</i>	<i>kí</i>	<i>tí</i>	<i>mi</i>	<i>ki</i>	<i>si</i>
	Zaranda	<i>ámí:</i>	<i>kí:</i>	<i>tí:</i>	<i>mí:</i>	<i>kiní:</i>	<i>sí:</i>
	Pelu	<i>ami</i>	<i>kí</i>	<i>tí</i>	<i>mi</i>	<i>ki</i>	<i>si</i>
POLCI	Diir	<i>ám</i>	<i>ká</i>	<i>yàx</i>	<i>mì</i>	<i>kàn</i>	<i>wúrí</i>
	Buli	<i>mí</i>	<i>ki</i>	<i>fi</i>	<i>mi:</i>	<i>ki:</i>	<i>wur</i>
	Langas	<i>ám</i>	<i>káŋ</i>	<i>yáx</i>	<i>mì:</i>	<i>gàn</i>	<i>wúr</i>
	Polci	<i>ám</i>	<i>kí</i>	<i>tí</i>	<i>mì</i>	<i>kì</i>	<i>wún</i>
ZEEM	Chaari	<i>ám</i>	<i>kí</i>	<i>fi</i>	<i>mè:</i>	<i>kè:</i>	<i>fiè:</i>
DASS	Baraza	<i>ám</i>	<i>ká</i>	<i>yè:</i>	<i>mà</i>	<i>kò</i>	<i>kè:</i>
	Dott	<i>ám</i>	<i>kí</i>	<i>àrì</i>	<i>mà</i>	<i>kò</i>	<i>sáŋ</i>
SAYA	Zakshi	<i>ámí</i>	<i>kí</i>	<i>tí</i>	<i>mì</i>	<i>kì</i>	<i>fi</i>
	Sigidi	<i>jà:ni</i>	<i>ká:ni</i>	<i>fi:ni</i>	<i>jà:né</i>	<i>kà:né</i>	<i>fi:né</i>
	Zaar	<i>m'á:ni</i>	<i>k'á:ni</i>	<i>yá:ni</i>	<i>m'à:ní</i>	<i>k'à:ní</i>	<i>yà:fi</i>

However, apart from these pronouns where number is clearly marked, the picture in the rest of the nominal system is less clear. In the North (including Zođi), which we consider as representative of common SBW, languages do not possess grammatical gender or nominal classes and as a rule, few nouns possess a nominal plural.² A noun in SBW is generally used without reference to number, and can have a generic meaning, or refer to a class, a unit or

² In this presentation, we will ignore the Hausa lexemes borrowed with their original Hausa plural, e.g. in Zaar:

	singular	plural
animal	<i>dabbà</i>	<i>dabbo:bi</i>
car	<i>mó:ta</i>	<i>mo:to:fi</i>
soldiers		<i>so:ɕo:ɕi</i>
book	<i>tàgàrda</i>	<i>tàgàrdu</i>

several items. Only a couple of nouns, high on the animacy hierarchy, possess a suppletive plural. In the Noun Phrase, number is expressed by the modifiers. In the South (Zeem and Saya clusters), SBW languages differ in that they have developed a set of noun plurals through the use of various morphological devices, but most commonly, a *-(Vn)sə* suffix.

In the Verb Phrase, number appears in a pre-verbal clitic which is a combination of TAM and Person called ‘subject pronouns’ in Chadic linguistics. When a noun subject is present, the subject pronoun functions as a mark of agreement. Number appears in this subject-verb agreement, on the left periphery of the verb, where it is attached to the person.

(1) a. *ɲa: gət wò tur nákat*
 young WOMAN 3SG.FUT cook food

“a young girl will cook food”

b. *məri gudī tá tûr nákat*
 young.PL.GL woman.PL 3PL.FUT cook food

“young girls will cook food.”

The change of tone on the verb, from *tu:r* (lexical form) to *tû:r* (modified form) is due to tone propagation from left to right, from the TAM (which works as a proclitic) to the verb. As a rule, there is no exponent of number on the right periphery of the verb, which remains insensitive to agreement between the verb and its arguments. As a consequence, in the northern sub-group of SBW languages, when there is no exponent of number inside the noun phrase, the subject pronoun is the only place where number is expressed in the sentence. There are, however, three exceptions to this system: number appears as a verbal suffix (i) in the formation of the imperative; (ii) in a verbal derivation forming what has come to be called, since (Newman 1990), ‘pluractionals’; (iii) in a marginal development that came about in 4 languages due to the phonological loss of the segmental exponent of number in the subject pronouns.

In this paper, I will discuss number, contrasting the situation in the northern subgroup of SBW (Geji, Polci), plus Dass, with that of the southern subgroup (Zeem and Saya) (i) in the noun phrase; (ii) in the verb phrase; (iii) in relation with other related categories, i.e. honorifics, associatives and the singulative.

3. NUMBER IN THE NOUN PHRASE

3.1 NORTHERN SBW, PLUS ZODI

3.1.1 NOUN PLURALS

Apart from one case of plural formed by suffixation with the suffix *-a:sán* (Geji *buka:sán*, “parent”; sg. *buk*), noun plurals are represented by very few suppletive plurals, generally limited to ‘child’ and ‘woman’. The table below lists all the noun plurals found in the sub-group. Zodi, classified with the Southern sub-group by Shimizu, belongs in this subset of SBW languages, where it joins the languages of the Geji and Polci clusters which make up the Northern sub-group.

TABLE 2: NOUN PLURALS IN THE NORTHERN SBW SUB-GROUP

	Geji	Pelu	Diir	Buli	Langas	Polci	Zođi
“child”	<i>yén</i>	<i>yéŋ</i>	<i>ɲá:</i>	<i>ʔún</i>	<i>le:n</i>	<i>wún</i>	<i>wún</i>
“children”	<i>m̄:l</i>	<i>mi:lí</i>	<i>mímí:ri</i>	<i>me:</i>	<i>mimer</i>	<i>mír:r</i>	<i>mé:r</i>
“woman”	<i>káli</i>	<i>káli</i>	<i>gerí</i>				<i>gət</i>
“women”	<i>mó:l̄ɣì</i>	<i>mó:l̄ɣi</i>	<i>myéti</i>				<i>máti</i>
“thing”	<i>ili</i>						
“things”	<i>wúl</i>						
“person”						<i>yàŋ</i>	
“people”						<i>mbâ:m</i>	

These plurals abide by the constraint on the animacy hierarchy as stated by Corbett (2000: 56):

Animacy hierarchy

SPEAKER (1ST PERSON) > ADDRESSEE (2ND PERSON) > 3RD PERSON > KIN > HUMAN >
ANIMATE > INANIMATE

Constraint on the animacy hierarchy. “The singular-plural distinction in a given language must affect a top segment of the Animacy Hierarchy”

The plurals in Table 3 add to the pronominal plurals seen in Table 1 above to define a Northern SBW general/singular versus plural system (Corbett 2000: 50) where the singular and the general share the same form, and suppletive plurals are reserved for a few terms high on the hierarchy: pronouns, two terms of kinship (“child/children” and “woman/women”) and one [+human] term for Polci (“person/people”). The case of Geji *buk* “parent”, pl. *buka:sán* abides by the constraint too. However, the Geji pair *ili/wúl* (“thing/things”) in Table 2, which is much lower on the hierarchy as it bears the [+inanimate] feature, is a noticeable exception.

3.1.2 MODIFIERS

Number is otherwise expressed by noun modifiers, while the head noun remains unmarked. In the nominal system, plurality is marked in the indefinite, in demonstratives, relative pronouns, and in the pronominal system. Adjectives however have no plural form in these languages. In the following development, Geji has been chosen as a representative of the northern group, while examples in Zođi (a member of the southern group) have been quoted to illustrate its similarity to this northern group.

3.1.2.3 *Demonstratives (Geji).* Geji operates a two-degree deictic system, with an opposition between proximal and distal, as can be seen in the adverbs *ad̄e:*, “here” and *tédu*, “there”. The nominal determinants are formed with the genitive link *gə̀* (sg) / *ɗ̄ɣì* (pl), with the contrastive deictic elements reduced to the vowels /e/ for proximal and /u/ for distal.

TABLE 3: GEJI DEMONSTRATIVES

	Singular	Plural
proximal	<i>-ḡe:</i>	<i>-ɗ̄ɣe:</i>
distal	<i>-gu/-wu</i>	<i>-ɗ̄ɣu</i>

- (2) a. *lelpi-gè: / -gù*
antelope-PROX.SG / -DIST.PL
“this/that antelope”
- b. *mó:ɕì-ɕɛ: / -ɕu*
woman-PROX.PL / -DIST.PL
“these/those women”

3.1.2.1 *Indefinite quantifier (Zodì)*. The indefinite quantifier, translated as “some/other(s)”³ is *gəlâm* for the singular and *ɕilâm* for the plural.

- (3) a. *dī: ma bən ərám gəlâm ndi*
NEG.PERF 1P know thing some.SG NEG
“We don’t know anything.” (*lit.* “**some thing**”)
- b. *buká: mbárti ɕilâm*
after day some.PL
“after a few days” (*lit.* “**some days**”)

3.1.2.2 *Genitive link (Geji)*. The expression of possession is done by the use of the genitive link *gə* (sg) / *ɕi* (pl), “of” which is optional and incompatible with possessors low on the animacy hierarchy, i.e. outside the human sphere. It appears in the structure <SN₁ *gə/ɕi* SN₂>, <the SN₁ of SN₂>, where SN₂ stands for a [+human] possessor. It is sensitive to number, manifesting the [±plural] referential value of SN₁.

- (4) a. *puka gə Áwdù*
knife GL.SG Audu
“Audu’s knife”
- b. *puka ɕi Áwdù*
knife GL.PL Audu
“Audu’s knives”

The same genitive link appears at the initial of possessive pronouns, manifesting the referential plurality of the possessed, e.g. *gi:ni* (1sg. “mine”, “*le mien*” in French) vs. *ɕi:ni*, (1pl. “mine”, “*les miens*” in French):

TABLE 4: GEJI GENITIVE PRONOUNS

	Singular	Plural
1s	<i>gi:ni</i>	<i>ɕi:ni</i>
2s	<i>gwa:</i>	<i>ɕwa:</i>
3s	<i>gwa:si</i>	<i>ɕwa:si</i>
1p	<i>gənən</i>	<i>ɕinən</i>

³ The meaning of this quantifier is close to the English “a/some” when it modifies a noun that appears for the first time in a text. If the quantified noun has already been mentioned, the quantifier takes the meaning “another/others”. For a detailed study of the meaning and uses of the indefinite quantifier *wani/wata/wasu* in Hausa, cf. Attouman, M. B. & B. Caron (1984). *Extraction et opération de quantification-qualification en haoussa: les emplois de wani*. *Opérations de détermination* (Paris, Université Paris VII) II: 9-32.

2p *gwa:kən dʒwa:kən*
 3p *gwa:sən dʒwa:sən*

3.1.2.3 *Relative construction (Zodi)*. The relative pronouns use a plural form when their antecedent refers to several units: **gu** for singular and **wúrdʒu** for plural.

- (5) a. *to: séj kon wún-i pi*
 well then male boy-DEF do
arám gu a ndákə-ti
 thing REL CONT want-NMLZ

Well, then the boy did **the thing that** he wanted.

- b. *séj mé: məł wúrdʒu tə pat máni*
 then children woman REL.PL 3P.AOR take man
dí: tə doŋ səŋ ŋak ndi
 NEG.PERF 3P return 3P.ICP RES NEG

Then, **the girls who (pl.)** had found a husband did not return.

3.2 SOUTHERN SBW

3.2.1 NOUN PLURALS

Some traces of the suppletive plurals of the north sub-group can be found in the Zeem and Saya clusters of the southern sub-group:

TABLE 5: SOUTHERN SBW NOUN PLURALS

	child	children	woman	women
Chaari (Zeem cluster)	<i>nâ:</i>	<i>mímyé:rə</i>	<i>kâl</i>	<i>màŋi</i>
Sigidi (Saya cluster)	<i>ŋǎ:ŋ</i>	<i>mímé:r</i>		
Zaar (Saya cluster)	<i>ŋá:</i>	<i>mə:ri</i>		

However, a much larger group of complex noun plurals has developed in these languages, using suffixation and other morphological devices. The complexity of these plurals parallels what is well known for other Chadic languages, e.g. Hausa (Newman 2000:430-465).

3.2.1.1 *Sigidi (Saya cluster)*. Our survey of the Sigidi lexicon has yielded 235 verbs, 15 adjectives, 527 singular nouns and 267 plural nouns. Two classes of plural can be distinguished:

Regular plurals use suffixes. The most common is *-sə* frequently combined with lengthening of a radical vowel, plus some other morphonological changes (apophony, restitution of etymological consonants, etc.).

TABLE 6A: SIGIDI NOUN PLURALS: *-SƏ* SUFFIX

	sg	pl
pumpkin	<i>bòláj</i>	<i>bòlà:ŋsə</i>
cloud	<i>bú:n</i>	<i>bù:nsə</i>
groundnut	<i>dàl</i>	<i>dàlsə</i>

shrew	<i>dʒa:ba</i>	<i>dʒà:bà:gsà</i>
stone	<i>dà:j</i>	<i>dà:ɲsá</i>

Nouns finishing in /ə/ or /a/ replace these with a *-e:s* suffix:

TABLE 6B: SIGIDI NOUN PLURALS: *-E:S* SUFFIX

	sg	pl
locust-bean	<i>bətkə</i>	<i>bətkə:s</i>
thorn	<i>dʒibgə</i>	<i>dʒibgè:s</i>
leaves	<i>waldá</i>	<i>waldè:s</i>

Other plurals, limited in number, display different types of vowel lengthening and apophony:

TABLE 6C: SIGIDI NOUN PLURALS: APOPHONY

apophony	sg	pl
iguana	<i>dəgər</i>	<i>dəgè:r</i>
worm	<i>zibər</i>	<i>zibè:r</i>
wife	<i>gədə</i>	<i>gu:də</i>
baboon	<i>föyŋ</i>	<i>fugá:n</i>
lizard	<i>bǎyŋ</i>	<i>bùgò:n</i>
squirrel	<i>ʒətʃi</i>	<i>ʒətà:j</i>
bone	<i>ʒera</i>	<i>ʒira:j</i>
broom	<i>votsə</i>	<i>vwa:tsə</i>

3.2.1.2 *Zaar (Saya cluster)*. Our survey of the *Zaar* lexicon has yielded 578 verbs, 52 adjectives, 1479 singular nouns and 50 plural nouns. Regular plurals are formed with the suffix *-sə*, and its variants *-fi*, *-tsə*, *-Vnsə* associated to various tone patterns.⁴

TABLE 7A: ZAAR REGULAR NOUN PLURALS

	sg.	pl.
head	<i>gàm</i>	<i>gàm(t)sə</i>
hen	<i>gəri</i>	<i>gersá</i>
dog	<i>kádi</i>	<i>kadaŋsá</i>
mouse	<i>mbâp</i>	<i>mbaptsá</i>
chief	<i>gùŋ</i>	<i>guŋsá</i>
vulture	<i>kwádâk</i>	<i>kwadaksá</i>
viper	<i>dʒigu.rí</i>	<i>dʒigu.rínsə</i>

The irregularities are proportionally quite numerous:

TABLE 7B: ZAAR IRREGULAR NOUN PLURALS

	sg	pl
woman	<i>gət</i>	<i>gudí</i>
arrow	<i>pís</i>	<i>piská</i>
guest	<i>səm</i>	<i>səmdá</i>

⁴ In the Marti dialect of *Zaar*, the suffix is *-sá*, i.e. *kansá* (from *kǎn*, ‘uncle’), vs. *kansə* in the *Bogoro* dialect.

sheep	<i>tâm</i>	<i>timsá</i>
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3.2.1.3 *Chaari (Zeem cluster)*. Our survey of the Chaari lexicon has yielded 190 verbs, 19 adverbs, 25 adjectives, 693 singular nouns and 56 plural nouns. The basic plural suffix is *-V:sə / -V:fi / -nsə / -nfi*, combined with various other processes, where *V*: stands for the lengthening of the final lexical vowel.

TABLE 8A: SIGIDI NOUN PLURALS

	sg	pl
pot sp.	<i>dàkà</i>	<i>dáká:sà</i>
hut	<i>dāwkè</i>	<i>dāwkè:sà</i>
dog	<i>kàdā</i>	<i>kádi:fi</i>
hyena	<i>vùli</i>	<i>vúlánsá</i>
bone	<i>nìsà</i>	<i>nísánsà</i>
tooth	<i>f'è:nà</i>	<i>f'è:nánfi</i>
king	<i>làkà</i>	<i>lákánfi</i>

Final /i/ and /ə/ in the singular exhibit various degrees of apophony:

TABLE 8B: SIGIDI NOUN PLURALS: APOPHONY

	sg	pl
water spring	<i>là:rà</i>	<i>lá:ri:sà</i>
hut	<i>b'è:nà</i>	<i>b'è:né:sà</i>
old man	<i>kwàri</i>	<i>kwàri:sà</i>
basket	<i>dàrfi</i>	<i>dàrf'è:sà</i>

Two nouns use an *-a:sə* suffix:

TABLE 8C: SIGIDI NOUN PLURALS: *-A:SƏ* SUFFIX

	sg	pl
pot sp.	<i>džárán</i>	<i>džáráná:sà</i>
arm	<i>táwò</i>	<i>táwà:sà</i>

3.2.1.4 *Southern SBW plurals and the Animacy hierarchy*. As far as the Animacy hierarchy is concerned, in Zaar, noun plurals relate to [+animate] terms, i.e. humans and animals. In Sigidi and Chaari, where the number of plurals is proportionally more important than in Zaar, no specific semantic field seems to be predominant, and both animate and inanimate terms have a plural form. This may be due to the fact that the survey of Chaari and Sigidi was done over a couple of weeks, and was strictly morphological, whereas the work on Zaar has been going on for 20 years, and has been more thorough and extensive. During a morphological survey, speakers can produce morphologically sound plurals, by applying processes mechanically, while the resulting plurals would hardly be used by a speaker. I suspect this was the case during the survey of Sigidi and Chaari, and the lexicon gathered in Zaar has a good chance of reflecting the way number works in the Saya and Zeem languages as a whole.

3.2.1.5 *Kinship terms*. Kinship terms in southern SBW languages form a special plural, e.g. in Sigidi, with a morpheme *ká* preceding the noun: *ká džìgè* 'grand-fathers'; *ká džì:ka* 'grand-children'; *ká ká:wù* 'uncles', etc.).

In Zaar too, a good number of kinship terms form a special plural with a *-(k)tə* suffix and MH tones:

TABLE 9: ZAAR KINSHIP TERMS

	sg	pl
in-law	<i>dʒit</i>	<i>dʒidəktá</i>
cousin	<i>kúndà:</i>	<i>kundaktá</i>
mother	<i>na:</i>	<i>naktá</i>
sister	<i>wa:tsá</i>	<i>watsaktá</i>
brother	<i>jés</i>	<i>jestá</i>

The irregular Zaar plural *səm/səmdá* “guest” seen above can be considered as a variant of this derivation. However, this derivation seems to function more like an abstract suffix (cf. English –*ship*) than a plural.⁵

3.2.2 MODIFIERS

Contrary to the Northern sub-group, the languages of the Southern sub-group vary as regards plural agreement in their determiner, whether indefinite or demonstrative. In the Saya cluster for example, plural agreement between a plural noun and its modifiers is marked in Sigidi, but is optional in Zaar:

3.2.2.2 Demonstratives

The two Sigidi demonstratives are: proximal *gwíni*, “this” (pl. *gíni*, “these”); distal *gwa gágwi*, “that” (pl. *gja gági*, “those”): *za:r gwíni/gwa gágwi*, “this/that man”; *zà:rsà gíni/gjà gági*, “these/those men”.

In Zaar, the pronominal forms are proximal *gán*, “this” (pl. *gja: gán*, “these”) and distal *gí*: “that”, (pl. *gja: gí*:, “those”).

The strong adjectival demonstrative forms are the postmodifiers *gán*, “this” for the proximal and *gí*: “that” for the distal used both with the singular: *za:ri gán/gí*:, “this/that person”; and the plural: *zà:rsà gán/gí*:, “these/those people”.

The light adjectival demonstrative forms are suffixed to the modified nouns: *-ín* for the proximal and *-í*: for the distal. These forms are pluralized by the premodifier *gja*:, e.g. in ex. (10) below, *gjá: ngáfín* (< *ngáfí-ín*) “some things” and *gja: zà:mí*: (< *zà:m-í*:) “some beans”:

(6)	<i>gjá:</i>	<i>ngáfí-ín</i>	<i>gja:</i>	<i>zà:m-í</i> :
	PL3	thing-PROX	PL3	bean-DIST
	“some things”		“some beans”	

⁵ This has since been confirmed for Zaar by survey done in December 2012.

3.2.2.1 Indefinite quantifier.

In Sigidi, the indefinite quantifier (“some/other”) is *gón* for the singular, *gján* for the plural, both for the adjectival and the pronominal forms: *gón/gján*, “some” (sg/pl); *kùn gón/mimí:ri gján*, “some boy/some boys”.

In Zaar, the pronominal form of the indefinite is *gón* for the singular (“some (more)/another one”):

- (7) *kó: ma tu gón*
 or 1SG.FUT get some
 “Or can't I get **some more?**”.

and *gja: gón* for the plural (“some (more)/others”):

- (8) *gja: gón tá nóm*
 PL3 some 3PL.AOR take
tá ǽ:r gudí=wâ:sàŋ mán
 3PL.AOR go.CAUS woman.PL=3PL.POS BEN
 “**Others** took [it] to their wives.”

For the adjectival form, the indefinite quantifier is the postmodifier *gón* in the singular:

- (9) *sé: mə ǽ tu*
 then 1SG.AOR go meet
gàri gón mə ǽfɛt
 town some 1SG.AOR ask
 “Then I arrived in **a village** I asked [...]”

and the premodifier *gja:*⁶ in the plural:

- (10) *mə:ri tà: mán jǔkn lábí:*
 child.PL 3PL.PFV come fill place-DIST
tá gja: gudí
 with PL3⁷ woman.PL
 “Children have crowded the place, and **some women** too.”

If the modified noun is marked with a plural, whether suffixed or suppletive, the postmodifier *gón* can be used instead of the premodifier *gyá:* *za :r gón*, “a man”; *zàrsà (< zà:r-sá) gón*, “some people”.

3.2.2.3 *Relative construction.* The relative construction in Zaar uses an invariable relativizer, *dán*, which does not agree with the pivot noun. Only the resumptive pronoun agrees in number with a [+human] antecedent.

⁶ Tone variations (*gja:* / *gja:* / *gǔǎ:*) are yet to be accounted for. The form *gja:* is the one appearing in isolation, e.g. when the speaker hesitates and is looking for his words.

⁷ Since the same morpheme *gja:* is used to form the plural of the question-word “who?” (sg. *nú:*; pl. *gja: nú:*), of demonstrative and indefinite pronouns and modifiers, I have decided to gloss it as PL3 in the examples, even when it appears on its own with the meaning “some / others”.

- (11) *mur-í: / zàrsà gí:*
 man-DIST / people DIST
- ɗan** *mə* *jél=ta/ǃí*
 REL 1SG.AOR see=3SG/3PL
- This man / those people **that** I saw...

3.2.2.4 *Adjectives*. Morphologically, adjectives are a "nouny" category in Chadic. Contrary to what obtains in the Northern SBW sub-group, Zaar adjectives have a singular and a plural form that agree with the head noun. They have a plural and a definite form. When these two affixes are combined, four forms can be obtained. Let's take the adjective "evil" as an example:

TABLE 10: ZAAR ADJECTIVAL FORMS

"evil"	lexical	definite
singular	<i>kúskə</i>	<i>kú:ǃí</i>
plural	<i>kusúŋsə</i>	<i>kusúŋǃí</i>

They draw their number feature by agreement with the noun they modify, as in ex (12) below where the adjective is simply juxtaposed to the left of the noun:

- (12) a *kúskə* *za:r*
 evil person
 "an evil person"
- b *kusúŋsə* *zàrsə*⁸
 evil.PL people
 "evil people"

4. NUMBER IN THE VERB PHRASE

In the left periphery of SBW verbs, number appears in subject-verb agreement through a proclitic morpheme combining person and TAM. In the right periphery, subject-verb agreement is limited to the Imperative, with an opposition between singular and plural addressees. This Imperative Plural morpheme has been marginally extended in four languages to mark subject-verb agreement. Another phenomenon is the presence of a derivation well-known in Chadic languages, producing what has been named 'pluractional verbs' in (Newman 1990).

4.1 SUBJECT-VERB AGREEMENT IN THE LEFT PERIPHERY OF THE VERB

The verb is inflected for Aspect, Tense and Mood (TAM), and this inflection (INFL, called 'subject pronoun' in Chadic linguistics), includes a personal mark of agreement with the subject. See the Zaar example below :

- (13) Subject INFL Verb Object
nganá:s *tǎ* *dǃǎ:* *va:t*
 Nganyas 3PL.AOR can forge
- "The Nganyas can forge."

⁸ *Zàrsə* (< *za:r-sǎ*) is a non-regular plural of *za:r*, "human being"

In this example, the word *nganâ:s* is not marked for number, and can refer to the Nganyas clan in general, a single member of the clan, or a set of several members. Only the 3pl subject pronoun *tá* reveals the fact that it refers to the individual members of the clan as a set.

4.2 THE IMPERATIVE PLURAL

SBW languages as a rule have two imperative forms, depending on whether the addressee is singular or plural. The imperative is characterized by a specific tone pattern replacing the lexical tone pattern of the verb, and a suffix *-i* for the singular, and *-N* for the plural:

4.2.1 Polci (Polci cluster)

In Polci, the Imperative has High tone which is H for singular and HL for plural. The suffix is *-V:/-i* for the singular and *-V:ni/-ən(n)i* for the plural depending on the syllabic structure of the verb.

TABLE 11: POLCI IMPERATIVES

	Singular	Plural
<i>té</i> , “enter”	<i>té:</i>	<i>té:nì</i>
<i>dès</i> , “pound”	<i>désí</i>	<i>désánnì</i>
<i>bùk</i> “grill”	<i>búkí</i>	<i>búkánì</i>
<i>búl</i> “open”	<i>búlí</i>	<i>búlánnì</i>

4.2.2 Chaari (Zeem cluster)

In Chaari, the tone patterns of the Imperative are H for singular and LHL for plural. The plural suffix is *-əne*.

TABLE 12: CHAARI IMPERATIVES

	Singular	Plural
<i>mbák</i> , “shoot”	<i>mbákí</i>	<i>mbàkánè</i>
<i>kám</i> , “take”	<i>kámí</i>	<i>kàmánè</i>
<i>fát</i> , “blow”	<i>fátí</i>	<i>fàtánè</i>
<i>ngán</i> “tie”	<i>ngání</i>	<i>ngàné</i>

4.2.3 Zodi (Dass cluster)

We have no examples of imperative plurals in Zodi.

4.2.4 Sigidi (Saya cluster)

In Sigidi, the form of the Imperative singular is the same as the lexical form of the verbs. The plural is formed with a *-(ə)n* suffix and HL(L) tones.

TABLE 13: SIGIDI IMPERATIVES

	Singular	Plural
<i>ta:</i> , “unroll”	<i>ta:</i>	<i>tâ:n</i>
<i>ka:s</i> , “knead”	<i>ka:s</i>	<i>ká:sən</i>
<i>ja:tsá</i> , “chop”	<i>ja:tsá</i>	<i>já:tsən</i>
<i>batə</i> , “lick”	<i>batə</i>	<i>bátən</i>

4.2.5 Geji (Geji cluster)

In the singular, the tones for the Imperative are M for verbs beginning with an initial depressor consonant and H otherwise.⁹ In the plural, the tones are respectively M and HM. The suffixes are $-\emptyset/-i$ for singular and $-V:ni/-\grave{a}nni$ for the plural depending on the syllabic structure of the verb.

TABLE 14A: GEJI IMPERATIVES, CV VERBS

	Singular	Plural
<i>su</i> , “go”	<i>sú</i>	<i>sú:ni</i>
<i>ta</i> , “drink”	<i>ta</i>	<i>ta:ni</i>
<i>te</i> , “enter”	<i>té</i>	<i>té:ni</i>
<i>to</i> , “climb”	<i>tó</i>	<i>tó:ni</i>
<i>yo</i> , “emigrate”	<i>yó</i>	<i>yó:ni</i>
<i>gù</i> , “billow”	<i>gu</i>	<i>gu:ni</i>
<i>zi</i> , “put”	<i>zi</i>	<i>zanni</i>

TABLE 14B: GEJI IMPERATIVES, CVC VERBS

	Singular	Plural
<i>kól</i> , ‘farm’	<i>kóli</i>	<i>kólanni</i>
<i>kg:</i> , ‘take’	<i>kámí</i>	<i>kámanni</i>
<i>dòp</i> , ‘pound’	<i>dóbi</i>	<i>dóbi:ni</i>
<i>zəl</i> , ‘stand’	<i>zəli</i>	<i>zəlanni</i>

4.3 PLURAL VERBS (“PLURACTIONALS”).

Plural verbs, also called ‘pluractionals’, mark agreement with a plural subject in case of intransitive verbs, and repeated or distributed action in case of transitive verbs. They are best represented in the Southern sub-group, and more precisely in the Saya sub-branch. In the northern sub-group, only one verb in Geji can be considered to be a pluractional: *zine*, “cook”, related (?) to *zi* “put down”.

4.3.1 Zaar (Saya cluster)

Two forms of pluractionals exist in *Za:r*:

- an internal plural through lengthening of the radical vowel, or replacement of this vowel by the vowel /a:/, resulting in a H verb: *dʒom* / *dʒwá:m*: “pile up, gather” (with a plural object); *kír* / *kí:r*: “run” (with a plural subject); *ndʒol* > *ndʒwá:l*: “leave, go”; *ʒop* / *ʒwá:p*: “sting”; *mal* / *má:l*: “get lost”; *nat* / *ná:t*: “tie up”; *dat* / *dá:t*: “nail”; *ʃim* / *ʃí:m*: “call”; *kəp* / *ká:p*: “weave, plant”; *məs* / *má:s*: “die”; *vjer* / *vjá:r*: “insult”.

- an external plural through suffixation of $-ń$ / $-\grave{a}n$, e.g. *bat* / *bađǎn*: “move along”; *sə:* / *sə:n*: “breathe”; *lə* / *lən*: “go”; *wum* / *wumǎn*: “feel”; *nat* / *nađǎn*: “tie up”. NB: this external plural form, *nađǎn* (“tie up several times, or several things, or several people tying up sth.”), alternates with the external plural form, *ná:t*: “tie up”.

4.3.2 Sigidi (Saya cluster)

There are traces of a pluractional derivation through lengthening of the first vowel:

TABLE 15: SIGIDI PLURACTIONAL VERBS

⁹ Depressor consonants (voiced obstruents in Geji) have an influence on the behavior of tones in Geji, and are generally associated with Low tones. See (Caron 2009).

<i>mbatsá</i> , “combine, glue”	>	<i>mba:tsá</i> , “gather”
<i>nas</i> , “bite”	>	<i>na:s</i> , “chew”
<i>nat</i> , “tie”	>	<i>na:t</i> , “tie”
<i>ngal</i> , “see, look at”	>	<i>nga:l</i> , “examine”
<i>ngigə</i> , “answer”	>	<i>ngi:gə</i> , “refuse”
<i>ʒer</i> , “cease”	>	<i>ʒe:r</i> , “stand, stop”

4.3.3 Zodi (Dass cluster)

Verbs and verbal nouns sometimes take a *-ni*₁ suffix in agreement with plural subjects or objects: *tʃi/tʃini* “eat”; *pár/párni* “do”; *ʔəbát/ʔəbátni* “get up, start, grow up, migrate”. This suffix is incompatible with the Perfective.

(14) a *əri gu má: tʃi aɗa*
 3S REL 1S.FUT eat ANAPH
 “it’s what I shall eat with”

b *man tʃi-ni gálba*
 1P.FUT eat-PL victory
 “we will win”

(15) a *ú ʔəbát*
 2S.AOR grow_up
 “you grew up”

b *ma ʔəbát-ni ú lo:tí*
 1P.AOR migrate-PL from far
 “we migrated from far”

4.3.4 Chaari (Zeem cluster)

Only two instances of verbs looking like pluractionals appear in our survey of Chaari:

TABLE 16: CHAARI PLURACTIONAL VERBS

	Verb	Pluractional
divide/distribut	<i>báli</i>	<i>bàlè:ŋá</i>
e		
dance	<i>nápi</i>	<i>nápnàpi</i>

4.4 SECOND PERSON PLURAL VERBAL SUFFIX

A third exception to the absence of exponent of number on the right periphery of the verb is provided by a marginal development that came about in four SBW languages (Zaranda, Geji, Pelu and Diir) due to the phonological loss of the segmental exponent of number in the subject pronouns. This has been done by extending the function of the Imperative plural suffix to the function of subject/verb agreement in the plural.

As compared to proto-West Chadic (Newman & Schuh 1974) where person and number in the pronominal system are marked by vocalic contrast, what can be observed in SBW is a situation where the final vowels have been lost and replaced by a central neutral vowel /ə/ resulting in segmental ambiguity between singular and plural. Let us illustrate this by looking at the Aorist subject pronouns of the two geographically most distant languages, i.e. Zaranda and Zaar:

TABLE 17: AMBIGUITY IN SBW PRONOUNS

	Proto West-Chadic	Zaranda	Zaar
1sg	*ni	a	mə
2sg.m	*ka	kə	kə
2sg.f	*ki		
3sg.m	*si	tə	a
3sg.f	*ta		
1pl	*mu	mə	mə
2pl	*ku	kə	kə
3pl	*su	sə	tə

We can see that a new segmental form (e.g. *a*) has emerged in various languages in the 1st and 3rd persons to remove the ambiguity. But this segmental ambiguity remains prevalent in all SBW in the 2nd person, much in the same way as the difference between *thou* and *you* has been lost in modern English. In Caron (2006) I summarized the situation in the proto-SBW pronominal system in the following table, where no segmental difference is made between singular and plural pronouns:

TABLE 18: PROTO-SBW PRONOUNS

1sg/pl	*n/m
2sg/pl	*k
3sg/pl	*t/s

However, the SBW languages have found various ways of maintaining the opposition active, as the following table shows for the Aorist:

TABLE 19: SBW AORIST SUBJECT PRONOUNS

	1sg	2sg	3sg	1pl	2pl	3pl
Zaranda	à	kə	tə	mə	kə Vpl	sə
Geji	à	kə	tə	mə	kə Vpl	sə
Pelu	à	kə	tə	mə	kə Vpl	sə Vpl
Diir	à ^H	kə ^H	yà: ^H	mù ^L	kə ^L Vpl	wù ^L
Langas	à	kə	yá:	mə ^H	gə ^H	wù
Chaari	má	ká	tá	mə	kə	tə
Polci	a	kə	jà:/ə ^{r*}	mə	kə	wú
Baraza	ám	ká	jè:	mə	kò	kì
Zodí	à	ú	∅	mà	kò	tì
Zakshi	á	ká	tá	mə	kə	tə
Sigidi	mə	kə	tʃi	mə	kə	tʃi
Zaar	mə	kə	á	má	ká	tá

*: əɾ [-human] ; jà: [+human]

The means developed by the SBW languages to solve the ambiguity between 2sg & 2pl pre-verbal pronouns are quite varied:

1. Baraza & Zodi have developed a new set of vowels, resp. *ká/kò* and *ú/kò*
2. Langas has used the [+/- voiced] feature to differentiate the singular (*kà*) from the plural (*gà*) in the 2nd person only;
3. Other languages have used tone to oppose the singular and the plural: Zakshi opposes High tones for singular to Low tones for plural in the whole paradigm (*ká/kà*); Guus does the same with Mid and Low (*kə/kà*); Zaa with Mid and High (*kə/ká*).
4. Other languages use a floating tone that attaches to the 1st syllable of the following verb: Dir uses this device for all the persons: High for the singular and Low for the plural; Langas combines a High floating tone on the plural 1st and 2nd person pronouns with the voice opposition seen above for the 2nd person;
5. Finally, four languages (Zaranda, Geji, Pelu and Diir) use a suffix that attaches to the verb in the 2nd person plural.¹⁰ This suffix, which is the same as that of the Imperative plural, is the only exponent of plural for Zaranda and Geji, and reinforces the floating Low tone for Diir.

Let us see an example of the plural suffix that attaches to the verb in the 2nd person plural of the Subjunctive in Pelu:

- (16) a. *sà* *la:* *tàk¹¹* *po:l* *hunká.*
3PL.AOR want 2.SBJV sweep room
“They want you (sg) to sweep the room.”
- b. *sà* *la:* *tàk* *pó:l-ən* *hunká.*
3PL.AOR want 2.SBJV sweep-PL room
“They want you (pl) to sweep the room.”

This suffix which appears here in the 2nd person plural, and which has spread to the 3rd person plural in Pelu, is a remarkable development in so far as it is the only instance of plural agreement on the right periphery of the verb in the verb in SBW languages. This innovation has been done through the extension of the function of the Imperative plural marker.

5. NUMBER AND OTHER RELATED CATEGORIES

5.1 HONORIFICS, AVOIDANCE, ETC.:

In the Chadic languages of the area, number is not used for social deixis (honorifics, etc.).

5.2 NUMBER AND ASSOCIATIVE

¹⁰ In Pelu, the suffix is used with the 3rd person plural as well.

¹¹ *tàk* is analysed as *tə+kà* : <complementizer + Aorist>, resulting in a subset of Aorist with a subjunctive meaning.

Associative plurals are common in SBW languages, as in Chadic in general.¹² They are characterized as follows by G. Corbett: “These forms consist of a nominal plus a marker, and denote a set comprised of the referent of the nominal (the main member) plus one or more associated members.” (Corbett 2000: 101). In Zaar, for example, this is expressed by the plural form of the quantifier “some”, reduced to the pluralizer *gjá:* “some” with a high tone, e.g.

- (17) a. *dàn gjá: Lokšil de: káwêj*
house PL3 Lokshil indeed merely
“simply at **Lokshil (and his friends’)** house”

5.3 NUMBER AND DIMINUTIVE

The same reduced plural form of the quantifier “some”, when combined with the adjective *ɲa:* “small” is used with mass nouns to mean “a little”, with a clear diminutive meaning. Numerous examples appear in the corpus : *gjá: ɲa: ɲgǎtn ʃíyǎn*, “a little food”; *gjá: ɲa: zà*, “a little water” ; *gjá: ɲa: já:pm kà fǎ:li/zèlì*, “a little white/red earth”, etc.

- (18) a. *má fi gjá: ɲa: kàlà:ʃi*
1PL.AOR do PL3 small breakfast
“we take **a little** breakfast”

Corbett (2000: 110) argues that the associative is “a category distinct from number, even though the two are frequently realized together”. However, we have seen that in Zaar, *gja:* is used to form the plural of the indefinite modifier (*gja: gón*, “some, others), of demonstratives (*gja: gín*, “these”; *gja: gí:*, “those”) of the question word “who?” (*gja: nú:*). These elements converge to establish strong links between number and the associative in Zaar and weaken Corbett’s claim. The grammaticalization trough Zaar *gja:* of the link between number, associative and diminutive emphasizes the lability of the concept of plurality.

6. CONCLUSION

As can be seen in (Table 20) below, the study of number in SBW languages has introduced some nuances in the vision we have of the division introduced by Shimizu (78) between the northern and southern sub-groups, with the Dass cluster (e.g. Zodi) behaving like the Northern languages as regards nominal and adjectival plurals. In this cluster, pluractionals seem to be absent, and replaced by a *-ni* suffix which looks more like an agreement flexion than a pluractional derivation.

TABLE 20: NUMBER IN SBW

	Northern			Southern	
	Geji	Polci	Dass	Zeem	Saya
Noun Plurals	—	—	—	+	+
Plural Determiners	+	+	+	+	+/-

¹² Cf. the use of Hausa *su*, as in *su Mūsā sun dāwō dà sāfe* “Musa and the others returned in the morning.”; *munà nēman su bàrēwā* “We are looking for gazelles, etc.” (Newman 2000: 460)

Plural Adjectives	—	—	—	+	+
Plural Imperatives	+	+	?	+	+
Pluractionals	—	—	—	+	+

The presence of nominal and adjectival plurals in the Zeem and Saya clusters is a clear innovation departing from a situation where plurality is expressed only by the personal pronouns, by the modifiers within the nominal system, and by the imperative.¹³ Pluractionals, although they are widespread in many Chadic languages, seem to be an innovation of Zeem and Saya as well. These innovative features may have developed through the influence of plateau languages in the case of Zeem and Saya. The exact nature of this influence is yet to be investigated. The innovation has gone one step further in Zaar proper with the optional marking of number on modifiers when the modified noun bears a plural exponent. Finally, a marginal case of subject-verb plural agreement on the right periphery has appeared in four languages (Zaranda, Geji, Pelu and Diir), first in the 2nd plural, and then has spread to the 3rd plural in one of the languages (Pelu).

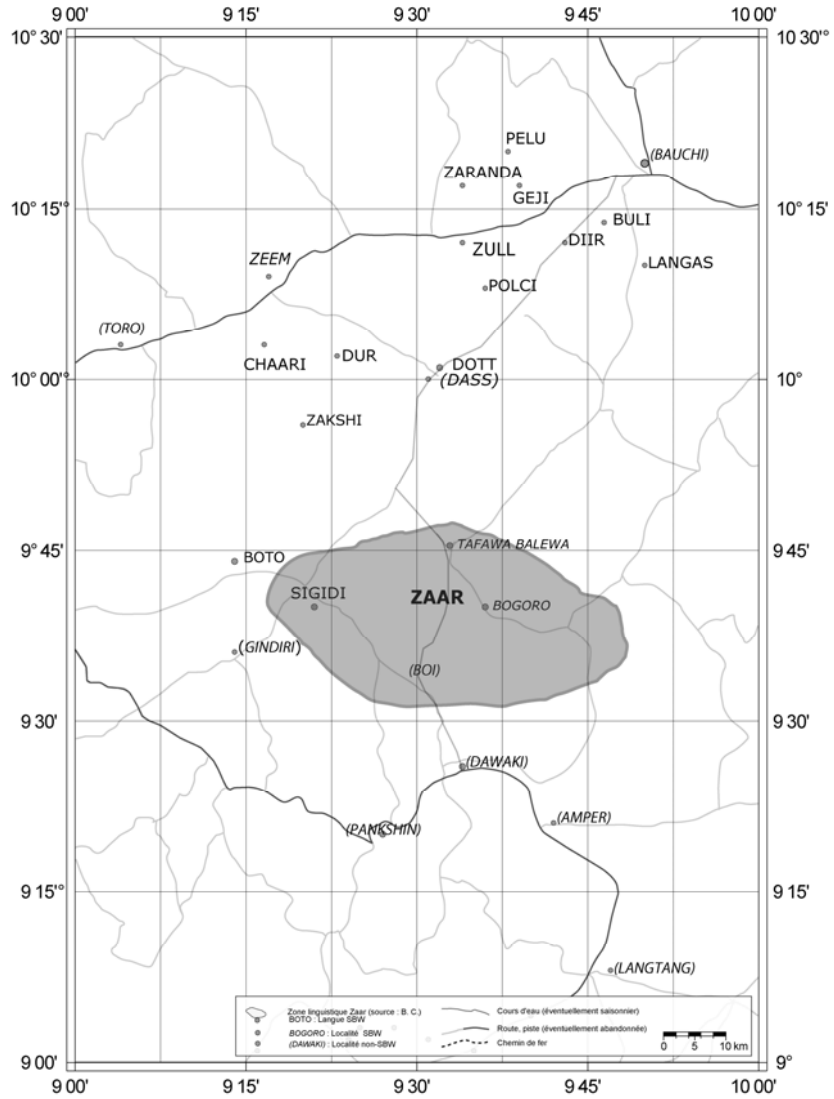
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¹³ The absence of plural in the Zodi imperative may be due to a faulty survey.

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Annex 1 : SBW languages



Annex 2 : Internal Classification of SBW languages**

Language clusters	Languages	Dialects
Sub-group North		
Geji	{ Geji	{ Bolu
		{ Pelu
Zaranda	{ Zaranda	{ Geji
		{ Zaranda
Dir	{ Dir	{ Zul
		{ Baram
Polci	{ Polci	{ Dir
		{ Buli
Langas (Luri†)	{ Langas (Luri†)	{ Lundur
		{ Polci
Sub-group South		
Zeem	{ Chari	{ Zeem†, Dyarum (?)
		{ Tule†
Lushi	{ Chari	{ Chari
		{ Lushi†
Baraza	{ Baraza	{ Dur
		{ Zumbul
Dott	{ Dott	{ Wangdày
		{ Zodî
Zakshi	{ Zakshi	{ Zakshi
		{ Boto
Zari	{ Sigidi	{ Zari
		{ Guus
Zaar of Kal	{ Zaar	{ Zaar of Kal
		{ Zaar of Marti
Zaar of Bogoro	{ Zaar	{ Zaar of Bogoro

** Adapted from (Shimizu 1978; Lewis 2009). The languages studied in the paper appear in bold characters

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ⁱ On South-Bauchi East languages, see (Jaggar 1988 & Haruna 2003) for a description of Guruntum.