Comparing causal-noncausal valence orientation in Atlantic and Mande languages

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Introduction

This paper investigates the coding of causal:noncausal alternation in two (small) families of languages spoken in West Africa. ATLANTIC and MANDE languages belong to the same Niger-Congo phylum[1] but display quite **different typological profiles** and have long lasting historical **contacts** in Senegal.

This make them good candidates for :

- evaluating the correlation between typological profile and valence orientation
- locating possible contact-induced changes in valence orientation

The 5 possible coding strategies are actually attested in both families:

suppletivism	nC ≠ C
lability	nC = C
causativization (or transitivization)	nC > C
decausativization (or detransitivization)	nC < C
equipollence	nC ~ C

However, considering their respective typological profiles, two distinct strategies are expected to be favored:

- *lability* for MANDE languages which are rather isolating languages with a limited set of derivational suffixes and regularly labile verbs (1);
  e.g. Mano : 4 verbs out 5 (66/297) are labile in Khachaturyan (2014)
- *directed strategies* (> and <) for ATLANTIC languages which commonly display a large inventory of verbal extensions (2).

Mandinka (MANDE, Creissels & Bassène 2013)
(1) d*ádaa* 'to repair' / 'be repaired'

Wolof (ATLANTIC)
(2)

noncausal > causal			causal > noncausal	
réer		'to be lost'	*sakk*	'seal'
réer-al	be_lost-CAUS	'to lose'	*sakk-u* seal-MID	'to be sealed'

In order to check our predictions: the same 18 verb-pair meanings (Nichols 2017) were retrieved from the ***RefLex*** lexical database

[1] The belonging of Mande to the Niger-Congo phylum is presently questioned.

RefLex: Reference Lexicon of the Languages of Africa (Segerer & Flavier 2011-2018)

The language sample

- Focus on ATLANTIC languages (cf. variation seems to be greater, contact in Senegal)
- MEL languages added because of contacts ATLANTIC and mostly MANDE
  cf Map : ppt

Language sample (list in Appendix), after discarding too poorly documented languages:

- 36 ATLANTIC languages (/ ± 50)
- 8 MANDE languages (/ ± 35) (2 lg outside contact area, added as M "prototype")
- 7 MEL languages (/ ~10-15)

Limitations*:* CAVEAT

- Data shortage (seldom all the 18 pairs / lg) resulting in unbalanced sample
- Possible bias → various solutions, still results should be interpreted with caution

1. Favored strategies in the different families

The study of the coding profiles of the different families show interesting results:

- The first two results are according to our hypothesis (1.1) and (1.2.)
- Two additional results can be observed which are unexpected according to general predictions (1.3. and (1.4)

→ Favored strategies according to typological profile?
Mel: too poorly documented for defining a typological profile

1.1. Favored coding strategy in ATLANTIC : directed strategies (voice opposition)

For Atlantic: directed strategies were expected to be favored according to typological profile

Table 1- Average values for directed strategies vs. Others in the ATLANTIC family (%)[2]

	ATLANTIC
< & >	41,34
~	10,09
=	8,61
≠	15,77

- Results : Directed strategies are the favored strategies in ATLANTIC (hyp. confirmed)

for Mande: Lability expected according to typological profile:

[2] The total of the % for the various strategies is below 100 because it was calculated on the basis of the number of pairs found in individual languages (X/18).

1.2. Favored coding strategy in MANDE: Lability

Table 2- Average values for each of the five possible types of strategies in the three family (%)

	ATLANTIC	**MANDE** (sample)	MEL
>	29,34	36,81	20,83
<	12,00	8,89	17,59
~	10,09	0,93	11,11
=	8,61	31,25	7,54
≠	15,77	12,15	20,63

NO !: More prominent use of **Causativization** (>), lability (=) is **only** much more frequent in MANDE than in ATLANTIC (and MEL)

NB. **MEL** has a coding profile closer to that of ATLANTIC (unsurprising cf. previously classified as a sub-branch of ATLANTIC)

cf. same ranking (but in MEL the scores for > and ≠ are almost similar):

Ranking	1	2	3	4	5
ATLANTIC	>	≠	<	~	=
MEL	>	≠	<	~	=

Lability is not the favored strategy in MANDE in our results, causativization is the favored one (>).

Hypothesis: bias due to the list of verbs?

[01 laugh, 02 die, 03 sit, 04 eat, 05 learn, 06 see, 07 be angry, 08 be afraid/frighten, 09 hide, **10 boil , 11 burn, 12 break , 13 open, 14 dry, 15 be straight, 16 hang, 17 turn over, 18 fall**]

(a) *Causative derivation overrepresented* because of verbs 1 to 9 in the list?
cf. Haspelmath 1993: when the core-event is itself agentive (i.e. when one participant is a volitional agent) and atelic: always causative coding

(b) Moreover, *verbs 10-18* correspond almost perfectly to the verbs for which the *cross-linguistic variation* is particularly important (Haspelmath 2017, Creissels 2018)

cross-linguistic variation +++ : monovalent V
process undergone by inanimate
occurring without external instigator

→ crucial to characterize the preference of individual languages

*Table 3- Average of the 5 possible strategies for the verb pairs **10 to 18** (%)*

	ATLANTIC	**MANDE**	MEL
>	30,98	33,33	29,63
<	21,74	13,89	42,59
~	15,74	0,00	11,11
=	15,36	44,44	19,44
≠	12,87	5,56	11,11

Based on the 10 to 18 verb pairs: Lability is the favored strategy (hyp. and bias confirmed)

1.3. Equipollent strategy: a surprisingly significant score in ATLANTIC and MEL

Table 4- Average values for each of the five possible types of strategies (%)

	ATLANTIC	**MANDE** (sample)	**MEL**
>	29,34	36,81	20,83
<	12,00	8,89	17,59
~	10,09	0,93	11,11
=	8,61	31,25	7,54
≠	15,77	12,15	20,63

There are two plausible explanations for this:

- In several languages (Pulaar and Balant in ATLANTIC, probably Landuma in MEL), verbal conjugations involve voice opposition (cf. Active, Middle and Passive in Pulaar) or verbal classes (as in Balant), so equipollent strategy is ***structurally obligatory*** (induced by the verbal system);
- Double derivation widespread in all Atlantic, esp. in Joola languages (cf 2.2.3.)

1.4. Suppletive lexicalization : a surprisingly significant score in the 3 families

Table 5- Average values for each of the five possible types of strategies (%)

	ATLANTIC	**MANDE** (sample)	**MEL**
>	29,34	36,81	20,83
<	12,00	8,89	17,59
~	10,09	0,93	11,11
=	8,61	31,25	7,54
≠	15,77	12,15	20,63

Two factors can explain these scores:

(1) the **corpus**: among the 18 pairs, two involve verbs referring to ***frequent activities*** which favors suppletism (Comrie 1985): 02_*die* / *kill* ; 06_ *see* / *show*

As shown by the scores for this two pairs in the next table, the languages of the 3 families do follow this universal tendency:

	02_die / kill			*06_ see / show*	
ATLANTIC	nC ≠ C	97%		nC ≠ C	90%
MANDE	nC ≠ C	63%		nC ≠ C	87%
	nC = C	38%			
MEL	nC ≠ C	100%		nC ≠ C	100%

(2) A bias due to our incomplete **data**: for the languages for which we found only a few pairs (because the causal member could not be found in the dictionary), the pairs using suppletive coding were overrepresented because lexicalized causal verbs were always (by definition) ***in the dictionary*** whereas derived causatives are not always given.

In order to overcome this bias due to the data, we checked the scores for the 5 strategies, with an **optimized sample**, that is after taking out the poorly documented pairs from the list.

> for ATLANTIC: 10 languages removed (36 > 26 languages); for MANDE: none because well documented (NB. small sample: representative of the Mande languages of Senegal only, but Bobo and Bambara added for balancing somehow the sample); for MEL: none too because taking out the 3 languages with poor data would have made our sample (7) too small.

Compare tables 6 and 7 (darker shading indicates higher score inside the family)

Table 6 - Ranking order of the strategies with <u>all</u> languages and all pairs of the corpus (%)

	ATLANTIC	MANDE	MEL
>	29,34	36,81	20,83
<	12,00	8,89	17,59
~	10,65	0,93	11,11
=	8,61	31,25	7,54
≠	15,77	12,15	20,63

Table 7 - Standard patterns of distribution of the 5 strategies based on <u>optimized samples</u>

	ATLANTIC	**MANDE**	**MEL**
>	33,33	36,81	20,83
<	12,33	8,89	17,59
~	11,28	0,93	11,11
=	8,64	31,25	7,54
≠	17,31	12,15	20,63

→ **suppletion remains significant** and even higher in ATLANTIC, with the optimized sample

Results based on optimized data: used as ***family-standards*** along which deviation of individual languages was calculated (using standard-deviation).

2. Identifying possible contact phenomenons

Study of deviation of individual languages (against standard) inside each family

- to identify possible contact-induced change in valence orientation,
- to check the variability inside ATLANTIC family
- and to sort out whether the languages deviating from the ATLANTIC pattern follow areal distribution and can be accounted for by ***contact induced changes***, or are better explained by ***internal factors***.

Procedure

- We have first selected the languages deviating from the standard pattern of their family
- Eliminated the ones for which deviation could be due to shortage of data
- Analyzed whether deviations could be due to :
  - Language-specific feature
  - Internal evolution (group-specific, for example)
  - Contact

2.1. MEL

Table 8 - Measure of deviation from standard pattern in MEL languages

	Sherbro	Kisi	Baga sitem	Landuma
>	+2,29			
<				+4,82
~				
=		+7,74		-0,60
≠			+4,87	

Dark / light shading = positive / negative deviation

Sherbro Highest rate of use of directed strategies inside MEL and no equipollent, so derivation is very productive and not undergoing freezing (equipollent coding emerges either from the merging of derivational affixes in conjugations or from freezing).
Hypothesis: a **language specific** feature of Sherbro

Kisi Surprisingly important usage of **labile** strategy (+ 7,74), unexpected compared to the standard pattern.
Hypothesis - Considering the geographical contacts with MANDE (Kisi is surrounded by Mande lgs) and the preference for lability in MANDE, a **contact induced change** is plausible *(=> MANDE on MEL)*

Baga-sitem Important gap of **suppletive** strategy opposite to the standard pattern, especially if we take into account that in Baga Sitem only 7/18 pairs have been found.

Two kinds of interpretations are possible:

(i) Together directed strategies are the favored strategies in Mel, but suppletion comes 2d after causativization (cf p.3). For languages prioritizing directed strategies, a **"natural" evolution** would be to evolve into languages that increase the suppletive strategy (cf. ATLANTIC family has more or less the same profile). In this hypothesis, Baga-Sitem differs from the standard pattern, but shows the (possible) evolution path of some MEL languages.

(ii) The increase of the suppletive strategy in Baga-Sitem is the result of **contact** with ATLANTIC languages.

Hypothesis - Probably convergence of both (i) and (ii)

Landuma Important gap of **decausative** strategy (NB. Landuma is also the **only** MEL language using **equipollence**).

Analysis:

- Landuma is surrounded by 3 ATLANTIC languages but this deviation *cannot be analyzed as a contact-induced change* (decausative is more or less equivalent in MEL and ATLANTIC, cf. directed strategies are the favored strategies of both families).
- More plausible explanation: a natural internal change of language, which could actually point to a plausible evolution inside MEL family: in this scenario, the directed strategies were the *original standard for MEL* and other MEL languages have undergone diachronic changes, Landuma being more conservative on this point.

Hypothesis – a **language specific feature** of a more **conservative** language

2.2. MANDE

Table 9 - Measure of deviation from standard pattern in MANDE languages

	Maninka	Mandinka	Kakabe	Soso	Soninke B	Soninké K
>		55,56				-11,11
<		0,00				16,67
~						
=			47,22	-11,11		
≠						

Soninke K differences due to the lack of data - discarded

Mandinka small gap of **causative** and total absence of **decausative** strategy: closer to Bobo and Bambara "prototype" for MANDE (the 2 lgs spoken outside the Senegal and the contact area under study)

Hypothesis – a language closer to the canonical standard of Mande (see D. Creissels for discussion)

Kakabe strong usage of **lability** (cf. preferred strategy in MANDE)

2.3. ATLANTIC

Table 10 - Measure of deviation from standard pattern in ATLANTIC languages

	>	<	~	=	≠
Wolof	3,54	2,8			
Kasanga*					
Kobiana*					
Nyun Gunyamolo		2,8	-0,83		
Nyun Gubaher		2,8		—	
Nyun Gujaahar				—	
Konyagi					
Bedik			—		
Basari			—		-4,5
Pajaade			—		
Biafada					
Sereer	6,32				
Pulaar (Futa Toro)		-5,25			3,21
Ful of Massina		-5,25	—	—	—
Laalaa	3,54	2,8	-3,27		
Noon					
Ndut					
Palor	-9,1			—	3,21
Saafi			—	—	
Nalu			—		8,77
Balant kentohe			—	—	-4,5
Balant ganja			14,03		
Balant soofa					
Joola kerak				8,55	
Joola fogny		0,14	-3,27		3,21
Joola banjal			2,92		
Joola kasa	3,54	—			
Joola kwaatay	-9,1				
Joola karon		2,8		—	
Bayot		—		—	-4,5
Manjaku of Bassarel	9,1		—		-4,5
Manjaku of Babok	-9,1		—	—	
Pepel	3,54		—		
Bijogo kagbaaga				2,99	
Bijogo kamona	—		—	—	

Summary of the results:

Languages discarded because of the lack of data:
Kasanga, Kobiana, Balante Soofa, Manjaku Babok, Bayot, Ndut

A first typological remark: for valence orientation, ATLANTIC family displays a **very distributed profile** compared to MANDE and MEL:
cf. very *small gaps* in deviance from standard, and *great number of languages* displaying deviance. Confirms results of Table 2

This strong internal variation can be explained by language-specific features and group-specificities.

- ***Deviance due to language-specific features***

Pulaar. The **absence of decausative** strategy is induced by the verb-system (voice opposition: active, middle and passive): decausative marking is mechanically interpreted as part of equipollent strategy (middle vs active voice)

Balant Ganja. The favored usage of **equipollence** in Ganja is linked to the existence of conjugation classes involving noncausal:causal alternation.

- ***Deviance due to group-specific features***

NORTH vs. BAK branches. Deviation of individual languages cannot be explained by an opposition between NORTH vs. BAK branches. As we can see in the tables below, higher usage and lesser use of the expected strategies are attested for languages of the two branches.

- CAUSATIVE

	NORTH	BAK
Higher usage	Wolof, Sereer, Laala	Joola kasa
Lesser usage	Konyagi, palor	Joola kwaatay

- DECAUSATIVE

	NORTH	BAK
Higher usage	Wolof, Nyun gunyamolo, Nyun gubaher, Laalaa	Joola fogny, Joola karon
Lesser usage	—*	—

* excepted Pulaar and Balant, but was explained by language-specific

- EQUIPOLLENT

	NORTH	BAK
Higher usage	—*	Joola banjal
Lesser usage	Nyun Gunyamolo, Laala	—

* excepted Balant, but was explained by language-specific

- LABILE

	NORTH	BAK
Higher usage	Bijogo	Joola kerak
Lesser usage	—	—

- SUPPLETIVE

	NORTH	BAK
Higher usage	Pulaar, Palor, Nalu	Joola fogny
Lesser usage	Bassari	Balante kentohe, Manjaku of Bassarel

- However, in the **BAK group**, deviances always involve a JOOLA language: this suggests specific features of the **JOOLA sub-group**.

Hypothesis - specific features needs to be further investigated but can be attributed to the **contact** of JOOLA languages (BAK branch) with the surrounding languages: JOOLA languages have clearly undergone various influences from Nyun (ATLANTIC-NORTH) and also from MANDE languages. This may explain the current diversity inside the BAK group.

- In **NORTH group**, none conclusion possible in affiliation terms (subgroups):

Details: Wolof is an isolate (WOLOF sub-group). PULAAR-SEREER: Sereer evolves differently than Pulaar (merging not completed). CANGIN: Laalaa shows deviance not encountered in other languages of the subgroup (but a better documentation of CANGIN is needed, cf difference between Palor and Ndut which are better documented than Noon)

Conclusion

The main results of our cross-linguistic investigations on valence orientation in ATLANTIC, MANDE and MEL languages are the following:

(1) Expectations about favored strategies according to **typological profiles** are confirmed
- lability in MANDE vs. derivational strategies in ATLANTIC and MEL

(2) The **deviations from the family standard** observed for individual languages can be:
- a langage specific feature: cf. Pulaar, Balant (ATL.) and probably Landuma (MEL)
- a group-specific feature : cf. JOOLA

due to:
- ***internal evolution*****:** clear inside the PEUL-SEREER sub-group, may be in CANGIN (suspected in TENDA) – more studies are needed
- contact-induced changes: MANDE => Kisi (MEL); probably Nyun (ATLANTIC) and MANDE => JOOLA
- ***a combination of the two*** factors: Baga-sitem (MEL) in contact with ATLANTIC

(3) A remarquable **heterogenity** has been observed inside ATLANTIC family for valence orientation.
   - appears to be due to an internal evolution of the family and language-specific features rather than to contact (excepted for JOOLA maybe), but further investigations need to be done.
   - In sum, this internal variation reflects the **historical depth** of the family (~ 8000 years vs. 5000 for MANDE): individual languages and groups have undergone more changes through time leading to more drastic divergence than in more recent families.

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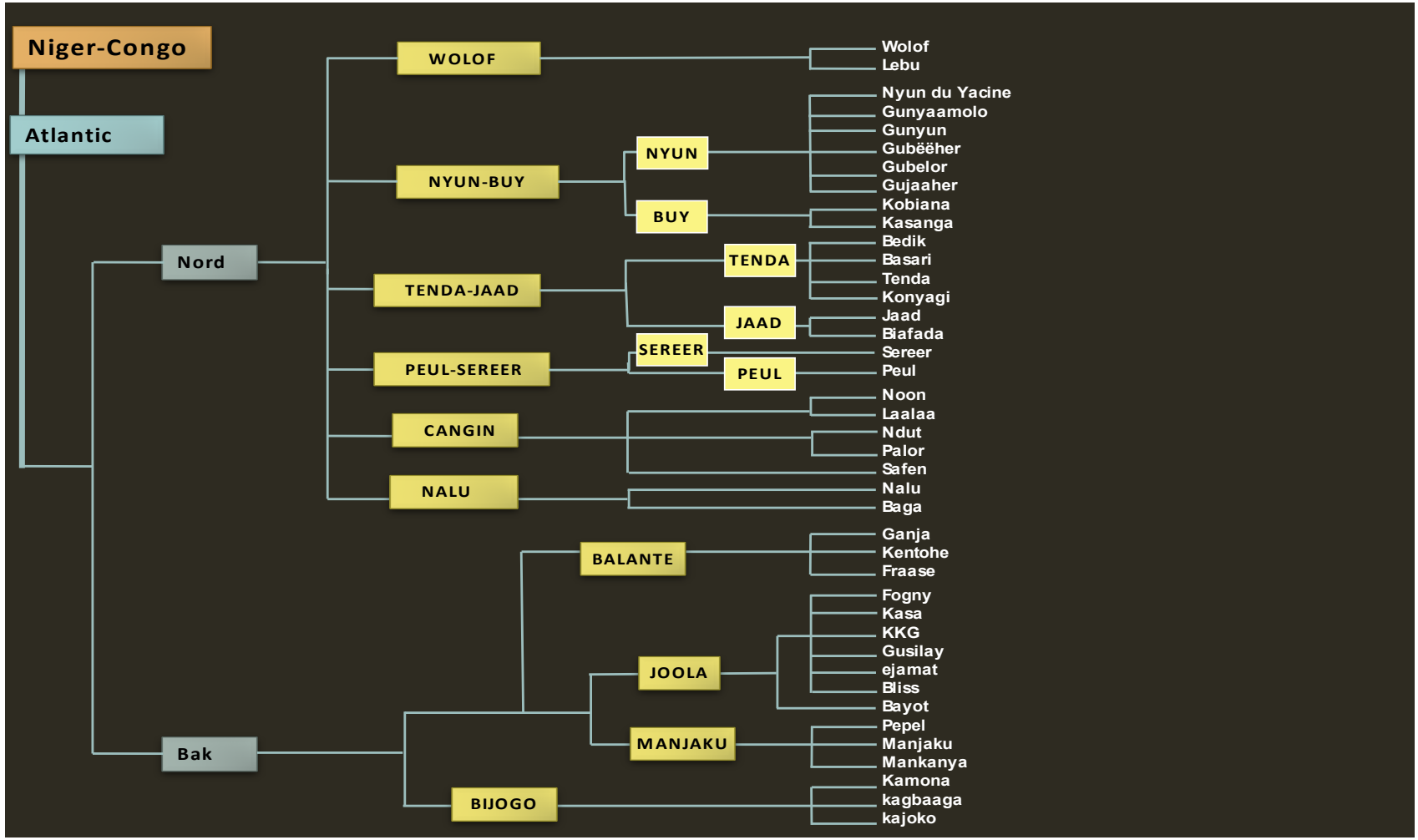
Appendix. *Language sample*

ATLANTIC	MANDE	MEL
Wolof	Bobo	Sherbro
Kasanga	Bambara	Kisi
Kobiana	Maninka	Kim
Nyun Gunyamolo	Mandinka	Mani
Nyun Gubaher	Kakabe	Temne
Nyun Gujaahar	Soso	Baga sitem
Konyagi	Soninke of Bakel	Landuma
Bedik	Soninke of Kingi	
Basari		
Pajaade		
Sereer		
Pulaar (Futa Toro)		
Ful of Massina		
Laalaa		
Noon		
Ndut		
Palor		
Saafi		
Nalu		
Baga mboteni		
Balant Kentohe		
Balant Ganja		
Balant Sofa		
Joola kerak		
Joola fogny		
Joola banjal		
Joola kasa		
Joola kwaatay		
Joola karon		
Bayot		
Manjaku Bassarel		
Manjaku Babok		
Mankanya		
Pepel		
Bijogo kagbaaga		
Bijogo kamona		

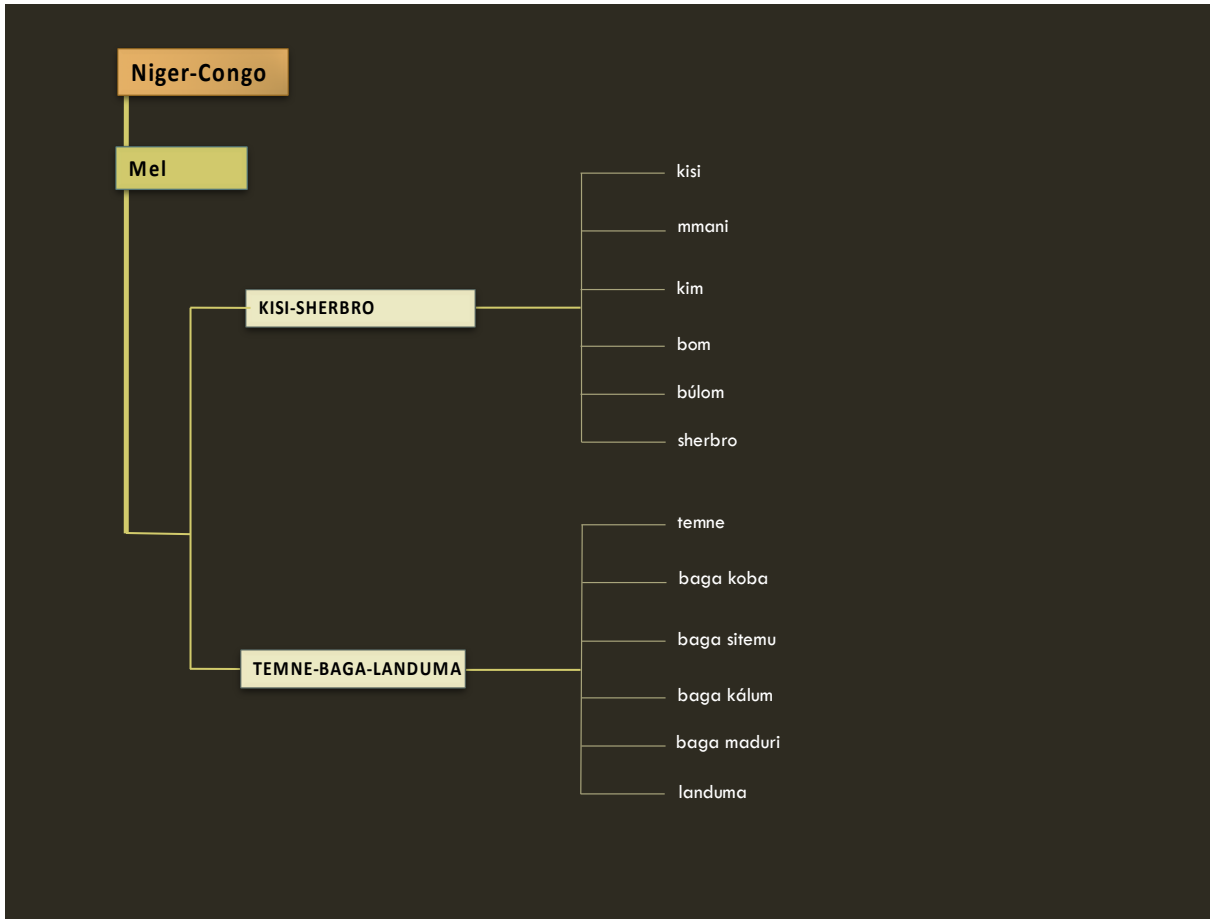
Senegal and the languages in the study

Podzniakov, Segerer & Vydrin 2008)

ATLANTIC : classification of the family



MEL : classification fo the family



MANDE : classification of the family

West, Central-Southwestern, Central, Manding-Jogo, Jogo-Jeri, Jogo, Jogo (Ligbi)

West, Central-Southwestern, Central, Manding-Jogo, Jogo-Jeri, Jeri-Jalkuna, Jeli and Jalkuna (Ble)

West, Central-Southwestern, Central, Manding-Jogo, Manding-Vai, Vai-Kono

West, Central-Southwestern, Central, Manding-Jogo, Manding-Vai, Manding-Mokole, Manding : **bambara**

West, Central-Southwestern, Central, Manding-Jogo, Manding-Vai, Manding-Mokole, Mokole, **Kakabe**

West, Central-Southwestern, Central, Manding-Jogo, Manding-Vai, Manding-Mokole, Mokole, Mogofin

West, Central-Southwestern, Central, Manding-Jogo, Manding-Vai, Manding-Mokole, Mokole, Koranko and Lele

West, Central-Southwestern, Central, Susu-Yalunka, **Soso**

West, Central-Southwestern, Central, Susu-Yalunka, Yalunka and Jallonke

West, Central-Southwestern, Southwestern, Kpelle and Mende-Looma

West, Central-Southwestern, Southwestern, Mende-Looma, Mende-Bandi, Mende

West, Central-Southwestern, Southwestern, Mende-Looma, Mende-Bandi, Loko

West, Northwest, Soninke-Dzuun, Samogo (Dzuun-Seenku)

West, Northwest, Soninke-Dzuun, Soninke-Bobo: **Bobo, Soninke**

East, Eastern-Eastern, Bisa and San

East, Eastern-Eastern, Busa

East, Eastern-Southern