

Loanwords and Trade in West Africa

Grains, Gold, Salt, and Iron

Henning Schreiber – Nikolas Gestrich

1. Introduction

Since the beginnings of historiography on sub-Saharan West Africa, trade and exchange have been major topics. In large parts, this concerns the trans-Saharan trade of the medieval period, which produced most of the written source material on West Africa prior to European presence on the Atlantic coast, and on which precolonial history has therefore relied greatly. Trans-Saharan contacts prior to this era are not well understood, though glass bead and copper finds demonstrate how, from the early 1st millennium CE at the latest, objects from beyond the Sahara were becoming increasingly available in this region (Magnavita 2013). In addition to these external contacts, there is a growing body of work that documents how Western Africa, from the southern Sahara to the forest zone, was economically connected well before the Muslim conquest of North Africa. The establishment of societies dependent on long-distance trade in iron, salt, stone, grain, and probably many other perishable items is likely to have led to the emergence of specialist traders, to market-oriented production, but also to the exchange of ideas, knowledge, and practices over a wide area. It is also a key factor in the development of urbanism and of large-scale polities. Archaeological work over the last fifty years has contributed greatly to our understanding of the region's past, hinting at intricate trade networks and cultural exchanges that shaped its societies before and during the medieval trans-Saharan trade (McIntosh 2020; Dueppen 2024). As was also the case in the central Sahel, around Lake Chad, the savanna, Sahel and southern Sahara of western Africa were interconnected through extensive trade networks that facilitated not

only the exchange of goods but also the movement of ideas and languages.

The trade-related movement of people, objects, ideas, practices, and words therefore constitutes a large multidisciplinary field of study. Archaeological and historical writings on the area's past have tended to treat this issue as a matter of course, though McIntosh (2020) points out that this has not been accompanied by much theoretical discourse on what trade represents. Historical linguistics, on the other hand, have not often been mobilised explicitly to bear evidence on early trade relations in this region. This is despite the fact that linguistic data have distinct strengths that complement both archaeological and historical data on this question. Archaeological data for West Africa is generally patchy, and large parts of the region have very little or no data that is excavated, well contextualised, and well dated. In addition, there is a strong preservation bias against many of the items that are thought to have been key components of the internal West African and Saharan trade networks, either because they are perishable, or because they are valuable. Where such finds are made, they are often fortuitous and exceptional (Nixon 2017a; Gestrich et al. 2021), or found in funerary contexts (Magnavita 2003), which are underrepresented in the region's archaeological work. Documentary historical sources begin relatively late, are exclusively external and fragmentary prior to the 17th century, and, apart from early European contact on the coast, their geographical coverage is limited to the Sahara and its southern margins, though locations beyond the central Sahara are often impossible to reconstruct at

all. Due to the fact that historical linguistics relies on contemporary data that is relatively easy to collect, its geographic coverage is far more comprehensive, allowing an overview at a scale that historical data cannot, and archaeological data can not yet afford. It can also potentially address such trade items as salt, of which no direct archaeological evidence can be found.

The current paper therefore aims to show how existing archaeological and historical data pertaining to the history of trade in earlier periods and previously undocumented areas of West African history

can be supplemented by enquiring into the linguistic stratigraphy and into lexical borrowings for selected trade items. The overall aim is to add contextual information to such trade items as are known from archaeological and historical sources, and to also provide primary evidence where trade is archaeologically and historically invisible. We will here focus on two grains, pearl millet and fonio, on two metals, gold and iron, and on salt, for which we summarise the state of the art in archaeology and history, and discuss the linguistic evidence.

2. Reconstructions, Wordlists, Loanwords and Semantics

For Africa, Ehret (1967), Nurse and Spear (1985), Bostoen (2005; 2007), and Blench (Blench 2006), among others, have contributed substantial historical insights on the basis of relating linguistic and archaeological evidence and applying methods of ‘linguistic palaeontology’ (Bostoen 2009), though mostly in the context of Bantu and East African history. The *words and things* approach (see Bostoen 2009) is particularly concerned with the lexicalization of material culture and linguistic outcome of culture contact, and has been adapted for the West African context e.g. by Köhler (1953) and Beyer (1998) for the horse and military technology, or the reconstruction of Bantu pottery technology by Bostoen (2005; 2007). A further lexicon-based approach on African livestock and domestication, with a strong relation to archaeology, is presented by Blench and MacDonald (2000).

In this paper, we employ linguistic stratigraphy as a basic framework. Linguistic stratigraphy applies different methods of language analysis: historical comparative linguistics, language contact theory and language geography. The overall aim of this mix of methods is the identification and periodisation of lexical layers which attest the impact of history on language histories. The method of stratification searches for historical remains in the lexicon with a strong focus on borrowings as indexes of cultural contact and political hegemonies. As Andersen (2003) states, loanwords are a key historical source, and, for many questions, the only one. A linguistic stratum is understood as a series of contact induced lexical

innovations (‘intrusions’) and changes that go back to historical culture contact (Anderson 2011).

Historical lexical reconstructions, of both inherited and formerly borrowed words, are based on systematic comparison between genealogically related languages and provide information about earlier stages and proto-languages. As in the great majority of cases in Africa, genealogically related languages are also neighbouring languages in contact. The overall challenge is to identify and genealogically stratify lexical borrowings. Earlier cultural contacts must be distinguished from later ones but similar looking word forms may be easily misinterpreted and thus misdated. One way to motivate the plausibility of analysis is to consider phonological and semantic arguments. Phonological plausibility of established comparisons is a crucial point in the analysis and for relative dating. Historical linguists, and proponents of the words and things approach, thus, emphasize the importance of phonological reconstruction and regular sound correspondences (Nicolai 2003; Bostoen 2004). However, for the great majority of West African language families mostly basic vocabulary is reconstructed – if at all – and most often, only singular proto-items of cultural lexis are proposed. That is to say that one fundamental condition for the words and things approach, reconstructed vocabulary, is rarely given – or controversially discussed as in the case of Nilo-Saharan (see Nicolai 2003). Furthermore, it needs to be stated that the level of language documentation is unequal across the African continent.

In our case, some language groups, such as the Dogon languages, have seen great advances and very detailed documentation over the last decade, whereas other areas, such as the Atlantic language family in the periphery of the Manding sphere, still show lacunae, or little detail in ethnolinguistic description. This creates clear biases in the data, and could skew interpretations towards better documented areas.

The relatedness and relative age of cultural terms and borrowings of cultural vocabulary has thus to be estimated based on other criteria. We therefore make phonological comparisons with words of basic vocabulary similar in phonological shape, or by taking familiar internal morpho-phonological heterogeneity into account. Another way of identifying ancient borrowings is to take language classifications which are established on basic vocabulary into account as independent external evidence. As a rule of thumb, linguistic distance in relative lexicostatistical classification should generally correspond to the rate of phonological similarity of terms. Put simply, if a term in two only distantly related languages is identical or rather similar and shows no regular sound correspondences, a more recent borrowing is more likely.

As shown for the example of fonio in Dogon (Tab. 1), family-internal borrowings of cultural vocabulary cut across genealogical groupings. Internal convergence, borrowing between related languages can be assumed because the morpho-phonological forms do not correspond to the lexicostatistical classification of basic vocabulary but cut across genealogical relations.

Historical linguistic evidence for older strata in present-day data can be as fragmented as archaeological finds. In practice, phonological plausibility for cognacy, the historical relation between words, is only one factor. As unambiguous sound correspondences are generally rare and mostly found only for some conceptually simple generic terms of basic vocabulary, linguistic reconstructions can only be established if semantic changes are “regular” or at least plausible as well. One should emphasize that semantic shift and the total exchange of terms is a frequent

process, even in basic vocabulary, but historical linguistics rarely problematize this in wordlist comparisons. Nevertheless, regular semantic change is much more difficult to establish than regular sound correspondences and it would ideally rely on historical ethnographic evidence about a proto-world – which means that the goal of the words and things analysis is also its prerequisite. While some issues of semantic analysis can be tackled by analysis of semantic world fields or taxonomies, external evidence is needed. As a consequence, the systemic integration of cognitive conceptualisation and internal reconstruction are to be taken into account. Moreover, the problem of semantic plausibility suggests that historical sources and archaeological evidence should eventually be consulted, as should ethnoarchaeology and linguistic anthropology.

A further semantic problem concerns the use of wordlists and conceptual correspondences. As argued in Morgenthal – Schreiber (2025), insights into the emic perspective and conceptualisation are crucial for an understanding of lexicalisation – and semantic shifts. However, ethnolinguistic description of cultural domains requires intensive linguistic field research. In contrast, lexical data is mostly available in the forms of dictionaries based on general text corpora, which differ largely regarding their treatment of cultural vocabulary. Moreover, dictionaries, which include proper semantic description of terms and their word senses, exist mostly for the major languages only but they are not available for large scale comparisons. Instead, wordlists, collected at large scale in short periods of field research, are a very common tool for language classification *and* linguistic reconstruction in African historical linguistics. Such wordlists are for many language comparisons and reconstructions the only available data but come with their own inconsistencies and fragmentations. They generally have a basic vocabulary bias, and terms listed under one meta-sense often show conceptual mismatches, misunderstandings and word-by-word translations in the translation of French or English meta-language terms. Again, fur-

Dogon variety	Sub-Group Lexicostatistical Classification	Form	Phonological Form (with tones)
Donno_So	NE_E_SEC_C	A.1.b	paṵṵṵṵṵ
Yorno_So	NE_E_SEC_C	A.1.a	paṵṵṵ
Tommo_So	NE_E_SEC_C	A.1.a	paṵṵṵṵṵṵṵ
Jamsay_A	NE_E_SEC_SE	A.1.a	paṵṵṵṵ
Perge_Tegu	NE_E_SEC_SE	A.1.b	paṵṵṵṵ

Tab. 1 Fonio terms in Dogon languages.

ther evidence from linguistic anthropology and (ethno-) archaeology as well as sound semantic analysis is needed to interpret comparative wordlists.

Not every comparative series of a term will show an evaluable linguistic stratification. Whenever there is a conceptual (concept-thing-lexicalisation) mismatch between meta-language and target languages, this will result in a random distribution of terms in a comparative list (see Schreiber 2008: 48). Another related issue is direct translations from the meta language as it occurs in wordlist collections in linguistic field research. Moreover, semantic shifts

from generics to super-generics (e.g. English/German: Hund->Dogge, dog->hound) can easily create terminological heterogeneity. In the case of ‘glass beads’, for example, even the family internal comparative series for Songhay show strong lexical variation. Tab. 2 shows how here, there is conceptual instability in that different kinds of beads are distinguished by distinct generic terms. This may be taken as an indication of the high cultural value of the item. However, this conceptual variability leads to terminological mismatches, which require much more in depth analysis in smaller areas.

SAHELIA Code	Lexical Form	French
s. Dupu 745	hababa	Perles blanches
s. Dupu 993	kutu	perles (verroteries)
s. Dupu 997	labajur	perles (grosse) que les femmes portent à la ceinture
s. Dupu 1056	lulu	perle
s. Dupu 1238	samawi	perles violettes
s. Dupu 2300	hiri	Perle (en général). Principales sortes de perles

Tab. 2 Words for beads in Songhay (Dupuis-Yakouba 1917).

3. Grains and trade

First, it should be stressed that due to intrinsic issues with folk classifications of botanical species, the conceptual age of the concept and its cultural prominence, semantic changes and morphological differences are to be expected. In many languages of the West African Sahel, the super-generic term for ‘grain’ and ‘millet’ overlap such that pearl millet is termed as a pseudo-specific “millet-grain” like in Jenaama Bozo. Moreover, millet plant, seed and grains may be distinguished – or carry the same denomination. In addition, one should take into account that words are often collected by wordlist translation tasks and not in the field of research on folk taxonomies. Red and white, or small and normal are common descriptors but those like “late” fonio occur in wordlists as well. Some authors also use vague formulations like “a variety of X” when it comes to specific botanical species, which makes the botanical identification difficult. All

this may lead to misunderstandings and misinterpretations. A very particular problem concerns distinct transcription conventions of [dj] in African linguistics. While some authors follow the IPA conventions, others use *j* as it appears in the word for Mande traders and the ethnic group of Jula/Djula/Dyula.

3.1. Pearl millet

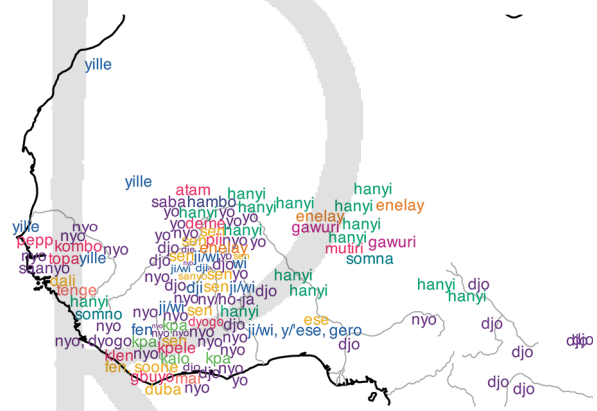
Pearl millet (*Pennisetum glaucum* (L.) Br., syn. *Cenchrus americanus* (L.) Morrone) is the earliest known West African domesticated plant, and is considered to have been key to the development of agriculture. It was a widespread staple of agricultural communities throughout the region, but particularly in the Sahel and savanna until recently. Pearl millet

was domesticated in the southwestern Sahara, particularly northern Mali, in the 4th millennium BCE, following a period of cultivation (Burgarella et al. 2018; Fuller et al. 2021). There, pearl millet cultivation was adopted into preceding pastoral lifeways. The resulting agro-pastoral economy has often been seen as a key factor in the final Late Stone Age of the western Sahel, at sites like Karkarichinkat in the Tilemsi valley (Manning et al. 2011; Manning – Fuller 2014), Windé Koroji below the Niger Bend (MacDonald 1996; MacDonald et al. 2017), or the Tichitt culture sites in southeastern Mauritania (Amblard – Pernés 1989; Fuller et al. 2007). However, pearl millet agriculture also spread rapidly both within West Africa and beyond. It reached the Ganges Basin in the 1st millennium BCE and the Inner Congo Basin in the 1st millennium BCE. In the southern part of West Africa, there are early finds in the Kintampo complex in Ghana (D’Andrea – Casey 2002) and in the Nok culture of Nigeria (Champion et al. 2023), both in the 2nd millennium BCE. In this region, pearl millet might have been integrated into already agricultural societies concentrating on yams and arboriculture (Dueppen 2024). Certainly its wide geographic spread attests to far-reaching exchange networks in the 2nd millennium BCE.

While millet is not prominent in the literature as a trade item, McIntosh and McIntosh have repeatedly argued that Jenné-jeno (and by extension probably other urban centres in and around the IND) developed in relation to the exchange of resources including agricultural produce. In recent and modern times, trade in pearl millet is attested mainly for the desert edge where it is traded north as a staple food (Museum 1977; van der Loeff 2005), but also for the Dogon country, where female brewers will buy surplus millet from the plains in order to produce beer, a key source of female income (Jolly 2004: 312–323).

In Arabic sources, millet is prominently referred to as a staple foodstuff and is often mentioned in the context of locally made food, but also as a trade good “imported from the land of the Sudan” (Ibn Battuta in Levtzion – Hopkins 2000: 282). The Arabic term given most prominently is *dukhn*, while *anili* and *inele* are identified as millet terms of Berber origin (Levtzion – Hopkins 2000: 28).

With some likelihood, the Songhay/Berber term *hanyi* (Fig. 1; for interactive versions of the maps in this article, please visit <https://doi.org/10.34780/ji3ivwmi>) can be related with the one cited in Arabic sources, *anili*. This form is found along the Niger though mostly in the middle Niger and not in the Boko/Busa area – in contrast to ‘gold’ (see below). In her archaeo-linguistic analysis of Pearl millet in Ban-



1 Major forms of terms for pearl millet in West Africa, showing the wide geographic spread of nyo/djo forms (Map © Nikolas Gestrich, Henning Schreiber, for online version see [supplement](#)).

gime, Dogon and beyond, Hangtan (2024) states that “[the lexeme NJO] is, at its source, proposed to be a product of the Mande expansion [...]. Speakers of the *linguae francae* Bambara in Mali, and closely related Jula in Ivory Coast and Burkina Faso, are the likely propagators.” This interpretation can be supported by the larger data sample presented here. NYO is found all over West Africa and even has reached the coastal Kru populations in present Côte Ivoire.

Nevertheless, the analysis shows further lexical strata for millet terms:

YILLE: The origin of the Northwestern-Mande term has been attributed to Berber influence. However, a potential cognate term **ji/wi* can be reconstructed for Niger-Volta, and Proto-Eastern-Mande (Schreiber 2008). A closer examination of the word-field shows that while NJO appears for millet in many South-Mande languages, the cognates of **ji/wi* are still used for the super-generic lexeme for ‘grain’. Therefore, **w/yille* is a potential Proto-Mande term and the Sonike word is not borrowed but conceptually ancient.

SEN: This term is consistent in the Gur speaking areas but also found in Dogon.

There are thus two scenarios for us to envisage the spread of loanwords related to millet. The first is the initial adoption of pearl millet cultivation, which has a considerable time depth, especially in the northern parts of our study region. The second relates to possible later exchanges both in grain as foodstuff and in landraces and other millet-related agricultural practices. We might be able to see linguistic traces of the initial adoption of pearl millet agriculture in the *ji/wi/yille* terms. Apart from this, however, the diversity of terms is the main consequence of the an-

also find forms with initial p, and p->f is a well attested sound change (e.g. from Proto-Central-Southwest to Proto-Central Mande (Kastenholz 1996: 259)), we can reconstruct a Proto-Western-Mande root for fonio as *pon based on regular sound changes. As the analogous case of *fuga/puga “flower” shows: f/p is a regular correspondence between Central-Southwest and

Proto-Central Mande. Moreover, another series shows an analogous case for which p corresponds to f, o to e and a final nasal consonant: Northwestern Mande (Soninke/Bozo) *p/fon* vs. Central-Mande (Manding) *feN (Kastenholz 1996: 251). Apparently, p/f is subject to consonant mutation in Northwest-Mande (Soninke “flower” *puugu/fuugu* (Kastenholz 1996: 251) and for

Dogon variety	Sub-Family	Common form	Phonological/ Tonological form
Toro_Tegu	NE_E	SAREMBE (<-Fula)	seHreHmbeT
Tomo_Kan_S	NE_E	A.2.b	fH?H
Donno_So	NE_E_SEC_C	A.1.b	paT?H
Yorno_So	NE_E_SEC_C	A.1.a	pɔːn
Tommo_So	NE_E_SEC_C	A.1.a	paTɔːn
Jamsay_A	NE_E_SEC_SE	A.1.a	paɔ
Perge_Tegu	NE_E_SEC_SE	A.1.b	pɔːn
Jamsay_Gourou	NE_E_SEC_SE	A.1.a	paT?H
Togo_Kan	NE_E_SEC_SE	A.1.a	paT?H
Jamsay_D	NE_E_SEC_SE	A.1.a	paT?H
Dogul_Dom	NE_N_NET	A.1.a	paT?H
Tebul_Ure	NE_N_NET	A.1.b	pɔːn
Yanda_Dom	NE_N_NET	A.1.b	paTːn
Najamba	NE_N_NET	A.1.a	paT?eH-ŋgoH
Tiranige	NE_N_NET	A.1.c	paH:ŋgeH
Ben_Tey	NE_N_NW	FONJO	pɔːyːn
Bankan_Tey	NE_N_NW	A.1.b	pɔːn
Nanga	NE_N_NW	A.1.b	pɔːn
Mombo	W	A.1.b	pɔːn
Bunoge	W	A.1.c	paH:ŋgeT
Penange	W	A.1.c	paH:ŋgeT

Tab. 3 PON and sub-forms within Dogon (adapted from Heath et al. 2015).

Country	Variety	Phonological form
GUINEA-BISSAU	FULA-PULAAR	djadje
UPPER VOLTA	FULA-FULFULDE (Upper	sereme
SENEGAL	FULA-PULAAR	serene
GUINEA-BISSAU	FULA-PULAAR	fonio
GUINEA	FULA-PULAAR	foignié
SIERRA LEONE	FULA-PULAAR	fonye
MALI	FULA-PULAAR	sereme
NIGERIA	FULA-FULFULDE	accari sarembe
NIGERIA	FULA-FULFULDE	geroreje
NIGERIA	FULA-FULFULDE	ilanwode

Tab. 4 Common forms within the Fula language continuum (data from Burkill 1994).