

THE INVENTION, TRANSMISSION AND EVOLUTION OF WRITING: INSIGHTS FROM THE NEW SCRIPTS OF WEST AFRICA

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ABSTRACT

West Africa is a fertile zone for the invention of new scripts. As many as 20 have been devised since the 1830s (Dalby 1967, 1968, 1969, inter alia) including one created as recently as 2002 (Mbaye 2011). Talented individuals with no formal literacy are likely to have invented at least three of these scripts, suggesting that they had reverse-engineered the ‘idea of writing’ on the same pattern as the Cherokee script, i.e. with minimal external input. Influential scholars like Edward Tylor, A. L. Kroeber and I. J. Gelb were to approach West African scripts as naturalistic experiments in which the variable of explicit literacy instruction was eliminated. Thus, writing systems such as Vai and Bamum were invoked as productive models for theorising the dynamics of cultural evolution (Tylor [1865] 1878, Gelb [1952] 1963), the diffusion of novel technologies (Kroeber 1940), the acquisition of literacy (Forbes 1850, Migeod 1911, Scribner and Cole 1981) the cognitive processing of language (Kroeber 1940, Gelb [1952] 1963), and the evolution of writing itself (Gelb [1952] 1963; Dalby 1967, 2). This paper revisits the three West African scripts that are known to have been devised by non-literates. By comparing the linguistic, semiotic and sociohistorical contexts of each known case I suggest various circumstances that may have favoured their invention, transmission and diffusion. I argue that while the originators of scripts drew inspiration from known systems such as Roman and Arabic, they are likely to have drawn on indigenous pictorial culture and annotation systems to develop their own scripts. Once established, their creations were used to circumscribe an alternative politico-religious discourse in direct opposition to the discourses of colonial administrations. The appeal of these scripts were thus tied more to their relative indexical power than their apparent technological or cognitive advantages. Just as earlier theorists imagined, I contend that West African scripts do have the potential to illuminate historical processes of creativity, transmission and evolution, but only when local particularities are given due consideration.

Keywords: evolution, graphic codes, cultural transmission, West Africa, Liberia

Few regions of the world rival West Africa for the sheer scale, diversity and dynamism of its indigenous writing traditions. Over the past two centuries at least nineteen scripts have been invented in the western region of the sub-Saharan zone spanning from Senegal to Cameroon. The most widely known of these, and the earliest on record, is the Vai script of Liberia created in ca. 1832–1833; the most recent is Wolof Saaliw Wi of Senegal invented in 2002. The high-water mark for West African script invention was arguably the 1920s and 1930s when at least seven scripts came into existence, while the greatest density of indigenous scripts is found in Liberia and neighboring Sierra Leone.

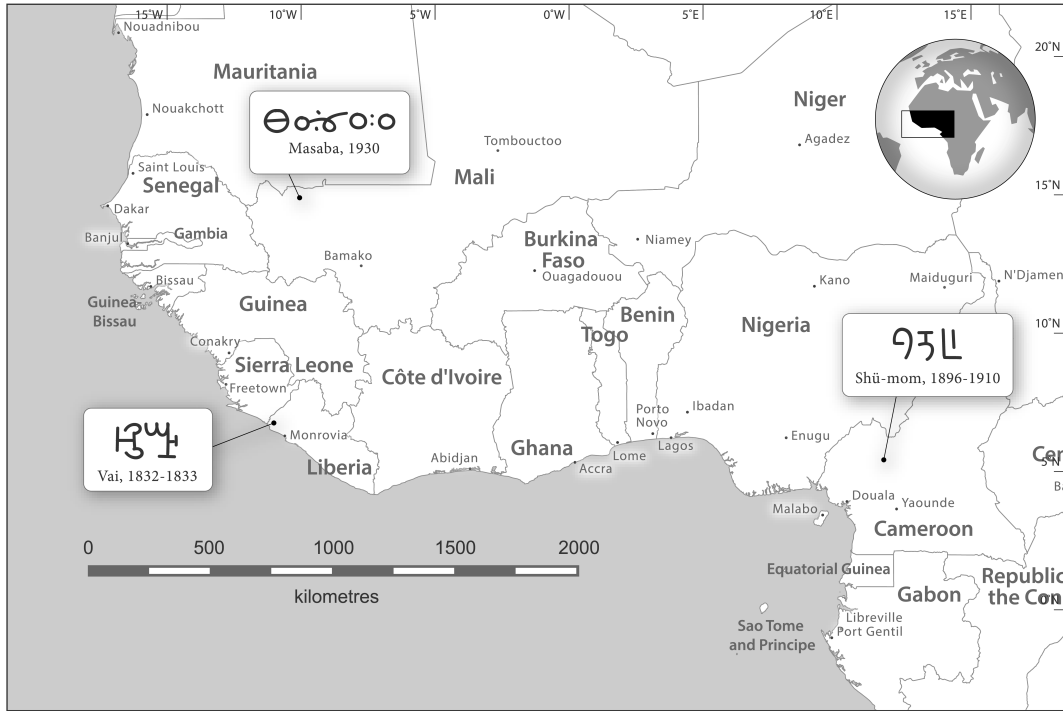
In this paper I describe and evaluate the rise of writing in West Africa across three analytic dimensions: a *social dimension* encompassing historical, political and ethnographic contexts, a *graphic dimension* that considers the scripts visual appearance its range of semiotic associations, and a *glottographic* dimension that examines the ways these scripts model the structures of the languages they are designed to represent. I argue that, to date, scholarly research has centred primarily on this last dimension to the detriment of more context-informed approaches.

In order to constrain my analysis within manageable limits I focus on three significant cases of invention, namely the Vai (𞐃𞐄𞐅) script of Liberia (invented ca. 1833), the Bamum (𞑭𞑮) script of Cameroon (ca. 1895), and the Masaba (⊖⊙⊛⊜⊝) script of Mali (1930) (Map 1). The three case studies under consideration are not random selections since they share a unique circumstance that distinguishes them from all other West African examples: their inventors are likely to have had no formal literacy instruction prior to developing their scripts. Peter T. Daniels has observed that writing systems created by those who are already literate in another system appear to differ from those by illiterate creators in terms of their strategies for modelling phonology (Daniels 1992). In the examples he cites of non-literate inventions (including Vai) the resulting writing systems are always syllabically organised, a fact that lends strength to the hypothesis that syllables have psychological primacy while phonemes (and alphabets) are a second-order analytical construct (Lieberman 1973, Aronoff 1992, Treiman and Tincoff 1997). Be that as it may, the full extent to which previous exposure to literacy influences the structural development of new writing systems has yet to be studied in any systematic, quantifiable or comprehensive way.¹ This paper does not seek to test or problematise the issue, nor does it invoke the so-called ‘autonomous model’ (Street 1984) in which literacy is understood to have transformative cognitive effects (Goody and Watt 1963, Olson 1977, Hildyard and Olson 1978). Rather, it takes as a minimal assumption that *literate* inventors are better able to exploit the learned systematicity of the systems in which they are already familiar, while *non-literate* inventors have less conceptual scaffolding, making the process of invention harder but also ‘freer’ in the sense that it is unbiased by existing models. In other words, non-literates must pull themselves up by their own bootstraps, simultaneously inventing writing and their own experience of literacy.

As a result, scripts by non-literates (termed ‘unsophisticated grammatogenies’ by Daniels), reproduce at least one of the conditions—non-literacy—that obtained in the early development of writing as it unfolded in the known primary origination sites of the Middle East, China and Mesoamerica, and possibly elsewhere. Given the

¹ In modern times there have been at least nine documented cases of scripts invented by non-literates in small scale societies. These are: Cherokee (created 1821), Vai (ca. 1833), Bamum (ca. 1895), Alaska script (1901-1905), Western Apache (1904), Caroline Islands Script (1905-1909), Masaba (1930), Urup Iban Dungle (Borneo, 1947-1962) and Pahawh Hmong (Vietnam, 1955-1971). Potential additions to this list are Bagam (Cameroon, terminus ante quem 1917), Khom (Laos, 1924), and Sayaboury (Laos, terminus ante quem 1950) though the available documentation does not cast light on the state of literacy of their inventors. To the extent that the Rongorongo script of Easter Island is glottographic it might also be regarded as non-literate secondary invention. At least three of these writing systems are not strictly syllabic (Caroline Islands Script, Pahawh Hmong and Khom), casting doubt on the extent to which Daniels’ claim is generalisable. However, greater reliability would be achieved from a dedicated comparison of parameters that go beyond system type, including such things as glyphic inventory and orientation, as well as the phonotactic structure of the languages in question.

opportunities offered by modern script inventions scripts for studying the origin and evolution of writing more generally, I make a few cautious suggestions to extend the findings to ancient contexts. In so doing I hope to complexify the notion of stimulus diffusion, and to propose a distinction between patterns that are broadly typological versus those that are peculiar to non-literate inventions.



Map. 1 Sites of origin for the Vai, Bamum and Masaba scripts.

THREE INVENTIONS

Although the Vai, Bamum and Masaba scripts are equally deserving of scholarly attention, the documentary record remains uneven. By far the best described is Bamum, which has been investigated in various French and German sources across the twentieth century (Delafosse 1922, Friedrich 1937, 1938, Dugast and Jeffreys 1950, Friedrich 1951, 1954) culminating in a monumental three-volume work by Alfred Schmitt (Schmitt 1963a, b). The existence of the Vai script was reported relatively soon after its invention and it has fared well in early missionary sources (for an excellent summary and analysis of these sources see Tuchsherer and Hair 2002). Its continued vitality throughout the twentieth and twenty-first centuries has granted it the highest profile of the three cases and it has been discussed in a diverse range of scientific and historical contexts. The Masaba script, by stark contrast, is known from just one source (Galtier 1987) and urgent fieldwork in the Kayes region of Mali is needed to further assess its history, principles and present vitality.

Vai

On a fateful night in 1832 or 1833, a young man by the name of Məmōlu Duwalu Bukele was taught the art of writing by a stranger who visited him in a dream. Like the other inhabitants of his village on the Pepper Coast of West Africa, Bukele was an

illiterate speaker of Vai, a Mande language spoken in present-day Liberia and Sierra Leone.

At this time, Vai people and their neighbours were entering a prolonged period of violent transformation. In response to growing racial unrest in the nominally emancipated states of the US, the American Colonization Society secured support for a proposal to resettle vast numbers of freed slaves in an appropriate location in West Africa. Through force, barter and diplomacy, the Society laid claim to a tract of coastal territory just south of British colony of Sierra Leone, and as the new settlers arrived they would displace the Vai and other indigenous occupants from their homelands. Conflict with locals continued to simmer. A mere two years after Bukele's invention of the Vai script, the expanding coastal colony was proclaimed as the nation of 'Liberia', a Latinate derivation for a new 'land of the free'. Like the European visitors who had preceded them, the African-American colonists were Christians who neither spoke the local languages nor followed West African customs. In contrast, the communities along the Pepper Coast were linguistically diverse and while most were nominally Muslim they continued to observe indigenous spiritual beliefs and practices. Out of this collision of culture, religion and language the newcomers were to reproduce the conditions of segregation from which they had fled, for the most part denying indigenous Liberians constitutional rights within their brave new republic. A number of the arriving colonists were literate, and Vai people did not always draw a distinction between black 'Americo-Liberians' and the white missionaries who accompanied them, referring to all groups as 'whites' or *poros*.

Fuelled by the ongoing slave trade in which Vai chiefs were active participants, persistent intertribal warfare overshadowed the otherwise isolated anti-colonial skirmishes with the Liberian colony (Johnston 1906a). In the 1830s, life on the Pepper Coast was precarious as territories were invaded or recaptured and the vanquished enslaved by the victors, or sold to Atlantic traders. Even the epithet *Bukele*, meaning 'gun war' is evocative of the conflict in which the Vai were enmeshed. Although the preeminent Vai chief was to renounce his complicity in the trade and form an alliance with anti-slaving patrols, the practice of keeping and selling slaves persisted within Vai society for some time.

It is against this background that I return to Bukele's revelation and its aftermath, as it unfolded in the village of Tombè in a swampy terrain near the southern border of Sierra Leone. His dream, retold through the imperfect filter of missionary sources, is recounted thus:

[Mòmɔlu Duwalu Bukelɛ] had a dream, in which a tall, venerable looking white man appeared to [him], saying, "I am sent to you by other white men [...] I bring you a book. [...] I am sent to bring this book to you, in order that you bring it to the rest of the people. But I must tell you, that neither you, nor any one who will become acquainted with the book, are allowed to eat the flesh of dogs and monkeys, nor of any thing found dead, whose throat was not cut; and to touch the book on those days on which you have touched the fruit of the To-tree [...]" The messenger then showed Doalu [i.e. Bukelɛ] his book, and taught him, to write any Vei [Vai] words in the same way, in which the book was written. This made a deep impression on Doalu's mind, and he described it to me quite graphically. He said: "Look, this sign (writing the sign with his finger on the ground) Doalu means i (English e). Then he wrote close to it another sign, saying, and this means na. Now, Doalu, read both together!" Doalu did so and was quite delighted to have learnt to read the word ina, *i. e.* come here! In the same way the messenger showed him how a great number of other words can be written. [...] A few days after, [Bukele's cousin] Kali Bara also [...] had a dream [...] in which a white man told him that the book came from God, and that they must mind it well. (Koelle 1849, 21-22).

According to the same source Bukēle was unable to remember the specific signs that had been revealed to him in the dream, but having acquired the principles of representing speech, he and his cousins soon set to work devising the Vai syllabary.

Character	Variety	K	F	N	Character	Variety	K	F	N	Character	Variety
⊙		a	ah	a	⌚		do		di	⌚	
⌚		bā	bar	ba	⌚		da		dā	⌚	
⌚		bā	bah	bā	⌚		da	doi	da	⌚	
⌚			baugh	bā	⌚		dū		dū	⌚	
⌚		ba	begh	be	⌚				dū	⌚	△
⌚		be	begh	bē	⌚		ji	dua	dua	⌚	
⌚		bā		bē	⌚		dang	lang	dang	⌚	
⌚		bā		bē	⌚		dang		dang	⌚	+
⌚		bai		bai	⌚		deng	dhing	dong	⌚	⊙
⌚		bī	bee	bī	⌚		dong	dona	dong	⌚	⊙
⌚		bī		bī	⌚		dong	loh	dong	⌚	
⌚			bih	bī	⌚		dong	dong	dong	⌚	#
⌚		bo		bo	⌚		dang		dung	⌚	⌚
⌚		bō	boo	bū	⌚		dang		dung	⌚	⌚
⌚		bo		bō	⌚		e		e	⌚	⌚
⌚				bō	⌚		ea		ea	⌚	⌚

Figure 1. Sample of the earliest surviving documentation of the Vai syllabary collected by F. E. Forbes in 1849 (Forbes 1851).

The above account recorded by the German missionary Sigismund Wilhelm Koelle is oft-repeated in commentaries on the script, but it should be noted that alternative and intersecting origin stories are known to Vai people. One of the more prosaic was recorded in an early Vai manuscript known as the Book of Rora, by Bukēle’s aforementioned cousin who related that the script was devised one night by a group of Vai men as a challenge to the supposed cultural superiority of outsiders, or “Those-from-afar” (Dalby 1967, 8, Tuchsherer and Hair 2002, 449).




Māmōlu Massaquoi, a Vai intellectual who did much to promote and standardise the script in the early twentieth century, commented that “Vais believe [their script] was taught them by the great Spirit whose favourites they are” (Massaquoi 1911). And in the 1970s Scribner and Cole were repeatedly told by their Vai informants that “There are three books in this world—the European book, the Arabic book, and the Vai book; God gave us, the Vai people, the Vai book because we have sense” (Scribner and Cole 1981).²

In large part these origin stories point to a persistent association between writing and religious experience, framed within a distinctly colonial context. In the dream narrative, an interaction between a literate outsider (not necessarily ‘white’) and a non-literate insider leads to an inspired revelation-within-a-revelation. The vision of written words, the enumeration of Halal dietary taboos, and taboos concerning the touching of a sacred book, would no doubt have resonated among Vai Muslims in the early nineteenth century. It is also worth bearing in mind that the name Māmōlu is a Vai rendering of ‘Mohammed’ and that by 1849 he had acquired the nickname

² Scribner and Cole (1981, 264) write that “in the towns and villages some elders recount different stories about the invention and early development of the script”. Unfortunately, none of these stories were documented.




Mómolu Duwalu *Kpolo* meaning ‘book’ (Koelle 1854, 230) a term that semantically extended to ‘writing’ in the local vernacular (Tuchsherer and Hair 2002, 451). Thus the motif of a ‘book’ given to the prophet of God’s chosen, on equal terms with other ‘peoples of the book’ (i.e., ‘European’ and ‘Arabic’), further reinforces an Abrahamic conceptualisation of the written word and its supernatural significance. In this way Vai origin stories recapitulate the founding of a religion based on scripture, prophecy and revelation, in the face of an encroaching group with a rival but commensurate set of beliefs and institutions.

It is telling that the literate stranger in Bukɛɛ’s dream exemplified the principles of writing by using two independently meaningful Vai morphemes: *i* (interpretable variously as ‘you’ plural; an affirmative marker; an aspectual suffix) and *na* (‘come’; intransitive marker³) that are—at least within the dream—given graphic representation as separate logograms. That these are then recombined to form the lexical phrase *ina* (‘come here’) theoretically permits an intuitive reanalysis of *i* and *na* as phonetic rather than morphemic syllables. In short, a crucial stepping stone towards phonographic writing is encapsulated in a subtle reorientation of meaning to sound. Accordingly, Bukɛɛ’s dreamed insight resembles other known ‘discoveries’ of the phonetic principle in autonomous inventions of writing from the Middle East to Mesoamerica.

The earliest surviving versions of the Vai script do, in fact, include a number of syllabograms that can be redeployed for their phonetic values while shedding their original semantics in the manner of a classical rebus. These were identified by Koelle as the iconic characters for GUN ●● <bu>, WATER  <dʒi> and MONEY ●● <kpe>, and according to Koelle they were all “used as frequently in a phonetic capacity as in the one which might be called symbolic” (235). In 1933, August Klinghenben, noted that the “Vai script is now a purely phonetic syllabic script” even though “today signs are occasionally found in Vai manuscripts which embody not a phonetic sound-sequence but a definite concept”. Among these he identified DEATH.DIE.KILL  <faa> (today: ) representing “a withered tree with drooping branches” as a positive logogram. More speculatively, Klinghenben singled out a further twenty Vai syllabograms as potential icons that may once have been used logographically, while David Dalby later isolated eight such signs, cautioning however that the search for iconicity is a subjective enterprise (Dalby 1967, 17). But while the distinction between logographic and phonetic values for a given glyph is fundamental to definitions of glottographic writing, in practice it is not always possible to identify which function is being foregrounded.⁴

Whatever the status of these signs, the majority of the approximately 211 syllabograms devised in the early 1830s have no evident iconism or logographic value. The Vai script was always, first and foremost, a syllabary. Nonetheless, pictorial graphic codes were used in the Mande linguistic area prior to and contemporaneously with the emergence of the Vai script. Thus the derivation of actual and potential logograms may be the consequence of a conscious repurposing of

³ The Vai morphemes *i* and *na* could be interpreted variously depending on their phrasal context. See Koelle (1854), Welmers (1976, 90) and the lexical lists in progress by Charles Riley and Tombekai Sherman (Riley 2015).

⁴ In Alan Gardiner’s seminal analysis of Egyptian hieroglyphics he noted that dual readings were often possible, citing the following example: “Elsewhere, as in  when abbreviation for *htp* ‘favour’ [...], or in  *sdm* ‘hear’ or  *iw* ‘come’, the terms ideographic and phonetic seem almost equally suitable” (Gardiner [1927] 2001).

existing semiotic resources, as has been argued by Massaquoi, Klingenheben and Dalby; this hypothesis is elaborated later. Indeed, familiarity with indigenous pictorial conventions may have assisted learners and given impetus to the early spread of Vai literacy. Of the many scripts subsequently created in West Africa, Vai still ranks as the most successful in terms of its transmission across time. Teaching of the Vai script in purpose-built schools was known from as early as ca. 1835 but came to an end in 1850 when the last school in Bandakoro was destroyed in war (Koelle 1854, Migeod 1909). It was in this town that Koelle observed that “all grown up people of the male sex are more or less able to read and to write, and that in all other Vei towns there are at least some men who can likewise spell their ‘country-book’ [ie, ‘local writing’] (Koelle 1849).⁵ By the 1960s, David Dalby (1967) reported that the script was used “widely” by the Vai in Liberia, but it wasn’t until the 1970s that the first formal literacy survey was conducted by Scribner and Cole (1981, 63) who noted that in their fieldsite of Cape Mount County in 1973-1978 only 6.6 per cent of the general population and 20.3 per cent of the adult male population were literate in the Vai script. Although these figures appear low, literacy in *any* script—Vai, Roman or Arabic—was found to be at 19.1 per cent of the general population and 28.4 per cent of the adult male population.

Bamum (Bamum)

As the Scramble for Africa reached its zenith in the late nineteenth century, a West African noble reprised Mómolu Duwalu Bukelɛ’s discovery in very different circumstances. Shortly after the German colony of Kamerun was proclaimed in 1884, the newly installed King Ibrahim Mbouombouo Njoya voluntarily formed an alliance with the Imperial German Government. His kingdom, centring on the town of Fumban in the northwest of the nation, was recovering from war with the Nso people and Njoya’s allegiance to the colony helped to shore up his legitimacy in a court divided by intrigues.

Like Bukelɛ, the illiterate King Njoya was inspired to create writing after a revelatory dream. In Njoya’s retelling, a teacher instructed him to draw an image of a hand on a wooden tablet before washing it off and drinking the water (Dalby 1968, 163). The imagery is telling. In many regions of Africa a well-established healing ritual involves writing Quranic verses on wooden slabs or plates that are then washed off with water to be consumed by the patient (Silverman 2007 *inter alia*). These rites do not require the participants to be literate in the Arabic script: it is the body itself that must *read* the sacred text without interference (Nieber In preparation). Possibly the dream prompted Njoya to discover a ‘literacy’ latent within his body that would find expression through his writing hand. Such rituals were sufficiently familiar in West Africa outside of Muslim communities that the Christian inventor of the unrelated Medefaidrin (Map 2) script had a similar inspirational vision which led him to believe that by drinking water he would “receive knowledge washed from a great book written in different colored inks and thus receive the words of God” (Hau 1961, 298).

Upon awaking, Njoya re-enacted the dreamed ritual before beginning work on a syllabary for his native language of Bamum. With assistance from at least two others, he drafted a series of pictographic characters that were intended, at first, to represent objects and actions. Progress was slow and there were at least five abortive attempts

⁵ In a later edition of the same text, “all” was moderated to “a great proportion” (Koelle 1854).

before Njoya began experimenting with rebus writing. In a first practical draft, the working group completed a table of 510 syllabic characters of largely pictographic inspiration. Over the next fourteen years, the script went through six revisions, becoming progressively smaller with each draft. The total inventory of characters was reduced successively from 510, to 437, to 381, to 295 and 205 until it stabilised as an alphasyllabary of some 80 characters in 1910 (Gelb 1963, 210; Dalby 1968). At the same time, Bamum transitioned from a logography to a syllabary and finally to an alphasyllabary. The graphic form of the characters themselves became marginally simpler (see Fig. 2 below).

A	B	C	D	E	
					<u>ɣun</u> [.], les hôtes
					<u>tuə</u> ['], viens
					<u>ɣuə</u> ['], que, dont
					<u>pə</u> ['], eux
					<u>tumə</u> ['], retire, extrais
					<u>kuə</u> ['], la toux
					<u>suan</u> [..], le caillou de pouzzolane
					<u>tuəʔ</u> ['], penche
					<u>vua</u> ['], perdu, la perte
					<u>wux</u> ['], la mort
					<u>laam</u> [..], la forge

Figure 2. Excerpted comparison of Bamum graphemes across five successive phases (Dugast and Jeffreys 1950, 87)

Njoya's collaborative creativity was not limited to the art of writing and he is also remembered for devising a secret courtly language. Assisted by a female European missionary, the pair generated a lexicon from nativised French, German and English words with reassigned Bamum glosses. Njoya employed the Bamum script to produce a corpus of manuscripts in both the Bamum language and the restricted courtly language.

In 2005, Konrad Tuchsherer led the Bamum Manuscripts Project to preserve and digitise over 7000 documents at the Archives du Palais des Rois Bamoun in Fumban. Despite the availability of an extensive corpus, present transmission of the script is very weak (Unseth 2011).

Masaba

A third rediscovery of writing took place in the northwest border region of Mali, nearly a century after the invention of Vai. One night in 1930, a twenty-year-old Masasi man by the name of Woyo Couloubayi experienced a revelation while lying in a state of deep reflection. By morning he had produced the first draft of a writing system for his native language of Bambara spoken today as a first language by some 4 million people. Couloubayi's village of Assatiémala is located at a point where the dry bushland of the south gives way to the Sahara desert, and at the time of his discovery literacy was practically non-existent; today, the adult literacy rate for the whole of Mali is 33.6 per cent though this tally does not specify languages or scripts.⁶

Couloubayi's earliest attempts at writing have not been recorded but in subsequent years an assistant by the name of Lamine Konaté helped him revise the system until it reached its final form: a syllabary of 123 characters written from left to right. The script is referred to by its users as 'Masaba', a name derived from the first three letters of system in its conventional recitation order: \ominus <ma>, $\circ\text{̣}\text{̣}$ <sa> and $\circ\text{̣}\text{̣}$ <ba>, see Fig. 3.

	i	e	ɛ	a	ɔ	o	u
	\ominus	 	Z	Y	→	→	I
p	∞		W	Z	Z		!E
t	∞	Y	Z	Z	W	W	^
c	\ominus	X	X	X	=	X	Z
k	\ominus	∞	Z	W	V	→	O
b	W	F	\square	$\circ\text{̣}\text{̣}$	$\circ\text{̣}\text{̣}$		E
d	W	^	E	∅	V	W	+
j	$\circ\text{̣}\text{̣}$	E	E	^	V	=	Z
g	\ominus	E	E	W	→	→	^
f	$\circ\text{̣}\text{̣}$	I	I	I	X	I	^
s	I	E	Z	∞	=	O	→
nz			Z	∞			
m	I		W	\ominus	E		O
n	I		E	∞	 		^
ny	I		$\circ\text{̣}\text{̣}$	Z	W		I
ŋ				W	Z		D
y	Z	V	∞	∅	∞	V	Z
w	I		W	→	O	Z	I
h	$\circ\text{̣}\text{̣}$		X	V			W
l	I	∞	W	E	Z	I	+
r	A	Y	∞	X	X	V	W

Figure 3. Chart of the Masaba syllabary, adapted from Galtier (1987) by Cleobie Impang

⁶ Literacy data is from <http://data.worldbank.org/>, accessed 6 October 2016.

Like Bukele and Njoya before him, Couloubayi was Muslim and aware of writing in the form of the Arabic script. Being a subject of a French colony it is likely that he would also have encountered the Roman script and later in life he was to acquire at least an oral command of both Arabic and French. Despite superficial formal similarities between Masaba and Vai, Couloubayi knew nothing of the inspired invention of other West African writing systems. Another indication that he was not generating his system from a pre-existing and complete model is the fact numbers in Masaba are written out as words.

Couloubayi was aware that his system did not accurately represent the phonemes of Bambara since there was no means of indicating vowel contrasts by means of tone, nasality or length. Concerned about the additional learning-load, his collaborator advised against extending the system any further, but Couloubayi would eventually introduce vowel diacritics to specify nasality, vowel-length and a high tone.

Access to literacy in Masaba is not restricted to any class or gender and it has been taught in evening classes by an organisation devoted to its promotion. In 1978 when apprentices of Couloubayi were interviewed by a Malian and French research team, the script was used in the villages of Assatiémala, Dyabé, Ségala, Sérédji, Koronka and neighbouring areas. The present distribution of Masaba is unknown. Numbers of readers and writers have never been estimated, but by the late 1970s there were circumstantial indications that use of the script was in decline, a situation attributed to its difficulty of acquisition, the introduction of state-sponsored literacy, and a population exodus from rural areas (Galtier 1987). At this time, Masaba was used for recording taxes, registering debts, personal correspondence and the transcription of Muslim prayers.

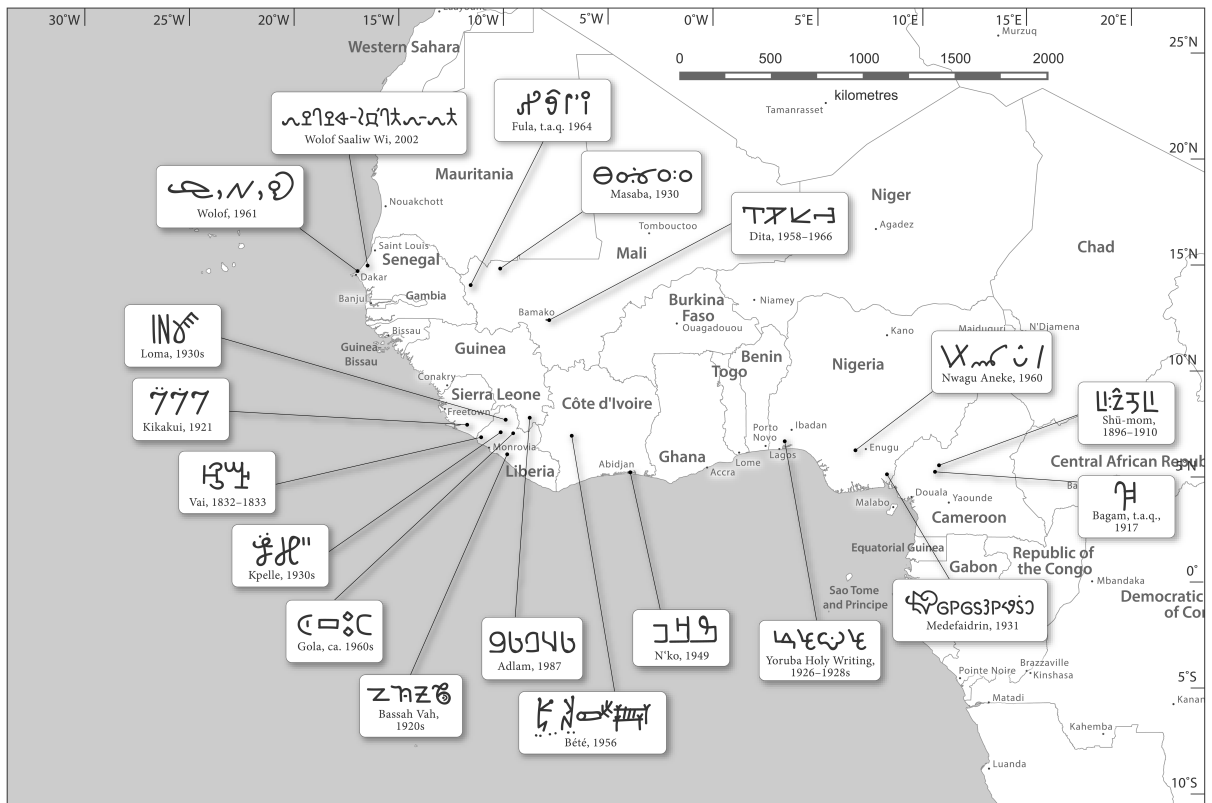
Other scripts

The Vai, Bamum and Masaba writing systems are set apart as special cases because their inventors were known to be illiterate, even if they were aware of the idea of writing. However the true status of their prior competence in other scripts can only be inferred from the documentary record. Scholars have pored over Mòmolu Duwalu Bukele's biography to try determine whether he had had some instruction in the Roman script. Similarly, Njoya and his coterie may have had some familiarity with the Arabic script and have been conscious of the existence of the Vai script due to Vai migrations into Cameroon in the late nineteenth century (Migeod 1909). Arabic was being taught by Mandingo imams in Vai country by at least the middle of the century (Wilson 1856, 75), and it is possible though not proven that Bukele learned, via missionary channels, of the successful creation of the Cherokee script in Georgia (Dalby 1968, Tuchsherer and Hair 2002). At a bare minimum one could safely assert that all three inventors had been exposed to the idea writing and its principles, but no piece of evidence has yet come to light indicating that they had any *competency* in these systems.

Whether in West Africa or elsewhere, script invention on the part of non-literates is a rare phenomenon. By contrast, inventions by those already literate in another system are comparatively more numerous. In the first half of the twentieth century an astonishing frenzy of scribal creativity is documented along the entire West African coast with particular density in Mande linguistic area encompassing the freed-slave republics of Sierra Leone and Liberia, and neighbouring Côte d'Ivoire (Map 2). Liberia saw no less than four new scripts created in the twentieth century, all for languages spoken by indigenous groups on the margins of the Americo-Liberian polity. David Dalby, who did most to document and publicise these scripts outside of

Africa, emphasises that Vai was standardised at the beginning of the century and gained new domains of official use. By way of consequence it became known beyond Vai country and this may have inspired other communities to emulate it. Dalby also speculates that the increasing political power of the Vai in the early twentieth century may have stimulated a kind of arms race wherein the possession a distinctive script became a marker of political legitimacy and cultural prowess.

Whatever the case, the Bassa people whose lands lie to the southeast of Vai country were to acquire an alphabet in the 1920s thanks to the efforts of Dr Thomas Flo Lewis. An educated Bassa man who received his medical training in the United States, Lewis was to call his script ‘Vah’ or ‘Bassa Vah’, a possible derivation from ‘Vai’ (Dalby 1967). By the 1930s, both the Loma and Kpelle peoples would begin writing their languages in indigenous scripts and both these systems diffused across the border into neighbouring Guinea. Meanwhile, speakers of Gola whose territory was hemmed in by the literate Vai and newly literate Kpelle peoples produced their own alphabet some time prior to 1968, though it did not diffuse and only fragments have survived. The most recent Vai-centric script is Adlam, invented in Guinea for the Pular language in 1987 (Abdelhay, Asfaha, and Juffermans 2014).



Map 2. West African script invention, ca. 1832–2002

Bamum may have been a source of inspiration for the Bagam script invented in the same region of Cameroon some time prior to 1917. No connection has been established between Bamum and the nearby Medefaidrin script of Nigeria despite sharing a striking idiosyncrasy: the inventors of both scripts also invented new languages to go with them. Excluding inventions designed for works of fiction, the only other known case of simultaneous language-script creation of this kind is found in the Philippines (Kelly 2016).

In Mali, at least one new script was created in the wake of Masaba. The so-called Fula alphabet of Adama Ba was invented some time prior to 1964 but did not diffuse. In neighbouring Senegal, two separate alphabetic scripts were created for the Wolof language, the first in 1961 (Dalby 1969) and the most recent in 2002 (Mbayer 2010).

Many of the scripts marked in Map 2 did not last beyond a single generation, with some such as Fula and Yoruba Holy Writing failing to diffuse beyond their originators. There are no recent surveys of literacy in West African indigenous scripts, but those scripts that are known have recent communities of use include Vai, Bamum, Kikakui and Medefaidrin. The most successful West African writing system to date is undoubtedly N'ko, invented by Souleymane Kanté in the Côte d'Ivoire in 1949 for the mutually intelligible Mande languages of Malinke, Bambara, Mandingo, Dioula and Wankara. Its present scribal communities extend from Senegal to Nigeria, and N'ko associations exist in Burkina Faso, Côte d'Ivoire, the Gambia, Ghana, Mali, Senegal, and Togo, as well as in Cairo and Mecca (Oyler 1997).

While African script invention is concentrated in the western sub-Saharan region, other new scripts are attested on the continent. These have not been discussed here, but at least six twentieth-century scripts are known in east Africa (for an overview see Rovenchak and Glavy 2012), and two in Central Africa (Payi 2007, Mavinga 2011).

THE INTELLECTUAL USES OF SAVAGE LITERACY: ALPHABETS, SYLLABARIES AND STIMULUS DIFFUSION

The Church Missionary Society at the helm of the resettlement policy in Liberia was particularly enthused by the Vai script, reporting it as a scientific find on a par with the discovery by Europeans of Mount Kilimanjaro that occurred in the same year (Church Missionary Society 1849). Indeed, as news of Vai and other West African writing systems spread through missionary networks, intellectuals from further afield began to ponder their potential for unravelling problems in anthropology and psychology.

It should be remembered that material support for the new Liberian settlement was to a large extent contingent on public opinion in the United States. The presence of independent Vai literacy was an argument against the view propounded by advocates of the slave trade that Africans were morally and intellectually incapable of assimilating the values of civilisation. For the Society, the Vai script instead afforded “proof of intellectual ability and enterprise in the Natives, as well as of a certain degree of moral and religious feeling” (Church Missionary Society 1849).

Teleology

Needless to say, belief in the intellectual inferiority of Africans was dominant in scientific circles at this time. In the second half of the nineteenth century, most anthropologists accepted a version of the progressivist hypothesis, the theory that all human cultures passed through successive stages of development from a condition of primitivity to an advanced state of civilisation. Progress, according to this schema, was motive force emanating from within society itself whose effects were both inevitable and predictable. Innovations in technology, from the development of fire-making tools to the invention of arrows and pottery, occurred in a unilinear sequence in which a given stage could not be reached without the attainment of an earlier prerequisite stage. Though cultural teleology had been in vogue since at least the late eighteenth century, it was to be eventually systematised and formalised in two highly influential works of theoretical anthropology: Lewis Morgan's *Ancient Society* (1877)

and Edward B. Tylor's *Researches into the early history of mankind and the development of civilization* (Tylor [1865] 1878).

For Morgan, the invention of writing was the sole innovation that marked the passage of humankind from what he called the 'Upper Status of Barbarism' to the final and consummate 'Status of Civilisation'. The successful representation of language in writing, and more especially *alphabetic* writing, conferred civilisational legitimacy through its power to record a permanent narrative. "Without literary records," Morgan argued, "neither history nor civilization can properly be said to exist" (Morgan 1877, 31).

As the signature achievement of Western civilisation the autonomous innovation of writing was regarded as well beyond the reach of the illiterate savages on the colonial frontier. Accordingly, the presence of both the Cherokee and Vai scripts presented a conundrum for progressivist theorists like Tylor who tried to account for both inventions by invoking the guided hand of colonial contact. For Tylor, these scripts necessarily owed their inspiration to "the books of civilized men", pointing out that the celebrated inventor of Cherokee was a 'halfbreed', and asserting—incorrectly—that Bukelɛ was instructed by a white missionary when he was a boy (Tylor [1865] 1878, 102-103).⁷ Similarly, numerous scholars searched long and hard for semiotic evidence that the Vai writing system was either descended from scripts originating in non-African societies or at least modelled on them.⁸

Although social evolutionist theory was all but rejected by the 1920s, it proved to be a tenacious idea, especially in the popular imagination, while its application to the history of writing continued to hold appeal for European scholars well into the twentieth century. While the Cherokee and Vai scripts were hard to account for within Morgan and Tylor's model of *societal* teleology, they were to be treated as primary evidence to sustain a progressivist theory of the evolution of writing systems by later thinkers. Of course, the notion that alphabets were superior to other writing systems had been in circulation in Europe for some time (see Boswell [1791] 1807, 52, Hegel [1837] 2001 inter alia). Koelle himself commented that the primitive syllabicity of Vai writing was characteristic of a "first attempt in writing" (Koelle 1849, 20) and that therefore it "cannot be suited for the present era of the world" (Koelle 1854, 15) in stark contrast to an alphabet as "the most developed method of representing thoughts to the eye" (Koelle 1854, 234). But it was David Diringer who first theorised this prejudice and did so in distinctly progressivist terms. In Diringer's understanding writing systems inevitably evolved from picture-based logographies, to syllabaries and finally "modern civilized writing" instantiated in an alphabet (Diringer [1948] 1968, 4). While progress towards alphabetism was unilinear, it was not evenly enjoyed among different societies with some systems remaining frozen at a lower stage of development. For Diringer, the Vai script provided evidence of an

⁷ The source of Tylor's claim that Bukelɛ was already partly literate is Koelle (1849, 1854) who speculates that the young Bukelɛ learned to read and write for about three months under the guidance of a white missionary. Although Koelle indicates that this is his own idle hypothesis ("it will not be amiss to state here what, *in my opinion*, will *account for* Doalu Bukere's dream [...]", my emphasis), the vignette is repeated as fact by Tylor and in other commentaries (Moody 1900, 478, Tuchsherer and Hair 2002). Arabic is likely to have been a more proximal source for Vai inventors (Wilson 1856, 75).

⁸ Vai graphemes were variously associated with Hebrew (Norris 1851, 104, Roman (Tylor [1865] 1878, Delafosse 1899, Johnston 1906b), Arabic (Johnston 1906b), Greek (Delafosse 1899) and Chinese (Wilson 1834, cited in Tuchsherer and Hair 2002, 437)

evolutionary transition and he predicted that it must have begun life as a purely ideographic script before Bukēle refashioned it as a syllabary (131).

I. J. Gelb extended Diringer's progressivism to argue that the sequence of system types corresponded to "stages of primitive psychology" (Gelb [1952] 1963, 203). Moreover scripts invented by non-literates underwent rapid and predictable transformations that emulated the natural evolution of *all* writing across deep historical timescales (21, 210). A similar sentiment invigorated the important fieldwork of David Dalby who believed that "West African scripts have a wider palaeographic interest, since they provide us with modern examples of the development of writing" (1967, 2). For Gelb, the Vai script had taken the first step in its transition from a pure logography to a syllabary, Cherokee was arrested at the syllabic stage, while the later-phase alphasyllabic tendencies of Bamum demonstrated its yearning for alphabetisation (203). As such, the precocious Bamum script was "of greatest importance for the theory of writing" (209).

The syllabicity of African systems had different implications for the nineteenth-century philologist Edwin Norris who argued that a syllabic system was better suited to the clusterless syllable structure of the Vai language (Norris 1851). Not only was a syllabary easier for native speakers of Vai to acquire than an alphabetic script, but the manuscripts produced by Vai speakers were more faithful to the language and thus of greater benefit to philologists. Dalby (1967) later maintained that the high proportion of syllabaries among all the indigenous scripts of West Africa (Map 2) afforded proof that this system was perhaps more appropriate for the phonotactics of African languages. A similar observation was made by Gérard Galtier (1987) for Couloubayi's invention of Masaba, a script that was not included in Dalby's analysis since he was not aware of its existence. In a different context Konrad Tuchsherer attested to the greater learnability and accuracy of the syllabic Kikakui script (Map 2) for the Mende language of Sierra Leone in contrast to the Africa alphabet, a pan-African orthography that missionaries had struggled to introduce in the area. Tuchsherer concluded that the drive to introduce alphabetic orthographies was founded on a Eurocentric progressivist ideology and that "the African inventors of syllabaries had insights into their languages which European linguists did not" (Tuchsherer 1995).

No scholar has yet gone so far as to claim that CV- languages *must* use a syllabary in order to be successful, nor conversely that languages with consonant clusters will resist a syllabary. Advocates of syllabaries, from the nineteenth century to the present, merely point out that the system makes the initial process of literacy acquisition demonstrably easier for speakers of CV- languages. Once literacy is successfully acquired in the first instance, it is argued, the skill can be transferred to a different system.

This view is not entirely shared by Alexander de Voogt who sees both literacy transmission and script invention as agnostic with regards to system types (de Voogt 2014). Noticing that African scripts invented prior to the 1930s have been mainly syllabic while later scripts (including those in East Africa) are mainly alphabetic, he hypothesised that the change was associated with the formulation of the Africa Alphabet in London in 1928 and the near concurrent foundation in 1934 of the Institute of Linguistics. That the top-down policy directives of distant colonial institutions could exert such an effect on grassroots literacy movements is

unconvincing.⁹ A more parsimonious explanation is the mere fact that *all* creators of new scripts after the 1930s had prior literacy in either the Arabic or Roman alphabets. Their inventions, therefore, could be reasonably interpreted as cyphers for these systems even if they deliberately diverge in the visual appearance of their scripts. In other words, they represent cases in which the system and its sound values were (largely) borrowed but the sign shape was not.¹⁰ They could not, however, be regarded as reinventions via minimal input in the manner of stimulus diffusion.

Stimulus diffusion

While Tylor struggled to accommodate Vai writing within the progressivist paradigm, he understood that the unusual circumstances of its genesis had potential precedents in ancient contexts. Thus he supposed that “the difficulty in tracing the origin of some of the Semitic characters may result from their having been made in the same way as these American and African characters” (Tylor [1865] 1878, 103). It was not until 1940 that the anthropologist Alfred Kroeber—without reference to Tylor—developed his concept of ‘stimulus diffusion’, again relying on the Cherokee and Vai scripts as exemplifications. Acknowledging the psychological primacy of syllables for non-literates, Kroeber maintained that the two syllabaries must have been reverse-engineered from the mere idea of (alphabetic) writing. But their inventors, he argued, were not merely adapting writing but had altered its basic principle by shifting to a different system. As such they were marked as “person[s] of originality capable of primary invention” (3).

Like for Tylor before him, the implications of this insight extended beyond the Cherokee and Vai examples. Indeed, Kroeber promptly suggests an application to the history of writing itself. At this time, writing was widely held to have been invented only once in Mesopotamia from where it diffused to other corners of the world. This theory failed to account for why early writing in Egypt should therefore be so radically different in form and organisation from its presumed cuneiform progenitor. Stimulus diffusion, on the model of Vai and Cherokee, provided an explanation for this difference since it permitted the possibility of a ‘primary’ creativity. Even the problem of Aegean scripts and their origin would soon after be approached on similar terms by Marcel Cohen (1958, 444) who invoked the Bamum script as a modern parallel for earlier secondary inventions derived from ‘imperfect knowledge’.¹¹

The hypothesis that certain languages, on account of their simple syllable structures, are predisposed to phonography was first proposed by Heyman Steinthal (1852) but has been championed more recently by Peter T Daniels (1996) and, independently, by William Boltz (2000). In a nutshell, they proposed that languages with monosyllabic morphemes present an easy entry point for logographic

⁹Neither was the perceived ‘shift’ from syllabaries to alphabets quite so dramatic in West Africa. Of the six systems created before 1930, four are syllabaries (Vai, Bamum, Bagam, and Kikakui) and two are alphabets (Bassa Vah, and Yoruba Holy Writing). After 1930, five are syllabaries (Masaba, Loma, Kpelle, Bété, Nwagu Aneke) and eight are alphabets (Medefaidrin, N’ko, Dita, Wolof, Fula, Gola, Adlam and Wolof Saaliw Wi).

¹⁰In de Voogt’s typology of script transfer, these are classed as L6 (de Voogt 2012), accounting for scripts that borrow system and sound value but not the script shape.

¹¹For Aegean scripts, Cohen presumably had in mind Cretan hieroglyphics and Linear B, but his allusion is somewhat elliptical: “Si un système évolue à l’usage de la langue pour laquelle il a été inventé, en passant par des stades de perfectionnement, il se produit des réadaptations successives par bonds. Exemple: substitution de syllabo-phonogrammes à des signes-mols (égéen (?), bamoun [Bamum])” (question mark in original) (Cohen 1958, 444).

representation, from which point the pivot to a syllabary requires little imaginative effort. In effect, readers and writers do not need to make any analytical distinction between grapheme, morpheme, syllable and sound; and once the principle of phoneticisation has been discovered a nominally logographic system can be refashioned as a conventional syllabary. Of these scholars, Daniels was the first to remark that the earliest languages to be represented in writing were “syllabically organised” as are many languages with scripts invented via stimulus diffusion. On the face of it, the Vai, Bamum and Hmong languages (represented in the Vai, Bamum and Pahawh Hmong scripts respectively) fit Daniels’ model very well in terms of their morphophonological structures. That they are all tonal languages may also be relevant since in theory the availability of tone contrasts makes the inventory of syllable shapes smaller allowing for a more economical syllabary. But a deterministic version of this hypothesis is easy to falsify, since both Sumerian (for Proto-Cuneiform) and Old Chinese (for the Oracle Bone script) are now understood to have been an agglutinative languages, as are Cherokee and Yup’ik (Alaska script). Furthermore, non-literates have also been known to create *alphasyllabaries*, as in the case of Pahawh Hmong, the Caroline Islands script and the Alaska script.

Nonetheless, the strategies applied by non-literates to model sound systems of their languages remain worthy of further investigation. A comparative analysis of the nine to thirteen writing systems created by non-literates in modern times may well bring to light biases and typological patterns that cast light on ancient cases stimulus diffusion such as Old Persian Cuneiform, Cretan hieroglyphics and Linear A, as well as the ruptures in the transmission of the Maya script (Houston 2008).

One aspect of non-literate glottography that has not yet been investigated seriously is an assessment of what phonological features are conspicuously *absent* from new writing systems. The Vai script, for example, does not represent tones and a later move introduce tonal diacritics did not succeed. It would be premature, however, to claim that tones have less psychological reality than other phonemes. Yet contrastive features of vowels (including tone) were not represented in the earliest version of the Masaba script either. And beyond Africa, the non-literates who invented the Caroline Islands script did not choose to build contrastive vowel-length into their system. Typically, a poor ‘fit’ between system and phonology can be accounted for when writing systems are repurposed for new languages, or when the evolution of the writing system is outpaced by language change. But the fact that systems that are consciously constructed by non-literates are also off-centre with respect to phonology suggests that a degree of schematicity may be a benefit to users rather than a source of friction. As such, evidence of purpose-built schematicity has implications for analysing the relationships between ancient scripts and their languages, especially in cases of suspected stimulus diffusion.

BEYOND SYSTEMS: THE SOCIAL AND SEMIOTIC DIMENSIONS OF WEST AFRICAN SCRIPTS

Writing systems, whether ancient or modern, do not materialise out of thin air, and mere exposure to the concept of writing and literacy is hardly sufficient to compel anybody to devise their own script. After all, long before Bukɛɛ, Njoya and Couloubayi experienced their revelatory dreams indigenous Africans had been interacting with literate Muslim and Christian missionaries in encounters that resulted in neither the wide diffusion of literacy nor the dramatic reinvention of writing across multiple sites.

What was it that changed in West Africa such that no less than three Cherokee-like stimulus diffusion events and sixteen post-literate creations of new scripts were witnessed in a relatively tight geographic-historical frame? Needless to say, this question cannot be addressed solely by examining typologies of writing systems and their relationships to linguistic structure. Social and historical explanations must be brought to the fore.

Social context

The century that spanned the three creations of the Vai, Bamum and Masaba scripts marked a period of unprecedented culture contact in West Africa. Sustained colonial activity introduced isolated communities to novel technologies and institutions, while expropriations of land, people and resources aggravated local conflicts and ultimately culminated in demands for self-determination. As foreign powers attempted to assert control over a continent of considerable ethnolinguistic diversity and mobility, cartographers projected seemingly indiscriminate territorial borders around local populations. Within these boundaries, indigenous communities would be subjected to further mapping in the form of ethnographic surveys, census reports and tariff systems that rendered them legible to foreign administrators. In effect, local populations had to be reduced to texts before they could be stabilised in colonial bureaucracies. Christian missionaries instigated the entextualisation of local populations by recording ethnographic and linguistic information, translating scripture, and promoting indigenous literacy in the service of spreading the Word. Indeed, the first meaningful experience of literacy for many Africans was in the context of evangelisation; sustained interaction with state bureaucracies came later. Underpinning all these colonial discourses were ideologies that variously associated the written word with Eurocentric ideas of civilisation, hierarchy, and religious or scientific truth. It is little wonder, therefore, that communities under the thumb of literate outsiders should develop an interest in writing as a real and imagined source of colonial power (Monaghan 2008).

For those living along the Slave Coast and its adjacent territories, writing would have at first been associated with record-keeping for the slave trade. The Vai in particular, found themselves as both middle-men and occasional victims of trans-Atlantic slaving. Scribner and Cole (Scribner and Cole 1981, 269) noted a sudden increase in slave exports between 1807 to 1850, after slave trading was officially outlawed. They argued that the Vais status as middle-men in this trade, and their ongoing conflict with the Liberian colony, created a demand for written technology that was opaque to outsiders. Earlier, Migeod (Migeod 1909) contended that the trade resulted in an economic boom for the Vai and a subsequent upsurge in mental activity. In turn, he argued, this gave rise to an intellectual renaissance that produced the Vai script.

An existing circumstance that may have pre-disposed the Vai to the development of writing was their celebrated preeminence as artisans. Bukelē's own occupation is not known but from the early 1800s to the present day, Vai men have been renowned for their skills as silversmiths, carpenters, masons and tailors—professions that, to a greater or lesser extent, demand drafting and spatial calculation. A graphic code of any kind would certainly have facilitated these trades, and today Vai carpenters still use their script for drafting (see Fig 4). Of some significance is the fact that these professions are known to be held by the creators of other West African scripts including Kikakui (created by tailors and weavers), Loma (a weaver) and Dita (a carpenter). Couloubayi's profession is not recorded, but it is known that Bambara

artisans, particularly blacksmiths, made use of indigenous notational systems for their work (Scribner and Cole 1981, 266). Given its wide-ranging secular uses, it is plausible that Masaba was also applied in the service of artisanal manufacturing; future fieldwork may resolve this question.

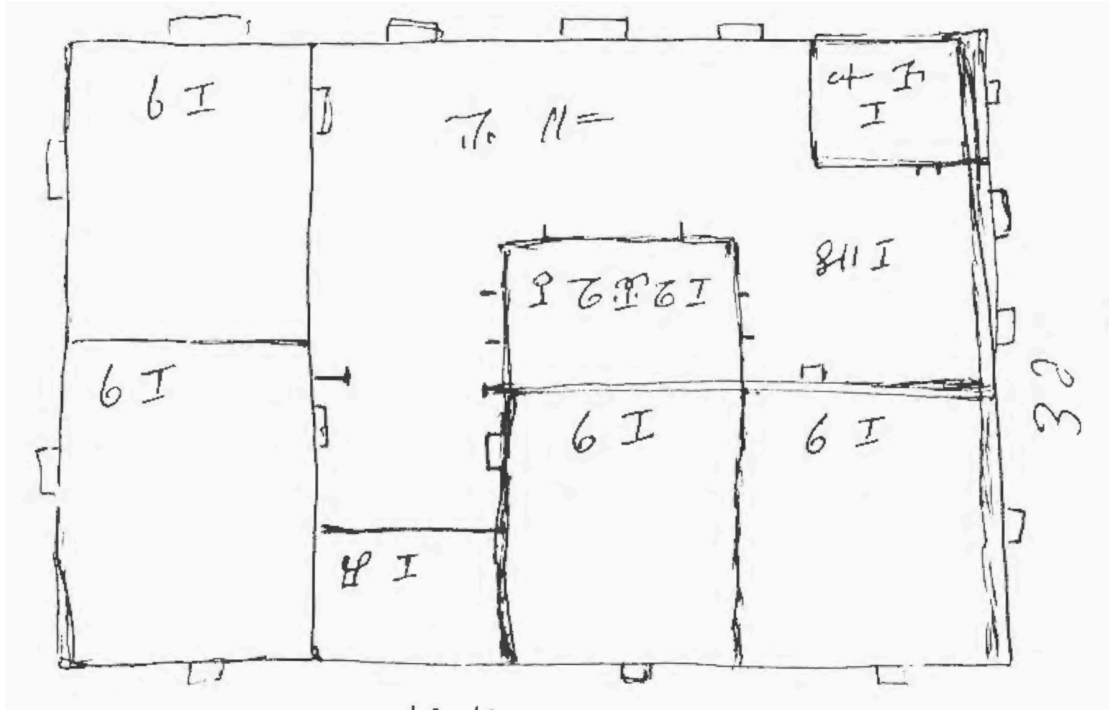


Figure 4. Carpenter's plan using the Vai script (Scribner and Cole 1981, 78)

Although such functional needs may have made the development of a Vai script useful and desirable, a significant push factor was likely to have been the assertion of prestige and political autonomy as attested in early narratives. As we have seen, the creators of the Vai script were moved to demonstrate their sophistication in relation to 'Those-from-afar', and in fact the early success of the Vai script may be due to the support of a prestigious patron. In Bukelè's account the inventors approached the Vai king Fa Toro with a gift of salt in order to gain support for their initiative. The king was duly impressed with the Vai script and declared that it would raise the Vai to the same status as the other 'book' people, namely the *poros* ('whites and Afro-Liberians') and Mandingo Muslims. At this time, European colonists considered Mandingos to be "the most civilized, influential, and enterprising of all the tribes of Western Africa" (Wilson 1856, 74), partly on account of their observed literacy in the Arabic script.

Peter Unseth (Unseth 2011) remarked that most West African indigenous scripts were created after World War I in a time of enormous social change as Africans began to demand and achieve political independence. Indeed, the creation of a new script as a marker of ethnolinguistic prestige has, perhaps, a unique power to make a community and its language materially visible while simultaneously excluding non-literate outsiders from the discourse that it generates. Prestige and political status were certainly factors that influenced the development of Bamum and Masaba scripts. Njoya, as a child, was fascinated by writing used by Europeans and Arabic-literate traders (Friedrich 1937, 326) and part of his stated motivation in developing Bamum

was to resist the cultural dominance of colonisers and to inspire a distinctly Bamum identity for his people (Kootz and Pasch 2009, 107). Even the left-to-right orientation of the script was, according to tradition, a deliberate move to differentiate Bamum from the Arabic alphabet (Dalby 1967, 169).

G rard Galtier suggested, similarly, that the creation of Masaba was stimulated by a desire for political independence among the Masasi people. Couloubayi and other Masasi of Assati mala were members of the Hamallaya order, a Sufi sect associated with anti-colonial struggle. In the late 1970s, the local government of Sandar  district raised a biscriptal banner decorated in the Roman and Masaba scripts in celebration of Mali's Independence Day. Political autonomy is even more explicitly referenced as a motivation by the creators of other West African scripts, most notably N'ko.

The Bamum script, in contrast to Vai and Masaba, could not be said to have had an obvious functional role at the time of its invention. The slave trade was not active in Cameroon at the time, nor were its inventors artisans as far as the record shows. Nonetheless, all three scripts would acquire both profane and sacred domains of use. Today the Vai script is used for personal letters, shopping lists and recording town business among other uses, but it has been applied in the creation of serious texts designed to record wise sayings, traditional tales, and translations from the Koran or the Bible (Dalby 1967). Masaba, likewise is used to keep track of transactions and for letter writing, but also for copying out Muslim prayers.

It would be misleading, however, to enforce a clear cut distinction between sacred and profane domains of script use, or to contrast the desire for political autonomy with that of spiritual self-determination. Anti-colonial movements in West Africa among other regions of the colonised world often took on a religious character, and new scripts associated with utopian spiritual movements have tended to be relatively successful despite or because of the fact that their domains of use are restricted (witness for example, the success of the Pahawh Hmong and Eskaya scripts).

As Johnston commented with reference to the Vai script:

Their addiction to [the Vai script] is somewhat of a protest against "Christian" or missionary influence (the Vai are Muhammadan), and it is also due to their desire to carry on a correspondence not readily deciphered by the American Negro who rules their country. The Liberian Government can only combat this movement by adopting a simple and logical orthography in Roman letters for rendering Vai and other native languages, and then by spreading the knowledge of reading and writing in the Roman character among its native races as part of a secular education carried on by the State, and not associated with the teaching of doctrinal religion. (Johnston 1906b, 1115)

Dalby has remarked that the dreams reported by Buk le, Njoya and Couloubayi are not out of place in West Africa as the meeting place of the two revelational religions of Islam and Christianity, and he goes on to compare the rise of new scripts with the movement for independent African churches (Dalby 1969, 180). But it should also be acknowledged that visionary trance rituals are part of the spiritual repertoire of indigenous West Africans. Arguably, too, visions have a particular force in the establishment of traditions since they lend otherworldly authority to a new idea, while allowing their inventors to deny authorship. Significantly, Vai, Bamum and Masaba are not the only West African scripts to have been inspired by dreams. The motif is also found in the origin stories for Kikakui, Yoruba Holy Writing, Kpelle, Medefaidrin and Nwagu Aneke (Map 2).

Graphic repurposing and evolution

In his compendium *Afrikan alphabets: The story of writing in Afrika* (2004) Safi Mafundikwa mentions that a few Vai people have begun to reject the narrative that Bukele was inspired by the apparition of an educated foreigner and that instead the script developed more gradually out of indigenous pictograms familiar from ritual contexts. While Bukele’s claim to have been inspired by a dream is unlikely to have been confabulated by Koelle, since it was independently elicited by Migeod (1909), a continuity between the Vai, Bamum and Masaba scripts and pre-contact semiotic systems has been suggested by others and deserves consideration.

The pictorial culture of Vai people was, before and after Bukele’s invention, expressed in sand divination rituals as well as ritualised body scarring (Johnston 1906b, 970-972). But pictograms of a comparable structure to those of North America are also attested among the Vai. Momulu Massaquoi himself referred to a system of Vai ‘hieroglyphics’ that he assumed Bukele had drawn upon in composing his script. Massaquoi isolated four such pictograms to show how they had been graphically reduced and repurposed as logograms and syllabograms, as shown in Fig. 5 below.








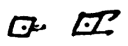
V. Hiero.	Eng. Equivalent.	Meaning.	Present forms.
	= Mo	= man	= 
	= Ku (n.)	= head	= 
	= ta	= fire	= 
	= lba	= {mother. large	= 

Figure 5. Momulu Massaquoi’s diagram of traditional Vai pictograms and their relationship to the script (Massaquoi 1911)

Later he was to provide greater ethnographic detail concerning this system of Vai pictograms, telling August Klinghenben that in the event of an attack on a village:

The figure of a man sitting down would then be carved on the bark of trees which those returning to the town would be bound to pass on their way. In order to indicate that it was not merely a single man, but a large number, several dots were placed beside this figure, each of which stood for a repetition of the figure, and thus, to some extent, signified an abbreviation. Any one conversant with this sort of picture-writing then ‘read’ that a large number of people, presumably enemies, was ‘sitting down’ farther along the path, and could take precautions accordingly. (Klinghenben 1933)

What Klinghenben noticed was that the use of dots for plurality was also found in Vai texts, further corroborating Massaquoi’s contention that elements of the code had transferred into the script, including the logograms identified in early documentation. Klinghenben went on to delineate over twenty syllabograms that, in his view, bore an iconic relationship to their associated morphemes. Though Klinghenben and

Massaquoi's hypothesis cannot be demonstrated empirically, a tradition of Vai pictography continues to exist independently of the Vai script, and symbols approximating the famous DEATH.DIE.KILL logogram are still used as motifs in non-script contexts such as tombstones (Scribner and Cole 1981, 267).

Non-linguistic graphic codes similar to the 'Vai hieroglyphs' described by Massaquoi have been in use across West Africa for some time. The most high profile of these is the *nsibidi* code, originating in the 17th century and found today in parts of Nigeria and Cameroon and (Carlson 2007). In its current form, *nsibidi* is a system of iconic logograms, some of which are public and others restricted. Within its secular domains it is used for tallying resources and making notes about events. Esoteric domains are more restricted, and knowledge of certain ritual symbols are limited to an elite group of practitioners (Carlson 2007, 146). The Bambara people of Mali are also known for their use of a functionally similar code of 259 symbols used in ritual and secret societies, though details are necessarily scarce (Scribner and Cole 266).

While King Njoya purports to have used traditional pictograms as the basis of the first phase of Bamum, the precise systems that he drew on are not identified. Dalby (1968, 191), however, compares a number of Bamum logograms with their *nsibidi* semantic equivalents to show a convincing correspondence. More speculative, but no less intriguing, is his table comparing the graphic forms of purported logograms in Vai, Kikakui, Loma, Kpelle and Bassa scripts with semantic equivalents in *nsibidi* and Bambara graphic codes (Dalby 1968, 185-189). Unfortunately, Dalby makes no attempt make his analysis systematic, turning instead to musings of a quasi-mystical variety. Despite his earlier caution over iconicity judgments he elaborates a theory that West African indigenous scripts and graphic codes are all descended from a single source in Arabic cypher scripts used in talismanic magic, going so far as to link them to the so-called 'Gypsy alphabet' (Decourdemanche 1908) that was later discredited as a hoax. Though Arabic cyphers certainly feature in the semiotic context of West African script creation, their highly restricted and esoteric nature make them a less-likely source of widespread inspiration. Further, their restriction to an initiated elite makes it impossible for non-initiates to investigate a systematic relationship.

But such restrictiveness may, paradoxically, point to a fundamental dynamic in the transition between a non-linguistic (or logographic) code and glottographic writing. In his aptly named work *Inventer l'écriture* (2013) Pierre Déléage defined *écritures attachées* ('bound writing') as restricted codes that rely heavily on context or orality in order to be effective (hence their boundedness). Such codes, he argued, are most likely to emerge among elite communities of specialists who develop conventionalised symbols as mnemonic aids in the performance of ritual. Though these symbols provide useful raw material for the subsequent development of more general-purpose glottographic writing, they are unlikely to propagate further given the limits placed on ritual knowledge.

However, in cases of secondary invention it is conceivable that ritual knowledge escapes and becomes democratised. The catalyst for this may be a social crisis such as war, occupation and the introduction by outsiders of alternative cosmogenies—conditions that tend to prevail in colonial expansions. Even after glottographic writing has been reinvented, restrictions on the use of a new script do not automatically hinder on its survival and transmission. With the exception of the Caroline Islands script, all of the modern secondary inventions of writing in Southeast Asia and the Pacific have had political or ritual restrictions on their transmission. All this points to the hypothesis that new writing systems in West Africa did not necessarily arise or thrive because they fulfilled an ordinary communicative need. Rather, their primary

function is the indexing of an elite politico-religious discourse in direct distinction—and defiance—of threatening outsiders.

Stephen Houston and Felipe Rojas (forthcoming) have recently proposed a tripartite typology for understanding secondary inventions, in which the “details of sound-to-sign correspondence” are subordinate to the real-world “intentions of makers and users”. In their model, secondary inventions can be characterised by *accommodation* to an existing system, deliberate *contrast* from a source script, or *rupture* in which form and sound values are radically different from their original stimulus. Scripts in ‘rupture’, they predict, are most likely to occur in circumstances of unequal power relations. Accordingly, the literate/illiterate status of the inventors may in fact be less relevant than their political motivations in generating an effective counter-cultural statement. From this perspective, the varied forms and structures of West African scripts may owe their distinctiveness to the dilemma of “mimicry and rejection” (Rao 2010) familiar from postcolonial ethnography (see for instance Bateson [1936] 1958, Tsing 1993, Sahlins 2012).

Conclusion

Many earlier commentaries discussed West African writing systems in almost a-historical terms encouraging theoretical generalities that either understated or ignored the critical relationship between writing and social dynamics. While it is useful to classify secondary inventions of writing in terms of their approaches to modelling meaning and sound, the explanatory power of this exercise is limited. In this paper I have argued that the rapid proliferation of new writing systems in sub-Saharan West Africa was a response to a set of shared historical circumstances framed by globalisation, colonial contact, missionary evangelisation and subsequent grassroots struggles for autonomy. The three case studies selected for more specific analysis—Vai, Bamum and Masaba—are united by the fact that their inventors had no sustained exposure to formal literacy. As such the commonalities of each situation have the potential to bring to light issues of importance to the invention of writing. All three systems originated as syllabaries, in line with the predictions of Daniels and others. But each script was also conceived in an atmosphere of colonial conflict in which indigenous elites struggled to assert political primacy and express distinctive oppositional identities. For these three scripts, the idea of writing introduced from outside came into productive dialogue with indigenous systems of secular graphic communication as well as codes reserved for ritual events. Thus, the creation of these scripts was facilitated through both the repurposing of an existing visual culture and the reapplication of indigenous systems of graphic communication, annotation and ritual.

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