
Lexicological Models for Technical Discourse in French and Yoruba: A Comparative Study

Priye E. Iyalla–Amadi
Rivers State University of Education
Port Harcourt

Abstract

The modern exigencies of a technological age demand the use of specially evolved linguistic features to render scientific and technological realities. An anecdotal style displaying subjectivity and imprecision would be out of keeping with the present widely adopted scientific culture of the times. This paper proposes technical terms in Yoruba, an African language, using French as a model. The aim is to facilitate technical thinking through teaching African children how to use their own indigenous language to express technical phenomena. In the long term, this linguistic initiative is expected to kick start the process of technological development on the continent.

Keywords: technological age, linguistic features, technical thinking, technological development.

Introduction

Many African languages, though developed enough to cater to the everyday linguistic needs of their locutors, seem not to be very well suited for technical discourse, often not displaying the necessary objectivity and precision in their rendition of technical matters.

The present paper takes a comparative look at some languages of wider diffusion, specifically English and French, and sets them up as lexicological models whose linguistic structures can provide insights into aspects that make them appear amenable to technical discourse. It goes on further to see how the displayed lexicological features of these languages can be replicated in African languages (specifically Yoruba), in such a way as to create the type of linguistically conducive environments necessary for technological discourse in the modern age.

The concept of technical discourse

According to Wales (1989: 10), discourse can be said to cover all those aspects of communication which involve not only a message or text but also the addresser and the addressee and their immediate context of situation.

Vigner and Martin (1975:16) make the point that in ordinary discourse the communication process could be influenced by a number of variables ranging from social considerations to political, economic or cultural ones. These are considerations which hardly come into play in technical discourse. Whereas in everyday discourse a lot of prominence is given to the discussants, and the communication act revolves around them, in technical discourse, prominence is given to the referent, i.e. the object of communication. Usually the speakers are already aware of each other's competence concerning the object of discussion and proceed directly to talk about it. Communication therefore takes place in a homogeneous setting and there is a common identity of perception and of representation of ideas or facts. The object of the communication remains the same regardless of the position or status of the interlocutors.

2.1 Characteristics of Technical Discourse

Vigner and Martin describe technical discourse as a written code which is basically characterized among other things, by the following:

- a) A near-total absence of distinction between oral and written discourse.
- b) A homogeneous use of language resulting in the absence of language registers.
- c) A reduction of temporal forms resulting in the permanence of the technical fact, and also a reduction of the intemporal aspect of technical operations and of the properties used.
- d) An objectivity in communication resulting in the disappearance of all process that may entail sentiments or subjective appreciations.
- e) The precision and concision necessary for technical information, which is what makes for the use of complex lexical unit, etc.

It can be observed that many languages of wider diffusion, e.g. English and French, display some of these characteristics in their linguistic configurations and so appear well suited to the rendition of technical matter. African languages could also be made to portray these technical features if conscious linguistic adjustments are made by indigenous speakers. This would be a lexicological exercise involving the search for appropriate lexical units that could create linguistically conducive environments for technical discourse. This in essence, is what is being attempted here using the Yoruba language. But first, a linguistic survey of the selected lexicological models for this study.

3 Lexicological models

In the context of this paper, lexicological models are defined as languages whose linguistic structures make it possible to effect morphological, syntactic,

semantic and phonological changes to achieve a ‘technical language’ model. For the purpose of this work, Yoruba, a language of the Benue-Congo phylum, is studied in relation to French and English, both members of the Indo-European language family, with particular reference to similarities in their respective linguistic configurations.

3.1 Yoruba

According to Williamson’s (1989: 64) classification, Yoruba belongs to Benue-Congo a sub-ground of the Niger-Congo language family. The vast majority of speakers are found in Nigeria in the Southern States of Ekiti, Lagos, Ogun, Ondo, Osun, Oyo and some Sierra Leone, Benin Republic and Togo. Recent figures provided by Moseley and Asher (1994) put the number of Yoruba speakers at 25 million worldwide.

Pullyblank (1987:121) informs that, morphologically, the word formation processes in Yoruba are for the most part derivational and inflectional, and they involve two basic processes: prefixation and reduplication. These again fall into two classes: and ‘abstract’ class and an ‘agentive’ class. Prefixes of the agentive class include ‘a-’, ‘à’ and ‘olu-’ among others. With respect to the prefixes that form abstract nouns from verb phrases, Rowland (1969:184) notes that these are basically two: ‘i-’ and ‘a-’. Both prefixes may attach to a simple verbal base, e.g. imo,-knowledge (mo - know), ‘alo’- going (lo - go). In many cases, ‘i-’ and ‘a-’ can be freely substituted for each other, e.g. isoye’, asoye’ (explanation). Bamgbose (1992:x) makes a case for using these two prefixes for semantically distinctive purposes, i.e. the prefix “i”, used for the abstract noun (i.e. the process) and the prefix ‘a-’ or ‘à -’ for the concrete noun (i.e. the result of the process).

Concerning the syntactic structure of Yoruba, it could be said that its basic word order is S-V-O, i.e. Subject preceding verb preceding object. Pulleyblank gives an example of this word order in the following sentence: Baba rabata” (Father bought shoes).

Awobuluyi (1979:21) gives the same word order as Subject – Predicator – Object, and illustrates with the following example: Ojoramoto (Ojo bought a vehicle). This word order is however not fixed and could be differently altered by versatile language users. Nevertheless, it is generally agreed that the S-V-O structure of Yoruba is shared with many other widely diffused languages of the world.

Semantically, words in Yoruba can be made to say almost anything. The language displays all the semantic processes of polysemy, antonymy, synonymy, homonymy, etc. To ensure its vocabulary expansion, one of the techniques employed is what NEIDA & NERDC (1988) refer to as semantically motivated coinage. This is described as a technique which involves the meaning – bearing elements of one language with a view to capturing the meanings or essence of a term or expression in another language (e.g. ‘ranmupe’ –

nasalization). Another semantic resource is the technique of semantic extension. This is aimed at increasing the number of distinct meanings found in the language. An example, to cite just one, is the word ‘opo’, which actually means ‘an upright pole supporting the roof’ but has, by semantic extension, also come to mean: ‘the stem of a word’ (morphology), ‘an electric pole’ (lexis), or ‘an extreme point in an electrical circuit’ (Physics).

Phonologically, Yoruba is a tonal language and tone marks play a distinctive role in it. Unmarked; and low, represented by a grave accent. As noted by Katzner (1995:13), these accents do not indicate stress but rather the rise and fall of the voice. More importantly, however, it can be noted that several words or sets of lexical items are often distinguished by tone in Yoruba: e. g. *igbá*(Calabash), *igba* (two hundred), *igbà*(time): *ọkọ* (hoe), *ọkọ* (husband), *ọkọ* (vehicle); etc, also noteworthy is the fact that the vast majority of Yoruba verbs are monosyllabic, of the form CV, i.e. Consonant – Vowel. Examples include :*wá* (come), *lọ* (go), *mu* (drink), *jẹ* (eat), *rí* (see), *fò* (fly), *rà* (buy), etc.

3.2 French

The French language is currently classed by any standard as one of the major languages in the world. It is a Romance language which derives, via Latin, from the Italic branch of the Indo – European language family. Statistics provided by Rowlett (2007:14) show that indigenous French is spoken in France, Francophone Canada and in the West Indies. In the Maghreb (Algeria, Morocco and Tunisia), Arab is the official language, whereas French is the second language, widely spoken in schools, media, etc., but generally it is not an indigenous language. In Black Africa, French is the official language of sixteen independent Francophone states. Iyalla-Amadi (2000: 88) gives the names of these countries as: Bénin, Burkina Faso, Burundi, Cameroun, Central African Republic, Chad, Congo, Côte d’Ivoire, Gabon, Guinea, Mali, Niger, Rwanda, Sénégal, Togo and Zaïre.

Phonologically, French sounds are mostly not indicative of their orthography (cf.:*bleu*, *peur*, *brun*, *brune*, *vieille*, *villes*, etc). However, French is similar to Yoruba in that it is also a language that makes use of tone marks. This is probably what informed the lexicographer, R.C. Abraham, in his choice of French examples for Yoruba words. French is SVO, i.e. the subject (which is obligatory) precedes the verb which precedes the complement(s) in positive, declarative utterances. Also noteworthy is the fact that alongside this SVO order there is a wide variety of other possible orders, involving the dislocation of one or more nominal elements associated with a verb to the left and/or to the right of the core sentence (e.g. *J’ aime Marie*; *Marie, je l’aime*; *Marie; Je l’aime, Marie*; etc).

With respect to its morphological configuration, the derivational processes of the language are here examined with particular emphasis on word formation techniques which appear to facilitate technical expression in the

French language. Whereas prefixation is the more productive word formation process in Yoruba, suffixation is the affixal process which ensures, to a greater extent, the lexical growth in French. Words which depict an action or process, mostly bear the suffix ‘-age’ or ‘-ion’ in the language. To portray the doer or agent of an action, the suffix ‘-eur’ is used and this is often derived from the ‘-age’ suffixal formation. Some examples, drawn from Vigner and Martin (1975:22-23) are given below:

Verb	Noun (process)	Noun (agent)
Broyer (to grind)	Broyage (grinding)	Broyeur (grinder)
Demarrer (to start)	Demarrage(starting)	Demarreur (starter)
Souder (to weld)	Soudage (welding)	Soudeur (welder)
Forer (to drill)	Forage (drilling)	Foreur (driller)

As a technical discourse process, the above technical model has been replicated in Yoruba in this paper.

3.3 English

David Crystal (2007:360) makes the point that although Mandarin Chinese is spoken by a greater number of people, English is spoken around the globe and has wider dispersion than any other language. According to its linguistic classification, English belongs the Germanic phylum of the Indo-European language family. It is the principal language of the United States, Canada, Great Britain, Ireland, Australia, New Zealand, and many newly independent islands in the Caribbean. It is also the official language of more than a dozen African countries.

In its orthography, English can be seen to be more out of harmony with the spoken language than that of many other languages. Nevertheless, many observers note that advantages exist to the relative distance between orthography and speech in that written English is remarkably uniform throughout the world, and printed material can be distributed internationally without adaptation.

Concerning its vocabulary expansion, Comrie (1987: 68) states that compounding, suffixing and prefixing are largely responsible for adding to the word stock of the English language. A few examples from English technical vocabulary may suffice to illustrate this process:

Lexeme	Prefixation	Prefixation+Suffixation
Radiate (verb)	Irradiate	Irradiation
Efficient (adj.)	Inefficient	Inefficiency
Generate (verb)	Regenerate	Regeneration
Ionize (verb)	De-ionize	De-ionization
Pole (noun)	Bipolar	Bipolarity

The challenge before all indigenous African locutors is to be able to reproduce the above technical vocabulary model in their respective languages. This challenge has been taken up in this paper by its reproduction in Yoruba as a proposed model for technical discourse in the language.

Syntactically, English is an SVO language a fact which has been adduced as one of the reasons for its current widespread use in the world. A further fact is that, as noted by Finegan, SOV languages, like English, are perceptually simpler than languages whose basic word orders are SVO or SOV. Furthermore, it is noteworthy that granted their sociological and political statuses, Chinese, French, Russian and Spanish, all of which are SVO are languages of wider diffusion, and so is the spoken form of Arabic. Incidentally, these six languages, i.e. including English, constitute the official languages of the United Nations. Apparently, the perceptual advantage of SVO languages is the ready identification of subjects and objects, which are separated (by verb) in SVO but not in SOV or VSO languages.

This similarity in syntactic structure is also shared by the Yoruba language as shown earlier in this paper and it is a feature that should facilitate its lexicological modeling, in relation to technical expression, on French and English which are both established SVO languages. It might also be added at this point that another reason attributed to the extension of English is the spread of technology, notably the diffusion of American technologies during the twentieth century. Since the focus of the present paper is equipping African languages with the lexicological means for discussing scientific and technological matters, it can be supposed that adopting the processes responsible for technical discourse in French and English will contribute significantly towards attaining the same goal in Yoruba.

4. Lexicological Processes for Technical Discourse

In this section, lexicological processes are applied to achieve technical discourse in the Yoruba language. The technical models already cited in previous sections are here reproduced in an attempt to show that a technical vocabulary denoting scientific and technological phenomena can be consciously developed in an indigenous African language, using other languages as lexicological models.

This first technical vocabulary to be replicated is that based on French using suffixal formation, viz.

Verb	Noun (Process)	Noun (Agent)
Broyer (to grind)	broyage (grinding)	broyeur (grinder) (non-human agent)
Demarrer (to start)	demarrage (starting)	demarreur (starter) (non-human agent)
Souder (to weld)	soudage (welding)	souder (welder) Human & (non human agent)
Forer (to drill)	forage (drilling)	foreur (driller) Human & (non human agent)

The same model is replicated below in Yoruba, this time using the processes of prefixation and partial reduplication.

Verb	Noun (Process)	Noun (Agent)
Lo (grind)	Lilo (grinding)	alagbalo (grinder/human) Olo (grinder/nonhuman)
Sina (start engine)	sisina (startingengine)	asina (starter/human) isina (starter/nonhuman)
Jorin (weld iron)	jijorin (ironwelding)	ajorin (welder/human) ijorin (welder/nonhuman)
Gbeho (drill hole)	gbigbeho (hole drilling)	Agbeho (driller/human) igbeho (driller/nonhuman)

As can be noticed from the above model, there is a distinction between the prefix used for human and non-human agents in all cases in Yoruba, whereas in French, the suffix ‘-eur’ is sometimes used for both human and non-human agents. This is probably because in the African Weltanschauung, the spiritual dimension of man is greatly revered and is not be compared with lifeless things. This cultural aspect of the African should always be borne in mind whenever lexicological models are being evolved for African languages.

In the cases of the earlier cited English technical language model, whereas prefixation and suffixation are the processes mostly used to increase the English technical lexicon, prefixation is what is largely used to ensure same in Yoruba. Iyalla-Amadi (2000:95) provides a framework below, showing the prefixal processes involved:

Lexeme	Prefixal Process 1	Prefixal Process 2
Feka (radiate)	Afeka (irradiate)	Ifeka (irradiation)
Muna (efficient)	Komuna (inefficient)	Aimuna (inefficiency)
Peena (generate)	Tunpeena (regenerate)	Itunpeena (regeneration)
Amohuntutu (fridge)	Mohuntutu (refrigerate)	Imohuntutu (refrigeration)
Gbeero (ionize)	Yo-ero (de-ionize)	Iyo-ero (De-ionization)
Opo (pole)	Eleeji-opo (bipolar)	Eleleji-opo (bipolarity)

5. Conclusion

From the foregoing, it can be deduced that evolving a technical language model for technical expression, is achievable. This is what has been attempted in this paper using Yoruba as a case study.

African locutors need to be sensitized to the prevailing technical dictates of the times and rise to the modern challenges of technicalization of speech for scientific and technological purposes, especially as this concerns the technological development of the continent. For, as Abdus Salami (1989:19)

puts it “On Science and Technology depend the living standards of (every) nation”.

Technical thought and the appropriate linguistic apparatus to reflect it, would go a long way to relate the African’s language to the scientific needs of his environment and thus provide him with the means to face the tasking but surmountable challenges of the future with adequate linguistic mastery.

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