# On the Most Innovative Outer Access Structure of any Bantu Dictionary: The *Lexique kikongo–français* by Charles Polis (1938)

Gilles-Maurice de Schryver, *KongoKing Research Group, Department of Languages and Cultures, Ghent University, Ghent, Belgium;* and *Department of African Languages, University of Pretoria, Pretoria, South Africa (gillesmaurice.deschryver@UGent.be)*

**Abstract:** In this article a little-known dictionary manuscript from the 1930s, the *Lexique kikongo-français* by the Jesuit missionary Charles Polis, is analysed in great detail. Section 1 expounds on the goal and raison d'être of the study, Section 2 introduces the manuscript, its author as well as the Kikongo variety dealt with, Section 3 presents the inner workings of the *Lexique* on macro-, micro- and mediostructural levels, Section 4 gives a lexicographical appreciation based on a large selection of the entries, Section 5 joins the international debate on the exact nature of a dictionary's macrostructure, access structure and access route, and Section 6 compares Polis's work with a dictionary from the same region and period. Conclusions are offered in Section 7, chief among them the fact that Polis designed the most innovative outer access structure of any Bantu dictionary.

**Keywords:** BANTU, KIKONGO, KINTANDU, FRENCH, DICTIONARY MANUSCRIPT, BILINGUAL LEXICOGRAPHY, MISSIONARY LEXICOGRAPHY, LEMMA SIGN, MACROSTRUCTURE, OUTER ACCESS STRUCTURE, OUTER ACCESS ROUTE, INNOVATION

**Samenvatting: Over de meest innovatieve externe toegangstructuur in de Bantoelexicografie: het *Lexicon Kikongo–Frans* van Charles Polis (1938).** In dit artikel wordt een weinig bekend woordenboekmanuscript uit de jaren 1930, het *Lexicon Kikongo–Frans* van de jezuïet-missionaris Charles Polis, in detail onderzocht. Deel 1 licht het doel en de bestaansreden van de studie toe, Deel 2 introduceert het manuscript, zijn auteur, alsook de behandelde variant, Deel 3 beschrijft minutieus de macro-, micro- en mediostructuur van het *Lexicon*, Deel 4 geeft een lexicografische appreciatie die is gebaseerd op een ruime selectie van materiaal uit het werk, Deel 5 draagt bij tot het internationale debat over de ware aard van de macrostructuur, toegangstructuur en toegangsroute van een woordenboek, en Deel 6 vergelijkt Polis' werk met een woordenboek uit dezelfde regio en tijd. Conclusies worden aangeboden in Deel 7, de belangrijkste het feit dat Polis de meest innovatieve externe toegangstructuur uit de Bantoelexicografie ontwierp.

**Sleutelwoorden:** BANTOE, KIKONGO, KINTANDU, FRANS, WOORDENBOEKMANUSCRIPT, BILINGUALE LEXICOGRAFIE, MISSIONARISLEXICOGRAFIE, LEMMATEKEN, MACROSTRUCTUUR, EXTERNE TOEGANGSTRUCTUUR, EXTERNE TOEGANGSROUTE, INNOVATIE

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## 1. Goal and raison d'être of the present study

The main goal of this research article is to present and analyse an unpublished dictionary manuscript for Kikongo: the *Lexique kikongo–français* by Charles Polis s.j. (1885–†1943). Apart from the fact that this manuscript, of which there are still a handful of extant copies left, deserves to be widely known, what makes this work especially intriguing is that it employs a highly original outer access structure to get at the data. After a cursory examination of the work one could be forgiven to conclude that this is the first example of a Bantu dictionary in which the lexicographer has finally succeeded to atomise a Bantu language's lexicon, breaking it down to its most basic components, to then reassemble the lexicon (and to compile a dictionary in the process) from those building blocks. If this were indeed the case, this would be the first example of a purely stem-based lemmatisation strategy in Bantu lexicography, rather than the traditional approach which results in a lemmatisation strategy that is neither purely stem-based nor purely word-based, but sits somewhere on the sliding continuum between these two extremes (see De Schryver 2008: 86-88). Questions that immediately arise upon studying Polis's original presentation include:

— Could this outer access structure be applied to all Bantu languages?

— Is this outer access structure perhaps universal?

— Could such an outer access structure perhaps be a solution for all non-corpus-based lexicographic endeavours?

The latter question is a direct result of Polis's claim, in his introduction, that his approach allows for the systematic identification of the missing forms in a dictionary (Polis 1938: Part I, i). Regardless of the answers to these questions, a presentation of this work is important in its own right, as it contains — as will be argued below — a wealth of unique language data on a less-resourced Kikongo variety with a considerable time-depth (over 75 years, down to a century), which is rare in Bantu lexicography.

## 2. The manuscript, its author and the Kikongo variety dealt with

The manuscript consists of 719 typed-up pages, each page slightly larger in size than an A4. Polis, whose name appears on the bottom-right of the first page, 'transcribed' the material from his notes during the course of 1938, while in Leuven.[1] His manuscript was stencil duplicated and distributed in nine fascicules (Van de Casteele 1968).[2] It is not known how many copies were made. The Ghent University library has had the copy which used to belong to the agricultural engineer Lode De Wilde (whose name appears on the first page of each of the nine fascicules) for some time, and in 2015 also acquired the copy which used to belong to the missionary-linguists Jan Daeleman s.j. (1922–†2014) and Gaston van Bulck s.j. (1903–†1966).

The manuscript has no title page, which has resulted in a proliferation of designations. The copy of De Wilde was catalogued as *Dictionnaire Kikongo* (http://lib.ugent.be/catalog/rug01:000184510), while the Daeleman–Van Bulck one was catalogued as *Dictionnaire KiKongo–Français, schikking van K. Polis* (http://lib.ugent.be/catalog/rug01:002189704). Other copies that are known to us include a couple at the Leuven University library, where it is the *Dictionnaire de la langue congolaise* (http://www.unicat.be/uniCat?query=sysid:11277820), and one at the Antwerp University library, where it is the *Dictionnaire congolais (en formation)* (http://anet.be/record/opacanet/c:lvd:355728/N). We have chosen to refer to the work with *Lexique kikongo–français*, as done by Van de Casteele (1968) in his obituary of Polis, mainly because Polis himself points out in the introduction to his work that it is not yet a dictionary, but rather contains material that may lead to the compilation of a dictionary (Polis 1938: Part I, i). The Ghent University fascicules have been bound into three volumes, those at Leuven University into two, while at Antwerp University the catalogue entry shows nine 'volumes' (in all likelihood the nine fascicules). The version consulted for the present study is the one of De Wilde: the stencilled pages are generally of poor quality, often with faint vertical sections down the middle, and/or (mostly) horizontal ink smears. Several letters are also typed on top of one another, or are otherwise unreadable. With a bit of effort, these issues can of course be overcome (but they give even trained OCR software a hard time). During the binding of the De Wilde copy, on some pages a (very limited) number of lines at the bottom got cut off.

Even though there is no title page, we are certain the language dealt with is indeed Kikongo. This is amongst others clear from the illustrative material, which includes the phrases (1) to (4) — phrases that also tell us something about the process by which the material was collected:[3]

(1) **FuM + O, VERBE** (Part II, p. 251): ... *tufuma ndiinga kikoongo*, nous avons une masse (de travail) (dans cette étude) du kikoongo; donc bcp. à combiner, à réfléchir [we have a lot (of work) (in this study) of Kikongo; thus a lot to combine, to work out] ...

(2) **FiK + OII, SUBST., mi** (Part II, p. 261): ... *ba balaanda beeto, sa bamona mmfiku, sa babaka kikoongo mu mmf.*, ceux qui viendront après nous, trouveront la difficulté supprimée; ils acquerront le kikoongo sans peine, à bon compte (réflexion d'un aide) [those who will come after us, will find that the difficulty is gone; they will acquire Kikongo without efforts, on the cheap (remark of a helper)] ...

(3) **KoZ & KoS + OI, VERBE** (Part II, p. 402): ... *muundele ukoonza Na Kosi kikoongo*, le Blanc est en train d'épuiser tout le kikoongo de Monsieur Kosi [the White man is busy exhausting all the Kikongo of Mr Kosi] ...

(4) **KoZ & KoS + OI, V.DER., uNA** (Part II, p. 403): ... *konzununa kikoongo*, rechercher tout le kikongo mot par mot [research all of Kikongo, word after word] ...

What is thus immediately apparent from these four example phrases, is that Polis worked with native-speaker language consultants — one of them even

called Mr Kosi — with whom he tried out all possible 'combinations' in an attempt to pinpoint *all* the words of Kikongo. Those informants felt that Polis was really getting the maximum out of them, and as a result they concluded that anyone wishing to learn Kikongo in the future would now have an easy time thanks to their efforts.

Knowing that one is dealing with Kikongo is not enough, however, as 'Kikongo' is actually "a disparate continuum of closely related Bantu languages" known as the Kikongo Language Cluster or 'KLC' (De Schryver et al. 2015). The KLC may be divided into four subgroups — North, West, East and South — together with a Central buffer zone, as shown in Figure 1.

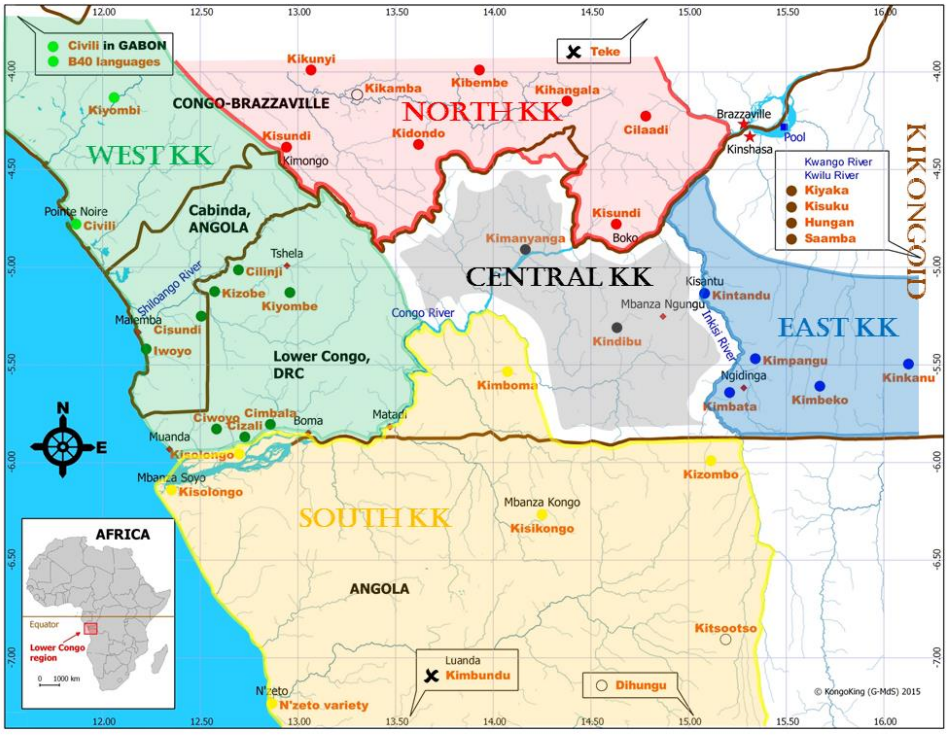


**Figure 1**: The Kikongo Language Cluster (KLC), with its sub-groups mapped. Colours indicate sub-group membership within the KLC. (Kimbundu and Teke are not part of the KLC, and are therefore preceded by black crosses.)

In order to determine to which subgroup the Kikongo variety described by Polis belongs, and perhaps even to pinpoint the variety itself, we can first turn to the literature. Over the past four years, the KongoKing research group has built up and digitised a documentation corpus which currently stands at over a

thousand sources on the Kongo kingdom and/or on the Kikongo language. Disappointingly, Polis is only mentioned in seven sources: in the obituary already referred to, in the documentation of one map, in the introduction of one dictionary, in two MAs, in one PhD, and in one scientific article.

From the obituary (Van de Casteele 1968) we learn that Charles Polis was born in Antwerp on November 1, 1885. As a Jesuit he arrived in the Kwango for missionary work on August 15, 1911, and basically stayed there for the rest of his life, being variously posted as a teacher/priest to Kimpako, Leverville, Lemfu, Mbanza-Mboma and Ngidinga. All of these locations are east of the Inkisi River, and all but one (Leverville, the present Lusanga) are close to that river, which thus strongly suggests that Polis is covering one (or several) East Kikongo varieties in his manuscript. Kimpako and Mbanza-Mboma are locations close to Kisantu, where Kintandu is spoken, while Lemfu is situated halfway between Kisantu and Ngidingi, the latter where Kimbata is spoken. See Figure 1 for the major locations, the Inkisi River, and the KLC varieties. Polis's stay in the Congo was interrupted four times for return visits to Belgium, the longest of these during the entire World War I. He died of health complications in a Léopoldville (today Kinshasa) hospital on June 27, 1943.

In the supporting documentation of Boone's (1973: 145) ethnographic map of the Congo, Polis is mentioned for a short contribution on the Mbata (Polis 1942). In contrast, in his dictionary Swartenbroeckx (1973: v) refers to "the excellent Kintandu works" of Polis which he was alas "not able to acquire in time" to help during compilation, while Makaya Lutumba (1999: 9) merely lists Polis together with René Butaye and Joseph Van Wing as contributors to Kintandu. In neither of these, references to actual works in Kintandu are however provided. Makolo Miaka (2000: 8), who clearly copied various pages verbatim from Makaya Lutumba (1999), repeats the exact same paragraph and thus statement regarding Kintandu. Lastly, and arguably the best evidence, Daeleman (1966) points out in his PhD on Kintandu:

> *Veel nut, inzonderheid bij de studie van de werkwoordafleidingen, hebben we getrokken van de rijke mijn van voorbeelden die amper aangeboord is in het als handschrift gestencilde 'Dictionnaire kikongo–français' van wijlen P. K. POLIS.* [A great help, especially when it comes to the study of verbal derivations, was the goldmine of examples found in the hardly perused stencilled manuscript *Dictionnaire kikongo–français* by the late Father C. POLIS.] (Daeleman 1966: 7)

In his article on the PB reflexes in Kintandu, Daeleman (1983) also refers to and uses data from Polis's manuscript. In the entire academic literature, then, there is but one scholar who explicitly refers to the work under study: Jan Daeleman, not surprisingly another Jesuit working from Leuven, who put the information contained within Polis's manuscript to good use in the course of his doctoral studies and subsequent research. Since then, Polis's work has regrettably remained untapped. The literature just reviewed further also suggests that the (main?) variety dealt with by Polis must be Kintandu.

Could the Kikongo variety be derived from Polis's manuscript itself? A good starting point is to look at the (frequencies of) place names used in the illustrative material,[4] which clearly favour Kisantu and neighbouring locations over Ngidinga: *Kisantu* (25 x), *Kimvulu* (12 x), *Kimpese* (6 x), *Lemfu* (4 x), *Ngidinga* (3 x), *Kimpako* (2 x), *Kivuunda* (2 x), or *Mbe* (an old village close to Lemfu, 1 x). Also compare this to locations much farther away: *Mpuumbu* and *Stanley Pool* (6 x) or *San-Salvador/S. Salvador* (3 x). Rivers are not mentioned often enough to be conclusive, but are indicative: *Inkisi* (1 x) and *Bongolo* (1 x) vs. *Congo* (0 x) and *Kwilu* (0 x). While the *Ntandu* (East), *Mpangu* (East), *Mbeko* (East), *Ndibu* (Central), *Zombo* (South), *Solongo* (South) and *Laari* (North) are each mentioned about once or twice, the *Mbata* (East) are mentioned numerous times. Further analysis reveals that this is actually done to contrast the speech of the Mbata, mostly labelled with the abbreviation *MB.*, with the main variety covered in the manuscript. There are well over 180 instances of the labels *MB.* and *Mbata* throughout the microstructure. Additionally, a note at the start of fascicule G/K- is very clear on the fact that Kimbata should be considered the dialectal form in this manuscript:

(5) **G/K-** (Part II, p. 293): Nota: le sigle (MB.g) indique que le g est maintenu dans le dialecte de Mbata, qui le remplace généralement par v bilabial. [Note: the label '*MB.g*' indicates that g is maintained in the dialect of Mbata, where it is generally replaced by the bilabial v.]

While the linguistic explanation is only approximate here, this note does point out an important difference between Kintandu and Kimbata regarding the phonetic outcome of the PB ***p** in intervocalic position, as seen in (6) vs. (7):[5]

(6) Kintandu

***p > ɣ/V_V[-closed] & *p > ɣ/Ṇ_V[-closed]**

***-páan-** 'give' (BLR 2345) > -**ɣáán**- (Daeleman 1983: 382)

(7) Kimbata

***p > v/V_V[-closed] & *p > v/Ṇ_V[-closed]**

***-páan-** 'give' (BLR 2345) > -**vana** (KongoKing Fieldwork 2012)

As shown in Bostoen et al. (2013: 63-66), given **β**, **v**, **h,** **ɣ̊** and **ɣ** are all found as unconditioned reflexes of PB ***p** within the KLC, these phonetic outcomes may be seriated most economically by postulating the intermediate proto-sound **°ɸ**, as shown in (8):

(8) ***p**-lenition within the KLC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | > | **β** | > | **v** | | |
| ***p** | > | **°ɸ** | | | | | | |
| | | | > | **h** | > | **ɣ̊** | > | **ɣ** |

Kintandu, then, is the endpoint of the bottom series of the split seriation shown in (8), while Kimbata is the endpoint of the top series. Polis covers the forms of the bottom series, thus Kintandu.

Other KLC varieties that are labelled in Polis's manuscript include the southern Kisikongo, as *Kis*. (63 x), and *Kizoombo* (2 x), as well as the western Kiyombe, as *May*. (22 x). There are even a few instances of the Kikongoid *Kiyaka* (10 x), and the non-related eastern *Kiluba/Luba* (2 x). In order to contrast 'his Kikongo' with other KLC varieties, Polis must have had access to other existing dictionaries, as he is not known to have travelled widely throughout the Lower Congo region, and thus to have had first-hand experience with other KLC varieties. That he indeed had access to other reference works is evidenced by the fact that he names his colleagues and thus indirectly his sources by name: *Laman/Lam*. (23 x), *Bittremieux* (1 x), *Butaye* (1 x), *Gillet* (1 x), *Georges de Gheel* (1 x), *Bentley* (1 x), and *Delplace* (1 x). These can be linked to dictionaries for the central Kimanyanga variety by Laman (1936), the western Kiyombe variety by Bittremieux (1922, 1927), the eastern Kintandu variety by Butaye (1909) and Gillet and Pâque (1910), the southern Kisikongo variety by Van Gheel (1652)[6] and Bentley (1887, 1895), and the concocted Kikongo by Delplace (1895). All of these reference works indeed appeared before 1938. The gleaned information was in such cases mostly literally lifted from those other sources, as is for instance the case for the excerpt shown in (9) with data copied from and cross-referenced to (10):

(9) **SuS + OII, SUBST., ma** (Part II, p. 144): ... <u>*dinsusu-nsusu*</u>, légume apprécié (*ocimum* sp., petit basilic à feuilles aromatiques servant aux assaisonnements; sec. Fr Gillet) [much-liked vegetable (*ocimum* sp., small basil with aromatic leaves used to season; according to Brother Gillet)] ...

(10) **Dinsusu**. — *Ocimum* sp. LABIÉES.

*Nsusu* = poule (generice).

Petit basilic, à feuilles aromatiques servant aux assaisonnements.

(Gillet and Pâque 1910: 14)

While it is a truism that one cannot prove a negative, the total absence of labels to mark Kintandu, in combination with the fact that other varieties *are* labelled and contrasted with what is being described lexicographically, should be sufficient additional proof that Polis indeed deals with Kintandu.

The only other known sizeable general-language dictionary for Kintandu is Butaye's (1909) *Dictionnaire kikongo–français, français–kikongo*. Even though that dictionary was published three decades before Polis transcribed his material (it was even published before Polis ever set foot in the Congo), we can be rather certain that Polis did not frequently consult Butaye's dictionary to compile his own work. This assertion is not only based on Polis's idiosyncratic approach to the macrostructure, but also on the actual coverage of the lexicon in his work, the original microstructural contents he presents, and his use of a

non-standard spelling for Kikongo/Kintandu. Certainly, a valid hypothesis could have been that Polis merely 'pretended' to be devising a new outer access structure, while he was in actual fact rearranging the data of an existing dictionary (including the possibility of the rearrangement of the draft of a dictionary of his own making). This hypothesis is inspired by the fact that it seems rather overwhelming, truth must be told, to imagine a situation whereby one departs from the most basic building blocks of a language — CV(C) clusters in this case — which are subjected to some systematic manipulations and the addition of other building blocks, the results of which are only kept when meaningful words are the outcome, to end up with a balanced and representative coverage of a language's lexicon. Can this type of introspection really lead to the full coverage of the lexicon — or at any rate, an acceptable one? As we will show in the subsequent sections, this is indeed possible, and the dictionary compilation procedure gleaned from the extracts shown in (1) to (4) must therefore reflect reality: Polis and his team of native speakers pulled off quite a feat.

## 3. Presentation of Polis's *Lexique*

### 3.1 The macrostructure of the *Lexique*

#### 3.1.1 Metalexicographical context

It is well-known that modern dictionaries for the Bantu languages are corpus-based (De Schryver and Prinsloo 2000a, b), with the very best even aiming to be corpus-driven (De Schryver 2010). In the pre-corpus era the main strategies employed for the actual compilation of the macrostructure were either (i) random, (ii) rule-oriented, or (iii) enter-them-all approaches. In the random approach "words are simply added whenever they happen to cross the compiler's way", in the rule-oriented approach "a set of rules/guidelines presented in the dictionary's front matter must be followed whenever a word cannot be looked up directly" (so the assumption is that everything is covered 'in theory'), and in the enter-them-all approach "the compilers are obsessed to include all conceivable nominal and verbal derivations [working] through a modular paradigm in order to pursue such a comprehensiveness" (De Schryver and Prinsloo 2001: 219-225).

This is not to say that still other strategies have not been tried out. Prinsloo and De Schryver (1999: 264-267) discuss an interesting case whereby Vermeersch (1922) sought out and brought together the vocabulary of Cilubà according to morpho-lexical fields. This approach has been found wanting (Kalonji 1993: 134-136), and may be seen as a variant of the random approach in that there is no system to ensure a systematic coverage. A more recent alternative approach is that by Mbatha (2006) for Zulu, who argues that only content words belong in a dictionary and that just four word classes merit to be recog-

nised anyway: nouns, verbs, interjections, and ideophones. This could be seen as a variant of the rule-oriented approach, whereby all sorts of meanings now somehow have to be forced onto extremely low-frequent to non-existing verb and noun stems in order to fit in, say, what everyone else recognises to be adjectives, adverbs, etc. For a critique of Mbatha's method, with supporting examples, see De Schryver and Wilkes (2008: 829-830). Polis's approach, now, may be seen as a variant of the enter-them-all approach, also known as the paradigm approach, but unlike the blind generation of often highly infrequent, dubious and even non-existent forms that characterise other modular approaches (see Prinsloo 2014), Polis was only interested in what really exists (and in all openness even added question marks when he was uncertain).

### 3.1.2 The Vertical Base

So how is Polis's *Lexique* structured on the macrostructural level? To begin with, one needs to acquaint oneself with his alphabetical ordering for consonants (11) and vowels (12):

(11) Consonants

**B/P, M, V/F, G/K, D~L/T, N, Z/S (, Y, W)**

(12) Vowels

**a, e, i, o, u (, diphthongs)**

As may be seen from (11), Polis first works through the labials (bilabials B/P and M, and labiodentals V/F), then the velars (G/K), followed by the alveolars (D~L/T, N and Z/S), and concludes with the semi-vowels (Y and W). The consonants are thus grouped according to place of articulation (mostly from front to back), and within each group according to manner of articulation (from plosive over nasal, etc.). At each of those levels Polis considers the voiced ones before the unvoiced ones (where relevant). D and L are considered on a par, as they are in complementary distribution in Kintandu. The vowels, shown in (12), follow the standard ordering.

In a **first stretch** of his manuscript Polis combines each consonant (C) with either a following vowel (–) or a following vowel and itself, as shown in (13), going through all the consonants in his defined ordering (11), and associating each of the vowels in the standard ordering (12) to each of the consonants, one at a time:

(13) **C–**

**C–C**

An extract from the resulting ordering may be seen in (14):

(14) ... Pa, Pe, Pi, Po, Pu, PaP, PeP, PiP, PoP, PuP, Ma, Me, Mi, Mo, Mu, MaM, MeM, MiM, MoM, MuM, ... Sa, Se, Si, So, Su, Sau, Say, SaS, SeS, SiS, SoS, SuS. (The semi-vowels Y and W are not considered here.)

Voiced and unvoiced renderings are treated on a par, before moving to the next consonant. Furthermore, given that D and L are in complementary distribution, this means that to for example go from DaD to DeD to DiD etc. one needs quite some gymnastics, as illustrated in (15):

(15) ... Da, De, Di, Do, Du, La, Le, Li, Lo, Lu, Lau, **DaD**, DaL, LaL, LaD, **DeD**, DeL, LeL, LeD, **DiD**, DiL, LiL, LiD, **DoD**, DoL, LoL, LoD, **DuD**, DuL, LuL, LuD, Ta, Te, ...

In a **second stretch** Polis combines each consonant (C) with each other consonant (C'), as shown in (16), running through all the vowels before going to the next consonant:

(16) **C–C'**

This results in the ordering seen in (17):

(17) B-P (an empty category), PaB, PeB, PiB, PoB, PuB, BaM, BeM, BiM, BoM, BuM, PaM, PeM, ... SaT, SeT, SiT, SoT, SuT, ZaN, ZeN, ZiN, ZoN, ZuN, SaN, SeN, SiN, SoN, SuN, ZaS & SaZ, ZeS & SeZ, ZiS & SiZ, ZoS & SoZ, ZuS & SuZ. (The semi-vowels Y and W are not considered here.)

For D~L one now obtains sequences like (18):

(18) ... PaK, PeK, PiK, PoK, PuK, **BaD**, BaL, **BeD**, BeL, **BiD**, BiL, **BoD**, BoL, **BuD**, BuL, BaT, BeT, BiT, BoT, BuT, **PaD**, PaL, **PeD**, PeL, ...

While all of this is of an impeccable logic, this ordering is of course not user-friendly. Do note that this was not meant to be, as this work is only a temporary tool for Polis, so the usual dictionary criticism is not warranted. At the same time, Polis did get tangled up in his own system as he starts his dictionary with the sequence shown in (19)a, while it should have been as in (19)b:

(19) **a.** Ba, BaB, Be, BeB, Bi, BiB, Bo, BoB, Bu, BuB, ...
**b.** Ba, Be, Bi, Bo, Bu, BaB, BeB, BiB, BoB, BuB, ...

The difference is not insignificant, as the sequence shown in (19) runs over 25 pages. Overall, there are very few other errors in the actual ordering (the headings are sometimes wrong though). Also, some categories are lumped together, as may be seen from the ampersand '&' in (17). At times, this leads to slip ups: there is for instance an entry for GaD, and another for GaL & GaD.[7]

In a **third stretch** Polis specifically deals with the semi-vowels Y and W, as well as the diphthongs. For Y, formulas (20) and (21) are applicable, which results in the sequence shown in (22):

(20) **Y–**

**Y–Y**

(21) **Y–C,W**

**C–Y**

(22) Ya, Ye, Yi, Yo, Yu, YaY, YeY, YiY, YoY, YuY, YaB, YeB, YiB, ... YoZ & YoS, YuZ & YuS, YaW, BaY, BeY, BiY, BoY, PaY, PeY, PiY, PoY, PuY, MaY, MeY, MiY, ... ZaY, ZeY, ZiY, ZoY, ZuY, SaY, SeY, SoY, SuY.

Likewise for W, formulas (23) and (24) are applicable, which results in the sequence shown in (25):

(23) **W–**

**W–W**

(24) **W–C**

**C–W**

(25) Wa, We, Wo, Wu, WaW, WeW, WiW, WoW, WuW, WaB, WeB, WiB, ... WoZ & WoS, WuZ & WuS, BaW & PaW, BeW & PeW, ... DoW & LoW, DuW & LuW, TaW, ToW, Z-W, S-W.

The sequence for the diphthongs (26) is as shown in (27):

(26) **VV**

(27) ay, au (monosyllabic), au (polysyllabic), ey, eu, oy.

Clearly, not all combinations exist, and when one doesn't, Polis normally does not provide a heading for it, as may be deduced from the gaps in the sequences seen in (22) and (25). When treating each vowel in its own right is not worth the effort, Polis also lumps the material, as is the case for Z-W and S-W in (25). Again, very few errors were found in the sequence, except that an entry Y-W follows SuY, while that entry should actually have replaced (and the data merged with) the earlier YaW (which follows YuZ & YuS).

Finally, there is also a shorter **zeroth stretch**, which precedes the three stretches already mentioned, where Polis lists what he calls the 'pre-grammatical forms'. The ordering here mimics the ordering used in stretches one to three, thus first (13) and then (16), presented as (28) and (29). This is followed by a section dedicated to vowels and varia (30), sections on W, as (31) rather than (23) and (24), and Y, as (32) rather than (20) and (21), and concludes with a section on diphthongs (33):

(28) **C–**

**C–c**

(29) **C–c'**

(30) **V, varia**

(31) **W–**

**W–c,w,y**

**C–w**

(32) **Y–**

**Y–c**

**C–y**

**Y–y**

(33) **VV**

Following Polis, the second consonant in the pre-grammatical part has been written in lowercase (although he doesn't follow this convention consistently), which should ease in differentiating this part from the rest of the work. By and large, one notices that the pre-grammatical part thus follows the same sequence as the rest of the work, but not in the details. In addition to the swapping of the semi-vowel sections Y and W, the changes within those sections, and the addition of a vowel section, the pre-grammatical equivalent of (15), for instance, is also different, as shown in (34):

(34) ... Kik, Kok, Kuk, Da, De, Di, Do, Du, La, Le, Li, Lo, Lu, **Dad**, **Ded**, **Did**, **Dod**, **Dud**, Dal, Del, Dil, Dol, Dul, Lal, Lel, Lil, Lol, Lul, Lad, Led, Lid, Lod, Lud, Ta, Te, ...

There are also a few errors, such as the erroneous placement of the F– sequence before the V–v sequence, where it should be the reverse.

For all these reasons, and in order to make this first level of the macrostructure more accessible to future users, we felt that it was necessary to create an index of the full CV(C) sequence. We have termed that sequence the 'Vertical Base', where even the shorthand 'CV(C) sequence' is an approximation, as it refers to the sequence of formulas (28), (29), (30), (31), (32), (33), (13), (16), (20), (21), (23), (24), and (26). The result is shown in Addendum 1. In perusing Polis's manuscript, checking and searching (the electronic version of) Addendum 1 greatly speeds up the look-up process.

We are now in a position to make more sense of the different fascicules of the manuscript, as summarised in Table 1. The short introduction (numbered i-iii by Polis) together with the pre-grammatical forms (numbered 1-67, including one bis-page), constitutes one fascicule. All the subsequent sections (for which the page numbering restarts at 1, running up to 646, including two bis-

pages) each constitute a fascicule in their own right. Given the double numbering, we use Part I to refer to the pre-grammatical part, and Part II to refer to the bulk of the work. The dates in the manuscript indicate that Polis first transcribed the simple and double labials and linguals (fascicules 1 and 2 — corresponding to Stretch 1 of his CV(C) sequence), followed by the introduction and pre-grammatical forms (fascicule 3 — Stretch 0). He then proceeded with all the mixed consonants (fascicules 4 to 8 — Stretch 2), and concluded with the semivowels and diphthongs (fascicule 9 — Stretch 3).

**Table 1:** Details of the nine fascicules of Polis's *Lexique*, linked to the four different CV(C) stretches of the macrostructure's Vertical Base

| No. | Title | Pp. | Fasc. | Stretch | Part | Signed |
|---|---|---|---|---|---|---|
| 0 | Introduction | i-iii | 3 | — | — | 24 Apr. 1938 |
| 1 | Pre-grammatical forms | 1-67 | " | 0 | Part I | 21 May 1938 |
| 2 | Simple & double labials | 1-80 | 1 | 1 | Part II | 21 March 1938 |
| 3 | Simple & double linguals | 81-144 | 2 | " | " | 17 Apr. 1938 |
| 4 | B/P with other consonants | 145-225 | 4 | 2 | " | 26 Aug. 1938 |
| 5 | M and V/F with other consonants | 226-292 | 5 | " | " | 2 Sept. 1938 |
| 6 | G/K with other consonants | 293-406 | 6 | " | " | 10 Sept. 1938 |
| 7 | D~L/T with other consonants | 407-495 | 7 | " | " | 20 Sept. 1938 |
| 8 | N and Z/S with other consonants | 496-599 | 8 | " | " | 25 Sept. 1938 |
| 9 | Words with Y, W and diphthongs | 600-646 | 9 | 3 | " | 9 Oct. 1938 |

The information summarised in Table 1 and the CV(C) sequence shown in Addendum 1 constitute the first entry point to (and the first part of the macrostructure of) Polis's work. Addendum 1 reveals that there are 1 592 CV(C) clusters: these, then, are the basic building blocks around which Polis proceeds to construct the entire lexicon of Kintandu. Except for a few empty CV(C) clusters, for which the heading is listed but no data is provided, each of those clusters is now subjected to a number of manipulations in order to arrive at real words.

### 3.1.3 The Horizontal Base

Still on the macrostructural level, Polis follows up with three types of manipulations of each CV(C) cluster in Part II: Steps 1, 2 and 3 — to which we will collectively refer to with the term 'Horizontal Base'. To enable the presentation of Step 1, each CV(C) cluster may now be written as shown in (35):

(35) **C V**

**$C_1$ V $C_2$**

**Step 1** is concerned with either the palatalization or labialization of the first consonant (C or C1) and/or the prenasalization of the second consonant (C2, or for the CV cluster simply the consonant C). Considering either the presence of palatalization (coded Y), the presence of labialization (W), or the absence of both (O), in combination with either the presence (I) or absence (II) of prenasalization, results in a 3 x 2 matrix, or thus six possibilities, for which Polis uses the codes shown in the column 'Code 2' of Table 2. The linguistic implication of those codes is shown in the last two columns of Table 2, where the superscript $^{j}$ stands for palatalization, the superscript $^{w}$ for labialization, and the superscript $^{N}$ for prenasalization (with N a non-syllabic homorganic nasal). Optional items are shown between round brackets; variation within the options is separated by a comma.

**Table 2:** Step 1 of the Horizontal Base in Polis's *Lexique*

| Code 1 | Code 2 | Meaning | Linguistic formula CV | CVC |
|---|---|---|---|---|
| Y | | palatalization of C or $C_1$ | $^{(N)}\mathbf{C}^{j}\,\mathbf{V}$ | $\mathbf{C_1}^{j}\,\mathbf{V}\,^{(N)}\mathbf{C_2}$ |
| | **YI** | palatalization of C or $C_1$, and prenasalization of [C or] $C_2$ | $[^{N}\mathbf{C}^{j}\,\mathbf{V}]$ | $\mathbf{C_1}^{j}\,\mathbf{V}\,^{N}\mathbf{C_2}$ |
| | **YII** | palatalization of C or $C_1$, but no prenasalization of [C or] $C_2$ | $[\mathbf{C}^{j}\,\mathbf{V}]$ | $\mathbf{C_1}^{j}\,\mathbf{V}\,\mathbf{C_2}$ |
| W | | labialization of C or $C_1$ | $^{(N)}\mathbf{C}^{w}\,\mathbf{V}$ | $\mathbf{C_1}^{w}\,\mathbf{V}\,^{(N)}\mathbf{C_2}$ |
| | **WI** | labialization of C or $C_1$, and prenasalization of [C or] $C_2$ | $[^{N}\mathbf{C}^{w}\,\mathbf{V}]$ | $\mathbf{C_1}^{w}\,\mathbf{V}\,^{N}\mathbf{C_2}$ |
| | **WII** | labialization of C or $C_1$, but no prenasalization of [C or] $C_2$ | $[\mathbf{C}^{w}\,\mathbf{V}]$ | $\mathbf{C_1}^{w}\,\mathbf{V}\,\mathbf{C_2}$ |
| O | | no palatalization nor labialization of C or $C_1$ | $^{(N)}\mathbf{C}\,\mathbf{V}$ | $\mathbf{C_1}\,\mathbf{V}\,^{(N)}\mathbf{C_2}$ |
| | **OI** | no palatalization nor labialization of C or $C_1$, but with prenasalization of [C or] $C_2$ | $[^{N}\mathbf{C}\,\mathbf{V}]$ | $\mathbf{C_1}\,\mathbf{V}\,^{N}\mathbf{C_2}$ |
| | **OII** | no palatalization nor labialization of C or $C_1$, and no prenasalization of [C or] $C_2$ | $[\mathbf{C}\,\mathbf{V}]$ | $\mathbf{C_1}\,\mathbf{V}\,\mathbf{C_2}$ |
| I | | prenasalization of [C or] $C_2$ | $[^{N}\mathbf{C}^{(j,w)}\,\mathbf{V}]$ | $\mathbf{C_1}^{(j,w)}\,\mathbf{V}\,^{N}\mathbf{C_2}$ |
| II | | no prenasalization of [C or] $C_2$ | $[\mathbf{C}^{(j,w)}\,\mathbf{V}]$ | $\mathbf{C_1}^{(j,w)}\,\mathbf{V}\,\mathbf{C_2}$ |

Analysis of the manuscript reveals that Polis also uses the codes shown in the column headed by 'Code 1', thus focusing on the palatalization (Y), labialization (W), or absence of both (O), as well as the prenasalization (I) or absence

thereof (II), without considering (or specifying) the other level. The use of the single codes Y, W and O is the favoured (but not the sole) approach for CV clusters, the use of the single codes I and II is the favoured (but not the sole) approach used in the semi-vowel-initial section of the third Stretch, while the use of the double codes (YI, YII, WI, WII, OI and OII) is the favoured (but not the sole) approach in the bulk of the work, thus for the CVC clusters. Not all Codes are used with each CV(C) cluster; only the applicable ones, and in the order seen in Table 2, from top to bottom.

The codes for the formulas shown between square brackets in the penultimate column of Table 2, namely those to indicate whether or not there is prenasalization of CV clusters, could have been used, but they haven't. Not only does Polis not codify the prenasalization of CV clusters, he does not do so for the first consonant of CVC clusters either. Rather, he silently lumps its potential presence at Step 3 of the Horizontal Base. Likewise, he does not codify the palatalization or labialization of the second consonant, again silently lumping its potential presence at Step 3 of the Horizontal Base. While this is not linguistically sound, his reasoning must have been that in Step 1 he was only interested in changes around the vowel of each CV(C) structure.

**Step 2** could be said to be the signpost for the word class or part of speech; the two major categories being VERBE to introduce base verbs, and SUBST. to introduce base nouns. Verbs and nouns, as well as occasionally other word classes, derived from this are grouped in a section preceded by V.DER. Word forms that cannot be derived from the previous are brought together under VARIA. While pre-grammatical forms are to be found in their own separate part (i.e., Part I) of the dictionary, references to them are, when applicable, signnalled at the start of Step 2 with the signpost PREGR. Step 2 is repeated for each (relevant) Code from Step 1, in the order just described.

**Step 3** is used with two of the signposts from Step 2: SUBST. and V.DER. At SUBST. the plural prefix of the nouns that follow is shown, as if to say that a collection (hence the plural) of nouns from that gender is announced.[8] Table 3 lists the labels used for the nouns at Step 3, together with their actual singular and plural prefixes as well as the gender numbers in use today.

**Table 3:** SUBST. 'noun prefixes' used at Step 3 of the Horizontal Base in Polis's *Lexique*

| SUBST. | Singular / Plural prefixes | Modern gender numbers |
|---|---|---|
| ba | mu-, mw-, Ṇ- / ba- | 1/2 |
| bi | ki-, ø- / bi- | 7/8 |
| bu | bu- | 14 |
| ma | di-, ø- / ma- | 5/6 |
| mi | mu-, mw-, Ṇ- / mi-, mw-, Ṇ- | 3/4 |
| tu | lu- / tu- | 11/13 |
| zi | N- / N- | 9/10 |

| | | | |
|---|---|---|---|
| (ku) | ku- / ma- | 15/6 | (Part II, pp. 369, 381, 475, 478) |
| ga | ga- | 16 | (Part II, p. 314) |
| (ku) | ku- | 17 | (Part II, p. 318, 636) |
| *gu* | *gu-* | *17 ?* | *(Part II, p. 314)* |
| *mu* | *mu-* | *18* | *?* |
| fi | fi- | 19 | (Part II, p. 47) |

The abbreviation N at gender 9/10 stands for the non-syllabic homorganic nasal, to contrast it with the syllabic homorganic nasal Ṇ found in classes 1, 3 and 4.[9] Orthographically, Polis differentiates the syllabic from the non-syllabic nasals by doubling the nasal when it is syllabic, for instance: *nnkeento/bakeento* 'woman/-en' (1/2) and *mmvu* 'year(s)' (3/4) vs. *nzo* 'house(s)' (9/10) and *mbwa* 'dog(s)' (9/10). With only the plain characters of a typewriter at hand, Polis came up with a wonderfully simple and straightforward way to draw attention to the difference between syllabic and non-syllabic nasals, which is most definitely an improvement over the earlier works by Butaye (1909, 1910), who doesn't mark the difference and only uses simple nasals.[10] Further note that Polis orders the nouns in Step 3 using his usual alphabetical ordering, as seen in (11) and (12): B, M, T, Z — followed by the addition of the relevant vowels for each of these.[11] Only those labels for which nouns are eventually presented are listed. The noun classes under the dashed line in Table 3 are infrequently used; the few instances we noted are referenced.

At V.DER. a large battery of labels for 'extensions' (real or perceived, and the eventual words themselves often with further extensions) is used. The main and more productive ones are shown in Table 4. This table lists the labels in the ordering used by Polis (from left to right, and within each column from top to bottom), which again follows the orderings (11) and (12). Of course no single V.DER. signpost has all these labels; what is not relevant is simply skipped.[12]

**Table 4:** V.DER. 'extensions' used at Step 3 of the Horizontal Base in Polis's *Lexique*

| **V.DER.** | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 ⇨ | 2 ⇨ | 3 ⇨ | 4 ⇨ | 5 ⇨ | 6 ⇨ | 7 ⇨ | 8 |
| BA | MA | NGA | KA | LA | TA | NA | SA |
| aBA | aMA | aNGA | aKA | NDA | aTA | aNA | aSA |
| iBA | iMA | iNGA | iKA | aLA | eTA | iNA | iSA |
| uBA | uMA | oNGA | uKA | iLA | iTA | uNA | oSA |
| | | uNGA | | oLA | uTA | | uSA |
| | | | | uLA | | | |

In the case of verbs with verbal extensions, Table 4 reveals that these are thus unfortunately not explicitly marked. Implicitly, though, a possible (first) verbal extension may be guessed from the label, such as the rollative (**-Vb-**) in column 1,

the stative (**-am-**) in column 2, the imperfective (**-ang-**) in column 3, the impositive (**-ik-**) and intransitive oppositive (**-uk-**) in column 4, the agitative (**-al-**), applicative (**-il-**) and oppositive (**-ul-**) in column 5, the contactive (**-Vt-**) in column 6, the reciprocal (**-an-**), expressive (**-in-**) and debilitative (**-un-**) in column 7, or finally the ergative (**-as-**) and causative (**-is-**) in column 8.[13]

The Horizontal Base in Part I simplifies that seen in Part II: Step 1 is kept, Step 2 is skipped, and for Step 3 only a set of numbers is used to represent extensions to the base clusters, namely 1 for -B-, 2 for -M-, 3 for -NG-, 4 for -K-, 5 for -L-, 6 for -T-, 7 for -N-, and 8 for -S-. This is analogous with the V.DER. extensions which are otherwise used at Step 3 (compare with Table 4), with this difference that combinations of extensions are marked explicitly here, resulting in for instance 15 for *-abala*, 38 for *-engese*, 77 for *-anana*, 546 for *-olokoto*, etc.

At last we are now in a position to combine the Vertical Base and the Horizontal Base, as illustrated with a number of selected examples in Table 5, to arrive at 'real words' in Polis's work.

**Table 5:** Combining the Vertical Base and the Horizontal Base in Polis's *Lexique*: Selected examples for each of the Codes used

| Codes | With CV clusters | With CVC clusters |
|---|---|---|
| Y | **Da + Y, SUBST., bi** > *kindya*, *kidya* (Part II, p. 82) | **NeM + Y, V.DER., iTA** > *nyeemita* (Part II, p. 498) |
| YI | — | **ZuG + YI, V.DER., aLA** > *zyungalakana* (Part II, p. 547) |
| YII | — | **FoT + YII, VARIA** > *fyote* (Part II, p. 282) |
| W | **Fa + W, SUBST., zi** > *mfwa* (Part II, p. 45) | **SaM + W, V.DER., uNA** > *kiswaamunu* (Part II, p. 538) |
| WI | — | **TeG + WI, SUBST., bi** > *tweengi* (Part II, p. 463) |
| WII | — | **SeT + WII, V.DER., aMA** > *sweetama* (Part II, p. 591)<br>**Set + WII, 4** > *sweetika* (Part I, p. 59) |
| O | **Ka + O, Varia** > *aka* (Part II, p. 63) | **SiN + O, SUBST., bi** > *kisina* (Part II, p. 595) |
| OI | — | **KoD & KoL + OI, V.DER., iSA** > *koondisa* (Part II, p. 363) |
| OII | — | **VuT + OII, SUBST., zi** > *mvutu* (Part II, p. 272) |
| I | — | **YaG + I, VERBE** > *yanga* (Part II, p. 609) |
| II | — | **YeK + II, V.DER., iKA** > *yekikila* (Part II, p. 614) |

The words listed in Table 5 are however not the only words generated by each respective Vertical Base + Horizontal Base. For instance, **ZuG + YI, V.DER., aLA** also leads to *zyungalakasa* (i.o.w., the ergative replaced the reciprocal as the final verbal extension), or **KoD & KoL + OI, V.DER., iSA** also leads to *kondisanga* (where the imperfective was added), or **YaG + I, VERBE** also leads to *iyanga* (now with a preceding reflexive), or even **YeK + II, V.DER., iKA** which also leads to simply *yekika* (where the applicative was dropped). Therefore, where and how are these different 'words' (i.e., the ones in italics in Table 5) now listed in Polis's work? This is the topic of the next section, as we move to the microstructure.

### 3.2 The microstructure of the *Lexique*

#### 3.2.1 The microstructure in Part II

Our discussion will be revolving around a single CVC cluster, namely the **ZaZ** cluster (Part II, pp. 127-128), reproduced in Addendum 2. This one CVC cluster runs over nearly two pages, and is obviously an example of one of the longer ones (recall there are 1 592 CV(C) clusters, on 716 pages). It was chosen as it is representative of a large number of the features of Polis's work. The full **ZaZ** cluster may be synthetized as shown in Table 6. Getting to the **ZaZ** cluster has been explained in Section 3.1.2 (on the Vertical Base), while the first three columns seen in Addendum 2 as well as Table 6 were covered in Section 3.1.3 (on the Horizontal Base). All of this may be considered as a multi-pronged approach that leads directly into the 48 'items' listed in column 4 of Table 6.

The items are often, but by no means always, the first 'word' of the microstructure. If not, in all but a few cases the formulaic macrostructure (i.e., the codified Vertical Base + Horizontal Base) enables one to pinpoint the item that is the focus of the lexicographical description. Items that are not at the start of their entry in the microstructure include the verb *zanzalaanga* at **ZaZ + OI, V.DER., LA** for which only an example sentence is provided: "*nkasa iye zanzalaanga mu nitu yakulu*, le poison se répand à travers le corps" [the poison is spreading through the body], or the noun *mazaaza* at **ZaZ + OII, SUBST., ma** which is used in the example: "*ndiinga ifwiidi mazaaza*, voix rauque (on perçoit des tremblements *za za za*)" [the voice is hoarse (one notices a trembling *za za za*)]. The item *nzanzumune* is even imbedded in a children's song. Also, some items are actually collocations: *nzanza madyaadi*, *'carton' di nzanza*, *kweenda nzanzuba*, *nzanzala koondi(i)*, *zaaza tiiya*, *zaza uzaza*, *zaaza ki bampaangi*, *nzazi nzazi*, and *mmbanda nzazi*. The items are moreover not always presented in their canonical form, given that some remain unlemmatised, as at **ZaZ + OI, V.DER., MA** where one of the entries is the following example sentence: "*ikizanzumuna*, je m'explique, m'excuse, me défends" [I explain/excuse/defend myself] rather than the reflexive verb *-kizanzumuna* as item.

**Table 6:** Synthesis (and translation) of the ZaZ cluster in Polis's *Lexique*

| Code | POS | Affix | Item | Grammar ... | NTD | Meaning | COL | EG |
|---|---|---|---|---|---|---|---|---|
| YI | PREGR. | | cf. previous | — | — | — | — | — |
| | VERBE | | *zyaanza* | > *zyanzidi & zyeenze* | ✓ | to get out quickly | 4 | — |
| | V.DER. | MA | | *-zyanzamene* | — | be lash; be straight | — | 3 |
| | | KA | *zyanzika* | caus. of *zyanzama* | — | — | — | — |
| YII | PREGR. | | cf. previous | — | — | — | — | — |
| | VERBE | | … | — | — | — | — | — |
| | SUBST. | mi | *nnzyaasi* | — | — | a straight thing | — | 3 |
| | | | *nnzyaasi* | — | — | name of a bush liana | — | — |
| | V.DER. | | *zyaazama* | — | — | be long, be stretched out (of snake, ...) | — | — |
| WI | … | | … | — | — | — | — | — |
| WII | PREGR. | | cf. previous | — | — | — | — | — |
| | VERBE | | … | — | — | — | — | — |
| | SUBST. | bi | *zzuaazu* | — | — | fly whisk | — | — |
| | | zi | *nzuaazu* | — | — | whipping; noise that sounds like *zua* | 3 | — |
| OI | PREGR. | | cf. previous | — | — | — | — | — |
| | VERBE | | *zaanza* | ant. *batalala* | — | to be up front, to be rising, to be in line | — | 3 |
| | SUBST. | bi | *kinzanza* | — | — | tin, tin can | 2 | — |
| | | ma | *zanza* | cf. *nza baantu* | — | large quantity | 4 | — |
| | | | *manzanza* | — | — | fetish *nkita* which had its *kimpasi* | — | — |
| | | | *dinzanza* | cf. *nzaanza* | — | small boat | — | — |
| | | mi | *nnzaanza* | — | — | bush between streams | — | — |
| | | | *nnzaanza* | syn. *ntaantu* | — | liana or pole serving as a bridge | — | — |
| | | tu | *lunzanza* | — | — | kind of fly very eager for blood | — | — |
| | | | *lunzaanza* | — | — | wide-openness | 1 | — |
| | | zi | *nzanza* | — | — | arrow | — | 2 |
| | | | *nzanza madyaadi* | — | — | edible rat, which roams the *madyaadi* grass | — | — |
| | | | *nzaanza* | — | — | whale boat, steel boat | — | — |
| | | | *'carton' di nzanza* | — | — | tin sheet used as the back of a cupboard | — | — |
| | | | *nzaanza* | — | — | line | — | 1 |
| | V.DER. | BA | *zaanzaba* | — | — | to crawl (of snakes, insects, …) | — | — |
| | | | *nzanzaba(i)* | — | — | large insect which climbs in trees | — | — |

| Code | POS | Affix | Item | Grammar ... | NTD | Meaning | COL | EG |
|---|---|---|---|---|---|---|---|---|
| | | | *kinzanzabala* | — | ✓ | a young boy, a small girl | — | — |
| | | | *nnzanzuba(u)* | — | — | winged insect, comes out of the ground | — | — |
| | | | *kweenda nzanzuba* | — | ✓ | to hurry | — | — |
| | | MA | *zaanzama* | — | — | be in line, to make a line | — | 3 |
| | | | *zanzumuna* | — | — | to do a little and then move on | — | 1 |
| | | | *-kizanzu-muna* | — | — | to explain/excuse/ defend oneself | — | — |
| | | | | *-zaanzu-mukini* | — | be having pins and needles | 1 | — |
| | | | *zanzumuni ... ?* | — | — | to oscillate, to go quickly | — | — |
| | | | *nzanzumune* | — | — | (maybe just used for the sound effect?) | — | — |
| | | NGA | *nzanzaanga* | the 1st 'a' H, the 2nd L | — | forest tree whose wood is not very strong | — | — |
| | | KA | *zaanzika* | caus. of *zaanzama* | — | — | — | — |
| | | LA | *zaanzala* | — | — | to crawl; …? | — | — |
| | | | *bizaanzala* | — | — | that which crawls (i.e., insects, ants) | — | — |
| | | | *nzanzala koondi(i)* | — | — | spider web | — | — |
| | | | *zanzalaanga* | — | — | to spread | — | — |
| OII | PREGR. | | cf. previous | — | — | — | — | — |
| | VERBE. | | *zaaza* | > *zeeze* | ✓ | be very ripe | — | — |
| | | | *zaaza tiiya* | syn. *zaasa ?* | — | to light a line of fire (along the forest) | — | — |
| | | | *zaza uzaza* | — | — | be talkative | — | — |
| | SUBST. | bi | *zaaza ki bampaangi* | — | — | instinct to imitate, fear of other's judgement | — | — |
| | | ma | *mazaaza* | + trembling voice | — | hoarse | — | — |
| | | mi | *nnzazi* | — | — | a strip of bush being farmed | — | — |
| | | | *nzazi nzazi* | — | — | along | — | — |
| | | zi | *nzazi* | syn. *Ni Kongo* | — | lightning | — | — |
| | | | *mmbanda nzazi* | — | — | kind of plant | — | — |
| | V.DER. | LA | *zaazila* | — | — | to tremble | 2 | — |
| | | | *nzaazila* | — | — | trembling, vibration | — | 1 |

Following the signpost VERBE the base verbs are shown, here *zyaanza* at YI, *zaanza* at OI, and *zaaza* at OII. Even though one could be led to assume that everything that follows is related semantically to each of these starting points, this is of course not the case. While base verbs are often accompanied by their perfect forms (as seen at *zyaanza* > *zyanzidi & zyeenze* and *zaaza* > *zeeze*), perfects of verbs with verbal extensions may be items in themselves (such as *-zyanzamene* and *-zaanzumukini*), and are thus included without a mention of their more canonical form.

Although Polis is not explicit in this regard, and certainly not systematic, he does include information on grammar (perfects, verbal extensions, etc.), pronunciation (especially on tone), lexical relations (synonyms, antonyms, etc.), various cross-references, and in other CVC clusters also labels and even usage notes. This type of information has been grouped in column 5 of Table 6.

At times, and in addition to a translation equivalent, Polis also provides a paraphrase in the language itself, information which typically precedes the translation equivalent proper. In Table 6 the presence of such information is indicated with a tick mark (✓) in the column headed by NTD (for Kintandu).

The most important information contained in any dictionary is of course the meaning; in a bilingual dictionary consequently the translation equivalents. Here Polis does rather well although one often needs to 'derive' the generic meaning from a series of collocations (COL) or example sentences (EG). The number of additional collocations and example sentences used to achieve this is indicated in the last two columns of Table 6: these come over and above the items which are collocations or examples in themselves.

### 3.2.2 The microstructure in Part I

By and large, the microstructure seen in Part I mimics that of Part II, albeit that it is on the whole simpler. This has to do with the nature of what Polis terms pre-grammatical forms. These turn out to be mostly ideophones (Doke 1935: 118), a decidedly elusive word category to characterise semantically as well as lexicographically (see De Schryver 2009). Various specific sounds and exclamations are also covered in part I, as well as the occasional infrequent word class. A sample page is shown in Addendum 3, with the synthesis presented in Table 7.

Ideophones, while an important word category of Bantu languages, are often overlooked in dictionaries. Polis's lists are a true treasure trove. Especially interesting are his and his team's attempts to derive other word classes from them, such as their suggestions that *nùù/núú* gave rise to the verb *nuuka*, or that *nyau* gave rise to the verb *nyaanga*. While the paraphrase and folk etymology seen at *nnniii(w)iiiii* vacillates between being intriguing and funny, the information does give extra insight into the compilation approach: even casual interlocutors (no doubt grabbed from their bicycles while on the way to the market) provided input on the words' uses, meanings and etymologies.

**Table 7**: Synthesis (and translation) of a pre-grammatical page (Part I, p. 24) from Polis's *Lexique*

| Vertical Base | Horizontal Base | Item | Meaning | Grammar ... | NTD | COL | EG |
|---|---|---|---|---|---|---|---|
| Ne | Y | *nye* | of emptiness | — | — | — | 2 |
| | | *nnye* | of crushing | — | — | — | 1 |
| | | *nyee* | of piercing pain | — | — | — | 2 |
| | | *nyeee* | cry of the cicada *mungyeenga* | — | — | — | — |
| | | *nye nye* | the crying of small children | — | — | — | — |
| | W | *nwe* | of pinching | — | — | — | — |
| | | *nue nue* | of small movements | — | — | — | 1 |
| | | *nue nue* | sound of muffled fart | — | — | — | — |
| | O | *ne* | of solitude | — | — | — | — |
| Ni | W | *nwi* | of rapidness | — | — | — | — |
| | | *nwi* | sound of muffled fart | — | — | — | — |
| | | *nwi* | (*May*.) of sweetness | — | — | — | — |
| | O | *ni ni ni* | cry of small children when they see a parent arrive | — | — | — | — |
| | | *nni* | buzzing (of flies, wasps, ...) | — | — | — | — |
| | | *nnniii(w)iiiii* | sound of a bee, with (w) a small change in sound corresponding to the moment the bee stops its wings to sting | (w) has become *u* in the word *nyuki* 'bee' (according to a casual interlocutor) | — | — | — |
| No | YW | ... | — | — | — | — | — |
| | O | *nno, no* | of dripping | — | — | — | 1 |
| Nu | Y | *nyu* | (*May*.) of piercing pain | — | ✓ | — | — |
| | | *nuu* | of bad smell (with grimace) | L tone; > v. *nuuka* smell | — | — | — |
| | | *nuu* | of good smell | H tone; > v. *nuuka* smell | — | — | — |
| Nau | | *nyau* | mewing of a cat | > v. *nyaanga* | — | — | — |
| Nan | Y | *nyana* | of tiptoeing | — | — | — | 1 |
| | | *nya nya* | exclamation of surprise, of disapproval | — | — | — | — |
| | | *nyanika* | of twinkling | — | — | — | 1 |
| | W | *nuana* | of rapidness | — | — | — | — |
| | | *nuanuna* | of rapidness | — | — | — | — |
| | | *nanika* | of movement | — | — | 1 | 1 |

### 3.3 The mediostructure of the *Lexique*

The mediostructure of a dictionary is the system of cross-referencing (Wiegand 1996, Gouws and Prinsloo 1998). A frequent type of cross-reference found in Polis's work is the one from Part II to Part I, linking the main dictionary material to the pre-grammatical forms. As could be seen from Addendum 2 and Table 6, the reference marker used for this is *cfr antea* [cf. previous]. The reference position is always the same, namely the microstructural slot following the signpost PREGR. in Step 2 of the macrostructure's Horizontal Base, while the reference address remains undefined. However, given the structure of the dictionary the reference address can be said to be implicit. For instance, the external reference addresses for the reference positions of this type in the **ZaZ** cluster (see Table 6) cross-refer to the corresponding entries in the **Zaz** cluster, reproduced in Addendum 4 and synthetized in Table 8.[14]

**Table 8**: Synthesis (and translation) of the pre-grammatical **Zaz** cluster (Part I, p. 26) in Polis's *Lexique*

| Vertical Base | Horizontal Base | Item | Meaning |
|---|---|---|---|
| Zaz | YII | *zyazya* | of gushing forth (e.g. blood) |
| | WII | *zwazwa* | alternating hitting sound of a flexible stick used to cut grass left and right |
| | OI | *zanzumuni zazumuni* | of rhythm (dance, fast walk) |
| | OII | *zazaza* | of trembling (arrow, lightning, dance, voice) |

Several other cross-reference markers are found, including *cfr* / *cfr.*; *cf* / *cf.*; *cfr supra*; *cfr Prov. et devinn.* / *cfr devinn.* [for references to proverbs and riddles]; and *syn.* These typically link items within a single CVC cluster or from different CVC clusters to one another. In addition to such explicit cross-references to items (i.e., full words) within the microstructure, explicit cross-references to specific Steps in a CVC cluster's macrostructure are also found, such as "*cfr NGA, KA*" at **DoK & LoK + OII, V.DER., uLA** (Part II, p. 458).

Lastly, the excerpts (36) to (38) show that the stacking of near-synonyms in Kintandu (seen at (36)) en lieu of a proper translation equivalent should also be considered to be (implicit) cross-references, for which alternatively *aussi* [also] (as seen in (37)) or simply *cfr* [cf.] (as seen in (38)) are used. These three items (*maanga*, *mpyaata* and *ngoombe*) cross-refer to one another, but in three different ways:

(36) **MaG + OI, SUBST., ma** (Part II, p. 228): *nkisi maanga, mpyaata, ngoombo; ta maanga ma nkele*, faire le jugement du fusil (tirer de près, s'il touche coupable, sinon libre) [do the gun judgement (shoot at close range, when he hits: guilty, if not: free)]; *twe teesa keti fimanga*, allons consulter (un brin de fétiche) [let's consult 'a bit of fetish'].

(37) **PaT + YII, SUBST., zi** (Part II, p. 209): *mpyaata*, fétiche pour découvrir la cause magique d'une maladie [fetish to discover the magical cause of an illness]. aussi [also] *ngoombo, maanga*. ...

(38) **GoB + OI, SUBST., zi** (Part II, p. 295): ... *ngoombo mu baabila ina*, la boîte-fétiche est en train de trembler (elle indique le coupable) [the fetish box is trembling (it indicates the guilty person)], cfr *maanga*, *mooko*, *mpyata*. ...

## 4. Lexicographical appreciation of Polis's *Lexique*

Before Polis's *Lexique* can be subjected to a true evaluation, a number of additional lexicographical elements must be pointed out and clarified further.

### 4.1 On the language and human resources

We already concluded that the main KLC variety covered is Kintandu, but is it the 'pure' Kintandu? In more than one place in the dictionary's microstructure, one finds example sentences such as the one seen in (39):

(39) **BiB + OI, SUBST., zi** (Part II, p. 16): *kikongo kizole, ki mbiimba*, le kikongo second (en opposition à l'ancien, celui des indigènes), celui des écoles, de fabrication étrangère, avec des obscurités [the second Kikongo (in opposition to the historical one, the one of the natives), the one of the schools, of foreign fabrication, with obscurities] ...

As so often with the laudable missionary efforts to codify a language and to reduce it to writing, they were at times either overzealous in their manipulation of the language, or the mother-tongue speakers felt that despite their efforts, the result still sounded stilted. One thus has to keep in mind that the data may not be as 'pure' as one would want them to be.

That said, one must also realise that Polis tried to give as accurate a picture as possible, being open about disagreements between his collaborators, as for instance seen in (40) and (41):

(40) **BuB + OII, V.DER., TA** (Part II, p. 25): ... *muuntu utabuubuta mu nzo*, qqun est en train de tâtonner dans la maison (contesté par d'autres qui disent, *baabita*) [someone is busy groping along in the house (contested by others who say *baabita* (rather than *buubuta*))] ...

(41) **KuD & K3uL + OI, V.DER., uBA** (Part II, p. 368): *nzau mu kwisa kunduba ina*, l'éléphant s'amène de son pas pesant, majestueux [the elephant arrives in his heavy, majestic step]; *mwaana mu k. ina*, l'enfant rampe à 4 pattes (sens contesté, il faudrait *kuluba*) [the child crawls on all fours (contested meaning, one would need *kuluba* (rather than *kunduba*))] ...

Polis also went to great length specifying where he recorded the material, whether or not in Mbata for instance, as in (42) vs. (43), or showing the differ-

ences between KLC varieties, especially the differences between Kintandu and Kimbata, as in (44) where the plural of *kutu* 'ear' is *makutu* in Kintandu but *matu* in Kimbata:

(42) **TaD & TaL + OII, V.DER., iSA** (Part II, p. 481): quelle direction prenez-vous? [which direction do you take?]; - *ntadisa mpuumbu*, la direction du Pool, le Nord [the direction of the Pool, the North]; - *nt. Koongo*, celle de S. Salvador, le Sud [the direction of S. Salvador, the South]; - *nt. Mbaamba*, celle de Mbaamba, l'Est [the direction of Mbamba, the East]; - *nt. Nsuundi*, l'Ouest (orientation des Bambata) [the direction of the Nsundi, the West (orientation of the Bambata)] ...

(43) **LuL + O, SUBST., tu** (Part II, p. 103): ... *Luula*, le pays des Baluula (*Luula Lumeene*); on connait ici (& à Mbata) *Luula lu Mpese*, et *Luula lu Ntari* (dans la région de Thysville) [the country of the Baluula (*Luula Lumeene*); here we know (& at Mbata) *Luula lu Mpese* and *Luula lu Ntari* (in the region of Thysville)].

(44) **KuT + OII, SUBST., (ku)** (Part II, p. 381): *kutu*, plur *makutu*; MB *matu*; oreille [ear] ...

### 4.2 On grammar (comment on form)

The microstructure of most dictionary entries may be divided into a comment on form and a comment on semantics (Hausmann and Wiegand 1989: 353-357), directed at the items which are the focus of the lexicographical description. The comment on form in Polis's manuscript mainly deals with pronunciation, morphology and additional word-class information.

In our manuscript, pronunciation information typically concerns tone, and could for instance already be seen for the noun *nzanzaanga* in Table 6 (at **ZaZ + OI, V.DER., NGA**), or for the ideophones *nuu* in Table 7 (at **Nu + Y**). Another example is shown in (45):

(45) **Bok + OII** (Part I, p. 31): ... *nwa uboka* (*o*, ton très bas), la bouche gronde: bruit de l'eau dans la bouche [(*o*, very low tone), the mouth roars: sound of water in the mouth] ...

Examples of morphological information could also already be seen in Table 6, in the column headed by 'Grammar ...', where the perfect forms are listed (following '>'), or where causatives are explicitly mentioned (following '*caus. of*'). Another example is shown in (46):

(46) **PuP + OII, V.DER., KA** (Part II, p. 32): ... *pupuka*, passif de *pupula* [passive of *pupula*]

While the main word classes are taken care of at Step 2 of the Horizontal Base, less-frequent word classes are mentioned in the microstructure every now and then, especially following the signpost VARIA. These word classes include: '*adverbe*' [adverb], '*adjectif*' [adjective], '*pronom personnel / pron. pers.*' [personal pronoun], '*pronom interrogatif / pron. interrog.*' [interrogative pronoun], '*pronom*

*relatif*' [relative pronoun], '*pronom démonstratif / pron. dém.*' [demonstrative pronoun], '*préposition / prépos. / prép.*' [preposition], '*possessif / poss.*' [possessive], '*conjonction / conj.*' [conjunction], '*locatif*' [locative], '*particule honorifique*' [honorific particle], etc., as well as '*verbe / v.*' [verb] and '*auxiliaire*' [auxiliary]. Examples are shown in (47) and (48):

(47) **Na + O, VARIA** (Part II, p. 120): ... *na* conjonction et prépos. [conjunction and preposition]; *bu kikala na ntaangu masiinsa*, quand il était environ midi [when it was about midday], *na bumbuta tala ye mana*, depuis que mes parents m'ont engendré [since my parents begot me], *na tee ye kuna nsoongi*, tout le long jusqu'au bout [all the way until the end]

(48) **NeN + O, VARIA** (Part II, p. 124): ... *neene*, adjectif; grand (dans tous les sens) [adjective; big (in all senses)]

The abbreviation '*v.*' is mostly found in Part I, where verbs derived from the pre-grammatical forms are listed, as seen in (49). These verbs are not normally repeated in Part II, though (50) shows an exception:

(49) **Ful + OII** (Part I, p. 39): *fulu*, remplissement [of filling up]; v. *fulusa*, *fulwasa*, *fuluka*

(50) **FuD & FuL + OII, V.DER., uKA** (Part II, p. 277): *fuluka*, plénitude [fullness (i.e., be full)]; *nzo ifulukidi na ndyaa*, la maison était pleine [the house was full]; - *baantu baf. ye kyeese*, les gens étaient remplis de joie [the people were full of joy] ...

### 4.3 On meaning (comment on semantics) and etymology

The dictionary's semantics is actually not as undeveloped as the flat microstructure tends to suggest. While it is for instance true that the numbering of senses is rare, an interesting exception is found in Part II, p. 83 "*disasana*: 1) se donner mutuellement de la nourriture. 2) se manger l'un l'autre" [1) to give one another food; 2) to eat each other]. In Part II, pp. 106-107, up to seven uses/ senses are even listed (and numbered as such) for *ta*.

Polis also often tries to move from core meanings to peripheral ones when ordering his microstructural material. A small selection of short examples includes: "*nzeefo vwamvala*, barbe touffue, d'où poilu, velu" [bushy beard, hence hairy] (Part I, p. 10), "*nua swe swe*, boire en aspirant, d'où prégustation" [drink while inhaling, hence pre-tasting] (Part I, p. 29), "*mmfu*, un trépassé, d'où revenant, spectre" [a deceased, hence ghost] (Part II, p. 47), "*lungungu*, roue, d'où bicyclette" [wheel, hence bicycle] (Part II, p. 60), etc.

In order to support the meanings, the French translation equivalents are at times complemented by Dutch equivalents, such as "flauwkens gaan" [to stroll] (Part II, p. 13), "gaarne groot" [be pretentious] (Part II, p. 32), "reus van'ne mensch" [tall, strong man] (Part II, p. 40), "hij loopt op eiren" [he walks very carefully] (Part II, p. 64), "mond vol tanden" [not know what to say] (Part II, p. 117), "stoefferken" [a pocket square] (Part II, p. 165), or "hij kent den hoofdman"

[he recognises the authority of the chief] (Part II, p. 632).[15]

Loanwords are labelled. For Portuguese with '*du portugais*', for instance: *dimpa* < pão [bread] (Part II, p. 26), *papelo* < papel [paper] (Part II, p. 28 bis), or *ndoona* < dona [lady] (Part II, p. 488); and for French with '*du français*', for instance: *buni* < bonnet [bonnet, hat] (Part II, p. 215), *moti* < mont [mountain] (Part II, p. 236), or *ntoma* < automobile [car] (Part II, p. 437).

There are also over 50 instances of the label '*vieux mot*' [old word], found at items such as: "*mmpu*, nom récent du chapeau, couvre-chef; vieux mot *mmpeewo*" [recent word for hat, headgear; old word *mmpeewo*] (Part II, p. 27), "*kimpuumpu*, vieux mot pour *kitaansi* machette" [old word for *kitaansi* machete] (Part II, p. 31), or "*mmbangi*, témoin; le vieux mot est *kyeesi*" [witness; the old word is *kyeesi*] (Part II, p. 154). References to lexical material that goes back to the 19th century are especially valuable in this regard, as contrary to the Southern and Western KLC varieties (for which lexical material exists that dates from the mid-17th century, respectively late-18th century, cf. Bostoen and De Schryver (2015)), there are no pre-20th-century sources for the Eastern KLC varieties. Glimpses such as those seen in (51) to (53) are thus highly welcome:

(51) **BoB + OII, V.DER., LA (, zi)** (Part II, p. 19): ... *mboobila*, petite torsade de perles d'il y a 40 ans [small spiral-shaped pearl necklace from 40 years ago] ...

(52) **Se + Y, VERBE** (Part II, p. 135): ... *sye nge!* vieille formule de salut (d'il y a plus de 75 ans) [old greeting formula (from over 75 years ago)]

(53) **NaB + YI, SUBST., bi** (Part II, p. 496): *kinyaambi kimana osi*, une épidémie meurtrière d'il y a plus ou moins 100 ans [a fatal epidemic from roughly 100 years ago]; = *kibwaaka*; *nitu zibweke*; le corps devenait (pâle) [the body turned 'pale']; cf *nyaangi*; *ngaambu*. - le fétiche causant cette maladie [the fetish causing this sickness]

### 4.4 On usage (in the extended microstructure) and labels

Quite a number of items are labelled for register, using mostly '*péjoratif*' [pejorative] vs. '*terme honnête*' [decent term], as seen in (54) and (55):

(54) **PeK + OII, VERBE** (Part II, p. 175): *peka*; courir de tous côtés, à généralement sens péjoratif de courir les femmes [run in all directions, generally has the pejorative meaning of chasing women]

(55) **TaK + OII, SUBST., ma** (Part II, p. 467): ... *taku*, fesse [arse]; grossier [rude]; terme honnête [decent term], *kito*, ou [or] *sina di kuulu* ...

Recurrent text boxes are hard to draw on a typewriter, but had the manuscript under consideration been professionally set, the contents of the various Usage Notes would have been a prime candidate to feature in such text boxes. According to Gouws and Prinsloo (2010) text boxes are a device employed in an extended microstructure:

> Instead of a compulsory and consistently applied homogeneous article structure the lexicographer has the liberty to opt for a less rigid heterogeneous article structure in which the compulsory microstructure, the default version of the specific dictionary, can be supplemented by items representing an extended microstructure. [...] One lexicographic device frequently employed in the presentation of data [is] the lexicographic text box [for which the] default presentation seems to be as article-internal microstructural entries within a typical relation of lemmatic addressing. (Gouws and Prinsloo 2010: 501)

In Polis's work such lexicographic devices are introduced by the label '*Nota:*' [Note:], and can be directed at both the comment on form, as in (56), or the comment on semantics, as in (57):

(56) **BoB + OI, VERBE** (Part II, p. 17): ... *boomba muuntu mu maambu*, engager qqun à son insu dans une affaire [draw someone into an affair without their knowing], *kotisa mu maambu, bu kena mu maambu ko*, le faire entrer dans l'affaire alors qu'il n'y est pour rien [make him join the affair while he has nothing to do with it].

(Nota: *boomba* ne prend pas deux régimes) [(Note: *boomba* does not take two concords)]

(57) **TuM + SUBST., zi** (Part II, p. 437): ... *ntumu iyisidi*, une (invitation) est arrivée [an 'invitation' has arrived], *kindaanda* [(i.e., a message)].

Nota: le concept d'invitation (incluant liberté) n'est pas de mise ici, il s'agit d'annonce d'événements qu'on doit annoncer et pour lesquels on doit répondre à l'annonce par une visite [Note: the concept of an invitation (without obligations) is out of place here; this refers to the announcement of events which have to be announced and to which one must reply by means of a visit]

Observe that the Note presented at (5) above has, in contrast to (56) and (57), a synoptic assignment, as it is directed at all entries where the label '*MB.g*' is used. While the single assignment at (56) and (57) employs immediate addressing, the synoptic assignment seen at (5) does not employ any immediate addressing, only distant addressing.

### 4.5 On culture and history

As is the case for any reference work that seeks to present the lexicon of a language which is foreign to the reader, culture-specific information stands out, both with regard to concrete objects, as in (58), and with regard to the speakers' world view, as in (59):

(58) **DaZ & DaS & LaZ & LaS + OI, SUBST., mi** (Part II, p. 490): *nnlaanzi*, bout d'étoffe pendu par devant et par derrière; cache-sexe [piece of cloth hung up in front and at the back; sexual-organ cover, 'G-string'] ...

(59) **KoK + OII, V.DER., uLA** (Part II, p. 78): *kiilo ki nnkookolo mi nsusu*, le sommeil du temps des chants des coqs, c'est le troisième sommeil, celui du petit matin [that

part of sleep during the singing of the cocks, this is the third sleep, the one of the early morning]

Other aspects of the culture, while being rather universal, are certainly marked among the Bakongo/Bantandu, as may for instance be deduced from (60) and (61), which both deal with language:

(60) **NiM + O, VARIA** (Part II, p. 499): *goga lunima*, ou *goga nseka noomba*, parler en permutant l'ordre des syllabes, *ba-ngu* pour *ngu-ba*, langue secrète des enfants [talk in which the order of the syllables is swapped, *ba-ngu* for *ngu-ba*, secret language of children]

(61) **SaL & SaD + OII, V.DER., iSA** (Part II, p. 583): *sadisa muuntu*, travailler avec qqn., l'aider; faire pour qqn. [work with someone, help him/her; do for someone] (*sadila muuntu*); - *bansadisa mu kunsaansa*, ils m'aident à l'élever, le soigner [they help me to raise him/her, to take care of him/her]; - *nyiimpi kena, kaansi bafweete kunsadisila mu maambu maakulu*, il est bien portant, mais on doit l'aider pour tout; (devinette; le petit enfant) [he is in good health, but needs to be helped for everything; (riddle; (answer:) the small child)] ...

Finally, Polis's manuscript also contains quite a number of snippets comprising historical information, with for instance references to and descriptions of the course of trade networks passing through the region (62), the location of former local markets and their goods (63), as well as explanations of 'indigenous' customs which turn out to be anything but, being merely the result of historical encounters (64):

(62) **Fa + W, SUBST., mi** (Part II, p. 45): ... *ffwa, unene ngutu*; le Stanley Pool est très grand; jadis les gens d'ici faisaient la navette entre le Pool (là où est l'emplacement actuel de la CITAS, parait-il) et le port de Mbala (probablement Ambrizette) [the Stanley Pool is very large; in times past the people from here shuttled between the Pool (there where CITAS is currently located, so they say) and the port of Mbala (probably Ambrizette)]

(63) **ZeM + O, V.DER., iSA** (Part II, p. 536): *zeemisa matadi mu kiseengo*, fondre du minerai de fer; il y avait un marché de lingots de fonte à Koonso u Ndeele, l'actuel Boko Kifulama, près de Kisantu [to smelt iron ore; there used to be a market of cast-iron ingots at Konso u Ndeele, the current Boko Kifulama, close to Kisantu]

(64) **DaD + OI, SUBST., zi** (Part II, p. 87): *ndaandu*, shake-hands indigène qui se fait en frottant paume contre paume; les ancêtres avaient vu les Blancs à l'Angola et les imitaient avec un peu d'adaptation [indigenous handshake produced by rubbing palm against palm; the ancestors had seen the Whites in Angola and copied them with a bit of adaptation]

In contrast, explicit references to Polis's missionary work are not very frequent, example (65) shows a rare instance:

(65) **YiK + II, V.DER., aMA** (Part II, p. 615): *bakristu mu yikama*, les chrétiens augmentent (en nombre) [there are an increasing number of Christians]

## 5. Metalexicographical analysis of Polis's *Lexique*

### 5.1 On the nature of the macrostructure

I have argued elsewhere that a dictionary's macrostructure is not merely the list of lemma signs but also necessarily includes information on the word class and morphology of that lemma sign (De Schryver 2013: 1384). This drew harsh criticism from Rufus Gouws:

> *Dit is 'n standpunt wat teoreties nie steek hou nie. De Schryver verwar hier die makrostruktuur met die vormkommentaar wat 'n funksioneel en posisioneel segmenteerbare komponent van die mikrostruktuur van 'n woordeboekartikel is.* [This is a point of view which doesn't make any sense theoretically. Here, De Schryver confuses the macrostructure with the comment on form, which is a segmentable component — both functionally and positionally — of the microstructure of a dictionary article.] (Gouws 2014: 485-486)

So, what is a dictionary's macrostructure then? According to Wiegand and Gouws's most recent definition (their definition has changed a number of times over the past few decades), in Volume 4 of the *International Encyclopedia of Lexicography*:

> The macrostructure of a printed dictionary is that textual structure that presents the ordering of all those elements of the data memories that contribute to the dictionary type specific macrostructural coverage. (Wiegand and Gouws 2013: 78)

Unfortunately, the concept 'data memory/-ies' is not defined anywhere in the *International Encyclopedia of Lexicography*. Even in the largest lexicographic documentation corpus available to us (De Schryver 2012), it is only found once, namely in the systematic introduction included in Volume 1 of the *Dictionary of Lexicography and Dictionary Research*:

> All lexicographical partial texts of a dictionary with outer access structure and therefore all the lexicographical partial texts in which an informed user can find lexicographical data in a purposeful way, form the data memory of a printed dictionary. If there is only one word list in a dictionary, this word list is identical to the lexicographical data memory. (Wiegand et al. 2010: 147-148)

A definition which avoids the concept of 'data memory/-ies' has also been provided in Volume 4 of the *International Encyclopedia of Lexicography*:

> A new understanding of macrostructure is introduced: It is the structure which is responsible for the order of all elements of a printed dictionary which make a dictionary type-specific contribution to the macrostructural coverage; the cardinality of its structure-carrying set is identical to the extent of the macrostructural coverage with the result that the macrostructure indicates the macrostructural coverage. (Wiegand et al. 2013: 31)

No doubt, all of this makes perfect sense within Herbert Ernst Wiegand's General Theory of Lexicography (Gouws 2012), but the outright dismissal of my points seems regrettable, especially given that they also admit:

> The term *macrostructure* and its equivalents in other modern languages of culture has been used in dictionary research for the past more or less six decades. The use of this term by different researchers shows smaller or bigger differences according to the specific reference object. Currently there is no unified metalexicographic use of *macrostructure* and consequently a unified concept of *macrostructure* also lacks within dictionary research. ¶ From the perspective of the philosophy of science it is not imperative to have only one concept in a specific discipline for a scientific object. A scientific pluralism could rather lead to findings, especially when the competing theoretical concepts constituting an object from different perspectives are clearly defined [...] (Wiegand and Gouws 2013: 74)

My initial point was that in order to be able to differentiate between, say, *record* as a noun, *record* as verb, and *record* as an adjective in a dictionary's macrostructure, knowledge about the word class and/or the morphology is also needed. Considering (part of) the comment on form as microstructural is only a convention. But, point taken, I guess that what I wrote was not based on conventional practice in any of the 'modern languages of culture', but rather the result of a lifetime of work in Bantu lexicography. In that regard, Polis's dictionary provides me with another good example of why I wish to stand by my point of view. Let us start with the traditional definition of the lemma sign:

> Strictly speaking, the information contained in the microstructure does not refer to the lemma but to the linguistic sign which the lemma arbitrarily represents in the macrostructure. The sign may be called the lemma sign [...] (Hausmann and Wiegand 1989: 329)

If we now look back at Polis's dictionary, then we see that the arbitrary linguistic sign is simply what we termed the Vertical Base + Horizontal Base. Those two together, which we presented in bold type throughout this article, thus make up each lemma sign. Given that the sequence of all such lemma signs constitutes the macrostructure, it follows from Polis's approach that word class information (at Step 2 of the Horizontal Base) and morphology (at Step 3 of the Horizontal Base) are thus indeed *part and parcel* of a dictionary's *macro*structure. There is (assuming purposeful dictionary consultation and not random browsing) in other words no way that one can arrive at any item in the dictionary's microstructure without passing through the macrostructure, and that macrostructure has word-class information as well as morphological information *built into* the very lemma signs!

This observation does not mean that no other word class or morphological information cannot appear in the microstructure — and in effect, we saw that it can — the point is that in order to get at the data, (some) word classes and (some) morphology have to be obligatory taken into account at the macro-

structural level. Assuming that all comments on form are necessarily segmentable and distinct from the macrostructure, as suggested by Gouws (2014: 485-486), is thus a faulty theoretical construct which is not rooted in actual practice. Or to paraphrase Michael Rundell's wonderful aphorism, this is yet another case of a lexicographic matter that works in practice but doesn't work in theory (Rundell 2012).

### 5.2 On the nature of the access structure

A dictionary's macrostructure is intimately linked with its outer access structures, as defined by Wiegand:

> Informally one can distinguish as follows between macro- and access structures: each macrostructure contains as partial structures $n$ outer access structures (with $n \geq 1$); when $n = 1$ a special case prevails, i.e. that the macro- and the only outer access structure (regarding the word list) of one and the same dictionary coincide, so that a mono-accessible dictionary with one (outer, index-external) access structure prevails. (Wiegand 1989: 393, Wiegand and Gouws 2013: 77)

In Polis's dictionary there is just one outer access structure, which means that the outer access structure and macrostructure coincide. The outer access structure itself may be defined as follows (again with reference to the latest definitional incarnation of this concept):

> An *outer access structure* is a linear textual structure, whose elements are outer access text elements, which can be accessed externally through the knowledge of general dictionary-external and specifically defined dictionary-internal principles for the linear sequence of the access text elements. (Wiegand and Beer 2013: 113)

As was shown in Sections 3.1.2 (on the Vertical Base) and 3.1.3 (on the Horizontal Base) Polis's dictionary makes especially use of dictionary-internal principles for the linear sequence of the access text elements. Once a lemma sign is reached, the inner access structure takes over. In contrast to the outer access structure, however, there isn't much structure in the inner access structure of Polis's work. The various items to which the lemma signs lead are simply listed in no particular order, and as we saw in Section 3.2 (on the microstructure) both the exact position and the form of those items vary.

### 5.3 On the nature of the access route

Considering the entire access route which a dictionary user can follow to reach the actual lexicographical treatments of each item, one can conclude from the previous section that the innovative outer access structure provides for a rather fool-proof guidance, while the inner access structure is haphazard.

The outer access structure, while rather fool-proof, is indeed not fully fool-proof: During ideal dictionary consultation, a user should be able to look up a word without the need to know anything about that word. In Polis's work, this is not really the case. If one wishes to look up *lufwá*, for instance, should one go to the cluster **L-f**, **LuF**, or **Fa** in the Vertical Base? Reformulated, if one doesn't already know whether one is dealing with, say, an ideophone, a verb or a noun, each of those starting positions in the Vertical Base is 'correct'. Given that *lufwá* 'death' is a noun in class 11, the lemma sign is **Fa + W, SUBST., tu** (Part II, p. 45). No sooner has one mastered this as a user that one runs into trouble for nouns in other noun classes. The plural noun class 6 is a case in point. The noun *maanga*, for instance, shouldn't be looked up under the cluster **Ga**, but rather under the lemma sign **MaG + OI, SUBST., ma** (Part II, p. 228), as was seen in (36). And then there are the genuine doublets. Take for instance the word *nyalu*, should it be looked up under the cluster **NaL** or **YaL**? It turns out that it can be found under both: as *siidi nyalu yiingi* 'he/she disappeared hiding' under the lemma sign **NaD & NaL + YII, SUBST., zi** (Part II, p. 514), and as *nyalu* 'row, layer' under the lemma sign **YaD & YaL + II, SUBST., zi** (Part II, p. 617). The second outer access route here is actually the correct one. Another bone of contention concerns collocates, and the question of where they should be looked up (Bogaards 1990). Take for instance *nzo tubu*: It turns out that Polis covered this particular set under both constituents, as seen in (66) and (67), but this is by no means the general rule:

(66) **Zo + O, SUBST., zi** (Part II, p. 126): ... *nzo tubu*, ensemble de 2 pièces d'étoffe cousues ensemble (d'environ 12 m.) [outfit consisting of two lengths of cloth sewn together (of about 12 m)] ...

(67) **TuB + OII, SUBST., ?** (Part II, p. 429): *nzo tubu*, deux pagnes cousus en un seul [two loincloths sewn together as one]; *twiiku*.

The strict separation between the type of lexicographical information covered in the pre-grammatical section vs. the main section is also not always adhered to, as may be deduced from (68) vs. (69), where the verbal information (here regarding *sweetama*) is expounded on both in the pre-grammatical section (Part I), and in the main section (Part II):

(68) **Set + WII, 4** (Part I, p. 59): *sweetika*, resserrement [of tightening]; v. *sweetama*; au moral aussi, de qqun "in 't nauw gebracht", serré de près dans une affaire [also figuratively, of someone (in Dutch) 'be put in a tight spot', be forced into an affair]; v. *swetika*. (*swatata*, mince [thin]; *swetete*, s'amincir avec effort [to get thinner with effort])

(69) **SeT + WII, V.DER., aMA** (Part II, p. 591):[16] *nnti usweetama ga nsuka boonso mbaambi nkay*, le bois s'amincit à l'extrémité comme une corne (d'antilope) [the wood thins at the tip, like a horn (of an antelope)]; - *kinkutu fiswetamene*, le veston est étroit, serrant [the jacket is tight].
*nnkaanda uwiidi sweetama*, le papier s'est resserré, il reste peu de place pour écrire après tout ce qu'on a déjà écrit [the paper has narrowed, little space remains to

write after everything we already wrote]; - *bisona biswetamene*, les lettres sont serrées, l'écriture est serrée [the letters are packed, the writing is compressed]; *na swetika*; - *muuntu swetamene*, qqn (est rétréci), on lui coupe la parole [someone 'is shortened', he is cut off (i.e., interrupted, stopped from speaking)]: *susa*; - *muuntu usweetama mu maambu*, qqn. est serré dans les affaires, à quia, pas d'issue! [someone is forced into the affairs, nonplussed, with no way out!]

By contrast, the route a user must follow to navigate the inner access structure of Polis's work is definitely challenging at times. Whenever the microstructural description of a certain item is limited to a single example, without the provision of a direct translation equivalent, the user will have to go back and forth between the Kintandu text and its French translation in order to extract the meaning. Doing so for the entry shown in (70), for instance, will hopefully lead to the meaning 'be able to be pulled' for the verb *golakana*:

(70) **GoD & GoL + OII, V.DER., aKA** (Part II, p. 339): *myo nnsiinga ka migolakana ko*, ces lianes ne peuvent se tirer [these lianas cannot pull themselves] ...

Quite often, however, a substantial amount of cultural information needs to be negotiated in addition, as in (71), where the meaning for the verb *suunguta* 'to limp' has to be extracted from the wider context:

(71) **SuG + OI, V.DER., uTA** (Part II, p. 561): *nsusu go yadi syeetuka, muuntu mpi yadidi suunguta*, (pour soigner une jambe cassée, le féticheur met dans la maison du patient une poule à qui il a cassé et bandé la patte; les deux guériront ensemble), la poule quand elle commencera à se traîner, l'homme aussi commencera (à se mouvoir) [(in order to treat a broken leg, the fetish-priest puts in the house of the patient a chicken whose leg he broke and taped; the two will heal together), the chicken when it will start to drag itself, the person too will start 'to move'].

On occasion, Polis helps the reader by placing the (approximate) translation equivalent, rather idiosyncratically, between brackets, as seen in (71) — an approach which could also be seen in for instance (36), (53), (57) and (69) above. However, without any real structural markers in the microstructure — whether typographical (e.g., various typefaces and font sizes, the use of bold print vs. italics, etc.) or non-typographical (e.g., the use of numbering, various symbols, etc.) — the inner access route is bound to be more convoluted than it needs to be. The fact that there are also quite a number of typos when it comes to all matters punctuation, quotation marks and brackets doesn't help in this regard.[17]

The hardest part to work out in the microstructure remains the task to extract generic meanings when only a series of example phrases and/or collocates is presented, which thus implies going back and forth between each line of a microstructural entry. Some of those meanings will turn out to be related, others won't (cf., e.g., the Meaning column in Table 6). If a comparison with modern corpus-based/driven lexicography is allowed here, Polis thus provides us with the corpus evidence (i.e., collocations as well as short example

sentences that his language consultants provided for each formula), and tends to leave it to the reader to deduce the meanings from this data. Those deductions are known to be the hard part of the work of a lexicographer (Hanks 2002), so this may also be one of the reasons why Polis does not refer to his work as a dictionary yet: both the items and the translation equivalents are still hidden and often only implicit in his work's microstructure. In a way, this state of affairs could be viewed as the reverse problem of the situation whereby dictionaries typically offer context-free answers to real-world context-sensitive questions:

> I [...] demand that the future dictionary pay attention to the contexts in which the professional user needs dictionary help. In other words, I suggest that the only way to overcome the present user dilemma of general (context-free) answers to context-sensitive questions is to try to predict the reasons why the user looks up a particular headword and then try to provide a set of adequate answers. (Varantola 2002: 33)

Of course, Polis was never part of this metalexicographical discussion, but it is nonetheless interesting to note that his and his collaborators' intuition was to present actual data in context, rather than attempt to systematically abstract away that context. Whereas a typical bilingual dictionary's focus is the translation equivalent, that of Polis's dictionary is the illustrative material. That the access route, in the absence of pre-packaged ready-made answers, suffers in the process seems to be merely a trade-off. But does it work? Does Polis's dictionary describe items (in context) that a typical user may need? Does it also describe items (in context) that an advanced user may need? This is the topic of the next section.

## 6. Practical evaluation of Polis's *Lexique*

### 6.1 Billions, millions or hundreds of thousands of combinations?

The overarching question which remains to be answered is whether Polis's method and presentation actually succeeded in capturing and sharing the lexicon of Kintandu with any reasonable success. If someone were given the 26 letters of the Latin alphabet, and told that words may, say, contain up to eight letters, a fully blind approach would generate over 217 billion possibilities (i.e., $26 + 26^2 + 26^3 + 26^4 + 26^5 + 26^6 + 26^7 + 26^8$). Realizing that Bantu languages have a CV structure — and assuming C is a single letter also covering cases like CS, NC, NCS, CH, etc. (with S the glides, N the nasals, and H aspiration) — this could immediately be reduced to about 123 million (i.e., $26 + (21 \times 5) + (21 \times 5)^2 + (21 \times 5)^3 + (21 \times 5)^4$). Of course, on the one hand words can be longer than eight letters, while on the other hand there are of course numerous combinatorial constraints in any language, which enable one to bring down that number

substantially. This is exactly what Polis did. First, he realised that he doesn't need all the letters of the alphabet for an approximate description of Kintandu: *c*, *h*, *j*, *q*, *r* and *x* were not used. This is in line with Butaye (1910: 10-12), except that Butaye also uses *r*. Although Polis doesn't list *r* as part of his alphabet, he does use it sporadically, especially for foreign words, as in *Balaari* (under the cluster **LaD**). A comparison with the phonemes in the various Kikongo varieties tabled by Laman (1936: xc-xci) indicates that *h* could have been kept to indicate aspiration. In any case, with just 20 letters, of which 15 consonants and five vowels, and with the same assumption about C, the number of theoretically possible single-letter words and CV-sequences up to eight letters goes down to about 32 million (i.e., $20 + (15 \times 5) + (15 \times 5)^2 + (15 \times 5)^3 + (15 \times 5)^4$). Second, Polis also took Bantu morphology into account, and as we saw he builds everything around single CV(C) clusters — his Vertical Base. In reality, Bantu word roots are not limited to CV(C) clusters and may be longer, but he takes care of the longer ones in his Horizontal Base. Indeed, his CV(C) structures of the Vertical Base do not normally take noun class prefixes into account, nor any suffixes (i.e., verbal extensions, and others). These are taken care of in paradigmatic fashion in Steps 2 and 3 of the Horizontal Base, which further brings down the random variation. Disregarding diphthongs and vowel length to simplify the present thought experiment, the maximum number of CV(C) structures in the pre-grammatical and main sections would then be $2 \times ((15 \times 5) + (15 \times 5 \times 15))$ or two series of 1 200 CV(C) clusters. Polis actually ended up with 1 592 clusters in the Vertical Base (cf. Section 3.1.2), 527 of which in Part I and 1 065 in Part II. Each of the 1 065 CV(C) clusters in Part II was subjected to the six Step 1 combinations of palatalization, labialization and prenasalization (cf. Code 2 in Table 2), and for each of these also the Step 3 variation, thus the seven main noun prefixes on the one hand (cf. Table 3) and the more than 30 main extensions on the other (cf. Table 4). Together with the base verbs and varia from Step 2, that's still about 300 000 combinations that must have been tried out in Part II. Given the absence of base verbs and noun classes in Part I, as well as generally fewer extensions and no varia, the number of pre-grammatical combinations tried out may have been around 30 000. Of the total of 330 000 combinations, it is estimated that no more than about 5% resulted in actual words and were subsequently treated in Polis's work.

In order to evaluate the eventual selection, one would ideally be able to compare it with Kintandu corpus data. This is problematic for a number of reasons, chief among them the idiosyncratic spelling adopted by Polis. Amongst others Polis tends to double vowels in environments of compensatory lengthening (i.e., V:NC and CSV:) whereas others don't mark this as it's predictable, he uses *y* for glides whereas others use *i*, he doesn't mark tone whereas several others do, etc., but in contrast he for instance differentiates between the syllabic vs. non-syllabic homorganic nasals (at noun level) whereas others don't.[18] Nonetheless, what is feasible to do is to compare Polis's work with Butaye's dictionary, and vice versa. Two tests to this end are discussed next.

### 6.2 Test 1: Polis vs. Butaye

Butaye's (1909) dictionary consists of a number of sections; the part which interests us here is the first, i.e., the Kintandu–French direction. Compared to that section, Polis's work is about three times larger. Given that Butaye brought together around 8 300 lemma signs for Kintandu, but also that the treatment for each lemma sign in Polis is much more extensive, with most of Polis's lemma signs leading to multiple items in the microstructure, the assumption is that Polis covers more of the Kintandu lexicon than Butaye does. As a first test to check this hypothesis, we took every tenth page in Polis's work, selected the top item on each of those pages, and checked whether or not it is also covered by Butaye. The data for this test is shown in Addendum 5.

Of the 71 test items from Polis, as many as 27 have no equivalent in Butaye. For 6 of those who have, the correspondence is furthermore only approximate. Extrapolating from this random sample, anything between 54% and 62% of the material from Polis is also covered by Butaye, while 38% up to 46% isn't. For the pre-grammatical items, the correspondence is even lower: only two (one of which dubious) of the seven Polis items is also included in Butaye. Here the overlap is thus a mere 14% to 29%.

While some of the missing items clearly belong to the fringes of common vocabulary, such as the ideophones *kyu* and *zwe* for the sound the throat makes when one swallows, respectively the instance of a thorn entering the body, or the verb *kedingiinza* used for the pounding in small double beats such as that of one's heart, others seem much more common, such as the ideophone *zubu* to refer to intelligence or vigilance, the noun *ntuuta* for a quarrel, or even the verb *vidika* used to say something in a round-about way. If anything, this clearly indicates that Polis's dictionary contains a good number of unique items, especially ideophones and words derived from them, not covered by the otherwise excellent dictionary of Butaye.

### 6.3 Test 2: Butaye vs. Polis

A comparison of Butaye's dictionary with Polis's work has the potential to be even more revealing, as Butaye's dictionary can be treated as a corpus whose main lexical material ought to be in Polis's work. In this regard we are rather fortunate that Butaye took the trouble to mark all the main lemma signs in his dictionary with tramlines (i.e., two vertical parallel lines ‖),[19] leaving the common ones unmarked, while also marking dialectal/local forms with an asterisk (*). About one fifth of Butaye's lemma signs are preceded by tramlines. In order to obtain a sufficiently large and balanced sample the following procedure was followed: we selected the first lemma sign from each page, but exploiting Butaye's frequency indications, we consistently took the first unmarked word (i.e., lemma sign) from an even-numbered page and the tramline-marked word from an odd-numbered page. The focus was also on true words rather than

formatives and affixes, and those words also had to have a (recoverable, e.g. through cross-referencing) meaning. This procedure resulted in a set of 154 main (i.e., supposedly frequent) words, and 154 common (i.e., supposedly less frequent) words. Each of these was then looked up in Polis's dictionary, where we searched for 'the same word' (with either the same or an adapted spelling) having 'the same meaning' (broadly defined) and 'the same word class' (glossing over erroneous class assignations in either work). In the process, the practicability of Polis's innovative outer access structure was also tested. The full data set for this extensive test is shown in Addendum 6, which immediately reveals that Polis's dictionary can indeed successfully be used as a proper dictionary. From a user's perspective, this is an important result, one which can only be considered valid following such an extensive test.

Overall, 73% of the lemma signs from Butaye could be found as items in Polis. A further 4% were used throughout the dictionary but were not listed following their logical position in Polis's macrostructure, while for 7% of the lemmata a related item could be found in the macrostructure. Overall, then, just 16% of the material from Butaye could not be found in Polis at all. This stands in sharp contrast with the 38% to 46% of the material from Polis which could not be found in Butaye. A quick back-of-the-envelope calculation may now even suggest the number of items in Polis's dictionary. If up to 84% of the 8 300 lemmata in Butaye can eventually be found in Polis, these 8 300 x 0.84 or about 7 000 items must also be in Polis. If 7 000 items can be seen, the first test tells us that this represents only 54% to 62% of what is really covered, which suggests that Polis contains about 12 000 items.

These are the overall figures. When the data is split up according to main lemmata vs. common lemmata, as done in Table 9 and Figure 2, a highly interesting pattern emerges. Indeed, while as many as 73% of the Butaye lemmata can be looked up directly in Polis, there is a marked difference between the findability of frequent vs. less-frequent parts of the lexicon, with Polis covering as many as 87% of the frequent ones, but only 60% of the less-frequent ones. From the point of view of the material that cannot be found at all, the difference is even more marked, with just 5% of the main material not covered in Polis vs. 27% of the common material.

**Table 9:** Butaye lemmata vs. Polis items: Statistics for the full sample

| **Butaye lemma is ...** | **Full sample** | | **Main lemmata** | | **Common lemmata** | |
|---|---|---|---|---|---|---|
| | **N** | **%** | **N** | **%** | **N** | **%** |
| in Polis as item | 226 | 73% | 133 | 87% | 93 | 60% |
| used in Polis | 12 | 4% | 8 | 5% | 4 | 3% |
| related item in Polis | 21 | 7% | 5 | 3% | 16 | 10% |
| not in Polis | 49 | 16% | 8 | 5% | 41 | 27% |
| SUM | 308 | 100% | 154 | 100% | 154 | 100% |

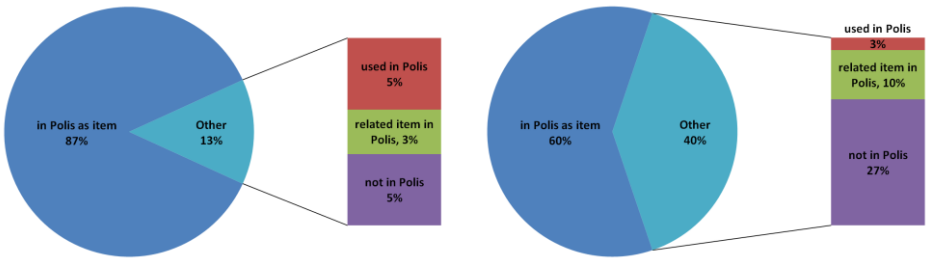


**Figure 2**: Butaye lemmata vs. Polis items: Main lemmata (left) vs. common lemmata (right)

While the macrostructural coverage of no two dictionaries can ever be the same (unless blatant copying is involved), one can expect any general language dictionary to cover at least the largest part of the frequent section of a language's lexicon. The left pie diagram shown in Figure 2 indicates that Polis succeeded well on this level.

Given that the sample extracted from Butaye also comes with part-of-speech (POS) information, a further breakdown is possible in order to answer questions like: Which types of words did Polis typically miss, or conversely, which types did he tend to include at the expense of others? In other words, did Polis pay particular attention to nouns, or verbs, or perhaps any other word class? The answers to these questions are summarised in Figure 3 for the main lemmata and in Figure 4 for the common lemmata.

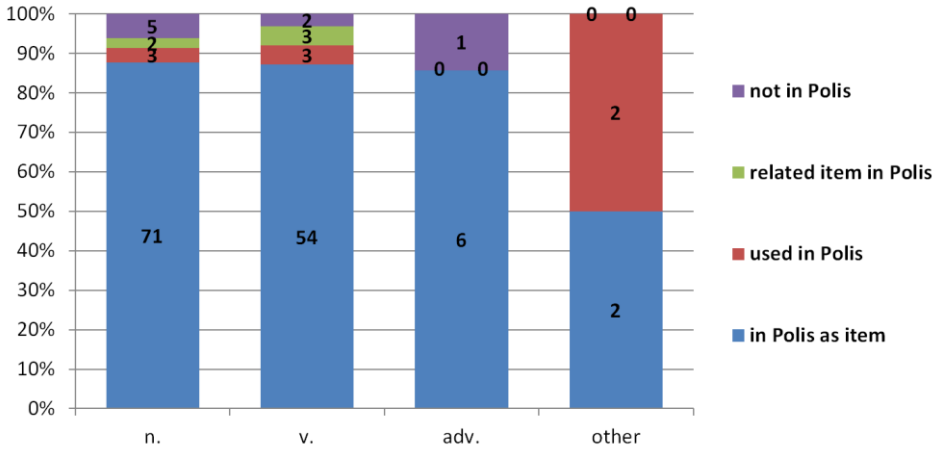


**Figure 3**: Main Butaye lemmata vs. Polis items: POS distribution (with the number of actual occurrences in the sample shown in the histograms)

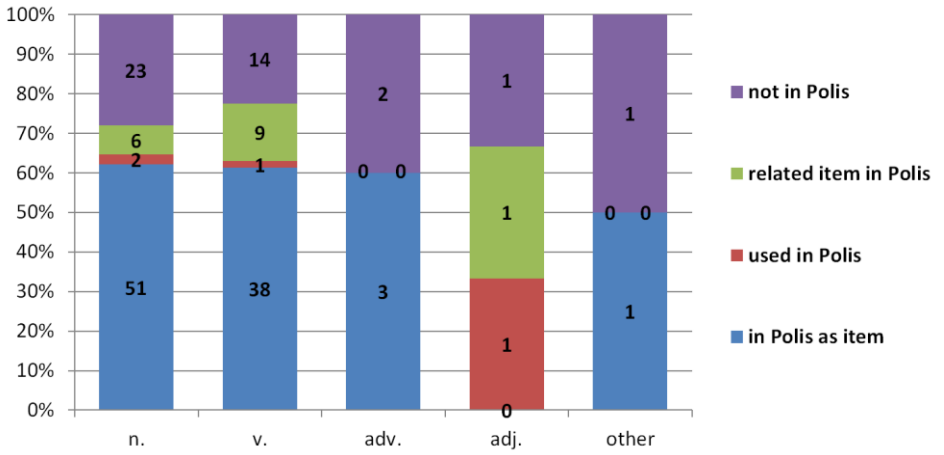


**Figure 4**: Common Butaye lemmata vs. Polis items: POS distribution (with the number of actual occurrences in the sample shown in the histograms)

Astonishingly, when it comes to the main word classes — nouns, verbs and adverbs — Polis seems to have been exceptionally consistent. While 87% of Butaye's material was directly included for the main lemmata overall, the distribution for these main lemmata across nouns, verbs and adverbs is respectively 88%, 87% and 86%. Likewise, while 60% of Butaye's material was directly included for the common lemmata overall, the distribution for these common lemmata across nouns, verbs and adverbs is respectively 62%, 61%, and 60%. The values for the other word classes, as may be derived from the number of actual occurrences shown in the histograms of Figure 3 and Figure 4, are too low to have any statistical value. These tests, then, not only show that Polis approached the compilation of his dictionary with military precision, but also and more importantly that he truly managed to capture the general-language lexicon of Kintandu as well as the more peripheral one (in the pre-grammatical section).

The answer to the question "Does it work?" is thus a resounding "Yes." At the same time, it is clear that his approach is thoroughly user-unfriendly for any real-world dictionary user. So what could have been Polis's underlying motives? We try to answer this in the next section.

### 6.4 Polis's underlying motives

Polis begins the introduction to his dictionary with the following paragraph, which in truth should be seen as a teaser, as its contents only make sense once one has painstakingly studied his dictionary:

> *Les présentes listes ne sont pas un dictionnaire; elles n'en sont que la préparation. Elles constituent un instrument de travail; elles permettent la recherche systématique des formes manquantes; elles rendent plus aisée la comparaison des formes entre elles, en comparaison verticale des mots d'une même racine, en comparaison horizontale d'un même échelon dans les racines différentes; plus aisée aussi la comparaison avec les correspondants dans des dialectes et des langues apparentés; lesquelles comparaisons permettront de préciser le sens des éléments.* [The present lists are not a dictionary; they are but their groundwork. They constitute a tool; they allow for the systematic search of the missing forms; they facilitate the comparison of the forms amongst one another, by means of a vertical comparison for the words with the same roots, and by means of a horizontal comparison for the same paradigm applied to different roots; they also facilitate the comparison with cognates in related dialects and languages; all of which will enable one to clarify the sense of the items.] (Polis 1938: i)

Even though Polis himself prefers not to see his work as a dictionary (yet), we have chosen to do so, as any modern dictionary definition would recognise his work to be exactly that; for instance: "a dictionary may be defined as a lexicographic reference work that has been designed to fulfil one or more functions, contains lexicographic data supporting the function(s), and contains lexicographic structures that combine and link the data in order to fulfil the function(s)" (Nielsen and Mourier 2007: 121). The main function of Polis's dictionary is to arrive at the best possible clarification of the various senses of an item. The lexicographic structures Polis developed for this goal have been expounded on at length in this article. With them, Polis firstly claims that "they allow for the systematic search of the missing forms". Although Polis has not succeeded in pinpointing *all* the items of Kintandu, his approach could certainly have revealed virtually all — probably given more time and a larger team, as it is known that no one person knows all the words and all their senses of a language. It is now indeed entirely feasible to run through the different formulas, to complete them where necessary, and to add the missing items.

Polis's second claim in the quoted opening paragraph summarises his core motive, namely to "facilitate the comparison of the forms amongst one another, by means of a vertical comparison for the words with the same roots, and by means of a horizontal comparison for the same paradigm applied to different roots". Unfortunately, the concept 'root' should not be understood in a true linguistic sense here, but even his blind, mechanical approach to vary CV(C) clusters and to combine them with affixes will obviously bring related material together. Take for instance the **ZaZ** cluster shown in Addendum 2 and summarised in Table 6. Going up and down vertically indeed reveals items that are likely related morphologically, such as *-zyanzamene* 'be straight' and *nnzyaasi* 'a straight thing', *dinzanza* 'small boat' and *nzaanza* 'whale boat, steel boat', *nzaanza* 'line' and *zaanzama* 'be in line, to make a line', *zaanzaba* 'to crawl (snakes, insects, …)', *zaanzala* 'to crawl; …?' and *bizaanzala* 'that which crawls (insects, ants)', etc. Recalling that the pre-grammatical material actually belongs with the main material, one should also extent the vertical discovery path from **ZaZ** to **Zaz**,

shown in Addendum 4 and summarised in Table 8, whereupon one may for instance want to link *mazaaza* 'hoarse' in Part II with *zazaza* 'of trembling (arrow, lightning, dance, voice)' in Part I. The horizontal discovery path Polis suggests simply refers to the application of Steps 1 to 3 of the Horizontal Base: these steps are brought into position for each and every CV(C) structure, so cross-comparing the results will ultimately lead to the discovery of the morphological rules of the language.

Polis's third claim in support for his approach refers to the fact that his lists "facilitate the comparison with cognates in related dialects and languages". This aspect is actually not well developed, and is certainly not unique to his approach. References to other KLC varieties and even other languages have indeed been included (see the paragraph following the variation discussed in (5) to (8) in Section 2 above), but they are not the result of treating those other varieties and languages in the way Polis does.

Should one now take Polis's suggestion seriously and proceed with the compilation of a 'classical' dictionary based on his 'raw material'? This could certainly be a worthwhile (and challenging) venture, but it is our contention that a digitised and searchable version of his work as it stands is far more intellectually stimulating to interact with. Already, this unique source joins the ranks of only a few other lexicographical reference works which challenge preconceived metalexicographical notions. This in itself makes Polis's manuscript one to cherish.

### 6.5 Test 3: Keywords in Polis as compared to Butaye

Tests 1 and 2 dealt with macrostructural issues, so in this last section of the practical evaluation we propose an attempt to qualify the microstructure by computational means. Due to the idiosyncratic orthography used by Polis, any automated method faces an uphill struggle. However, the microstructure is also full of French (whose orthography has eagerly been guarded by the French Academy since the mid-seventeenth century), and thereby provides a way out. We propose to look at the French translations in order to know more about the Kintandu contents throughout the dictionary. In actual fact we will also look at the Kintandu in the process, but we do not expect the results for it to be very revealing. We are especially interested in knowing in what way the microstructural contents of Polis differ from those of Butaye.

We proceeded as follows: a text corpus was prepared containing the full text of Polis, bar the introduction, and another text corpus was prepared consisting of the full text of the Kintandu–French direction from Butaye. Both corpora thus consisted of material in Kintandu and French. Wordlists were drawn up for each text corpus, the result of which was a list of all the Kintandu and French words in the respective texts, together with the frequencies for each of those words as used in the respective dictionaries. The two frequency lists were then compared to one another, using the KeyWords function of WordSmith

Tools (Scott 1996–2015). The overall statistics for these two text corpora are given in Table 10, from which it may be seen that both behave similarly: for each 1 000 words added, Polis contains an average of 55.65 unseen words, while Butaye contains an average of 56.64 unseen words. The difference is just a single word, so Polis is only slightly more repetitive (or less original in its variation of word choice).

**Table 10:** Overall statistics for the Polis and Butaye text corpora

| | **Items** (Polis)<br>**Lemma signs** (Butaye) | **Tokens** | **Types** | **STTR**<br>(1 000) | **STTR std. dev.** |
|---|---|---|---|---|---|
| Polis | ± 12,000 | 319,552 | 47,603 | 55.65 | 45.26 |
| Butaye | ± 8,300 | 107,662 | 24,108 | 56.64 | 42.49 |

*(with STTR = standardised type-token ratio; std. dev. = standard deviation)*

For a word to be considered a keyword in Polis, it had to occur at least three times in his dictionary. WordSmith Tools's KeyWords function calculates so-called keyness values, for which we used the log-likelihood statistical test and set the probability to $\leq 0.000001$, meaning that each keyword's appearance had a chance of only one in a million of not being statistically significant (Taljard and De Schryver 2002: 52). Abbreviations and the dictionaries' metalanguage were pruned from the resulting keyword list, as were function words, and for Kintandu also the keywords which are the result of the different spellings. The keyword list was divided into a French and Kintandu section, and each of these was again divided according to positive and negative keyness values. Positive keywords occur more often in Polis than would be expected by chance in comparison with Butaye; the occurrence of negative keywords is the reverse. In short, then, we trust that this method will allow us to characterise the microstructure of Polis's dictionary in comparison to Butaye's.

Rather than to now present long lists of words with their respective frequencies in the two text corpora, together with their actual keyness values and probabilities, we have opted for four word clouds generated with Wordle (Feinberg 2008–14), as what interests us here is to get an instant picture of the differences.[20] The relative size of the keywords shown in the word clouds is in proportion to their keyness values, and they have mostly been arranged in alphabetical progression (the standard A-to-Z that is, not Polis's ordering).

From Figure 5 it is immediately clear that the most outstanding concepts in Polis are actually nondescript, as they refer to generic objects, animals and people: 'thing' (*chose*), 'animal, beast' (*bête*), 'child' (*enfant*), 'kid, child' (*gamin*), 'people' (*gens*), 'issues' (*affaires*), and 'kind, type, species (of)' (*sorte (de)*). When the concepts become descript they refer to non-verbal communication, strong feelings, or issues to do with face: 'look, appearance' (*allure*), 'feeling' (*sensation*), 'heart' (*coeur*), 'gesture' (*geste*), 'intensely' (*intensément*), 'body' (*corps*), 'rhythm' (*rythme*), 'empty' (*vide*), 'eyes' (*yeux*), 'mouth' (*bouche*), and 'strongly' (*fortement*).

**Figure 5**: French positive keywords in Polis as compared to Butaye

Next up are those concepts that connect the Bantandu to mother earth, their social structures, and their close or cult animals: 'earth' (*terre*), 'stream, brook' (*ruisseau*), 'wall' (*paroi*), 'clan' (*clan*), 'fetish-priest' (*féticheur*), 'fetish' (*fétiche*), 'dog' (*chien*), 'rat' (*rat*), and 'leopard' (*léopard*). The words which refer to daily activities that stand out in Polis compared to Butaye include: 'job, work' (*travail*), 'slap, smack' (*giffle*), 'blow' (*coup*), 'fall' (*tombe*), 'hold' (*tient*), and 'shout, scream' (*crie*), as well as 'truck' (*camion*) and 'cooking pot' (*marmite*).

**Figure 6**: French negative keywords in Polis as compared to Butaye

Figure 6 is the inverse of Figure 5 in that it shows us the concepts and words which Polis does not often use compared to Butaye. The nondescript words favoured by Butaye are simply the higher-register versions of some of those of Polis: 'species' (*espèce*), 'game, prey' (*gibier*), 'names' (*noms*) and 'any, some' (*quelconque*). The connection with mother earth is represented in Butaye by 'wood' (*bois*) and 'grass' (*herbe*). The activities underrepresented by Polis compared to Butaye are: 'to give back' (*rendre*), 'act' (*action*), 'to spill' (*répandre*), 'to put' (*mettre*), 'to move away' (*éloigner*), 'to break, to crush' (*briser*), 'to burn' (*brûler*), 'to spread out' (*étendre*), 'to muddle up, to tangle up' (*embrouiller*), and 'to cover' (*couvrir*). Characterisations are also often more specific and more individualistic in Butaye: 'a lot' (*beaucoup*), 'native, indigenous' (*indigène*), 'individual' (*individu*), 'today' (*aujourd'hui*), 'side' (*côté*), and 'better' (*mieux*), as well as '-self, each other' (*se*) and 'able (to)' (*pouvoir (être)*).

Overall, then, one may state that the material in Polis is closer to nature; wilder, less-polished and less-precise in its word use and activities described; deals with the deeper culture; and places more weight on the need to live in harmony, while condoning violence, stressing the importance to keep face, and avoiding the singling out of the individual.

Considering the limitations placed on an analogous exercise for the Kintandu words used throughout both dictionaries, Figure 7 confirms rather than disputes these findings.

**Figure 7**: Kintandu positive (left) and negative (right) keywords in Polis as compared to Butaye

The positive keywords in Kintandu include: 'palm wine' (*malafu*), 'animal; meat' (*mbisi*), 'job, work' (*kisalu*), 'body; colour; form' (*nitu*), 'house' (*nzo*), 'dog' (*mbwa*), 'oil' (*mafuta*), 'fetish' (*nkita*), and 'peanut' (*nguba*). The fact that the ideophones 'of nothing' (*kena*) and 'of sound' (*po*) have a strong showing here, once more indicates the virtual absence of this word class from Butaye.

Kintandu words underused in Polis compared to Butaye include: 'to walk, to go' (*kuenda*), 'fire; heat' (*tiya*), 'to blame' (*bela*), 'knife' (*mbele*), 'material, fabric' (*nlele*), 'Matadi' (*Matadi*), 'things' (*bima*), 'to lie down' (*leka*), 'Nzeza (an indigenous 'saint')' (*Nzeza*), 'to put on' (*sila*), and 'illness' (*kimbefo*).

These few Kintandu keywords suggest a far more local concern in Polis than in Butaye, and related to this, Polis seems to refrain from over-comparing with the outside world: he simply lives among the Bantandu and describes

what he notices from within the culture. Butaye, on the other hand, tries to bridge cultures, and looks at the Bantandu as an outsider. From the perspective of the user, Butaye's is the more user-friendly approach. From the perspective of the original culture, Polis's is the truest approach.

## 7. Polis's *Lexique* and the most innovative outer access structure of any Bantu dictionary

We set out to present a little-known dictionary manuscript for Kikongo, and showed that its contents are so unique that it more than deserves to be known and consulted as a dictionary in its own right. The material for this dictionary was brought together about a century ago, and typed up on over 700 pages in 1938 in Leuven, by the Jesuit missionary Charles Polis. Only a few of the stencil duplicated copies are still extant, and their readability is variable, but the data has now been digitised and is available for computerised searches. Polis worked in the Lower Congo region, east of the Inkisi River, and all the evidence — both dictionary-external and especially dictionary-internal — converges to pinpoint the particular variety described in the work as Kintandu, an eastern KLC (i.e., Kikongo Language Cluster) variety.

Our analysis of the structure of Polis's dictionary revealed a highly complex approach to the macrostructure, consisting of a Vertical Base + Horizontal Base. In simple terms, the Vertical Base is the sequence of all possible CV(C) clusters in the language. These clusters are listed in a non-standard ordering, which makes an index to the work highly desirable (for which see Addendum 1). These clusters vaguely resemble word roots. The Vertical Base consists of three steps. Step 1 is concerned with combinations of palatalization, labialization and prenasalization of each CV(C) cluster (for which codes are used, as seen in Table 2). Step 2 signposts the main word classes (base verbs, base nouns, derived forms (verbs, nouns, and others), and varia), which leads to differential variation in Step 3: noun class prefixes for the nouns (for which see Table 3), and extensions for the derived forms (for which see Table 4). The whole work is also divided into a short pre-grammatical section, Part I, which mainly deals with ideophones and derivations thereof, and the main section for all the other word classes, Part II. The macrostructure in Part I uses a simplified version of that from Part II. The same is true for the microstructure, where Part I mimics and simplifies what is done in Part II. On the whole, the focus in the microstructure is on presenting evidence (example phrases, collocations, etc.) together with translations into French, rather than on generic translation equivalents. Compared to the highly structured macrostructure, the microstructure is rather flat. The mediostructure mainly connects the relevant bits from Part II with those from Part I.

In the lexicographical appreciation we detailed how Polis must have interacted with his native-speaker collaborators, noting their every comment and hesitation, and also how he tried to differentiate between his main variety

Kintandu and the neighbouring variety Kimbata. We further indicated how the main components of the traditional dictionary were nonetheless also covered in Polis's idiosyncratic dictionary: comments on form, comments on semantics, etymology, usage notes (in the extended microstructure), labels, and also encyclopaedic excursions into the culture and history of the Bantandu.

In the metalexicographical analysis we argued that even the latest definition for the concept 'macrostructure' that has emanated from the General-Theory-of-Lexicography school may not be correct. The sequence of lemma signs which constitute the macrostructure of Polis's dictionary consist of the combinations of the Horizontal Base + Vertical Base in each case, and thus necessarily imbed word class information and morphological information right into the very heart of the lemma signs, and hence also into the very heart of the macrostructure. There is no escaping this, and the insistence on assigning the comments on form to the microstructure is untenable. We further showed that in Polis's dictionary, the outer access structure and macrostructure coincide, and that while Polis makes especially use of dictionary-internal principles for the linear sequence of the access text elements, there isn't much structure in the inner access structure. As to the nature of the access route, once a user succeeds in reaching the entry they are looking up, the need to map meaning onto use takes over — a very modern lexicographic concept indeed (cf. Hanks 2002).

In the practical evaluation we first suggested that Polis and his team must have tried out well over 300 000 combinations as candidate word forms, to eventually keep about 12 000 'valid' items (i.e., real words) as the focus of their lexicographical descriptions. Three tests accompanied this evaluation, all involving Polis's dictionary on the one hand, and a contemporary Kintandu dictionary by Butaye (1909) on the other. These tests confirmed Polis to be an absolutely unique source: just 16% of the material from Butaye could not be found in Polis at all, while as much as 38% to 46% of the material from Polis could not be found in Butaye. Polis is especially strong on the so-called pregrammatical forms (i.e., ideophones, but also words for sounds and exclamations), and generally focuses more on the Bantandu in situ, while Butaye tends to contrast the Bantandu with the outside world. These subtle differences were revealed by means of a keyword study of the full Kintandu–French texts of these two dictionaries, the results of which were illustrated in the form of word clouds (for which see Figures 5 through 7).

From all of the above it should thus be clear that in addition to its intrinsic value as a highly informative lexicographic resource about a Kikongo variety for which there is otherwise very little data available, Polis's most important contribution to the lexicographic community at large is that he designed a truly unique outer access structure which forces all those interested in lexicographic theorising to go back to their drawing boards. In more practical terms, and returning to our three opening questions, we are now in a position to provide answers to them: (1) "Could this outer access structure be applied to all Bantu languages?" Yes, no question; but it can immediately be pointed out that if it

were done with more linguistic insight and if the usual alphabetical ordering were used, a far better product would be the result. (2) "Is this outer access structure perhaps universal?" No, not in its present form, given the approach assumes open syllable structures, more specifically CVCV sequences, and includes Bantuesque features like a system of noun classes and (verbal) extensions. (3) "Could such an outer access structure perhaps be a solution for all non-corpus-based lexicographic endeavours?" The question is thus whether an — obviously language-dependent — atomic approach could be designed whereby all types of permutations are tried out in order to 'find' all the words of a language's lexicon. This certainly seems feasible theoretically, but in this day and age of large electronic corpora we see no need for it. Polis's attempt, however, is testimony to what some were capable of in the pre-corpus era, including in the absence of the tens of thousands of paper slips which were otherwise common in the lexicographic backrooms of the time. Polis truly came up with a system whereby he could, without access to any draft material, work through the alphabet and hardly miss any word — literally conjuring up a language out of thin air.

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## Endnotes

1. Each of the sections of the manuscript is dated, as is the introductory material, with dates ranging from March 21, 1938 up to October 9, 1938 — see Table 1. Three of those dates are also accompanied by "Louvain", French for the city of Leuven.
2. Van de Casteele (1968: col. 827-828) mentions eight fascicules, as does the earlier Daeleman (1966: 7), but it must have been nine based on the current binding of the instalments as seen in the extant copies.
3. For readability of all cited material from Polis (1938), we have added formatting (bold, italics, underlining, proper spacing, etc.) as well as translations into English (between square brackets). Obvious typos have also silently been corrected. Some inconsistencies were left as is, however, such as the inconsistent notation of vowel length (e.g., *mpyaata* vs. *mpyata*), the use of 'qqun', 'qqn.' and 'qqn' as abbreviations for 'quelqu'un', etc. Sample pages from the actual manuscript may be seen in Addenda 2 and 3.
4. Frequency counts are lower-bound values, meaning that there may be more occurrences (which we haven't spotted).
5. 'BLR' stands for the Bantu Lexical Reconstructions database (Bastin et al. 2002), and the integer following it is the index number in that database. The abbreviation Ṇ stands for a syllabic homorganic nasal.

6. Likely using the heavily reworked version by Van Wing and Penders (1928), cf. De Kind et al. (2012) for more information on this source.
7. By considering the subsequent steps of the outer access route, this infelicity may at least be explained, however.
8. However, for the plural class 10 the pronominal prefix (PP) zi- is used as label, rather than N-, which leads to an alternative interpretation: the labels at the nouns show the plural PPs. This is indeed useful information, as PPs are used to form "connectives, substitutives, possessives, precessives, determinants, interrogatives, demonstratives and numerals" (Daeleman 1966: 212, our translation) with those nouns, but why show plurals, especially considering the fact that nouns are typically presented and illustrated in their singular forms in the text that follows?
9. For the variation seen in Kikongo/Kintandu at classes 1, 3 and 4, as well as class 7, the reader is referred to the detailed exposition in Bostoen and De Schryver (2015).
10. Unfortunately, Polis does not draw this convention to its logical conclusion, as he doesn't use double nasals for the object concord of class 1, as in "*bantombwele kuna gaata mu kufuundisa*, on le fit monter au village pour l'accuser (chez le chef)" [they made him go up to the village to accuse him (at the chief's place)] (Part II, p. 427), where it should have been *banntombwele* for *bantombwele*.
11. There are some small errors on this level of the ordering, however. Question marks are also used to indicate uncertainty with regard to class membership.
12. Observe that there are some small errors on this level of the ordering as well.
13. Except for the term 'imperfective' (Nurse and Philippson 2006: 190-192), the terminology used here is that of Daeleman (1966), with the 'rollative' our coinage based on his discussion on p. 179.
14. Although there is a cross-reference at the reference position **YI, PREGR.** in the **ZaZ** cluster, there is no corresponding reference address in the **Zaz** cluster. Recall (see Table 1) that **ZaZ** was typed in before **Zaz**, which may explain this infelicity. Other similar dead cross-references from fascicule 4 onwards must be seen as errors though.
15. In at least one instance Daeleman (1966: 175, 190) copied over such a Dutch paraphrase: "spartelen om iets te bekomen" [to flounder in order to obtain something] (Part II, p. 336).
16. Observe that there is no cross-reference from the cluster **SeT** to the pre-grammatical cluster **Set**. This seems to be part of a more general issue; as such explicit cross-references (using *cfr antea* [cf. previous]) seem to suddenly stop being used after **KeF** (Part II, p. 322).
17. Recall, however, cf. note 3, that such typographical markers were added for the quoted material in this article, and that (most) errors were also corrected.
18. The differences in spelling will become clear from the data shown in Addenda 5 and 6.
19. Observe that this use is the opposite of their function in the early OED, where they indicate words which are "alien or not yet naturalized" (Murray 1888: xxvi). See also Ogilvie (2008).
20. For another use of word clouds in metalexicography, see De Schryver (2012: 471-473). In practical lexicography, word clouds have been proposed (e.g., Bowker 2012: 384-385), but they have not actually been used to date. The closest to them are the wordmaps found in Wordnik (McKean et al. 2009–15), an extension of Dream no. 17 (De Schryver 2003: 165-166).

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**Addendum 1:** Vertical Base, or CV(C) sequence, of the macrostructure in the *Lexique kikongo–français* by Charles Polis (1938) [corrections and erroneous positions are marked in red]

| Page | Vertical Base |
|---|---|
| **0.** | **Introduction** |
| i | on word order |
| ii | example matrix |
| iii | on layout |
| **PART I** | |
| **Stretch 0 – CV(c), CVc' V, varia WV(c,w,y), CVw YV(c), CVy, YVy VV** | |
| **1.** | **Pre-grammatical forms** |
| 1 | Ba, Be, Bi, Bo |
| 2 | Bu |
| 3 | Bab, Beb, Bib, Bob |
| 4 | Bub, Pa, Pe |
| 4bis | Pa ctd. |
| 5 | Pi, Po |
| 6 | Pu, Ma, Me |
| 7 | Mi, Mo, Mu, M-m, Va, Ve |
| 8 | Vi, Vo, Vu |
| 9 | Fa, Fe, Fi, Fo |
| 10 | Fu, Vav, Vev, Viv, Vov, Vuv |
| 11 | Faf, Fef, Fif, Fof, Fuf |
| 12 | Ga, Ge, Gi, Go |
| 13 | Gu, Gag, Geg, Gig, Gog, Gug |
| 14 | Ka, Ke |
| 15 | Ki, Ko |
| 16 | Ku, Kak, Kek |
| 17 | Kik, Kok, Kuk, Da |
| 18 | De, Di, Do, Du, La, Le, Li |
| 19 | Lo, Lu, Dad, Ded, Did, Dod |
| 20 | Dud, Dal, Del, Dil, Dol, Dul, Lal, Lel |
| 21 | Lil, Lol, Lul, Lad, Led, Lid, Lod, Lud, Ta, Te |
| 22 | Ti, To, Tu, Tat, Tet |
| 23 | Tit, Tot, Tut, Na |
| 24 | Ne, Ni, No, Nu, N diphthong, Nan |
| 25 | Nen, Nin, Non, Nun, Za, Ze |
| 26 | Zi, Zo, Zu, Zaz |
| 27 | Zez, Ziz, Zoz, Zuz, Sa |
| 28 | Se, Si, So, Su, Sas |
| 29 | Ses, Sis, Sos, Sus, B-p, Pab, Peb, Pib, Pob, Pub, B-m, Pam, B-v, Bof |
| 30 | P-v, Paf, Pof, Puf, Bag, Beg, Big, Bog, Bug, Bak, Bek |
| 31 | Bik, Bok, Buk, Pag, Peg, Pig, Pog, Pug, Pak |
| 32 | Pek, Pik, Pok, Puk, Bad, Bed, Bid, Bod, Bud, Bal |
| 33 | Bel, Bil, Bol, Bul, Bat, Bet |
| 34 | Bit, Bot, But, P-d, Pal, Pel, Pil, Pol, Pul, Pat, Pet |
| 35 | Pit, Pot, Put, B-n, P-n, Bez, Boz, Buz, Bis, Paz, Pas, Pos, Pus, M-b, M-p, M-v, M-f, M-g |
| 36 | Mak, Mek, Mok, Muk, Mad, Mat, Mit, Mot, M-n, M-z, M-s, Vab, Veb |
| 37 | Vib, Vob, Vub, V-p, V-m, V-f, Vag, Veg, Vug, Vak, Vik |
| 38 | Vuk, Vid, Val, Vid, Vil, Vul, Vat, Vet, Vit, Vut, Vez, Viz |
| 39 | Vis, Fab, Fob, Fop, Fup, F-m, F-v, Fog, Fak, Fek, Fok, Fuk, Fid, Fud, Fal, Fol, Ful, Fat |
| 40 | Fet, Fit, Fot, Fut, Fin, F-z, Fus, Gab, Geb, Gob, Gub |
| 41 | Gep, Gam, Gom, G-v, Gof, Guf, Gok, Guk, Gad, Ged, God, Gud, Gal, Gel, Gil, Gol |
| 42 | Gul, Gat, Got, G-n, G-z, G-s, Kab |
| 43 | Keb, Kib, Kob, Kub, K-p, K-m |
| 44 | K-f, K-g, Keg, Kog, Kug, Kad, Ked, Kid |
| 45 | Kod, Kud, K-l, Kel |
| 46 | Kil, Kol, Kul, Kat, Ket, Kit |
| 47 | Kot, Kut, Kan, Ken, Kon, Kun, Kaz, Kez, Kiz, Kuz |
| 48 | Kas, Kes, Kos, Dab, Deb, Dib, Dub, Leb, Lob, D-p, L-p |
| 49 | Tab, Teb, Tib, Tob, Tub, Tap, Tep, Top, Tup, D-m |
| 50 | L-m, T-m, D-v, L-v, D-f, L-f, T-v, T-f, Dag, Deg, Dog |
| 51 | Dug, Lag, Leg, Log, Dak, Dek, Dik, Dok, Duk, Lak |
| 52 | Lek, Lok, Luk, Tag, Teg, Tig, Tog, Tug, Tak |
| 53 | Tek, Tik, Tok, Tuk, D-t, L-t, T-d, T-l |
| 54 | D-n, T-n, D-z, D-s, L-z, L-s, T-z, T-s, N-b, N-p, N-m, N-v, N-f, N-g |
| 55 | N-k, N-d, N-l, N-t, N-z, N-s, Zab, Zeb, Zib, Zob |

| | |
|---|---|
| 56 | Zub, Sab, Seb, Sib, Sob, S-p, Z-m, S-m, S-v, S-f, Zag |
| 57 | Zeg, Zug, Zak, Seg, Sig, Sak, Sek, Sik, Sok, Suk |
| 58 | Zad, Zed, Zid, Zud, Zal, Zel, Zi, Zol, Zul, Zat, Zit, Zot, Zut, Sad |
| 59 | Sed, Sod, Sud, Sal, Sel, Sol, Sul, Sat, Set, Sot, Z-n |
| 60 | S-n, Z-s, S-s, a, e, i, o |
| 61 | u, varia, Wa, Wi, Wo, Wu |
| 62 | W-b, Wag, Weg, Wog, W-k, W-d, Wal, Wil, Wol, Wul, W-t, W-n, W-z |
| 63 | W-s, W-w, W-y, B-w, Ya, Ye, Yi, Yo, Yu |
| 64 | Yab, Yeb, Yub, Y-p, Y-m, Y-v, Y-f, Yag, Yeg, Yig, Yug |
| 65 | Yak, Yek, Yik, Yok, Yuk, Yad, Yed, Yid, Yod, Y-l, Yil |
| 66 | Yol, Yul, Y-t, Y-n, Y-z, Y-s, B-y, V-y, K-y, L-y, Y-y |
| 67 | diphthongs |
| **PART II** | |
| **Stretch 1 – CV(C)** | |
| **2.** | **Simple & double labials** |
| 1 | Ba |
| 2 | … |
| 3 | BaB |
| 4 | … |
| 5 | … |
| 6 | … |
| 7 | … |
| 8 | … |
| 9 | … |
| 10 | … |
| 11 | Be |
| 12 | BeB |
| 13 | … |
| 14 | Bi, BiB |
| 15 | … |
| 16 | Bo |
| 17 | BoB |
| 18 | … |
| 19 | … |
| 20 | Bu, BuB |
| 21 | … |
| 22 | … |
| 23 | … |
| 24 | … |
| 25 | … |
| 26 | Pa |
| 27 | Pe, Pi, Po, Pu |
| 28 | PaP |
| 28bis | … |
| 29 | PeP, PiP |
| 30 | PoP |
| 31 | PuP |
| 32 | … |
| 33 | Ma |
| 34 | Me, Mi, Mo, Mu |
| 35 | MaM, MeM |
| 36 | MiM, MoM, MuM |
| 37 | Va |
| 38 | Ve |
| 39 | Vi, Vo, Vu |
| 40 | VaV, VeV |
| 41 | ViV, VoV, VuV |
| 42 | … |
| 43 | Fa |
| 44 | … |
| 45 | … |
| 46 | Fe |
| 47 | Fi, Fo, Fu, Foy |
| 48 | FaF, FeF |
| 49 | FiF, FoF |
| 50 | FuF |
| 51 | Ga, Ge |
| 52 | Gi, Go, Gu, Gay |
| 53 | GaG |
| 54 | … |
| 55 | GeG |
| 56 | … |
| 57 | GiG, GoG |
| 58 | … |
| 59 | GuG |
| 60 | … |
| 61 | Ka |
| 62 | … |
| 63 | Ke, Ki |
| 64 | Ko |
| 65 | Ku, Kau, Kay |
| 66 | KaK |
| 67 | … |
| 68 | … |
| 69 | … |
| 70 | … |
| 71 | KeK |
| 72 | … |
| 73 | KiK |
| 74 | … |
| 75 | KoK |
| 76 | … |
| 77 | … |
| 78 | KuK |
| 79 | … |
| 80 | … |
| **3.** | **Simple & double linguals** |
| 81 | Da |
| 82 | … |
| 83 | … |
| 84 | De, Di |
| 85 | Do, Du, La |
| 86 | Le, Li, Lo, Lu, Lau, DaD |
| 87 | … |
| 88 | DaL |
| 89 | LaL |
| 90 | LaD |
| 91 | … |
| 92 | … |
| 93 | LaD, DeD |
| 94 | DeL |
| 95 | LeL |
| 96 | LeD |
| 97 | … |
| 98 | DiD |
| 99 | DiL |
| 100 | LiL, LiD, DoD |
| 101 | DoL, LoL, LoD |
| 102 | DuD |
| 103 | DuL, LuL |
| 104 | LuD |
| 105 | … |
| 106 | Ta |
| 107 | … |
| 108 | Te |
| 109 | Ti, To |
| 110 | Tu |
| 111 | TaT |
| 112 | … |
| 113 | TeT |
| 114 | TiT |
| 115 | ToT |
| 116 | TuT |
| 117 | … |
| 118 | … |
| 119 | Na |
| 120 | Ne |
| 121 | Ni, No, Nu, N-N |
| 122 | … |
| 123 | NeN |
| 124 | NiN, NoN, NuN |
| 125 | Za, Ze |
| 126 | Zi, Zo, Zu, Zau |
| 127 | ZaZ |
| 128 | ZeZ |

| | |
|---|---|
| 129 | … |
| 130 | ZiZ, ZoZ |
| 131 | … |
| 132 | ZuZ |
| 133 | Sa |
| 134 | … |
| 135 | Se |
| 136 | Si |
| 137 | So, Su, Sau, Say |
| 138 | SaS |
| 139 | … |
| 140 | SeS |
| 141 | SiS |
| 142 | … |
| 143 | SoS |
| 144 | SuS |
| **Stretch 2 – CVC'** | |
| **4.** | **B/P with other consonants** |
| 145 | B-P, PaB |
| 146 | PeB, PiB |
| 147 | PoB, PuB, BaM |
| 148 | … |
| 149 | BeM, BiM, BoM |
| 150 | BuM, PaM, PeM |
| 151 | PoM, PuM, BaV, BeV, BuV, BaF |
| 152 | BeF, BiF, BoF |
| 153 | BuF, PaV, PeV |
| 154 | PuV, PaF, PoF, PuF, BaG |
| 155 | … |
| 156 | … |
| 157 | BeG, BiG |
| 158 | BoG |
| 159 | BuG |
| 160 | … |
| 161 | BaK |
| 162 | … |
| 163 | … |
| 164 | BeK |
| 165 | BiK |
| 166 | BoK |
| 167 | … |
| 168 | BuK |
| 169 | … |
| 170 | … |
| 171 | PaG |
| 172 | PeG |
| 173 | PiG, PoG, PuG |
| 174 | PaK |
| 175 | PeK, PiK, PoK |
| 176 | PuK |
| 177 | BaD |
| 178 | … |
| 179 | … |
| 180 | BaL |
| 181 | … |
| 182 | BeD |
| 183 | BeL |
| 184 | … |
| 185 | BiD |
| 186 | … |
| 187 | BiL |
| 188 | … |
| 189 | BoD, BoL |
| 190 | … |
| 191 | BuD |
| 192 | … |
| 193 | BuL |
| 194 | … |
| 195 | BaT |
| 196 | … |
| 197 | BeT |
| 198 | … |
| 199 | BiT |
| 200 | BoT |
| 201 | … |
| 202 | BuT |
| 203 | PaD |
| 204 | PaL |
| 205 | PeD, PeL |
| 206 | PiD |
| 207 | PiL, PoD, PoL |
| 208 | PuD, PuL |
| 209 | PaT |
| 210 | … |
| 211 | PeT |
| 212 | PiT |
| 213 | PoT, PuT |
| 214 | BaN, BeN |
| 215 | BoN, BuN, PaN |
| 216 | PeN, PiN, PoN, PuN, BaZ & BaS |
| 217 | … |
| 218 | … |
| 219 | BeZ & BeS |
| 220 | BiZ & BiS |
| 221 | BoZ & BoS |
| 222 | BuZ & BuS |
| 223 | PaZ & PaS |
| 224 | PeZ & PeS |
| 225 | PiZ & PiS, PoZ & PoS, PuZ & PuS |
| **5.** | **M and V/F with other consonants** |
| 226 | MaB, MeB, MiB, MoB, MaV & MaF, MeV & MeF, MiV & MiF, MoV & MoF, MuV & MuF |
| 227 | MaG |
| 228 | MeG |
| 229 | MiG, MoG |
| 230 | MuG, MaK |
| 231 | MeK |
| 232 | MiK, MoK |
| 233 | MuK, MaD & MaL |
| 234 | MeD & MeL, MiD & MiL, MoD & MoL, MuD & MuL |
| 235 | MaT, MeT |
| 236 | MiT, MoT, MuT |
| 237 | MaN |
| 238 | MeN, MiN |
| 239 | MoN |
| 240 | MuN, MaZ & MaS |
| 241 | MeZ & MeS, MiZ & MiS, MoZ & MoS |
| 242 | VaB, VeB |
| 243 | ViB, VoB, VuB |
| 244 | … |
| 245 | VaP, VeP, ViP, VoP, VuP, FaB |
| 246 | FeB, FiB, FoB |
| 247 | FuB |
| 248 | FaP, FeP, FiP, FoP, FuP |
| 249 | VaM, VeM, ViM, VoM, VuM |
| 250 | FaM, FeM, FiM, FoM |
| 251 | FuM |
| 252 | VaF, ViF, VuF, FuV, VaG |
| 253 | … |
| 254 | VeG, ViG, VoG |
| 255 | VuG, VaK |
| 256 | VeK, ViK, VoK |
| 257 | VuK |
| 258 | FaG, FeG |
| 259 | FiG, FoG |
| 260 | FuG, FaK |
| 261 | FeK, FiK |
| 262 | FoK, FuK |
| 263 | … |
| 264 | VaD |
| 265 | VaL |
| 266 | VeL, ViD |
| 267 | ViL |
| 268 | VoD & VoL, VuD, VuL |
| 269 | … |
| 270 | VaT, VeT |
| 271 | ViT |
| 272 | VoT, VuT |
| 273 | FaD & FaL |
| 274 | FeD & FeL, FiD & FiL |

275 FoD & FoL, FuD & FuL
276 …
277 …
278 FaT
279 …
280 FeT, FiT
281 …
282 FoT, FuT
283 …
284 …
285 VaN, VeN, ViN, VoN, VuN
286 FaN, FeN, FiN
287 FoN, FuN
288 VaZ & VaS, VeZ & VeS
289 ViZ & ViS, VoZ & VoS, VuZ & VuS
290 FaZ & FaS, FeZ & FeS
291 FiZ & FiS, FoZ & FoS, FuZ & FuS
292 …

**6. G/K with other consonants**

293 GaB
294 GeB, GiB, GoB
295 GuB
296 GaP, GeP, GoP
297 GuP, KaB
298 …
299 …
300 …
301 …
302 KeB
303 …
304 KiB
305 KoB
306 …
307 KuB
308 …
309 …
310 …
311 …
312 KaP, KeP, KoP
313 KuP, GaM
314 GeM, GoM, GuM
315 KaM
316 KeM, KiM, KoM
317 KuM
318 …
319 GaV & GaF, GeV & GeF
320 GiV & GiF, GoV & GoF, GuV & GuF, KaV, KeV, KiV, KoV
321 KuV, KaF
322 KeF, KoF, KuF
323 GaK
324 GeK, GiK, GoK
325 GuK
326 KaG
327 …
328 …
329 …
330 KeG
331 KiG
332 KoG
333 …
334 KuG
335 GaD
336 GaL & GaD
337 GeD & GeL, GiD
338 GoD & GoL
339 …
340 GuD & GuL
341 GaT
342 GeT
343 GiT, GoT
344 GuT
345 KaD & KaL
346 …
347 …
348 …
349 …
350 …
351 …
352 …
353 KeD & KeL
354 …
355 …
356 …
357 …
358 …
359 KiD & KiL
360 …
361 KoD & KoL
362 …
363 …
364 …
365 …
366 …
367 KuD & KuL
368 …
369 …
370 …
371 …
372 KaT
373 …
374 KeT
375 …
376 KiT
377 …
378 KoT
379 …
380 KuT
381 …
382 GaN
383 GeN, GiN
384 GoN, GuN, KaN
385 …
386 …
387 KeN
388 KiN
389 KoN
390 KuN, GaZ & GaS
391 GeZ & GeS
392 GiZ & GiS, GoZ & GoS
393 GuZ & GuS
394 KaZ & KaS
395 …
396 …
397 …
398 …
399 KeZ & KeS
400 …
401 KiZ & KiS
402 KoZ & KoS
403 …
404 KuZ & KuS
405 …
406 …

**7. D~L/T with other consonants**

407 DaB & LaB
408 …
409 …
410 DeB & LeB
411 …
412 …
413 DiB & LiB
414 …
415 DoB & LoB
416 DuB & LuB
417 DaP & LaP, DeP & LeP
418 DiP & LiP, DoP & LoP, DuP & LuP
419 TaB
420 …
421 …
422 …
423 …
424 TeB
425 TiB
426 ToB
427 TuB
428 …
429 …
430 TaP, TeP
431 TiP, ToP, TuP

| | |
|---|---|
| 432 | DaM & LaM |
| 433 | LeM, DiM, DoM & LoM |
| 434 | DuM & LuM, TaM |
| 435 | TeM |
| 436 | TiM, ToM |
| 437 | TuM |
| 438 | D-V & L-V, DaF & LaF, DeF & LeF |
| 439 | DiF, DoF & LoF, DuF & LuF, TaV & TaF |
| 440 | TeV & TeF, TiV & TiF, ToV & ToF |
| 441 | TuV & TuF, DaG & LaG |
| 442 | … |
| 443 | DeG & LeG |
| 444 | … |
| 445 | … |
| 446 | … |
| 447 | DiG |
| 448 | DoG & LoG |
| 449 | … |
| 450 | DuG & LuG |
| 451 | DaK & LaK |
| 452 | … |
| 453 | DeK & LeK |
| 454 | … |
| 455 | … |
| 456 | DiK |
| 457 | DoK & LoK |
| 458 | … |
| 459 | DuK & LuK |
| 460 | … |
| 461 | TaG |
| 462 | … |
| 463 | TeG, TiG |
| 464 | ToG |
| 465 | TuG |
| 466 | … |
| 467 | TaK |
| 468 | … |
| 469 | TeK |
| 470 | … |
| 471 | TiK, ToK |
| 472 | … |
| 473 | TuK |
| 474 | DaT & LaT |
| 475 | DeT & LeT, DiT, DoT & LoT |
| 476 | DuT & LuT |
| 477 | TaD & TaL |
| 478 | … |
| 479 | … |
| 480 | … |
| 481 | … |
| 482 | TeD & TeL |
| 483 | … |
| 484 | TiD & TiL, ToD & ToL |
| 485 | … |
| 486 | TuD & TuL |
| 487 | … |
| 488 | DaN & LaN, DeN & LeN, DoN & LoN, DuN & LuN, TaN, TeN, TiN |
| 489 | ToN, TuN |
| 490 | DaZ & DaS & LaZ & LaS |
| 491 | DeZ & DeS & LeZ & LeS |
| 492 | DiZ & DiS, DoZ & DoS & LoZ & LoS |
| 493 | DuZ & DuS & LuZ & LuS |
| 494 | TaZ & TaS, TeZ & TeS |
| 495 | TiZ & TiS, ToZ & ToS, TuZ & TuS |
| **8.** | **N and Z/S with other consonants** |
| 496 | NaB, NeB, NiB |
| 497 | NoB, NuB, NaP, NeP, NiP, NoP, NuP |
| 498 | NaM, NeM, NiM |
| 499 | NoM, NuM, NaV & NaF, NeV & NeF, NoV & NoF |
| 500 | NuV & NuF, NaG |
| 501 | … |
| 502 | … |
| 503 | NeG |
| 504 | … |
| 505 | NiG |
| 506 | NoG |
| 507 | NuG |
| 508 | … |
| 509 | NaK |
| 510 | NeK |
| 511 | NiK |
| 512 | NoK |
| 513 | NuK |
| 514 | NaD & NaL, NeD & NeL, NoD & NoL, NuD & NuL, NaT |
| 515 | … |
| 516 | NeT, NiT |
| 517 | NoT, NuT, NaZ & NaS |
| 518 | NeZ & NeS, NiZ & NiS |
| 519 | NoZ & NoS |
| 520 | ZaB |
| 521 | … |
| 522 | ZeB |
| 522bis | ZiB |
| 523 | ZoB |
| 524 | ZuB |
| 525 | SaB |
| 526 | … |
| 527 | … |
| 528 | … |
| 529 | SeB |
| 530 | SiB |
| 531 | SoB |
| 532 | SuB |
| 533 | SaP |
| 534 | SeP, SiP, SoP, SuP |
| 535 | ZaM |
| 536 | ZeM, ZiM |
| 537 | ZoM, ZuM, SaM |
| 538 | SeM, SiM |
| 539 | SoM, SuM |
| 540 | … |
| 541 | ZaV & ZaF & SaV & SaF, ZoV & ZoF & SoV & SoF |
| 542 | ZuV & ZuF & SuV & SuF, ZaG |
| 543 | … |
| 544 | ZeG |
| 545 | ZiG |
| 546 | ZoG |
| 547 | ZuG |
| 548 | ZaK |
| 549 | … |
| 550 | ZeK |
| 551 | ZiK |
| 552 | ZoK |
| 553 | ZuK |
| 554 | SaG |
| 555 | … |
| 556 | SeG |
| 557 | … |
| 558 | SiG |
| 559 | SoG |
| 560 | SuG |
| 561 | SaK |
| 562 | … |
| 563 | … |
| 564 | … |
| 565 | SeK |
| 566 | … |

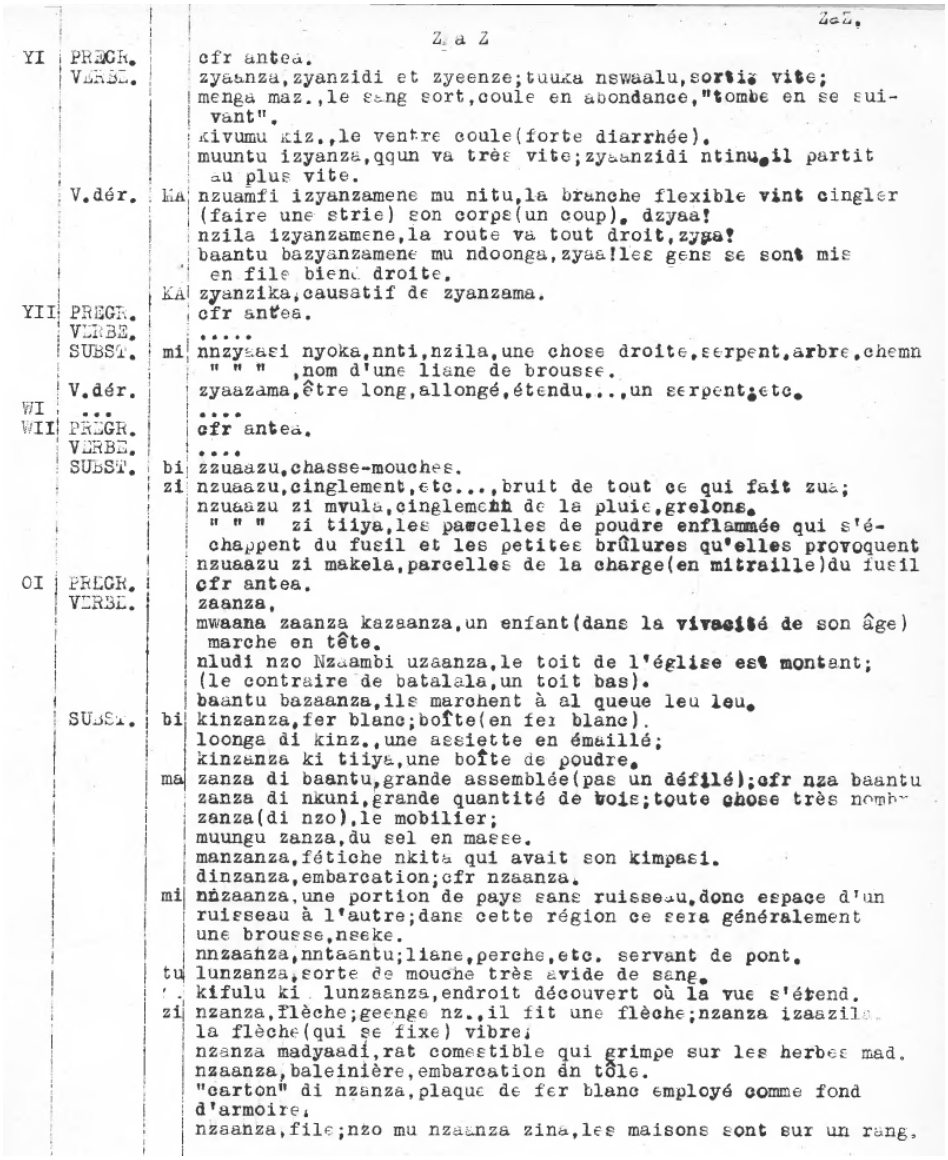
567 SiK
568 SoK
569 …
570 SuK
571 …
572 ZaD & ZaL
573 …
574 ZeD & ZeL
575 ZiD & ZiL
576 ZoD & ZoL
577 ZuD & ZuL, ZaT
578 ZeT, ZiT
579 ZoT
580 ZuT, SaD & SaL
581 …
582 …
583 …
584 SeD & SeL
585 SiD & SiL
586 …
587 SoD & SoL
588 SuD & SuL
589 SaT
590 SeT
591 SiT
592 SoT, SuT, ZaN
593 ZeN, ZiN
594 ZoN, ZuN, SaN
595 SeN, SiN
596 SoN, SuN
597 ZaS & SaZ
598 ZeS & SeZ, ZiS & SiZ
599 ZoS & SoZ, ZuS & SuZ

**Stretch 3 – YV(Y), YVC,W, CVY WV(W), WVC, CVW VV**

**9. Words with Y, W and diphthongs**

600 Ya, Ye, Yi
601 Yo, Yu, YaY
602 YeY, YiY, YoY, YuY
603 YaB
604 …
605 YeB, YiB
606 YoB, YuB
607 YaP, YeP, YiP, YoP, YuP, YaM
608 YeM, YiM, YoM, YuM
609 YaV & YaF, YuV & YuF, YaG
610 …
611 YeG
612 YiG, YoG, YuG
613 YaK
614 YeK
615 YiK
616 YoK, YuK
617 YaD & YaL
618 …
619 YeD & YeL, YiD & YiL
620 YoD & YoL
621 YuD & YuL
622 YaT
623 YeT, YiT, YoT, YuT
624 YaN, YeN, YiN, YoN
625 YuN, YaZ & YaS, YeZ & YeS, YiZ & YiS
626 YoZ & YoS, YuZ & YuS, YaW, BaY
627 BeY, BiY, BoY, PaY, PeY, PiY, PoY, PuY, MaY, MeY, MiY
628 MoY, VaY, VeY, ViY, VoY, VuY, FaY, FeY
629 FiY, GaY, GeY, GiY, GoY, GuY, KaY
630 KeY
631 KiY, KoY, KuY, DaY & LaY, DeY & LeY, DiY & LiY
632 DoY & LoY, DuY & LuY, TaY, TeY, TiY, ToY, TuY, N-Y, ZaY
633 ZeY, ZiY, ZoY, ZuY, SaY, SeY, SoY, SuY, Y-W
634 Wa, We, Wo
635 Wu, WaW, WeW, WiW, WoW, WuW, WaB
636 WeB, WiB, WoB, WuB, WuP, WuM, WuF, WanG
637 WeG, WiG, WoG, WuG, WaK, WeK, WiK, WoK
638 WuK, WaD & WaL, WeD & WeL
639 WiD & WiL, WoD & WoL, WuD & WuL, WaT
640 WeT, WiT, WoT, WuT, WaN, WeN, WiN, WuN
641 WaZ & WaS, WeZ & WeS, WiZ & WiS, WoZ & WoS, WuZ & WuS, BaW & PaW, BeW & PeW
642 BiW & PiW, BoW & PoW, PuW & PuW, M-W, KaW, KeW, KiW, KoW
643 KuW, D/L-W, DoW & LoW, DuW & LuW, TaW, ToW, Z-W, S-W
644 ay, au (monosyllabic)
645 au (polysyllabic)
646 ey, eu, oy

**Addendum 2**: Sample pages from Part II of the *Lexique kikongo–français* by Charles Polis (1938) [cluster **ZaZ**; Part II, pp. 127-128]



ZaZ.

Z a Z

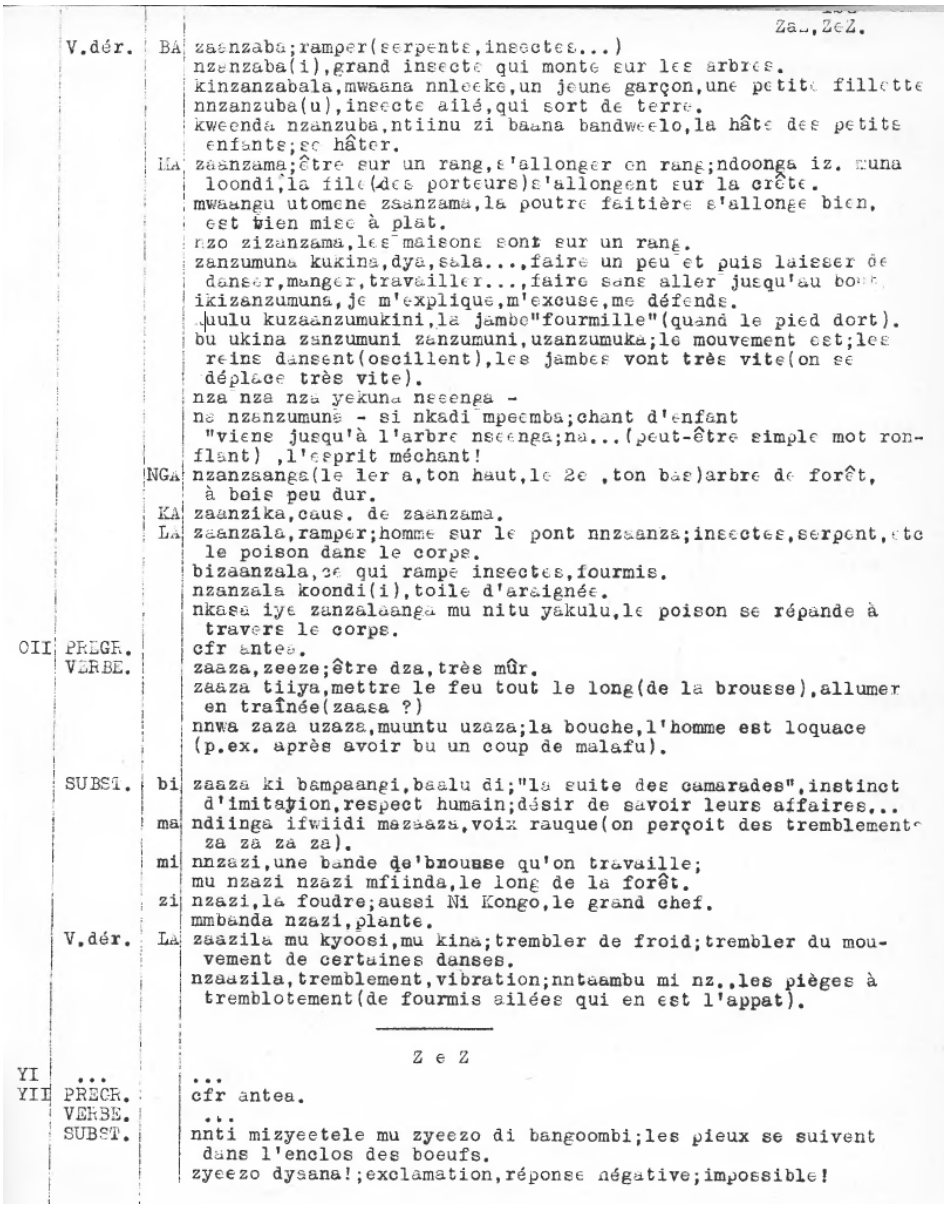
YI PREGR. cfr antea.
VERBE. zyaanza,zyanzidi et zyeenze;tuuka nswaalu,sortir vite;
menga maz.,le sang sort,coule en abondance,"tombe en se suivant".
kivumu kiz.,le ventre coule(forte diarrhée).
muuntu izyanza,qqun va très vite;zyaanzidi ntinu,il partit au plus vite.
V.dér. KA nzuamfi izyanzamene mu nitu,la branche flexible vint cingler (faire une strie) son corps(un coup), dzyaa!
nzila izyanzamene,la route va tout droit,zyga!
baantu bazyanzamene mu ndoonga,zyaa!les gens se sont mis en file bien droite.
KA zyanzika,causatif de zyanzama.

YII PREGR. cfr antea.
VERBE. .....
SUBST. mi nnzyaasi nyoka,nnti,nzila,une chose droite,serpent,arbre,chemn
" " " ,nom d'une liane de brousse.
V.dér. zyaazama,être long,allongé,étendu...,un serpent;etc.

WI ...
WII PREGR. cfr antea.
VERBE. ....
SUBST. bi zzuaazu,chasse-mouches.
zi nzuaazu,cinglement,etc...,bruit de tout ce qui fait zua;
nzuaazu zi mvula,cinglement de la pluie,grelons.
" " " zi tiiya,les parcelles de poudre enflammée qui s'échappent du fusil et les petites brûlures qu'elles provoquent
nzuaazu zi makela,parcelles de la charge(en mitraille)du fusil

OI PREGR. cfr antea.
VERBE. zaanza,
mwaana zaanza kazaanza,un enfant(dans la vivacité de son âge) marche en tête.
nludi nzo Nzaambi uzaanza,le toit de l'église est montant;
(le contraire de batalala,un toit bas).
baantu bazaanza,ils marchent à al queue leu leu.
SUBST. bi kinzanza,fer blanc;boîte(en fer blanc).
loonga di kinz.,une assiette en émaillé;
kinzanza ki tiiya,une boîte de poudre.
ma zanza di baantu,grande assemblée(pas un défilé);cfr nza baantu
zanza di nkuni,grande quantité de bois;toute chose très nomb
zanza(di nzo),le mobilier;
muungu zanza,du sel en masse.
manzanza,fétiche nkita qui avait son kimpasi.
dinzanza,embarcation;cfr nzaanza.
mi nnzaanza,une portion de pays sans ruisseau,donc espace d'un ruisseau à l'autre;dans cette région ce sera généralement une brousse,nseke.
nnzaanza,nntaantu;liane,perche,etc. servant de pont.
tu lunzanza,sorte de mouche très avide de sang.
. kifulu ki lunzaanza,endroit découvert où la vue s'étend.
zi nzanza,flèche;geenge nz.,il fit une flèche;nzanza izaazila
la flèche(qui se fixe) vibre;
nzanza madyaadi,rat comestible qui grimpe sur les herbes mad.
nzaanza,baleinière,embarcation en tôle.
"carton" di nzanza,plaque de fer blanc employé comme fond d'armoire.
nzaanza,file;nzo mu nzaanza zina,les maisons sont sur un rang.

*(ZaZ continued, and beginning of ZeZ)*



Za.., ZeZ.

V.dér. BA zaanzaba;ramper(serpents,insectes...)
nzanzaba(i),grand insecte qui monte sur les arbres.
kinzanzabala,mwaana nnleeke,un jeune garçon,une petite fillette
nnzanzuba(u),insecte ailé,qui sort de terre.
kweenda nzanzuba,ntiinu zi baana bandweelo,la hâte des petits enfants;se hâter.
MA zaanzama;être sur un rang,s'allonger en rang;ndoonga iz. muna loondi,la file(des porteurs)s'allongent sur la crête.
mwaangu utomene zaanzama,la poutre faîtière s'allonge bien, est bien mise à plat.
nzo zizanzama,les maisons sont sur un rang.
zanzumuna kukina,dya,sala...,faire un peu et puis laisser de danser,manger,travailler...,faire sans aller jusqu'au bout
ikizanzumuna,je m'explique,m'excuse,me défends.
kuulu kuzaanzumukini,la jambe"fourmille"(quand le pied dort).
bu ukina zanzumuni zanzumuni,uzanzumuka;le mouvement est;les reins dansent(oscillent),les jambes vont très vite(on se déplace très vite).
nza nza nza yekuna nseenga -
na nzanzumuna - si nkadi mpeemba;chant d'enfant "viens jusqu'à l'arbre nseenga;na...(peut-être simple mot ronflant) ,l'esprit méchant!
NGA nzanzaanga(le 1er a,ton haut,le 2e ,ton bas)arbre de forêt, à bois peu dur.
KA zaanzika,caus. de zaanzama.
LA zaanzala,ramper;homme sur le pont nnzaanza;insectes,serpent,etc le poison dans le corps.
bizaanzala,ce qui rampe insectes,fourmis.
nzanzala koondi(i),toile d'araignée.
nkasa iye zanzalaanga mu nitu yakulu,le poison se répande à travers le corps.

OII PREGR. VERBE. cfr antea.
zaaza,zeeze;être dza,très mûr.
zaaza tiiya,mettre le feu tout le long(de la brousse),allumer en traînée(zaasa ?)
nnwa zaza uzaza,muuntu uzaza;la bouche,l'homme est loquace (p.ex. après avoir bu un coup de malafu).

SUBST. bi zaaza ki bampaangi,baalu di;"la suite des camarades",instinct d'imitation,respect humain;désir de savoir leurs affaires...
ma ndiinga ifwiidi mazaaza,voix rauque(on perçoit des tremblements za za za za).
mi nnzazi,une bande de'brousse qu'on travaille;
mu nzazi nzazi mfiinda,le long de la forêt.
zi nzazi,la foudre;aussi Ni Kongo,le grand chef.
mmbanda nzazi,plante.

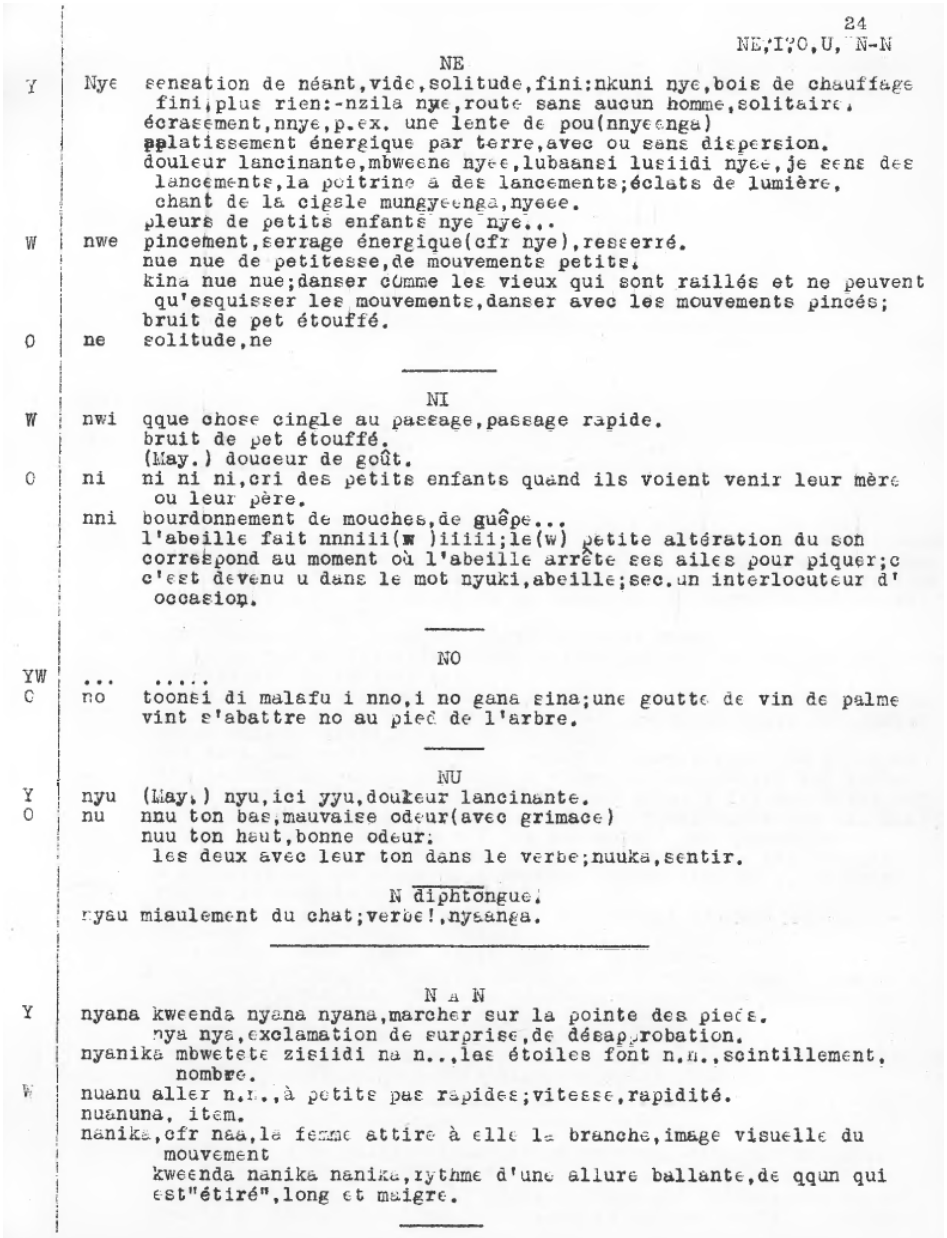
V.dér. LA zaazila mu kyoosi,mu kina;trembler de froid;trembler du mouvement de certaines danses.
nzaazila,tremblement,vibration;nntaambu mi nz.,les pièges à tremblotement(de fourmis ailées qui en est l'appat).

---

Z e Z

YI ...
YII PRECR. VERBE. SUBST. ...
cfr antea.
...
nnti mizyeetele mu zyeezo di bangoombi;les pieux se suivent dans l'enclos des boeufs.
zyeezo dysana!;exclamation,réponse négative;impossible!

**Addendum 3**: Sample page from Part I of the *Lexique kikongo–français* by Charles Polis (1938) [clusters **Ne**, **Ni**, **No**, **Nu**, **Nau**, and **Nan**; Part I, p. 24]



24
NE;I;O,U, N-N

NE

Y Nye sensation de néant,vide,solitude,fini:nkuni nye,bois de chauffage fini,plus rien:-nzila nye,route sans aucun homme,solitaire, écrasement,nnye,p.ex. une lente de pou(nnyeenga) applatissement énergique par terre,avec ou sans dispersion. douleur lancinante,mbweene nyee,lubaansi lusiidi nyee,je sens des lancements,la poitrine a des lancements;éclats de lumière, chant de la cigale mungyeenga,nyeee. pleurs de petits enfants nye nye...

W nwe pincement,serrage énergique(cfr nye),resserré. nue nue de petitesse,de mouvements petits. kina nue nue;danser comme les vieux qui sont raillés et ne peuvent qu'esquisser les mouvements,danser avec les mouvements pincés; bruit de pet étouffé.

O ne solitude,ne

---

NI

W nwi qque chose cingle au passage,passage rapide. bruit de pet étouffé. (May.) douceur de goût.

O ni ni ni ni,cri des petits enfants quand ils voient venir leur mère ou leur père.

nni bourdonnement de mouches,de guêpe... l'abeille fait nnniii(w )iiiii;le(w) petite altération du son correspond au moment où l'abeille arrête ses ailes pour piquer;c c'est devenu u dans le mot nyuki,abeille;sec.un interlocuteur d' occasion.

---

NO

YW ... .....

O no toonsi di malafu i nno,i no gana sina;une goutte de vin de palme vint s'abattre no au pied de l'arbre.

---

NU

Y nyu (May.) nyu,ici yyu,douleur lancinante.

O nu nnu ton bas,mauvaise odeur(avec grimace) nuu ton haut,bonne odeur; les deux avec leur ton dans le verbe;nuuka,sentir.

N diphtongue.

nyau miaulement du chat;verbe!,nyaanga.

---

N a N

Y nyana kweenda nyana nyana,marcher sur la pointe des pieds. nya nya,exclamation de surprise,de désapprobation. nyanika mbwetete zisiidi na n...,las étoiles font n.n..,scintillement, nombre.

W nuanu aller n.n..,à petits pas rapides;vitesse,rapidité. nuanuna, item. nanika,cfr naa,la femme attire à elle la branche,image visuelle du mouvement kweenda nanika nanika,rythme d'une allure ballante,de qqun qui est"étiré",long et maigre.

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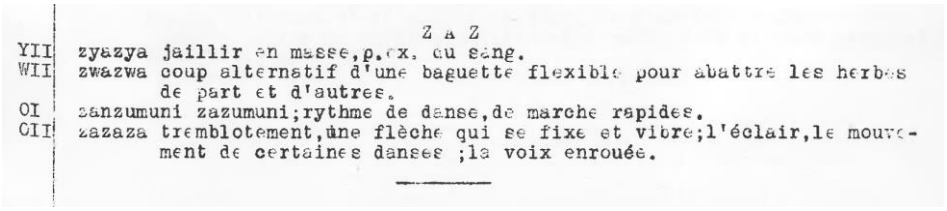
**Addendum 4**: The cluster **Zaz** in the *Lexique kikongo–français* by Charles Polis (1938) [Part I, p. 26]



Z a Z

YII zyazya jaillir en masse, p. ex. du sang.
WII zwazwa coup alternatif d'une baguette flexible pour abattre les herbes de part et d'autres.
OI zanzumuni zazumuni; rythme de danse, de marche rapides.
OII zazaza tremblotement, une flèche qui se fixe et vibre; l'éclair, le mouvement de certaines danses ; la voix enrouée.

**Addendum 5**: Data for Test 1: Polis (1938) vs. Butaye (1909) [with for Butaye: ‖ = main word; * = dialectal form; grey = the form, the meaning, or both are only approximately that/those of Polis; all translations into English are ours]

| **POLIS** | | | **BUTAYE** | |
|---|---|---|---|---|
| **Part, p.** | **Item** | **English translation** | **Lemma sign** | **English translation** |
| I, 6 | *pyu* | pitch-black, very dirty | ‖*pilu, piu* | black, blue |
| I, 16 | *kyu* | sound of throat movement when swallowing | — | — |
| I, 26 | *zwe* | of thorn that enters | — | — |
| I, 36 | *myaka* | sparkling, bright like varnish | *miaka* | itching |
| I, 46 | *kilaa* | together! | — | — |
| I, 56 | *zubu* | of intelligence; of vigilance | — | — |
| I, 66 | *yololo* | of being soaked, of being drenched | — | — |
| II, 9 | *kibabu* | *usa* ~ = he puts his zeal in … | — | — |
| II, 19 | *booba* | to beat | *buba* | to beat |
| II, 28bis | *-papumuka* | to beat (the wings) heavily | *pápumúka* | to flutter about |
| II, 38 | *-vwiidi* Mb., *-wiidi* Kis. | be finished | * *uwa, vwa* B.K. *(-widi)* | be completed |
| II, 48 | *mfyaafi* | armpit | *mfímfiáfi & nsimfiafi* | armpit |
| II, 58 | *ngoongi* | internode (of bamboo, fingers, etc.) | *ngongi, ngonge* | ... part of a reed between the nodes |
| II, 68 | *kaka* | to close | ‖*kaka* | to obstruct; to close; to hit |
| II, 78 | *nnkookolo* | song | ‖*kékila & kokila* | to cackle, to sing like cocks & to sing (said of a cock) |

| | | | | |
|---|---|---|---|---|
| II, 88 | *daada* | to beat | * *dada* | to die a sudden death |
| II, 98 | *nnledi* | educators | — | — |
| II, 108 | *ta* | ? | *ta* | [various] |
| II, 118 | *ntuuta* | quarrel | — | — |
| II, 128 | *zaanzaba* | to crawl, to slither | ‖*zánzala* | to crawl, to walk like insects |
| II, 138 | *nsyaasi, ntsyaasi* | noise of a small thing | — | — |
| II, 148 | *bama* | do quickly (and badly); *b. nnsiinga* = make a bad knot | *bama* | to shout; to tighten a knot (*babamini nsinga* = they have tightened the knot) |
| II, 158 | *biinga* | to call, to summon | ‖*binga* | to go and meet |
| II, 168 | *-bokila* | to proclaim (cf. p. 75) | ‖*bókila* | to call after |
| II, 178 | *baanda* | to hit | ‖*banda* | to hit |
| II, 188 | *mbila* | call | ‖*mbila* | call |
| II, 198 | *-bweetama* | to crush | ‖*bweta* | to crush |
| II, 208 | *kimpodi* | return obligation | *mpodi* | credit |
| II, 218 | *baasa* | to cut, to split, to tear | ‖*basa* | to split, make jump |
| II, 228 | *maanga* | fetish to discover the magical cause of an illness; charm to indicate the guilty person | *manga* | charm to uncover the guilty person |
| II, 238 | *mweena* | for 'to see' | *muene* | preterite of 'mona' |
| II, 248 | *mfubu* | *makeenge ma* ~ = kind of pandanus with which mats are made | *fubu* | soft stem of the sugar cane, tender part of the palm leaf; old basket |
| II, 258 | *mmfyaangu* | the tissues close to the waist, the kidneys | *mfiangu* | bundle of muscles in the back, from top to bottom |
| II, 268 | *vidika* | to say something in a round-about way | — | — |
| II, 278 | *fulukidi* | regained one's senses | ‖*fúluka (-kidi)* | be full; dial. to come back to life |
| II, 288 | *mmfunu* | utility | *mfunu* | utility |
| II, 298 | *-kwabama* | to hit while passing | — | — |
| II, 308 | *kuumbidi* | opened the mouth | ‖*kumba (-bidi)* | to murmur, to make noise |
| II, 318 | *kuma* | to put on | *kuma* | to erect, to place, to fix |
| II, 328 | *keenge* | ~ *kyaafu* = to make a bridge | ‖*kanga (kenge, kangidi)* | to link up, to attach, to close, to bandage, to conclude |
| II, 338 | *gyyodi gyyodi* | bush herb | *kiodi-kiodi* | herb that grows on stony terrain |
| II, 348 | *-kaandama* | be prohibited | *kandama* | be withheld |
| II, 358 | *kedingiinza* | to pound in small double beats (of the heart) | — | — |

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| II, 368 | *kunduba* | to move unwieldly | — | — |
| II, 378 | *kitumuna* | to make someone change their mind | *kítumuna* | to change radically, to bribe, to seduce |
| II, 388 | *kena* | to discover | * *gena* | to curl up |
| II, 398 | *kasu* | ring to keep something open | — | — |
| II, 408 | *laamba* | to knead | ‖ *lamba* | to cook, to steam/braise; to prepare food |
| II, 418 | *-leepama, leempama?* | to be lying in wait, glued to the floor | — | — |
| II, 428 | *tuumba* | to impose, to dedicate, to install | ‖ *tumba* | to initiate, to confer, to dedicate |
| II, 438 | *bundyaafu* | gluttony, greed | — | — |
| II, 448 | *dingutuna* | to cut off a big piece | — | — |
| II, 458 | *-looka* | to become darker (of fruit) | ‖ *lóka* | to become dry |
| II, 468 | *taki* | black | — | — |
| II, 478 | *ntwaadi* | possessed jointly (by two or more) | ‖ *ntwadi* | association; in common |
| II, 488 | *dyaana* | to make a loud noise | — | — |
| II, 498 | *nyama* | animal, meat [recent word] | — | — |
| II, 508 | *nyuunguta* | confusion of a happy crowd [sic] | * *niunguta* | to delight, to dance out of happiness |
| II, 518 | *manyaanza-nyaanza* | mist, droplets of rain | *maniánga-nianga* | a few drops of rain, light and passing rain |
| II, 527 | *nsaamba* | palm wine drawn from the male flower of this tree | *nsamba* | palm wine |
| II, 537 | *-zoomene* | be ripe | *zoma (-mene)* | to be yellow or soft like a ripe fruit |
| II, 547 | *zyoonguna* | to twist, to pull out | *zonguna* | to prick |
| II, 557 | *-swengila* | to hurry, to hasten | — | — |
| II, 567 | *swiika* | to gobble up (in large quantities) | — | — |
| II, 577 | *kinzola* | snobbery, vanity | — | — |
| II, 587 | *nsila* | strip | ‖ *nsila* | line, vein, groove |
| II, 597 | *masuni* | canine teeth | *nsunda, nsundi* | boar tusk, canine tooth |
| II, 607 | *mayùba* | old word for *mantusi* = 'meat maggots' | — | — |
| II, 617 | *dyukusu, yukusu* | to have eaten one's fill | — | — |
| II, 627 | *biiya, biiyidi* | to become bad | — | — |
| II, 637 | *wengeenge* | cartilage | — | — |

**Addendum 6**: Data for Test 2: Butaye (1909) vs. Polis (1938) [with for Butaye: ‖ and no shading = main words; grey = common words; for Polis: green = extensions to the lemma-sign system [sic]; red = errors in the lemma-sign system [sic]; all translations into English are ours]

| BUTAYE | | | | POLIS | |
|---|---|---|---|---|---|
| **Page** | **Lemma sign** | **POS** | **English translation** | **Lemma sign** | **Part, p.** |
| **1** | ‖*aka* | adv. | yes | **Ka + O, Varia** | II, 63 |
| **2** | *aritmetika* | n. | mathematics | — | — |
| **3** | ‖*baba* | n. cl. 5 | person who is mute or stutters | **BaB + OII, SUBST., bi** | II, 8 |
| **4** | *bákila* | v. rel. | to take for | **BaK + OII, V.DER., iLA** | II, 163 |
| **5** | ‖*bámbuka* | v. m. | be reminded | **BaB + OI, V.DER., KA** [as *baambuka*] | II, 6 |
| **6** | *bángamísa* | v. caus. | to cause an oppressed state | — | — |
| **7** | ‖*bau* | pron. & adj. cl. 2 | they; their | **au + B, --** | II, 644 |
| **8** | *bémbama* | v. i. | be bent, folded | **BeB + OI, V. DER., MA** | II, 13 |
| **9** | ‖*beto, betu* | pron. & adj. cl. 2 | we; our | — | Y [as *beeto*] |
| **10** | *bikáku* | n. cl. 8 | congestion | **KaK + OII, SUBST., bi** | II, 68 |
| **11** | ‖*bindama* | v. m. | be closed | **BiD + OI, V.DER., aMA** [as *biindama*] | II, 186 |
| **12** | *bítana* | v. rec. | to catch one another | — | — |
| **13** | ‖*bôla* | n. cl. 5 | onion | **BoL + OII, SUBST., ma** [as *boola*] | II, 190 |
| **14** | *bonsikila, bonsukila* | v. i. | to insist | **BoZ & BoS + WII, V.DER., iKA** | II, 221 |
| **15** | ‖*buau* | adv. | like this | **au + B, bu** [as *bwau;* but not with main meaning] | II, 644 |
| **16** | *buingi* | adj. & adv. | a lot | — | Y [as *bubwiingi*] |
| **17** | ‖*búkumúka* | v. m. | be destroyed; be overturned | **BuK + OII, V.DER., uMA** | II, 170 |
| **18** | *bumbangu* | n. cl. 14 | craft knowledge | — | — |
| **19** | ‖*buna* | v. tr. | to skin | **BuN + O, VERBE** | II, 215 |
| **20** | *bundumba* | n. cl. 14 | standing of a girl | — | — |
| **21** | ‖*busi* | n. cl. 5 | wad of a gun | **BuZ & BuS + OII, SUBST.** [as *buusi*] | II, 222 |

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| **22** | *buyúmbulu* | n. cl. 14 | big stupidity | **Yub + I, 5** [as *yuumbulu*] | I, 64 |
| **23** | ‖*dâka* | v. i. | to split/crack; to shatter | **DaK & LaK + OII, VERBE** | II, 451 |
| **24** | *diadia* | n. cl. 5 | tall bush | — | Y [as *dyadya*] |
| **25** | ‖*diata* | v. i. | to walk | **DaT & LaT + YII, VERBE** [as *dyaata*] | II, 474 |
| **26** | *diéngasa* | v. tr. | to make turn | **DeG & LeG + YI, V.DER., aSA** [as *dyengasa*] | II, 443 |
| **27** | ‖*dila* | v. i. | to cry/weep | **DiL + O, VERBE** | II, 99 |
| **28** | *dinkúndi(a)* | n. cl. 5 | sp. of climbing plant | — | — |
| **29** | ‖*dóngumúka* | v. m. | to emerge | — | — |
| **30** | *e* | quest. part.; affirm. part. | ?; ! | — | — |
| **31** | ‖*fi-* | dim. pref. | a little bit, a small amount | **Fi + O, SUBST., FI** | II, 47 |
| **32** | *fídila* | v. rel. | to lead to | **FiD & FiL + OII, V.DER., iLA** | II, 275 |
| **33** | ‖*fioti* | adv. | a little | **FoT + YII, VARIA** [as *fyote*] | II, 282 |
| **34** | *fókuka* | v. m. | be folded; be multiplied | **FoK + OII, V.DER., uKA** | II, 262 |
| **35** | ‖*fula* | v. tr. | to conclude; to forge; to blow | **FuD & FuL + OII, VERBE** [as *fula* and *fuula*] | II, 276 |
| **36** | *fúmbama* | v. m. | be curved | **FuB + OI, V.DER., aMA** [as *-fuubama*; a typo] | II, 247 |
| **37** | ‖*fúnguna* | v. tr. | to confess | **FuG + OI, V.DER., uNA** | II, 260 |
| **38** | *futana* | v. tr. | be vexed | — | — |
| **39** | ‖*fwanasa* | v. caus. | to make equal | **FaN + W, V.DER., aSA** | II, 286 |
| **40** | *ga* | v. i. | to produce (fruit) | **Ga + O, VERBE** | II, 51 |
| **41** | ‖*gala-nti, gadi-nti* | n. cl. 7 | carpenter | — | — |
| **42** | *gangama* | v. m. | to be in order | **GaG + OI, V.DER., MA** | II, 54 |
| **43** | ‖*gedila* | v. rel. | be clean/pure | **GeD & GeL + OII, V.DER., iLA** | II, 337 |

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| **44** | *gelele, gelele-gelele* | inv. | purity | **Gel** | I, 41 |
| **45** | ‖*go, gogo* | adv.; conj. | here/there; if, when; or | — | — |
| **46** | *gólakána* | v. poss. | be able to be pulled; to slip | **GoL + OII, V.DER., aKA** | II, 339 |
| **47** | ‖*gongi* | n. cl. 5 | ball (of food) | **GoG + O, SUBST., ma** [as *goongi*] | II, 57 |
| **48** | *guga* | n. cl. 5 | space between two objects | — | — |
| **49** | ‖*gulusa* | v. caus. | to save | **GuD + OII, V.DER., uSA** | II, 341 |
| **50** | *Iezu Kristu* | n. | Jesus Christ | — | — |
| **51** | ‖*kaba* | v. tr. | to give, to share | **KaB + OII, VERBE** | II, 300 |
| **52** | *kakala* | v. i. | to slip, to worm/inch | — | — |
| **53** | ‖*kádila* | v. rel. | to stay for; to be with | **KaD & KaL + OII, V.DER., iLA** | II, 352 |
| **54** | *kambalala* | v. i. | be at fault; to over-shoot | **KaB + OI, V.DER., aLA** | II, 299 |
| **55** | ‖*kándikíla* | v. tr. | to prohibit | — | Y [at *kadila*, p. II, 352] |
| **56** | *kani* | adv. | not yet; not; or | **KaN + O, VARIA** | II, 385 |
| **57** | ‖*kati-kati* | adv. | in the middle | **KaT + OII, Varia** [as *kati kati*] | II, 373 |
| **58** | *kekumuna* | v. tr. | be thirsty | **KeK + OII, V.DER., uMA** [as 'to clear one's throat'] | II, 72 |
| **59** | ‖*kenga* | v. i. | to stop doing, to renounce | **KeG + OI, VERBE** [as *keenga*] | II, 330 |
| **60** | *kétalála* | v. i. | to hold on; to insist | **KeT + OII, V.DER., aLA** | II, 376 |
| **61** | ‖*kia, kiya* | v. i. | to clear up | **Ka + Y, VERBE** [as *kya*] | II, 61 |
| **62** | *kiatumuna* | v. tr. | to place a crowd in rows | — | — |
| **63** | ‖*kibota* | n. cl. 7 | club, bludgeon | — | — |
| **64** | *kidíla* | n. cl. 7 | stock of goods | **DiL + O, SUBST., bi** | II, 99 |
| **65** | ‖*kifu* | n. cl. 7 | quality, character; vice, error | **Fu + O, SUBST., bi** | II, 47 |
| **66** | *kigana* | v. refl. | to sacrifice oneself | — | — |
| **67** | ‖*kikálulu* | n. cl. 7 | residence; character | **KaD & KaL + OII, V.DER., uLA** | II, 352 |
| **68** | *kikongi* | n. cl. 7 | small duck | **KoG + OI, SUBST., bi** | II, 332 |

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| **69** | ‖*kikwa* | n. cl. 7 | potato; big tuber | **Ka + W, SUBST., bi** | II, 61 |
| **70** | *kileso ki muini* | n. cl. 7 | dazzling ray of light | — | — |
| **71** | ‖*kimbefo* | n. cl. 7 | illness | **BeF + OII, SUBST., bi** [as *kimbeefo*] | II, 152 |
| **72** | *kimbundu* | adv. | as a whole | **BuD + OI, SUBST., bi** [as *(ki)buundu*] | II, 191 |
| **73** | ‖*kimosi* | n. cl. 7 | unity | **MoZ & MoS + OI, VARIA** | II, 241 |
| **74** | *kimpólokósu, kimpolongoso* | n. cl. 7 | cavity | **PoL + OII, V.DER., NGA** | II, 208 |
| **75** | ‖*kindíku* | n. cl. 7 | friendship | **DiK + OII, SUBST., bi** | II, 456 |
| **76** | *kingándi* | n. cl. 7 | whatchamacallit | **GaD + OI, VARIA** | II, 335 |
| **77** | ‖*kinkála* | n. cl. 7 | kick | **KaD & KaL + OII, SUBST., bi** | II, 350 |
| **78** | *kinkutula* | adj. | that opens by itself | — | — [but verb is in, p. II, 382] |
| **79** | ‖*kintete* | n. cl. 7; adv. | priority; first | — | Y [as *ntete*] |
| **80** | *kintwema* | n. cl. 7 | breathlessness | — | — |
| **81** | ‖*kiôlólo* | n. cl. 7 | cry; applause | **KoD & KoL + YII, V.DER., uLA** [as *kyololo*] | II, 361 |
| **82** | *kisania* | n. cl. 7 | small tree with beautiful white flowers and good wood | **SaN + O, SUBST., bi** | II, 594 |
| **83** | ‖*kisína* | n. cl. 7 | origin | **SiN + O, SUBST., bi** | II, 595 |
| **84** | *kiswamu* | n. cl. 7 | hiding-place | **SaM + W, V.DER., uNA** [as *kiswaamunu*] | II, 538 |
| **85** | ‖*kiteso* | n. cl. 7 | measure, model | **TeZ & TeS + OII, SUBST., bi** [as *kiteeso*] | II, 495 |
| **86** | *kítumúka* | v. m. | to undergo a radical change | **KiT + OII, V.DER., uMA** | II, 378 |
| **87** | ‖*kivúmu* | n. cl. 7 | stomach | **VuM + O, SUBST., bi** | II, 249 |
| **88** | *kiyaka* | n. cl. 15 | assumption | — | — |
| **89** | ‖*kizanu, kizalu* | n. cl. 7 | insubordination | — | — [but verb is in, p. II, 593] |
| **90** | *kobe* | n. cl. 5 | strong man | — | — |
| **91** | ‖*kodila* | v. rel. | to pull for; be strong at | **KoD & KoL + OII, V.DER., iLA** | II, 366 |

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| **92** | *kómakána* | v. i. | be additionally added | — | — |
| **93** | ‖*kondisa* | v. tr. | to make chase; to subtract | **KoD & KoL + OI, V.DER., iSA** [as *-koondisa*] | II, 363 |
| **94** | *konko* | n. cl. 7 | angle | **KoK + OI, SUBST., bi** [as *ikoonko*] | II, 75 |
| **95** | ‖*ku, kuku, kuna* | adv.; dem.; prep. | here/there; this/that; by, for, towards | **Ku + O, VARIA; KuK + OII, VARIA** | II, 65; II, 80 |
| **96** | *kúbakána* | v. poss. | to be able to err | **KuB + OII, V.DER., aKA** | II, 310 |
| **97** | ‖*kúfama* | v. m. | be short | **KuF + OII, V.DER., aMA** | II, 323 |
| **98** | *kukusu* | adv. | *kituka* ~ = be full of mud | — | — |
| **99** | ‖*kúlumúka* | v. m. | to go down | **KuD & KuL + OII, V.DER., uMA** | II, 370 |
| **100** | *kúmbalála* | v. i. | to be abundant | **KuB + OI, V.DER., aLA** | II, 309 |
| **101** | ‖*kundá* | adv. | far, high, deep | **KuD & KuL + OI, SUBST., mi** [as n. *nnkuunda*] | II, 367 |
| **102** | *kúnkúfi* | adv. | very/too close, too short | — | — |
| **103** | ‖*kútuka* | v. m. | to undo | **KuT + OII, V.DER., uKA** | II, 381 |
| **104** | *kwámína* | v. rel. | to persevere in | **KaM + W, V.DER., iNA** | II, 315 |
| **105** | ‖*kwika* | v. tr. | to switch on, to arrange | **KiK + WII, VERBE** [as *kwiika*] | II, 73 |
| **106** | *labidika* | v. i. | to launch, to throw | **BaB & LaB + OII, V.DER., iLA** | II, 409 |
| **107** | ‖*lalánsa* | n. cl. 5 | orange (tree) | **LaL + OII, SUBST., ma** [as *mlaala*] | II, 89 |
| **108** | *lâmbidíka* | v. tr. | to lay on its side | **BaB & LaB + OI, V.DER., aLA** | II, 408 |
| **109** | ‖*lángidíla* | v. rel. | to watch, to keep an eye on | **DaG & LaG + OI, V.DER., iLA** | II, 442 |
| **110** | *laza* | n. cl. 5 | empty words | — | — |
| **111** | ‖*lela* | v. i. | be slippery | **LeL + OII, VERBE** | II, 95 |
| **112** | *lembanzau* | n. cl. 7 | wild pomegranate tree; fetish palm | — | — |
| **113** | ‖*lenga* | v. i. | to walk, be on the way | **DeG & LeG + OI, VERBE** | II, 444 |

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| **114** | *lensi* | n. cl. 5 | bitter taste | **DeZ & DeS & LeZ & LeS + OI, SUBST., ma** | II, 491 |
| **115** | ‖*lolula* | v. tr. | to forgive | — | — [but *loluka* 'be pardoned' is in, p. II, 101] |
| **116** | *lóngakana* | v. i. | to be prone to instruction | — | — [but *longuka* 'be instructed' is in, p. II, 449] |
| **117** | ‖*lotó* | n. cl. 11 | spoon | **To + O, SUBST., tu** | II, 109 |
| **118** | *lubasa lu nima* | n. cl. 11 | backbone | — | Y [pp. II, 139; II, 432; II, 615] |
| **119** | ‖*lufwá* | n. cl. 11 | death | **Fa + W, SUBST., tu** | II, 45 |
| **120** | *lugambuku* | n. cl. 11 | space, distance; retreat | — | — [but verb *-gaambuku* is in, p. II, 293] |
| **121** | ‖*lukáya* | n. cl. 11 | leaf | **KaY + O, SUBST., tu** | II, 630 |
| **122** | *lukúba* | n. cl. 11 | pillow | **KuB + OII, SUBST., tu** | II, 310 |
| **123** | ‖*lumba* | v. tr.; v. i. | to drop violently; to move forward | **DuB & LuB + OI, VERBE** | II, 416 |
| **124** | *lumoko* | n. cl. 11 | chatter, gossip | **MoK + OII, SUBST., bi & ma** [as *moko* & *mamoko*] | II, 232 |
| **125** | ‖*lunga* | v. tr.; v. i. | to keep; be correct, be perfect | **DuG & LuG + OI, VERBE** | II, 450 |
| **126** | *lunsamba* | n. cl. 11 | edible mushroom | **SaB + OI, SUBST., bu** [as *bunsambi*] | II, 526 |
| **127** | ‖*lusendo* | n. cl. 11 | thorn | **SeD & SeL + OI, SUBST., tu** [as *luseende*] | II, 584 |
| **128** | *lutangu* | n. cl. 11 | reading, enumeration | **TaG + OI, SUBST., tu** | II, 462 |
| **129** | ‖*luziku* | n. cl. 11 | funeral | **ZiK + OII, SUBST., tu** | II, 551 |
| **130** | *lwákila* | v. rel. | to arrive at | — | — [but base verb *-lwaaka* 'to arrive' is in, p. II, 451] |
| **131** | ‖*mádia* | n. cl. 15 | food | **Da + Y, SUBST., bi** [as *kindya*, *kidya*] | II, 82 |
| **132** | *mafubu* | n. cl. 6 | marrow of palm leaves | **FuB + OII, SUBST., ma** | II, 247 |

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| **133** | ‖*makábu* | n. cl. 6 | present, gift | **KaB + WII, SUBST., ma** [as *makwaabu*] | II, 297 |
| **134** | *makésa* | n. cl. 6 | soldiers, army | **KeS + OII, SUBST., ma** [as *kesa*] | II, 401 |
| **135** | ‖*makutu* | n. cl. 6 | ears | **KuT + OII, SUBST., (ku)** | II, 381 |
| **136** | *maléla* | n. cl. 6 | small pagnes (front and back) | **LeL + OII, SUBST., ma** [as *maleela*] | II, 95 |
| **137** | ‖*mampa* | n. cl. 6 | bread | **Pa + O, SUBST., ma** [as *dimpa*] | II, 26 |
| **138** | *manganana* | v. i. | to hold one's chest in front | **MaG + OI, V.DER., aNA** | II, 228 |
| **139** | ‖*manta, mata* | v. | to climb | **MaT + OII, VERBE** | II, 235 |
| **140** | *masekwasa* | n. cl. 6 | sparrows | **ZoK + OII, V.DER., aSA** [as *mazokaasi, masekwasi*] | II, 553 |
| **141** | ‖*maté* | n. cl. 6 | saliva, mucus | **Te + O, SUBST., ma** [as *te*] | II, 108 |
| **142** | *mavwangi* | n. cl. 6 | bushes in a wood | **VaG + WI, SUBST., ma, i** | II, 253 |
| **143** | ‖*mazóno* | n. cl. 6 | yesterday, an earlier day | **ZoN + O, SUBST., ma** [as *zono, mazoono*] | II, 594 |
| **144** | *mbamu* | n. cl. 9 | abuser of power, exploiter | **BaM + O, SUBST., zi** [as *mbaamu,* and meaning shift] | II, 148 |
| **145** | ‖*mbasi, mbazi* | n. cl. 7 | tomorrow, a future day | **BaZ & BaS + OII, VARIA** | II, 218 |
| **146** | *mbemba-mbemba* | n. cl. 9 | butterflies | **BeB + OI, SUBST., tu** [as *lumbemba mbemba*] | II, 13 |
| **147** | ‖*mbeni* | n. cl. 9 | enemy | **BeN + O, SUBST., zi** [as *mbeeni*] | II, 214 |
| **148** | *mbílama* | n. cl. 9 | abundance, multi-plication | **BiL + OII, V.DER., aMA** [as perfect verb *-bilamene*] | II, 188 |
| **149** | ‖*mboko* | n. cl. 9 | bought peace | **BoK + OII, SUBST., zi, o** | II, 167 |
| **150** | *mbota* | n. cl. 9 | hard-wood tree | **BoT + OII, SUBST., zi** | II, 201 |
| **151** | ‖*mbulu-mbulu* | n. cl. 9 | small black fly; black soldier | **BuL + SUBST., zi** | II, 194 |
| **152** | *mbundu* | n. cl. 3 | short grass; big crowd | **BuD + OI, SUBST., ma, IIu** [as *buundu*] | II, 191 |
| **153** | ‖*mbweta* | n. cl. 9 | ball, sphere | **BeT + WII, SUBST., zi** [as *mbweeta*] | II, 197 |

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| **154** | *mengi* | adj. cl. 6 | a lot | — | — |
| **155** | ‖*mfiku* | n. cl. 9 | age of wine; power of food; low price | **FiK + OII, SUBST., mi & zi** [as *mmfiku* & *mfiku*] | II, 261-2 |
| **156** | *mfuki* | n. cl. 3 | small civet; pain radiance | **FuK + OII, SUBST., mi & zi** | II, 263 |
| **157** | ‖*mfundu* | n. cl. 3; n. cl. 9 | lawsuit; secret | **FuD & FuL + OI, SUBST., mi** [as *mmfuundu*] | II, 275 |
| **158** | *mfwa* | n. cl. 9 | death | **Fa + W, SUBST., zi** | II, 45 |
| **159** | ‖*miáya* | n. cl. 4 | yawning | **MaY + WII, SUBST., mi** [as *mmwaayi*] | II, 627 |
| **160** | *minuta* | n. cl. 3 | minute | — | — |
| **161** | ‖*mongo* | n. cl. 3 | mountain | **MoG + OI, SUBST., mi** [as *moongo*] | II, 230 |
| **162** | *mpambu* | n. cl. 9 | bifurcation | **PaB + OI, SUBST., u** [as *mpaambu*] | II, 145 |
| **163** | ‖*mpemba* | n. cl. 9 | white clay (used to whitewash) | **PeB + OI, SUBST., zi** [as *mpeemba*] | II, 146 |
| **164** | *mpímbidi* | n. cl. 9 | flower of the banana tree | **PiB + OI, SUBST., zi** | II, 146 |
| **165** | ‖*mpuku* | n. cl. 9 | rat | **PuK + OII, SUBST., zi, u** | II, 177 |
| **166** | ‖*mputulukesi* | n. cl. 1 | Portuguese | **PuT + OII, SUBST., zi** | II, 214 |
| **167** | ‖*muánga* | n. cl. 3 | sting, venom | **MaG + WI, SUBST., mi** [as *mmwaanga*] | II, 227 |
| **168** | *muila* | n. cl. 3 | estuary | **MiD & MiL + OII, V.DER., iLA** [as *mwiidila*, *mwiila*] | II, 234 |
| **169** | ‖*mumpani* | n. cl. 3 | pagan, heathen | **PaN + O, SUBST., mi** | II, 215 |
| **170** | *mungwalanga* | n. cl. 3 | any tall tree | — | — |
| **171** | ‖*muéso* | n. cl. 3 | whistling | — | — [as *mu–mpyooso* on p. II, 225] |
| **172** | *mvubi, mvuya* | n. cl. 3 | excellent rattan to weave baskets | **VuY + SUBST., zi** | II, 628 |
| **173** | ‖*mvutu* | n. cl. 9 | return, answer | **VuT + OII, SUBST., zi** | II, 272 |
| **174** | *mvwototo* | n. cl. 9 | plain (food) | — | — |
| **175** | ‖*nánama* | v. m. | be tight, tall and thin | **NaN + O, V.DER., aMA** | II, 123 |
| **176** | *nangimisa* | v. caus. | to bother, to offend, to annoy | **NaG + OI, V.DER., uMA** | II, 502 |

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| **177** | ‖*ndala* | n. cl. 9 | palm leaf; sleep; alarm | **DaL + O, SUBST., zi** | II, 88 |
| **178** | *ndédila* | n. cl. 9 | strip of cloth/paper | **—** | **—** [other word: *nzyaadi* on p. II, 572] |
| **179** | ‖*ndíkila* | n. cl. 9 | action to feed with; poison | **DiK + OII, V.DER., iLA** | II, 457 |
| **180** | *ndoka* | n. cl. 9 | rain | **DoK & LoK + OII, SUBST., zi** | II, 458 |
| **181** | ‖*ndûka* | n. cl. 9 | caution, care; stink | **DuK & LuK + OII, SUBST., zi** [as *nduuka*] | II, 460 |
| **182** | *ndwanisa* | n. cl. 9 | attack | **—** | **—** |
| **183** | ‖*ngandu* | n. cl. 9 | crocodile | **GaD + OI, SUBST., zi** [as *ngaandu*] | II, 335 |
| **184** | *ngau, ngawa* | n. cl. 9 | palm tree bird | **au (monosyllabic)** | II, 644 |
| **185** | ‖*ngo* | n. cl. 9 | leopard | **Go + O, SUBST., zi** | II, 52 |
| **186** | *ngonda* | n. cl. 9; adj. | murder; bloody | **—** | **—** [but *-goonda* 'to kill' is in, p. II, 338] |
| **187** | ‖*nguka* | n. cl. 3 | caterpillar | **GuK + OII, SUBST., mi** [as *nnguka*] | II, 325 |
| **188** | *ngunsa* | n. cl. 1 | prophet | **—** | **—** |
| **189** | ‖*niakuna* | v. tr. | to chew | **N-k + YII** | I, 55 |
| **190** | *niémita* | v. tr. | to pinch | **NeM + Y, V.DER., iTA** [as *nyeemita*] | II, 498 |
| **191** | ‖*nioka* | n. cl. 9 | snake | **NoK + YII, SUBST., zi** [as *nyoka*] | II, 512 |
| **192** | *nkâdidi* | < v. (pret. < *kala*) | I denied; I don't want | **KaD & KaL + OII, VERBE** | II, 349 |
| **193** | ‖*nkama* | n. cl. 9 | hundred; act of dyking up; husband/spouse; dyke | **KaM + O, SUBST., zi & bi & mi** | II, 315 |
| **194** | *nkanga* | n. cl. 9 | hand of bananas; act of binding; quail | **KaG + OI, SUBST., zi** [as *nkaanga*] | II, 329 |
| **195** | ‖*nkási* | n. cl. 9 | fraction of a number | **KaZ & KaS + OII, SUBST., mi** [as *nnkasi*] | II, 398 |
| **196** | *nkefo, nkefua* | n. cl. 9 | spicy (pepper) | **KeF + OII, SUBST., zi** | II, 322 |
| **197** | ‖*nkeni(a)* | n. cl. 9 | corn | **KeN + O, SUBST., zi** | II, 388 |

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| **198** | *nkila* | n. cl. 3 | tail | **KiD & KiL + OII, SUBST., mi** [as *nnkila*] | II, 361 |
| **199** | ‖*nkókila* | n. cl. 9 | evening; cock's singing; act of attracting with a hook | **KoK + OII, V.DER., iLA** [as *nkookila*] | II, 77 |
| **200** | *nkondi* | n. cl. 1 & 9; n. cl. 9 | hunter; fetish | **KoD & KoL + OI, SUBST., zi** [as *nkoondi*] | II, 363 |
| **201** | ‖*nkufi* | n. cl. 9 | salutation | **KuF + OII, SUBST., ma** [as *makufi, kufi*] | II, 322 |
| **202** | *nkumba* | n. cl. 3 | navel | **KuB + OI, SUBST., mi** [as *nnkumba*] | II, 308 |
| **203** | ‖*nkusu* | n. cl. 9 | parrot | **KuS + OII, SUBST., zi** | II, 405 |
| **204** | *nkwamu* | n. cl. 9; adj. | duration; continuous | **KaM + W, SUBST., tu** [as *lukwaamu*] | II, 315 |
| **205** | ‖*nlele* | n. cl. 3 | cloth, pagne made out of cloth | **LeL + OII, SUBST., mi** [as *nnleele*] | II, 95 |
| **206** | *nluku* | n. cl. 3 | young breasts | **DuK & LuK + OII, SUBST., ?** [as *nnluku*] | II, 460 |
| **207** | ‖*nsa* | n. cl. 9 | greyish antelope | **Sa + O, SUBST., zi** | II, 135 |
| **208** | *nsaku* | n. cl. 9 | old thing | — | — |
| **209** | ‖*nsampatu, nsampítu, nsamputu* | n. cl. 9 | shoe | — | Y [and *nsabaatu* is also in, p. II, 529] |
| **210** | *nsau* | n. cl. 9 | pilot, ferryman | **Sau + mi** [as *nnsau*] | II, 137 |
| **211** | ‖*nsi* | n. cl. 9 | floor, region, country | **Si + O, SUBST., zi** | II, 136 |
| **212** | *nsila mvula* | n. cl. 9 | heavy rain | — | — |
| **213** | ‖*nsoki* | n. cl. 3; n. cl. 9 | mistake; ramrod; long type of grass | **SoK + OII, SUBST., mi & tu** [as *nnsoki* & *lusoki*] | II, 569 |
| **214** | *nsóngisa* | n. cl. 9 | act of redressing | — | — [but base verb *soonga* 'to be straight' is in, p. II, 559] |
| **215** | ‖*nsuka* | n. cl. 9 | end | **SuK + OII, SUBST., zi** | II, 571 |
| **216** | *nsungu* | n. cl. 9 | worry | — | — [but base verb *suunga* |

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| | | | | | 'to worry about' is in, p. II, 560] |
| **217** | ‖*nswalu* | n. cl. 3 | speed | **SaL & SaD + OII, SUBST., mi** [as *nnswaala*] | II, 581 |
| **218** | *ntamba* | n. cl. 9 | offer | — | — [but verb is in, p. II, 419] |
| **219** | ‖*nteba* | n. cl. 9 | mud | **TeB + OII, SUBST., zi** | II, 425 |
| **220** | *nteti-mbisi* | n. cl. 1 | butcher | — | — |
| **221** | ‖*ntomboka, ntombuka* | n. cl. 9 | ascension | — | Y [p. II, 314; and verb is in, p. II, 426] |
| **222** | *ntoya* | n. cl. 9 | bird of the banana tree | **ToY + O, SUBST., zi** | II, 632 |
| **223** | ‖*ntûtu* | n. cl. 3 | bottle; opening | **TuT + OII, SUBST., mi** [as *nntuutu*] | II, 117 |
| **224** | *nungumuka, nungumuna* | v. tr. | to push hard | **NuG + OI, V.DER., uMA** | II, 508 |
| **225** | ‖*nyalu* | n. cl. 9 | row, layer | **YaD & YaL + II, SUBST., zi** | II, 617 |
| **226** | *nzalala* | n. cl. 9 | haste | **ZaD & ZaL + OII, V.DER., aLA** [as *zalala*] | II, 574 |
| **227** | ‖*nzaza* | n. cl. 9 | vessel, ship | **ZaZ + OI, SUBST., zi** [as *nzaanza*] | II, 127 |
| **228** | *nzíkisa* | n. cl. 9 | check, proof | — | — [but verb is in, p. II, 552] |
| **229** | ‖*nzo* | n. cl. 9 | house | **Zo + O, SUBST., zi** | II, 126 |
| **230** | *nzo zi matubu tatu* | n. cl. 10 | two pagnes sewn together | **Zo + O, SUBST., zi** [as *nzo tubu*] **& TuB + OII, SUBST., ?** [as *nzo tubu*] | II, 126 & II, 429 |
| **231** | ‖*nzuzi* | n. cl. 9 | "tiger cat" | **ZuZ + OII, SUBST., zi** | II, 132 |
| **232** | *pala* | v. i. | to make jealous | **PaL + OII, VERBE** | II, 204 |
| **233** | ‖*pii, pidi* | n. cl. 5 | silence | **Pi + O ; P—d, OII** | I, 5 ; I, 34 |
| **234** | *pupula* | v. i. | to stay up | — | — |
| **235** | ‖*sabi* | n. cl. 5 | cork | **SaB + OII, SUBST., zi** [as *nsabi*] | II, 528 |
| **236** | *sakula* | v. tr. | to weed | **SaK + OII, V.DER., uLA** | II, 564 |

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| **237** | ‖*sampula* | v. tr. | to carry over | **SaP + OI, V.DER., uLA** [as *saampula*] | II, 533 |
| **238** | *sangalakasa* | v. i. | to mix | — | — [but base verb *-saanga* 'to mix' is in, p. II, 554] |
| **239** | ‖*sasuka* | v. m. | to hurry | **SaS + OII, V.DER., u--** | II, 140 |
| **240** | *seke, seki* | n. cl. 5 | small bush sparrow | **SeK + OII, SUBST., ma** | II, 466 |
| **241** | ‖*sénguka* | v. m. | be put face-up, be discovered | **SeG + OI, V.DER., uKA** [as *seenguka*] | II, 557 |
| **242** | *siatunina* | v. rel. | to inject in | — | — [but verb *-syatula* 'to spurt out' is in, p. II, 590] |
| **243** | ‖*simba* | v. tr. | to hold | **SiB + OI, VERBE** | II, 530 |
| **244** | *síngamísa* | v. caus. | to make sure st. is straight | — | — [but verb *-siingama* 'to be straight' is in, p. II, 558] |
| **245** | ‖*sókama* | v. m. | be rare | — | — |
| **246** | *sómbuka* | v. m. | to jump | **SoB + OI, V.DER., uKA** [as *soombuka*] | II, 531 |
| **247** | ‖*sótuka* | v. m. | to get lost | **SoT + OII, V.DER., uKA** | II, 592 |
| **248** | *sukulu* | n. cl. 5 | corner behind the door | — | — |
| **249** | ‖*sumuka* | v. m. | to transgress, to commit a sin | **SuM + O, V.DER., uKA** | II, 540 |
| **250** | *sunsimika* | v. tr. | to swallow whole | — | — |
| **251** | ‖*swétama* | v. m. | be thin, be narrow | **SeT, WII, V.DER., aMA** [as *sweetama*] | II, 591 |
| **252** | *taka* | n. cl. 7 | fork (used to hold thieves) | **TaK + OII, SUBST., ma** | II, 467 |
| **253** | ‖*táluka* | v. m. | be spread | **TaL + OII, V.DER., uKA** | II, 481 |
| **254** | *tanda-tanda* | n. cl. 7 | extreme thinness, wasting away | **TaD & TaL + OI, SUBST., mu** | II, 478 |
| **255** | ‖*tâta* | n. cl. 1 | father; chief | **TaT + OII, SUBST., ba** [as *taata*] | II, 111 |
| **256** | *tebisa* | v. caus. | to fill to the brim | — | Y [p. II, 574] |
| **257** | ‖*teluka* | v. m. | be removed from the fire | **TeL + OII, V.DER., uKA** | II, 483 |

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| **258** | *tengama* | v. m. | to accumulate (in a pool of water) | **TeG + OI, V.DER., aMA** | II, 463 |
| **259** | ‖*tiaka* | v. tr. | to spill, to pour | **TaK + YII, VERBE** [as *tyaaka*] | II, 467 |
| **260** | *tikita* | n. cl. 5 | knife | **TiK + OII, V.DER., iTA** | II, 471 |
| **261** | ‖*titila* | v. rel. | to shake because of, to be afraid of | — | — [but base verb *-tiita* 'to tremble' is in, p. II, 115] |
| **262** | *tokolo* | n. cl. 5 | jaw | **ToK + OII, V.DER., aLA** [as *matookolo*] | II, 472 |
| **263** | ‖*tona* | v. i. | to understand | — | Y [p. II, 490] |
| **264** | *tótakána* | v. i. | to converge | — | — |
| **265** | ‖*tubuka* | v. m. | be pierced | **TuB + OII, V.DER., uKA** | II, 429 |
| **266** | *túkula, dukula* | v. i. | to move, to shake | **TuK + OII, V.DER., uLA** | II, 474 |
| **267** | ‖*tumbuka* | v. m. | to manifest; to stop dripping | **TuB + OI, V.DER., uKA** [as *tuumbuka*] | II, 428 |
| **268** | *tungalakala* | v. i. | to interlace, to intertwine | — | — [but verb *tungalaka* is in, p. II, 466] |
| **269** | ‖*tuti* | n. cl. 5 | cloud | **TuT + OII, SUBST., ma** | II, 117 |
| **270** | *twenga* | n. cl. 5 | young shoot | **TeG + WI, SUBST., bi** [as *tweengi*] | II, 463 |
| **271** | ‖*uele* | < v. | he/she is gone | — | Y |
| **272** | *vika* | v. aux. | (marks an imminent action) | **ViK + OII, VERBE** | II, 256 |
| **273** | ‖*vítika* | v. tr. | to lower, to bow | **ViT + OII, V.DER., iKA** | II, 272 |
| **274** | *vúmana* | v. rec. | to respect one another | — | — [but noun *luvuma* 'respect' is in, p. II, 249] |
| **275** | ‖*vunga* | n. cl. 5 | any cover | **VuG + OI, SUBST., ma** [as *vuunga*] | II, 255 |
| **276** | *vúzana* | v. i. | ~ *mbundu* = to feel nauseous | **VuZ & VuS + OI, V.DER., aNA** [as *vuunzana*] | II, 290 |
| **277** | ‖*vwansa, vwanza* | v. i. | to damage, to obliterate, to dirty | **VaZ & VaS, WI, VERBE** [as *vwaanza*] | II, 288 |

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| **278** | *wa* | v. tr. | to hear; to understand; (completed action) | **Wa, VERBE** | II, 634 |
| **279** | ‖*wena* | v. i. | to stop, to leave | **WeN + VERBE** [as *weena*] | II, 640 |
| **280** | *yabakana* | v. rec. | to talk a lot amongst one another | — | — |
| **281** | ‖*yálumuna* | v. tr. | to unroll, to spread | **YaD & YaL + II, V.DER., uMA** | II, 618 |
| **282** | *yanga* | v. tr. | to heat | **YaG + I, VERBE** | II, 609 |
| **283** | ‖*yaya* | n. cl. 1 | grandmother | **YaY + OII, SUBST., ba** | II, 601 |
| **284** | *yekikila* | v. tr. | to stand/lean against st. | **YeK + II, V.DER., iKA** [as 'to stop; to keep'] | II, 614 |
| **285** | ‖*yemba* | v. tr. | to steal | **YeB + I, VERBE** [as *yeemba* 'to leave'] | II, 605 |
| **286** | *yensula* | v. tr. | to open wide | — | — |
| **287** | ‖*yikama* | v. m. | be added | **YiK + II, V.DER., aMA** | II, 615 |
| **288** | *yindumuna* | v. rev. | to make forget | — | — |
| **289** | ‖*yobila* | v. i. | to take a bath | **YoB + II, V.DER., iLA** | II, 606 |
| **290** | *yukula* | v. i. | to make light with a torch | — | — [but a homonym is in, p. II, 616] |
| **291** | ‖*yúngana* | v. i. | to wander | **YuG + I, V.DER., aNA** | II, 613 |
| **292** | *zakila, zakimina* | v. rel. | to tremble | **ZaK + OII, V.DER., aMA** | II, 549 |
| **293** | ‖*zaula* | v. tr. | to draw, to pump | **au (polysyllabic) + Z-L** | II, 645 |
| **294** | *zeleniana, zelengana, zelangana* | v. i. | be exhausted, be weak | **ZeD & ZeL + OII, V.DER., aNGA** [as *-zelangana*] | II, 575 |
| **295** | ‖*zíama* | v. m. | be buried | **ZaM + Y, VERBE** [as *zyaama*] | II, 535 |
| **296** | *ziku-ziku* | adv. | just | **ZiK + OII, VARIA** [as *ziku ziku*] | II, 551 |
| **297** | ‖*zingisa* | v. caus. | to make last, to make live | — | — [but base verb is in, p. II, 545] |

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| **298** | *ziúngalakána* | v. i. | to whirl around, to surround | **ZuG + YI, V.DER., aLA** [as *–zyunga-lakana*] | II, 547 |
| **299** | ‖*zole* | num. | two | — | Y |
| **300** | *zundu* | n. cl. 5 | giant frog | **ZuD & ZuL + OI, SUBST., ma** [as *zuundu*] | II, 577 |
| **301** | ‖*babila* | v. tr. | to flap, to flutter; to dance | **BaB + OII, V.DER., iLA** | II, 10 |
| **302** | *bondengila* | v. i. | to resonate far away | — | — |
| **303** | ‖*dombo* | n. cl. 5 | a single bar of brass (which serves as money) | — | — |
| **304** | *gakula* | v. tr. | to deceive | — | — [but a homonym is in, p. II, 323] |
| **305** | ‖*kibidi* | n. cl. 7 | place where one rets (soaks) manioc | — | — |
| **306** | *kintuku* | n. cl. 7 | charm, fetish | — | — |
| **307** | ‖*sunguta* | v. i. | to limp | **SuG + OI, V.DER., uTA** [as *suunguta*] | II, 561 |
| **308** | *vonga, fonga* | v. i. | to sit oneself, be seated | **VoG + OI, VERBE** | II, 254 |

— Abbreviations in the POS (part of speech) column, using Butaye's terminology: < = derived from ...; *adj*. = adjective; *adv*. = adverb; *affirm*. = affirmative; *aux*. = auxiliary; *caus*. = causative (-is-); *cl*. = class; *conj*. = conjunction; *dem*. = demonstrative; *dim*. = diminutive; *i*. = intransitive; *inv*. = invariable; *m*. = -uk-, -am-; *n*. = noun; *num*. = numeral; *part*. = particle; *poss*. = possibility (-akan-); *pref*. = prefix; *prep*. = preposition; *pret*. = preterite; *pron*. = pronoun; *quest*. = question; *rec*. = reciprocal (-an-); *refl*. = reflexive (ki-, i-); *rel*. = relative (-il-, -in-); *rev*. = reversive (-un-); *tr*. = transitive; *v*. = verb.

— The noun class numbers in the POS column reflect those of Butaye (and include errors), but were transposed to their modern equivalents.

— In the last column Y = yes, meaning that while the word may not be an item, it is still used in Polis.