LEXICOGRAPHY, LINGUISTICS, AND
MINORITY LANGUAGES

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Introduction

THERE is a tendency to assume that anything and everything to do with language comes within the purview of linguistics, which is often characterized as the scientific study of language in all its aspects. For the professional linguist today, this perhaps needs to be amended, as there seem to be many aspects of language, or its scientific study, which are of little concern to linguistics. This could be interpreted in two ways: one, as a signal that some aspects of language are not of sufficient importance to warrant the attention of the trained linguist; or two, as a recognition of the limitations of the discipline, that there exist important aspects of language which we don't yet have the tools to investigate properly. Compiling and editing dictionaries—lexicography—certainly has to do with language, but judging by the lack of attention devoted to this practice in linguistics programmes and textbooks, one might be forgiven for concluding that it is either relatively insignificant or a task of such monumental complexity that it is still beyond our grasp. For example, no definition or discussion of lexicography is found in standard introductory textbooks in linguistics, such as Hockett (1954), Robins (1971) or O'Grady *et al.* (1992), and only passing mention is made in Fromkin and Rodman (1988: 124), who define lexicography simply as 'the editing or making of a dictionary', the aim of which is to prescribe rather than describe the words of a language. (They add, however, that Samuel Johnson, in the preface to his dictionary, tells us that he was not able to construct, but only to 'register the language': thus this prescriptive atti-

tude, even if it does exist now among lexicographers, did not always.) Similarly, in works such as *Linguistics: The Cambridge Survey* (Newmeyer 1988), or Crystal's (1991) *Dictionary of Linguistics and Phonetics*, there is no entry for lexicography: in the latter, in fact, lexicography doesn't even warrant mention as an allied discipline of linguistics. In his *Cambridge Encyclopedia of Language* (1987), which is oriented towards the general public, Crystal does include some discussion of 'dictionaries', but this is largely just a synopsis of the history of dictionary-writing. He tells us, for example, that the earliest dictionaries were bi- or multilingual word lists aimed at the traveller or missionary, or dialectal or technical vocabularies. The absence of any serious discussion of lexicography in linguistics is also reflected in the fact that the presence of lexicography in linguistics programmes is negligible.

This suggests that there is a gulf between the concerns of the linguist and those of the lexicographer. It might help to convince the sceptic, as well as establish a foundation for the second part of this paper, to look at how each side—linguist and lexicographer—views language, especially the lexicon and its make-up. In exploring the nature of this gulf, my thinking closely follows that of Pawley (especially 1986, 1996). The second part of the paper looks at the importance of lexicography with respect to minority or endangered languages and the new capabilities offered to lexicography by computational technology; it is illustrated by my own work editing dictionaries of Mòkpè, a language spoken in south-west Cameroon, and Cambap, spoken in the Mambila region of the Nigeria–Cameroon borderland. I look first at how both the lexicographer and the mainstream linguist view the object of the lexicographer's task—'words', or more precisely, lexical items, or lexemes, and the lexicon.

Grammar and grammaticality have always been central to the study of language within linguistics; this may be obvious from the high importance placed on syntax in contemporary linguistics, while the lexicon has generally been accorded low status, being thought to contain those elements which cannot be predicted by the grammar.[1] While the importance of the lexicon varies somewhat depending on who one reads or which theory one prefers, this low status goes back at least to Bloomfield, if not further. For him, 'The lexicon is really an appendix of the grammar, a list of basic irregularities' (1933: 274). Within most versions of current mainstream (generative) linguistic theory, the lexicon is comprised of lexical items together with a specification of their behaviour within the grammar. Compound words, phrases, and the like are in some views handled by the syntax, that is, they are treated as sentences; in other approaches they are handled within the morphological component of the grammar, together with the results of inflectional and other productive processes.

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[1] The current increase in interest in the mental lexicon within mainstream linguistics does not change the essential view presented here.

In either case, whether treated by the syntactic or the morphological component, these are not housed within the lexicon. For example, we assume words such as *dictionary, novel* and *write* to be listed in the lexicon, but not *dictionary-writer* or *novel-writer,* which can be constructed through entirely regular processes in English. Similarly, *edit,* but not *edited, editing, editor, editorial,* and *editorialize.* Other information assumed to be contained in the (linguist's) lexicon includes semantic information (though the amount and types of detail vary from theory to theory); grammatical information, for example, a list of complements permitted by a particular lexical item; rules that a form undergoes, for example, pluralization; and some form of phonological/phonetic information. It is not usually assumed that 'pronunciations' are stored, but rather that there is an abstract representation and that pronunciations are generated by interpretive rules.

The mental lexicon, then, is assumed to be restricted with respect to the number of entries it contains, but relatively rich with respect to the information associated with each entry. The actual bounds on both aspects of the lexicon are not clear-cut, and are subject to considerable debate.

Lexicographers, on the other hand, are not concerned first and foremost with issues of grammaticality. The standard dictionary typically provides definitions, spellings, and information as to the part of speech and the pronunciation of its entries. It may also include etymological information, illustrative quotations, and dialectal information. What lexicographers are interested in when determining which lexical items should be included in a dictionary are, first of all, comprehensiveness, as well as issues such as whether an item is of standard use, and its frequency of use. We might expect certain lexical items to be excluded under the criterion of standard use: for example, we may find *novel-writer* excluded in favour of the more standard *novelist.* Frequency is a consideration in that rarely used words may be excluded if the size of the dictionary is to be limited, for example, for commercial reasons. Comprehensiveness is a concern in that ideally all words in the language will be included, whether or not they result from productive processes. Thus, in a dictionary aiming at comprehensiveness, we might reasonably expect to include all of the words cited above, though *edited* and *editing* might not necessarily be listed as headwords. The notion of comprehensiveness will, of course, be limited by the purpose of the dictionary: dictionaries of specific or limited scope will aim to be comprehensive within that scope.

The ideal lexicographer's dictionary, then, will be considerably larger than the ideal mental lexicon with respect to the number of entries contained, but will presumably not contain much of the grammatical information assumed to be housed in the mental lexicon. Put differently, all speakers know more about the lexical items in their mental dictionary than can be found in any written dictionary; but any written dictionary (potentially) contains more lexical items than any speaker's assumed mental dictionary.

These different views of the lexicon do not simply mirror the different needs of, or pressures on, linguists and lexicographers—for example, the scientific orientation of linguistics as opposed to the commercial aspect of lexicography—though these clearly play a defining role. Rather, they seem to reflect two different views of language. As Pawley (1996) argues (following Grace, e.g. 1987), these two views represent different approaches to the relation between language and culture. For the lexicographer, language encodes culture; for the linguist, language is primarily a code which expresses the relationship between form and meaning and contains the conventions used in expressing these meanings.

The difference is illustrated in terms of intertranslatability. Within linguistics, the view is generally held that anything that can be said in one language can also be said in any other language. A corollary of this (at least in a strong version of the hypothesis) is that languages are fully intertranslatable. If this is true, it means that a language can in principle be viewed as an autonomous system distinct from the culture of its speakers. This is essentially the view that we find in mainstream contemporary linguistics, with its insistence on the autonomy of linguistic knowledge, and that differences between languages are of minor importance (e.g. basically lexical) relative to their underlying commonality (i.e. Universal Grammar). The implications for understanding the lexicon should be clear—it becomes exactly what Bloomfield, quoted above, described it to be.

However, it is obvious that, even with a loose interpretation of the notion, languages are not always intertranslatable except through recourse to long-winded paraphrase. One need only consider the difficulties involved in explaining culturally specific phenomena to someone totally ignorant of the culture in question. In the view that language encodes culture, there is no one-to-one mapping between language and reality: on the contrary, there is much that is conventional, and part of linguistic (and cultural) competence is knowing what to say, and when and how to say it. The lexicographer's task in compiling the lexical items, phrases, idioms, and expressions used in a given language/culture is based essentially on the cultural encoder view. In other words, the gap between lexicography and linguistics can arguably be seen as a dichotomy of language as cultural encoder versus language as universal encoder.

Despite this gulf, there is perhaps one characteristic that both lexicographers and linguists share in their work, and that is a concern for standard varieties of language, or the standard variety of a language. This not to deny dialect dictionaries, jargon dictionaries, etc., on the one hand, and interest on the part of the linguist in language variation on the other. For lexicographers, in cases where no standard exists, the concern is at least implicitly, but often explicitly, to help create a standard and to relegate variants to non- (or sub-) standard status. For linguists, particularly those concerned with 'the idealized speaker/hearer', the tendency is to avoid questions of variation—not to mention the fact, of course, that linguists typi-

cally work with a written form of whatever language they are studying, and therefore are by default working with a standard variety.

Minority and Moribund Languages, Linguistics, and Lexicography

So where does this leave non-standard varieties or dialects and unwritten languages (i.e. the majority of the world's languages), especially those spoken by small and isolated groups of people? With regard to non-standard varieties of a language, we can, in a few cases, find examples where dictionaries have been written ('proper' dictionaries, i.e. in the sense of the standard works done for European languages), but in almost all of these instances we find that the non-standard variety is in a sense actually a standard in its own context. A dictionary of Quebec French, for example, is not one of standard, metropolitain French; rather, Quebec French (in fact one variety of Quebec French) is taken as standard in the Canadian context (more precisely, one of several varieties of French spoken in Quebec has become the Canadian standard). We have yet to see a dictionary of French as spoken, for example, on the Port-au-Port peninsula of Newfoundland or the Cheticamp area of Cape Breton. A similar story could be told with respect to regional varieties of other languages, including English.

The situation for languages which remain unwritten, as well as those spoken by small and isolated groups of people, is a subject of growing awareness and concern among both linguists and anthropologists. These constitute the world's linguistic heritage. Conservative estimates by concerned linguists suggest that of the approximately 6,000 languages in the world, only half will survive the next century (Hale *et al.* 1992). Less optimistic views suggest this figure may be reduced to 300. There is increasing recognition that this loss represents a loss of cultural and intellectual diversity, as well as linguistic diversity, and that linguistic and cultural diversity should be considered a form of biodiversity and valued as such. Yet when compared with concern for the biological world, relatively little attention is paid to questions of language contraction and death. Admittedly there is controversy among those concerned with questions of language endangerment as to what steps should be taken, particularly whether, and if so to what extent, linguists should intervene or even instigate attempts to reverse the process of language death. However, an important goal which all accept is to document wherever possible, and to as great an extent as possible, endangered languages before they become extinct. One of the primary tasks of linguistics is to produce a universal theory of language. This requires input from as broad a base of languages as possible—it is impossible to know what contribution unstudied languages might have made to the development of such a theory should they disappear. Similarly, to the extent that language encodes culture, the disappearance of a language represents a

loss to anthropology. Lexicography, then, assumes greater importance to both linguistics and anthropology than has perhaps been previously recognized.

The last few years have seen increasing development of the potential of lexicography, with the advent of more sophisticated and information technology and computer software. Dictionaries can now be prepared that are, in effect, searchable databases that are readily updatable, whose organization can be changed according to need, and which can generate sub-dictionaries of a specified size/scope (e.g. all words relating to a particular cultural domain or all nouns of a given semantic area).

Semantics and Lexicography

To take an example of the latter, semantics is, in part, concerned with how people 'relate words to each other within the framework of their language', i.e. to discover the semantic properties of individual words. While it is part of the core of linguistics, semantics can also be seen as a concern of psychology—whence the sub-discipline of cognitive semantics, and of anthropology and its sub-discipline cognitive anthropology. With only a bit of imagination, a lexical database can be used for purposes other than those for which it may originally have been designed. Systematic examination—say, extracting all the nouns of a particular semantic field—can reveal which areas are highly differentiated, thereby giving insight not only into the semantic and conceptual organization of the language, but also the structure of the grammar of the language and the structure of the speakers' culture and social organization. I quote Ellen Contini-Morava from her work on Swahili (1994):

> From a semantic point of view, the phenomenon of noun classification has been of interest to linguists and anthropologists because understanding the basis for grouping nouns together as members of a class hints at a system of cognitive or cultural classification underlying the system of linguistic classification. From a grammatical point of view, noun classes are interesting because they mediate between grammar and lexicon, and fall somewhere between inflection and derivation. Also, the analysis of grammatical agreement has played an important role in arguments for and against various models of syntactic theory.[2]

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[2] Noun classification in Swahili and throughout the Bantu languages refers to the system of prefixes used to mark singular and plural forms of words. Concord prefixes, which may or may not be identical to that borne by the noun, are found on modifying elements. Nouns taking a given prefix are assigned to the same morphological class. Frequently, however, it is the concord prefix that is considered the decisive determinant of class membership, since (by this criterion) there may be overlap found in classes as established by noun prefixes alone. Nouns of a class are also all assumed to take the same plural prefix: singular/plural

I turn now to illustrate, with reference to two unwritten minority languages of Cameroon, the importance of lexicographic/lexicological study to linguistics and anthropology.

Mòkpè

Mòkpè (also known as Bakweri) is a Bantu language spoken in south-west Cameroon. With approximately 32,000 speakers, it is not yet a language on the edge of extinction. It is, however, a relatively small language—clearly a minority language in the Cameroon context—and it is on the cusp of substantial change, its speakers being exposed to two colonial languages (English and French) as well as two local vehicular languages, Duala and Pidgin, and other local languages. It is unlikely to be among the 3,000 languages optimistically expected to be around this time next century, and certainly will not be around if this figure is reduced to 300.

The Mòkpè dictionary project (Connell 1997) is an attempt to bring both the lexicographic tradition of dictionary-writing and the theoretical concerns of the linguist to bear on documenting this language. Although based on limited materials, the traditional bilingual book version of the dictionary is aimed at addressing the concerns of the Bakweri themselves, as well as being of some service to the research linguist. An electronic database/dictionary is also being compiled. The added capabilities that technology affords this database allow for a version of the dictionary that is flexible in bringing more, not only to the Bakweri speaker, but also to the linguist and anthropologist.

This version incorporates additional materials, including sound recordings of most items included in the dictionary.[3] It is set up so that the different noun classes are flagged; independent marking of semantic fields is also incorporated. It can be searched equally well for phonological characteristics, e.g. distributions and combinations of vowels, consonants, and tones; other flags can be added to permit greater searching and cross-referencing capabilities. Mòkpè can be used here to illustrate briefly how such a dictionary can be used for research into the semantic structure of the lexicon.

Words from the 'human' class, that is, those that are tagged with the feature [+human] according to a componential analysis, were extracted from the dictionary, together with information as to their classification according to Mòkpè noun class criteria. These are shown in Table 1 above. As can be seen, all but one of those nouns considered by a standard componential analysis to be [+human] fall

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pairings are referred to as a gender. Membership of a gender, i.e. the fact of sharing the same singular and plural prefixes, is a further criterion used for noun classification.

[3] I record here a debt of gratitude to Shirley Ardener, who not only persuaded me to take on the Mòkpè project, but also managed to tape-record almost the entire dictionary during a 1997 field trip and kindly made the tapes available to me.

TABLE 1 Selected Mòkpè terms for [+human] objects[*]

Gloss	Mòkpè	Noun Class, Sg/Pl Prfx	Guthrie number
corpse	mwĭm̀bà	mò-/wà	1/2
deceiver	mɔ̀ɔ̀njɔ̀nèlǐ	mò-/wà	1/2
digger	mwĭma	mò-/wà	1/2
diviner	mwàngba a lĭàngà	mò-/wà	1/2
doctor (trad.)	ǹgàngà	ŋ-/ŋ	9/10
drinker	mònyɔèlǐ	mò-/wà	1/2
drunkard	mɔ̀sɔkèlǐ	mò-/wà	1/2
elder	mɔ̀m̀bakǐ	mò-/wà	1/2
eldest child	mùùlu	mò-/wà	1/2
european	mɔ̀kala	mò-/wà	1/2
fisherman	mòtò a mòsòm̀bo	mò-/wà	1/2
grassfielders	mòjeli	mò-/wà	1/2
gossiper	mòsàm̀bèlǐ	mò-/wà	1/2
guest	mwèni	mò-/wà	1/2
harlot	molana àkpàlà	mò-/wà	1/2
hunter	mɔ̀phaèlǐ	mò-/wà	1/2
husband	munyanà	mò-/wà	1/2
parent-in-law	mòkǐa	mò-/wà	1/2
in-law	mònyà	mò-/wà	1/2
interpreter	mùukǐsèlèlǐ	mò-/wà	1/2
judge	mòkaǐsèlǐ	mò-/wà	1/2
king	mòkànèlǐ; kingè	mò-/wà	1/2
madman	mwὲɛnyὲ	mò-/wà	1/2
man	munyanà	mò-/wà	1/2
mankind	mòtò	mò-/wà	1/2

[*] Low tones are marked ` , high tones are unmarked; the Guthrie numbers give the standard class assignments used among Bantuists.

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into the same Mòkpè noun class—Class 1/2. This suggests there is a valid semantic basis to the human class in Mòkpè and that the class has a cognitive basis. The one exception, 'traditional doctor', may reflect the fact that, given their assumed extra powers, such people are, in the Mòkpè world-view, extra-human.

In contrast to this, a sample of nouns that can be tagged with the feature [+body] (for parts of the body) according to a componential analysis were also ex-

TABLE 2 Selected Mòkpè terms for [+body], parts of the body

Gloss	Mòkpè	Noun Class, Sg/Pl Prfx	Noun Class, Sg/Pl
back	m̀busà	ŋ-/ŋ	9/10
backbone	mɔ̀ngɔ̀	mo-/mè-	3/4
beak	mwèsè	mo-/mè-	3/4
beard	ǹjelù	ŋ-/ŋ	9/10
belly	lùǹga, lùaǹga	lĭ-/mà	5/6
blood	màĭja	mà	6a
body	mwità	mo-/mè-	3/4
bone	èèse	e-/wè-	7/8
brains	wɔ̀ŋgɔ	wo̱-	14
branch	èkɔ̀kɔ	è-/wè-	7/8
breast	lĭwè̱	lĭ-/mà	5/6
breath	mùulù	mo-/mè-	3/4
buttocks	m̀bòǹdo	ŋ-/ŋ	9/10
calf	lùǹga la mwénde	lĭ-/mà	5/6
chest	ǹgèǹgè	ŋ-/ŋ	9/10
crop (of fowl)	èwàǹda	è-/wè-	7/8
ear	lĭtô	lĭ-/mà	5/6

tracted, without finding any close correlation with noun class (see Table 2). Rather, parts of the body fall into at least six different noun classes, each of which can also be shown to include a wide range of other nouns. Even if this list were to be cross-classified with [+human] by eliminating those nouns which do not conceivably pertain to humans (i.e. beak, branch, and crop), we are still left with six different noun classes represented. Clearly, then, there is no rigid semantic basis to these classes. It may also be concluded that the potential semantic class 'body part' does not exist in a structural sense in the Mòkpè mental lexicon, nor, on this evidence, does it have a cognitive basis.

The Effect of Language Decline/Death on the Lexicon

Language contraction clearly has effects on the structures of the language in question. Dressler (1988) identifies a number of phenomena which accompany language decline/death, some of which are manifested in the lexicon. The most obvious of these is the preponderance of borrowing: there may be extensive loans from a dominant language, but only sporadic loaning (at most) in the opposite direction. This phenomenon can be seen to reflect the social, economic, political, and psychological subordination of the contracting language/culture. Word-formation rules also cease to be productive, as a result of the language of technology, fash-

ion, or culture having switched to that of the dominant language. The cognitive function of language (at least for 'semi-speakers', to use Dorian's 1973 phrase) follows that of the dominant language: for example, calques, or loan translations based on forms found in the dominant language, become more typical than neologisms, or the building of new words from resources inherent in the language. Dying languages also appear to be characterized by considerable variation, largely through the relaxation of sociolinguistic norms and less frequent use.

Cambap

Mòkpè provides one example of a minority language. Cambap barely achieves even that status. It is now spoken more or less on a daily basis by some 30–35 people, though it is no longer the primary language of its speakers, who are scattered across five different villages, nor is it being transmitted to the young any more (Connell 1998, 1999). Work to document this language, including the compilation of a dictionary, is in progress. While it is too soon to reach clear conclusions as to what extent Cambap demonstrates the processes outlined by Dressler (1988), there is considerable overlap between its lexicon and that of Kwanja, now the dominant language of Cambap speakers. Moreover, examples can be found of most, if not all of Dressler's other processes.

Conclusion

In this article I have attempted to draw attention to the gap between linguistics and lexicography and, through illustration with minority and moribund languages, tried to suggest ways in which linguistics and allied disciplines such as anthropology can benefit from devoting greater attention to lexicography. This is not to suggest a one-way street: dictionaries as traditionally designed and written are far from perfect, far from being as informative and user-friendly as they might be. Pawley (1996) points out some typical faults, to which I here add a few.

There is, first, too much reliance on traditional alphabetic organization to the disregard of semantic or conceptual organization. Thanks to technological advances, good dictionaries can now readily incorporate cross-referencing, not only to reveal semantic categories, but also folk taxonomies, antonyms, synonyms, etc. Organization by grammatical category, as is sometimes done, is not necessarily helpful; for example, listing verbal nouns only under the verbal root as a headword leads to difficult searching. On the other hand, there is frequently too little grammatical information—the typical grammatical sketch found in the introduction or preface of a dictionary rarely contains syntactic information of the sort mentioned earlier (collocation restrictions, restrictions on complements and grammatical particles). It is even less usual to find this sort of information associated with individ-

ual entries. In the case of tone languages, tone-marking and information on tonal modification in grammatical contexts is commonly inadequate or totally absent. There is frequently inadequate indexing of entries in terms of discourse and social context, insufficient attention to relevant cultural knowledge, and incomplete description of cross-speaker variation with respect to both meaning and pronunciation. Illustrative sentences are also frequently not given, definitions are often no more than translation equivalents, and archaic words are frequently omitted for no good reason. In other words, the notion of comprehensiveness discussed earlier should take into account not only the number of entries in a dictionary, but the information associated with each entry. Among other criticisms, finally, is that definitions themselves are often inadequate, and pronunciation keys either deficient or absent.

Thus narrowing the gap between linguistics and lexicography appears to be a two-way street. To be rectified, many if not all the criticisms or faults outlined above require that the lexicographer has a proper training in linguistics. This, of course, means doing away with the gulf between the two disciplines, for example offering appropriate courses and programmes in linguistics departments. Needless to say, such a step could have far-reaching implications for linguistics as a discipline: for example, linguists placing more emphasis on the nature of the lexicon, meaning not only its mental organization, but also treating it as an important key to understanding the relation between language and culture.

Finally, if we accept that language is in some sense a repository or encoding of culture, then the death of a language can mean the loss of much of our potential for understanding that culture—even heavy lexical borrowing, in cases where the existence of a language itself is not threatened, reduces our potential for understanding the culture that produced that language. Not only is our potential for understanding culture diminished, but—more crucially for the mainstream linguist—our potential for understanding language is also diminished. For example, there has yet to be an adequate descriptive theory of the semantics even of English, despite the work that has been done, let alone a language such as Mòkpè.

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