Indigenous Languages for Culture, Science and Technology in Africa: On the Contributions of Lexicography and Terminology Development[1]

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Introduction

In a preface to Frantz Fanon's *The Wretched of the Earth* (1967), Jean-Paul Sartre laments the negative impact of colonial education on the colonised:

> The European élite undertook to manufacture a native élite. They picked up promising adolescents; they branded them, as with a red-hot iron, with the principles of Western culture; they stuffed their mouths with high-sounding phrases, grand glutonious words that stuck to their teeth…they were sent home white washed.[2]

Education was used to create an environment that would be conducive for the entire colonial project, as anti-imperialist thinkers such as Fanon and Paulo Freire,[3] among others, have argued. It inculcated in the mind of the colonised the misconception that African cultural practices were primitive, unchanging and incompatible with the 'high culture' of the West. The tragedy of formerly colonised Africans has been the acceptance of this myth which, unfortunately, suggests that arguments for indigeneity today are primordial. Such an ideology justified the marginalisation of colonised Africans and today, it remains the basis for the lack of total freedom in former colonies.

As products and vehicles of cultural practices, indigenous languages of Africa were subsequently despised and confined to vernacular roles during colonialism. The fact that English and other colonial languages were already written gave them a distinct advantage over African languages which were only in oral form. When African languages were put into writing by missionaries for the purposes of education and evangelisation, they were already trailing behind those of the colonisers. The languages were thus inscribed with the idea that they were inferior. As a result, at least two antagonistic scholarly views about the literary development of African languages have emerged. On the one hand are those who view the activities as 'language raising' and those who view them as 'reducing the languages into the written form'. The former school of thought is premised on the argument that once rendered into writing, the languages are better used in formal, academic and other public sectors of life as opposed to the domestic domains within which unwritten languages are restricted.[4] The latter view is concerned with the misperceptions and biases of those who participated in the activities of rendering the languages into written form – these critics argue that putting the languages into writing produced

'step-tongues', languages which are only written in books, learnt at schools and used in media but different from those that people really speak.[5] Nevertheless, the languages of the former colonial masters have continued to be learnt, taught and used with high regard compared to indigenous ones.

The role of indigenous languages became a major area of concern for policy-makers upon independence in many African countries. This has been made clear by the number of high-profile conferences on the status of indigenous languages since the 1980s.[6] The degrees of success have varied from country to country.[7] However, this article is not about language status planning *per se*, but rather corpus development, mainly that of lexicography (dictionary-making) and terminology development in Africa. It explores how indigenous African language practitioners are trying to overcome the colonial legacy, which neglected and simplified indigenous languages, by redefining the languages and developing them for use in a modern and technologically advanced society. The challenges faced by these language practitioners and the strategies that they employ in the process are also highlighted. To return to the opening quote from Sartre, the article seeks to encourage the development of indigenous languages so that Africans may find themselves comfortable with both their history and the needs of modernity. The argument is supported by illustrations drawn from lexical activities mainly in Zimbabwe and, to some extent, South Africa.

Lexicography and cultural construction in post-independence Africa
Lexicography can be simply defined as the study and field of activity concerned with dictionaries. It includes the actual practical compilation of dictionaries as well as theoretical issues, such as the role of dictionaries in society. It has been emphasised that dictionaries have evolved over centuries as practical intruments consulted by their users for specific purposes and in specific situations.[8] In that regard, dictionaries have been seen as "container[s] of knowledge".[9] Dictionary users refer to dictionaries in order to confirm various aspects about linguistic items to satisfy cognitive and communicative needs. In this regard, McArthur suggests that:

> Lexicography is part – and an important part – of that interplay of technology and taxonomy which has helped our species find means of storing information beyond the brain, our first and for an enormous length of time our only container of knowledge.[10]

It is in this respect that the dictionary has gained prominence as a reference book. However, the normative stature of the dictionary, the fact that people use the dictionary as a measure of correctness, has raised the question of objectivity versus subjectivity of the knowledge contained in dictionaries. The fact that dictionary-makers choose words to include in a dictionary, choose how to spell them, choose how to define them and so on,[11] indicates that dictionary knowledge can also be subjective, influenced by the dictionary-maker's purpose in making the dictionary

and their ideological bent. The two English dictionaries by Samuel Johnson for British English and Noah Webster for American English, and *Isichazamazwi SesiNdebele[12]* (henceforth the ISN) by Samukele Hadebe and others, apart from being containers of knowledge, can be seen as ideological tools in that they also construct the identity of the dictionary users who are mother-tongue language speakers.

While this discussion focuses on lexicography in independent and contemporary Africa, it should be noted that this lexicography is derived from the lexicographic practices of the colonial past. The dictionaries that are being compiled in modern-day Africa have as their predecessors dictionaries compiled by missionaries during the colonial period. As these contemporary constructions are compiled mainly by and for first language speakers, the dictionaries do not only intend to meet the real needs of the users but also to develop pride and confidence in the indigenous languages. On the other hand, the titles of pre-independence dictionaries in African languages would, in some cases display a paternalistic attitude towards the languages to which the compilers had no sentimental attachment. For instance, the word 'kaffir' appears as part of the titles of most Zulu and Xhosa dictionaries compiled during the apartheid period.[13] According to the Wikipedia Online Dictionary, 'kaffir' is a pejorative term used to describe persons of African descent mostly in South Africa and Jamaica.[14] Although the pre-twentieth century use of the word, before it gained its pejorative character, might have had a different meaning, its attachment to Nguni languages has been intepreted within the larger racist paradigm of the colonial and apartheid era. So too are the dictionaries bearing the same word as part of their titles, considering that they also display racist tendencies in their treatment of language as will be demonstrated shortly. A counter-ideological approach may be noted in the post-colonial context. Indigenous language dictionaries being produced in South Africa have all dropped the now pejorative word 'kaffir' as part of their titles, a move that makes dictionaries more representative of the concerns and rights of indigenous people. Consequently, indigenous language speakers identify themselves more with contemporary dictionaries than those produced during the colonial period. As Klein states:

> Another advantage dictionaries have for their users is their symbolic value…that the language is worth to be written down, and that it can be used in practically all domains of life. This has a positive side-effect that the status of African languages is enhanced and that L1 speakers of African languages can be proud of their languages.[15]

Indeed, the lexical activities that are currently being carried out in the indigenous languages of Africa will boost the speakers' confidence in the languages, firstly as symbols of their socio-cultural activities and secondly, as potential tools for grappling with scientific and technological issues.

Looking further at pre-independence dictionaries, it is notable that rarely were they produced to meet the cognitive and linguistic needs of the mother-tongue speakers of the languages. The title of Wealie's dictionary abundantly shows that it could in no way be targeted at the Ndebele or Kalanga speakers.[16] Entitled *Matebele and Kalaka Vocabulary: Intended for use by Prospectors and Farmers in MaShonaland* (1903), it is that obvious it was targeted mainly at Rhodesians and a few Africans who could learn the English language so that they could perform better as go-betweens in the (un)relationships of colonial masters with their black African labourers. Thus, while lexicography is meant to empower language users by producing dictionaries to meet their various cognitive and communicative needs, dictionaries produced during colonialism often served to confine Africans to positions of oppression.

A closer look at some of those dictionaries shows that missionaries were not only ignorant of indigenous linguistic and cultural systems, but were also accomplices in the negation and marginalisation of indigenous knowledge systems. This role has been highlighted by Viriri in his historical study of Shona lexicography.[17] Hadebe also observes that words associated with Ndebele religion were largely excluded from Pelling's *A Practical Ndebele Dictionary*[18] (hereafter PND), which is populated by those pertaining to Christianity.[19] In lexicography, exclusion is at times interpreted as illegitimacy or inexistence such that what is not in the dictionary is considered an illegitimate or non-existent item – not only in the language but also in the lives of the people for which the dictionary is made. According to this view, African religious and cultural concepts whose names are missing in the missionary-compiled dictionaries either do not exist or are illegitimate, evil, pagan and barbaric as certain anthropologists have argued about various aspects of African culture. All this attests to the fact that missionary activities, be they religious or educational, were to some extent part of the colonial agenda.

The explanations of meaning, by means of equivalents, of the few words that pertain to Ndebele religion in Pelling's dictionary really confirm that missionary lexicographers' commitment to evangelisation resulted in the distortion of African realities that, unfortunately, coincided with the ideals of imperialism. This is aptly shown by Moyo,[20] who compares the definition of 'isangoma' in Pelling's dictionary to that in the ISN. Pelling gives 'witch doctor' as the equivalent of *isangoma*.[21] The same applies to the treatment of *isanuse*.[22] Contrary to Pelling's dictionary, both *isangoma* and *isanuse* refer to revered people with diagnosing powers who have contributed to the social and physical well-being of African societies for many centuries. This can be seen from the following excerpts from the ISN.

> **isangoma**…ngumuntu oledlozi lobungoma njalo okuvumisayo.[23]
> (An *isangoma* is a person possessed by an ancestral spirit who also makes you confess).

> **isanuse** … ngumuntu oledlozi elimupha amandla okunuka njalo abone
> ukuthi uhlupho luvela ngaphi.[24]
> (An *isanuse* is a person who is possessed by an ancestral spirit that gives
> him/her power to smell and dictate the source of trouble).

An *isangoma* or *isanuse* would diagnose the illness and its cause. If the cause is human evil, the culprit would be asked to confess or deny guilt. Prescription and treatment would then be sought, usually from an *inyanga*, a traditional healer. Thus *izangoma*, *izanuse* and *izinyanga* had important positions in the Ndebele and other African societies. Even kings would rely on them to consolidate and protect their kingdoms. Colonial education and religion created negative attitudes towards traditional belief systems, but after gaining independence, African governments have made efforts at developing positive attitudes towards various forms of indigenous knowledge systems. The government of Zimbabwe, for example, acknowledged the crucial role of traditional medicine and healthcare system by facilitating, through an act of parliament, the formation of Zimbabwe National Traditional Healers Association (ZINATHA) in the late 1990s. ZINATHA was once headed by a sociology Professor, Gordon V. Chavunduka, also former University of Zimbabwe Vice-Chancellor. Thus, the subscription of educated and influential members of society to associations such as ZINATHA indicates that, for Africa, sustainable development lies in the adaptation of traditional practices into the contemporary environment which is thereby enriched with new resources.

Dictionaries need to play a role in this negotiation and integration process by preserving and imparting such cultural knowledge for posterity, in their role as knowledge containers. In our globalising world, it takes much less effort for new values and ways to take root. As a general process of globalisation spreads its reach, it becomes easier for old values and systems to be uprooted and discarded. The general Ndebele dictionary therefore reconstructs the Ndebele traditional healthcare system and integrates it with the modern one by entering and defining both traditional and modern names of health-related concepts. A list of some of the well-known diseases in traditional Ndebele names is appended to the dictionary.[25] Modern names of contemporary diseases and treatment processes such as *eyidzi* (AIDS), *ipholiyo* (polio), *ithethenasi* (tetanus), *ikhensa* (cancer) and *ikhimotheraphi* (chemotherapy) are also entered and defined. The same can be said of the *Duramazwi reUrapi neUtano*,[26] the Shona dictionary of medical terms. What should be noted is that it is not the advent of colonialism that made Africans aware of most of the diseases. Instead, it brought new insights to their understanding and therefore new names. For instance, polio and cancer were known among the Ndebele as 'imbeleko' and 'imvukuzane' respectively, and this is well captured in the ISN.

The dictionaries of musical terms in Zimbabwe's two national languages, *Duramazwi reMimhanzi*[27] in Shona and *Isichazamazwi SezoMculo*[28] in Ndebele (henceforth the ISM), also indicate an integration of indigenous cultural practices with modern practices motivated by advances in science and technology. In both

dictionaries, it was crucial that a balance was struck in terms of lexical inclusion between traditional folk music and contemporary music. Data collection for the ISM therefore included sourcing musical terms from Ndebele historical and cultural texts, such as interviewing Ndebele elderly people who are the repositories of culture, as well as sourcing terms from modern music dictionaries in English. While the dictionary contains terms such as *ipiyano* (piano), *isopurano* (soprano), *ibhale* (ballet) which are probably universally known as musical terms, it also has as entries *amahlwayi* (leg rattles), *ilima* (work-party)**,** *uphondo* (horn), *isitshikitsha* (a traditional dance), which are most likely known as part of music only in the Ndebele and other related societies, particularly Nguni. Without such traditional concepts, music knowledge, education and production would not be complete from an African point of view. Thus, advanced music studies in Ndebele include both traditional and modern music. Language practitioners like lexicographers should also acknowledge this and through their work, meet the language speakers' communication and cognitive needs by lexicographically handling words dealing with both traditional and modern concepts brought about by scientific and technological development in various spheres of life.

It is in this line of argument that dictionaries produced in independent Africa, such as those produced by the African Languages Lexical (ALLEX) project in Zimbabwe and the National Lexicography Units in South Africa, are seen as tools of empowerment. In the context of historical marginalisation, these dictionaries also extend their role to cultural reconstruction, redefining the world in order to accommodate and revitalise African cultural practices. At the same time, they help in the democratisation of science and technology by making this knowledge more accessible in the languages which people understand better. Tarp's analysis of the role of lexicography in the information age cannot therefore be over-emphasised.[29]

The relevance of terminology development in African societies
So far, the discussion has focused on lexicography, through its practice of dictionary-making, providing an interface between traditional cultural practices and modernity by including lexical items pertaining to both in dictionaries produced in independent Africa. No attention has so far been given to what happens to the names of scientific and technological concepts as they enter into African societies. This is the domain of terminology. Terminology may be simply defined as the practice of naming concepts but more formal and critical definitions can be found in the works scholars such as Wuster,[30] Sager,[31] and Felber.[32] The study of terminology does not end with naming concepts but also includes collection, description and presentation of terms in a way that displays the relationships between concepts and terms of particular subject fields. Thus, while *terms* are the subject matter of the field of study, the *relationships* that they have with the *concepts* that they represent forms the basis of the general theory of terminology.[33]

Two forms of terminology development can be noted: the primary and the secondary. Primary terminology development refers to term-creation that is

motivated by invention in a particular society.[34] In some cases, the name of the inventor of a concept becomes the name for the invented object – like Newton being the unit of measure for gravity after Isaac Newton. A term created in that regard becomes the first name through which the newly invented object or discovered concept becomes known. In fields like science, Greek and Latin become classic examples of societies where primary term-creation has been perfomed. However, this does not mean that pioneer work in those fields was done in those societies. Rather, it is the progress which the societies made at particular periods which led to terminological growth in those fields. Today, scientific and legal terms in English display a great reliance on Greek and Latin words respectively. Secondary term-creation logically follows primary term-creation when new objects and concepts are transferred from their places of discovery to other places, which means that knowledge is transferred from one linguistic community to another.[35] Terms have to be created in a language that is used in the new community if that knowledge has to be integrated, disseminated, shared and acquired by people who do not understand the language of primary term-creation. This involves a number of linguistic strategies such as borrowing, coining, blending, compounding and so on. The choice of linguistic strategies often depends on various extra-linguistic factors, some of which will be discussed shortly.

Looking at most African societies today, one notes that terminology development is largely secondary since it has undertaken to fill a linguistic gap that exists when most of the knowledge that has become 'mainstream' in our daily lives is imported from the Western world. This fact is of course interwoven with Africa's history of European imperialism and domination in all facets of life. Cluver argues that as long as national industry and scientific research is underdeveloped, technical terms do not develop in the indigenous languages since knowledge is imported from the developed world with corresponding terms.[36] As such, European languages have continued to dominate all sectors of life in Africa with indigenous languages playing second fiddle. In the case of Zimbabwe, English is the official language although the majority of the citizens are not proficient speakers, writers or readers. In spite of the fact that the country has been independent for more than two-and-a-half decades, one cannot challenge this status quo before deciding how this or that would be called in Ndebele, Shona, Kalanga, Venda, Sotho, Nambiya and so on. One of the problems that deny indigenours languages their rightful function among their speakers is the politics of terminology,[37] and this is a matter of fact for indigenous languages in most countries in Africa.

Terminology development, just like language policy issues the world over, is both a linguistic and extra-linguistic matter. Talking on lexicography and language raising – programmes and efforts to create a standard literary language from the vernacular and promoting it until it is accepted in the community where it belongs and used widely in all important functions – Chimhundu remarked that "a language cannot raise itself like self-raising flour."[38] Concerted efforts by educationalists, intellectuals, other stakeholders in different domains; the wider population, and

more importantly, government, are needed if indigenous African languages are to be attributed the necessary power for handling and disseminating the modern and scientific information which drives our daily lives. The Afrikaans language in South Africa is a very good example of this. Efforts by Afrikaans scholars in the 1950s contributed significantly to the development of the Afrikaans language and its terminology.[39] This partly made it possible for the language to be used on the same scale as English in South Africa.

The efforts that have been made by different individuals and institutions to compile glossaries constructed for their fields of specialisation have shown that, linguistically, all languages have the capacity to name anything and facilitate communication in any discipline. However, such patriotic efforts to uplift indigenous African languages seem to be short of theoretical and even practical underpinnings. This entails a complex set of questions: who creates what? for whom? and who uses it? Terminology is an inter-disciplinary field and no single field specialist, be it in law, politics, administration, commerce, music and so on, can single-handedly create a glossary that would meet full acceptance of the final users. Even mother-tongue competence and enthusiasm in the language is not enough – one has to be a terminologist. However, most African countries do not have trained terminologists and terminology development establishments, such that terminology development and ultimately the elevation of indigenous languages lags behind. Scholars on language planning in general, and Wuster on terminology in particular, have noted that while a single person can create language (through corpus development), getting the results accepted is unthinkable without some form of organisation (and an endorsing authority).[40] This makes terminology development difficult in most African languages. In the following discussion, some problems affecting terminology development in Ndebele are highlighted as a case in point.

Problems affecting terminology development in Ndebele
Problems of terminology and its development in Ndebele are either linguistic or extra-linguistic, although there is always a link between those factors. It should be noted that the constraints to terminology development are deeply rooted in the linguistic, social, economic and political history of the Ndebele people themselves. While linguistic constraints are largely language specific, extra-linguistic factors are shared by various language communities in Africa.

Linguistic constraints
The linguistic constraints that terminology development in Ndebele has to overcome are a legacy of the literary history and tradition of the language. Like most African languages, Ndebele was first rendered into written form by Christian missionaries in the late nineteenth century. When the missionaries undertook to put African languages in writing, they had very little competence in the languages themselves. Besides, their commitment to developing African languages and their speakers was overriden by their Christianising mission, which was rarely concomitent with the traditional ways in which Africans lived. Missionaries approached Ndebele as a

variety of Zulu, but research evidence indicates that while the two languages are closely related, they are different and therefore should be treated differently.[41] However, the affinity to Zulu has continued to haunt the development of Ndebele at orthographic, morphological, lexical and terminological levels. Zulu literary and language reference texts still have an important place in the Ndebele curricula at secondary and tertiary levels. A detailed discussion of orthographic issues that have affected the lexical development of Ndebele is offered by Hadebe, who notes that a discussion of terminology development cannot be complete without considering orthographic issues since borrowed terms need to be written following the rules of the Ndebele writing system.[42]

Another related linguistic constraint that continues to hinder or at least affect terminology development in Ndebele is related to translation. In addition to the linguistic constraints that have already been outlined, other linguistic and cultural disparities between the source and target languages make direct or literal translation non-viable. Even in the pursuit of dynamic and pragmatic equivalence, loss and gain are inevitable. This is not peculiar to the Ndebele language, but all language communities in which the source and target languages within which translation takes place are culturally distant.

However, such linguistic constraints are not a total barrier to the transfer of information. It has already been argued that every language has the capacity to communicate anything. No language is richer or more deficient than another. But it takes human effort to empower a language. Extra-linguistic constraints to terminology, and language development in general, are therefore more detrimental than the linguistic constraints which can be overcome with reasonable human effort.

Extra-linguistic constraints
Most indigenous African languages, Ndebele included, have lagged behind in terminology development owing to the colonial histories of the communities in which they are used. The hierarchical labelling of languages as official, national or minority languages by the linguists and language planners commissioned by colonial governments has had long-lasting impacts on the development of African languages. Indigenous languages served local communities to their satisfaction before colonial 'civilisation' came to Africa and, as with all languages blessed with the property of creativity, they have adapted over time and continue to play important roles in the societies in which they are spoken.

In the case of Zimbabwe, Doke's 1931 report,[43] commissioned by the Rhodesian colonial government, recommended that Shona and Ndebele be recognised as the main languages to be taught at schools in the Eastern and Western regions of the country respectively. Nothing tangible was done to develop Ndebele as it was felt that it was well catered for by Zulu. This was the first step in undermining the development of the language – whose impact is still felt today. While both Shona and Ndebele were recognised as the main languages to be taught at schools and up

to today accorded the honorific 'national language' status, they have been marginalised from the mainstream of formal communication in Zimbabwe. English has continued to be the language of education, adminstration, politics, trade, law and all the formal and advanced operations. This continued domination of English denies indigenous languages an opportunity to be developed for use in such public domains. Inadequate financial and human resources are being allocated for the development of indigenous languages since they play less significant social roles. The international character assumed by former colonial languages such as English makes it rewarding for indigenous langauage speakers to prioritise learning foreign languages instead of their native languages. Although the blame may be directed towards policy makers, the policy makers would argue that people do not have pride in their language. So why waste resources developing the languages since this will not help develop their speakers? With little awareness on language matters, the responsible authorities have been ever reluctant to put full support behind the development of indigenous languages.

Due to this lack of commitment to terminology development and upliftment of Zimbabwe's indigenous languages, some activists have undertaken to create terminology for their fields either at individual or institutional levels. Temba Dlodlo, a physicist, is one example worth mentioning. He has produced a Ndebele glossary of physics terms; he translated his doctoral thesis into the language and taught physics at the country's largest science university in Ndebele. He has also written several academic articles in support of his methods.[44] Another notable example is Jerry Zondo,[45] who has created a glossary of Ndebele linguistic and literary terms in an effort to address the fallacy that Ndebele students can only understand the grammar and literature of their language in a foreign language. While these efforts are laudable, their combined effects are relatively insignificant since individually produced terminologies rarely get standardised, fully recognised, and used by most targeted language speakers. Duplication of efforts becomes the order of the disorder resulting in what Chimhundu calls "an undesirable terminological flood."[46] Besides, what contribution will the efforts make to a language that continues to be confined to vernacular usage? Again, the efforts of language activists are potentially frustrated since their products are never considered for official use by the relevant authorities.

However, while we see that terminology development in Ndebele has some linguistic and extra-linguistic constraints to deal with, with the latter being more challenging, dictionary-making at the African Languages Research Institute (ALRI) has managed to address some of those challenges and can have a resounding impact on terminology development in Ndebele.

Terminology development through dictionary-making in Ndebele
The resultant standardisation of the Ndebele language through the compilation of the first monolingual dictionary in the language, the ISN, is likely to contribute immensely to terminology development. Research by Hadebe has shown that the

compilation of the dictionary has contributed considerably in that respect by describing Ndebele phonology, morphology and vocabulary.[47] It should be noted that standardisation of the language at such levels addresses some of the linguistic problems discussed in the previous section. Besides, some terms used in a number of fields like the teaching of literature and grammar, law, administration, politics, media among others were either entered and defined in the main text of the ISN. Others were appended as the back matter of the dictionary with English equivalents. In this way, the compilation of the first monolingual Ndebele dictionary addressed the linguistic constraints that have negatively impacted on terminology development so far.

While the contribution of the ISN cannot be overemphasised considering the normative influence of a dictionary, the fact that it is a general dictionary means that its contribution to terminological development has been a limited one. A general dictionary describes the 'entire' vocabulary of a language. As such, given size and funding limits, and the time-frame within which the dictionary was to be completed, the ISN had to be as general as possible. It was at the editors' discretion to cover terms of a certain field to the extent they considered appropriate. Advanced terms in some fields could not be included in the dictionary. As such, no one can blame the ISN editors for excluding this or that term from particular fields. These would have to be covered by specialised dictionaries which focus on specialised languages of specific subject fields.

Ndebele currently has one specialised dictionary, the ISM. The ISM is a Ndebele dictionary of musical terms. In measuring the contribution of the ISM to the development of music terminology in Ndebele, it is appropriate to outline how the dictionary was compiled and what it contains.

In the introduction, it was emphasised that terminology development is an inter-disciplinary field to which experts from different disciplines should contribute. The editors of the ISM, of which I am one, are not musicologists, ethnomusicologists, musicians, organologists or even guitarists. The editors cannot also claim to have done a good job as terminologists since the dictionary has not been put to academic scrutiny from a terminological or terminographic perspective. However, with mother-tongue competence, undergraduate courses in translation and lexicography and in-house training at ALRI, the editors have been informally commended by musicians, lecturers and students of music, language, translation and lexicography and all those who have an interest in Ndebele or Zimbabwean music and culture. An outline of the contents serves to confirm a claim made earlier that the dictionary is in line with others produced in independent Africa which attempt a balance between African culture and modernity.

The ISM is constituted of three main texts: the front matter which is basically a preface of the book, the main text and the back matter. The main text is the Aa-Zz part of the dictionary, or, in other words, the layperson's dictionary. This part

contains dictionary articles to which musical terms are ports of entry. The back matter contains illustrations of music instruments, costumes and musical symbols – a closer look which gives a clear picture of what constitutes musical knowledge in Zimbabwe. A section of selected Ndebele songs are also offered and rendered in notation symbols. The selected songs illustrate how music symbols which are entered and defined in the Aa-Zz are actually used in music teaching. The illustrations and song sections compliment the Aa-Zz text. The last part of the ISM includes the Shona and English reverse indices which can help either the Shona or English mother tongue speakers know what a term in Shona or English respectively means in Ndebele, thereby making the dictionary tri-lingualised.

From the outline of the dictionary contents, one can see that the editors could not produce the work by themselves even if they were trained terminologists, terminographers or lexicographers. As such, experts, mainly music lecturers, were involved in the crucial stages of compilation like term-creation, lemma selection and defining terms, with the actual presentation of data remaining the sole responsiblity of the editors. All this was done in a bid to achieve conceptual, linguistic and presentation expertise in the dictionary and ultimately maximum acceptability of the final work. A specialised dictionary should meet terminological and lexicographic standards.

In the compilation of the ISM the major available term-creation strategies were coining, translation, and borrowing or transliteration.[48] As far as language attitudes are concerned, coinages, lexical items created within an indigenous language, are usually more acceptable than loan words, especially those loaned from English in a post-colonial context. Interestingly though, it has emerged that in spite of colonial history, loan words from English are more acceptable than those from other Zimbabwean languages, particularly Shona, due to other historical factors.[49] There are still other socio-political considerations which affect the selection of terms, such as age, social class, gender and so on which this article does not pursue further. Thus, informed by language attitudes, the main principle with regards to term-creation strategies for the ISM was in favour of coinages such that loan words and transliterations were taken where no equivalents exist or where coinages would not communicate effectively.

Coining entails the use of existing linguistic resources to name new concepts in what is called semantic extension. This is demonstrated by the following examples of terms from the ISM.

1. prelude---------------------------*isisusa* (beginning)
2. interlude-------------------------*ikhefu* (break/rest)
3. compose-------------------------*sungula* (create)
4. refrain/chorus--------------------*impinda* (repetition)

In the above examples, the italicised items are terms from the ISM. Such terms were drawn from the general lexicon of Ndebele, with literal meanings as given in the brackets. New and specialised meanings carried by English musical terms, which are given as equivalents of the Ndebele terms in the ISM, were then assigned to the words. As such, these coinages have been given term status in the domain of music. However, coining using this approach raises interesting questions in some cases. For instance, a guitar is seen as a body with parts like the neck and the head. Using this coining strategy, terms *intamo* for 'guitar neck', *ikhanda* for 'guitar head' and *umlomo* for the sound hole of a drum, *ingungu*, were created. According to the theory of concepts, a term should represent a concept and clearly show its relationship with other concepts in the conceptual structure of a special subject field. Following this, one would then want to know if a guitar has other parts like arms or legs, or whether a drum has teeth since it has a mouth. This should not be taken as condemnation of terms created using this strategy, but as some notable dilemmas of the theory of concepts which is central to the general theory of terminology. Assigning new and specialised meanings to words of a language may also yield terms that have different connotations in a special domain of knowledge. For instance, *-tshaya* in the ISM means playing an instrument while in everyday language it may mean beating, hitting or assaulting. This demonstrates creativity as a property of all languages, especially African languages which have been marginalised from specialised and advanced communication on the premise that they are not developed enough.

Some terms in the ISM are coinages which resulted from the modification of existing linguistic resources either through derivation or affixation, compounding and conversion. The three examples below each show how derivation or affixation, compounding and conversion yielded some of the ISM coinages respectively.

1. *osontambo* < o-(class 2a prefix) + -so- (nominal affix) + (i)ntambo (strings/chords) for chordophones.
2. *amazwingoma* < amazwi (words) + (i)ngoma (song) for lyrics.
3. *ukutshuna* < uku- (noun class 15 prefix) + -tshuna (verbal form tune)
   for tuning an instrument or a song. (The verb is syntagmatically converted into a noun by using the infinitive form).

It can be seen that coining is a very productive term-creation strategy. However, coining by modifying existing resources, especially compounding, tends to produce very complex terms which may be mouthful and difficult for target users. Users may reject such terms, potentially making standardisation difficult. This is another stage where the ISM editors had to work closely with other experts in Ndebele language and music education and production.

As mentioned earlier on, borrowing as a strategy was a last resort in cases where no equivalents for English and Shona terms could be found or where coining was not

very productive and effective. Loan words are simply adapted into the writing system of the target language. Below are some loan words from the ISM.

1. adagio ----------------*iadejiyo**[50]
2. accordion------------*iakhodiyoni**
3. radiogram------------*irediyogiramu*
4. mbira-----------------*imbila*

The ISM editors, together with the group of experts, could not find Ndebele equivalents nor coin Ndebele terms for the English terms listed above. While borrowing, an attempt was made to adhere to the phonological and morphological structures of Ndebele. Prefixing terms borrowed from English and Shona follows the rule that all Ndebele nouns commence with an initial vowel except in particular instances of usage. In the last example, the lateral /l/ was posited in the place of the lateral /r/ because the latter is a latecomer in the Ndebele alphabet such that its acceptability is secondary to that of the former. It is important to note that borrowed terms that were entered are mainly those that have been used over a long period of time like *isopurano* for 'soprano,' *ithena* for 'tenor,' *ialitho** for 'alto,' *iphiyano* for 'piano' among others.

Terminology development through dictionary-making in Ndebele has so far differed from that by individual field experts in that it has been collaborative, drawing expertise from different fields. The probability of satisfying various terminological principles and meeting acceptability of terms by users is higher with a collaborative approach. Dictionaries, unlike individually produced glossaries, can reach a wider population of language speakers and hence have better prospects of facilitating the development and standardisation of terminology. However, while terminology development through dictionary-making is promising in Ndebele as there are a number of specialised dictionaries in the pipeline, there is always a problem of a low dictionary culture in Ndebele which might see the efforts of lexicographers getting little recognition. Dictionary culture, just like reading culture, needs to be improved such that important products get recognition and feedback through dictionary criticism. Again, this is a concern not only peculiar to Ndebele but a number of African language communities.

Furthermore, dictionaries are only reference books and they should not be an end in themselves, but rather a means to an end. The general theory of terminology has a requirement that terms must be acceptable and used by the people for whom they were created.[51] It would therefore be of little siginificance for dictionaries and terminologies to be produced without being used. For terms to be used and popularised, textbooks and manuals have to be produced by field experts with dictionaries as reference texts. For instance, a Ndebele grammar book written in Ndebele can help promote Ndebele linguistic terms collected, created and defined in the process of compiling a Ndebele dictionary of linguistic terms.

The language policy issue also needs recognition and serious attention. Unless and until the government approaches the language issue with the seriousness it deserves in Zimbabwe, indigenous languages will continue to be marginalised and less developed. Taking the language issue seriously on the part of the government entails assigning each language a clear functional role in education, administration, law, politics and other formal sectors, as well as providing financial, infrastructural and professional support to the language policy. A major positive development that could result from such moves would be the establishment of an institution that collects, creates, regulates, documents and promotes terms for different fields of specialty with trained terminologists. The importance of an unequivocal and comprehensive national language policy is outlined in the brief discussion of lexicography and terminology development in South Africa, which follows in the next section.

Lexical activities in South Africa
As far as lexical development of national languages is concerned, post-apartheid South Africa seems to have made commendable advances. A clear national language policy which unequivocally promotes multiligualism in all public spheres of life provides a broad framework for lexical activities in all eleven official languages. South Africa has therefore passed the contemplative stage of enquiring whether or not the subject of Science can be taught in Sepedi, and experiments have fully identified the possibilities and challenges.

In view of the existing challenges, official structures have been formed to work towards the implementation of the national language policy. At the apex is the Pan-South African Language Board (PanSALB) under which are eleven national language boards. For lexicography specifically, there are eleven National Lexicography Units addressing lexicographic needs for each official language. For terminology development there is the National Language Services (NLS) which manages terminology activities for all the languages. Various institutions work in consultation with the NLS in developing terms and glossaries they need to promote the national language policy. For example, the Language Centre at the University of Stellenbosch has benefited from the guidance of the NLS and PanSALB in developing various term-lists to improve the use of Xhosa as an academic language.[52]

Unlike in the Zimbabwean situation discussed previously, the objectives of language practitioners in South Africa are explicated in the national language policy and its achievements are notable in media where the eleven languages are often used efficiently in discussions of politics, economy, weather, sports, law, administration and so on. Even bank Automated Teller Machines and mobile phones can be operated in the languages which were initially looked down upon as far as science and technology are concerned.

Conclusion

An indigenous language is usually the best medium of communication in any linguistic community. Unfortunately, this is no longer the case regarding African languages. That they were unwritten at the advent of colonialism made them appear inferior to European languages. When the missionaries undertook to develop them literarily, they suffered from the biases of their religious beliefs and the wider colonial ideology. They associated African languages with witchcraft and other forms of backwardness as they misinterpreted the realities which the languages embodied. Now, in the twenty-first century, African languages remain marginalised because they are seen as incapable of dealing with 'modern' issues such as the economy, science and technology. Consequently, language practitioners and academics of African languages have two basic tasks towards the promotion of indigenous languages. Firstly, they have to correct the misinterpretations of African realities which characterise language reference works of the past, such as the colonial and missionary dictionaries which have been highlighted in this article. Another task is to develop the languages in line with the current advances in science and technology. It is important that 'modernity' should not always be seen as that which comes from Europe or America – Africa has also produced high-class intellectuals in all fields of specialty. It is unfortunate that such achievements are reflected through European languages which African scholars have to use for publication purposes and international networking due to lack of publishing facilities in indigenous languages. However, the progress that has been made by Zimbabwe and South Africa in the lexical development of indigenous languages shows that given a chance, indigenous languages can play a crucial role in handling and developing discourses around science and technology. As such, it would emerge that culture, science and technology are not incompatible with indigenous languages after all and moreover, are not only embodied by those of the West.

Notes

[1] The article is an offshoot of my ongoing research for a Master of Philosophy degree at Stellenbosch University's Department of Afrikaans and Dutch in the Programme for Lexicography. I am very grateful to the National Research Foundation of South Africa for the award of the Africa Scholarship, which has afforded me an opportunity to pursue my MPhil research. I am also grateful to my supervisor, Professor R. H. Gouws, whose academic impression on me will go beyond my research degree, and the two reviewers of this article for comments which have definitely improved the quality of the article.

[2] J. P. Sartre in F. Fanon, *The Wretched of the Earth* (Penguin Books: London, 1967), p. 7.

[3] P. Freire, *Pedagogy of the Oppressed* (Penguin: Harmondsworth, 1972).

[4] H. Chimhundu, "Lexicography and Language Raising: Dictionaries in Zimbabwean Languages" (2005). This was the title of a public lecture delivered as part of the Golden Jubilee Celebrations of the University of Zimbabwe, University of Zimbabwe, Harare, on 13 April.

[5] S. Makoni, "In the Beginning was the Missionary's Word: The Invention of an African Language. The Case of Shona in Zimbabwe," in K. K. Prah, (ed.), *Between Distinction and Extinction*: *The Harmonization and Standardization of African Languages* (Witswatersrand University Press: Johannesburg, 1998), p.162.

[6] The 22nd Ordinary Session of the then Organisation of African Union (OAU), now African Union (AU) produced the "Language Plan of Action for Africa" in 1986 while the Intergovernmental

Conference on Language Policies in Africa produced "The Position Paper on Zimbabwe' s Language Policy" and the "Harare Declaration" in 1997.

[7] Some countries such as Zimbabwe are still without comprehensive national language policies, but South Africa, for instance, has formulated a clear language policy in view of the multilingual and multicultural composition of the nation. However, as yet, it is too early to judge the success of the implementation of the policy.

[8] R. H. Gouws and D. J. Prinsloo, *Principles and Practice in South African Lexicography* (SUN Press: Stellenbosch, 2005), p. 1.

[9] T. McArthur, *Worlds of Reference* (Cambridge University Press: Cambridge, 1986), pp. 19-23.

[10] T. McArthur, "Thematic Lexicography," in R. R. K. Hartmann, (ed.), *The History of Lexicography* (John Benjamins Publishing Company: Amsterdam and Philadelphia, 1986), p. 158.

[11] S. Hadebe, "Language Planning and Monolingual Dictionaries," in *Lexikos* (17) 2007, p. 294.

[12] S. Hadebe, K. Dube, T. M. Ndlovu, L. Khumalo, J. Masuku, M. Maphosa, V. Ndlovu, S. J. Mhlabi and T Dube. *Isichazamazwi SesiNdebele* (College Press: Harare, 2001).

[13] *A Kaffir-English Dictionary* compiled by Albert Kropf, published by Lovedale Mission Press and *A Concise English-Kaffir Dictionary* by McLaren James, published in 1923 by Longmans & Green in London are some of the examples. One cannot readily tell from the titles whether the dictionaries are Zulu or Xhosa. From a metalexicographical point of view, this is unfortunate since it makes the user's choice of a dictionary for use difficult. However, it shows that from a racist perspective, which characterised the production of such dictionaries, the indigenous languages were similar and inferior.

[14] The Wikipedia Online Dictionary. See http://en.wikipedia.org/wiki/Kaffir. Last accessed on 13 December 2007.

[15] J. Klein, "Implementing a Dictionary Culture in South Africa: An Attempt at a General Framework for the African Languages," in *Lexikos* (17) 2007, p. 418.

[16] I. Wealie, *Matebele and Kalaka Vocabulary: Intended for use by Prospectors and Farmers in MaShonaland* (Publisher Unknown: Cape Town, 1903).

[17] A. Viriri, "The Contribution of Missionaries to Shona Lexicography," in *Lexikos* (14) 2004, p. 349-358.

[18] J. N. Pelling, *A Practical Ndebele Dictionary* (Longman Zimbabwe: Harare, 1971).

[19] S. Hadebe, *The Standardisation of the Ndebele Language Through Dictionary-Making* (The ALLEX Project: Oslo and Harare, 2006), p. 128.

[20] N. Moyo, "*Isichazamamzwi SesiNdebele* as Reflector of the Moral and Ideological Values of Society," in *Lexikos* (17) 2007, p. 358.

[21] Pelling, *A Practical Ndebele Dictionary*, p. 12.

[22] *Ibid*.

[23] S. Hadebe, K. Dube, T. M. Ndlovu, L. Khumalo, J. Masuku, M. Maphosa, V. Ndlovu, S. J. Mhlabi and T Dube. *Isichazamazwi SesiNdebele*, p. 205.

[24] *Ibid*., p. 206.

[25] K. Hadebe, T. M. Dube, L. Ndlovu, J. Khumalo, M. Masuku, V. Maphosa, S. Ndlovu, J. Mhlabi and T Dube, "Isengezo 11: Izifo" in Hadebe et. al, *Isichazamazwi SesiNdebele*, p. 550.

[26] N. Mpofu et. al., *Duramazwi reUrapi neUtano* (Mambo Press: Gweru, 2005).

[27] G. Mheta, *Duramazwi RemiMhanzi* (Mambo Press: Gweru, 2005).

[28] D. Nkomo and N. Moyo, *Isichazamamzwi SezoMculo* (Mambo Press: Gweru, 2006).

[29] S. Tarp. "Lexicography in the Information Age," in *Lexikos* (17) 2007, p.170-179.

[30] Eugine Wuster is regarded as the Founder of the General Theory of Terminology (see next note); but here no special reference is made to any of his works which are available in the German language (also see note 31).

[31] J. A. Sager, *A Practical Course in Terminology Processing* (John Benjamins Publishing Company: Amsterdam, 1990).

[32] H. Felber, "In Memory of Eugine Wuster, Founder of the General Theory of Terminology," in *International Journal of the Sociology of Language* (23) 1980, pp. 7-14.

[33] *Ibid*., p. 11.

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[34] Sager, *A Practical Course in Terminology Processing*, p. 80.

[35] *Ibid*., p. 82.

[36] A. D. De V. Cluver, "The Development of a Terminological Theory in South Africa," in *International Journal of the Sociology of Language* (23) 1980, p. 59.

[37] S. Hadebe, "Developing Terminology in African Languages with Reference to Ndebele," in E. Chiwome, Z. Mguni and M. Furusa, (eds.), *Indigenous Knowledge and Technology in African and Diasporan Communities* (SAACDS: Harare, 2000), p. 225.

[38] H. Chimhundu, "Lexicography and Language Raising," personal notes.

[39] R. H. Gouws, "Afrikaans Lexicography," in R. R. K. Hartmann, (ed.), *The History of Lexicography* (John Benjamins: Amsterdam, 1986), pp. 75-83.

[40] E. Wuster, "Introduction (Fragment of a Draft)," in *International Journal of the Sociology of Language* (23) 1980, p. 6.

[41] S. Hadebe, *The Standardisation of the Ndebele Language*, p. 54.

[42] Ibid, p.173.

[43] C. M. Doke, *Report on the Unification of Shona Dialects* (Stephen Austin and Sons: Hertford, 1931).

[44] For example, T. S. Dlodlo, "Science Nomenclature in Africa: Physics in Nguni," in *Journal of Research in Science Teaching* 36, (3). 1999, p. 321-331.

[45] J. Zondo, "Umcilikitshane WeSayensi YoHlelo Lemimhalo YesiNdebele," (unpublished paper).
46 H. Chimhundu, "Pragmatic Translation and Language Elaboration," in J. C. A. Pongweni and J. Thodhlana, (eds.), *LASU Conference Proceedings* (LASU: Maputo, 1987).

[47] S. Hadebe, *The Standardisation of the Ndebele Language Through Dictionary-Making* (PhD Thesis, University of Zimbabwe and University of Oslo, 2002). Hadebe's dissertation was later published as a book in 2006 by the ALLEX Project.

[48] The discussion of term-creation strategies for the ISM given here is a slightly altered version with original examples, of an extract from D. Nkomo, "Compiling Specialised Dictionaries in African Languages: *Isichazamazwi SezoMculo* as a Special Reference," in *Zambezia: The Journal of Humanities of the University of Zimbabwe* 32 (i/ii) 2005, p. 64-77.

[49] S. Hadebe, "Language Planning and Monolingual Dictionaries," in *Lexikos* (17) 2007, p. 292 306.

[50] The symbol indicates that the terms appear differently in the dictionary. In the dictionary, the terms are without the initial vowel as an attempt to solve orthographic and dictionary access structure problems for users.

[51] De V. Cluver, "The Development of a Terminological Theory in South Africa," p. 62.

[52] P. M. Sibula, "Furthering the Aim of Multilingualism through Integrated Terminology Development," in *Lexikos* (17) 2007: 397-406.