

Terminology Research in the Digital Era: Implications for the Translation of Optical Terms into Igbo Language

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Abstract: Terminology research could be an integral part of the translation process especially where highly technical texts are involved. This study seeks to examine the modern trends in terminology research as well as the implications of this new trend in translation into the Igbo Language with particular reference to the translation of optical terms. We did extensive review of existing literature and our findings revealed that terms are now extracted electronically as opposed to the hitherto manual consultation of specialized dictionaries. It was also discovered that the Igbo Language lacks the necessary terms in the optical field. It was therefore suggested that necessary measures should be taken to enable those that have Igbo Language as their working language to key into this new trend.

Key words: Terminology • Translation • Digital era • Optical terms • Igbo language

INTRODUCTION

The Cambridge Advanced Learner's Dictionary [third edition] defines terminology as "special words or expressions used in relation to a particular subject or activity. The same dictionary also defines research as "a detailed study of a subject especially in order to discover new information or reach a new understanding". In view of the foregoing, therefore, it might be appropriate to state that terminology research involves a detailed study of a group of terms with a view to discovering their semantic import in a given context. It could also imply the search for appropriate terms during the translation process. It is obvious that terminology research is an integral part of the translation process especially where technical and scientific texts are involved. The level of success enjoyed by every translator is directly linked to his ability to source for and utilise appropriate terms in the course of exercising his functions.

There is no doubt that every field of activity has its terminology [1]. It is also true that these terms may not be fully grasped by most members of the public but the members of the professional group in question fully understand and effectively use these terms. This explains why every translator should tread with caution when his task involves translating highly technical texts. Any infractions committed through the use of

inappropriate terms could give away his incompetence in his chosen field and that might seriously impede his progress in his career. Effective terminology research therefore could be described as the oil that lubricates the engine of translation.

[2] define language as "a form of human communication using words, either spoken or written or gestures with hands or other parts of the body". The Chambers 21st Century Dictionary defines language as "any formalized system of communication, especially one that uses sounds or written symbols which the majority of a particular community will readily understand" it is true that every language is a system of communication among all the speakers of the language. It is equally true that not all languages operate at the same level of development. Some are certainly more developed than others. This explains why some languages have huge repertoire of terms while others especially those in the West African sub region are still struggling to survive. The Igbo Language belongs to the latter group. There is no doubt that Igbo Language, like all other languages, is a system of communication among the Igbo people. Language professionals, however, will discover that this language is yet to develop very rich repertoire of terms in some vital fields of human endeavour.

It is to highlight this deficiency that we have undertaken this study entitled Terminology Research

in the Digital Era: Implications for the Translation of optical terms into Igbo Language. To effectively discuss this topic, we will examine the concept of terminology. This will be followed by the discussion of trends in sourcing for terms in the past as well as the modern trend in terminology research. We will also examine the research effort of those whose language could be described as being in the same category as Igbo Language in terms of terminology development. The case of Igbo Language will be x-rayed. Finally, there will be a detailed discussion based on our findings before the conclusion.

The Concept of Terminology: The Cambridge Advanced Learner's Dictionary [third edition] defines terminology as "special words or expressions used in relation to a particular subject or activity". The Chambers 21st Century Dictionary also defines it as "the words and phrases used in a particular subject or field". Though the two definitions given above came from two different dictionaries, they have similar meaning in spite of the slight differences in the words used. The two sources quoted above also highlighted the fact that the relevance of any terminology can better be appreciated when it is used in a given subject or field of activity. This view was equally expressed by [3] who adds that;

Terms differ from words in that they are endowed with a special form of reference, namely that they refer to discrete conceptual entities, properties, activities or relation which constitute the knowledge space of a particular subject field.

The above distinction between words and terms is very vital as most people are often tempted to see no difference between them. It has to be stressed that words are of a more general use and could be applied in different fields while the significance of every term can only be determined when applied in a given field of human activity. Ambiguity could be associated with words but not with terms which are more specific. The environment or context of use goes a long way in revealing whether we are dealing with an ordinary word or a term. The meaning of the word *host* is not ambiguous when used by a science teacher discussing parasites. In the same way, the same word could mean a different thing when used by a catholic priest in the church. The initiated fully understands the meaning of this term in any of the above fields of human activity. One can therefore say that specificity in meaning is an attribute of a term. This explains why all the definitions given above made it clear that the field of activity must be known for us to

properly determine the meaning of a term. This bit of information is very necessary for every translator that wishes to be successful in his job. Any lapses on his part in the course of exercising his professional duty could mean producing target texts that misinform and consequently mislead the targeted audience, which could lead to avoidable socio-political and economic problems. Having clarified the concept of terminology, we will examine the meaning of digital era.

The Meaning of Digital Era: Chambers 21st Century Dictionary defines digital as "denoting a process or a device that operates by processing information that is supplied and stored in the form of a series of binary digits". The same dictionary also illustrates with "digital recording" and "digital computer". It is interesting to note from the above definition that all the complex pieces of information that we input into the memory of a computer are stored in the form of a series of binary digits. The technical issues, however, should be left for the engineers and technicians. As professionals who live in this period of technological innovations, we should understand that digital era has to do with a period when information is processed with the aid of computers.

Terminology Research in the past: Translation as a professional activity did not start today. There is no doubt that terminology research has been part of the professional duties of translators before now. There is a huge difference between the method of sourcing for terms in the past and what obtains now. It should, however, be admitted that some translators especially those that are not computer literate still adopt the old method of terminology research. [4] states how translators sourced for terms before now:

In the "old days" we simply jotted words on pieces of paper and kept them inside the dictionary, either in the front or in the back. When we translated a specialized item, such as farming equipment or coal mining, we would write down the difficult and unknown terms, do some research and write down the English equivalents of foreign terms[or vice versa]

The above quotation highlights how terms were sourced before the digital era. In the process of translation, new terms were noted and their meanings were thoroughly researched not only in technical dictionaries but also in other relevant specialized documents. This mode of terminology research was,

however, found to be very tedious and time-consuming as highlighted by [5] in the following words:

Term banks evolved from printed technical dictionaries and have been closely linked with translation since their inception in the mid 1960s and early 1970s. In specialized translation, it is well known that the search for interlingual equivalents is a time-consuming activity, occupying in some cases up to 60 percent of total translator time.

When the author talks about “the search for interlingual equivalents”, he is referring to terminology research which, according to the author, “takes up to 60 percent of translator time”. The fact that the exercise takes more than half of the translator time implies that this aspect of the translator’s job is very tedious. This perhaps informed the need to search for modern methods of terminology research which culminated in the new trend that will be discussed in the next segment of this work.

Terminology Research in the Digital Era: It is obvious that advancement in information technology has greatly affected the way most human activities are done in recent times and terminology research cannot be an exception. [6] gives us some indication about how terminology management is done in the digital era. According to him, one of the purposes of setting up a terminological data bank was to speed up “the translation process by giving the translator a single efficient tool for retrieving specialized vocabulary”. He goes further to explain that terminological data bank [term bank] “applies to any system which stores specialized vocabularies in electronic form”. From the above, it becomes clear that in this digital era, terms are stored and retrieved electronically. Further clarification on this was given by [7] who said that:

Now, however, we have become much more sophisticated.

We do what is known in professional linguistic circles as “terminology management”. To manage all of our glossaries and specialized terminology we rely on two key elements-smart terminology organization and smart use of the computer.

Smart terminology organization implies that terminology management is electronically controlled or computer-guided. This contrasts sharply from the old

practice of manually consulting technical dictionaries and other specialized documents. It is certain that this new trend in terminology management could work perfectly well in scientific and technical translation where there is some level of universality in the way knowledge about living and non living things in the environment is communicated to different peoples of the world. However, there are some doubts about the workability of this new system in the literary domain [8]. This is because of the connotative nature of literary expressions and also the fact that literature embodies people’s culture which can hardly be the same in any two different communities. In view of the on-going advancement in technology, it is obvious that automation of the translation process in the pragmatic and sci-tech domains could be perfected with time with minimal human input. However, the translator is likely going to continue to play a great role in literary translation for as long as it takes technology to develop tools that could take care of the connotative aspects of language and disparities in human cultures. Having examined terminology research in the digital era, we will, in the next segment, discuss the experience of the Porto Group so as to gain the insight needed to advance Igbo Language in this technological era.

The Porto Group Experience: One Igbo adage states that a blacksmith who does not know how to make a gong should take a look at the tail of the kite. Consequently, we intend to examine here the experiences of other language professionals who are working very hard to improve the fortunes of their language. [9] in an article entitled “Terminology and Translation-bringing research and professional training together through technology” relates the experiences of the Porto Group, whose project is known as LINGUATECA, a project that has led to the development of a range of online tools for “special domain corpora compilation and analysis, term extraction and term database management”. They called this tool “Corpografo”

LINGUATECA seeks “to create and evaluate resources and tools for the computational processing of Portuguese”. They have successfully delivered the following resources to linguists and translators according to the same author;

- CETEMPUBLICO - a corpus of 180 million words in Portuguese
- COMPARA- a parallel corpus of approximately 1 million words each of Portuguese and English literary texts

- METRA- a meta engine for machine translation [MT].
- TRAVA-an environment for evaluating MT.
- CORTA- a corpus of sentences+ their MT equivalent

Any researcher who is keen on seeing Igbo Language develop in this new era must be thrilled by the main objectives of this group of researchers in Portugal. [10] continues as follows;

The focus of Corpografo, therefore, has been to see the Big Picture, create an overall framework, get feedback from the users and develop according to real research needs, rather than simply developing tools for the sake of it

The graphic presentation of Big Picture above should be noted. It is for emphasis. The 21st century researcher should no longer be myopic or too restrictive in his thinking and outlook. What is the current global requirement in my area of research? How can my immediate environment fit into this global view? Who are the beneficiaries of the research outcome? What exactly do they need? All these constitute the Big Picture. Once this picture becomes clear, the next step is to develop the appropriate plan and structure for implementation. That is the framework to be created in the quotation. With the plan, engage the beneficiaries for the necessary feedback. After reviewing the feedback, the appropriate tools that will meet these needs are developed. Given the nature of the task involved here, the language professional will certainly have to collaborate with other professionals to achieve the desired goal. Stressing the need for collaboration, [11] adds:

Corpografo results from LINGUATECA's interests, the collaboration of a computer engineer with interests in artificial intelligence and information retrieval, the terminology and translation master's degree and the interest of the domain experts we work with.

From the above, it becomes clear that to develop online tools, there must be active collaboration of experts from different fields. For Corpografo to emerge, three different professional groups collaborated- the teachers and master's students of terminology and translation at the University of Porto, a computer engineer and a

number of domain experts. What a lesson for all those who have interest in the development of Igbo Language. The author of the article we are analyzing also stressed as follows

The advance of technology in the form of machine assisted translation and machine translation, on the other hand, increasingly forces the language of both the original and the translation to be as standardized and as literal as possible

The above quotation makes it clear that languages that benefit from advancement in technology are those that do not have issues with standardization. That is, the more standardized a language is, the more chances it has to fit into existing online tools. Language professionals with specialization in Igbo Language know very well that Igbo Language has issues with standardization. It is time for Igbo Language professionals to work towards the development of the language. Having highlighted the experiences of the Porto Group, we will now examine terminology development in Igbo Language.

Terminology Development in Igbo Language: The Igbo language, like all other languages, is a system of communication among the Igbo speaking communities. However, due to policy inconsistencies and negative attitude on the part of its owners, the language has not kept pace with the level of development associated with the international languages [12, 13]. The result is that in many areas of need, the language lacks the necessary terminologies. [14, 11]. According to [8];

One of the major reasons for the non-use of the Igbo Language in formal settings has been attributed to the limitation on the vocabulary of the language. Some Igbo speakers who would want to use the language in writing in other fields of human endeavours especially in the sciences, architecture, aviation and the likes find it difficult to do so. This is because of the limitations in finding the appropriate expressions in the Igbo Language

As the authors observe, there is difficulty in finding the relevant terminologies to communicate certain aspects of knowledge especially in specialized fields of human

endeavour. To buttress this point, we will examine what exists online with regard to the translation of parts of the eye from English to Igbo. It should be noted that the translations given below were provided by the Google Translators.

| English | Igbo |
|-------------|-------------|
| Eye | anya |
| Eyelid | nkuchianya |
| Eyelashes | anya anya |
| Lens | anya |
| Iris | iris |
| Pupil | nwa anya |
| Conjunctiva | conjunctiva |
| Cornea | cornea |

From the table above, it becomes clear that there is a very huge problem with regard to the existence of relevant terminologies in this field in Igbo language. It is only eye and eyelid that have the correct equivalents in Igbo. The rest were either not translated at all or translated wrongly. It might also be necessary to examine how the following eye diseases were translated online:

| ENGLISH | IGBO |
|---|---|
| The patient has cataract. | Onye oria ahu n'emeputa ihe. |
| The woman is suffering from glaucoma. | Nwanyị ahu na-ata ahuhu site na glaucoma. |
| It is conjunctivitis | O bu njikota |
| This is a case of myopia | Nkea bu ihe gbasara myopia |
| This is a case of chalazion | Nkea bu ihe ohuu |
| This is a case of strabismus | Nkea bu ihe gbasara strabismus |
| This is presbyopia | Nkea bu presbyopia |
| This is a case of pinguecula | Nkea bu ihe gbasara pinguecula |
| It is a case of Keratitis | O bu ihe na-eme ka i na-egbu Keratitis |
| She is suffering from blepharitis | o na-aria oria stropitis |
| The man is suffering from Amblyopia | Nwoke ahu na-aria amblyopia |
| It is a case of ptosis | O bu ihe ptosis |
| This condition has to do with hyperopia | Onudu a nwere ihe metutara hyperopia |

The examples above show that none of the eye problems mentioned has any online translation in Igbo. This clearly demonstrates the acute nature of the problem of terminology in this domain in Igbo language. It also indicates that the language is not fully ready for translation activities in this digital era. The results of this research will be presented in two different papers. In our next paper, we will give the Igbo equivalents of the above terms. The steps taken in arriving at the Igbo equivalents will also be fully analyzed.

DISCUSSION ON FINDINGS

This research effort has thrown up a number of issues regarding translation in Igbo Language in the

digital era. It is apparent, from this study, that terminological research through manual consultation of technical dictionaries is becoming obsolete. The current trend obviously is to store and retrieve terms electronically. Linguists and professional translators who have not keyed into this new trend are expected to do so. There is some evidence that some Igbo scholars are becoming conscious of their responsibility in this regard. For instance, the Igbo dictionary could be assessed online and Nwankwere and Opara did some good work on Igbo musical terms. These efforts are quite commendable but much more work is still required. If the Porto Group could deliver a corpus of 180 million words in Portuguese as revealed in this study, it becomes obvious that we still have a long way to go because it is doubtful if one could

find up to one million words in the online Igbo dictionary. For meaningful progress to be made in this direction there is need for sacrifices on the part of the relevant professionals of Igbo extraction and serious investment on the part of government. While the professionals avail the society of their skills, the government should be prepared to commit the necessary funds for the success of the project. The need for coordination is also very obvious. There is no doubt that individual research efforts are on-going in different institutions of the world and effective harnessing of the results of these efforts would be very rewarding. For instance, the Igbo musical terms provided by Nwankwere and Opara should be harmonized with what already exists and made more accessible to the public online. While still describing the giant strides of the Porto Group, [4] said, "the focus is now on perfecting search engines like Google and structuring knowledge so it can be found fast". The above quotation is very instructive and highly significant. First, it implies that experts have a way of perfecting the Google Search Engines. Second, it explains that there is a particular way knowledge could be structured if it is to be assessed easily online. All these mean that the body in charge of harnessing Igbo terms should liaise with the relevant computer professionals who will ensure that the body of knowledge we are presenting is structured in a way to enhance its accessibility to the public.

It is also necessary that we place emphasis on the standardization of Igbo terms. Google translators have a long list of world languages and Igbo is one of them. This means that those who have Igbo as their working language have a great deal of responsibility. To fully appreciate the reason for insistence on standardizing Igbo terms, it is necessary to examine the following statement credited to [4]

Sharing of terminology resources and tools among international organizations was recognized as a very beneficial exercise for the quality of translation and the need for enhanced communication and networking has been stressed in order to face the spectacular rise of the importance of terminology in a globalised context.

From the foregoing, it is obvious that terminological data can no longer be described as local products produced and utilized only by the indigenous owners of the language. Such terminological data will be useful to

international organizations and translators all over the world. This explains why International Standards Organisation [ISO] exists to ensure that terms are standardized for the purpose of "encouraging unambiguous communication between people working in special domains"[8]. It is said that European Union works with 552 language combinations. [9]. Any terminological data from any of these languages must be standardized to be acceptable. This explains why the fortunes of Igbo Language could be enhanced if Igbo terms are standardized. To achieve this purpose, Igbo scholars and responsible government agencies should take a cue from the French Academy-a body that has not only raised the standard of the French Language but has also made the language the pride of the francophone world. Muscato [n:d] has this to say about the French Academy;

In 1635, the French statesman Cardinal de Richelieu was granted permission by King Louis XIII to formally inaugurate a council of learned men to guard the French Language. With forty members who served for life, the French Academy was founded as an institution that would standardize, purify, codify and preserve the French Language for all time.

A replica of the French Academy which the same author described as "the most venerated literary and linguistic institution in the world" and from which other developed countries modeled their own institutions should be established for the standardization and preservation of the Igbo language.

It is also necessary to address the issue of developing online tools. The Porto Group models discussed in this work could be followed. To be successful in this regard, there should be effective collaboration with competent computer engineers. With diligence and effective coordination of activities of the different professional groups involved, Igbo terminological database could be made richer and more accessible to the public.

CONCLUSION

In this work, we examined Terminology Research in the Digital Era and its implications for translation into Igbo language with particular reference to optical terms. The concept of terminology as words and phrases used in a particular field of activity was clarified. It was also

highlighted that not much has been done in terms of enhancing the terminological database of Igbo Language in different fields. It was therefore suggested that for translators to use Igbo Language as a working language in the digital era, serious efforts should be made to develop a standardized Igbo terminological database and efficient online tools to make these terms accessible to the public.

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