

Chapter

1

A Report on the Abidjan-Bielefeld-Uyo Introduction to Language Documentation (ABUILD) Project

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Abstract

This is a report on an international tripartite pilot project on language documentation involving three universities: University de Cocody in Adidjan (Corte d'Ivoire), Universitaet Bielefeld (Germany), and the University of Uyo (Nigeria) - the Abidjan-Bielefeld-Uyo Language Documentation (ABUILD) Project. The main objective of the project was to train manpower in language documentation as well as develop tools for the documentation of languages of the locality in which the project was domiciled. It was an interdisciplinary collaboration, and it drew specialists from both linguistics and computer science from the three countries involved. The funding for the collaboration was provided by DAAD from 2002-2006, with support from the partner universities. The project began as a pilot one which developed a curriculum for the training of manpower via an MA in Computational Language Documentation. Later a PhD programme in Computational Language Technology was introduced as an addition to the MA programme in the University of Uyo. The ABUILD Project has yielded many direct fruits and fallouts. Besides the two postgraduate programs, there were fruits in the areas of text and speech technology, hardware and software acquisition, as well as an increase and general awareness on linguistic issues in the Cross River Basin.

1. Introduction

Language Documentation or Documentary Linguistics as it is also known today is a relatively new area of Linguistics worldwide. Although it has important antecedents in linguistic fieldwork done by earlier linguists, this was just a small aspect of general linguistics. Today the story is different, arising principally from the urgency associated with work on endangered languages. On the African continent, Language Documentation as an academic course is even more rare! In Nigeria for instance, only the University of Uyo offers Language Documentation at the MA and PhD levels presently. Although African linguists have been and are involved in documenting endangered and unwritten languages, Language Documentation disciplines are rare in the University curricula.

Much of the motivation for Documentary Linguistics is principally from work done on and with endangered languages. A substantial percentage of the world's over 6,000 languages is threatened, and many of those endangered languages are spoken in Africa. This calls for rather urgent attention and action. We realize that when we lose a language, it is not just the language that dies. The loss of the languages also entails the loss of cultural heritage and linguistic artefacts that are unquantifiable. According to Himmelmann (1998), Language Documentation aims to

provide a comprehensive record of the linguistic practices characteristic of a given speech community. Linguistic practices are manifest in two ways: (1) the observable linguistic behaviour, manifest in everyday interaction between members of the speech community and (2) the native speakers' metalinguistic knowledge, manifest in their ability to provide interpretations and systematizations for linguistic units and events.

In the African context, in addition to the endangered languages, many languages exist in the oral form, and although they may not be considered 'endangered', they require assistance from the

methods and tools of Language Documentation in order to preserve and safeguard the linguistic and cultural wealth that are continually lost in the course of oral transmission (Urua, Ekpenyong & Gibbon 2007).

Given the ICT age, it is vital to have a credible body of corpus which can be harnessed for different uses. There is also the need to develop orthographies, instructional materials, grammar books, primers, dictionaries (multipurpose, general and specialised), concordance, story books, speech technology research, etc. Besides, using modern computational tools for language documentation ensures that corpora have proper metadata which will make it easy for storage, archival and retrieval purposes. In so doing, other scientists and community can readily and easily have access to materials obtained from Language documentation. It was with this background that the Abidjan-Bielefeld-Uyo Introduction to Language Documentation (ABUILD) Project was conceived.

2. *The ABUILD Project*

Between 2000 and 2001, Professor Dafydd Gibbon hosted two Alexander von Humboldt fellows in Bielefeld. One of the fellows, Professor Dr. Firmin Ahoua came from a Francophone West African country, Cote d'Ivoire while the other, Professor Dr. Eno-Abasi Urua was from an Anglophone West African country, Nigeria. The partnership turned out to be rewarding intellectually, socially and culturally. Sustaining the partnership for further scholarship was crucial, leading to what we now know as the ABUILD Project. The ABUILD Project, a brainchild of Professor Dr. Gibbon was an international tripartite cooperation which involved the University de Cocody in Abidjan, Cote d'Ivoire, the Universitaet Bielefeld in Bielefeld, Germany and the University of Uyo, Nigeria. The project was funded by DAAD (2002-2006) with support provided by three institutions in various ways. Linguists, Computer Scientists, Speech Technologists, were pulled from these institutions in the

collaboration, which involved the documentation of the languages of the area, development of manpower and materials for documentation, teaching and practical use. The project commenced with an M.A. program in Computational Language Documentation as a pilot project. It was expected to have an initial four-year duration (2002-2006). However, due to some logistic problems, the actual classes could not commence in 2003 as earlier envisaged. It later started in the 2005/2006 session.

The main objectives were:

- (i) the training of local linguists, computer scientists, archivists, and other manpower in the area of language documentation;
- (ii) the raising of awareness and training of local community on basic principles of language studies like transcription, lexicography, etc.
- (iii) ensuring relevance of linguistic studies to the practical life of the people in education, agriculture, markets, professions, etc.
- (iv) record and register of the status of documentation for the languages and dialects of the communities;
- (v) attraction of local funding for linguistic work; etc.

The program had an initial four-year travel and program development funding from the DAAD, German Academic Exchange Services. Being a collaborative program with the Universitaet Bielefeld, Germany and Universite de Cocody, Cote d'Ivoire. Lecturers from the partner universities presented seminars and lectures on the program during their annual visits. Students were part of the exchange visits as well. The travel and accommodation costs of the exchange trips for both staff and students were borne by the Deutscher Akademischer Austauschdienst (DAAD), i.e., the German Academic Foundation and partly by the University of Uyo for the period of the pilot project. The Bielefeld team was led by Professor Dafydd Gibbon,

while the University of Uyo team was led by Professor Eno-Abasi Urua. There were several exchange visits between Uyo and Bielefeld and vice versa involving both staff and students.

The first of the Uyo trip was made from the 16th of November to the 20th of December 2002, made up Professor Eno-Abasi Urua and Mr. Moses Ekpenyong. In March 2003, the German team, made up of Professor Dr. Dafydd Gibbon, Dr. Ulrike Gut and Juliane Lindenlaub arrived Uyo and went on a fieldtrip to Iko in Eastern Obolo Local Government Area of Akwa Ibom State of Nigeria. They were joined by the Cote d'Ivoire team made up of Professor Firmin Ahuoa, Dr. Eddy Gbery and Dr. Zacharia Yago. During this visit, the curriculum for the MA program was drawn up, with the course details. The process for its approval by the University of Uyo Senate was initiated.

The group on its first visit to Uyo, besides the curriculum development, embarked on a field trip to Iko in Eastern Obolo LGA for a Sociocultural Survey of the area, at the end of which seminars were presented. The field trip to Iko which was coordinated by Professor Urua (who was also the team leader), comprised of Dr. Imelda Udoh, Dr Escor Udosen, Mr. Amos Ukafia and Mr. Taju Bello (the official University driver).

The second trip of the project was made by the Uyo team to Germany in May-June, 2004 by Professor Urua and Mr. Moses Ekpenyong. Later in August 6th – 31st 2004, the German team made a second trip to Uyo, led by Professor Dafydd Gibbon, including Sophie Salffner, Nadine Borchardt and Bettina Rust. On this trip, presentations, seminars and lectures were given on software tools and other technical aspects in language documentation, while Miss rust documented the activities with her camera. On the 7th of July 2005, Sophie Salffner visited Uyo from SOAS. She stayed for two weeks, and in that time made a field trip to Iwerre community in Ini LGA. At the end of her trip, she presented a seminar on software tools (Salffner 2005). There was another visit by Professor Urua and Mr. Moses Ekpenyong to Germany between September and October 2005.

From August 6th – 24th 2006, Professor Gibbon visited Uyo with Nadine. They made a field trip to Itu Mbonuso community in Ini Local Government Area. Seminar/lectures/tutorials were presented on different areas of the curriculum, including: Computational Lexicography with toolbox and other software tools, Acoustic Phonetics with Audacity and Praat, Text processing with script programming for language documentation and speech synthesis, etc. A public lecture on Language Documentation and Heritage Preservation crowned this final trip in the Project (Gibbon 2006). Professor Urua and Mr. Moses Ekpenyong later visited Bielefeld between October and November 2006 for wrapping up, assessment and writing up of report on the project.

Members of the ABUILD team attended and participated in several international conferences in Ibadan (WALC), South Africa (MULTILING), Lisbon (LREC), Germany, USA (E-MELD), etc.

From this collaboration many fruits were harvested in different areas of language documentation, description, applied text linguistics, grammar, heritage conservation, etc.

3. *Fruits of the ABUILD Project*

The Linkage Project

A linkage project was developed. This project was a tripartite international collaboration with the University of Bielefeld, Germany, and the University of Cocody-Abidjan, Ivory Coast, and the University of Uyo, as has been stated, on the Computational Documentation of Nigerian Languages. It began in 2003. Through it, the MA in Computational Language Documentation was conceived and several other projects.

The MA in Computational Language Documentation Program

Today we live in an era where information technology is fast becoming a way of life even in the developing world, with mobile phones, cyber cafes and private providers of Internet and World Wide Web services. Such services involve massive text processing, table calculations, establishment of data banks, etc. These services are language dependent, both written and verbal. In order to tap into this new technology with all the concomitant benefits, it has become increasingly important and of utmost necessity to computationally document African languages in general and Nigerian languages specifically in order to establish the required information technology structures. However, the establishment of such structures requires properly trained personnel, which at the moment is absent. This was the purpose of the inception of an MA degree in Computational Language Documentation in the University of Uyo (taken from the ABUIL Project proposal 2002).

This program was designed with the following objectives:

- (i) To provide manpower training in current electronic language documentation, linguistic theories, practices and techniques
- (ii) To apply these theories and principles to the analyses of language problems in an interest area.
- (iii) To utilize local languages and materials in the development of orthography, instructional materials, development of text technology information systems, publications in indigenous languages and government developmental programs.
- (iv) This was expected to have a multiplier effect in other disciplines, especially in the Faculties of Arts and Education, Computer Science, Electrical/Electronic Engineering and other language related disciplines, especially in the University. Students were also to be

trained to undertake electronic language documentation and development of materials for work in related fields.

According to the initial plan, the MA program was to begin in 2003. Processing its approval by the Senate of the University through several committees took quite a while. It was only in 2005 that the program was approved.

The first set of students was admitted into the program in the 2005/2006 session. Ten of them were admitted, but only nine registered as full-time students.

These students completed the course work. The courses were jointly taught by lecturers from the Departments of Linguistics & Nigerian Languages and Computer Science of the University of Uyo and lecturers from the University of Bielefeld. Professor Gibbon and his team taught some of the courses on their trips within the period. Some of these students have since graduated from the program.

The PhD programme in Language Documentation

Following the apparent success recorded on the DAAD funded MA program on Language Documentation between 2002 and 2006 in the 2 south-south universities, viz., University of Uyo, Uyo, Nigeria (Anglophone) and the University of Cocody in Abidjan, Cote d'Ivoire (Francophone) and the interest on the program, a PhD in Computational Language Technology, was to further strengthen the goals stated in the MA program, namely, that of manpower development and capacity building in this area with the ultimate goal of protecting and safeguarding our endangered and oral languages. Moreover a PhD program in CLT was to provide a training ground for other people, given the fact that Uyo is the only University in Nigeria that offers a

postgraduate program in Computational Language Technology for now.

The PhD program in Computational Language Technology has four options: PhD in Linguistics, PhD in Computational Language Documentation, PhD in Speech Technology and PhD in Natural Language Processing. This program is also collaborative in nature. To ensure quality and state-of-the-art research, the program cuts across Linguistics, Computer Science and Engineering. Therefore, the supervision is co-supervised research by experts in the relevant fields. Supervisors are currently drawn from University of Uyo, Nigeria; Universität Bielefeld, Germany and Universität Bonn (Institute for Communication Research and Phonetics), Germany. Students who need the foreign supervision source for funds to support the travelling involved.

Some of the students who were admitted in the 2005/2006 academic session indicated a strong interest in pursuing research in Computational Language Documentation up to the PhD level. The groundwork was sufficiently prepared to provide what would become the crop of the intake to the proposed PhD programme. In the University of Uyo, the process reached an advanced stage in anticipation of the logical progression of building on the MA curricula. A PhD in Computational Language Documentation was the logical culmination of manpower training and development since it would have strengthened capacity of both staff and students on the programme.

The PhD program was approved by the University Senate, and in the 2008/2009, the first set of five students were admitted in 2008.

The Speech Synthesis Project

This was one of the fruits of the collaboration between the Department of Linguistics and Nigerian Languages and the Department of Computer Science, both of the University of Uyo, and the Fakultät für Linguistik und Literaturwissenschaft of the

Universitaet Bielefeld, Germany. It is aimed at creating a machine-readable text from a human readable one, in a Text-To-Speech (TTS) conversion (Gibbon, Ekpenyong, Urua, 2004; Ekpenyong, Urua, Gibbon 2004). This project has a lot of potential for grassroots development programs, particularly in information dissemination with regard to health, agriculture, adult literacy, challenged persons (deaf, blind and dumb), difficult and challenging environments in conjunction with GIS. The project was funded by the LLSTI Project by Outside Echo UK and the funding expired in 2006. This project was coordinated by Roger Tucker and Ksenia Shalnova of Outside Echo UK, under the llsti project (see <http://www.llsti.org>). We are pleased to report that the Ibibio Speech Synthesis Project thanks to the just approved funding from the Federal Ministry of Education/World Bank STEP-B Project.

The Lower Cross Languages Project (LCL-Project)

This project documents the languages of the Lower Cross. This documentation begins with field trips and the traditional description of the languages, and then goes further to computationally document them. These documentations are being collected in a multilingual public electronic repository: The West African Language Archives (WALA), which contain audio recordings, multimodal recordings, annotations, sketch grammar, dictionaries, etc. and also have reports on the entries so far made on Ibibio, Iko, Nkari and Ega, are exhibited (Gibbon, Ahoua, Gbery, Urua, Ekpenyong 2004). The purpose of the language documentation program is to utilize modern IT tools to electronically preserve, in addition to hard versions, many of our languages in this region which are endangered and in danger of extinction, and by so doing helping to preserve the rich cultural heritage that is encapsulated in our languages. The Department of Linguistics & Nigerian Languages is also the focal training point for personnel in this area of specialty being the first and only Nigerian university to have such a programme at the postgraduate level.

The LCL-Project provides a systematic documentation of the languages and varieties of the *Lower Cross* subgroup spoken in Akwa Ibom State. It also provides descriptions of the said varieties as well as grammars, dictionaries, orthographies, meta-language by way of empowering these languages to be effectively used in all spheres life of Akwa Ibom State. From these, the speakers and others interested in these languages can draw from to produce primers, literacy materials, etc.

The following are some of the aims and objectives of the Project:

- (i) to further the study and description of the *Lower Cross* languages;
- (ii) to produce grammars on them;
- (iii) to document them electronically and prepare them for electronic archiving;
- (iv) to empower them for use in education and elaborate the code of some of the varieties to make them useable in different spheres of life, (by producing dictionaries, meta-language, orthographies, etc.)
- (v) to empower them to be able to partake in the sharing that globalization requires in both the space of place and the space of flows;
- (vi) to produce corpora (both hard and electronic) in these languages and data bases that can be stored, accessed and retrieved by the international Linguistic community, scholars and the speakers of the languages;
- (vii) to pull together and publish all the work on the Lower Cross Languages in a website.

With the support of the Akwa Ibom State Government's funding, this project is still on-going.

Cooperation with the Department of Computer Science, University of Uyo

Although the MA programme in Computational Language Documentation is housed in the Department of Linguistics & Nigerian Languages of the University of Uyo, there is an excellent working relationship between the Department of Linguistics & Nigerian Languages and the Department of Computer Science in the area of teaching and assessment. The design of the programme had the Department of Computer Science as a partner right from the inception. For that reason, a staff each from the Department of Linguistics & Nigerian Languages and the Department of Computer Science have worked closely on the MA project design and implementation. Two courses, LID 622 Introduction to Linguistic Programming and LID 623 Technology and Databases, are taught by colleagues from the Department of Computer Science. Professor Eno-Abasi Urua and Mr. Moses Ekpenyong in conjunction with Professor Dr. Dafydd Gibbon have developed the first Ibibio language e-dictionary, the first Ibibio e-Concordance and an Ibibio language corpus. Through this cooperation, a Computer Science colleague in collaboration with other colleagues from Linguistics and Computational Linguistics has developed a GPRS template in locating areas where the different languages documented in Akwa Ibom State of Nigeria are spoken. These are planned to replicate this initiative in other regions of Nigeria (see Ekpenyong, Umoh, Udoinyang, Ibiang, Urua, Gibbon 2006).

4. *Limitations*

The ABUILD Project had a number of constraints. These were largely issues regarding funding. The funding for the Project was supposed to be from the three bodies involved in the tripartite cooperation. Many more people could have been involved in the exchange of visits, but the funds were limited, and so, the Uyo team was rather restricted.

The francophone component was not as fully explored as was envisaged, because of some technical and political issues. Although a similar curriculum was also developed in Cocody, Abidjan, the English/Francophone interaction was not felt. We regret that Dr. Gbery, died in the course of the Project in Germany. May his soul rest in perfect peace.

5. Conclusion

The ABUILD Project was a language documentation project which yielded very many fruits. It met most of its objectives. Many students have been trained and there have been local multipliers of linguists, computer scientists, archivists, and other manpower in the area of language documentation from the MA Computational Language Documentation which was developed as a pilot study. The PhD program which has taken off this academic session will further train linguists in this area. There is a tremendous increase of awareness and training of local community on basic principles of language studies like transcription, lexicography, etc. The Project has raised the relevance of linguistic studies to the practical level in the life of the people in education, agriculture, business, etc. The documentation work on the languages of the Lower Cross drew the attention of the local community to this kind of research and has attracted local funding (e.g. from the Akwa Ibom State Government) for linguistic work, etc.

Many results have indeed been recorded. Apart from the MA and PhD programs in the University of Uyo, the first and only ones at this level to date, there have been a general increase in awareness of linguistic issues. There are concrete results in the areas of speech technology, in which an Ibibio robot of greeting was designed; and in text technology, an Ibibio Electronic Dictionary and Concordance were developed. Besides these, there are grammar documents, meta data, transcriptions, speech signal annotation data, multimodal speech resources, etc. on Ibibio,

other Lower Cross and even Upper Cross varieties (Urua 2003a,b; Udoh 2004a, 2007, etc).

In fact, a tradition of language documentation has been set in Uyo and this is gradually spreading beyond the Niger Delta Region, thanks to Professor Dafydd Gibbon that pulled such an excellent team.

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