Contrasts between Igbo and Chinese Consonantal Phonemes and the Pedagogical Implications

Okoye Chinenye Loyce (Ph.D)
Department of Linguistics/Department of Chinese Studies.
Nnamdi Azikiwe University, Awka
clo.okoye@unizik.edu.ng.

Abstract
The paper intends to contrasts the consonantal phonemes of Igbo and Chinese, and the pedagogical implications of Igbo (L1) learning of Chinese (L2) amongst the JSS2 students of Nnamdi Azikiwe University High School, Awka. The two languages under study have their phonological peculiarities, hence, any Igbo learner of Chinese is bound to encounter difficulties and vice versa. In other words due to the phonological differences between Igbo, the mother tongue (MT) and Chinese, the Target Language (TL), the different sound system may create a problem in learning the target language. The data for this paper were collected through both primary and secondary sources. The paper was able to bring out the similarities and differences using the contrastive analysis as a framework. Through a descriptive approach, the two languages are presented, Isolated and described. Through classroom interaction, the pedagogic implications are predicted based on the differences that exist in the sound systems of the two languages. The findings reveal amongst other things that the absence of some of the phonemes in Igbo which are present in Chinese pose learning difficulties for Igbo learners of Chinese. Also, Igbo has the greater number of consonantal phonemes than Chinese, hence Igbo learners will have difficulty in learning Chinese. Certain sounds in Igbo which are absent in Chinese will pose learning problems to the Chinese learners of Igbo. Chinese has aspirated sounds such as /Ph th Kh tSh etc/ which are absent in Igbo, will pose learning problems to the Igbo learners of Chinese. Absence of retroflex sounds in Igbo may lead to error in production. The study concludes by suggestions that language teachers should focus more on those areas of differences in the two languages in the course of teaching, in other to enhance the learning of the target languages ((TL).

Keywords: Contrast, consonantal phonemes, Igbo, Chinese, Mother tongue, Target language.

Introduction

University (Nigeria) in 2007 brought about an increased demand for the study Chinese. The current wave of globalization has gradually turned the world into one massive global village. The ability to speak any of the major languages of the world; English, Chinese, French, German etc. furnishes one better to face the challenges of globalization. The agreement to establish Confucius Institute between Hanban (China) and Nnamdi Azikiwe

At the moment, Chinese is taught and studied at Nnamdi Azikiwe University (Unizik) at certificate and degree levels, and also at the Nnamdi Azikiwe University (Unizik) High school, Awka. Majority of the students are Igbo speakers. Since the inception of Chinese studies many students who are Igbo speakers still grapple with the basics due to mother tongue (L1) inference. Many reasons have been put forward in order to explain the reasons for the difficulties students face in learning Chinese language as L2.

While Igbo is one of the Afro Asiatic family, Chinese belongs to a separate branch of the Sino-Tibetan language family. Igbo is a register tone language with three level tone. (high, low and down stepped tones). The tones are marked on all tone bearing units (TBUs) as follow; high – / (acute accent)), low - \ (grave accent) and downstep – (macron). Chinese is a contour tone language, it has four (4) basic tones, represented as follows; first tone – (high-level tone, second tone / (starting low and rising), third tone v (falling rising) and fourth tone \ (falling). The writing system of the two languages are different. Igbo is an alphabetic language whereas Chinese is a logographic language. Writing Chinese language (character) is one of the hardest aspects in learning the language. Each character is made up of various strokes formed by different dots or lines as the basic components. In 1958, the Chinese government passed the Act that adopts the Latin alphabet (pinyin, arranged sound) writing scheme. This writing

scheme has helped the phonologists in drafting the Chinese phonetic Alphabet. This has helped the oversea countries in studying the Chinese language.

In terms of popularity, more people speak Chinese than Igbo or any other language in the world. Katzer (2002) notes that Chinese has more speakers than any other language, twice the number of people that speak English speak Chinese and it is one of the five (5) official languages of the United Nations (U.N). It is against the aforementioned background that the current study decides to look into the problem or effect of Igbo (L1) on the learning of Chinese (L2) amongst JSS 2 students of Unizik High school, Awka. It is generally assumed that the features of the first language usually interfere with the learning of the second language. Lado (1957) is of the opinion that for there to be a lasting solution, there is need to compare the features of both source language (mother tongue) and the target language (TL) in order to find out the problem students learning both languages are likely to have or encounter. This study therefore sets out to compare sound systems of standard Igbo and that of standard Chinese (i.e Mandarin Chinese). This is to, amongst other things, predict and describe areas that will cause difficulty in learning.

Objectives

The following objectives will help us to achieve aim of the study;

1. To reveal the differences as well as the similarities of the consonantal phonemes of Igbo and Chinese.
2. To examine the pedagogical implications of L1 learners of L2 and teachers of Chinese.
3. To call the attentions of teachers, curriculum and text book writers to areas that demand greater attention.

Research Questions

The research questions that will help in achieving the objectives of this study include;

1. What are the differences and similarities in the consonantal phonemes of Igbo and Chinese?
2. What are the pedagogical implications of the differences in Igbo L1 learners and teachers of Chinese?
3. How will the study benefit the language teachers, curriculum planners, textbook writers and the learners?

Theoretical Framework

The study employs the theory of contrastive analysis (CA). The theory began with Robert Lado's (1957) book titled "language Across Cultures". This is a language teaching tool that was used extensively in the field of second language acquisition in the 1960s and 1970s. It is built upon the ideas set out in linguistic relativity, otherwise known as the Sapir-Whorf Hypothesis, the general belief is that language structures affect cognitive thinking. Which eventually leads to the automatic transferring of one language's rules to another, Yang (1992).

The Contrastive Analysis Hypothesis (CAH) states that the structure of the first language affects the acquisition of the second language (Fries 1945, Lado 1957). CAH refers to the theory itself while CA is all about the method of implementation of the hypothesis. CAH

> according to Wardhaugh (1970) has two versions, the weak and the strong versions; the weak version identifies the difficulties encountered during the process of learning, it does not pay attention to the apriority prediction of linguistic difficulties. That is, it involves the observational use of the CA. The strong version notes that the main barrier to L2 learning is from interference of the learners L1 system. Hence, the more the difference between learners' L1 and L2, the greater the difficulty, a systematic and scientific analysis of the two languages systems can help predict the difficulties, the result of the CA can be used as a reliable source in the preparation of teaching materials, planning of course and the improvement of classroom techniques.

The merits of CAH is summarized as follows, contrastive analysis is carried out for pedagogical purposes because:

i. It aids the L2 teachers to plan and execute effective teaching and learning.
ii. It helps in identifying difficult areas
iii. It aims at encouraging positive measures or strategies that would help to develop syllabus which can facilitate the L2 learning process to take place within the shorted time limit that is possible
iv. It also helps the learners to have a good knowledge of the structures of L2.

CA has variously been criticized because of some shortcomings such as:

a. It is not all differences that can hinder meaning
b. It does not predict some of the errors which learners are observed to have made.
c. It predict some errors that do not occur.

Despite the above shortcomings CA has been found to be a veritable tool for the study of language learning and teaching. Based on this structural view of language and the behavioural view to learning, the task of pedagogy is to determine which sets of habits need to be dropped and those that need to be reinforced so that the learning of L2 would be successful - (Agbedo, 2015). Schmitt (2010:116) affirms that in spite of the rejection of CA by some L2 acquisition researchers, most teachers and researchers are still convinced that learners draw on their knowledge of other languages as they try to learn a new one. They do not simply transfer all patterns from the L1 to the L2. There are changes over time, as learners come to know more about L2. He opines that some aspects of the language are more prone to L1 influence than the others such as pronunciation.

Review of Literature

Olukpe (1978) contrasts the syntax of Igbo with that of English. He brings out the difficulties which an Igbo learner may encounter while learning English as a second language. He also notes that the lexical patterns of the learner is influenced by the mother tongue interferences. Orakwue (1993) in his contrast of Yoruba and Igbo consonantal phonemes affirms that the consonantal phonemes of the two languages have a lot in common because they belong to the same language group. But the production of the Yoruba /ɾ/ tap involves a single tap whereas, the Igbo /r/ is a roll, the production involves a series of rapid taps. Also, Yoruba observes a nasalization process whereby the tap /r/ and the semi- vowels /j, w/ are nasalized before a nasalized vowel but this is not so in in Igbo.

Li (1998) contrasts word order in English and Chinese, she notes that the difference between the two languages is in the secondary elements or modifiers. The attributes are grouped into pre-modification and post-modification, that of Chinese are positioned before the nouns they modify. This is always a sources of confusion to Chinese learners of English language and vice-versa. Onuegbu (2005) looks at the consonant system of Mbaise and that of English language, and notes that Mbaise has 42 consonant sounds. She concluded that difficulties encountered by Mbaise English learner emanate from the differences in the phonemes of the two languages in question. Mekiliuwa (2008) studies spoken Igbo and English, he finds out that English has dental fricatives /θ and ð/ but igbo has no dental fricatives rather than /t/ and /d/ are used as substitutes in words like ‘thin’ /tin/, ;that’ /dat/. Also English identifies the vowels /1/ and /1:/, /æ/ and /a:/ as long and short respectively but Igbo has no such distinction, hence words like ‘seat’ and ‘sit’ and ‘cart’ and ‘cat’ are pronounced alike. Diphthongs such as /ei/, /au/ in English do not have their equivalent in Igbo, so that ‘gate’ and ‘tower’ are pronounced as /get/ and /tawa/. In terms of syllabic structure, he points out that English permits consonant clusters whereas igbo does not which creates difficulty for Igbo English learners.

Mensah and Ojukwu (2012) in their study of central vowels in English and Efik, find out that part of the learning difficulties faced by Efik English learners are recognition of these English phonemes //ʌ ə ʒ:/, and the problem of distinguishing /ʌ/ /ə/ and /ʒ:/ from /ɔ a and ɛ/ because they are equivalent of the former set sounds. Eme and Odinye (2008) discover in their study that standard Igbo has 28 consonants while mandarin Chinese has 21 consonants. They identify some sounds which are present in Igbo but not peculiar to Chinese and vice versa: Igbo has these phonemes /ɣ ʤ ɲ ŋ ŋw j w kp gb kw gw / which Chinese lacks, Chinese has aspirated segments /ph th kh tsh ʨh tʂh/ and retroflex segments

/ʂ tʂ tʂh ɻ / which do not occur in Igbo. They are of the opinion that these differences in the two languages' consonant inventories were likely going to pose production difficulties to L2 learners.

Odinye (2009) looks at the phonological problems of Igbo learners of Chinese. He posits that there are some sounds which are found in Chinese but not found Igbo. Also, those sounds with their equivalence in both languages are not articulated in the same manner, such as (Ch, Z, sh etc). These areas of differences pose at learning difficulties to Igbo learners of Chinese. Jiang & Liu (2014) is on the input of L1 negative phonological transfer on L2 word identification and production. They used Speech learning model and the Abstractionist model of speech perception in the study. Using 30 undergraduate Chinese English learners to participate in two experiments to address the issue of; negative phonological transfer on second language word identification and production. The findings show that students assimilated the English phonemes /s/, / θ/and /ð/ into the Chinese phonemic categories of /s/ and /d/ respectively and used /s/, and /d/ to substitute /s/, / θ/, /d/ and /ð/ in word identification and production. They argue that the negative phonological transfer is as a result of false phonological representation of L2 words in the learners' mental lexicon. They suggest that L2 teachers should pay more attention on phonetic and phonological instructions of L2 learners, in order to help them in the correct identification and production of L2 words. Okoye (2014), in contrasting the vocal phonemes of the standard Igbo and the mandarin Chinese posts that Chinese has more numbers of vowels than the igbo counterpart. Whereas, there are 36 (thirty six) vowels in mandarin Chinese, Igbo has only 8 (eight). In addition she identified 8 diphthongs and 16 nasal vocal segments which are absent in Igbo. She concludes that for Igbo native speakers learning Chinese, the plethora of vocalic sounds in Chinese will pose a Colossal learning difficulties.

The works reviewed above are all relevant to the current study in that they contrasts two languages to find out learning difficulties encountered by learners of either languages under study. However, the current study differ in that no known study has been done in the area of the learning problems encountered by Igbo (L1) speakers trying to learn Chinese (L2) amongst the J.S.S students of Nnamdi Azikiwe University High School, Awka. Whereas Eme and Odinye (2008) and Odinye (2009) compares the consonantal phonemes, tones and errors of both Igbo and Chinese using Nnamdi Azikiwe University students as case study, the current study intend to contrasts the consonantal phonemes of the two languages under study using Unizik High School students as area of concentration hence filling a scholarly gap.

Summary of Literature Reviewed

From the various literature reviewed on contrastive analysis done of different languages. Although some scholars are of the opinion that contrastive analysis does not adequately predict learner's learning difficulty. They however, agreed that it is recognized as a veritable tool for predicting learners' deficiency while learning their L2. CA is an important framework which when applied effectively aids teaching and learning of two or more languages. From all the works done on CA which we have reviewed, none contrasts standard Igbo and mandarin Chinese segmental phonemes amongst Unizik High School students. This study therefore, is to fill that scholarly gap.

Methodology

In carrying out this study, two methods of data collection were employed; the primary data came through native speakers of Igbo from JSS 2 class of Unizik High school, fifty (50) students were tested and interviewed as informants using unstructured questionnaires and tape recorder. Also personal interaction in the course of classroom teaching was also employed. At this level, teachers pay more attention on the grammatical knowledge of Chinese rather than pronunciation. Hence, it is assumed that the students have fairly low phonological awareness. The secondary data includes: textbook, thesis, dissertation, journals and seminar papers. The data gathered were compared and analyzed to determine where native speakers of Igbo are likely to encounter problems in the pronunciation of some Chinese sounds and words. At last L1 and L2 consonantal phonemes were contrasted and classified into two types in terms of the relationship; similar sounds and different sounds. The bigger the gap is between an L1 sounds, the easier it will be for L2 learners to observe the differences.

Data Presentation and Analysis

The matching methods will be used (one of the procedures of contrastive analysis in applied linguistics) in this study. In this procedure, the constituents of the targeted areas of the two languages of study are matched with their equivalent in order to determine their similarities and differences.

Segmengtal Phonemes of Standard Igbo and Mandarin Chinese Standard Igbo Consonants

From our observation as native speakers of Igbo, and available literatures there are about twenty eight (28) consonants in the phonemic system of the Igbo language. They are as listed below:

/p b t d k g kp gb kw gw m n ɲ ŋ ŋw f v s z ʃ ɣ ɦ tʃ dʒ l r j w/

The consonants for standard Igbo are placed in a consonant chart as shown in Figure 1 below, this is in order to capture the three-term labels of description for consonants (placed and manner of articulation, and the state of the glottis).

Fig. 1: Consonant Chart of the Standard Igbo.

Place → Manner ↓	Bilabial	Labia-dental	Alveaolar	Post-alveolar	Palatal	Velar	Labial velar	Labialized velar	Glottal
Plosive	p b		t d			k g	kp gb	kw gw	
Nasal	m		N		ɲ	Ŋ		Ŋw	
Fricative		f v	s z	ʃ		ɣ			ɦ
Affricate				tʃ dʒ					
Lateral			L						
Trill			R						
Approximant					j				

Chinese Consonantal Phonemes

The Chinese consonants are 21 (twenty one), as presented below;

/p p^h t t^h k k^h m n f s ɕ ʂ h
ts^h tɕ $tɕ^h$ tʂ $tʂ^h$ l ɻ/

They are placed in the consonant chart as shown below;

Figure 2: Consonant Chart of Standard Chinese

Place → Manner ↓	Bilabial	Labia-dental	Alveaolar	Post-alveolar	Palatal	Velar	Glottal
Plosive: Plain aspirated	p p^h		t t^h			k k^h	
Nasal	M		N				
Fricative		f	s	ɕ	ʂ		h
Affricate: Plain aspirated			Ts ts^h	tɕ $tɕ^h$	tʂ $tʂ^h$		
Lateral approximant			L				
Approximant					ɻ		

Differences and Similarities Between Igbo and Chinese Consonantal Phonemes

Looking at the differences, we note that while standard Igbo has 28 consonants, standard Chinese has 21 consonants. Also, the following sounds are present in Igbo but absent in Chinese; /ɣ dʒ ɲ ŋ ŋw j w kp gb kw gw/. In addition, Chinese has aspirated sounds /p^h t^h k^h ts^h $tɕ^h$ $tʂ^h$/, retroflex sounds/ʂ tʂ $tʂ^h$ ɻ/ and post-alveolar sound /ɕ/ that are not found in Igbo.

In the area of similarities, we notice that Igbo and Chinese have some of the sound segments in common; /p b t d k m n f s l/

What Is The Pedagogical Implication Of The Differences To Igbo L1 Students Learning Chinese And The Chinese Teachers?

Here in this section, the results and the implications of the differences in the consonantal phonemes of the Igbo and the Chinese languages are stated as it affects the Igbo learners and the Chinese teachers. Through classroom interactions, we found out that bulk of the problems which Igbo Chinese learners encounter is as a result of the differences in the phonemic inventories of the languages in question. Since Igbo students learn Chinese against the background of their mother tongue, hence, the Mother tongue interference. This agrees with Fries (1945:9) and Lado (1957 cited in Okoye 2014) that the habit formed by the learner in his first (L_1) language plays a major role in his second (L_2) language learning.

It is observed that those Chinese phonemes which are not found in Igbo would definitely constituted pronunciation problem for the Igbo learners of Chinese, as they would often negatively transfer sound from Igbo into Chinese by substituting the unfamiliar Igbo phonemes. This naturally results in pronunciation error on the part of the Igbo learners of Chinese. The learners may find the following areas of phonology in either language difficult to articulate; As noted earlier, Chinese language has aspirated sounds /p^h t^h k^h ts^h $tɕ^h$ $tʂ^h$, retroflex sounds/ʂ tʂ $tʂ^h$ ɻ/ and post-alveolar sound /ɕ/ that Igbo lack, which pose a lot of problems for the learners of the Chinese language. The Igbo students learning Chinese often substitute these sound segments with their plain counterparts in the language or simply replace them with ones that are closest in terms of articulation

Examples; /p^h/ → /p/, /t^h/ , /ts^h/ → /t/, /k^h/ → /k/ , /ɻ/ → /r/, /ɕ/ → /ʃ/ · In words such as;

> pāizi 牌子 (brand), tīan 天 (sky), cǎo 草(grass), kàn看 (see), rì 日(day), xī 系 (west).
> We also noticed during reading sessions that those sounds that are similar in both languages /p b t d k m n f s l /aid the learners in learning the target language. Therefore words such as; bǐ 笔 (pen) , dǎ 达 (to express), ming名 (name), nuǎn 暖 (warm), fù 富(rich), suàn 算 (garlic), and lèi 累(tired) do not constitute pronunciation difficulty during reading sessions.

In order to overcome the problem of pronunciation and production error, through negative transfer and over simplification, the Chinese teacher should pay more attention to the production and pronunciation of those sound segments that are different in the languages under study (as pointed out above). The students should be made to understand that the production of the aspirated segments whose plain variants occur in Igbo, is with more strongly expelled breath between the release of the sound and the onset of a following voiced segment (Laver, 1994; Clark et al, 2007, Eme & Odinye 2008, Okoye 2014). In addition, the tip of the tongue is curled backwards to articulate with the hard palate for the production of retroflex consonants. We recorded that the students found it easy to produce those sound segments that are similar in the two languages because they share the same segmental features, as indicated earlier.

Summary and Conclusion

The paper contrasted the consonantal phonemes of Igbo and Chinese and the pedagogical implications. The use of CA has been helpful in identifying the similarities, and differences in the phonemic inventories of the two languages that interact in L2 learning. The differences as pointed out earlier, occasion negative transfer, production error of L2 sound segments and words, over-simplification of L2 sound segments etc.

In conclusion, the suggested that there is need for the language teachers to pay more attention to those areas that are difficult for the students, correct pronunciation of Chinese sounds can be achieved by the use of modern ICT-based educational media, bilingual dictionary. Teachers should be aware of the differences pointed out in order to tackle the pronunciation problem. This calls for the need of teachers with linguistics background, with phonology as one of the areas of specialization. In the early stage of L2 teaching, teachers should design phonological awareness raising tasks in order to prevent the

negative sound transfer. Finally, the learners should actively participate in the learning process to overcome areas of difficulties, since learning involves four universal skills which are: egemnti, tingli 听力 (listening), okwuku, kouyu 口语 (speaking), ogugu, yuedu 阅读 (reading) and odide, tingxie 听写 (writing).

References

Agbedo C.U (2015). Agbedo, C. (2015) *General linguistics: Historical and contemporary perspectives*. Nsukka: KUMCEE-Ntaeshe Press Inc.

Clark, J., C. Yallop & J. Fletcher. (2007). *An introduction to phonetics and phonology*. Malden: Blackwell Publishing.

Eme, C.A & Odunye T.S, (2008). Phonology of standard Chinese and Igbo, *Nkuzi na Omume Asusu (NKOA)*, 126-37. Amaka dreams, Awka.

Fries C, (1945*). Teaching and learning English as a foreign language*. Ann Arbor: University of Michigan.

Jian,F. &Liu, Y.(2014).The impact of L1 negative phonological transfer on L2 word identification and production . *International Journal of Linguistics.*6, 5 37-50.

Katzner, K. (2002). *The languages of the world*. London: Routledge.

Lado, R. (1957*). Linguistics across cultures. Applied linguistics for language teachers.* Ann: absor University. Michigan Press.

Laver, J. (1994). *Principles of phonetics*. Cambridge: Cambridge University Press.

Lin, M. (2010). *Contrastive analysis of English and Chinese*. North Western Polytechnics: University Press.

Mensah, E.O Ojukwu,O, (2012). A contrastive analysis of English and Efik central vowels: The pedagogical implication. *Linguistics Association of Nigeria*, 9, 45 – 50.

Mekiliuwa, O. (2008). *An introduction to applied English linguistics.* Lagos: Forsdson Part and Sons.

Odinye, S. (2009). *An analysis of students' errors in learning Chinese language at Nnamdi Azikiwe University, Awka.* B. A. Thesis, Nnamdi Azikiwe University, Awka.

Okoye, C.L, (2014). *A contrastive study of Chinese and Igbo vocalic phonemes*. Seminar paper presented at University of Nigeria, Nsukka.

Oluikpe, A. (1978) *English in Igboland: A contrastive study of English and Igbo* syntax. Onitsha: Africana Publishers Limited.

Onuegbu, T.M, (2005). *A contrastive analysis of English and Mbaise consonantal phonemes.* B.A. Thesis. Ebonyi State University Abakaliki.

Orakwue, V.E.(1993). Error analysis and second language strategies. *Language Sciences,* 11.17-22.

Schmitt, N. (2010). *An introduction to applied linguistics*. 2nd edn, London: Hodder & Stoughton Ltd.

Appendix: Research Instrument

1. Pronounce the following Chinese consonants;

p t k p^h t^h k^h ts tɕ ʈs ts^h $tɕ^h$ $ʈs^h$ f s ɕ ʂ x m n ŋ l r

2. Pronounce the following Chinese and Igbo consonants;

/p^h/ → /p/, /t^h/ , /ts^h/ → /t/, /k^h/ → /k/ , /ʅ/ → /r/, /ɕ/ → /ʃ/

3. How would you pronounce the following words:

pāizi 牌子 (brand), tīan 天 (sky), cǎo 草(grass), kàn看 (see), rì 日(day), xī 系 (west), bǐ 笔 (pen) , dǎ 达 (to express), ming名 (name), nuǎn 暖 (warm), fù 富(rich), suàn 算 (garlic), and lèi 累(tired)