

Lexicostatistics Comparison of Standard Igbo and Achi Dialect

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Abstract

Comparative linguistics is the sub-field of linguistics that compares languages or dialects and tries to find out the differences and similarities that exist among them, using various techniques such as mass comparison, lexicostatistics, reconstruction etc. This study set out to compare the lexicon of standard Igbo and Achi dialect using the lexicostatistic analysis and lexical comparison. Data was collected using simple elicitation method, a prepared checklist culled from Swadesh 200 wordlist was used to elicit data and oral interviews were conducted over the phone to get the Achi equivalent from the Achi consultants, who are natives of Achi. A total of 100 lexical items were analyzed. The study revealed that there is a high level of mutual intelligibility between Standard Igbo and Achi dialect. From the data analyzed, the percentage of lexical items in both dialects that are different is 13%. Also, it was observed that the percentage true cognate of identical lexical items in both dialects is 45%, whereas, the percentage cognate of lexical items that differ in only sound segments is 42%. The percentage cognate of lexical items in both dialects (true cognate and words that differs in sounds) that share a similarity is 87%. It was also revealed that there exist similarities and differences between both varieties but there are more similarities. Therefore, the study establishes that Achi dialect is a variety of the Igbo language with more similarities than differences.

Introduction

Language is one of the most fundamental aspects of human behaviour (Nwaozuzu, 2017:1). To this researcher, "one of man's greatest achievements is the development of language into a refined instrument of expression and communication". Chomsky (2000:11) defines language as a set of (finite or infinite) sentences, each finite length constructed out of a limited set of elements. Languages are the principal communication systems used by particular groups of human beings within the specific society of which they are members (Lyons, 1981).

A language is made up of dialects. A dialect can be defined as "any regional or social variety of a single language that is mutually intelligible with other dialects of the same language and that differs in some definable features from other varieties of that language" (Campbell & Mixco, 2007). Chambers & Trudgill (2004) opine that a dialect is a term which is often applied to forms of language, particularly those spoken in more isolated parts of the world, which have no written form. It also refers to varieties which are grammatically (and perhaps lexically) as well as phonologically different from other varieties. As noted by the authors above, the differences observed in dialects or varieties of a language can be phonological, lexical, et cetera.

The field of linguistics that is concerned with the comparison of languages or dialects is known as comparative linguistics. It is usually understood as meaning the application of the comparative method to the comparison of languages. Sometimes the term comparative linguistics is used as a synonym or near synonym of historical linguistics (Campbell & Mixco, 2007). This branch of linguistics tries to find out the differences and similarities existing among languages or dialects. It studies the relationship or correspondence between two or more languages and the techniques used to discover whether the languages have a common ancestor.

The fundamental aim of comparative linguistics is to compare phonological systems, morphological systems, syntax and the lexicon of two or more languages/dialects using various techniques such as mass comparison, lexicostatistics, comparative method/reconstruction, etc. For this study,

lexicostatistics is applied as it leads to a more detailed classification. In this technique, basic vocabulary of the language variety is compared and used to determine level of similarity or difference.

Lexical comparison has gained a lot of attention in the field of linguistics. Arokoyo (2016a, 2016b), Bamigbade & Oloso (2016), Obisesan (2012) and a host of other researchers have worked on different areas of lexical comparison using different Nigerian languages and dialects. Their study reveals how they compared the different languages they worked on using the comparative method and the lexicostatistics analysis approach to derive cognate percentages in order to determine the level of the dialects' mutual intelligibility. The present study intends to contribute to existing literature by carrying out a lexicostatistic comparison of Standard Igbo and the Achi dialect of Igbo. In order to compare phonological systems, morphological systems, syntax and the lexicon of two or more languages/dialects, comparative linguistics employs various techniques such as mass comparison, lexicostatistics, and comparative method/reconstruction. Lexicostatistics will be adopted in comparing the basic vocabularies of Standard Igbo and Achi dialect. Using this technique, this study will focus on the phonological and lexical comparison of selected basic words found in Standard Igbo and the Achi dialect. These basic vocabularies of the varieties will cover areas such as numerals, animal names, plant names, food terms, etc. This research aims to fill such vacuum by determining the level of mutual intelligibility of both varieties, and to establish the areas of similarities and differences.

Literature Review

This section describes the related concepts as well as reviews related literature as regards lexicostatistics and comparative studies.

Conceptual Review

Comparative Linguistics

Comparative linguistics is the subfield of linguistics that compares languages; usually understood as meaning the application of the comparative method to the comparison of languages. Sometimes the term comparative linguistics is used as a synonym or near synonym of historical linguistics (Campbell & Mixco, 2007). There are various methods or techniques used in carrying out a comparative study such as mass comparison, comparative method / reconstruction and lexicostatistics.

Comparative Method

This is the most important method of historical linguistics; a method (or set of procedures) for comparing languages to determine whether they are related and, if related, how they have developed from a common ancestor. This method compares forms from languages that are related, cognates that have descended from a common ancestral language (the proto-language), in order to reconstruct the form in that ancestral language and to determine the changes which the related languages have undergone. Comparative method is also the basis for subgrouping related languages and establishing their family tree (Campbell & Mixco, 2007). This study will compare words from Standard Igbo and Achi dialects; however, the lexicostatistics method will be used.

Lexicostatistics

According to Campbell & Mixco (2007), lexicostatistics is the statistical manipulation of lexical material for historical inferences. They opine that lexicostatistics is often used as a synonym for glottochronology, though in a more technical sense, lexicostatistics need not be concerned with dating, as glottochronology is. It is a method of comparative linguistics that involves comparing the percentage of lexical cognates between languages to determine their relationship. Lexicostatistics is related to the comparative method but does not reconstruct a proto-language and is to be distinguished from glottochronology, which attempts to use lexicostatistical methods to estimate the length of time since two or more languages diverged from a common earlier proto-language. This is merely one application of lexicostatistics, however; other applications of it may not share the assumption of a constant rate of change for basic lexical items.

Ayeomoni (2012) conducts a research on the Lexico-syntactic exploration on Achi dialects and standard Igbo. The study is a comparative study with a view to finding out the areas of convergence

and divergence between the two dialects especially in the area of auxiliary verbs. The findings reveal that the two dialects are closely related in the areas of lexical usage and syntactic structures. Also, they

have the same lexical items in both the subject and verbal (predicate) positions and also at the adjunct position; some of the lexemes are the same in both dialects.

Basic Assumptions of Lexicostatistics

Bankale (2006) also identified three basic assumptions of lexicostatistics approach as follows:

- i. It assumes a basic or core vocabulary which is relatively culture-free and which is less susceptible to change as other kinds of vocabulary.
- ii. The rate of retention of the basic vocabulary is constant through time and as such about 81 percent of the vocabulary will be retained over a millennium.
- iii. The rate of loss is also constant, about 14 percent will be lost over a millennium. With this in mind, the cognation count will surely give information about sub grouping of related languages.

Lexical Comparison

Lexical comparison has gained a lot of attention in the field of linguistics. Arokoyo (2016a, 2016b), Bamigbade & Oloso (2016), Obisesan (2012) to mention just a few have worked in different areas of lexical comparison using different Nigerian languages and dialects. Moving outside the shore of Nigeria, scholars like Parkhurst & Parkhurst (2003), Castro, Flaming & Youliang (2012) have also worked in this area. Their study revealed how they compared the different languages they worked on using the comparative method and the lexicostatistics analysis approach to derive cognate percentage in order to determine the level of the dialects' mutual intelligibility.

Lexical comparison is a comparative analysis with the aim of investigating the similarities and differences between two languages. Crystal (2008: 279) defines the lexicon as "the component containing all the information about the structural properties of the lexical items in a language, i.e. their specification semantically, syntactically and phonologically". Comparative study could be carried out in the lexicon (vocabulary), phonology (pronunciation), and grammar (morphosyntax and grammar). Parkhurst & Parkhurst (2003: 1) identified two different approaches to lexical comparison each with distinct objectives; lexical similarity and historical relatedness

Lexical similarity investigates to what extent the words of two languages are similar, often with the hopes of making a further correlation to the intelligibility between languages. For example, family and the Spanish equivalent 'familia' are very similar to each other. If an English speaker heard the word 'familia', he might be able to guess the correct meaning. In most cases, the greater the lexical similarity between two variations.

This paper adopts a comparative method for the numeral analysis, animal and edible nouns and also presented the lexicostatistics analysis for the three dialects. The numerals were compared by looking at their formations and mathematical derivations and animal and edible nouns were compared by observing the sound alternations while the lexicostatistics analysis was done to derive the cognate percentage. Basic vocabularies and other related items from the three speech forms were considered and the following criteria were used to determine the lexical items that are similar and different:

- i. Words are counted as similar if their pronunciations are identical barring only their tones.
- ii. Words that are different in forms but have same meaning are considered different words.
- iii. Derived words were seen as a case of compounding i.e. two separate morphemes combined to form new compound word.
- iv. Borrowed words that are different in forms are different words.

Data Presentation

The following data are vocabularies found in both Standard Igbo and the Achi dialect. The data is grouped into eight concepts according to the vocabularies. The tables present the words in Standard Igbo, Achi, and English gloss. Beside each vocabulary, a phonetic transcription is given with the appropriate tone mark to enable easy pronunciation. The use of the phonetic transcription is also to find out areas of phonological similarities or differences. A total of one hundred words makes up the data.

Table 1: Numerals

Numeral pattern has to do with the counting system in a particular language. Every language has a counting system which is language specific. It is usually mathematical with the use of addition, subtraction

or multiplication. This means that a numeral system has a particular base to which we can add to, subtract from or multiplied to generate another number.

S/N	Standard Igbo	Achi	Gloss
1	otu - [ótù]	nnaa/ofu - [ńnáā], [òfú]	“one”
2	abuṛ - [àbṛ]	ìbṛ - [Ìbṛ]	“two”
3	ato - [átò]	ìtò - [Ìtò]	“three”
4	ano - [ánò]	ìlò - [Ìlò]	“four”
5	ise - [ìsé]	ise [ìsé]	“five”
6	isii - [ìsìí]	ishii -[ìʃíí]	"six"
7	asaa -[ásáà]	ìsaa -[Ìsáà]	"seven"
8	asato -[ásátò]	ìsato -[Ìsátò]	"eight"
9	itolu -[ìtòlū]	ite naani -[ìtè náāní]	"nine"
10	iri -[ìrí]	iri -[ìrí]	"ten"
11	iri na otu -[ìrí nà ótù]	iri la ofu -[ìrí là òfú]	"eleven"
12	iri na abuṛ -[ìrí nà àbṛ]	iri la ìbṛ -[ìrí là Ìbṛ]	"twelve"
13	iri na ato -[ìrí nà àtò]	iri la ìtò -[ìrí là Ìtò]	"thirteen"
14	ìrí na ise -[ìrí nà ìsé]	iri la ise -[ìrí là ìsé]	"fifteen"
15	iri abuṛ -[ìrí àbṛ]	iri ìbṛ -[ìrí Ìbṛ]	"twenty"

From table 1 above, it can be seen that Achi and Standard Igbo share cognates, although there are variations in the sound segments of examples 2, 3,4,6,7 and 8. Examples 5 and 10 share a strong similarity as the numbers “five” and “ten” are represented the same way in both varieties ([ìsé]/[ìsé], [ìrí]/[ìrí]). However, a slightly different pattern is observed in examples 11 to 14. The pattern of

numbering is the same, but with the conjunction linking the numbers, we see a phonological difference where Standard Igbo uses [nà] to represent "and" while Achi Igbo represents "and" with [là]. It can also be noticed, that there is a difference in examples 1 and 9. Standard Igbo and Achi dialect represent the numbers "one" and "nine" with completely different words ([ótù], [ínāā]/ [òfú]).

Table 2: Animals

Animal nouns refer to living things which comprise of insects, amphibians, and four-legged animals.

S/N	Standard Igbo	Achi	Gloss
16	nkịta -[nkítā]	nkụta -[nkotā]	"dog"
17	ewu -[éwú]	eghu -[éví]	"goat"
18	abụzụ -[àbuzo]	mbizị -[mbíʒì]	"cricket"
19	igwurube -[ìgwùrùbè]	igwurube -[ìgwùrùbè]	"locust"
20	ọsa -[osá]	ọsha -[osǎ]	"squirrel"
21	atụrụ -[átúrū]	atụrụ -[átúrū]	"sheep"
22	ebule -[èbùlè]	ebule [èbùlè]	"ram"
23	mkpi-[mbí]	mkpi -[mbí]	"he-goat"
24	ehi -[éhí]	ehi -[éhí]	"cow"
25	ezi -[ézì]	ezi -[éʒì]	"pig"
26	enwe -[ènwè]	enwe -[ènwè]	"monkey"
27	ọzọdimgba -[osodímbā]	ọzọdimgba -[osodímbā]	"gorilla"
28	ọdum -[odom]	ọdum -[odom]	"lion"
29	agu -[ágo]	agu -[ágo]	"leopard"
30	ele -[éle]	ele -[éle]	"antelope"

From table 2, it can also be seen that Achi and Standard Igbo share true cognates. There are more animal words that share a strong similarity in both varieties. For instance, examples 19, 21, 22, 23, 24, 26, 27, 28, 29 and 30 represent animals using the same words ([átúrù]/ [átúrù], [èbùlè]/ [èbùlè]). However, variations can be seen in the sound segments of examples 16, 17, 18, 20 and 25. For examples 16, 17, 20, and 25, the sound variation is in the medial position ([í]/[ú], [w]/[v]), etc., but a slightly different pattern is observed in example 18 where the phonological difference is both at the initial, medial and final position ([àbozù]/[mbíʒí]).

Table 3: Plants (vegetables)

A living thing that grows in earth, in water, or on other plants, usually has a stem, leaves, roots, etc.

S/N	Standard Igbo	Achi	Gloss
31	onugbu -[ònúbù]	oligbe -[òlíbè]	"bitter leaf"
32	nchuanwù -[ntʃʉānwʉ]	nshigbu -[nʃíbu]	"scent leaf"
33	akwùkwò ànàrà -[ákwokwò ánàrà]	akù òhè -[áko óhè]	"garden egg leaf"
34	ùgu -[ugʉ]	ùgu -[ugʉ]	"pumpkin leaf"
35	gboròdì -[bərɔdí]	mgboròdì -[mbərɔdí]	"waterleaf"
36	ose -[ósè]	ose upurutu -[ósè úpúrútú]	"pepper"
37	òkwurù -[ɔkwɔrʉ]	òkwurù -[ɔkwɔrʉ]	"okra"
38	yabaasì -[jàbáàsì]	yòbaasì -[jàbáàsì]	"onions"
39	ero -[éró]	ero -[éřō]	"mushrooms"
40	òhà -[òhá]	òhà -[òhá]	"camwood leaf"
41	ánàrà -[ánàrà]	àhùhā -[áhohā]	"garden egg leaf"
42	inine -[ìnìnè]	akwùkwò giriini -[ákwokwò girīni]	"spinach"
43	òkazì -[ɔkázì]	òkazì -[ɔkázì]	"wild spinach"
44	ùtazì -[otàzì]	ùtazì -[otázì]	"African salad"
45	ùzìzà -[uzízà]	ùzùzà -[uzozà]	"black pepper leaf"

From table 3, it can be observed that there is sameness in examples 34, 37, 39, 40, and 41, that is, the words are the same in both varieties. Examples 31, 35, 38, 43, 44, and 45 differ in sound segments, while examples 32, 33, and 42 are completely different words. Here, we find lexical variations.

Table 4: Edible Foods

Edible food refers to something that is suitable or safe to eat. They also refer to something that can be eaten as food and consumable.

S/N	Standard Igbo	Achi	Gloss
46	ọka -[ɔkà]	akpaakpa -[àbààbà]	“corn”
47	egwusi -[ègwúsí]	ahụ ere -[àhùèrè]	“melon seed”
48	akị inu -[ákíílù]	ugugorio -[úgúgóriò]	“bitter kola”
49	ede -[édè]	ede -[édè]	“cocoyam”
50	akpu -[ábo]	jigboṣo -[dʒíboṣo]	“cassava”
51	jioko -[dʒíókō]	ule akankuta -[ùlè áká nkota]	"plantain"
52	unere -[únèrè]	ule ocha -[ùlè ɔiá]	"banana"
53	ụkpaka -[ɔbákā]	akpaka -[àbákā]	"oil bean"
54	akwu -[ákwɔ]	akwu -[ákwɔ]	"palm fruit"
55	akị oyibo -[ákí óyibó]	aku bekee -[áku bèkè]	"coconut"
56	oroma -[òrómá]	oroma -[òrómá]	"orange"
57	oji -[ɔdʒí]	oji -[ɔdʒí]	"kolanut"
58	ube -[ùbé]	ube oru -[ùbé órū]	"African pear"
59	ube oyibo -[ùbé óyibó]	ube bekee - [ùbé bèkéè]	"avocado pear"
60	mmimị -[mmìmì]	orị ụhwụ -[orì ɔhwɔ]	"pepper fruit"

From table 4, only example 49, 54, 56, and 57 have sameness of lexical items in both varieties. For the phonological variation, we see them in examples 53 and 55, while the other examples in the table are totally different from each other. They show a lexical variation in both varieties.

Table 5: Body Parts

A part of a human body

S/N	Standard Igbo	Achi	Gloss
61	afọ -[áfɔ]	ahwọ -[áhɔ]	"stomach"
62	isi -[ísí]	ishi -[íjǐ]	"head"
63	ntị -[ntǐ]	nchị -[ntǐ]	"ear"
64	aka -[áká]	aka -[áká]	"hand"
65	obi -[óbì]	obu -[óbù]	"chest"
66	imi -[ímí]	imi -[ímí]	"nose"
67	ọmụ -[ɔmɔ]	ọlụ -[ɔlɔ]	"mouth"
68	eze -[ézē]	eze -[ézē]	"teeth"
69	ire -[íré]	ire -[íré]	"tongue"
70	ntị -[ntǐ]	nchị -[ntǐ]	"cheek"
71	agba -[àbà]	agba -[àbà]	"chin"
72	nku anya -[nkù áfǎ]	nku anya -[nkù áfǎ]	"eyebrow"
73	ntutu anya -[ntùtù áfǎ]	ntutu anya -[ntùtù áfǎ]	"eyelash"
74	olu -[ólú]	olu -[ólú]	"neck"
75	egbugbere ọmụ -[ébùbèrè ɔmɔ]	egbugbere ọlụ -[ébùbèrè ɔlɔ]	"lip"

For table 5, examples 64, 66, 68, 69, 71, 72, 73, and 74 show sameness of lexical items. In this table, we do not see lexical variation. The other examples differ in sound segments. Examples 61, 62, 63, 67

and 70 for instance differ at the medial position, while example 65 differ at the final position. The items in table 5 mostly show a phonological variation.

Table 6: Liquids

A substance that flows freely but is of constant volume, having a consistency like that of water or oil.

S/N	Standard Igbo	Achi	Gloss
76	mmiri -[mmírí]	miri -[mírí]	“water”
77	ọbara-[ọbàrà]	ọbara -[ọbàrà]	“blood”
78	mmanya -[mmánū]	mii -[míí]	“wine”
79	mmanu -[mmánu]	mmalū-[mmáíu]	“oil”
80	amiri -[àmírí]	maamiri- [máámírí]	“urine”

From table 6 above, a lot of sound variation can be observed in the examples above. It is only in example 77, “blood” that we have sameness. In this sound variation, we see that some sounds are present in a variety and absent in the other. For instance, the Achi equivalent of water has one “m”, while its SI counterpart has two. In example 78, “ma” is missing in Achi, whereas it is present in Standard Igbo. This phonological change could be as a result of regional factors.

Table 7: Pronouns

A **pronoun** is a word that stands in for a noun, often to avoid the need to repeat the same noun over and over. Like nouns, pronouns can refer to people, things, concepts, and places. Most sentences contain at least one noun or pronoun.

S/N	Standard Igbo	Achi	Gloss
81	mụ -[mυ]	mụ -[mυ]	“I”
82	gị -[gí]	gụ -[gυ]	“you” (sg.)
83	ya -[já]	nya -[ná]	he/she/it
84	unù -[únù]	ulù -[úlù]	“you” (pl.)
85	anyị -[àní]	anyi -[ájí]	“we”
86	ha -[há]	ha -[há]	“they”

From table 7 above, it can be observed in examples 81, 85 and 86 are represented the same way in both varieties. In examples 82, 83 and 84 however, we find variation in the sound segments. Despite the variation in sounds, it appears that the pronouns in both Standard Igbo and Achi are similar.

Table 8: Verbs

Verbs are the action words in a sentence that describe what the subject is doing.

S/N	Standard Igbo	Achi	Gloss
87	lo -[lɔ́]	lo -[lɔ́]	"swallow"
88	gbɔ -[bɔ]	gbɔ -[bɔ]	"vomit"
89	gbu -[bú]	gbu -[bú]	"kill"
90	kɔ -[kɔ]	kɔ -[kɔ]	"scratch"
91	sì -[sɪ́]	shì -[ʃɪ́]	"say"
92	ńụ -[nɔ]	ńụ -[nɔ]	"drink"
93	ri -[rɪ]	ri -[rɪ]	"eat"
94	gba -[bá]	gba -[bá]	"dance"
95	chu -[tʃú]	chu -[tʃú]	"fetch"
96	gwa -[gwá]	gwa -[gwá]	"tell"
97	je -[dʒé]	ga -[gá]	"go"
98	ba -[bá]	ba -[bá]	"enter"
99	ke -[ké]	ke -[ké]	"tie"
100	gwu -[gwú]	gwu -[gwú]	"swim"

From table 8 above, it can be seen that all the verbs share same lexical items in Standard Igbo and Achi, except example 91 that differs in a sound segment and example 97 where the word for go is different. This implies that the verbs in both varieties are similar.

Data Analysis

In order to determine the level of relatedness, that is, the level of similarity, difference and mutual intelligibility, lexicostatistics method is used. The formula adopted is number of cognates divided by the total number of lexical items, multiplied by 100 as exemplified below:

$$\frac{\text{Cognate}}{\text{Total number of lexical Items}} \times 100 = 1$$

To determine the level of cognates that differ only in sounds, we counted 42 cognates. Their computation is given below:

$$\frac{42}{100} \times 100 = 42\%$$

To determine the level of true cognates, that is, lexical items that are the same in both varieties (words and sounds), we counted 45 cognates. Their computation is given thus:

$$\frac{45}{100} \times 100 = 45\%$$

To determine the level of similarity, we count both the true cognates and the word that differs only in sounds and they are 87 lexical items all together.

$$\frac{87}{100} \times 100 = 87\%$$

To determine the level of difference, we counted 13 lexical items that are different in the way they are represented. These lexical items are new words entirely. Their computation is given as follows:

$$\frac{13}{100} \times 100 = 13\%$$

Findings, Summary and Conclusion

From the data analyzed above, the percentage cognate of lexical items (true cognate and word that differ in sound) in both dialects that share a similarity is 87%. The percentage of lexical items in both dialects that are different is 13%. Also, it was observed that the percentage cognate of identical lexical items in both dialects that is the true cognate is 45%, whereas, the percentage cognate of lexical items that differ in only sound segments is 42.

From the results above, it can be concluded that Achi and Standard Igbo dialect share a high level of mutual intelligibility because of the high percentage of 87 that was arrived at. From the data also, it can be seen that even though there are areas of differences, the areas of similarities are more between the two varieties. Therefore, Achi is established as a variety of the Igbo language.

From the phonological perspective, some sounds were discovered that are present in the phonology of Achi but absent in the phonology of Standard Igbo. For example, the Achi words for 'cricket' /*m̩b̩ʃ̩*/ and 'pig' /*eʃ̩*/ contain the voiced palate alveolar affricate /*ʃ̩*/ but the sound is absent in Standard Igbo phonology.

The study also discovered the pattern of words and the use of conjunction in the Achi dialect as compared to Standard Igbo. Where Standard Igbo uses *nà* to link words, Achi used *là*.

The study also found out that Standard Igbo and Achi dialects have the same counting pattern of addition of the numbers from twenty-one to twenty-nine. The lexical items compared are similar although there are phonological variations especially vowel substitutions among the two varieties but this does not affect intelligibility.

This study carried out a lexicostatistic analysis of the lexicons of Standard Igbo and Achi. The study made use of 100 lexical items which were presented in 8 tables under the headings of numerals, animals, plants (vegetables), edible foods, body parts, liquids, pronouns and verbs. The Standard Igbo and Achi equivalents are given, and a phonological representation of the lexical items were given to determine the phonological differences and to aid pronunciation. The percentage cognate was done to determine the level of relatedness of the two varieties. We discovered that lexical items are similar in both varieties and we also discovered that there is intelligibility despite the various phonological variations.

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