

1. The study of infixes in Kisukuma language of Tanzania

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ABSTRACT

Generally, the possibility of Bantu languages having infixes has been ignored or not given proper attention. Thus, the argument that, 'infix affixation rather than prefix and suffix is impossible in Bantu languages is brought under scrutiny. Therefore, the article examines infixation in the Kisukuma language, the area, which has been ignored for a long time. The study on which the paper is based specifically aimed at presenting infixes in Kisukuma and analysing the roles of infixes. The study was guided by the Cognitive Grammar theory. The theory treats the derived lexemes' meaning in both core and periphery sense pragmatically. The approach used in this article was qualitative and the case study was used as a design through which Sukuma area was selected as a case study. Three informants were purposively sampled, so were the native speakers. Documentary review and focus group discussion techniques were used to collect data for this study Leipzig Glossing Rule and morpheme-by-morpheme correspondence was used as the framework of data analysis. The findings show that Kisukuma has infixes in their lexicon as in *koja*, which 'dip in' to *kogéja* 'dip in for/with steal each other'. Thus, the morph <gé> is an infix in this language. The paper concludes that Kisukuma language has infixes as opposed to scholars' claim that Bantu languages' infixes are uncommon. It is suggested that since infixation is non concatenative, there is a need of testing nonlinear theory being it Autosegmental Theory on the manner in which it accounts for infixes' representation. In addition,

since Kisukuma has multiple semantics in its lexicon, there is a need of carrying out morph semantics analysis of Kisukuma derived verbs.

Key words: *Kisukuma, infixes, cognitive grammar, applicative*

1. INTRODUCTION

Infixes in Bantu languages have drawn attention of many modern linguists; some argue that such process does not take place in Bantu (Johnson, quoted in Doke, 1950). Many researchers (i.e. Yu, 2006, Spencer, 1991: Martin & Munro, 1994, Broselow & McCarthy, 1983) have reported on infixation morphology as part of word formation process in linguistics terminologies as it is encoded. However, none of these researchers investigated infixation in Bantu languages, ever since it is reported that there are no infixes in Bantu languages (Doke, 1950). Other studies, include the Pangasinan study, a Malayo-Polynesian language spoken in the Philippines, (Benton, 1971), Timugon Murut, (an Austronesian language spoken in Sabah, Malaysia), Amis, an Austronesian language spoken in Taiwan (Prentice, 1971), SiSwati and Kinande, Bantu languages spoken in Swaziland and Zaire respectively as in E₁.

E₁ (a) luma 'house' → **lumaluma** 'houses'

(b) baso 'glass' → **babaso** 'glasses'
(Prentice, 1971:99)

In the above extract, the bolded morphs are prefixes, which are attached to the initial position of the word. Accordingly, there is no infixation process in the above data but reduplication, which has been claimed and considered as the result of the infixation (Kurusu, 2001). This shows how scholars need more research on determining linguistics phenomena such as infixation. Thus, it

is inconclusive to consider the data above as being derived by infixation process. Thus, the paper is line with Strauss and Corbin (2008) observation that, incomplete knowledge in technical and non-technical literature is one among the sources of research problem thus, the justification for the study on which the current paper is based.

According to Massamba (2009), an infix is the morpheme, which is inserted inside the word root, and that Kiswahili (a Bantu language) has no infixes though other Bantu languages have infixes as in Ciruuri, the language spoken in Tanzania particularly in Mara region as in E₂ data:

E₂ bhon-a 'get' → bweene '-has/have seen'
(Massamba, 2009)

In 2 we observe that the verb *bhona* means 'get;' according to Massamba, the verb *bweene* refers to 'she/he/they/we have seen'. The question is where is an infix in the verb *bhona*? Since, the verb *bhona* 'see' to *bweene* 'has seen' seems to be two different things and there is no infix other than phonological principles being applied. Based on this, the use of infix in Bantu language remains problematic hence, the need for a careful investigation to see what it means when we say affixes are inserted inside the root.

According to literatures (i.e. Johnson, quoted in (Doke 1950), Bantu languages have no infixes and those who investigate on infixes in Bantu languages (Massamba, 2009 and Richardson 1959 contradict the understanding of infixes by presenting incorrect data. Additionally, it is argued that since Bantu languages are agglutinative, their syntax is formed by either prefixes principally and suffixes to the root, but no infixes, that is to say, no mutable syllable is incorporated into the middle of the root-word

problem that motivated the current study². In the previous literatures on Bantu infixation phenomenon. Most of the scholars investigated infixation process as part of word elasticity of the lexicon in natural languages. Richardson (1959) presents data on infixes in Kisukuma language showing what he thought was infixes, which cause tone transfer in Kisukuma language. He presents the following examples in E₄ data below:

- E₄. (a) ba-bhon-a ‘they have seen’ >ba-**ku**-bhon-a
 ‘they will see’
 (b) ba-sol-a ‘they have taken’ >ba-**ku**-sol-a
 ‘they will take’ (Richardson, 1959)

In E₄ (a) data, the verb *bhona* means ‘see’ and the prefix [ba] represents second person plural ‘they.’ In E₄ (b), the verb *sola* means ‘take’. It is important to note that [bhon-] and [sol-] are roots in this language. Surprisingly, the bolded particle *-ku-* is an infix according to Richardson, which is incorrect because the particle *-ku-* represents the future time using auxiliaries’ similar to will or shall in English language. In addition, if the root is either *sol-* or *bhon-*, the particle *-ku-* is not inserted inside the root. However, the use of infixes in Kisukuma language needs in-depth studies to address the limitations of the previous studies.

Blevins (1999) reports justification of infixes in Leti, an Austronesian language spoken on the island of Leti, East Timor. Each of these allomorphs infixes *-ni-*, *-n-* and *-i-*. has a very specific distribution. The infix *-ni-* appears before the first vowel of the stem when the stem has an initial non-nasal or non-alveolar consonant followed by a non-high vowel. The

²The following are abbreviations used in this paper: E₁=Example one, FV =Final Vowel, C, SP= subject prefix agreement, INF= Infinitive, 1S= First person singular, OM= Object Marker, SM= Subject Marker,

infix *-ni-* is realized as *-n-* when the stem contains a high vowel after the initial consonant. Consider the following infixes showing nominalization in Leti language in E₅ below:

E ₅	(a) kasi ‘to dig’	→ k- ni -asi	‘act of digging’
	(b) kakri ‘to cry’	→ k- ni -kri	‘act of crying’
	(c) kili ‘look’	→ k- n -ili	‘act of looking’
	(d) kini ‘kiss’	→ k- n -ini	‘act of kissing’
	(e) davra ‘cut’	→ d- i -avra	‘act of cutting’
	(d) dèdma ‘to smoke’	→ d- i -èdma	‘act of smoking’

In E₅ we observe that, unlike other languages such as Kisukuma, whose infixes are inserted in the middle of the wordroot, Leti’s infix *-ni-*, *-n-* and *-i-* are inserted soon after the firstconsonant of the noun or adjective to another derived category such as verbs. This form of infixes is also expected in linguistics literature as the language dictates.

Egerod (1966) investigated the infixation process in Austronesian language spoken in Taiwan known as *Atayal* language. The study findings indicated that, *-m-* is an infix and can in fact appear before a consonant cluster. To Egerod (ibid), this form of infix is in contrast with forms that have a prefixing *-m-* marker that signifies the functions of reciprocity. Consider the following in E₆ data:

E ₆	(a) siuk ‘give back’	→ s mi uk	‘answer’
	(b) hutau ‘fall’	→ hu mt au	‘let fall’ (Egerod, 1965: 266)

In E₆data, the affix *-m-* is an infix in this language thus; it appears at the first consonant of the root. In fact, the infix *-m-* is active indicative marker as it is indicated above. This contrasts a prefix *-m-* marker that signifies the functions of reciprocity or reflexivity in addition to active indicative such as **smiuk**

'answer' vs. **mssiuk**, 'say to each other'. This is the behaviour found in Kisukuma language in so far as reciprocal prefix is concerned (Chipanda, 2018). The study by Egerod has empirical significance in the current study as it indicates similar findings with the language under discussion regarding infixation process.

As a challenging area of research, other scholars are reported to have treated infixes as part of reduplications system as it is indicated in Samoan plural (Mosel & Hovdhaugen, 1992), Uradhi, an Australian language as in E₇ data:

E₇'toa 'brave' → **to'toa** 'braves' (Mosel, 1992)

The E₇ data show that, some authors treat infixation as a reduplicate morph, something, which is incorrect. This motivated the current study to analyse what is supposed to be an infix and even the meaning of infix in linguistics.

Therefore, the reviewed literature shows that infixation as one of the word formation process in natural languages requires investigation. This is because what is reported in research data and arguments need to be investigated using the available data.

2. METHODOLOGY

The study used the case study design, which is strongly associated with qualitative research (Gray, 2014). Two techniques of data collection were used: Focus group discussions and documentary review. The former refers to an organized discussion among a selected group of individuals purposively for gaining a range or perspectives about subjects and situations (Gray, 2014; Bryman, 2008). The researcher used a group of three informants who were Sukuma native speakers for discussion. The informants were selected via snowball

sampling. The researcher listed Kiswahili words from languages of Tanzania and the informants were told to translate them into their mother tongue. For example, the Kiswahili word *nyang'anya* 'rob' to its applicative construction *nyang'anyia* 'rob for/with' and thereafter they were asked to provide its equivalent in Kisukuma as in *taja* 'rob' to *tagija* rob for/with. The latter refers to the process of reviewing documents for getting relevant secondary data that enabled the researcher to address the objective of the study. The researcher used two Kisukuma documents namely, "*Mhola nsoga*" (Mihayo, 1966) and Sukuma lesson grammar (Mary Knoll, n. d). The researcher read these documents thoroughly and identified verbs and their derivative infixes in their root to which content analysis was applied. This method was very important as it provided an insightful data from Kisukuma language.

The data obtained from the field (primary and secondary data) were analyzed using Leipzig *Glossing Rule* (Christian, 1982) which constitutes three levels of string representations. The first level represents word order or/and parsing level. The second level is known as the literal translation; and the third level is free translation level in which English language is used. We exemplify this phenomenon below using Kisukuma language spoken in the United Republic of Tanzania and Latin language:

E ₁₁	<i>Nalo<ge>j -a</i> 'Taste for'	1S-taste for-Fv Kisukuma: (Simon, 2018)
E ₁₂	<i>Reli<n>qu-ere</i> 'To leave'	Leave <PRS>-INF Latin: (Christian, 1982)

The data in E₁₁ and E₁₂ show three levels of glossing: one is word order, second is literal translation, and the third is free translation:

3. RESULTS AND DISCUSSION

This section discusses the findings in accordance with the paper's specific objectives. In this paper, I consider affix to be infix if and only if it is inserted inside the root and when inserted, there should be no change of other morphs before or after the root apart from extra affixes, which are inserted to dismantle the root discontinuously with near or distant semantic scope. Consider, to 'eat' → t-p-t 'eaten'. The study had two specific objectives: the first required us to explore infixes in Kisukuma and the second was to describe their roles. The two objectives were addressed using Cognitive Grammar theory. The paper starts with the first objective, which is on the infixes in Kisukuma language and whose analysis followed McCarthy's, (1982a) framework.

The infixes in Kisukuma language

The first objective of this study aimed at exploring infixes found in Kisukuma language and Kemunasukuma dialect in particular. The researcher studied infixes from documents as well as focus group discussions. In the preceding section, we defined infix as an affix, which is put inside the word root or stem. Thus, hypothetically the root XX means 'eat' when it is fixed inside it becomes XtX, which refers to as 'eaten'. That is to say, an infix should be put inside the word root or a stem of which it changes or modifies the semantic scope of the original word. In Kisukuma, a Bantu language F21, the researcher identified infixes, which play a number of roles as far as word elasticity is concerned. These findings refute the claim that Bantu languages have no infixes. The findings include <gɪ>, <ge>, <yɪ>, <ye>, <k>, <z>, <t> to mention a few. These infixes can be called Semantic focus infixes henceforth (SFI)...that is to say the meaning of the word is determined by its root. These infixes are categorised into three groups namely, applicative,

reciprocal, and contextual infixes. We start with applicative infixes:

Applicative infixes

An applicative morph is a suffix, which denotes different roles when it is attached to the verb. The Applicative morph can denote locative, instrumental, and benefactive roles to mention a few. The syntactic properties of the verb change following the fact that a new object (applied object) is introduced (Baker, 1988). It is also important to note that applicative or applied suffix increases the verb's valence when attached to the verbal root (Chipanda, 2018). Therefore, <gɪ> and <ge> are applicative or applied infixes in the language under discussion as in *koja* 'dip in' to *kogeja* 'dip in for or with' and *kilija* 'hold' to *kiligija* 'hold for/with'.

Reciprocal infixes

Reciprocal morph is a morph, which shows a relationship between two people, participants, or things, each of which plays a role of agent and patient. Additionally, reciprocal is a morph, which indicates the action that takes place between two parts that are applied to any verb, which is compatible with such semantic interpretation (Cocch, 2008). The proto Bantu reciprocal is *-AN- does not represent Kisukuma language though semantically present. This is because the language may exhaust different shapes of a morph to present certain semantic scopes. Thus, <yɪ> is a reciprocal infix in the language under discussion as in *Kuiɟsa* 'to steal' and *Kuiyɟsa* 'to steal each other.' It must be noted that other Bantu languages including Kiswahili, (Khamis, 2008), Tonga, (Mandal *et al*, 2016), Runyambo, (Rugemalira, 2007) to mention a few manifest reciprocals -an- as suffix derivation and not infix derivation like in Kisukuma language.

Contextual action infixes (Forceful)

Contextual action infixes are infixes whose action is performed by the doer either quickly or by force. That is to say before the verb is infixed, its action is normal compared to when it is infixed. These infixes are, <t> in *juula* 'take' to *jutula* 'take by force' and <z in *moola* 'cut/remove' to *mozola* 'cut or remove by force/quickly.' As far as I am aware, no one has provided linguistics explanations on the phenomenon under discussion in Kisukuma language.

The role of the Kisukuma language infixes

The second objective of this article aimed at describing the role of Kisukuma infixes. In other words, it was meant to identify the meaning expressed by infixes. The research accessed these roles by asking informants (Sukuma) to provide different alternatives of the word meanings after being derived or inflected by infixes. Thus, we managed to describe different meanings of either the same or different infixes by constructing sentences; where informants were not sure, such meanings were not considered. Therefore, the considered infix roles include argumentative, instrumental, locative, benefactive, intensive, associative, and motives. We shall start with argumentative role.

Argumentative role

Arguments in linguistics refer to the number of participants or valences being introduced to the verbs after the attachment of affixes. In this context therefore, when an infix is infixed inside the root, it adds a number of participants to the predicate structure. Consider the following structure in E₁₁ below:

- E₁₂. (a) Juma wa á -*loj* -*a* shiliwa
Juma-SP -Tns -taste -Fv -food
'Juma has tasted some food'

- (b) Juma wa á -lo<ge>j -a U ŋwana Shiliwa
 Juma-SP-Tns -taste <BEN>-Fv -Fv-SP -child -
 food 'Juma has tasted some food for the child'

In E₁₂ (a), it is observed that, there are two arguments, that is a subject or agent *Juma* and an object food. That is to say, the agent *Juma* is performing the action of *loja*, which means taste. In E₁₂ (b), it can be seen that the verb *loja* 'taste' is affixed with an infix *ge* which becomes *logeja* 'taste for.' That is to say, the addition of an affix *ge* in the verb root introduced another argument *ŋwana* 'child' whose agent *Juma* has tasted some food for (child). Therefore, this shows that infixes are also valence- increasing argument in Kisukuma language.

Instrumental role

This is the function of an infix, which shows that a certain thing such as a spoon, a knife, and the like has been used in performing a certain action. In this respect, when an affix is added into the root of the word in Kisukuma it sometimes shows instrumental role as in E₁₃.

- E₁₃ (a) P^huj -a Rob-FV 'Rob'
 (b) P^huj <g_I>-j-a Rob-<INST>FV 'Rob for/ with'
 (c) Bha-ka- m-p^huj <g_I>-j-a (ni knife) 2SM-PT-1OM-
 Rob-<INST>FV (by knife) 'They robbed him with
 knife' (by using knife)

The data in E₁₃ show that the affix <g_I> is an infix morph whose role is instrumental one. It indicates that someone uses a certain instrument for example, knife, or a gun for robbing. Such form of infixation is very important, as it is productive in nature since it introduces new valence to the predicate structure.

Locative role

This is the infix, which connotes location. Semantically, this is the function of an infix, which indicates direction of place or time. That is to say, such kind of infix can show where and when an event takes place. Consider the following data in E₁₄ below:

- E₁₄ (a) T^huj -a Cross-FV ‘Rob’
 (b) T^huj <g₁>-j-aCross-<TO>FV ‘Cross to/in’
 (c) a-ka- n- t^huj <g₁>-j-a kaya 1SM-PT-1OM-coross-<TO>FV home ‘He did cross at home’

In E₁₄ data, we note that the addition of infix <g₁> indicates a direction or place where an individual goes. It must be noted that not all infixes are productive; some show only a place or general direction.

Benefactive role

This is the situation where the added applicative morph to the verb indicates that an action, which is described by the verb, is the benefit of an individual. Semantically, applicative is sometimes called benefactive or dative, and “it indicates that the state or the action described is for the benefit of somebody else” (Mutaka and Tamanji 2000). However, one among thephrases that was indentified during the focus group discussionsis *guja*, which means sell, and *koja*, which means dunk, as it is shown in E₁₅:

- E₁₅ (a) Guj -a Sell-FV ‘Sell’
 (b) Gu<g₁>-j-a Sell-<BEN>FV ‘Sell for’

The data in E₁₅ (a) show that *guja* means ‘sell,’ but when it is infixed as in E₁₅ (b) it becomes *gugja*, which means to ‘sell for’. However, when the elements in E₁₅ are used in a sentence it

becomes pertinent to understand the role of the derived verb. We exemplify this for simplicity in E₁₆.

- E₁₆ (a) Nà-ka- guj-a Shiliwa I:PT-sell-<BEN>FV
 7- food ‘I sold some food’
- (b) Nà-ka- n- gu <gr>-j-a Juma -Shiliwa I:PT-
 10M-coross-<TO>FV 1.Juma 7- food
 ‘I sold some food for Juma/ I sold Juma some food’

However, the verb *-Guja* ‘sell’ takes two arguments in E₁₅ (c), *na-* ‘I’ and *chakula* ‘food.’ When the verb is derived with an applicative in E₁₆ (b) a beneficiary, *Juma*, is introduced. The applicative licenses a wide range of object roles that include the beneficiary, recipient, maleficiary, goal, instrument, reason, and location (Ngonyani, 1998).

Intensive role

This is the function of the Kisukuma infix, which indicates intensity. In other words, when the affix is infixed inside the root, it shows the action being done actively and with strong force or energy.

- E₁₇ (a) Ná Juul -a I: PFTake-FV ‘I have taken’
- (b) Ná n-ju<t>ul-a I:PF-10M-<FRC>FV
 ‘I have taken him by force’

E₁₇ is an interesting example, which indicates an intensive action of *juula*, which means ‘take’ in Kisukuma language, implying taking things in polite manner. Therefore, when the verb is infixed by an affix <t> its meaning changes and show that the action of taking something is done with vigour or force. Under the level of analysis, the same behaviour of semantic scope can be observed in the word such as *p^huluka* ‘escape.’ This

behaviour is also encoded in Cognitive Grammar theory holds that the words' meaning of the derived lexeme is conceptualized in both literal and non-literal senses. That is to say, the meaning can be conceptualized from within the same domain or (metonymy) (Kövecses, 2002) or from different domains (metaphor) (Taylor, 2002). In other words, it must be noted that the infixed word tends to harvest a variety of semantic scopes or peripheral meanings different from a core meaning of the original lexeme (see more in Taylor (2002) and Rosch (1978). Figure 1 illustrates the phenomena.

Figure 1: Semantic multi-conceptions

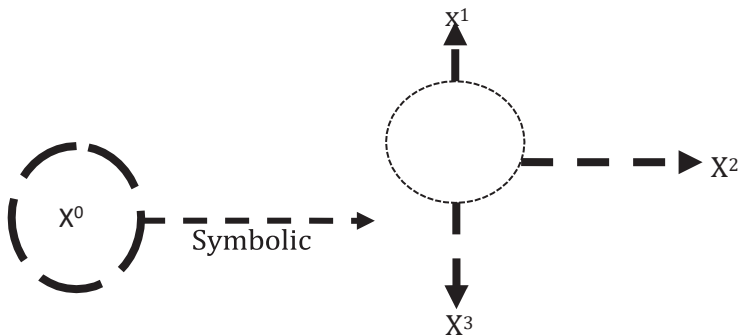
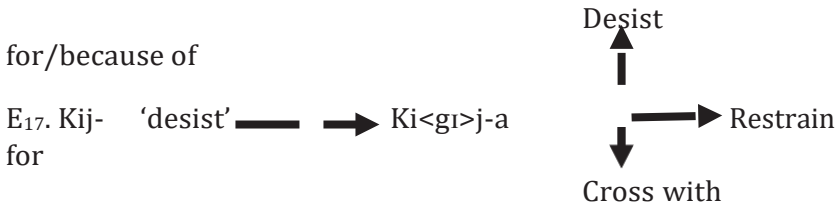


Figure 1 illustrates that X^0 means that, the lexeme has its basic meaning or overt manifestations, which one cannot confuse it. Therefore, after symbolic derivation, such a lexeme gets other either related or unrelated contextual or pragmatic aspects of meaning (Taylor, 2002). This can be presented in the following data in E₁₇.



In E₁₇, we observe that verb *kij-a*, which originally means ‘desist’, its semantic scope changes from abstract to concrete phenomena when it is derived. In fact, it can refer to desist for something, cross using an object, or instrument, or restrain for example restricting something to move. All these conceptions or representations of meaning are what Rosch (1978) calls peripheral senses.

Associative role

This is the function of an infix in Kisukuma with which when are infixed they indicate the action being performed from one another or from each other. This is sometimes known as reciprocal in linguistics. By definition, a reciprocal refers to constructions in which two or more participants act upon each other (Osore *et al.*, 2015) or conveying the idea of reciprocity (Manda *et al.*, 2016). See data 17 below as encoded in the document of Sukuma Lesson Grammar:

- E₁₈ (a) *kwiwigwa* ‘to listen each other’
 (b) *kwiyinha* ‘to give each other’ (Mary Knoll, n.d)

Data in E₁₈ indicate that the verb *kwiwigwa* and *kwiyinha* consists of an infinitive *ku/kw*, which is represented in English by infinitival *to*. Therefore, the roots of the above verbs are *-igw-* ‘listen’ and *-inh-* ‘give’. In fact, such roots are being infixed with an infix *-yi-* that is as shown in E₁₉.

E ₁₉ (a) Ku-inh -a	INF-give-FV 'To give'
(b) Ku-i<yɪ>nh-a	INF<REC> give-FV
'To give each other'	

In E₁₉ data above, we see that the bolded affixes are being infixed inside the verbal root at the right peripheral compared to the preceding data and it determines the position of gloss. This contests the scholars' argument that Bantu languages have no infixes at all (see Johnson quoted in (Doke, 1950). However, the discussed data in this paper prove that infixation is possible in Kisukuma.

4. CONCLUSION AND RECOMMENDATIONS

It can be concluded that infixes are manifested in Kisukuma language of Tanzania, a Bantu language contrary to what has been claimed by other linguists'/researchers. It was found that affixes including, <gɪ>, <ge>, <yɪ>, <ye>, <k>, <z>, <t> are infixes in Kisukuma language of Tanzania. These infixes are grouped into three types namely, benefactive or applicative infixes as in <gɪ> and <ge>, reciprocal or associative infixes as in <yɪ>, situational infixes as in <z>, ad <t>. It has also been discussed that Kisukuma infixes play a great role including, argumentative role, instrumental role, locative role, intensive role, benefactive role, and motive roles. These roles are tangible in accordance to Cognitive Grammar Theory which aims at indicating multiple semantics scope of a given derived lexeme on the contexts in which it is used. The presence of infixes in this language adds knowledge and the processes of word formation in Bantu language. The paper will be useful to professional instructors/lecturers worldwide — as it is argued that, the phenomenon of infixation tends to be less familiar than is the case with other morphological operations to students of linguistics; therefore, the study will familiarize students on lexicon's elasticity.

However, it is proposed that since infixation process is a non-concatinative phenomenon pertinent to word formation, it would be better for making the analysis by using nonlinear approach as an Autosegmental Theory to the infixation of data to see if there are peculiarities in the presentation compared with non-Bantu languages such as Semitic languages. Moreover, since Kisukuma has shown semantics multiplicity in its lexicon, there is a need of conducting morphosemantics analysis of Kisukuma derived verbs. This would contribute knowledge to linguistics literature and semiotics in particular.

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