

Troponymy of the Verb Root *-gbu* 'kill' in Compound Construction in Ìgbò

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Troponymy is a type of sense inclusion specific to verbs. In the Igbo language, a west Benue-Congo sub family of the Proto Benue-Congo language family, troponymy includes sense ranges of the verb root -gbu 'kill' relating to 'manner verb-manner result' and 'manner verb-manner verb' relations. This study examines the nature of troponymy that involves the verb root -gbú across different semantic domains and verb classes. The aim is to ascertain whether the sense of negativity, 'kill' that is encoded in this verb is also visible in the compound constructions that involve the verb root. Compound constructions involving the verb root were extracted from a corpus using the AntConc software, and the data analyzed using the descriptive method of analysis. The findings of the study reveal that the manner and how an action is carried out are depicted in all the sense ranges when the verb -gbú forms a compound with another verb class, and the sense of negativity is retained, whether the verb that forms a compound with it encodes positivity or not. In addition, the troponym-hypernym relation of -gbú 'kill' is clearly delineated where -gbú as the hypernym is used to describe the different manners of killing somebody. However, when it occurs with other verb classes, what is observed is simply a troponymic relation in which the sense ranges denoting stativity and place are simply metaphorical extensions.

Keywords: *troponymy, compounding, semantic relation, manner relation, semantic network*

1 Introduction

Troponymy is a linguistic phenomenon that relates to the inclusion sense that is unique to verbs, much like hyponymy, which expresses inclusion sense relations of class-based hierarchical organization of words. In other words, inclusion denotes "class membership in such a way that the meaning of the more specific term, also known as a subordinate or hypernym, includes or entails the meaning of the more general or generic term" (also known as a superordinate or hypernym) as Emenanjo (2015: 576) explains. This is why some authors refer to troponyms as "manner verbs" that encode a specific manner or way of doing something.

Despite the fact that the verbal system of the Igbo language has been found to be extremely rich in troponymy, including other sense ranges like stativity, place, manner, and verbal clusters (Emenanjo 2015), adequate attention has not been given to troponymy that has to do with the semantic relations of *-gbú* 'kill,' showing its semantic nuances and/or finer semantic distinctions especially in its combination with other verbs in compound verb structures. In addition, there is no in-depth study of troponyms in Igbo except those mentioned in the discussion of other semantic relations such as synonymy, hyponymy, meronymy, antonymy, and so on. Studies carried out in Igbo in various aspects of sense relations include hyponymy (Agbo 2009; Okeke & Igbeaku 2015; Onwuekwe 2015), synonymy (Obiora 2010; Omega 2014; Okeke et al 2020; Akidi et al. 2021), antonymy (Udemmadu & Ogwudile 2017; Odinakachi & Udemmadu 2022), and polysemy

(Uchekchukwu 2011; Okeke 2015; Madueke & Umeodinka 2021); hence, the study of troponymy in Igbo is yet to be explored and shall be undertaken in this study.

The study uses the verb root *-gbú* 'kill' to examine the nature of troponymy across various semantic domains and verb classes in compound verb constructions. It also seeks to determine whether the sense of negativity is encoded in the compound verb constructions. The effort in this paper also contributes to deepening our understanding of verb semantics in Igbo and its practical applications in translations, language teaching and learning, and computational models for Igbo language processing. This implies that investigating troponymy in Igbo should enhance our understanding of the intricate semantic relationships of verbs, and provide insights into how verbs are organized and categorized based on their specific senses in compound verb constructions.

This paper is organized as follows: In the next section, we discuss troponymy as a semantic relation. An overview of the Igbo verb to enable an understanding of the complexities of verb semantics in Igbo is given in Section 2. Section 3 shows the methodology, while Section 4 discusses the findings. The last section summarizes and concludes the paper.

1.1 Troponymy as a semantic relation

There are various systematic relationships that hold between concepts, and the structuring and labeling of these concepts form an integral part of our knowledge and understanding of the world of the speaker of a language. These concepts show systematic differences that are characterized in terms of similarities or contrasts. These consistent differentiations among concepts are what Fellbaum (2002: 23) calls semantic relations. Troponymy belongs to the domain of relational semantics. It is labeled by Fellbaum & Miller (1990) after the Greek word *tropos*, manner or fashion, to capture the complex semantics of verb relations. It is a relation in which the WordNet glossary of terms defines as a verb expressing a specific manner elaboration of another verb. That is to say, X is a troponym of Y, if 'to X' is 'to Y' in some manner.

Huminski & Zhang (2018: 408) identify two types of relations in WordNet, namely *troponym-hypernym* and *Manner-verb-result verb* relations. According to the authors, the *troponym-hypernym* relation is the basic and most frequent relation. It is hierarchical in the sense that while the hypernym has a more generalized meaning, the troponym replaces the hypernym by indicating specifically the manner of doing something. The authors further explain that the correspondence between *troponym-hypernym* and *manner result* relations that can be found in WordNet are as follows:

The troponym-hypernym relation can be equal "manner verb-manner verb" relation; for example, the verb stroll (walk + slow + relaxed) is a troponym for the verb walk. But both of them are manner verbs. Secondly, a troponym-hypernym relation can be equal "manner verb-underspecified relations". For example, walk (move + by steps) is a troponym for the verb move, the verb is a manner verb, but the verb move is underspecified. Thirdly, the troponym-hypernym relation can be equal "result verb-result verb" relation in which the verb fracture (break into pieces) is a troponym for the verb break (destroy the integrity). Fourthly, the troponym-hypernym relation can be equal "manner verb-result verb" relation, as in the verbs stone (kill by throwing stones at) and poison (kill with poison), which are troponyms for the verb kill (cause

to die; put to death). They also assume that the result-manner can have different sequence types, such as change, alter, modify.

In their study, Huminski & Zhang (2018) extracted certain kinds of troponyms from WordNet by matching ‘*hypernym with*’ and ‘*hypernym by*’ patterns in the definitions, for example ‘sweep = clean by sweeping’. Regarding the question of entailment and troponymy, it has been noted that troponymy is a specific sort of entailment. In line with this, “every troponym V_1 of a more general verb V_2 also entails V_2 ,” and lexical entailment is a unilateral relation. This means that if a verb V_1 entails another verb V_2 , then it cannot be the case that V_2 entails V_1 unless they are synonymous (Miller et al. 1993: 45-47). Miller et al further explain that troponymy is a particular kind of entailment where pairs are temporally co-extensive. For instance, drawing from Lin, Zhao, Qin, & Zhou’s (2003) example, “*Reason* is a troponym of *think* because to *reason* is to *think* in a particular manner (logically). So, to define *reason*, it naturally includes to *think* “at the same time” and thus inherits the property of *think*.” However, the semantic field or domain determines the specific manner expressed. Verbs expressing events that inevitably and unidirectionally imply one another are linked together. To enable an understanding of the complexities of verb semantics in Igbo, an overview of the Igbo verb is provided in the next section.

2 A preliminary overview of verb in Igbo

In line with Nwachukwu (1976) & Emenanjo (2015), Mbah (1999: 136) notes that “the function of the verb in Igbo is closely tied to the structure of the whole language; this is why the language has been regarded as a verb language”. To elucidate this point, Emenanjo (2015: 16) further states that the language employs verbs and verb forms to mark prepositional ideas, degrees of comparison, and to realize derivational processes. He also explains that in Igbo, the derivation of words is mostly unidirectional from the verb, and the verb and its complementing noun are so closely associated syntactically and semantically that it is not often easy to determine the generic verb in the language since, for example, there are very many Igbo verbs that stand for/translate the English verb ‘to be’. Thus, Emenanjo (2015: 21) defines the verb as the only part of speech that can take affixes, especially inflectional affixes. In addition, the verbal is the only part of speech that requires a complement and/or bound verb complement to be complete and meaningful.

The morphological classification of verbs has been described by Emenanjo 1975; Nwachukwu 1976; Mbah 1999; and Uchechukwu 2011. The issues and controversies with regard to inherent complement verbs and transitivity are beyond the scope of this study (see Emenanjo 2005; Ubahakwe 1976; Nwachukwu 1983; Uwalaka 1983; and Agbo & Yuka 2011). The current study, therefore, adopts the approach of Mbah (1999) and Uchechukwu (2011) in explaining the Igbo verbal structure because they share similar categorizations.

According to Uchechukwu (2011: 1), Igbo verbs can generally be divided into simple and complex verbs, whereby the simple verb has a consonant-vowel (CV) structure, while a complex verb is any verb whose form goes beyond the CV structure of the simple verb. Mbah (1999) divides the Igbo verbs into simple verb forms, compound verbs, and complex verbs. According to him, the simple verb forms are verbs without affixes; the compound verb is a verb that contains at least two simple verbs that are independent; and the complex verb

comprises free verbs with at least one affix. He also notes that the affix in complex verb forms changes its form depending on vowel harmony, but none of the vowels in compound verbs change their form due to vowel harmony. Thus, Mbah (1999: 138–139) and Uchechukwu (2011: 1–5) recognize (1) simple verbs, (2) compound verbs [verb + verb] and [verb + suffix], and (3) verbal complex/inherent complement verbs/complex verbs: [verb + noun phrase] or [verb + prepositional phrase].

Regarding the simple verb, it has a consonant-vowel (CV) structure and only has one verb root. Examples of simple verbs are: *-gba* ‘kick’, *-gbú* ‘kill’, *-zu* ‘steal’, *-nye* ‘give’, *-me* ‘do’, ‘cause’, ‘make’, ‘happen’, etc. The affixation of any structure to the verb root does not change its category as a simple verb, nor does any structure occur between the root consonant and the root vowel, as illustrated with the citation form: *-gbú* ‘kill’ (The verb root is in bold typeface).

A compound verb is made up of two independent, simple verb roots that are combined; there are no inflectional affixes or other linguistic structures in the middle. Compound verbs also form stems for the addition of inflectional affixes. While the affix in complex verb forms changes depending on vowel harmony, none of the vowels of compound verbs change their form due to vowel harmony. Studies in compound verbs using the *-nye* ‘give’ showing both the V-V compound type and the verb+suffix abound (see Obiamalu & Mbagwu 2014). These different types are exemplified in (2).

Verb + Verb:

-ku ‘hit’ + *gbu* ‘kill’ = *íkūgbū* ‘to kill by hitting’, (citation form: *-kugbu*)

- (2) a. Ifeanyi *kùgbù-rù* ágwó
 Ifeanyi hit.kill-rV.PAST Snake
 ‘Ifeanyi killed the snake.’

Verb + suffix:

-gbá ‘spray/splash’ + *sa* ‘on/upon’ = *igbāsa* ‘to splash on’ (citation form: *-gbasa*)

- b. mmirī *gbà-sà-rà* Ifeanyi
 water spray/splash-on-rV.PAST Ifeanyi
 ‘Water splashed on Ifeanyi.’ (Uchechukwu 2011: 3)

Inherent complement verb (ICV) structure, also known as verbal complex, consists of a verb plus a noun phrase or verb plus a prepositional phrase, e.g., *igbā mmirī* ‘to water (something)’ or ‘to fetch water’ (cited as *-gbá mmirī*) as in (3). That is to say, it involves a combination of a verb root and a meaning specifying noun complement or a prepositional complement to form a semantic unit. Unlike the compound verbs, which do not allow linguistic units between them because they are bound together to realize their meaning, the verbal complexes are separable, and other language structures can occur between the verb root and the noun and prepositional complements. According to Nwachukwu (1987), ICV structures are verbs that take complements for their meanings to be complete. This is exemplified in (3).

Verbal Complex: *igbā mmirī* ‘to water (something)’ (cited as *-gbá mmirī*)

- (3) Chidimma *gbà-rà* *ụgụ* *ahù* *mmirī*
 Chidimma spray/splash-rV.PAST vegetable COMP water
 ‘Chidimma watered that vegetable.’

The combination of the verb root *-gbā* with the *nominal phrase* (NP) *mmirī* constitutes the verbal complex. The verb root can also be combined with a *prepositional phrase* (PP). The explanation of the verbal structure is simply to demonstrate the fact that different verbs take different noun complements, some of which have strict selectional restrictions. This study is focused on the realization of *-gbú* ‘kill’ in compound verb construction alone, as exemplified in (2a), showing inclusion in meaning in different semantic domains. In the next sections follow the methodology and the data analysis.

3 Methodology

The *-gbú* keyword appeared with other verbs in the nine Igbo literary texts from which the compound constructions involving *-gbú* were taken. The sense-relational approach, which assumes that the actual value of a word is confirmed by means of its relatedness with other items in a paradigm, was used to descriptively analyze the data. The study looks at the relationship of inclusion within a lexical field by examining the compound construction involving the verb *-gbú* verb with other verbs schematized as V1 + V2.

The extracted data were examined and categorized in a table according to various semantic domains in order to clearly present the troponym-hypernym relations so as to facilitate the identification of the troponymic sense ranges. Examining the sense ranges also involves the analysis of the sense of negativity in compound constructions with other verbs.

4 Data presentation and analysis

The data were analyzed based on the *troponym-hypernym* relations involving the verb root *-gbú* ‘kill’ in different semantic domains, showing the *troponym-hypernym* relations. This is captured in column 2 of Table (1) below that shows the sense ranges related to *manner verb-result verb* relation.

4.1 Troponymy involving the verb root *-gbu* in different semantic domains

Table 1: Sense ranges related to manner verb-result verb relation

S/N	Verb Stem	Manner-result verb (V1+V2)	Gloss
1.	tò ‘strangle’	tò+gbú strangle-kill	to kill by strangling with a rope/strangle to death
2.	gbá ‘shoot’	gbá+gbú shoot-kill	to kill by shooting with a gun/shoot to death

3.	gbà	‘choke/suffocate’	gbà+gbú		to kill by choking or suffocating/choke to death
4.	kù	‘hit’	kù+gbú	hit-kill	to kill by hitting with a stick or club/ beat to death
5.	tà	‘bite’	tà+gbú	bite-kill	to kill by biting/bite to death
6.	tí	‘strike’	tí+gbú	strike-kill	to kill by striking or beating with cane, iron, stone, etc/strike to death
7.	dò	‘drag’	dò+gbú	drag-kill	to kill by dragging/drag to death
8.	pì	‘press’	pì+gbú	press-kill	to kill by pressing/press to death
9.	ré	‘burn’	ré+gbú	burn-kill	to kill by burning/burn to death
10.	tù	‘throw’	tù+gbú	throw-kill	to kill by stoning to death/stone to death
11.	píá	‘flog’	Píá+gbú	flog-kill	to kill by flogging - ‘to flog mercilessly’/flog to death
12.	nyé	‘give’	nyé+gbú	give-kill	to kill by poisoning/poison to death
13.	rí	‘eat’	rí+gbú	eat-kill	eat to kill/eat to death
14.	ké	‘tie’	ké+gbú	tie-kill	kill by tying/tie to death
15.	sù	‘pierce’	sù+gbú	pierce-kill	kill by piercing/pierce or stab to death
16.	zò	‘step heavily on/trample’	zò+gbú	match-kill	kill by matching upon/trample to death

The various verbs labeled V_1 that form compound verbs with $-gbú$ ‘kill’ in column 2 of Table (1) indicate the manner in which an action takes place. The second verb, $-gbu$ labeled as V_2 , shows the resultant effect of the action, thereby depicting the specific sense of killing. So, the kind of troponym-hypernym relation that exists between the two verbs V_1 and V_2 is the *manner verb-result verb* relation, whereby V_1 logically results in V_2 in some particular manner following the instances presented in the gloss of (1) – (16) in Table (1). This is what Fellbaum and Miller (1998) refer to as the troponym-hypernym relation. Thus, the troponyms of $-gbú$ ‘kill’ regarding *manner-verb result verb* relation are captured. One could see from these nuances of meaning that, culturally, when a person dies, a native speaker is not only interested in what killed the person, but also in the manner or cause of. This is exemplified in (2a) and (4).

- (4) Nkítā *tàgbù-rù* nwátà áhù
 Dog bite.kill-rV.PAST child COMP
 ‘The dog bit that child to death.’

While some of the compound verbs in data (4) through (19) in the table could be used to describe a course of action that could result in death, data (13) is frequently used to describe gluttony, or someone who eats excessively. Depending on the context, the usage may or may not imply death. The sense of killing metaphorically connotes self-destruction of oneself that depict irrationality in eating and spending. So, we can say that the V_1 verbs in table 1 are troponyms of the hypernym, V_2 .

Table 2. Sense ranges of – *gbu* related to verb class: verbs of cooking

S/N	Verb Stem	Manner + verb (V1+V2)	Gloss
1.	sí ‘cook by fire’	sí+gbú cook-kill	kill by overcooking, or, negatively, bad cooking/cook to death
2.	ghé ‘cook/fry by flames [+oil]’	ghé+gbú fry-kill	kill by frying ‘over-frying/ burnt’/ fry to death
3.	mí ‘dry by heat for meat, fish’	mí+gbú dry-kill	kill through excessive drying/ dry to death
4.	gwó ‘mix together’	gwó+gbú mix-kill	kill by combining in excess/ mix to death

The various cooking processes are displayed in Table 2. According to Onwuekwe’s (2015) and Okeke & Igbeaku’s (2015) studies, the verbs at V₁ in data (1) to (4) in Table (2) are hyponyms of the verb *-si* ‘to cook’, but when they are combined with *-gbú* ‘kill’ in an expression, the denotational meaning regarding the manner of cooking is expanded. The semantic elaboration of cooking denotes a specific *manner-result* relation, but not in the sense of killing an animate entity, but rather in the sense of a change in state to a negative mode that is irredeemable and possibly unusable. With regard to this class of verb, V₁ can really be described as troponyms of V₂ just like in table 1, or the verbs can be said to be in troponymic relations.

All the verbs in Table (1) and (2) imply an agent carrying out an action on an object or patient. Sentence (4) illustrates Table (1), where all the compound verbs have the same semantic relation. However, Table (2) is slightly different. Here, all the different forms of ‘cooking to death’ do not by means involve an animate entity, but simply metaphorically cooking something to the point of its being inedible.

Table (3) and (4) again differ from Tables (1) and (2). Here, the verbs involve the combination of the reflexive pronoun construction ‘*onwe* +pronoun’ with the effect that the sentence has to be understood as if the subject is killing himself/herself with the particular activity. See examples (5) and (6) below:

Table 3: Sense ranges of – *gbu* related to motion

S/N	Verb Stem	Manner + verb (V1+V2)	Gloss
1.	má ‘leap’	má+gbú leap-kill	kill by leaping/leap to death
2.	fé ‘fly’	fé+gbú fly-kill	kill by flying ‘maybe, crash at the instance of flying’/fly to death
3.	rí ‘creep’	rí+gbú creep-kill	kill by creeping on the ground/creep to death
4.	wù ‘jump’	wù+gbú jump-kill	kill by jumping/jump to death
5.	kpólè ‘walk with a rolling gait’	kpólè+gbú walk-kill	kill by walking/walk to death

6.	gbé	‘crawl’	gbé+gbú	crawl-kill	kill by crawling/crawl to death
7.	gbó	‘walk languidly’	gbó+gbú	walk-kill	kill by walking languidly/walk languidly to death
8.	hè	‘walk stealthily’	hè+gbú	walk-kill	kill by walking stealthily/walk stealthily to death

The motion verbs, which are a kind of “manner verb-manner verb” relation, simply show the manner of walking and their occurrences with *-gbu*, does not denote killing but rather express the speed of movement, i.e. walking in a briskly or relaxed manner. Sometimes, it is used to express a manner of behavior that is unacceptable, which the *-gbú* emphasizes. Example (5) below expresses someone who is slow at walking or working, and can be regarded as a dull person in a metaphorical sense.

- (5) Ó *rìgbù-rù* ònwé yā
 3SG creep.kill-rV(PAST) self PRON
 ‘S/he walks very slowly.’

4.2 Other Semantic Extensions of *-gbu* in Different Semantic Domains

The verbs in Tables (4) and (5) below combine with the verb root *-gbu* ‘kill’ to express a metaphorical extension of the compound constructions. The compound verbs in these examples are not in troponymic relationship; instead they simply extend the meaning to depict blowing out of proportion or ‘over exaggerate’.

Table 4: Sense ranges of *-gbú* related to verb of Mental Processes

S/N	Verb Stem	Verb stem + gbu	Gloss
1.	chè ‘think’	che+gbu think-kill	kill by thinking ‘overthinking’/think to death
2.	lé ‘see’	le+gbu look-kill	kill by looking/look to death
3.	ghótá ‘understand’	ghótá+gbú understand-kill	kill by understanding/understand to death
4.	chèzọ ‘forget’	chèzọ+gbú forget-kill	forgetfulness/forget to death
5.	má ‘know’	má+gbú know-kill	clever/know to death

So, the stative verbs in data (1) – (5) in Table (4) when used with the verb root *-gbú* still express state, though not in the sense of killing but in the sense of blowing out of proportion of an action. This is illustrated in example (6) below:

- (6) Àdá *màgbù-rù* ònwé yā n’ ākwūkṵ
 Ada know.kill-rV(PAST) self PRON PREP book
 ‘Ada is killing herself with book.’
 (Lit. ‘Ada is intelligent’)

The literal meaning of example (6) would be ‘Ada is killing herself with knowing books.’ But this is another way of expressing positive attributes in Igbo called and/or identified as

“negative positivism”, involving using a negative expression to blow something out of proportion and end up giving it a positive meaning (Egenti 2018).

Table 5: Sense ranges of -gbú related to verbal clusters of sensation, perception and emotion

S/N	Verb Stem with nominal phrase		Verb stem + gbu		Gloss
1.	ígū ágū	‘to be hungry’	gú+gbú	‘hungry-kill’	kill by starving/hunger to death
2.	ítū óyī	‘to feel cold’	tú+gbú	‘cold-kill’	kill by freezing/cool to death
3.	ítū égwù	‘to be afraid’	tú+gbú	‘fear-kill’	kill by being scared/fear to death
4.	ítā āhūhū	‘to suffer’	tá+gbú	‘suffer-kill’	kill by suffering/suffer to death
5.	írū āfō	‘to have stomach ache’	rú+gbú	‘ache-kill’	kill by having severe stomach ache/ache to death
6.	íbē ākwā	‘to cry’	bé+gbú	‘cry-kill’	kill by crying a lot/cry to death
7.	Íwē īwē	‘to be angry’	wé+gbú	‘anger-kill’	kill by anger/anger to death
8.	sì ísì	‘to smell’	sì+gbú	‘smell-kill’	kill by smelling-to stink/smell to death’

The verbal clusters are exemplified using verbs of sensation, perception, and emotion. These verbs occur with nominal phrases to form a verbal complex, as explained earlier. They do not occur without their noun complements, which Emenanjo (2015) calls bound cognate nouns, some of which have strict selectional restrictions. When these verbs are combined with *-gbu*, the verb expresses a very great degree of emotions or perception of the experiencer not involving the killing of an animate entity, and not in the sense of *troponym-hypernym* relations.

5 Summary

The study has shown that troponymy is a particular kind of verbal hypernymy that depicts sense inclusion relations specific to verbs that denote a specific manner elaboration of another verb. This means that one verb denotes the particular manner of the other. Hyponymy, on the other hand, expresses sense relations of inclusion based on super-subordinate relations and the hierarchical organization of words based on class membership. Troponymy, like hyponymy, creates hierarchies of specificity that connect verbs in a way that elaborates its hypernym rather than kind.

The study reveals that the verb root *-gbú* contributes significantly to meaning by elaborating in a particular way on troponymic relations in various semantic fields. The results demonstrate the existence of troponym-hypernym relations like manner verb-manner verb relation and manner verb-result verb relation in Igbo, and other metaphorical senses of the occurrence of *-gbu* in connection with sense ranges relating to stativity and verbal clusters. The study clearly shows that *-gbú* ‘kill’ has different semantic elaborations. However, true troponymy of *-gbú* kill strictly has to do with the different manner of killing something or somebody. Other senses that form compound with the verb *-gbú* simply expresses semantic

extensions which are not in the sense of troponymy-hypernym relations, but indicating the degree of an action and/or other metaphoric meaning.

In order to create a semantic network of word meanings that can be coded in WordNet for the Igbo language across various semantic domains, this work calls for a semantic mapping research. In particular, hierarchies of specific manner relations on the basis of conceptual-semantic and lexical relations are needed.

Abbreviations

COMP	complementizer
CV	consonant-vowel
ICV	inherent complement verb
3PL	3rd person plural
PREP	preposition
PRON	Pronoun
rv-PAST	past tense marker

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