



Evaluation on Sukuma ethnoichthyology within cognitive semantic theory

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Abstract

This paper evaluates Sukuma ethnoichthyology within the cognitive semantics theory's envisioning of Sukuma fish names. The motivation behind the investigation was geared by the lack of study on the topic and the peculiarities found in it. The Universal Grammar and cognitive semantics theories were used in data evaluation and explanations. This study employed a qualitative case study design, focusing on Lake Victoria and Juma Island. Data was collected through observation and unstructured interviews involving ten Sukuma native fisheries selected purposively. The study revealed that most of the Sukuma fish semantics structures are not encyclopaedic, embodied experiences as claimed in cognitive semantics, thus, they are bondless between signifier and signified. This study recommends further research aimed at coining theories that offer explanations for arbitrary names. The study also underscores the need for the younger generation to prioritise learning their local language names, including those of fish, as a means of preserving their linguistic heritage.

Introduction

Names are assigned to objects or entities for identification within specific cultural and geographical contexts (Simon, 2024; Kinyua & Barasa, et al. 2022). Numerous studies have examined nomenclature for fish across various languages; for example, Elameto (1975) investigated and compiled the names of common fish in Saipan, Mariana Islands. While this finding holds true, Barnett (1978) gathered fish names in Pacific languages and identified that fish are named based on various factors, including their hunting methods, feeding behaviours, colouration, and social interactions, among others. Dobson (2004) explored the distribution of freshwater crabs in Africa and discovered that these crabs exhibit similarities to their marine counterparts, classifying them based on size. Nevertheless, research on fish names in local languages such as Ga, Ewe, Nzema, and Mfantse has indicated that the names assigned to these fish reflect both static and dynamic characteristics (Kwei and Ofori-Adu, 2005). However, no studies on fish nomenclature have been reported in Lake Victoria, and it appears that Sukuma native speakers lack bases for most fish names, as suggested by global literature. This represents a significant issue, as the deficiency or incompleteness of knowledge forms the basis of the problem statement, thereby necessitating further studies within the Sukuma speech community of Tanzania. The current study aims to contribute to the theoretical implications regarding fish nomenclature in Lake Victoria across global languages.



Literature review

Fabian et al. (2022) investigated the population characteristics of selected small pelagic fish species along the coast of Tanzania. Their aim was to assess the species composition, length-weight relationship, and length at first maturity of *Amblygaster sirm*, *Encrasicholina heteroloba*, *Encrasicholina punctifer*, *Stolephorus commersonii*, and *Spratelloides gracilis* caught at Kilwa Kivinje, Kipumbwi, and Shangani along the Tanzanian coast. The study revealed that the length at first maturity (L50) varied, indicating that these species begin spawning at different sizes, which serves as a crucial biological reference for the sustainable exploitation of small pelagic fish. This research emphasises that most names are scientific and do not pertain to ethnoichthyology. Importantly, the younger Bantu generation, particularly the Sukuma, are losing their language regarding the Sukuma terms for fish, which draws attention to the current investigation.

Akimichi and Sakiyama (2010) examined the fish names of the Manus people from the Admiralty Islands in Papua New Guinea, located in the south-western Pacific Ocean. This area was deliberately chosen because the Manus are skilled fishermen who rely solely on fishing and trading for their livelihoods. Consequently, their investigation focused specifically on the fish names used by Manus fishermen. Approximately 300 vernacular fish names are documented, with additional data collected from neighbouring groups with distinct ecological and linguistic backgrounds. The study found that cognates of fish names are common among the Manus people and other groups. They noted that potential cognates—except for a few instances—are also recognised in languages spoken in Halmahera and Micronesia. These names suggest several connections between Manus languages and surrounding regions regarding ecological, economic, and historical implications. The current investigation extends beyond merely examining fish names from Lake Victoria in the Mwanza region of Tanzania; its primary aim is to explore the various fish names, understand the reasons behind them, and assess young people's knowledge of these names in their indigenous language.

Bayona et al. (2004) investigated the species composition, size structure, and distribution of fish in non-trawlable areas of Lake Victoria in Tanzania, focusing on Mwanza and Mori Bay. This study centres on composition, size structure, and both spatial and temporal distribution, derived from gill-netting, beach seining, and electric fishing. The current investigation builds upon previous studies by analysing the retention of fish nomenclature within the Sukuma-speaking community, as it is suggested that the younger generations' unfamiliarity with these terms has significant cultural and practical implications.

Patrick et al. (2021) investigated the role of metaphor in naming sea creatures among the Akan (Mfantse) people within the framework of onomasiology. In their qualitative research design, twelve fishers were purposively sampled, three from each of four fishing towns: Anomabo, Apam, Sekondi (Sekunde), and Moree (Mowure). The study revealed that the similarity between sea creatures and either static or dynamic entities provokes names for these creatures. It was concluded that metaphor is used to create simpler forms for salient features, convey non-codable salient attributes, and condense multiple characteristics. The study recommended further exploration of the linguistics surrounding naming practices in indigenous Akan occupations. These authors established a foundation for new investigations into specific topics in Bantu languages, particularly concerning Sukuma fish names; this could aid in preserving relevant vocabulary for sea creatures and preventing the loss of Bantu entities in the field of onomasiology.

Berkes and Mackenzie (1978) examined Cree fish names from Eastern James Bay, Quebec. The paper aimed to synthesise the Cree fish names as utilised in the Eastern James Bay communities of Mistassini, Waswanipi, Nemaska, Rupert House, Eastmain, Wemindji (Paint Hills or Nouveau Comptoir), Fort George, and Great Whale (Poste-de-la-Baleine). The authors contended that the



fish names of the Eastern James Bay Cree resemble those used by their neighbours, the Western James Bay Cree and the Naskapi. However, although some information on Cree fish names in specific communities within this area has been published, this material has not been compared, nor has a standard orthography been employed. This served as the motivation for the authors' investigation. The current study goes beyond mere comparison; it also addresses the Sukuma speech community's fish names and the youth's understanding of these fish. This would aid in safeguarding the cultural identity of the Sukuma speech community's fish names.

Morgan (1999) investigated fish names in the languages of Tonga and Fiji. His research focused on the record of fish names from two locations in the central Pacific: the Vava'u Islands of Tonga and the Taveuni area in northern Fiji, both of which are culturally part of West Polynesia. The work produced a comprehensive list of names in Tongan and Fijian for approximately 50 species of fish that inhabit the waters around these islands; it is noted that these names reflect the contemporary terminology used by Tongans and Fijians during the 1980s and 1990s. This word list serves as a reference document for marine scientists, fishers, environmentalists, and others engaged in the maritime cultures of the Pacific, local languages, and fish nomenclature. In light of Morgan's study, comprehending the names of locally used fish is crucial, especially in the context of the growing global concern for species diversity and sustainability. This investigation is motivated by the need to preserve the Sukuma language and integrate the indigenous Sukuma community's ichthyological knowledge, thereby contributing theoretically to and refining Bantu linguistics.

Underpinning theories

Theories are sets of hypothetical principles used to explain and relate what, why, who, and where a certain entity of inquiry is envisioned. From this base, the two theories (Universal Grammar and Cognitive Semantics) under study explain the critique of manifestation pertinent to fish names in the Sukuma language of Tanzania.

Universal Grammar Theory

This paper adapts Universal Grammar theory and a cognitive approach to the study of Sukuma fish names. The theory, advanced by Chomsky (1986a), aims to determine what native speakers *know* about their mother tongue (the names relevant to this study), allowing them to speak and comprehend the language with confidence. The study of language is part of the broader field of cognition (Radford, 2004, p.1). The theory posits that native speakers can form and interpret or assign meaning to expressions in their language. Consequently, this grammatical knowledge regarding the formation and interpretation of expressions, including names in their native language, is *tacit*, *signifying* innate or subconscious competence rather than explicit or conscious performance. Chomsky (1986a) proposed three tenets of Universal Grammar theory, namely: (i) observation, which suggests that a native speaker sometimes judges language rules, structure, vocabulary, and names through listening and observation. In this context, the native speaker of the Sukuma language can discern what is correct or incorrect using observational adequacy relevant to fish names; (ii) descriptive adequacy, whereby Universal Grammar must provide us with the tools to offer a *descriptively adequate* grammar for any human language (i.e., a grammar that accurately describes how to form and interpret expressions in the respective language). It is essential to note that nouns, names, and pronouns are encompassed within the grammaticality of the specific language; and (iii) explanatory adequacy. According to this principle, the application of Universal Grammar theory to the naming of Sukuma lake fish must prioritise explanatory power regarding the system's properties over a mere descriptive enumeration of universal characteristics.

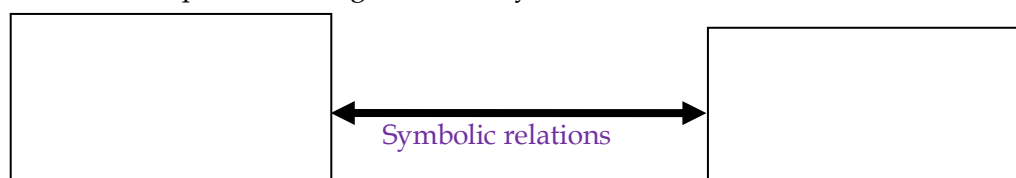
The theory of Universal Grammar regards language as an autonomous component of the mind. In the cognitive linguistic approach, language is viewed as an integral part of cognition; hence, it



should be studied in light of what is known about the mind, whether through experimentation, introspection, or observation (Taylor 2002, p. 8). Consequently, Chomsky's approach to the study of language seems too abstract and disconnected from people's daily experiences with language use. In other words, Chomsky's approach lacks naturalness and is too limited regarding the types of phenomena that he contends linguistic theory should address. This prompted the current evaluation of the Sukuma fish names to utilise another flexible theory, known as cognitive linguistics, and in particular, semantics.

Cognitive semantics

This theory in cognitive linguistics views linguistic meaning as a manifestation of conceptual structure. It originated in the 1970s as a response to the objectivist worldview prevalent in the Anglo-American tradition of philosophy and the related approach of truth-conditional semantics, which developed within formal linguistics (Evans & Green, 2006). Cognitive semantics, much like the broader field of cognitive linguistics of which it is a part, is not a single unified framework. Talmy (2000), one of the original pioneers of cognitive linguistics and cognitive semantics, argued that research in cognitive semantics examines conceptual content and its organisation in language. The theory posits that language can be exhaustively described in terms of three entities: phonological structure, semantic structure, and the symbolic relations between the two. This can be represented diagrammatically as follows:



Source: Taylor (2002, p. 20)

From the above structure, the phonological structure refers to the overt manifestation of language; that is, linguistic expression in its material or perceptible aspects. While this is true, the semantic structure pertains to the meaning of an expression. Importantly, the semantic structure not only relates to the semantic value of an expression but also encompasses a wide range of other semantically connected issues, such as the pragmatic aspects of meaning—specifically, the meaning of an expression in relation to its situational context (Taylor, 2002, p. 20)). The phonological structure is cognitively linked to the semantic structure due to the conversion representation of the referent, which, in this analysis, is fish.

Cognitive semantic theory is based on several tenets, including the embodiment of conceptual structure (the embodiment thesis). This posits that meaning arises from the interaction and awareness of human beings with the world. In other words, this engagement with the physical realm embodies the thesis, asserting that the nature of conceptual organisation derives from bodily experiences. Thus, part of what makes conceptual structure meaningful is its association with these bodily experiences. Another tenet is that meaning representation is encyclopaedic. This implies that semantic structure is encyclopaedic in nature, as words do not neatly encapsulate bundles of meaning (the dictionary view) but serve as 'points of access' to extensive repositories of knowledge related to a particular concept or conceptual domain (Langacker, 1987). Other tenets include semantic structure as conceptual structure and meaning construction as conceptualisation.

However, this theory addresses, to some extent, Sukuma fish naming systems in that the names articulated are structured according to Sukuma cognitive understanding rather than capability, as claimed by Chomsky (1986a). This is because those who assign fish names lack adequate explanations for these names.



Methodology

The study employed a case study design to describe Sukuma fish names in Lake Victoria, particularly around Juma Island. This area was selected due to its rich variety of fish species native to Lake Victoria. A qualitative research approach was adopted to provide adequate explanations regarding the Sukuma fish names. The research concentrated on the population of Juma Island in Tanzania, as it is a region where Sukuma fisheries thrive. Ten informants were purposively chosen for discussion from Juma Island, as they are speakers of the Sukuma language and have over ten years of experience in fishing and selling activities.


Two methods were employed for data collection regarding Sukuma fish names: observation and unstructured focus interviews. The former involved observing the fish and how fishers name them during sales, while the latter consisted of asking a small number of native Sukuma fishers about their naming systems. The interviews included ten informants, five of whom were native Sukuma fishers and five native Sukuma fish sellers. Both groups were shown various pictures of fish taken from their fishing shores. The researcher inquired about the name of each fish and the reasons behind those names.





The data were analysed using a qualitative approach. Words, clauses, and sentences were employed to describe the Sukuma fish names found within Sukuma speech communities. Universal Grammar and cognitive semantics were the theories that aided in presenting and explaining the data.

Results




This section presents a variety of names for Sukuma fish found in Lake Victoria, Tanzania. The study collected data through observational techniques and focus group discussions with ten native Sukuma speakers. The following subsection is illustrated in Table 1.





Table 1: Signifier and signified Sukuma fish names

Signifier	Signified	Descriptions
Ngele		This is one of the Sukuma fish name found in the Lake Victoria of Tanzania. It is the fish which is known as eel fish or electric eels (electricus). It comes from the family of <i>anguillidae</i> with <i>anguillalabiata</i> species. Electric eels are very long in structure, and they can grow up to two metres long while possessing 20kg. The fish has the ability to create electricity for listening and research for food or other animals are used to eating. It is the fish which only lives in cold water, as in Lake Victoria. Most of the Sukuma youths are unaware of the name of Ngele, they argue that it is just the fish they see and eat. This shows that there is a need of insisting them to study names of objects and other things in their local languages for keeping memory.
		Mbeté is in the family of <i>alestidae</i> and its species is <i>alestesbaremoze</i> . It is the fish found in Lake Victoria. Other lakes in which such a fish is found are in Lake Nyasa and Tanganyika.

<p><i>Mbeté</i></p>		<p>Sometimes this form of fish is named according to its elongated mouth structure, thus, Sukuma people in Mwanza region call 'domodomo', people from Kigoma region of Tanzania call <i>ndomolomo</i> etc. Ngele fish can be explained well within Universal Grammar theory following the sense the theory insists on explanatory adequacies in explaining properties that the name does in contrast to another fish name. It can be noted that the localised name <i>domodomo</i> reflects the way such fish physically looks like but not the word Mbeté.</p>
<p><i>Fùlu</i></p>		<p>This is the fish name found in our discussion with fisheries as they fish for both selling and eating. Fùlu's scientific name is known as <i>Chichlids or haplochromis</i>. They are short and small to medium size with different colours. Fisheries said that these fish reach up to 20-25 centimetres long. They are said to be very sweet compared to other small anchovy fish. Following their smallness each, fisheries and sellers buy and sell them in bundles, in the fisheries area around the lakes - twenty (20) kilograms of Fùluis sold at 7-10 USD depending on the localities.</p>
<p><i>βudagala</i></p>		<p>This is a Sukuma Lake Victorian fish name. These fishes have a shiny, silvery appearance, with a dark blue or greenish back and a silver stripe running down each side of their body. <i>βudagala's</i> scientific names are known as sardine or sardines (anchovy). They are small and are sometimes locally referred by different names including <i>Misuumari</i> 'nail' or <i>nshinge</i> 'needles', because of their structure of being thin.</p>
<p><i>Máamba</i></p>		<p>This is the Sukuma names named by Sukuma people and its scientific name is known as <i>gilled lung fish, marbled long fish (solefish)</i>. This kind of fish is coded from its structure which is likely similar with crocodile found in water bodies. The Swahili name for crocodile is <i>Mamba</i> with no long and toned vowel; therefore, Sukuma people coined the name from Swahili speaking people and became to be modified into <i>Máamba</i>. <i>Máamba</i> is similar</p>



		to a snake, its skin is like a snake, and when are caught, they do not die quickly, according to fisheries, the fish take a long time to die, the fishery may think, it has died while not.
<i>Sààto</i>		This is another Sukuma fish name found in Sukuma speech community; its habitat is found in warm, shallow waters such as lakes, rivers, and ponds across Africa, the Middle East, and parts of Asia. Sukuma speakers love this kind of fish because of its mild taste and sweetness compared to other types of freshwater fishes. The fish is called Tilapia, and its scientific name is <i>Oreochromis niloticus</i> . The fish is very strong, and fisheries said it can live for ten years. The fish is very expensive compared to other fishes, and only people with middle or high economic class manage to eat often.
<i>Sangala</i>		This is the Sukuma fish names known as <i>Perch fish</i> as its scientific names. They have long shaped fish which triggers swimming simplifications; it has greenish brown backs as well as dark vertical bars in colours. Fisheries said that they have swim strong and good bladder that helps in controlling buoyancy in the water. Perch fish when are big, are known as <i>Mbuta</i> in Sukuma speech communities. Sukuma native speaker cannot explicitly tell the reason for naming <i>Mbuta</i> or <i>Jowa</i> rather than they say it is just the name they met after birth.
<i>Mùmí</i>		This is the common name used by Sukuma people around Lake Victoria basin of Tanzania and its English common name is called scaly fish or Stargazer Mountain catfish. <i>Mùmí</i> is one among the catfish fishes but it has scales compared to other fishes as in <i>Barggrus Meridionalis</i> fish. This kind of fish is also found in some Tanzanian rivers as in Mara and Pangani rivers of Tanzania as well as in deep ponds. <i>Mùmí</i> 's scientific name is known as <i>Clarias gariepinus</i> in Tanzania. The fish comes from amphilius uranoscopus species within the family of amphiliidae.
		<i>Gogogo</i> is the Sukuma name given to a fish species which comes from <i>Mochokodae</i> family of fishes. They are short and small and are found in fresh water. <i>Gogogo</i> are characterised by a

<p><i>Gogogo</i></p>		<p>spotted body and a hard face compared to other fishes. This kind of fish is said to be found only in Africa. It is classified under Animalian kingdom, chordate phylum, vertebrate class and siluriformes order. Its scientific name is <i>synodontis grandioops</i> and its English name is squeaker.</p>
<p><i>Mbofū</i></p>		<p>This is another one among the catfish family in Tanzanian Lake Victoria and other big fresh ponds. It is also found in Malawi. Mbofū is big and measures up to 1.5 metres. Its body has no scales unlike other scaly fish like Stargazer Mountain catfish. The scientific name for Mbofū is <i>Bargrus</i>. This kind of fish has different species in Africa including <i>Bargrus</i> in Nigeria, (<i>Nigeria bargrus</i>), <i>Bargrus Meridionalis</i> in Malawi, (Kampango or Kamponyo), <i>Bargrus Ubangensis</i> (Congo bargrus), <i>Bargrus tucumanus</i> (Argentina Bargrus) etc and in Tanzania Mbofū is called <i>Bargrus degeni</i> (Victoria Bargrus).</p>
<p><i>Shiloonge</i></p>		<p><i>Shiloonge</i> is the name of a Sukuma fish found in the Lake Victoria zone. Shiloonge are thin and are used for food and local Sukuma medicine. <i>Shilonge</i> is not eaten by other fishes because it is poisonous, and when is swallowed, the fish can die, thus fresh fishes that eat other fishes escape eating <i>Shiloonge</i>. It is a sweet fish type to eat and cures stomach and other human body diseases. Fisheries said that <i>Shiloonge</i> is ground and becomes powder like form, then people with poison in their stomach use this medicine from the dried and ground Shiloonge for removing such poison.</p>
<p><i>Nsoga</i></p>		<p>The term '<i>Nsoga</i>' is a Sukuma word which implies good or clean or beautiful thing, object or human. Therefore, Nsoga is a Sukuma fish name used to refer to good or clean fish found in fresh water. Its name reflects the way such fish is sweet and clean in its body structure. It can be noted that the Universal Grammar cannot handle in explaining fish name like <i>Nsoga</i> in that the theory insists on ability of the native speaker to tell and assign meaning tacitly, names including <i>Nsoga</i> is arbitrary and cannot be exhibited and propertilized n</p>



		people’s mind. In turn the cognitive semantics can explain <i>Nsoga</i> just in a sense of phonotactics and meaning via symbolic relationship but not for semantics conceptualisation.
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Discussion of the findings

This subsection evaluates the accountability of Sukuma fish names within the cognitive semantics approach. Literature has shown that names are assigned to entities as a means of differentiating, recognising, and understanding these entities, reflecting the culture, philosophy, religion, thought, and environment (Partick et al., 2021). The argument posited by these scholars holds true only if names fulfil the purpose of identification. This is why Sukuma fish names, such as *Ngele*, differ from *Mùmí* in their structure, shape, size, and weight.

The names of Sukuma fish (cf. Table 1), with a few exceptions, lack a practical rationale for their designation. They appear more arbitrary, as these names show no connection between the reference and the referent. This contradicts the theory of metaphor. For instance, Lakoff (1993, p. 280) contends that “image metaphors are ‘one-shot’ metaphors: they map only one image onto another image, mapping one conventional mental image onto another.” To clarify, Lakoff and Johnson (1980, p. 5) noted that “the essence of metaphor is understanding and experiencing one kind of thing in terms of another.” The proposed metaphorical theory is not supported by an analysis of Sukuma fish names. Terms such as *Mbuta* ('perch fish') and *Mbofú* ('Barggrus') demonstrate a lack of secondary, metaphorical meanings.

Importantly, the practical experience of metaphorical expressions involves mapping the target image from the source domain. It was anticipated that the images of fish, such as *Fùlu* ('Chichlids') and *Sààto* ('Tilapia'), would be mapped or preserved in the target domain; however, this is not the case. Native speakers of Sukuma do not associate these names with other optional domains, such as nicknames. Therefore, the argument that image metaphors “map one conventional mental image onto another” (Lakoff 1993, p. 229) and that cognitive semantics, within the scope of metaphors, does not involve conceptual domains but rather structured mental images, is not an inherent tenet relevant to Sukuma fish names.

The principled argument of cognitive semantics, which asserts that semantic structure is encyclopaedic in nature, does not support the manifestations relevant to the reflections of Sukuma fish names. This is because much of the Sukuma fish vocabulary comprises neatly packaged bundles of basic meaning that do not function as ‘points of access’ to extensive repositories of knowledge related to a particular concept or conceptual domain, as suggested in cognitive semantics (Cf. Langacker, 1987). In this context, the Sukuma fish names are arbitrary, lacking a relationship between reference and referent or signifier and signified. Within the framework of cognitive semantics, it is posited that metaphorical mappings are not arbitrary due to the principle of invariance, which indicates that the image-schema structure of the source domain is projected onto the target domain in a manner consistent with the inherent structure of the target domain (Lakoff, 1993). The Sukuma names, such as *Mùmí*, *Sààto*, *Ngele*, and *Nsoga*, represent arbitrary sets of distinct correspondences. Linguistic studies of cognitive semantics cover a broad range of occurrences; one of its representations is the image-schematic concept, which demonstrates how bodily experiences inform meaningful concepts. However, the application of such commitment to Sukuma fish names is inadequate.

The conclusion presented by Patrick et al. (2021) regarding silent fish features contradicts the cognitive understanding of Sukuma native speakers when it comes to naming fish. Their



conclusion suggests that metaphor is employed to simplify salient features, convey non-codable attributes, and condense multiple characteristics when naming sea creatures. This argument does not apply to the current study on Sukuma fish names, as Sukuma native speakers do not exhibit silent or alternative fish features. In other words, there is no connotative experience or alternative explanation that can clarify the understanding of a specific fish name. Sukuma fish names, such as *Nsoga*, *Sangala*, and *Sààto*, are based on various salient features, following the observation that the form, colour, behaviour, shape, and type of these fish are not conceptual, contrary to the embodiment structure suggested by cognitive semantics theory. Primarily, Sukuma fish names lack a bodily experience that would provide name-givers with a detailed conceptual basis for naming, as seen in hen names (Cf. Simon, 2023), where the name is rooted in the physical form and appearance of the hens.

In the context of cognitive semantics (cf. Talmy, 2000) and Langacker (1982), the conceptualisation of fish names accounts for twenty percent (20%), as exemplified by the term 'sardine'. In addition to referring to *βudagala* as 'sardine', they also denote *Misumarii* 'nails', since their shapes invoke names suggesting they are thin like nails. Furthermore, the argument presented in cognitive grammar (cf. Taylor, 2002) is further developed, emphasising that entities in descriptive language—including phonological structure, semantic structure, and symbolic relations—are rationally relevant to the fish's shape, as illustrated by *Gogogo*, as well as its colour, size, and distinctive hard face that sets it apart from other fish in Lake Victoria.

Conclusion

The study has assessed the names of Sukuma fish within the framework of cognitive semantics theory. The fish names reported by the Sukuma indigenous people are significant for both general and scientific understanding of the development and expansion of the Sukuma language. The Universal Grammar theory has shown that, through observational and descriptive adequacy, native Sukuma speakers can articulate fish names grammatically, yet struggle to comprehend the rationale behind their naming systems. In turn, cognitive semantics has established a connection between the phonological and semantic meanings of fish names through symbolic relations. Typically, this is achieved by observing, viewing, and comparing the fish they encounter, rather than through characteristics that could be anchored using cognitive semantics as encyclopaedic, conceptual, and embodied experiences. Further theories could be developed to address topics not only within Bantu speech communities like the Sukuma, but also in other communities such as those in Europe, Australia, and beyond.

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