International Journal of Arts and Social Science **www.ijassjournal.com**
ISSN: 2581-7922,
Volume 5 Issue 3, March 2022

Uncovering Ethnoentomological Knowledge: A Semantic Analysis of Hyponyms of Insects in Bagobo Language

Jenny T. Hernan[1], Mary Ann E. Tarusan[2]
[1]*University of Mindanao – Bansalan College*
[2]*University of Mindanao – Davao City*

Abstract: Many insects discovered in nature have names given by indigenous groups of people, which replicate their culture and environment. It is vital to keep records of these insect terminologies and introduce them to the community's younger generations. This study explored the Bagobo- Tagabawa ethnoentomology through linguistic analysis and phenomenology. Using semantic analysis, hyponyms of insects in the Bagobo-Tagabawa language were identified. Also, this study described the Bagobo tribe's experiences with insects and how they are linked to their culture. Five well-versed speakers in the Bagobo-Tagabawa lexicon were the key informants during in-depth interviews. Insect terminologies were also validated during a focus group discussion with other tribal leaders. Through componential analysis, it was discovered that *"ulad"* is the native insect term, a superordinate term that encompasses many other superordinate words. The thematic analysis uncovered symbols of tribes' interaction with these insects that include various practical uses and negative interactions, including damage to crops and undesirable premonitions. These are symbolism of good luck and abundance; the symbolism of good life and happiness; the symbolism of sickness and death; the symbolism of famine; the existence of spirits/treasure; destruction of growing crops; medical use; food; tiny messengers; weather predictors; tribe's clock; and tribes' weaving material. Also, the Bagobo-Tagabawa folks shared insights to preserve ethnoentomological knowledge and biodiversity presented through three essential themes: intergenerational language transmission, language teaching in the community, and conservation and protection of the tribe's biodiversity. Implications highlight the importance of future language revitalization planning, policy, and programs among the Bagobo speech communities. It is imperative to document insect terminologies to augment tribes' ethnoentomological knowledge.

Keywords: *ethnoentomology, ethnoentomological knowledge, hyponyms, componential analysis, phenomenology, Bagobo-Tagabawa language, Philippines*

I. Introduction

The importance of insects in human evolution is undeniable. Despite their large number, insects, being the most species-rich taxon of all creatures (Chakravorty et al., 2011), are given distinctive names (Eze et al., 2020) however, there are new concerns about the documenting of indigenous insect terminology. Insects and their products, for example, have long been employed in Indigenous Australian civilizations; yet much of the knowledge available on these insects is tittle- tattle or anecdotal (Si & Turpin, 2018). In Nigeria, insects have strange names, yet many children are unfamiliar with these terms (Eze et al., 2020). Furthermore, traditional knowledge recording is scarce in Malaysia, even though indigenous people have long used insects in their daily lives. As they progressed towards modernization, their cultural knowledge began to deteriorate (Ismail & Mohamed, 2013). The largest threat to the Philippines' languages is families' intentional and unconscious decisions not to transmit on their

language and culture (Headland, 2003; Molina, 2012). The Bagobo tribe in Southern Mindanao, which is one of the largest ethnolinguistic groups (Zorc, 2019), has about 100% of its members who are illiterate in their own dialect (Save the Children UK, 2006).

Relative to this, ethnoentomology as a research discipline has been emphasized in many literatures since it attempts to investigate the link between humans and insects, particularly among indigenous peoples. It is empirical to investigate the breadth of people's knowledge of insects from various cultures. It is critical to increase indigenous peoples' enthnoentomological knowledge and ensure that this knowledge is passed down from generation to generation through verbal communication, music, dances, and traditions. Ethnoentomology has developed into a discipline that explores the human-insect link in several facets of life, such as food, medication, entertainment, and spiritual beliefs, over the previous few decades (Ismail, 2015; Kemalok et al., 2019). In the context of linguistics, keeping records of indigenous insect terminology and introducing them to the community's younger generations is vital and essential. Many insects discovered in the nature have unique names that differ from the names given to the same group of insects. It is imperative to document these terms so that many children in this modern generation can learn about them (Eze et al., 2020).

Given the importance of ethnoentomological knowledge, we, the researchers, studied different perspectives, assumptions, and studies linked to ethnoentomology and semantic language. Brosius et al. (1984) made the ethnoecological assumption that language is a vehicle for revealing knowledge and perception, implying that humans respond to the world through a filter of conceptions and labels in their language. Birx (2005) highlighted Franz Boas' cultural relativity theory, which is employed in ethnosemantic analysis to focus analyses on specific cultures and their unique language concepts. People label and classify cultural, societal, and ecological occurrences in their surroundings, then evaluate the semantic categories that these classification

provide to comprehend the cultural meanings behind how people describe things in their environment. In addition, Eze et al. (2020) used componential analysis in their research on insect hyponyms.

Considering the above-mentioned studies on ethnoentomology and semantic language conducted in the international context, we, the researchers, reviewed related studies in the local context, and one such study on the Bagobo-Tagabawa lexicon was recently documented in Davao del Sur, Philippines; however, this study did not specifically explore the linguistic aspects of the various life forms, such as indigenous terms used for naming insects, which remains an area that requires further attention. Furthermore, the researchers have not found a published work on ethnoentomology of indigenous peoples in the Philippines that emphasizes linguistic typology. To fill the gap on the limited ethnoentomological knowledge of the Bagobo community, we, the researchers, aimed to document the indigenous terms used by the Bagobo tribe in naming the insects present in their locality, thus generating knowledge in the field of ethnolinguistic research, and serving as a way of enriching Bagobo-Tagabawa vocabularies, thus fortifying the revitalization of the cultural and biological heritage of the Bagobo-Tagabawa people.

II. Literature Review

This study is grounded in the ethnoecological assumption of Brosius et al. (1984) which stated that language is a channel through which knowledge and perception can be discovered. People respond to the environment through a filter of conceptions and descriptions in their language, which is an important part of this notion. Language offers the symbols that organize the environment and serves two important purposes. First, language ensures that communication and learning within a socio-cultural group is consistent. Second, language is flexible, allowing us to add new phrases and concepts when circumstances and requirements change. In conjunction, this study was also based on Franz Boas' cultural relativity theory, which is employed in ethnosemantic analysis to narrow down studies to specific cultures and linguistic words. Ethnosemantics is the study of how people label and classify ethnic, sociocultural, and ecologic phenomena in their environment, as well as the semantic categories that these

classifications produce, in order to truly comprehend the cultural meanings behind how people describe things in their environment (Birx 2005).

The study of the interaction between insects and humans is known as ethnoentomology. The name is derived from the words "ethno" (people study) and "entomology" (study of insects). Haynes (2019) revealed the significant result of her linguistic study on insect figuration in the contemporary literature, art and film and claimed that insects are the only figure capable of exposing the limitations of everyday humanistic viewpoints in which there is an intertwined network of stories, ideas, feelings, structures, and interactions that appear to express interdependence.

To highlight studies linked to ethnoentomology and semantic language, Atran's (1998) concept of hyponymy, cited in Stinger's (2019), underlined the relationship between hyponymy and the ability to form generalizations about the environment in the discussion of commonality among cultures on human classification of the natural world.

Relatively, Eze et al. (2020) investigated insects, focusing on the content region of sense relation, and is one of semantics' preoccupations. The study focused on the hyponymy of insect in Ovoko lect, and it applied Katz and Fodor's (1963) componential analysis principles. Subsequently, Gomez and Maya (2016) were focused in the indigenous language of Pjiekakjoo in Mexico State, which is threatened with extinction, and they documented a total of 58 names in the indigenous language (Pjiekakjoo) and 66 names in Spanish. The majority of the invertebrates documented were insects, which Pjiekakjoo identified depending on the physical qualities (likeness to animals/fruits/tools, attributes when cooked, and hardness), ethology, and ecological characteristics. On another note, Si and Carew (2018) looked at honeybee terms and their semantics in ten (10) Arnhem Land languages in the presence of native speakers who were questioned for honey bee-related terminology and corresponding lexemes, as well as other information about these insects. Although there have been few directed studies on the utilization of insects in Australian Aboriginal societies, a survey of linguists' field dictionaries by Si and Turpin (2015) discovered that Northern Australian and Central Desert languages have numerous terms for insects that are consumed, used as treatments, or indicate essential phenomena in the immediate surroundings.

Moreover, the research of Posey (1986), who revitalized the study of traditional knowledge of indigenous and folk communities in Brazil and other nations, was one of the earliest recorded attempts to document ethnoentomology. According to Maya (2012), ethnoentomological studies have intrinsic value because they document the immaterial heritage of various societies and can also be an excellent tool for approaching other topics such as agroecology, biodiversity management and conservation, cultural revitalization and survival, sustainable community development, dialogue between different forms of knowledge, biocultural and intercultural education.

Anent to the importance of ethnoentomological knowledge, the different perspectives, assumptions, and studies linked to ethnoentomology and semantic language were captured. As such, Brosius et al. (1984) made the ethnoecological assumption that language is a vehicle for revealing knowledge and perception, implying that humans respond to the world through a filter of conceptions and labels in their language. In addition, Birx (2005) highlighted Franz Boas' cultural relativity theory, which is employed in ethnosemantic analysis to focus analyses on specific cultures and their unique language concepts.

In connection, Ismail and Mohamed (2014), who investigated the relationship between insects and people discovered that traditional knowledge of various ethnic communities is widespread, including the use of insects as food and medicine, as well as for showcasing tribal identity. Consequently, Reategui et al. (2018) highlighted that traditional knowledge is common among tribal populations in which insects continue to play an important role in indigenous people's lives and culture. Moreover, Gutiérrez-Santillán et al. (2019), found that local people have extensive awareness of the biological diversity existing in their territory, with distinct disparities in knowledge between groups founded in various ecosystems. Biocultural diversity suggests a high level of awareness and

utilization of the natural environment in communities where native languages and numerous customs are still practiced. Relatively, language documentation, according to Dita and Dayag (2012), has to do with generating a durable record of representative samples of a language, and they underline that more effort needs to be done in describing the languages of cultural communities. Ismail and Mohamed (2014) further accentuates that ethnoentomological data represent affinities and also serve as a source of history for ethnic communities.

Subsequently, ethnic groups in the Philippines have been documented. According to Mangune (2015), the Bagobos are one of the most numerous indigenous groups in southern Mindanao. They are divided into three (3) sub-groups: Tagabawa, Clata or Guiangan, and Ubo. They are referred to as ethnic groups because they have a distinct identity that is established in history. The Bagobos have been the major residents of the broad lands stretching from the west coast of Davao Gulf to the high reaches of Davao's famed and significant mountain ranges of Mt. Apo or Apo Sandawa to the tribal people since the beginning. In addition, according to Save the Children UK (2006), the Tagabawa (People of the South) traditional homelands extend from the southern portion of Davao City to the Municipality of Bansalan in Davao del Sur. The Tagabawa are a sub-tribe of the Bagobo and previously occupied the majority of the area at the foot of Mt. Apo. The Tagabawa people's sociopolitical framework and cultural matrix have undergone extensive alterations. Many new cultural trends entered the society as a result of the large-scale influx of "newcomers." Insidious foreign notions then wormed their way into the Bagobo tribe's "civilization." More changes occurred as the Bagobo culture became more open to the impacts of the newly emergent culture. Further, Estremera (2017) emphasized in her article that even in those long-ago years, the Bagobo-Tagabawa had a well-defined social structure that assigned jobs to people based on their capabilities and recognized skills, talents, and particular connection to nature.

II. (A) Research Questions

This study explored the Bagobo-Tagabawa ethnoentomology through linguistic analysis and phenomenology. The researchers aimed to put premium on its semantic features as the area of coverage. Hence, its purpose was to identify the hyponyms of insects in Bagobo-Tagabawa

language. Using semantic analysis, hyponyms of insects in Bagobo-Tagabawa language were identified. Semantic analysis includes sense relations particularly hyponymy and reference particularly stereotype of identified prototypes of insects. Furthermore, this study intended to describe the Bagobo tribe's experiences with insects and how they are linked to their culture, which is a topic of ethnoentomological study. Specifically, this study was guided though the following research questions: (1) what are the hyponyms of insects in the Bagobo-Tagabawa language using componential analysis? (2) how are these terms connected to the Bagobo-Tagabawa culture? (3) what insights can the Bagobo-Tagabawa folks share from the findings?

III. (B) Research Methods and Materials

This study used qualitative research employing semantic analysis and phenomenological approach. Semantic analysis is concerned with the link between word form and paralinguistic entity it represents (referent) its conventional meaning. Because the link arises in the speaker's or hearer's mind as an idea, which is seen as a key mediator between word form and its referent, itis considered psychologically real. Furthermore, proper names have a semantic component that must be cultural in nature (Barnabas & Peter 2013). Semantic analysis was appropriate in this study since it aimed to identify the hyponyms of insects in Bagobo-Tagabawa language. Using semantic analysis, hyponyms of insects in Bagobo-Tagabawa language were identified with the use of componential analysis. The semantic analysis of identified protoypes of insects includes sense relations, particularly hyponymy, and reference, particularly stereotype. Componential analysis, a principle of semantics, was used in specifically, following the paradigm of Eze et al (2020). Some components of superordinate terms under study were used to determine variations between co- hyponyms of such superordinate term utilizing binary signs (+ -) using CA as the framework for this research. By doing so, we, the researchers were able to see the discovered insects in the lect

under their hierarchical links, which were located under the superordinate term "insect." In this study, we, the researchers made use of actual insects found in the ancestral domains of the Bagobo- Tagabawa tribe and captured some available archive of collections of insects with their nomenclatures and pictures documented by local biologists which were discovered in the Bagobo ancestral domains. These were presented to the experts in the field of Biology for validation during the series of consultations. The researchers' collaboration with the local biologists was done primarily for validation to address issues pertaining to the actual collection and naming of insects. The collection of real insects and documented pictures became the linguistic data for the conduct of semantic analysis.

On the other hand, phenomenology is a qualitative research method that focuses on the shared experience of a group of people. The approach's main purpose is to arrive at a description of the nature of the occurrence in question (Creswell, 2002). Phenomenology was appropriate in this study since it aimed to describe the experiences of the Bagobo tribe as to how insects relate to their culture, which is a concern of ethnoentomological studies. An in-depth exploration on how the naming and characteristics of insects are linked to the daily life interactions, activities, and traditions of the Bagobo-Tagabawa people was also highlighted using phenomenological investigation. In-depth interview (IDI) guide questions were used to determine the native terms of the insects presented in the pictures and questions were also asked about the connection of the Bagobo-Tagabawa terms of insects to the tribe's culture. The same questions asked in the interview were used in the FGD. There were five (5) identified Bagobo people who were known to be well- versed with the Bagobo lexicons of insects served as participants during the in- depth interviews. They were also part of the Focus Group Discussion with other tribal leaders to discuss on the insights related to the findings of the study. Interview and FGD responses were analyzed using thematic analysis. It is a strategy for detecting, analyzing, and reporting patterns in data that is extensively used in qualitative research (Braun and Clarke 77). We, the researchers looked for patterns, core ideas, and themes in the transcribed recorded in-depth interviews and focus groups. These patterns were utilized to create codes that emphasized Bagobo-Tagabawa ethnoentomology more clearly.

IV. Results and Discussion

Hyponyms of Insects in Bagobo-Tagabawa Language. In the Bagobo-Tagabawa language, an insect is called *"ulad."* In terms of semantics, insect is a superordinate term that encompasses many other superordinate terms. The *"ulad,"* as they are known in Bagobo-Tagabawa, come in a variety of forms, including: *"lamigas"* (ant), *"kalulák"* (bee), *"bakukang"* (bettle), *"kataru"* (aphid), *"tangangó"* (bug), *"kalibangbang"* (butterfly), *"takóréng"* (cricket), *"ipas"* (cockroach), *"tarangas"* (dragonfly), *"igas"* (firelfy), *"tugsip"* (flea), *"langó"* (fly), *"kaláttu láttu"* (grasshopper), *"bitóró"* (lice), *"óppô"* (mantis), *"tagánnák"* (mosquito), *"kalibasbas"* (moth), and *"ané"* (termite). All these terms are hyponyms for insect, although they could also be superordinate nouns comprising various terms which are also on the hyponym level. As noted by Wigglesworth (2012), insects belong to the largest class in the Arthropoda phylum, which is the largest of the animal phyla. In terms of semantics, insect is a superordinate phrase that encompasses many other superordinate words. The findings of the study expanded the study of Eze et al. (2020) which revealed that there are a lot of insect hyponyms in the lect being investigated, and all the insect hyponyms have also hyponyms at other levels. The study also demonstrated that, while each co-hyponym in a superordinate word has its own unique characteristics, they all share some characteristics that group them together under that superordinate term. In addition, the Bagobo Tagabawa insect equivalent terms exemplify Atran's (1998) concept of hyponymy, which underlined the relationship between hyponymy and the ability to form generalizations about the environment in the discussion of commonality among cultures on human classification of the natural world.

Table 1
Insects and their Hyponym

	Bagobo Tagabawa Language	English Language
	Ulad	Insect
1	**Lamigas**	**Ant** (Or.Hymenoptera)
a	Tigasó	Household Ant
b	Lamáttik	Black House Ant
c	Dumaligas	Fire Ant
d	Tagurám	Black Garden Ant
e	Katungal Lamáttik	Weaver Ant
f	Tabuduk	Black Carpenter Ant
g	Tagiring	Sugar Ant
h	Mámalaguy	Red Long-Legged Ant
2	**Kalulák**	**Bee** (Or.Hymenoptera)
a	Manggówa-Wa	Mining Bee
b	Patyukan	Honey Bee
c	Lapinig	Honeybee
d	Tabulág	Bumble Bee
e	Tamaing	Killer Bee
f	Kalulák	Wasp
g	Tabuuwan	Carpenter Bee
3	**Bakukang**	**Beetle** (Or.Coleoptera)
a	Tabagang	Atlas Beetle
b	Kamaung	Lantana Beetle
c	Bunsalo Máma	Giant Stag Beetle
d	Bayi Bunsalo	Cyclommatus Zuberi
e	Métám Mararag Baták Kógód	Tiger Beetle
f	Mallutù Métám Baták Kógód	Lady Bug
g	Baták Kayu Kógód	Brown
h	Malunnó Kógód	Green
I	Inas	Weevil
4	**Kataru**	**Aphid**(Or.Hemiptera)
a	Mallutù Magdakál Kataru	Citrus Aphid
b	Marinták Malunnó Kataru	Green Peach Aphid
c	Karasè Métám Kataru	Citrus Aphid
d	Maránnás Sapádding	Brown Citrus Aphid
e	Malamónós Kataru	White Aphids
5	**Tangangó**	**Bug**(Or.Heteroptera)
a	Malomérég Tangangó	Stink Bug
b	Dallit Mararag Matibulu Tangangó	Yellow Bug
c	Lampisan Mallayat Manipis Tangangó	Dark Stink Bug
6	**Kalibangbang**	**Butterfly**(Or.Lepidoptera)
a	Métám Baták Kalibangbang	Red Velvet Butterfly
b	Poligád Kalibangbang	Brown Pansy
c	Baták Mata-Ligad Kalibangbang	Pearly-Eye
d	Magdakál Baták Mataligad Kalibangbang	Ring Butterfly
e	Mapputi Métám Panapisan Kalibangbang	Scarlet Mormon Swallow Tail
f	Ássóddas Kalibangbang	Red Helen Swallow Tail
g	Daróggi Métám Kalibangbang	Blue Dotted Black Butterfly
h	Malunó-Métám Baták Kalibangbang	Red Velvet/Black Butterfly
i	Magimpuruk Métámputi Baták Kalibangbang	Grey Glassy Tiger
7	**Takóréng**	**Cricket**(Or.Orthoptera)
a	Malunnó Takóréng	Green Cricket
b	Métám Takóréng	Black Cricket
c	Baták Kayu Takóréng	Brown Cricket
8	**Ipás**	**Cockroach**(Or.Dictyoptera)
a	Rarattám Ipás	German Cockroach
b	Arassán-Bayi Ipás	American Cockroach
c	Tindág-Suwag Ipás	Brown Branded Cockroach
d	Aglayang Ipás	Flying Cockroach
9	**Tarangas**	**Dragonfly**(Or.Odonata)
a	Tarangas Ta Waig	Neurothemis Terminata
b	Tarangas Máma-Maginlayat	Resiocnemis Antoniae-Male
c	Tarangas Métámbayi Maginlayat	Resiocnemis Antoniae-Female
d	Talebbissan Tarangas	Trithemis Aurora
e	Talebbian Tarangas	Diplacina Bolivari
f	Talimbitin Tarangas Máma	Heteronias Heterodoxa
g	Talimbitin Bayi Tarangas	Idionyx Philippa
10	**Igas**	**Firefly**(Or.Coleoptera,Fam.Lampyridae)
a	Talungtung Taribáddás Igas	Photuris Versicolor
b	Magdakál Igas	Big Firely
c	Marinták Igas	Small Firefly
11	**Tugsip**	**Flea**(Or.Siphonaptera)
a	Tanà-Tanà	Flea (Dog)
b	Tilla	Flea (Chicken)
c	Tuma	Human Flea
12	**Langó**	**Fly**(Or.Diptera)
a	Marinták Langó	Blue Bottle Fly
b	Maginlayat Magdakál Langó	Flesh Fly
c	Mararag Langó	Fruit Fly
13	**Kaláttu Láttu**	**Grasshopper**(Or.Orthoptera)
a	Malunnó Kabangás Bangás	Katydid Leaf Grasshopper
b	Mallayat Kabangás Bangás	Meadow Grasshopper
c	Balling Kaláttu Láttu	Common Field Grasshopper
d	Tindág Suwag Kaláttu Láttu	Long-Horned Grasshopper
e	Apang	Locust
14	**Bitóró**	**Louse (Adult)** (Or.Phthiraptera)
a	Daróggi Maiya Bitóró	Head Louse
b	Daróggi Bayi Bitóró	Sucking Louse
c	Magimpuruk Bayi-Kuód	Young Louse
15	**Óppô**	**Praying Mantis (Or.Dictyoptera)**
a	Baták Kayu Óppô	Brown Praying Mantis
b	Malunnó Óppô	Green Praying Mantis
c	Métám Óppô	Black Praying Mantis
16	**Tagánnák**	**Mosquito** (Or.Diptera)
a	Parissán Tagánnák	Aedes Aegypti
b	Maginlayat Paa- Tagánnák	Asian Tiger Mosquito
c	Maginlayat Paa Métám Tagánnák	Black Tiger Mosquito
d	Baták Kayu Tagánnák	Brown Mosquito
17	**Kalibasbas**	**Moth** (Or.Lepidoptera)
a	Lambaté Kalibasbas	Sphinx Moth
b	Mararag Kalibasbas	Yan Hawk Moth
c	Paragde Kalibasbas	Oleander Hawkmoth
d	Mararag Métám Kalibasbas	Macro Glossine Sphinx Moth
e	Baták Kayu Magdakkál Kalibasbas	Atakus Atlas
18	**Ané**	**Termite** (Or.Isoptera)
a	Mararag Bayi Marinták Ané	Worker
b	Mararag Máma Marinták Ané	Soldier
c	Métám Ané	Black Reproductive Termite
d	Kadalí-Dalí Kapakpa-Kan Dán Ané	Winged Reproductive Termite
e	Máma Kakangayan Dán Ka Pakpakan Ané	King Termite
f	Bayi-Mararag Magdakál Ané	Queen Termite

Furthermore, using semantic analysis, as shown in the componential matrices, it was found out that the Bagobo Tagabawa language is rich in vocabulary which they use to refer to different insects which are within their environment. Through componential analysis, this study was able to deconstruct the salient features of the hyponyms of these insects. The superordinate *"lamigas"* has hyponyms which contrast in terms of stereotypes (or characteristics) like biting, leg size, color, and body size. Some also differ in habitat extension such as some live in the tree shrub and garden. Also, "*kalulák*" or bee has hyponyms like *"patyukan"* and *"lapinig"* that differ in color. *Some hyponyms of kalulák* possess similar characteristics such as flying, biting, stinging, and black color but also differ in terms of size and habitat. Further, "*bakukang" or beetle has hyponyms like "tabagang"* and *"kamaung"* in which larva can be both eaten as food by the Bagobo-Tagbawa tribe, but they contrast in terms of some characteristics like color, habitat, and ability to fly. The last type of insect subjected for componential analysis in this study is the *"kaláttu láttu"* or grasshopper. All hyponyms of *kaláttu láttu* have similar characteristics like flying, biting, and leg size (large/long hind legs). They all inhabit in grass and garden plants, but also differ in some distinct characteristics such as in terms of color and antennae. The results of componential analysis in studying hyponyms of insects in Bagobo-Tagabawa language expanded the framework propounded by Katz and Fodor (1963).

Table 2
Componential Matrix for 'Lamigas' – Ant

	Insect	Flying	Biting	Long Legged	Stinging	Household	Ant	Black	Big	Tree Shrub	Garden
Tigasó	+	–	+	–	–	+	+	+	–	–	–
Lamáttik	+		+	+	–	–	+	+	+	–	–
Dumaligas	+	–	+	–	–	–	+	–	–	+	+
Tagurám	+	–	–	–	–	–	+	+	–	+	+
Lamáttik Katungal	+	–	+	+	–	–	+	–	+	+	+
Tabuduk	+	–	+	–	–	–	+	+	+	+	–
Tagiring	+	–	+	–	–	+	+	–	–	–	–
Mamalaauv	+	–	–	+	–	+	+	–	–	+	+

Table 3
Componential Matrix for 'Kalulák' - Bee

	Insect	Flying	Biting	Stinging	Household	Bee	Black	Big	Tree Shrub	Garden Plant
Manggówa-Wa	+	+	+	+	–	+	+	+	+	–
Patyukan	+	+	+	+	–	+	+	–	+	–
Lapinig	+	+	+	+	–	+	–	–	+	+
Tabulàg	+	+	+	+	+	+	+	+	–	–
Tamaing	+	+	+	+	–	+	+	+	–	–
Kalulák	+	+	+	+	+	+	+	–	+	–
Tabuuwan	+	+	+	+	–	+	+	+	+	-

Table 4
Componential Matrix for 'Bakukang' – Beetle

	Insect	Flying	Horn	Long Snout	Biting	Stinging	Food	Coleoptera	Black	Big	Tree Shrub	Coconut
Tabagang	+	+	+	–	+	–	+	+	+	+	–	+
Kamaung	+	–	–	–	–	–	+	+	–	–	+	–
Bunsalo Máma	+	–	+	–	+	–	–	+	+	+	–	+
Bayi Bunsalo	+	–	–	–	+	–	–	+	–	+	–	+
Métám Mararag Baták Kógód	+	–	–	–	–	–	–	+	–	–	+	–
Mallutu Métám Baták Kógód	+	–	–	–	–	–	–	+	–	–	+	–
Baták Kayu Kógód	+	+	–	–	+	–	–	+	–	–	–	–
Malunnó Kógód	+	–	–	–	–	–	–	+	–	–	+	–
Inas	+	–	–	+	–	–	–	+	–	–	+	–
Malunnó Inas	+	–	–	+	–	–	–	+	–	–	+	–

Table 5
Componential Matrix for 'Kaláttu láttu' – Grasshopper

	Insect	Flying	Biting	Stinging	Long Antennae	Grasshopper	Green	Big	Large/Long Hind Legs	Grass	Garden Plant
Malunnó kabangás bangás	+	+	+	–	+	+	+	+	+	+	+
Mallayat kabangás bangás	+	+	+	–	+	+	+	–	+	+	+
Balling Kaláttu láttu	+	+	+	–	–	+	+	+	+	+	+
Tindág Suwag Kaláttu láttu	+	+	+	–	+	+	+	+	+	+	+
Apang	+	+	+	–	–	+	–	–	+	+	+

Componential analysis (CA) is a semantics theory that claims that the meaning of any lexical item may be broken down into its constituent parts. In other words, there exist isolable qualities that can be utilized to determine the genuine semantic content of any lexical item. Semantic components, according to semantic analysts, allow for a concise characterization of lexical and sentence relations (Eze et.al, 2020). Further, words are deconstructed into semantic components

in CA, which represent the complete sum of a word's meaning (Katz & Fodor, 1963). Overall, Bussmann (2006) defined componential theory as the study of words using semantically structured sets of features that have the existence or absence of a feature in reference. Finally, employing componential analysis, words belonging to relatively limited lexical categories, such as insects, are simply described (Eze et.al., 2020).

Bagobo-Tagabawa Insect Terms and their Connection to Tribe's Culture. The Bagobo- Tagabawa people described how insect terms are connected to their culture as a tribe. They have highlighted tribes' interaction with insects that include both a wide variety of practical uses and negative interactions including serious damage to crops and undesirable premonitions. First, insects are perhaps thought to be associated with good luck and abundance as believed and experienced by the Bagobo-Tagabawa tribe. Also, the Bagobo-Tagabawa tribe have

seen the role of some specific insects in attracting good life and happiness. They believed that beautiful insects are bringers of bliss, gladness, and goodness in life in the community. On the other hand, insects with dark colors and some flying insects are generally associated with sickness and even omens of death. Some symbolize of a long period of drought and insect infestations. They have been also labelled as responsible for the damage to growing crops of the Bagobo-Tagabawa people. Moreover, the Bagobo-Tagabawa tribe utilizes substances extracted from insects as medicinal resources practiced by their culture. The substance extracted from their body is used to treat the affected part of skin experiencing wound or allergic reactions or insect stings in the skin. Also, like most other cultures, the Bagobo Tagabawa tribe also considers specific kinds of insects consumed as food. In Bagobo-Tagabawa folklore, some insects are believed to be envoys of important messages and warnings to the tribe's family and community. They are used to predict the weather such as rainy and dry seasons. Lastly, one interesting cultural practice of the Bagobo- Tagabawa tribe is using insects' products as material for weaving their traditional costumes such as the *tadu* (honeycomb) of the honeybees which makes the clothing fibers solid and shiny, creating their traditional costumes of quality. The findings of this study confirm the claim of Ismail and Mohamed (2014), who investigated the relationship between insects and people and discovered that traditional knowledge of various ethnic communities is widespread, including the use of insects as food and medicine, as well as for showcasing tribal identity. Furthermore, the findings of Reategui et al. (2018) can be linked to the results of this study, which highlighted the traditional knowledge of edible insects and ecosystems described as widespread among tribal populations in which insects continue to play an important role in indigenous people's lives and culture. In this study, the informants' statements concisely highlighted the tribe's strong relationship to insects, indicating that ethnoentomological knowledge is still circulating in the Bagobo Tagabawa culture. What is more remarkable is the tribe's understanding of bioindicator, which is a biologist's skill, yet the tribe performed a lot of knowledge sharing based on their biodiversity perspective. This is consistent with the idea of Gutiérrez-Santillán et al. (2019), who found that local people have extensive awareness of the biological diversity existing in their territory, with distinct disparities in knowledge between groups founded in various ecosystems. Biocultural diversity suggests a high level of awareness and utilization of the natural environment in communities where native languages and numerous customs are still practiced. This might be characterized as valuing, and it can be traced back to Ismail and Mohamed (2014) in his argument that ethnoentomological data represent affinities and also serve as a source of history for ethnic communities.

Insights of the Bagobo- Tagabawa Folks to Preserve Ethnoentomological Knowledge and Biodiversity. One of the goals of this study was to gather the insights of the Bagobo-Tagabawa folks to preserve ethnoentomological knowledge and biodiversity. The themes that emerged in the study were; *intergenerational language transmission*, *language teaching in the community*, and *conservation and protection of tribe's biodiversity*. Intergenerational language transmission, in which children learn languages from their parents and grandparents, is a vital method for reversing language change, according to the tribe (Forrest, 2018). To improve ethnoentomological knowledge, family language preservation initiatives are performed, particularly among the younger generation. Parents and elders have an important role to play in ensuring that their children converse in the dialect. Insect words in Bagobo-Tagabawa assist children get more familiar with and respect the important species that dwell in their ancestral land. Various authors (Bliss & Creed, 2018; Thorburn 2016) have discussed the experiences of families that have successfully introduced their endangered language into the home, as well as the range of factors that directly influence family language learning and usage. In addition, the family is the most important and key domain in the maintenance and reproduction of language (Fishman, 2001; Spolsky, 2004; Schwarts, 2020).

Moreover, language teaching in the community indicates the need to involve the community in preserving the language. Hence, the importance of community sharing of Bagobo-Tagabawa insect terminology is critical. This necessitates the informal or formal teaching of indigenous terminology to children to preserve their language and cultural knowledge. By doing so, the tribe's members, particularly the younger ones, can maintain the prestige and pride in utilizing their language to learn about biodiversity. This theme backs up Perez Baez et al. (2019)'s assertion that language preservation necessitates a relationship between the language and the community. The community's

goal is to generate interest and community support to encourage others to learn the language. Kirkness (2002) also stated that language revitalization is contingent on the will of its speakers in the community. The burden of proof rests on the younger generation of speakers who have received an education. To play an active part in the preservation of their language, waysand methods must be identified within the community context.

Likewise, the Bagobo Tagabawa people understood the importance of insects in the ecosystem. The tribe persuades all tribe members to begin conserving and protecting the environment of their ancestral territory. This expanded the findings of the study of Nayak (2016) which revealed the role of tribal communities in the conservation of biodiversity. Different tribal groups have different indigenous knowledge systems for the protection of biodiversity and conservation of natural resources. By their traditional knowledge, they can predict the weather or the season. Tribes can use specific strategies for the protection of biodiversities and these strategies are also useful in mitigation plans for coping with climate change and to sustain their livelihoods. For the protection of the natural resources, the tribe should always show their resistance against the destroyer of the natural resources.

Additionally, ethnoentomological studies, according to Maya (2012), have intrinsic value because they document the immaterial heritage of various societies and can also be an excellent tool for approaching other topics such as agroecology, biodiversity management and conservation, cultural revitalization and survival, sustainable community development, dialogue between different forms of knowledge, biocultural and intercultural education. Relatively, the findings of this study confirmed the ethnoecological assumption of Brosius et al. (1984) which stated that people respond to the environment through a filter of conceptualizations and labels in their language, which means language is a tool for uncovering information and perception. It also affirmed Franz Boas' theory of cultural relativity, which stipulated that people label and classify cultural, social, and environmental phenomena in their world, and analyze the semantic categories these classifications create to understand the cultural meanings behind how people describe things in their world, as mentioned by Birx (2005).

V. Implications for Educational and Linguistic Practice

Based on the findings of this study, the Bagobo Tagabawa language is rich in vocabulary which they use to refer to different insects which are within their environment. In studying indigenous terms of various species, semantic analysis employing componential analysis is a suitable method since several meanings of lexical items such as the Bagobo-Tagabawa terms for insects can be classified based on their essential components. It is effective in describing meanings and meaning relationships like hyponymy and stereotypes. This result implies that teachers, linguists, and other researchers interested in ethnoentomological studies can make the findings of this study a material for instruction and future research undertakings. Other scholars in linguistics and entomology may also use the findings of this study as a springboard for exploring different aspects of the life of insects or other species present in the Bagobo-Tagabawa ancestral domain Moreover, the results of this study also document the deep connection of the Bagobo Tagabawa tribe to insects which highlight the richness of the tribe's culture. This suggests that the members of the tribe, especially the younger generation, may use the study's findings as a reference to improve their appreciation of the importance of gaining ethnoentomological knowledge. The Bagobo-Tagabawa elders may organize various informal and formal literacy programs to educate the Bagobo-Tagabawa children about the terms and connection of insects to their culture and daily livelihood. By so doing, the tribe may also augment their environmental awareness and conservation attitudes.

More importantly, the final insights shared by the Bagobo-Tagabawa folks to preserve ethnoentomological knowledge and biodiversity include *intergenerational language transmission*, *language teaching in the community*, and *conservation and protection of tribe's biodiversity*. This result suggests that indigenous languages may be given important value as these languages ensure the culture, customs, and biodiversity preservation. The study's findings indicate the necessity to require a community of speakers who actively participate and share their language within the speech context to sustain knowledge on ethnoentomology. In addition, this study indicates how schools have become important places to learn a language, such as the integration of the Bagobo- Tagabawa language in teaching concepts on biodiversity specifically in teaching science subject with content like insects which may also

be used as a springboard in furthering the Mother Tongue Based Multilingual Education program (MTB-MLE) of the Department of Education. Familiarity with the Bagobo-Tagabawa insect terms may be aided by linguistic archives used for informal or formal teaching. More production of these linguistic materials may be initiated which may serve as a reference for learning.

VI. Concluding Remarks

The entire research journey was an exhilarating experience despite the challenges we encountered. The last phase of the research work was quite horrendous as the COVID 19 remarkably struck the globe at its peak. However, battling against the odds is a matter of drawing the boundary between winning and losing. Being driven by a strong will to hurdle the threat caused by the pandemic, we chose to stay focused on the bundles of joy we set to achieve in uncovering ethnoentomological knowledge rather than ensnaring ourselves to the rigors of doing a research work which are oftentimes disheartening. Merging linguistic typology and ethnoentomology requires rigidity in entailing concepts based on established theories and founded assumptions; however, the vast array of literature and related studies sourced from various platforms and the involvement of all expert entities in the field of linguistics and biology have provided the researchers a breakthrough in accomplishing this humble yet gratifying piece of written endeavor. The overall research experience is a total learning package and an adventure rolled into one. Basically, having explored the rich cultural facets of indigenous peoples specifically the Bagobo-Tagabawa tribe is a fulfilling experience which added a whole new flavor to our profession being educators and institutional linguistic researchers. Above all, having documented a parcel of ethnoentomology venture,

interwoven in the field of linguistics is a novel achievement which we will be forever grateful. With this, we wish to extend our gratitude to all entities who have munificently contributed for the success of this research endeavor.

Acknowledgment

We want to acknowledge the assistance in bringing this study on ethnoentomology to fruition. We thank Dr. Analyn A. Cabras and Dr. Milton Norman D. Medina from the Coleoptera Research Center of the University of Mindanao, Davao City, for assisting us in the documentation and validation of insect nomenclatures, to Dr. Erick T. Baloran from the Research and Publication Center of UM Bansalan College for his assistance in the data curation, and lastly to the National Commission on Indigenous People (NCIP) and Bagobo-Tagabawa Tribal leaders and community for sharing their valuable ethnoentomological knowledge.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Aldasoro Maya, E. M. (2012). *Documenting and Contextualizing Pjiekakjoo (Tlahuica) Knowledges thorugh a Collaborative Research Project* (Doctoral dissertation).

[2] Atran, S. (1998). Folk biology and the anthropology of science: Cognitive universals and cultural particulars. *Behavioral and Brain Sciences*, *21*(4), 547–609. doi:10.1017/S0140525X98001277 PMID:10097021.

[3] Barnabas, L., & Peter, J. (2013). A morphosemantic analysis of the Kamue personal names. *International Journal of English Language and Linguistics Research*, *1*(2), 1-12.

[4] Birx, H. J. (Ed.). (2005). *Encyclopedia of Anthropology: Five-Volume Set*. Sage Publications. Bliss, H., & Creed, M. (2018). *Costing Models for Language Maintenance, Revitalization, and Reclamation in Canada*. First Peoples' Cultural Council.

[5] Braun, V. & Clarke, V. (2006).Using thematic analysis in psychology. Qualitative research in psychology 3.2: 77-101.

[6] Brosius, P., Lovelace, G. W., & Marten, G. G. (1984). 9 Ethnoecology: An Approach to Understanding Traditional Agricultural Knowledge.

[7] Chakravorty, J., Ghosh, S., & Meyer-Rochow, V. B. (2011). Practices of entomophagy and entomotherapy by members of the Nyishi and Galo tribes, two ethnic groups of the state of Arunachal Pradesh (North-East India). *Journal of ethnobiology and ethnomedicine*, *7*(1), 1-14.

[8] Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative* (Vol. 7). Prentice Hall Upper Saddle River, NJ.

[9] Dita, S. (2012). Linguistic research in the Philippines: trends, prospects, & challanges. QC: Philippine Social Science Council, no. https://www.academia.edu/3397063/Linguistic_research_in_the_Philippines_Trends_prospects_and_challenges.

[10] Eze, J. U., Mamah, J. G., Aboh, S. C., & Aruah, V. O. (2020). Hyponyms of Insect in Ovoko Lect. *Journal of Language Teaching and Research*, *11*(6), 988-994.

[11] Fishman, J. A. (Ed.). (2001). *Can threatened languages be saved?* (pp. 99-104). Clevedon: Multilingual Matters.

[12] Forrest, W. (2018). The intergenerational transmission of Australian Indigenous languages: why language maintenance programmes should be family-focused. *Ethnic and Racial Studies*, *41*(2), 303-323.

[13] Gutiérrez-Santillán, T. V., Moreno-Fuentes, Á., Sánchez-González, A., & Sanchez-Rojas, G. (2019). Knowledge and use of biocultural diversity by Nahua in the Huasteca region of Hidalgo, Mexico. *Ethnobiology and Conservation*, *8*.

[14] Haynes, M. (2019). Tick Tock: insect figuration, temporal estrangement and historiographic critique in postmodern and contemporary literature, art, and film.

[15] Headland, T. N. (2003). Thirty endangered languages in the Philippines. *Work Papers of the Summer Institute of Linguistics, University of North Dakota Session*, *47*(1), 1.

[16] Ismail, N. A. (2015). *Etnoentomologi dalam Kalangan Kaum Orang Asli dan Melayu di Semenanjung Malaysia* (Doctoral dissertation, Universiti Tun Hussein Onn Malaysia).

[17] Ismail, N. A., & Mohamed, M. (2013). Ethnoentomological knowledge documentation of indigenous people in Peninsular Malaysia. In *International Conference for Multidisciplinary Research and Practices*.

[18] Katz, J. J., & Fodor, J.A. (1963). The structure of a semantic theory language 39.2: 170-210.

[19] Kemalok, J., Mohamed, M., Rahman, A. A., & Ismail, N. A. (2019, July). Biodiversity across boundary: Ethnoentomology among the Jakun of Kampung Peta, Mersing and the Malay, Chinese and Indian of Kahang, Kluang, Johor. In *IOP Conference Series: Earth and Environmental Science* (Vol. 269, No. 1, p. 012024). IOP Publishing.

[20] Kirkness, V. J. (2002). The Preservation and Use of Our Languages: Respecting the Natural Order of the Creator.

[21] Molina G. (2012, January 9). *Disappearing Languages in the Philippines*. Retrieved from https://www.ethnicgroupsphilippines.com/2012/05/12/disappearing-languages-in-the- philippines-2.

[22] Nayak, J. K. (2016). An anthropological observation on the role of tribal communities in the conservation of biodiversity.

[23] Pérez Báez, G., Vogel, R., & Patolo, U. (2019). Global Survey of Revitalization Efforts: A mixed methods approach to understanding language revitalization practices. *Language Documentation & Conservation*, *13*, 446-513.

[24] Reátegui, R. C., Pawera, L., Panduro, P. P. V., & Polesny, Z. (2018). Beetles, ants, wasps, or flies? An ethnobiological study of edible insects among the Awajún Amerindians in Amazonas, Peru. *Journal of ethnobiology and ethnomedicine*, *14*(1), 1-11

[25] Save the Children UK. (2006). *Indigenous administration of justice and its impact on the protection of children: The Tagabawa-Bagobo and Subanen experience*. Quezon City: Save the Children UK.

[26] Si, A., & Carew, M. (2018). Stingless honeybee (sugarbag) naming, identification and conceptualization in Arnhem Land—a lexicographic approach. *Australian Journal of Linguistics*, *38*(4), 519-548.

[27] Si, A. & Turpin, M. (2015).The importance of insects in Australian aboriginal society: a dictonary

[28] survey." Ethnobiology Letters, vol. 6, no. 1, 175–82, doi:10.14237/ebl.6.1.2015.399.

[29] Spolsky, B. (2004). *Language policy*. Cambridge university press.

[30] Schwartz, M. (2020). 10 Strategies and practices of home language maintenance. *Handbook of Home Language Maintenance and Development: Social and Affective Factors*, *18*, 194.

[31] Stringer, D. (2019).Lexical Semantics: relativity and transfer. *Applied Linguistics for Teachers of Culturally and Linguistically Diverse Learners*, pp. 180–203, doi:10.4018/978-1-5225- 8467-4.ch007.

[32] Thorburn, B. (2016). Another piece of the puzzle: the importance of supporting Indigenous language revitalization in the home. *Unpublished master's of education in the program of Indigenous language revitalization in the department of curriculum & instruction. University of Victoria*.

[33] Wigglesworth, V. B. (2012). *The principles of insect physiology*. Springer Science & Business Media.

[34] Zorc, R. D. (2019). Klata/Giangan--A new Southern Philippine subgroup. *The Archive: Special Publication No*, *16*, 33-51.

Brief Profile of Authors:

1. Jenny T. HERNAN is an Associate Professor and School Director of the University of Mindanao – Bansalan College. She holds a bachelor's degree in Elementary Education major in English and a master's degree in Education major in Administration and Supervision. She is presently completing her dissertation for her Ph.D. Degree in Applied Linguistics at the Professional Schools, University of Mindanao, Davao City, Philippines. Her research interests include social science research, educational management and supervision, English language teaching, linguistics, and the impact of COVID-19 pandemic on the academe.

2. Dr. Mary Ann E. TARUSAN teaches language, literature and communication subjects at the University of Mindanao, Davao City Philippines. She has done research on language, translation and strategies on literature teaching. At present, she is the research coordinator for the offsite classes of the Professional Schools.