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LANGUAGE DISTANCE AMONG BAGOBO SPEECH VARIETIES: A PHILIPPINE LEXICOSTATISTIC STUDY

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Abstract:
Language distance quantifies how speeches differ. This study described and compared language distance among Bagobo varieties — Obo Manobo, Klata, and Tagabawa — using a qualitative, descriptive-comparative design. Focus group discussions were held with 30 Bagobo respondents (10 from each subtribe), purposively identified via cultural gatekeepers as native speakers, aged 40 and above, and long-term residents, who provided equivalent Bagobo cognates for each entry in the 207-word Swadesh List. Lexicostatistic analysis derived from WordSurv7 software revealed high language distance among the varieties, that Obo Manobo and Tagabawa formed a closely related pair, a relationship confirmed by their classification as Manobo "languages of a family," in contrast to the more distant Klata, classified as a Bilic language at the "families of a stock" level, and uniformly low potential mutual intelligibility, challenging long-held assumptions of their ethnolinguistic connectedness. Given these findings, relying on a single Bagobo speech as an auxiliary medium of instruction alongside Bisaya in Davao (DepEd Order No. 020, s. 2025) may disadvantage Bagobo learners, underscoring the need for linguistically inclusive, context-based teaching aligned with SDGs 4, 10, and 16.

Keywords: language distance, mutual intelligibility, lexicostatistics, education

1. Introduction

Schools are inherently multilingual and/or multi-dialectical as they are multicultural by nature. Primary English teachers must then be prepared to handle language distance and variation effectively. With DepEd Order No. 020, s. 2025, where Filipino and English serve as the main media of instruction and local languages are limited to auxiliary use (Bisaya in the Davao Region), the intended goal of inclusivity remains only partially met. Indigenous learners like the Bagobo often become linguistically marginalized, making it

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harder for them to learn efficiently. This is also a setback for teachers who are unaware of the language distance and the level of mutual intelligibility among the languages present in class (Hibbs 257). Within the Bagobo community alone, three distinct varieties remain unevaluated for language distance.

Primary English teachers need to be linguistically and culturally responsive, which means understanding the role that language has in students' learning. When students' native tongues are not considered as learning resources, their prior knowledge and learning may also be overlooked (Alisaari 2). Language distance studies circumvent problems of language distance and mutual intelligibility in schools (Gooskens and van Heuven 70). It is one instance of language enrichment, which plays a significant role in the entire education system. In particular, this is helpful for primary teachers as they build English language features on top of students' mother tongue attributes.

This study aligned with SDG 4 - Quality Education by promoting equitable, inclusive, and culturally grounded teaching. Through its analysis of language distance among Bagobo varieties, the study underscored the importance of using indigenous languages in education to improve learners' understanding and classroom participation. It is also related to SDG 10 - Reduced Inequalities, as recognizing and valuing linguistic distance can help reduce social exclusion among indigenous peoples. Finally, it supported SDG 16 - Peace, Justice, and Strong Institutions by encouraging greater linguistic awareness, which can nurture respect, solidarity, and harmonious relationships among Bagobo subgroups.

Although the Philippines is home to far more indigenous languages than non-indigenous ones, many remain undocumented or insufficiently examined (Pilar 160). Research on language distance is one way of addressing these gaps. While such studies are common internationally, fewer can be accounted for in the Philippines, especially among indigenous groups. Existing works include Cabangon's study of Chabacano lexicon, Wimbish's lexicostatistical research on Zambales languages, and De La Torre and Gonong's analysis of Bikol-Sorsogon varieties.

Addressing the need for deeper linguistic inquiry, this study focused on the Bagobos — one of the major indigenous groups in Southern Mindanao, whose ancestral domain stretches from the western side of Davao Gulf to the Mt. Apo highlands (Hernan and Tarusan 4). The Bagobo ethnolinguistic group comprises three speech varieties: Tagabawa, Klata/Guiangan, and Obo Manobo. Of the Philippines' 175 indigenous languages, Obo Manobo and Tagabawa belong to the Manobo subgroup of the Greater Central Philippine family (Zorc 3), while Klata belongs to the Bilic group (Eberhard et al.). Their shared cultural identity but differing linguistic classification make them a compelling subject for deeper linguistic analysis.

With this light, the researcher was ardent in determining the language distance among the three Bagobo speech varieties—Klata, Tagabawa, and Obo Manobo—as it marked the first language distance study on an indigenous language in Southern Mindanao, which also served, to some extent, as a step toward revitalization of the Bagobo languages. The results outlined a language distance profile of the Bagobo varieties, their close relatedness and mutual intelligibility — useful for linguistic,

educational, and sociocultural comparisons. However, given the complexity of language distance studies, this research was limited to lexicostatistics, with lexicostatistical measures describing only possible mutual intelligibility among the three Bagobo varieties rather than demonstrating their actual mutual intelligibility.

Aligning with this research aim, the researcher employed the 207-word Swadesh List to determine the language distance within the Bagobo language network and simultaneously developed an authentic, updated Bagobo Basic Lexicon that encompasses all its varieties. As one of the minimally explored or inadequately investigated languages in the Philippines, this endeavor is revitalized and promoted Bagobo ethnolinguistic heritage across its various speech varieties. The study provided a basis for assessing the mutual intelligibility of Bagobo variations, offered a literary framework for developing language programs related to Bagobo variations, served as a fundamental tool for primary English teachers working with Bagobo students, and established a scholarly bedrock for Bagobo lexicons.

The study was primarily anchored on Robert Lado's Contrastive Analysis Hypothesis (1957), which argued that similarities between a learner's first language (L1) and the target language (L2) make learning easier, while differences may lead to interference. Shorter language distance generally supports positive transfer, while greater language distance often results in learning difficulty. This pattern is observable not only in classroom learning but also in everyday interactions, where linguistic closeness improves communication flow (Thao 102-03).

Empirical studies further substantiated this theoretical perspective. Lumabi and Maleon utilized CAH to compare English-Tagalog vocabulary among preschoolers, identifying easier and more difficult items as well as parents' views on bilingual development (66). Garay's contrastive work on Davao and Cebu Bisaya varieties also highlighted how shared and divergent items shape facilitative transfer, misunderstanding, and learning difficulty (48-49). Together, these Philippine studies affirmed CAH as a valuable lens for showing that similarities and differences among local languages shape ease of learning, transfer, and (mis)understanding.

Complementing CAH, this study also drew on Mutual Intelligibility Theory, initially developed by Einar Haugen (1966) and later expanded by Charlotte Gooskens and Vincent van Heuven (2021). It explained the degree to which speakers of different but related language varieties can understand each other without prior learning or translation. Factors like lexical overlap, phonetic distance, and listener experience influence it (Gooskens and van Heuven 55, 57). Haugen confirmed by describing it as "*the extent to which speakers of one language can understand another without special effort*" (60-61).

Mutual intelligibility describes how much language distance matters in real life—whether people can actually understand each other, talk smoothly, and learn together. From this standpoint, it is essential for understanding how language distance affects communication, interaction, and learning. When two varieties are very similar, conversations feel natural and effortless. However, as the language distance gap widens, it becomes increasingly complex for messages to be understood, leading to confusion and

even social distancing. A clear example was found among the Tagalog varieties in Luzon — Tagalog-Bulacan, Tagalog-Batangas, Tagalog-Cavite, and Tagalog-Laguna. Even though they have their own accents and expressions, people from these areas can still understand one another without much difficulty because their dialects remain highly mutually intelligible (Ciruela et al. 2528-29).

Finally, this study adopted Linguistic Distance Hypothesis (LDH) perspective by Barry Chiswick and Paul Miller (2005), which posits that greater language distance between a learner's native (L1) and target (L2) languages increases cognitive demands and slows language proficiency (Chai and Bao 4-5) Recent researches supported this view, indicating that greater language distance intensifies neural effort and reduces motivation and performance in L3 learning (Cargnelutti et al. 4-5; Wang 7). Overall, LDH suggested that lower language distance facilitates positive transfer, whereas greater language distance increases learning difficulty and processing demands.

Anchored on this, learners from linguistically distant backgrounds tend to perform poorly in reading and comprehension when home and school languages differ (Danieles-Cortez 70-71; Pouezevara et al. 15-16). Language typology further shapes feature transfer and accuracy (Domalaon 67; Vargas 5-6), while computational studies on Tagalog, Cebuano, and Bikol showed that linguistic proximity enables easier processing (Imperial and Kochmar 5371-5386). Together, these findings affirm the relevance of the Linguistic Distance Hypothesis in examining how language distance studies among the Bagobo subtribes may influence mutual intelligibility.

Accordingly, this study sought to determine the language distance among the three Bagobo speech varieties — Tagabawa, Klata, and Obo Manobo. It aimed to identify the degree of relatedness among these variations to determine which of them are closely related to each other. Finally, it sought to assess the potential mutual intelligibility of the varieties within the Bagobo language network.

2. Literature Review

Language serves as a medium of communication, an identity marker, and a system of arbitrary signs and symbols that can capture sensory representations, as these symbols refer to perceptual information (De Deyne 2; Dollado 57). It is an integral part of human behavior, serving as a system of communication between people, conveying their thoughts, feelings, intentions, and desires to others. It links interlocutors in a dynamic, reflexive process and varies according to the social group, situation, and location (Boubekeur 4-5; Noer et al. 134). From a linguistic point of view, it is important to recognize that no varieties of a language are inherently "better" than any other. They are simply different and are equally worthy of analysis.

According to Eberhard et al., there are currently 7168 living languages spoken worldwide, as listed in Ethnologue. These do not differ along just one dimension, but may differ at all linguistic levels (lexical, phonetic/orthographic, morpho-syntactic, prosodic). At each of these linguistic levels, languages may vary along many parameters. When a listener understands a foreign language, they recognize words in the same

sequence spoken by the speaker---this is called speech recognition. When enough words are correctly recognized to grasp the speaker's intended meaning, it becomes understanding or comprehension (Gooskens and van Heuven 51, 81).

In addition, part of a nation's identity is its linguistic landscape(s). It is about whether a country is monolingual or multilingual. Globally, there are many linguistic landscapes, ranging from multilingual (such as Israel) to monolingual (such as the USA). This landscape fluctuates on significant measures, such as COVID-19. In a study conducted across 70 countries during the pandemic, a significant shift was observed in this landscape (Dunn 6-7). Through this lens, the Philippines is a multilingual nation.

Understanding the complexities of multilingualism begins with the concept of language distance, a key lens for examining the relationships, similarities, and differences among languages. Generally, this concept describes the extent to which languages differ from one another and involves multiple dimensions, including lexical (shared words and meanings), phonological (sound systems), morphological (word formation), and syntactic (sentence structure) aspects (Gooskens and van Heuven 54; Xinxin 3). Owing to its significance, this concept has piqued global linguistic interest, with numerous studies exploring how language distance helps address challenges in comparing and describing mutual intelligibility between language pairs (Gooskens and van Heuven 70).

Worldwide, study results on these are either unambiguous or unpredictable. For instance, it is unpredictable that a greater frequency of psychotic disorders typically observed in several ethnic minority groups may be attributable to markers of social disadvantage and language distance. The latter appeared to have more potent effects in first-generation migrants. Relatively, they found out that language distance, alongside ethnicity (white majority, black, mixed, Asian, North-African, white minority, and other), generational status, social disadvantage, and discrimination, is one minor factor that contributes to schizophrenia and is one potential marker of sociocultural exclusion (Jongsma et al. 1541, 1536; Selten et al. 308).

The significance of language distance extends beyond linguistic variation, encompassing social and cultural dimensions as well. According to Spolaore and Wacziarg, language distance influences the transmission of ideas and behaviors, such as fertility decline, because individuals in linguistically closer societies face fewer barriers in social interaction and in learning new norms and practices. This connection highlights how low language distance facilitates the spread of innovations and cultural traits across communities. People who share closely related languages are often more culturally connected, enabling stronger communication, social learning, and inter-generational transmission of values (2).

In a case study among Indonesian tribes, Nasution et al. noted that language distance is a valuable guideline for identifying mediators who can help resolve inter-tribal conflicts in the country. Speakers from closely related languages are more likely to be chosen as mediators (13). Chaiyasat reported that linguistic challenges, understood as language distance, contributed to adjustment difficulties for French exchange students in Thailand.

Taking these findings into account, language distance is closely linked to the concept of mutual intelligibility, as both deal with how similar or different languages are. Language distance measures differences in vocabulary, phonology, and grammar, while mutual intelligibility refers to how well speakers of different languages understand each other without prior study. Generally, smaller language distances correspond to higher mutual intelligibility, as seen in related European languages, whereas greater distances reduce comprehension (van Heuven et al. 120).

Specifically, mutual intelligibility is the ease or difficulty with which speakers grasp the fundamentals of a new/other language. This may be facilitated by the sharing of some commonalities or the similarity in the argument of grammatical and lexical forms. If two languages share no vocabulary, the languages are, in principle, not mutually intelligible, and the larger the lexical similarity, the larger the mutual intelligibility will be. Hence, mutual intelligibility generally works well as a criterion for distinguishing dialects from other languages (Gooskens and van Heuven 57, 70).

If there is mutual intelligibility between the members of two different language varieties, these are considered dialects of one language; if there is no mutual intelligibility, the varieties belong to other languages. Hence, mutual intelligibility generally works well as a criterion for distinguishing dialects from other languages (Gooskens and van Heuven 57). Arabic languages, though described as incomprehensible or difficult to understand, are mutually intelligible because they are dialects of one language (Trentman and Shiri 19).

For instance, the English word "*fish*" and the Danish "*fisk*" clearly originate from the same source and are easily recognizable, whereas "*year*" in English and "*ar*" in Danish are more challenging to connect because their forms have evolved. Similarly, Swedish "*rom*" (room) matches the Danish "*rum*", making it easy to understand, but the Danish word "*værelse*" (also room) is less recognizable to a Swede. Conversely, a Dane would easily understand the Swedish *rom* (Gooskens and van Heuven 70-71), illustrating how asymmetries in lexical overlap shape degrees of mutual intelligibility between closely related languages (Gooskens and van Heuven 70-71).

Similarly, American and British English are closely related languages with only a few easily surmountable variations, such as differences in spelling conventions, for example, colour versus color, centre versus center, tyre versus tire, etc., and vocabulary differences, including toffee for candy, biscuit for cookie, trousers for pants, and elevator for lift. As to the methods of speaking the language, their language distance is very minimal (Barata 104).

An essential insight into mutual intelligibility emerged from the study of speech varieties in Claver, Surigao del Norte, which revealed that mutual intelligibility is highest among communities situated near the geographical center and gradually decreases as the distance between speech varieties increases (Ciruela et al. 2542-43). This finding suggested that geographical proximity plays a crucial role in maintaining linguistic similarity and ease of understanding among speakers. As communities become more geographically and socially distant, their speech patterns tend to diverge, leading to

reduced comprehension. The study highlighted the strong link between geographical distance and the degree of language distance with related language varieties.

Dialects, on the other hand, are variations of a language specific to geographical regions or social groups (Gooskens and van Heuven 56). It is any one of the related norms comprised under the general name "language", a subordinate term of the latter. Examples of dialectical variations, according to Boubekeur, include Mexican, Argentine, and Castilian for Spanish, and Egyptian, Gulf, Levantine, and Maghrebi for Arabic. Arabic, Spanish, and English are considered multi-dialectical languages (8).

In the Philippines, some dialects are closely related, making their speakers mutually intelligible. Though these languages differ in form, their speakers can still understand one another through shared tones, words, and syntax. This occurs when these languages/dialects originated from the same branch (Catoto 320). In his research, for instance, Catoto confirmed that Maranaw and Iranun are indeed mutually intelligible. This means that speakers of the languages do understand each other and use almost the same terminology in the same contexts and situations (327). Likewise, Tagalog is mutually intelligible to Ilokano and to Bikolano (Anayati 876; Wardana 475-479), and Kawayan (a dialect spoken in Negros Occidental and Negros Oriental) is mutually intelligible to the Bisayan dialect (Pilar 161-162).

Measuring language distance among languages or dialects based on lexical similarity is known as lexicostatistics. This technique is a comparative linguistic method that determines the degree of relationship or kinship between two or more languages by comparing the percentage of lexical cognates — the simplest and most direct way to assess their lexical similarity (Hoffmann et al. 129). Since it is essential to carefully consider the data set for stable measurement, linguists rely on a small selection of carefully chosen words, a so-called list of meanings. The Swadesh List, developed in the 1950s by lexicostatistician and glottochronologist Morris Swadesh, is often used in traditional research in glottochronology and lexicostatistics (Gooskens and van Heuven 71).

Lexicostatistics helps identify the percentage of related words, estimate language age, and classify languages. A high percentage indicates closer kinship, while a lower one shows more distant relations (Dardanila and Isma 1199; Wardana 476). Languages with shared features likely originated from the same proto-language. In the Philippines, for instance, many languages belong to closely related subgroups of the Austronesian family---such as Tagalog, Bikol, Cebuano, Hiligaynon, and Waray in the Central Philippine group (Reid 45-46); Ilocano, Pangasinan, and Ibanag in the Northern Luzon subgroup (Lobel 118-120); and Maranaw, Iranun, and Magindanaw in the Danao branch (Catoto 320-324) ---all reflecting strong linguistic kinship across regions.

Measuring lexical distance using lexicostatistics requires a carefully chosen dataset with sufficient words for stable results (Gooskens and van Heuven 71); many studies use the Swadesh List — a standardized basic-vocabulary set compiled by Morris Swadesh in the 1950s for objective comparison. Swadesh carefully selected words that are universal and fundamental to human experience---terms that are least likely to be borrowed or influenced by culture---such as *animal, bad, bite, black, child, die, eat, eye, hunt*, and the

numbers *one* to *five* (de la Torre and Gonong 4; Ginsburgh and Weber 367). By focusing on such core meanings, the Swadesh List enables linguists to estimate the degree of relatedness and distance between languages through lexical similarity.

Translating these insights into pedagogy highlights how educators can engage language distance constructively; Hibbs emphasized preparing primary English teachers for multicultural, multilingual classrooms by incorporating a curriculum unit on language and dialect variation to deepen their understanding of language diversity (257). Hence, it shall acquaint them with various issues and dilemmas of teaching English in multicultural classrooms, providing a range of strategies and techniques to introduce their future students to the features of standard American English while also valuing and supporting students' home dialect (257). When teachers utilize (when needed) the linguistic repertoire of minority students and allow them to speak it as well, they are more likely to develop their cognitive skills more holistically.

From principle to program, Philippine evidence shows why sensitivity to speech variety matters: in their study of Bikol-Sorsogon varieties, de la Torre and Gonong found that dialects within the same subgroup can share a single language program, whereas those from different subgroups require separate programs under the MTB-MLE framework (18). The Numancia case reinforced this point. Inati preschoolers struggled with MTB-MLE materials created for the Boracay-Malay Inati variety, showing that even within one ethnolinguistic group, varietal differences can hinder comprehension (Manzano 43). Accordingly, systems should adopt variety-sensitive programs, prioritize locally produced materials, and strengthen teacher mediation.

In conclusion, this study is highly significant for both the Bagobo subtribes and educators as it outlined a language distance profile of the Bagobo varieties, their close relatedness, and potential mutual intelligibility—useful for linguistic, educational, and sociocultural comparisons. Specifically, it established a literary bedrock of the Bagobo Lexicon across the three speech variations and provided a framework for language preservation, a resource for language program development, and a teaching aid for primary English educators with Bagobo learners.

Likewise, it revived the tribes' ethnolinguistic heritage and supported culturally responsive instruction under DepEd Order No. 020, s. 2025, helping teachers adapt to multilingual classrooms and promote inclusion. Beyond education, it fostered intragroup communication and unity, preserving cultural identity despite variations in speech. Ultimately, this study enriched linguistic research on language distance while advancing awareness of indigenous language diversity. Given the complexity of language distance studies, this research was limited to lexicostatistics, with lexicostatistical data (gathered via focus group discussions) describing only possible mutual intelligibility among the three Bagobo varieties rather than demonstrating their actual mutual intelligibility.

3. Material and Methods

3.1 Study Participants

The respondents in this study, referred to as Language Resource Persons (LRPs), consisted of 30 Bagobo individuals—18 males and 12 females—residing in the Davao Region, with 10 representatives from each tribe: Klata, Tagabawa, and Obo Manobo. Following the selection criteria of de la Torre and Gonong (33-34) in their lexicostatistical study, the participants were 40 years of age or older (the oldest being 80), native speakers of their respective Bagobo varieties, and permanent residents of their ancestral communities.

These language resource persons were purposively identified via cultural gatekeepers. Since tribal chieftains are the most credible authorities to identify qualified language resource persons, the researcher sought their assistance in identifying the respondents. Those who did not meet the established criteria were excluded from participation in the focus group discussions. The researcher involved only the Bagobos identified by their chieftains and did not, through sampling or random selection, participate in the decision-making process for selecting focus group participants.

3.2 Materials and Instruments

The main instrument used was the 207-word Swadesh List developed by Morris Swadesh in the 1950s. This list traditionally contains enough words to reliably measure lexical similarities and differences, making it a standard tool in lexicostatistics and glottochronology (Gooskens and van Heuven 71). The words included are fundamental and universally used, ensuring that the data provided by respondents remains objective and consistent. The study also used WordSurv 7, a specialized computer application designed for lexicostatistical and comparative linguistic research that automatically collects, computes, and analyzes linguistic data (de la Torre and Gonong 34).

Several materials were used during the focus group discussions to facilitate data collection and ensure clarity. A cellphone and a laptop were used for recording and documentation, enabling the researcher to capture and review the participants' responses accurately. Rutakumwa et al. affirmed that audio recording produced reliable data by capturing what was verbally expressed. He added that audio and video recording resulted in objective and comprehensive data collection and ensured rigor and validity (566, 577). A 32-inch television was used to display the 207-word Swadesh List, allowing LRPs to view, compare, and record their responses collaboratively. Printed copies of the list were also given to each participant for more apparent reference during the discussion.

3.3 Design and Procedure

Additionally, this study employed a qualitative, descriptive comparative design. As cited by Camino et al., Cantrell described it as observing and describing variations across groups within a population without intentionally altering any factors (276). This design is especially appropriate for the Bagobo language distance study because the goal is not to manipulate variables or test interventions, but to describe and compare existing speech

varieties as they naturally occur. By systematically contrasting the lexicostatistical measures of Klata, Tagabawa, and Obo Manobo, the researcher established the language distance, close relatedness, and potential mutual intelligibility of the Bagobo varieties.

The researcher maximized focus group discussions for data collection. As a research method, focus group discussions (FGDs) bring together people with similar characteristics to share thoughts, experiences, and insights (Doyle et al. 447). FGDs provide abundant information by accessing personal and group perceptions, meanings, and values, while their interactive nature encourages reflective, detailed responses and enables comparison of experiences to assess consensus or divergence, ultimately producing valid and reliable data when properly facilitated (Almutrafi 235; Lőhr et al. 4; Volk et al. 25). Given the need to supplement lexical equivalents to the Swadesh List, FGDs proved the most suitable and reliable method for eliciting the required linguistic data.

This study's focus group discussion participants were limited to ensure depth without overwhelming group dynamics. Several scholars supported this: Baumgartner et al. proposed 10-12 participants, Powell and Single suggested 6-10, and Krueger and Casey advised 6-8. Additionally, Onwuegbuzie et al. warned that larger groups may hinder participants from expressing their views openly and confidently (Akyildiz and Kwestan 7-8). In line with these recommendations, this study involved 10 participants per focus group discussion across the three subtribes.

To analyze the data, the researcher used lexicostatistics or lexicostatistical analysis. This linguistic method quantitatively compares languages or language varieties by compiling core vocabulary lists and examining shared lexical items to determine their degree of relatedness or language distance (Anayati et al. 878; Kassian 1). In the Philippines, it was used to measure the language distance between Bikol-Sorsogon speech varieties and Malay, Tagalog, and Ilocano languages (de la Torre and Gonong 16-17; Wardana et al. 485), while internationally, to estimate lexical kinship among English, German, Dutch languages and, together with phylogenetic techniques, applied in an Indo-European study (ResearchGate 147). These studies affirmed lexicostatistics as a reliable tool for analyzing language relationships both locally and globally.

Understanding the necessity of formality and legality in engagements with indigenous peoples, the researcher first secured UMERC certification and permission from the NCIP Regional Office. After receiving the Work Order, the researcher coordinated with NCIP offices in Davao City and Davao del Sur. With NCIP personnel, the researcher visited the subtribes on approved dates, presented the study to the chieftains, and sought assistance in identifying and gathering respondents.

At the time and place set by the chieftains, the researcher met with the respondents to explain the study's purpose, answer questions, and clarify that participation was entirely voluntary, with the option to decline or withdraw at any time without consequence. The researcher also explained their task: to, as a group, identify and verify the equivalent words in their speech for every item in the 207-word Swadesh List. After this, participants signed a Bisaya-translated Informed Consent Form — appropriate,

since they conversed well in Bisaya — ensuring a clear understanding and fostering support.

During the focus group discussions, the researcher, for everyone's convenience, used a laptop and connected it to a TV to display the 207-word Swadesh List in large fonts, scrolling through it gradually as the language resource persons followed along with their own printed copies. The LRPs provided the exact Bagobo equivalents, which the researcher typed into the laptop (while they were projected on the TV) as they spelled and confirmed them. Real-time corrections ensured accuracy, and all lexical data — verified spellings — were validated both during the session and later confirmed in writing by the tribal chieftains.

The researcher entered the data into the WordSurv7 software to compute lexical similarity percentages among the three Bagobo subtribes. The results revealed lexicostatistical measures for interpreting language distance, confirming close relatedness and describing potential mutual intelligibility among the Obo Manobo, Klata, and Tagabawa. These were then examined alongside qualitative insights from the focus group discussions to ensure a credible and reliable understanding of the Bagobo subtribes' linguistic relationships.

3.4 Ethical Considerations

Lastly, this study adhered to ethical considerations, including the informed consent process, voluntary participation, privacy and confidentiality, participant recruitment, risk minimization, prevention of fabrication and falsification, declaration of no conflict of interest, protection of focus group participant identities, avoidance of deceit, permissions from relevant organizations and locations (as certified under UMERC Certification No. UMERC-2025-027), responsible use of technology, proper authorship, benefits to participants, plagiarism prevention, and the assurance of trustworthiness.

4. Results and Discussion

This section presents the results of the lexicostatistical analysis of the three Bagobo speeches---Klata, Obo Manobo, and Tagabawa---describing the language distance and close-relatedness among these varieties and shedding light on their degree of mutual intelligibility.

4.1 Language Distance among the Three Bagobo Speech Varieties

Table 1: Language Distance in the Bagobo Speech Network

Language Distance Scores
49.76% (lowest)
Obo Manobo ↔ Tagabawa
70.05%
Obo Manobo ↔ Klata
72.46%
Klata ↔ Tagabawa

The Language Distance Summary Table outlined the language distance among the three Bagobo speeches: Klata, Obo Manobo, and Tagabawa. The Obo Manobo and Tagabawa pair demonstrated the lowest language distance index at 49.76%, indicating that these speeches are the closest, as supported by their high degree of shared fundamental vocabulary. Meanwhile, the Obo Manobo and Klata pair showed a moderate language distance relationship with an index of 70.05%. Klata and Tagabawa recorded the highest index at 72.46%, suggesting they have the highest language distance in the Bagobo speech network.

Taken together, the patterns cohered into a single picture, Klata as the most distant Bagobo speech, particularly from Tagabawa, while Obo Manobo as the bridge variety. The configuration aligned with the Linguistic Distance Hypothesis, which posits that smaller distances indicate closer historical ties: Obo Manobo and Tagabawa formed the closest pair, corroborating their shared ancestry and placement within the Southern Manobo branch of the Greater Central Philippine group (Gasing and Al-Saggaf 166). By contrast, Klata's affiliation with the Bilic group (Eberhard, Simons, and Fennig) accounted for its greater distance from both, thereby consolidating the subgrouping pattern indicated by the language distance measures.

In parallel, the Austronesian Kaili-Pamona study found that high lexical similarity is correlated with a common lineage — i.e., low lexical distance indicates shared ancestry (Khairiah et al. 8-10, 14-18). Blum, Herbold, and List revealed the same pattern: cognate distances across thousands of languages reliably recovered known families and subgroups, consistent with the notion that low language distances confirm linguistic relatedness (17915). These findings provided a simple rule of thumb: when two varieties are close in terms of language distance scores, they are likely to share deeper historical ties.

4.2 Close Relatedness among the Bagobo Varieties

Table 2: Lexicostatistic Data in the Bagobo Speech Network and Close Relatedness

Speech Pairs	Shared Cognates of 207 Items	Lexical Similarity	Language Distance	Close Relatedness
Obo Manobo-Tagabawa	104	50.24%	49.76%	Most closely related
Obo Manobo-Klata	62	29.95%	70.05%	Less closely related
Klata-Tagabawa	57	27.54%	72.46%	Least closely related

Table 2 presents the lexicostatistic results for the three Bagobo speech pairs based on the 207-word Swadesh Lists collected from each variety. Obo Manobo-Tagabawa shared 104 cognates, yielding 50.24% lexical similarity and 49.76% language distance. Obo Manobo-Klata shared 62 cognates, with 29.95% similarity and 70.05% language distance. Klata-Tagabawa shared 57 cognates, corresponding to 27.54% similarity and 72.46% language distance. Across the three pairs, lexical similarity decreased from 50.24% to 29.95% to

27.54%, with the complementary language distances increasing from 49.76% to 70.05% to 72.46%.

The results indicated varying degrees of close relatedness among the Bagobo speeches. The Obo Manobo and Tagabawa are the most closely related, sharing 50.24% of their basic vocabulary, consistent with their classification, as both are under the Southern Manobo branch of the Greater Central Philippine subgroup (Zorc 2-3). In contrast, Obo Manobo and Klata exhibited a markedly lower lexical similarity of 29.95%, indicating a less closely related relationship. The least closely related pair is Klata and Tagabawa, with only 27.54% shared cognates. This finding supported Klata's classification as a separate linguistic branch and highlighted internal subgroup distinctions within the Bagobo speech network shaped by language distance over time (Eberhard et al.).

Table 3: Crowley's Lexicostatistical Subgrouping Threshold

Level of Subgrouping	**Shared Cognate Percentage in Core Vocabulary**
Dialects of a language	81 – 100%
Language of a family	36 – 81%
Families of a stock	12 – 36%
Stocks of a microphylum	4 – 12%
Microphyla of a mesophylum	1 – 4%
Mesophyla of a macrophylum	0 – 1%

Lexicostatistical subgrouping thresholds proposed by Crowley and Bowern (2010) provided a practical framework for interpreting close relatedness between or among speeches (Jui et al. 2; Power 4-5). Applying these thresholds showed that although the Bagobo speech varieties belong to one ethnolinguistic group, Klata, Obo Manobo, and Tagabawa did not classify as dialects of a single language under Bagobo subgroup (Anggayana 308; Jui et al. 2). With 50.24% lexical similarity, Obo Manobo and Tagabawa fell within the 36-81% range (languages within the same family), whereas Klata's 29.95% similarity with Obo Manobo and 27.54% with Tagabawa placed it in the 12-36% range (families of a stock). These results supported their existing classification, with Obo Manobo and Tagabawa as Manobo languages and Klata as a Bilic language (Gasing and Al-Saggaf 166; Eberhard et al).

Thus, using the terms "Bagobo speech varieties", "Bagobo speeches/varieties", and "Bagobo languages" more accurately captures their linguistic reality. Klata, Obo Manobo, and Tagabawa may share the same Bagobo heritage and cultural roots; however, the numbers showed that they function as distinct languages, not as dialects of Bagobo. Even though they belong to the same ethnolinguistic community, their lexical similarity scores placed them in different subgrouping levels. In this sense, the updated terminologies honor both their shared history and the unique linguistic paths each group has developed over time.

Table 4: Cognate Comparison Across Bagobo Varieties

Cognates	Klata	Obo Manobo	Tagabawa
all	*lahat*	*langon*	*langon*
other	*otad*	*duma*	*doma*
heavy	*dollom*	*mobugat*	*mabagat*
narrow	*likkut*	*moliggot*	*malegga't*
thin	*kolat*	*monippis*	*manepes*
wife	*ippod ngo libu*	*sawa*	*sawa*
ear	*ngillo*	*tolinga*	*talenga*
tooth	*ippo*	*ngippun*	*ngep'pen*
foot	*pao*	*paa*	*paa*
wing	*pletep*	*pakpak*	*pakpak*
guts	*tiya*	*vittuka*	*betoka*
rain	*ula*	*uran*	*odan*
ash	*ow*	*avvu*	*abo*
name	*dait*	*ngaran*	*ngadan*
worm	*wallo*	*lewatti*	*lewate*

The data showed that Obo Manobo and Tagabawa share a substantial number of lexical items, underscoring their closer linguistic affinity. Core items such as *langon* 'all', *sawa* 'wife', *paa* 'foot', and *pakpak* 'wing' appeared in both, and many pairs exhibited systematic sound correspondences (e.g., *tolinga-talenga* 'ear', *ngippun-ngep'pen* 'tooth', *ngaran-ngadan* 'name'). These patterns indicated shared cognates with minor orthographic or phonetic shifts, reinforcing the varieties' linguistic closeness.

In contrast, Klata frequently employed lexically distinct forms such as *lahat* 'all', *otad* 'other', *dollom* 'heavy', *kolat* 'thin', and *ngillo* 'ear'. These items differed markedly from their Obo Manobo and Tagabawa counterparts in both form and phonology. Such divergences indicated deeper structural separation and confirmed that Klata stands at a more distant point on the lexical continuum than the closely aligned Obo Manobo and Tagabawa pair. Together, these patterns substantiated greater internal cohesion between Obo Manobo and Tagabawa, and a comparatively wide lexical and phonological gap separating Klata from the two.

4.3 Bagobo Speeches' Mutual Intelligibility

Lexicostatistic measures---lexical similarity and language distance indices---cannot infer actual mutual intelligibility itself. Mutual intelligibility is established through data extracted from experimental comprehension tools such as the Recorded Text Test (RTT) or other speech comprehension assessments (Gooskens and van Heuven 262-267), which were outside the scope of this research. However, Gooskens and van Heuven, and as confirmed from large-scale European studies, concluded that when related language varieties share fewer basic words, intelligibility is low, while greater lexical overlap enhances it; thus, lexical similarity serves as a significant predictor of "potential" mutual intelligibility (Gooskens and van Heuven 70, 368; Mosbach et al. 968).

Applying this perspective on lexical overlap and intelligibility patterns, the Bagobo data can likewise be interpreted using lexical similarity scores as an indicator of

"potential" mutual intelligibility. Following SIL-style inherent intelligibility guidelines, this study employed heuristic bands: ≥85% lexical similarity suggests high potential for mutual intelligibility; ≥70-84% indicates moderate potential for mutual intelligibility; ≥60-69% reflects marginal or partial intelligibility; and <60% signals low potential for mutual intelligibility. Within this framework, pairs with scores of 60% or below are taken to exhibit low potential mutual intelligibility, while scores above 60% remain inconclusive unless supported by direct comprehension testing — such as RTT or related assessment procedures (de la Torre and Gonong 45; Talah et al. 884).

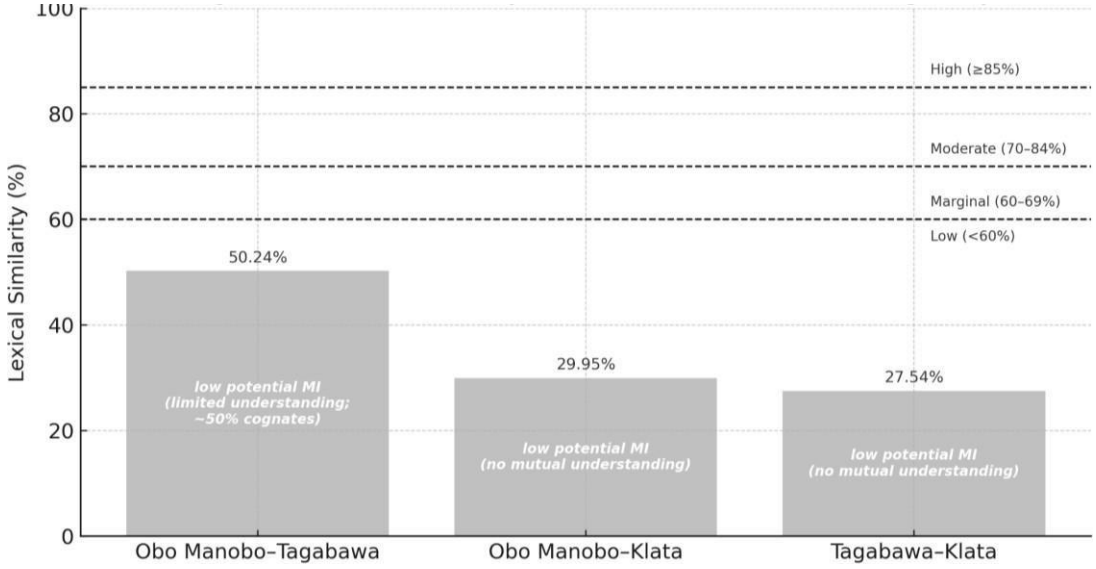

Table 5: Mutual Intelligibility Interpretation Graph among the Bagobo Speech Varieties

The Bagobo lexical similarity results all fell below the <60% range, indicating low potential mutual intelligibility among the three pairs. Nonetheless, the 50.24% lexical similarity between the Obo Manobo-Tagabawa pair suggested that speakers may still recognize some shared core vocabulary and gain a limited understanding of it. The much lower similarity scores of Obo Manobo-Klata (29.95%) and Tagabawa-Klata (27.54%) suggested that, as speakers might catch only a few cognates or guess specific meanings, intelligibility or effortless understanding is unlikely without prior exposure or structured learning. Consequently, intergroup communication among these communities is more realistically facilitated by a shared regional lingua franca — such as Bisaya — than by inherent intelligibility among the Bagobo varieties.

The Linguistic Distance Hypothesis, which draws on language distance scores and holds that higher language distance corresponds to lower mutual intelligibility and reduced structural transfer (Parkvall 19-20; Schepens et al. 3), supports this interpretation. The high language distance scores of the three pairs---Klata-Obo Manobo (70.05%), Klata-Tagabawa (72.46%), and Obo Manobo-Tagabawa (49.76%) ---can likewise be described as low potential mutual intelligibility. This interpretative label, derived from the language distance scores, is this study's own heuristic operationalization of the Linguistic Distance Hypothesis for the Bagobo data.

In sum, while Obo Manobo, Tagabawa, and Klata are all culturally identified as Bagobo varieties, their linguistic features reveal a different reality. Despite sharing a common ethnolinguistic heritage under the "Bagobo" identity, these three varieties are linguistically distinct enough to be considered separate languages rather than dialects of a single language. This conclusion is supported by their lexical similarity data, which showed that all scores fell below the threshold for potential mutual intelligibility, and by community testimony, which confirmed that speakers cannot understand one another without prior learning. Although there is greater overlap in core vocabulary — most notably between Obo Manobo and Tagabawa — the level of similarity remains too low for effective communication.

5. Recommendations

The language distance indices for the Bagobo speech pairs are 49.76%. 70.05% and 72.46%, respectively, revealed a high level of language distance among the three Bagobo speech varieties (Klata, Obo Manobo, and Tagabawa), with Klata as the most distinct and Obo Manobo as the bridge variety. By close relatedness, Obo Manobo and Tagabawa---with their high lexical similarity scores---are grouped as "languages of the same family", showing how closely they are linked within the Manobo language family. Klata, on the other hand, falls under the "families of a stock" category, supporting its identity as a Bilic language. Finally, by mutual intelligibility, with all lexical similarity scores below the 60% threshold, all three Bagobo varieties have low "potential" mutual intelligibility.

Consequently, the findings have important implications for DepEd Order No. 020 s.2025, which designated English and Filipino as the main media of instruction (MOI) and limited native languages to auxiliary use (Department of Education 5). In many big schools, indigenous or minority learners must adapt to a regional dialect used as the auxiliary language. In the Davao Region, Bisaya fills the role and pushes Bagobo varieties to the margins, a challenge heightened by the fact that no single "Bagobo variety" can realistically function as a shared auxiliary support for all Bagobos.

These results rippled with SDG 4 (Quality Education), SDG 10 (Reduced Inequalities), and SDG 16 (Peace, Justice, and Strong Institutions) because young Bagobo learners are compelled to cross multiple linguistic gaps (L1 → Bisaya → Filipino/English), placing them at greater risk of unequal access to learning. For SDG 4, this underscored the need for language planning and support that recognize the distinctness of each Bagobo variety. For SDG 10, it highlighted the danger of deepening marginalization if schools overlook these layered language barriers. For SDG 16, the findings stressed the need for inclusive, linguistically responsive institutions. Ignoring linguistic diversity in education can limit Bagobo learners' participation in schooling and civic life. In practice, English teaching should therefore use translanguaging, targeted scaffolding, and culturally grounded materials that affirm Bagobo linguistic identities.

Viewed through the lens of the Contrastive Analysis Hypothesis (CAH), the anchor theory of this study, the results suggested that Bagobo learners face different patterns of interference and transfer depending on whether their L1 is Klata, Obo

Manobo, or Tagabawa. CAH holds that error patterns in Bisaya, Filipino, and English are shaped by the specific contrasts between each Bagobo variety and the school languages, so treating "Bagobo learners" as one linguistic block can mask fundamental differences in predicted areas of difficulty. In practice, this means classroom contrastive analysis should use specific L1-target pairings (e.g., Klata-English, Obo Manobo-Bisaya-English) rather than a generic "Bagobo vs. English" model so that teachers can anticipate and address errors more accurately.

The 207-word Swadesh Lists for the three Bagobo varieties provide concrete lexical data that multiple education stakeholders can actively use. Primary English teachers can convert them into Bagobo-Bisaya-Filipino-English word banks, contrastive drills, and diagnostic tasks. Curriculum planners and material developers can identify which concepts require extra scaffolding or separate materials for specific Bagobo groups. Policymakers and DepEd officials can leverage it to justify differentiated language support, localized resources, and targeted teacher training. Beyond schools, the furnished lists guide linguists, translators, community workers, and cultural advocates in designing dictionaries, beginner reading materials, and revitalization projects that honor both the relatedness and distinctiveness of the three Bagobo speeches.

At the community and household level, the implications extend beyond technical classification. Grounded in comparative linguistic evidence and thresholds, findings revealed that, while the Bagobo speeches share common cultural roots, each one is linguistically distinct and carries its own historical and cultural meanings. These findings encourage community leaders and cultural gatekeepers to value and promote this internal diversity, ensuring that no speech is sidelined. At the family level, indigenous households are urged to use their native tongues actively at home to strengthen children's cultural identity and proficiency in their own Bagobo language.

Looking toward future research and long-term language planning, the lexicostatistic findings point to several essential directions. First, there is a need to move toward more multidimensional analyses that also consider phonological, morphological, and syntactic differences, together with sociolinguistic factors, to gain a fuller picture of how these varieties are related. Second, further investigation is needed to determine whether Bagobo speakers residing outside their ancestral territories still know and use their native languages. Such evidence is crucial for evaluating the vitality of Bagobo languages and for designing informed, context-sensitive preservation and revitalization initiatives.

6. Conclusion

This study opened the researcher's eyes to the deeper complexities of language relationships beyond surface similarities. Although the speech varieties belong to the Bagobo language network, the lexicostatistical results clearly underscored the importance of relying on empirical linguistic data rather than cultural or geographic assumptions. The findings demonstrated that perceived similarity does not always

equate to actual linguistic proximity, highlighting the value of systematic analysis in understanding language relationships.

More importantly, this research emphasized the social responsibility of language studies in promoting academic inclusion. It drew attention to the challenges faced by learners who struggle with the regional lingua franca and stressed the need for inclusive, context-sensitive language planning. Beyond numerical results, the findings served as a reminder that language research should recognize linguistic identities and support educational equity, particularly for marginalized communities whose linguistic realities are often overlooked.

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Conflict of Interest Statement
The authors declare no conflicts of interest.

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Appendix: 207-Word Swadesh List Across Bagobo Speech Varieties

Collected by Ana Marie V. Villanueva
Compiled 2025

Cognate	Klata	Obo Manobo	Tagabawa
1 I	hago	siak	sakka'n
2 You (singular)	hikko	sikkow	kona
3 He	hiya	mama	kanden
4 We	hito; hammo	siketa	kame
5 You (plural)	homu	sikkoneyo	kandan
6 They	kandan	sekandan	kandan
7 This	onni; konni	eni	nego
8 That	eyye	edda	yan
9 Here	dinni	kaay	dene
10 There	diya	deyon	doton
11 Who	himmo; immo; ommo	undoy	sadan
12 What	dayt; dayet;	orran	a'nden
13 Where	opi; ohi; hoyye	ingkon	anda
14 When	kela; pono	kan nu	kadengan
15 How	Kolog; pokolog	munuwon	Nonna'n
16 Not	iya	Kon na	dere
17 All	lahat	langon	langon
18 Many	polos	maorra	madeta
19 Some	dummo	Vuyow vuyow	Marapong
20 Few	kitik	desok	delek
21 Other	Dummo; ottad	duma	doma
22 One	hotu	sukkad	Sabbad; essa
23 Two	uwwo	aruwa	dowa
24 Three	tollu	otullo	Ta'llo
25 Four	appat	uppat	Ap'pat
26 Five	limo	limma	lema
27 Big	paya	dakku	Daka'l
28 Long	lawe	mowit	malayat
29 Wide	lowa	mowwag	malowag
30 Thick	kupa	mokuppa	Maka'ppal
31 Heavy	dollom	Mobugat	mabagat
32 Small	Pippis; kitik	dissuk	Marenta'k
33 Short	Lewo; kewo	molivutot	mabbaba
34 Narrow	likkut	moliggot	Malegga't
35 Thin	kolat	monippis	manepes
36 Woman	libu	molitan	bae
37 Man (adult male)	lai	Mama nu vuyyag	Tongga'l mama
38 Man (human being)	ottow	minuvu	Tongga'l
39 Child	angnga	annak	Bata; legsa'k
40 Wife	ippod ngu libu	sawa	sawa
41 Husband	ippod ngu lai	sawarin	doma
42 Mother	ino	innoy	en'na
43 Father	omo	ammoy	am'ma
44 Animal	mobbut	ayyam	mananap

45 Fish	luddung	ngaap	sad'da
46 Bird	laggam	voyakko	manok takayo
47 Dog	assu	toyyang	aso
48 Louse	kuttu	littogow	lessa
49 Snake	ula	owwud	ap'poy
50 Worm	wallo	lewatti	lewate
51 Tree	kayyu	kayo	kayo
52 Forest	puwalas	puwaas	powalase'n
53 Stick	longow	losangon	lagpes
54 Fruit	bungngo kayyu	wungat kayo	protas
55 Seed (semen)	ido	montus	semelya
56 Leaf	dau	doun	daon
57 Root	dolid	dalid	ramot
58 Bark (of a tree)	okap neng kayyu	lenas to kayo	panga ka kayo
59 Flower	bokka	kuvukaran	bolak
60 Grass	hobbot	sabbot	segba't
61 Rope	toli	tale	tale
62 Skin	kulit	kinda	lowet
63 Meat	hapu	ngaap	karne
64 Blood	dulu	longossa	depanog
65 Bone	tulla	tollan	tollan
66 Fat	towo	tava	malambo
67 Egg	holo	soo	ta'llog
68 Horn	hungoy	suwag	songay
69 Tail	ekong	ikkog	ekog
70 Feather	bubbu	vuvu	bolbol
71 Hair (on the head)	obbuk	vuvu to ow	selag ka olo
72 Head	ullu	o	olo
73 Ear	ngillo	tolinga	talenga
74 Eye	moto	sokkad no mata	mata
75 Nose	iddung	irong	edong
76 Mouth	huung	vivig	baba
77 Tooth	ippo	ngippun	ngep'pen
78 Tongue	dela	dela	dela
79 Fingernail	ungob	suo	solo
80 Foot	pao	paa	paa
81 Leg	bahog	vuvun	bobbon
82 Knee	ulob	vuwo	abol
83 Hand	limmo	bollad	lema
84 Wing	pletep	pakpak	pakpak
85 Belly	towotiya	komvugan	ga'tta'k
86 Guts	tiya	vittuka	betoka
87 Neck	ollong	liyog	aleg
88 Back (of a person)	kulung	pokka	bokkog
89 Breast	ammu	sungan	soso
90 Heart	puhung	pusong	posong
91 Liver	otoy	attoy	ate
92 To drink	minum	innom	aggena'm
93 To eat	maa	kaan	agkan

94 To bite	mangget	kahat	agkagat
95 To suck	soppo; mossop	susu	agsa'psap'
96 To spit	middu	illob	agge'lab
97 To vomit	mota	pongilob	aggenota
98 To blow	yupo; miyup	uyyab	aggedop
99 To breathe	bonnawwo	ginginawa	aglegenawa
100 To laugh	takke	kosuat	agngese
101 To see	minno	tongtong	agsela'g
102 To hear	nuwo	pominog	agpamenag
103 To know	kohaddo	mokosaddow	agkasadoran
104 To think	nidom	suman suman	agpanamdam
105 To smell	moppong	moka arok	agpangadak
106 To fear	mallow	liyasson	kamadangan
107 To sleep	mipit	tinuhon	agkatodogan
108 To live	mottow	kauyag	aggodoan
109 To die	motoy	patoy	agkamate
110 To kill	ogtoyo; toyo	immatoy	agmatayan
111 To fight	potoy	pousihoy	aggato
112 To hunt	ngalap	pongannop	agpanobok
113 To hit	kato	lampos	agpasaketan
114 To cut	poko	temppok	agtampa'd
115 To split	pobodeya	toppikon	agpasae
116 To stab	modussang	dudsuwan	agdogsa'k
117 To scratch	makkas	kammis	agkamas
118 To dig	mokkot	kalli	ag'kale
119 To swim	monguy	lombuk	agsela'm
120 To fly	mayang	layyang	aglayang
121 To walk	moow	ipannaw	agpano
122 To come	porinni	inguma	agsardene
123 To lie	mila	illugga	agbolalo
124 To sit	meod	unsad	aggonsad
125 To stand	middo	lohinat	agtendog
126 To turn	bolliyung	boliyung	aglonod
127 To fall	molawo	na uog	mekadil'los; mikadogso
128 To give	molloy	buggoy	agbag'ge
129 To hold	mape; pea	pummad	aggawedan
130 To squeeze	pihit; mopihit	ohhoton	agka'mmas
131 To rub	munas; muggu	ponguso	agsaposapo
132 To wash	maggas	ponlolo	aggorasan
133 To wipe	munas	ponasun	agtrapowan
134 To pull	moyod	osuron	agbennet
135 To push	hundu	usongon	agsolloy
136 To throw	teppo	lombag	agpantog
137 To tie	mikkot	ekkot	aggeka'ttan
138 To sew	mobbi	tobillon	agtabber
139 To count	miyap; eyap	velang	agberang
140 To say	koli	la'ag	agkagge
141 To sing	manta; moggung	uwahing	agkanta
142 To play	golu	od gaw	agkalenga'nnan

143 To float	mapow	gampong	agkapo kapo
144 To flow	mewes	idpaanud	agkanod
145 To freeze	pokapo; potee	pokoggalon	agpaga'nnon
146 To swell	mabbag	lubbag	agla'bbag
147 Sun	oddow	allow	allo
148 Moon	bula	buwan	bolan
149 Star	klammag	bituon	karane
150 Water	tubig	weeg	wayeg
151 Rain	ula	uran	odan
152 River	dawwow	dakkon weeg	wayeg garos
153 Lake	hobbe	lanow	leno
154 Sea	lagat	dahat	dagat
155 Salt	ohin	assin	asen
156 Stone	botu	battu	bato
157 Sand	pallok	pawok	baklayan
158 Dust	blubuk	bowbuk	barokbok
159 Earth	gnuwo	ingud	banowa
160 Cloud	lawo	sahapun	sagolapon
161 Fog	onnop	gappun	-
162 Sky	langit	langit	kawangawangan
163 Wind	onnus	kamag	karamag
164 Snow	-	apiyow	-
165 Ice	ice	piyow	ice
166 Smoke	obbo	obbo	abba'l
167 Fire	opuy	appoy	apoy
168 Ash	ow	avvu	abo
169 To burn	litu	tirukkan	aggobo
170 Road	dala	kosada	dalan
171 Mountain	bulud	vuvungan	pabongan
172 Red	ligga	moluto	malloto
173 Green	mlunnow	melom	mallono
174 Yellow	mlede	mokawag	mararag
175 White	putti	moputi	mapote
176 Black	mittom	metom	mettom
177 Night	bullii	bolli	dokella'm
178 Day	oddow	allow	allo
179 Year	byoo	lahun	amme
180 Warm	minit	monit	malatagge
181 Cold	kapo	mohunnow	maga'nno
182 Full	ponnu	nuimpon	epa'nno
183 New	lammi	lammi	manto
184 Old	tuwo	tapoy	toggal
185 Good	mali	moppiya	madega'r
186 Bad	homo	morat	madat
187 Rotten	loddog	norovuk	meroddog
188 Dirty	kolukku	molibmit	marepa
189 Straight	tullid	motullid	matolled
190 Round	tobipobulug	molivuson	tebok
191 Sharp (as a knife)	tolom	motawum	matam

192 Dull (as a knife)	dollu	danga	dere matam
193 Smooth	mlinnus	mounnas	mapoges
194 Wet	peta	mamos	mamma's
195 Dry	tikka	momara	mata'kkang
196 Correct	gele	ollog	na'nnga
197 Near	doddong	murani	madane
198 Far	layyu	moriyo	madeyo
199 Right (adj.)	ammi	kowanan	kawanan
200 Left (adj.)	ebang	ivang	ebang
201 At	ta	kaay	doton
202 In	ta	lasud	dene
203 With	ole; to i	dumarin	kadomaan
204 And	ole	wuy	hasta
205 If	ko	kod	kon
206 Because	ibba	sikkow	tengod
207 Name	dait; dita	ngaran	ngadan