

Sea in Language: Exploring Ecological Linguistic Relationship among Bajau, Bugis, and Banua in Berau Regency

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Abstract:

This study analyzes the similar vocabularies in three languages (Bajau, Bugis, and Banua) that reflect the ecolinguistic relationship among coastal communities in Berau Regency. Seventeen words have similar phonetic words which show that the three languages share a common root or influence each other due to intensive interactions among communities that involve in trade, marriage, and migration. The terms that related to sea and coastline, such as “sea”, “bay”, and “stingray”, indicate the coastal communities' urgent need to have clear terminology regarding the marine environment. These phonetic similarities can be caused by intense linguistic contact or term adoption from one language to another. The findings highlight the close social and economic ties between the three communities, especially in the context of coastal life. Thus, ecolinguistics has role as medium to transmit traditional knowledge about the sea, marine resource management, and social interactions in coastal communities. This study emphasizes the importance of understanding language as tool to preserve local knowledge as well as its vital role in maintaining the balance between humans and environment in coastal areas. The results of this study can make a significant contribution to ecolinguistic research and sustainable management of natural resources in coastal region.

Keywords: Ecolinguistic, Bajau, Bugis, Banua, Sea Vocabularies

A. Introduction

Berau Regency is one of regencies in East Kalimantan Province, it is known for its rich natural resources. In addition to its natural wealth, Berau also has diverse unique and special culture. This uniqueness appears due to significant cultural acculturation between the local culture and those from outside. One of interesting aspects of this culture is the linguistic system used by the people of Berau Regency. Dialectically, the blending of immigrant ethnic groups with the indigenous ethnic groups of one place has created new cultures and dialects (Rijal, 2016a). This is what happens in Berau Regency, immigrant ethnic groups assimilate with Berau indigenous people.

Between Language and culture seem inseparable. Within culture, there is language. Culture can be understood through language. In fact, language and culture are like a coin. On one side is culture and on the other side is language. Therefore, language and culture are truly united and the wise saying says that language reflects nation. This aligns with the finding of Ridwan et al. (2020), which stated that the function of regional languages (Taliabu language)

is as symbol and identity of the region that reflect the diversity of local wisdom in community.

The same thing also in Berau Regency. As a tourist destination in East Kalimantan, Berau Regency must show its cultural characteristics as an identity that is memorable for outsiders. The creation and establishment of law protecting Banua language could be foundation to strengthen the identity of Berau Regency. If Banua language has become Berau's identity, many aspects can be highlighted to show the unique characteristics of Berau Regency (Rijal, 2017).

Talking about tourism in Berau Regency, we are reminded for its potential of sea, beach, and island. Meanwhile, when talking about the sea and island, Berau has been inhabited by Bajau ethnic group who are known as "sea people." On the other hand, the Bugis ethnic group's tradition of migrating to various regions also influence the maritime culture in Berau Regency. However, we must not forget Banua people, the indigenous group of Berau who speak Banua language. The relationship between these three ethnic groups has formed maritime cultural acculturation in Berau Regency.

As one of the tourist destinations, Berau Regency needs to strengthen its local culture, including the exploration of its regional language. This needs to be done as form of cultural preservation and also identifying types of culture that can be managed to support tourism. If looking at the position of the three ethnic groups mentioned above (Bajau, Bugis, and Banua), they seem to meet on the ecological aspect of the sea. If looking at linguistic perspective, this will meet on linguistic science, namely ecolinguistic.

Banua language is a language recognized and protected by Berau Regency Government. This can be seen in the Berau Regency Regional Regulation Number 7 of 2018 regarding the Protection and Preservation of Banua Language and Barrau Culture in Chapter II, Article 4 and 5 which essentially state that Berau Regency Government has established Banua language as the regional language of Berau and ensures its protection. Based on regional regulation above, it is important to see the linguistic relationship among Banua, Bajau, and Bugis languages from ecolinguistic perspective in order to identify maritime cultural concepts within Berau's culture. To strengthen this, Banua language should be linked with other languages (Bajau and Bugis) as languages that support Banua language in enriching the maritime ecological culture of Berau Regency.

In the maritime context, the Bajau ethnic group is often referred to "sea people" due to their reputation as nomadic sea community. They have deep connection with the sea as their primary source of livelihood, start from fishing to hunting big fish. The Bajau language is rich in vocabulary that describes life in sea, types of fish, weather, and ways to understand ocean currents (Stacey & Allison, 2019).

Talking about environmental narrative, Bajau language often contains stories that emphasize the importance of maintaining balance with the sea. They assume sea as a home and a place that must be respected. This concept of sustainability appears in the way they talk about sea and natural resources (Umajjah, et al., 2021).

Bugis tribe is known for its maritime influence and migration to various regions in Archipelago. Bugis community are skilled sailors and often involved in maritime trade

activities. In Bugis language, there are many terms related to ships, sea, and traditional navigation techniques. Bugis language also reflects a deep understanding of coastal and marine ecosystems. Moreover, economic influence and migration also play important role in the spread of the Bugis people in Archipelago (Mukrimin, 2019).

Bugis tribe is also known for its economic influence and exploitation in several islands. As maritime and trading community, narratives in Bugis language sometimes reflect aspects of sea exploitation for trade. However, its culture also has tons of respect for sea as a natural element that must be preserved (Alamsyah, et al., 2021; Alamsyah, et al., 2023).

In the local and traditional context, Banua language, which is more restricted to local community, also show close relationship between people and environment. Banua community who live around the coast and coastal areas, often have local knowledge system about managing the sea and natural resources (Titumir & Pasha, 2022; Mohd Arzaman, et al., 2022).

In terms of local wisdom, narratives about sea in Banua language reflect many traditions that have been practiced, such as customary rules regarding fishing or management of coastal resources. This language has many ecological elements that show the balance between humans and nature (Levine & Fatima, 2013; Nayak, Dias, and Pradhan, 2021).

The three languages, despite they are culturally and linguistically different, they have similarities in terms of interaction with the marine ecosystem. There are three ecological linguistic relationships that can be explored more deeply. First, these three languages are related to the context of vocabulary and maritime terminology. Examining the vocabulary used in these languages can reveal how speakers of the local languages perceive and understand the sea. This may include terms for fish species, types of sea weather, or natural phenomena that are important for daily life (Diouf, et al., 2020; Rasekhi, et al., 2023).

Second, the traditional and modern narratives that influence speakers of these three languages. In this context, we can compare the traditional narratives in Bajau, Bugis, and Banua languages about sea and ecology with the influences of modernization. How language changes in response to the industrialization of fisheries or tourism. Additionally, we can find out whether the traditional ecological narratives in these three languages still exist until nowadays (Lachs & Oñate-Casado, 2020; de Sousa, Sacardi, & Vieira, 2022).

Third, the local environmental policies practiced by the speakers of these three languages. In the context of ecolinguistics, we can also find out how language influences coastal and marine management policies in Berau Regency. Many discourses appear in this context. One of the discourses is whether the terminology used in the local languages support conservation or even support the exploitation of resources (Benjamin, et al., 2016; Zent & Zent, 2023).

As an initial step, this article focuses on the first point, namely how the relationship among Bajau, Bugis, and Banua languages is related to the similarities in vocabulary regarding maritime terminology.

1. Dialectology and language relationship

Talking about the relationship or similarity between two or three languages also talking about the culture of three languages. This is in line with what Rijal (2015:36) stated: "The similarity of linguistic phonetic is really related to the similarity of culture. If there is similar vocabulary in one community with another community, it is possible that the two groups have similar customs or culture." In order to identify these similarities, a study of vocabulary in Bajau, Bugis, and Banua languages is needed through various linguistic aspects and its application with other studies.

Dialectology is a branch of linguistic that analyze the dialects of a language (Nadra and Reniwati, 2009:1). In the study of dialects, dialectology even examines small variations within a language. Dialectology is really related to specific geographic areas. This is known as dialect geography (Nadra and Reniwati, 2009: 20), which is the study of language variation based on local (spatial) differences within a language region. Dialect geography can be studied synchronically or diachronically. Meanwhile, this research focuses more on synchronic analysis, which compares three languages from Malay language family (Banua, Bajau, and Bugis) in one time to examine their relationship through the similarities in vocabulary forms (Keraf, 1996:34) of these three languages.

2. Ecolinguistic

The term 'ecolinguistic' comes from two different fields of study: ecology and linguistics. Linguistics analyzes language scientifically (KBBI, 2008:832), while ecology analyzes the reciprocal relationships between living organisms and their environment (KBBI, 2008:354). This means that this research collaborates two disciplines to uncover scientific fact. This is very possible because any field of study can complete one another to explain and reveal the realm of truth that has no specific boundary (Mahsun, 2010:9).

In 1993, Jorgen Chr Bang and Jorgen Door began introducing the dialectical ecolinguistic theory through Ecology, Language, and Ideology Research Group (ELI) at University of Odense, Denmark (Subiyanto, 2015). In general, the framework of this dialectical ecolinguistics theory refers to the concept of social praxis in language use in environment. This language environment based on three dimensions: ideological dimension, sociological dimension, and biological dimension. Specifically, biological dimension focuses more on human as language users who biologically can interact with other species such as plants, animals, land, sea, and so on (Bundsgaard and Steffensen in Subiyanto, 2015). However, this study does not separate these three dimensions because the scope of ecology includes all dimensions of human life.

The comparison of linguistic relationship by viewing the similarities in vocabulary forms between two languages through phonological analysis, particularly phonemic analysis. Due to this study focuses on regional languages, the writing should be transcribed into Latin alphabet (Marsono, 2008:113), according to the pronunciation as spoken by the respondents. This phonetic transcription is supported by the accurate or precise representation of sounds using phonetic symbols or writing (Chaer, 2009:13). However, not all compared vocabulary

items are written phonetically. Only vocabulary that is the same or similar based on ecological terminology is transcribed phonetically and analyzed more detail.

The similarity in vocabulary forms between two or three languages that are compared can be analyzed through two procedural stages. Firstly, by noting the contrasting sounds in the same or identical environments (Muslich, 2008:88). For example, between the words [pagi] and [bagi] are considered as related vocabulary because they are differentiated only by the phonemes /p/ and /b/, and phonetically, these two phonemes still occur in the same environment. Second, by noting the contrasting sounds in similar or analogous environments (Masnur, 2008:88). For example, the words [pasar] and [besar] are still considered as related vocabulary because they are differentiated by two phonemes: /p/-/a/ and /b/-/e/. The phonemes /p/ and /b/ occur in the same environment, while the phonemes /a/ and /e/ are considered to be in similar or close environments.

3. Banua Language

Banua language is always associated with Berau language. However, they are the same language, only the terms are different. The name of region is Berau, while the language spoken is called Banua language. Berau language is still closely related to several regional languages in East Kalimantan. This is due to the influence of Malay language which has spread and become deeply rooted in the culture of East Kalimantan people. Below are some vocabulary items in Table 1 that demonstrate the linguistic relationship between Berau language and other regional languages in East Kalimantan (Rijal, 2016b).

Table 1. The Proximity of Malay Language to Several Regional Languages in Kalimantan

Malay Language	Berau Language	Banjar Language	Kutai Language
antar (escort)	atar	Atar	hantar
sebuah (a/an)	sabuting	sebuting	sabuting
rakit (raft)	lanting	lanting	lanting
kering (dry)	karring	karing	kereng
celana (trouser)	saluar	salawar	seluar

Banua language is spoken by the indigenous ethnic group of Berau Regency. Berau Regency has long coastline which attract traders and fishermen from other ethnic groups to settle in the area. This is the reason why Bugis ethnic group made Berau as one of their sailing destinations. Trade and maritime activities resulted in contact with Banua and Bajau ethnic groups in Berau, especially around Sulawesi Bay area. This contact led to the emergence of various cultural assimilation, including linguistic assimilation among Bugis, Banua, and Bajau languages.

4. Bajau Language

Bajau language is one of minority languages, including in Berau Regency, where the population is multilingual. This ethnic group has been recognized by the United Nations as

people of world so their status is no longer tied to any particular country. Bajau ethnic group can be found in Malaysia, Philippines, and Thailand, while in Indonesia, Bajau people are spread across 10 provinces. In 2000, the estimated population of Bajau ethnic group in Southeast Asia was around 1,077,020, with 570,857 in Philippines, 347,193 in Malaysia, and 158,970 in Indonesia (Suryanegara, et al., 2015:68-78). Bajau language is widely spoken along coastal areas of Berau Regency until its islands. This can be seen in the names of several islands in Berau, such as Derawan Island, Maratua, Sangalaki, and Kakaban which are derived from Bajau language (Afrianto, Mursalim, and Rijal, 2018). Meanwhile, in other provinces, Bajau language is commonly spoken along the coasts of Southeast and South Sulawesi.

The principle of life for Bajau people is freedom, specifically the freedom to live life at sea without regulations. However, the Bajau people possess a high level of wisdom when it comes to the environment, valuing the importance of preserving and protecting their surroundings, such as coral reefs, mangroves, and other marine resources (Indrawasih and Antariksa, 2003:73). The Bajau people only take marine resources as needed. For other needs, the marine catch is sold to people on land (ethnic groups living on the mainland), thus maintaining communication with other ethnic groups. This is one of the reasons why Bajau vocabulary shares similarities with other languages. One such area is the Sulawesi Bay region in Berau Regency, East Kalimantan Province.

5. Bugis Language

Bugis language is one of the languages from outside Kalimantan Island that coexists with other regional languages in Berau Regency. Bugis ethnic group's habit of sailing and exploring islands outside Sulawesi has led them to communicate with and settle in the areas they visited, including along the coast of Berau Regency. This is what has allowed Bugis language to survive in Berau. Bugis language is known for several dialects, such as Bone dialect, Sinjai dialect, Sidrap dialect, and Pinrang dialect. For this study, all of these dialects are categorized under Bugis language, in accordance with the use of Bugis language in coastal regions of Berau Regency.

Bugis ethnic group, renowned for their resilience in navigating the seas, can also be found along the coastline of Berau Regency. They did not merely stop to trade, but also settled and intermarried with the ethnic groups living along the coast of Berau, including Barrau and Bajau ethnic groups. This situation has also led to cultural and linguistic assimilation among the three ethnic groups: Banua, Bajau, and Bugis.

B. Methods

This study is descriptive and qualitative in nature, employing a comparative technique of three vocabulary items for one gloss. These glosses were collected through observation and questionnaire techniques from native speakers of Banua, Bajau, and Bugis languages. The questionnaire distributed contained 200 vocabulary glosses based on Swadesh's list. Additionally, the data was supplemented with vocabulary related to the environment to examine the ecological linguistic proximity between the three languages. The vocabulary items were compared according to the theory of phonemic closeness through the distribution

of sounds in articulation environments. Overall, this study examines the linguistic features of similarity to determine the relationship between dialects of a language (Mahsun, 2007:219).

Studying language is essentially studying humans, because language is inherent to human beings, often referred to as *langue*. Therefore, this research necessarily involves humans as respondents, as they are the most knowledgeable about their own language (Djajasudarma, 2006:12). Data collection was conducted simultaneously through several communication techniques, such as sending questionnaires accompanied by phone interviews, so that the sounds and articulations of the language could be accurately obtained. Data collection was further strengthened by using recording techniques during the exploration of language sounds with the informants. The study involved 6 informants aged between 30 and 65 years. These informants included 2 speakers of Banua language, 2 speakers of Bajau language, and 2 speakers of Bugis language.

C. Results

Based on the data collected in the field, several words in Banua, Bajau, and Bugis languages were found to have phonetic similarities and resemblances. The words from these glosses were randomly selected as the initial stage of analysis for this research. For further details, Table 2 presents the identical and similar glosses from the three languages.

Table 2. Phonemic Similarity of Bajau, Bugis, and Banua Languages

Glos	Bajau Language	Bugis Language	Banua Language
ayam (chicken)	manuk	manu?	manuk
badik (weapon)	badi?	badi?	baddik
bakar (burn)	tunu?	tunu	tutuŋ
baru (new)	bawu	baru	baru
baju (shirt)	bajju?	waju	baju
batu (stone)	batu	batu	batu
batas (border)	watas	watasê	batas
beli (buy)	mêlli	elli	balli
celana (trouser)	suwal	sulara?	saluwar
hati (heart)	atay	até	ati
kopi (coffee)	kupi	kopi	kupi
laut (sea)	dilawut	tasi?	lawut
lebih (more)	maklabi	mallêbbi	labbih
lipan (centipede)	lipan	lipaŋ	lipan
mati (die)	matay	maté	mati
minum (drink)	ŋinum	minuŋ	minum
nenek(grandmother)	néné?	néné?	inni
pahit bitter)	payit	payi?	pait
pakai (use)	pakay	paké	pakai
pari (stingray)	pahi	pari	pari
pasar market)	pasal	pasa?	pasar
penuh (full)	pênno?	pênno	pannu
potong (cut)	poto	polo	putuŋ
putih (white)	poté?	puté	putih
serai (lemongrass)	sərray	sərre	sarra
teluk (bay)	têlluk	têllo?	tallu?
telur (egg)	intêllo	têllo?	tallur

timba (bucket)	timpa	timpa	timba
tolong help)	tuluŋ	tuluŋ	tuluŋ
ukur (measure)	ukul	ukuru?	ukur
rugi (loss)	lugi	rogi	rugi
tawar (bargain)	tawar	mattawa	tawar

From an ecolinguistic perspective, there are several vocabulary items that belong to the field of ecology. Some of these words are directly related to the environment, while others are indirectly related. For further clarification, these vocabulary items are separated in the following Table 3.

Table 3. Ecolinguistic Similarity of Bajau, Bugis, and Banua Languages

Glos	Bajau Language	Bugis Language	Banua Language
bakar (burn)	tunu?	tunu	tutuŋ
batu (stone)	batu	batu	batu
batas (border)	watas	watasê	batas
beli (buy)	mêlli	elli	balli
laut (sea)	dilawut	tasi?	lawut
pari (stingray)	pahi	pari	pari
pasar (market)	pasal	pasa?	pasar
penuh (full)	pênno?	pênno	pannu
potong (cut)	poto	polo	putuŋ
putih (white)	poté?	puté	putih
teluk (bay)	têlluk	têllo?	tallu?
telur (egg)	intêllo	têllo?	tallur
timba (bucket)	timpa	timpa	timba
tolong (help)	tuluŋ	tuluŋ	tuluŋ
ukur (measure)	ukul	ukuru?	ukur
rugi (loss)	lugi	rogi	rugi
tawar (bargain)	tawar	mattawa	tawar

This discussion focuses on 17 vocabulary items that are phonetically similar in the Bajau, Banua, and Bugis languages. These 17 vocabulary items will be examined using an ecolinguistic approach, specifically how the three languages are culturally related in the field of ecology, particularly marine and coastal ecology, as well as matters related to both. For further clarification, these vocabulary items will be discussed in detail.

(1) bakar (burn)

The word for "burn" (burn) is spoken similarly by speakers of all three languages in Berau: Bajau [tunu?], Bugis [tunu], and Banua [tutung]. Although the pronunciation of the word "burn" is slightly different in Banua language, it can be identified that these three ethnic groups often meet in environmental activities related to the word "burn." The similarity and resemblance of the word for "burn" can be traced back to the fishing activities of Bajau and Bugis ethnic groups. Both Bajau and Bugis people go out to sea to catch fish. Once they have caught enough fish, Bajau people typically return to land to sell their catch, which is then bought by Bugis traders. Bugis traders sell the fish at

markets or fish stalls, with some buyers being Banua people. This cultural encounter led to the use of a shared vocabulary in one of the fish processing methods for consumption, which is by burning. Thus, the marine environment, the coastline, and the markets brought these three ethnic groups together, leading to the emergence of several ecologically related vocabulary items, one of which is the word for “burn.”

(2) batu (stone)

The word "batu" (stone) is one of the vocabulary items that is spoken the same and similarly by almost all ethnic groups in Indonesia (Rijal, 2015). This is evident in Berau Regency, particularly around the Sulaiman Bay area. The Bajau, Banua, and Bugis ethnic groups all pronounce the word “batu” (stone) in the same way. This indicates a cultural meeting among these three ethnic groups, including their encounters with other ethnic groups across the archipelago. The vocabulary “batu” (stone) is inseparable from the ecology of human life, whether in the highlands, lowlands, or coastal areas. The multifunctionality of stones makes them always needed by humans for various purposes, ranging from household needs, building materials, to jewelry.

(3) batas (border)

The word "batas" (border) here mainly refers to the meaning of a border or boundary. Life at sea or along the coast sometimes does not recognize boundaries of ownership with precise measurements. Boundaries are only acknowledged based on de facto through natural markers, such as rocks, wood, trees, and other objects. The shared principles of the Bajau, Banua, and Bugis communities regarding boundaries are also reflected in the similarity of their vocabulary, namely the use of the words [watas] in Bajau, [watase] in Bugis, and [batas] in Banua.

(4) beli (buy)

The trading activities that connect Bajau, Bugis, and Banua ethnic groups are also reflected in the vocabulary for "buy." This word is spoken similarly by all three ethnic groups: [melli] in Bajau, [elli] in Bugis, and [balli] in Banua. The similarity in the word for "beli" (buy) follows a similar process to that of the word for "bakar" (burn) \where the common usage arises from activities at the market.

(5) laut (sea)

Both the Bajau and Banua ethnic groups pronounce the word for "laut" (sea) with similar sounds, namely [dilawut] in Bajau and [lawut] in Banua. Only the Bugis ethnic group has a different pronunciation, using [tasi?] for "sea." It seems that the Bajau and Banua ethnic groups share a similar view of the sea.

(6) pari (stingray)

The similarity of the word "pari" (stingray) in the everyday language of Bajau, Bugis, and Banua ethnic groups is certainly influenced by the fishing activities of these three

groups. Bugis and Banua ethnic groups still use the same term, [pari], while Bajau ethnic group has slightly modified it, changing the phoneme /r/ to /h/, so it sounds like [pahi].

(7) pasar (market)

In line with the similarity of the words for "bakar" (burn) and "beli" (buy) the word for "pasar" (market) is also spoken similarly, even identically, by all three ethnic groups. The only difference is in the final phoneme of the word "pasar" (market) Bajau ethnic group pronounces it by changing the phoneme /r/ to /l/, making it sound like [pasal], Bugis ethnic group changes the phoneme /r/ to /ʔ/ making it sound like [pasaʔ], while Banua ethnic group pronounces it as in Indonesian "pasar" (market). The similarity of the word "pasar" (market) is still influenced by the trading activities of the three ethnic groups, who all meet at the market for the process of buying and selling marine products.

(8) penuh (full)

The phonetic similarity of the word "penuh" (full) in the Bajau, Bugis, and Banua languages can be traced to the daily activities of these three ethnic groups, which are closely connected to water due to their frequent presence in marine and coastal environments. Therefore, the word "penuh" (full) is spoken similarly by speakers of these three languages in the Sulaiman Bay area of Berau, namely [pênnoʔ] in Bajau, [pênno] in Bugis, and [pannu] in Banua.

(9) potong (cut)

The word "potong" (cut) is most likely spoken similarly by the three ethnic groups because it is related to the activity of processing fish caught at sea. Although there are differences, phonetically, the three ethnic groups are still considered to have a close linguistic similarity in the word "potong" (cut) The word for "potong" (cut) is spoken as [poto] by Bajau, [polo] by Bugis, and [pututə] by Banua.

(10) putih (white)

For some reason, the word for "putih" (white) is spoken similarly by the three ethnic groups. However, it is believed that one of the most common basic colors used by all ethnic groups in the world is white. Natural colors in the marine environment and its surroundings are also often found to be white. For example, the color of foam left by the waves at sea, or the color of the skin of certain fish and the feathers of some birds around the sea and coastline. Therefore, the word "white" is spoken similarly by the three ethnic groups, namely [potéʔ] by Bajau, [puté] by Bugis, and [putih] by Banua.

(11) teluk (bay)

The word "teluk" (bay) is certainly essential when discussing marine ecology. Sailors around the world understand that a bay can be utilized as a location for building a dock due to the calm waves in the bay area. Moreover, the location of this study, centered in Sulaiman Bay, Berau Regency, has become part of the everyday language of the local

community. Therefore, the word "teluk" (bay) is spoken similarly by the three ethnic groups in Sulaiman Bay, namely [têlluk] by Bajau, [têllo?] by Bugis, and [tallu?] by Banua.

(12) telur (egg)

In addition to fish, another marine product commonly traded by the people around Sulaiman Bay is fish roe. The buyers come from various ethnic groups, including the Banua ethnic group in Berau Regency. From this foundation, the word for "telur" (egg) is spoken similarly by Bajau, Bugis, and Banua ethnic groups. The vocabulary is pronounced with only slight differences: [intêllo] by Bajau, [têllo?] by Bugis, and [tallur] by Banua.

(13) timba (bucket)

The word "timba" (bucket) here refers more to the verb "to scoop" or "to dip." The word "timba" (bucket) is also closely related to maritime activities or tasks involving water. Therefore, the activity of scooping or dipping is reflected in the similarity of vocabulary spoken by the three ethnic groups. This similarity can be seen in the word [timpa], spoken by Bajau and Bugis ethnic groups, and [timba], spoken by Banua ethnic group.

(14) tolong (help)

The word "tolong" (help) may still reflect the maritime activities that rely heavily on physical labor in their processes. Heavy tasks must be completed through mutual assistance. Therefore, the word "tolong" (help) is spoken exactly the same by all three ethnic groups, with the pronunciation [tulutə].

(15) ukur (measure)

Any work related to specific objects certainly requires measurements as a form of agreement. Similarly, in fishing activities, from building boats, sewing sails, to the process of making nets, measurements are used. Even the size of the fish is distinguished by its size. This is why the word for "ukur" (measure) is spoken similarly by Bajau, Bugis, and Banua ethnic groups, namely [ukul] in Bajau, [ukkuru?] in Bugis, and [ukur] in Banua.

(16) rugi (loss)

The similarity of the word "rugi" (loss) in the three languages is still related to the activity of buying and selling marine products. The word "rugi" (loss) is almost pronounced the same by all three ethnic groups, with only slight differences in the phonemes /r/ and /u/. Bajau ethnic group pronounces it as [lugi], the Bugis ethnic group as [rogi], and Banua ethnic group as [rugi].

(17) *tawar* (bargain)

Similar to the influence of other marine product trading activities, the word "*tawar*" (bargain) is also spoken similarly by the three ethnic groups. The process of buying and selling fish at the market is, of course, inseparable from the activity of bargaining. Therefore, the word "*tawar*" (bargain) shows phonetic proximity, with slight differences in pronunciation: [*tawar*] is used by Bajau and Banua ethnic groups, while [*mattawa*] is used by Bugis ethnic group.

D. Discussion

The analysis of the 17 words in Bajau, Bugis, and Banua mentioned above illustrates how these languages frame ecological relationships and human interaction with the marine and coastal environment. These words are related to the daily activities of coastal communities and key elements found in the marine and beach environments. The similarities in the words from the three languages form six key elements as a perspective on ecological relation.

Coastal and Marine Activity Relation

This relation is connected by the words "*laut*" (sea), "*teluk*" (bay), and "*pari*" (stingray). These words indicate direct connection between the community and the marine ecosystem. In all three languages, the use of these words reflects traditional knowledge related to activities in the sea, such as fishing, navigation, or ecosystem preservation. These languages may have unique ways of describing the sea and its inhabitants, also reflecting the proximity and dependence of the community in the sea as a primary source of livelihood.

The word "*teluk*" (bay) is also important in the coastal ecosystem because as bays often serve as natural refuges for fish and other marine life. The differences or similarities in to say "*teluk*" across the three languages could reflect how each community perceives this geographical feature.

Relation in Local Economic Activities

This relation is formed by the similarity of the words *pasar* (market), *beli* (buy), and *tawar* (bargain). These words refer to trade activities that related to marine products or other items obtained from the sea. Interactions among coastal communities often involve chartering or trading marine products, and the similarity in terminology indicates a strong cultural and economic connection among Bajau, Bugis, and Banua communities.

The word *tawar* is associated with the important process of negotiation in daily life at markets, particularly in traditional communities that rely on marine products as a primary source of income.

Relation with Objects or Processes Supporting Marine Activities

This relation is supported by the similarities in the words *bakar* (burn), *potong* (cut), and *timba* (bucket). These three words can refer to tools or processes used in daily life, whether for cooking, cutting catch, or fetching water. In the marine ecosystem, *timba* is linked to fishing activities or the management of seawater. Here, we can see how vocabulary

reflects the simple technologies used by coastal communities. Additionally, the word *bakar* also refers to the process of preparing seafood, such as *ikan bakar* (grilled fish), which often becomes part of coastal culinary traditions. This reflects the cultural connection to marine products and the ways in which they are utilized.

Relation that represent measurement and Boundaries

This relation can be observed in the similarity of the words *batas* (boundary) and *ukur* (measure). In an ecolinguistic context, words like *batas* and *ukur* often reflect how communities view the management and use of natural resources. For instance, the concept of *batas* in coastal cultures may represent customary rules regulating fishing zones or the allocation of marine resources. The word *ukur* is also related to traditional ways of assessing the quantity or quality of the catch, reflecting local ecological knowledge passed down through generations.

Relation that Describe Conditions or Qualities

This relation is found in the words *putih* (white), *penuh* (full), and *rugi* (loss). These words show conditions or characteristics that related to the marine ecosystem. For example, *penuh* could describe a bountiful fish catch or certain seasons when marine resources are abundant. The word *putih* is associated with the color of beach sand or other natural objects along the coast. Meanwhile, *rugi* could reflect risks in fishing or marine product trade, such as losses due to bad weather or insufficient catch.

Relation Associated with Social Solidarity

This relation is found in the similarity of the word *tolong* (help) in the three languages. In coastal communities, the word *tolong* reflects the importance of cooperation in activities related to the sea, such as helping one another when fishing or in emergency situation at sea. Solidarity is a crucial element of coastal cultures which face many risks from the natural environment.

E. Conclusion

Seventeen similar words which are phonetically indicate that these three languages share a common root or influence each other due to interaction among coastal communities in Berau. This phenomenon is often found in maritime communities that interact intensively in terms of trade, marriage, or migration, and share knowledge about the sea.

Words related to the sea and coast, such as “laut” (sea), “teluk” (bay), and “pari” (manta ray), reflect the urgent need in coastal communities to have clear and specific language regarding the sea. Phonetic similarities may arise as a result of intense linguistic contact or even the adoption of the same terms from one language to another.

The connection between Bajau, Bugis, and Banua languages in the context of the above words shows a strong ecolinguistic relationship. The similarity in vocabulary indicates that these three communities have close social and economic ties, particularly related to life on the coast and the sea. Ecolinguistics, in this context, reveals how language functions as a

medium for transmitting knowledge about the natural environment, including traditional knowledge about the sea, ways of managing marine resources, and social interactions within coastal communities.

Author

Contributions

The first author are fully involved in the preparation of this article. The second and third authors are responsible for designing the concept, theory, and framework, while the fourth author designed the overall data arrangement and presentation of the article. All authors are involved in the overall writing and preparation of the article.

Conflicts of Interest

All four authors of this article agree and declare that there are no conflicts of interest in this article.

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