Grammaticalization of Marine Animals as a Living Environment: A Case Study in Eco-Linguistics of the Bima Language

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Abstract

This study analyzes the grammaticalization process in naming marine animals in Bima language, especially the use of prefixes *{ka-}*, {sa-}*, and marine animals that do not have prefixes Ø* the use of these prefixes reflects the physical characteristics and ecological relationships between Bima people and their marine environment. This research uses a descriptive qualitative approach with data collection methods in the form of interviews, observation, and documentation. The data obtained was then analyzed with an ecolinguistic approach to understand how language represents human relationships with nature, as well as grammaticalization theory to reveal structured linguistic patterns in naming marine animals. The results show that the *{ka-}* prefix is consistently used for 'hard-shelled animals', while the *{sa-}* prefix is used to symbolize 'soft-shelled/non-shelled marine animals'. This study confirms that the grammaticalization process in Bima language not only explains the physical characteristics of marine animals, but also the relationship between Bima people and their marine ecosystem. In addition, this study also reveals that marine animals that are not grammaticalized reflect their position outside the human environment, but are still an important part of fulfilling their needs.

Keywords: Grammaticalization; Ecolinguistics; Marine Animals; Environment; Bima Language

1. Introduction

Language not only functions as a tool for communication, but also reflects how humans perceive the world and their relationship with their environment. Many communities, especially those living in harmony with nature, use language to record and classify the components of their environment. In linguistics, this phenomenon is called grammaticalization, which is the process by which language elements become more systematic and acquire specific meanings. This process is often used to mark certain elements, such as the classification of objects related to nature or social relationships. The Sapir-Whorf theory supports this view, stating that language also shapes the way humans understand the world around them. This theory shows that the language system can serve as a window into the community's view of the reality they encounter in daily life, highlighting the importance of language in conceptualizing and organizing the community's experiences and understanding of the world. In the Bima community, which traditionally lives in coastal areas, the sea plays a very important role in their lives. Bima has a

very close relationship with the sea, so many terms related to marine animals have undergone grammaticalization. This linguistic phenomenon has shown significant changes in the meaning and usage of these words in everyday communication, reflecting how the environment shapes and is shaped by the language used by the community.

This research aims to analyze the process of grammaticalization in the naming of marine animals in the Bima language, which reflects the socio-ecological relationship of coastal communities. The process of grammaticalization in the Bima language becomes an interesting topic because this language not only functions as a means of communication but also as a reflection of the culture and ecological views of its community towards the sea as a source of life.

The main research question focuses on how this naming system reveals the community's perception of their environment and how language plays a role in preserving traditional knowledge. This study is relevant because the names of marine animals in the Bima language are given certain prefixes, such as {ka} and {sa-}, which reflect the physical characteristics and ecological symbolism of these animals.

This research uses an ecolinguistic approach to understand the relationship between language and the environment. Moreover, the Sapir-Whorf theory serves as the conceptual framework in analyzing how the Bima community names marine animals based on their understanding and categorization of marine ecosystem elements. In this case, the process of grammaticalization not only functions as a linguistic mechanism but also as a means to represent social and ecological interactions.

The names of marine animals in the Bima language not only indicate the existence of these animals but also describe their physical characteristics, economic value, and ecological roles. For example, the prefix {ka-} tends to be used to name shelled animals, symbolizing strength and protection, while the prefix {sa-} is more often given to shell-less animals, indicating their vulnerability to the environment. This process of grammaticalization provides rich insights into how the Bima community perceives and utilizes the marine ecosystem.

This research is expected to enhance the understanding of the relationship between language, culture, and the environment in coastal communities. By using data on the naming of marine animals in the Bima language, this research also aims to demonstrate how the process of grammaticalization can serve as a reflection of the complexity of human relationships with their environment.

2. Literature Overview

2.1 Hipotesis Sapir Whorf

The Sapir-Whorf hypothesis, formulated by Edward Sapir and Benjamin Lee Whorf, proposes the concept that language and human thought are closely interconnected. Sapir (1929) explained that "language is not just a tool for expressing ideas, but also a factor that shapes those ideas."This means that language not only functions as a medium of communication but also influences how individuals conceptualize and understand the world around them. In the context of this research, the hypothesis is relevant because it illustrates how the structure of the Bima language can influence the way the Bima community understands and interacts with their marine environment. The process of grammaticalization that occurs in this language may reflect and shape the way the community views their ecological and cultural elements.

2.2 The Utilization of Ecolinguistic Theory in the Study of Bima Language

Ecolinguistics is a field that studies the relationship between language and the environment, highlighting how language reflects, maintains, and shapes the worldview of a society towards their natural

and social environment. In the study of the Bima language, this theory is highly relevant for understanding how the Bima community integrates elements of their environment into their language structure, particularly through the process of grammaticalization.

According to Benjamin Whorf and Edward Sapir, language is not just a tool for communication, but also a cognitive system that influences the way people think and understand reality. Sapir (1929) stated, "humans do not live only in the objective world or the world of social activities as usually understood, but are highly dependent on a particular language that serves as the medium of expression of their society." Whorf (1956) added that "the structure of a person's language greatly influences the way a person understands the world around them."This approach is known as the Sapir-Whorf hypothesis or the linguistic relativity hypothesis. In the context of the Bima language, this hypothesis helps us see how the use of prefixes in the names of marine animals not only serves to identify and classify species based on their physical characteristics but also reflects how the Bima people understand and interact with their marine environment.

2.3 Grammaticalization

Meillet (in Ridwan 2016) in L'evolution des formes grammaticales "Evolution of Grammatical Forms" explains that grammaticalization is a process of change in language units. If related to the research I will conduct, which focuses on the grammaticalization of marine animal names in the Bima language, the process is evident through the use of certain prefixes that indirectly become characteristic in the naming of marine animals. For example, the prefix {sa-} or other emerging patterns indicate that words initially used to directly describe marine animals are now adapting to become part of the grammar. This means that these words not only refer to marine animals but also serve to describe their characteristics, such as soft or hard shells. In addition, changes in linguistic units also occur at certain levels. In line with that opinion, Hann-Memmesheimer (2004 and 2006) also explains that grammaticalization is one of the linguistic theories used to describe the development of a language or the process of forming new structures, namely how language variations are formed.

2.4 Grammaticalization in the Context of Bima Language

Bima Language is one of the regional languages in Indonesia that is rich in elements of local culture and environment. The names of marine animals in the Bima language serve as an example of how this language preserves local knowledge and traditional cultural wisdom. In Yusra (2012) research, it was found that language and culture have the ability to adapt in plural or multicultural situations. This is related to the process of grammaticalization in the Bima language, where elements of the environment and culture are integrated into the language through specific grammatical patterns, such as prefixes used in the names of marine animals. The research shows how the Bima language is able to adapt to its surrounding environment, reflecting the close relationship between the Bima community and the sea, which is an important part of their lives.

2.5 Ecolinguistics

Ecolinguistics is a study that discusses language in relation to the living environment where the language grows, develops, and is used by the language community in the region of that language, as expressed by Mbete. (2007:1) Ecolinguistics is a discipline that studies the environment and language. Ecolinguistics is an interdisciplinary linguistic science, combining ecology and linguistics. This discipline examines the reciprocal relationship between language and the social human environment and the natural environment.

Language change, especially at the lexical level, cannot be separated from changes in the natural environment because language and its environment are two interrelated aspects. This phenomenon is the field of study of ecolinguistics, which is a discipline that examines languages and their environments and aligns ecology with linguistics. (Mbete, 2008:1).

In 1970, Haugen first introduced the term ecology of language (1972:352, in Fill and Muhlhausler, 2001:57). Haugen stated, "ecology of language may be defined as the study of interactions between any given language and its environment." The ecology of language in the above excerpt can be understood as the study of the interactions between a particular language and its environment.

Huagen emphasizes that language exists in the minds of its users and functions in the relationships between users with one another and with their environment, namely the social environment and the natural environment. This shows that language is not merely a tool for communication but also an integral part of the social and natural ecosystems in which it is used. This relationship encompasses how language is influenced by and influences social, cultural, and physical environmental factors. If viewed in this context, language ecology studies how language develops, changes, and adapts to its environment.

Language ecology provides deeper insights into the dynamics between language and the context in which it lives and is used. It also helps us understand the importance of preserving linguistic diversity as part of the human cultural heritage and a vital resource for collective knowledge and identity.

3. Methodology

This research uses a qualitative descriptive approach, analyzing grammaticalization patterns in the Bima language, particularly in naming marine animals based on their physical characteristics, such as the presence of shells. The purpose of this method is to understand how linguistic patterns reflect the ecological perspective of the Bima community in categorizing marine animals.

Data were collected through interviews with native speakers of the Bima language who are familiar with the marine ecosystem. The interviews were recorded using recording devices. To enhance the analysis, in-depth interviews were conducted with informants who understand the naming of marine animals in the Bima language, as well as relevant literature documentation. The data collected were analyzed using content analysis methods, which identified and classified prefix patterns in the names of marine animals. The purpose of this method is to understand the relationship between grammaticalization and the ecological perception of society towards the marine environment.

4. Discussion

This research shows the prefix patterns used to name marine animals in the Bima language and explains that there is a specific grammaticalization system. Based on the collected data, various prefixes with different frequencies were found, indicating that there are linguistic patterns and categorizations in the classification of marine animals conducted by the Bima community, as illustrated in the graph below.
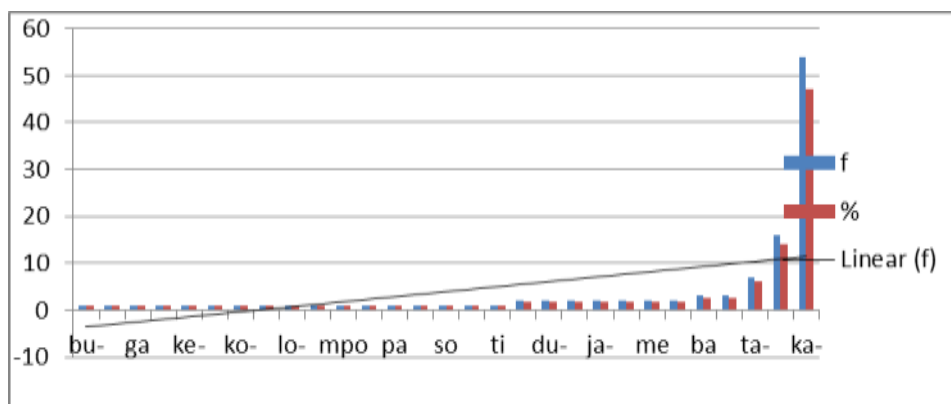
Graph 1. Percentage of the initial letters of marine animal names

4.1. Naming Marine Animals in the Bima Language

From the 114 marine animal names analyzed, there are two main prefixes, namely {ka-} and {sa-}, which are the most frequently used, at 46.96% and 13.91% respectively. Other prefixes, such as {ta-}, appear with a frequency of 6.09%, and several other prefixes with lower frequencies of 0.0%.

1) Marine Animals that Begin with {ka-}

In the naming system of marine animals in the Bima language, the prefix {ka-} is used 54 times, or about 46.96% of the data, indicating that this prefix plays an important role in categorizing certain animals, especially those with hard shells. The dominance of the prefix {ka-} in the Bima language indicates a strong grammaticalization pattern that marks animals with certain characteristics recognized in Bima society. This pattern shows the existence of linguistic systematization where the prefix {ka-} not only functions as a category marker but also reflects the unique physical aspects of the animals living in the marine ecosystem of Bima society.

Table 2. The Use of the Prefix {ka-} in Naming Marine Animals

Dimensi	Subdimensi	f	%
body size	small	12	22,22
	medium	36	66,67
	large	6	11,11
scales	yes	18	33,33
	no	36	66,67
body shape	flat	36	66,67
	elongated	12	22,22
	round	4	7,41
	long	2	3,70
mucus	yes	0	0,00
	no	54	100,00
shell	yes	35	64,81
	no	19	35,19
skin hardness	yes	54	100,00
	no	0	0,00

The table above shows the results of the analysis of several dimensions and sub-dimensions related to the physical characteristics of marine animals, such as size, scales, shape, slime, shell, and skin hardness. Each dimension is described with frequency (f) and percentage (%). This helps provide a better picture of the data distribution for different categories. This table has a complete explanation below.

1. Body Size

There are twelve marine animals or 22.22% that were analyzed as small-sized. Meanwhile, for medium-sized, there are 36 or 66.67% of marine animals of medium size out of a total of 54 marine animals. This reflects the dominant category of the sample. Only 6 large-sized marine animals or 11.11%.

2. Scales

It was found that 18 marine animals in the sample have scales or 33.33%. As many as 66.67% or 36 marine animals do not have scales, which indicates that most of the marine animals in this sample may be more vulnerable to external threats, as they do not have hard protection on their bodies.

3. Body Shape

The flattened body shape in most marine animals, specifically 36 (66.67%) of them, helps them move more easily and adapt to the underwater environment, which aids in finding food or protecting themselves from predators. Meanwhile, the elongated body shape is characteristic of 12 (22.22%) marine animals, which likely helps them move more efficiently through water. Only 4 (7.41%) marine animals have a rounded body shape, which may indicate a unique adaptation for survival in certain marine environments. The elongated body shape was found in only 2 marine animals or 3.70% of the total data, which may be beneficial for moving quickly in water or surviving in more open environments.

4. Mucus

All marine animal species in the research sample did not show any mucus or equivalent to (0.00%), indicating that mucus is not a characteristic of marine animals starting with {ka-}. Meanwhile, those without mucus overall for those starting with {ka-} were not found or equivalent to (100.00%).

5. Shell

As many as 35 marine animals, or equivalent to (64.81%) in the sample, have shells, indicating that most marine animals in this sample use strong protection as a survival method against predators and harsh sea conditions. Therefore, these shelled marine animals are very easy to find on the beach when the tide is low. Meanwhile, those without shells were only found in 19 data points, or equivalent to (35.19%) of marine animals without shells, indicating variation in their adaptation to the marine environment. These shell-less animals are likely more vulnerable to external threats, making them very rare and almost never found on the beach.

6. Skin Hardness

Marine animals that start with {ka-} generally have a physical characteristic of hard skin. Out of the 54 marine animals that start with {ka-} studied, all of them have hard skin. This skin hardness indicates that physical protection is a very important characteristic for marine animals, as it helps them protect themselves from predators and an unfriendly environment. Marine animals that start with {ka-} or have hard skin are almost all found along the coast, making them very easy to find. Moreover, for marine animals that start with {ka-}, they are very easy to find for the people of Bima who live on the coast because these marine animals can be found when the sea water recedes along the shoreline.

Overall, this table provides an in-depth overview of the various physical characteristics of marine animals that are the subject of the study. By examining these aspects, we can understand how the physical characteristics of marine animals adapt to their environment. Some animals have physical protection such as shells and hard skin, while others are more vulnerable due to their soft body shape and lack of protection, making them harder to find compared to marine animals with shells or hard skin.

Based on the data found, the prefix {ka-} is the most frequently used prefix in naming marine animals in the Bima language, with a frequency of 46.96% of all data. Examples of the use of this prefix include words like kapanto (shrimp) and kajuji. (undur-undur). This data shows that the prefix {ka-} is often used to describe marine animals that have specific characteristics, such as clear size or body shape. In the process of grammaticalization, the prefix {ka-} provides additional information about the names of marine animals to make them easier to recognize and distinguish. According to Sapir (1921), language not only reflects physical experiences but also the community's understanding of its environment. Therefore, the use of the prefix {ka-} in the Bima language indicates a close relationship between the community and the marine ecosystem, and language serves as a tool for conveying local knowledge. Here is a table of marine animal names that use the prefix {ka-};

Table 3. Names of marine animals starting with {ka-}

Bima Language	Linguistic Elements	Mucous Character 4	Skin Type Character 6	Meaning in Indonesian
kapanto	{ka-}	not slimy hard	hard	shrimp
kamboo	{ka-}	not slimy hard	hard	Payangka
Kabola	{ka-}	not slimy hard	hard	prawn
Kamoa	{ka-}	not slimy hard	hard	flying fish
Kappa	{ka-}	not slimy hard	hard	sucker fish
kasi'i mene	{ka-}	not slimy hard	hard	blood cockle
Kapee	{ka-}	not slimy hard	hard	tiger prawn
Kapantorembe	{ka-}	not slimy hard	hard	white prawn
keuwadu	{ka-}	not slimy hard	hard	blue crab
kapogo	{ka-}	not slimy hard	hard	sea cucumber
kalopoapi	{ka-}	not slimy hard	hard	Lepu macan
karawa kariki	{ka-}	not slimy hard	hard	tiger grouper
Kakero	{ka-}	not slimy hard	hard	kerong-kerong
karawa	{ka-}	not slimy hard	hard	mouse grouper
Katoko	{ka-}	not slimy hard	hard	black grouper
Katoko	{ka-}	not slimy hard	hard	Tellina clams
Kabesi	{ka-}	not slimy hard	hard	Clam tahu
kabeso	{ka-}	not slimy hard	hard	White scallop
karampenda	{ka-}	not slimy hard	hard	Brown scallop
Kaluka	{ka-}	not slimy hard	hard	Brown clam
kamboi	{ka-}	not slimy hard	hard	green parrot fish
kasi'imutiara	{ka-}	not slimy hard	hard	Marine shells
kasi'imonca	{ka-}	no berlendir	hard	Mussels
kasi'ipogo	{ka-}	not slimy hard	hard	Axe shell
Kasi'ijao	{ka-}	not slimy hard	hard	Green mussels

karengga	{ka-}	not slimy hard	hard	Fiddler crab
Keuwako	{ka-}	not slimy hard	hard	Mud crab
kabantabura	{ka-}	not slimy hard	hard	White Snapper
kakenta	{ka-}	not slimy hard	hard	Red snapper
kabantamee	{ka-}	not slimy hard	hard	Black Snapper
Kakinta	{ka-}	not slimy hard	hard	Grouper
kapantokafa	{ka-}	not slimy hard	hard	Famena
Karondo	{ka-}	not slimy hard	hard	shrimp
Karisa	{ka-}	not slimy hard	hard	catfish
karonga	{ka-}	not slimy hard	hard	Hornbill fish
Katia	{ka-}	not slimy hard	hard	Stone Bati fish
Karoe	{ka-}	not slimy hard	hard	parrot fish
Kappa	{ka-}	not slimy hard	hard	catfish
Kaso	{ka-}	not slimy hard	hard	horse mackerel fish
kapanto wadu	{ka-}	not slimy hard	hard	fan shrimp
kampenyo	{ka-}	not slimy hard	hard	Penyol fish
kahima	{ka-}	not slimy hard	hard	Molluscs
kapa'a	{ka-}	not slimy hard	hard	Kijing fish
kahima	{ka-}	not slimy hard	hard	Metonna melea shellfish
Kasi'i rimpu	{ka-}	not slimy hard	hard	Seven-eyed clam
kambala	{ka-}	not slimy hard	hard	Manila clams
Kasi'I mina	{ka-}	not slimy hard	hard	Mussel
Kabuu	{ka-}	not slimy hard	hard	Trumpet snail
Kaluka	{ka-}	not slimy hard	hard	Abra shells
Kajuji	{ka-}	not slimy hard	hard	Anthill
kahima	{ka-}	not slimy hard	hard	Sea snail

		not slimy hard	hard	This time, uncle
kalikuma	{ka-}			
		not slimy hard	hard	Sea urchins
kati'i	{ka-}			
		not slimy hard	hard	Lobster
Kabalu	{ka-}			

The data above shows that the consistent pattern in the Bima language for naming marine animals is the prefix {ka-}, which has meanings beyond linguistic but also social and economic. This pattern may be related to the way marine animals live their daily lives, which helps in understanding Bima culture. The use of this prefix to name marine animals is not only for identifying marine animals but also for indicating social aspects that determine daily life.

2) Sea Animals that Begin with {sa-}

The prefix {sa-} appears 16 times, or 13.91% of all prefixes. Although the frequency of {sa-} is lower than {ka-}, this number is still quite significant, indicating that this prefix also has a specific role in the classification of sea animals. Based on the collected data, the prefix {sa-} is used as a marker for sea animals that do not have shells or have physical characteristics different from the {ka-} group. The regularity of the use of this prefix indicates that marine animals are categorized systematically. This may indicate the ecological perception of the Bima community regarding the variety of marine animals they encounter daily.

Table 4. Frequency of marine animal dimensions starting with {sa-}

Dimensi	Subdimensi	F	%
Body size	small	4	25,00
	medium	12	75,00
	large		
Scale	yes	11	68,75
	no	4	25,00
Body shape	flat	13	81,25
	oval		0,00
	round	3	5,56
	long		0,00
Slime	yes	3	18,75
	no	13	81,25
Shell	yes	2	12,50
	no	14	87,50
Skin hardness	yes	2	87,50
	no	14	87,50

The table above shows the analysis results for various dimensions and sub-dimensions related to the physical characteristics of marine animals. It displays the frequency (f) and percentage (%). Overall, the results of this table indicate that the physical characteristics of most of the analyzed marine animals show adaptations to the harsh marine environment. Most of the marine animals in the sample have a medium size, flattened shape, and hard skin, which may offer protection against predators and the hazardous marine environment. However, not many animals have shells or mucus, indicating that physical protection is not the only way the analyzed species survive. Therefore, this table shows a

complex pattern of ecological adaptation. In this case, physical components such as body shape and skin protection are crucial for the ability of marine animals to survive in diverse marine environments. The following table provides further explanation.

Table 5. Names of marine animals starting with {sa-}

Bima Language	Linguistic Elements	Feature 6 Skin Toughness	6 Signs of Skin Hardness	Meaning in Indonesian
sancara	{sa-}	without a shell	no	Hornbill fish
sancara me'e	{sa-}	without a shell	no	rabbitfish
sancara monca	{sa-}	without a shell	no	yellowtail fish
sanggilo	{sa-}	without a shell	no	fish cork
sabete	{sa-}	without a shell	no	Glass fish
sarocu	{sa-}	without a shell	no	Kaka tua
sadapi	{sa-}	without a shell	no	mackerel
saboka	{sa-}	without a shell	no	bojor fish
sabete	{sa-}	without a shell	no	grouper
sabae	{sa-}	without a shell	no	Flatfish
sambula	{sa-}	without a shell	no	Sardines
sarita	{sa-}	without a shell	no	Pompano fish
sasepi	{sa-}	cangkang lembut	no	shrimp peci
salaja	{sa-}	without a shell	no	moon leech
salepe	{sa-}	without a shell	no	ribbon fish
sancada	{sa-}	cangkang lembut	no	minute bean shells

3) Marine animals without a prefix Ø

In this study, in addition to marine animals with prefixes, there are also marine animals without prefixes. Although their numbers are small, variations such as {ta-}, {ci-}, {du-}, {fa-}, {ja-}, {la-} indicate flexibility in linguistic classification. This group of prefixes does not appear consistently and only has low representation, ranging from 0.87% to 2.61% of the overall data. This group of marine animals is categorized as "without prefix," indicating that their names might be more general and do not fall into specific categories like animals with the prefixes {ka-} and {sa-} that indicate certain ecological characteristics.

4.2 The Grammaticalization Process in Naming Marine Animals

The grammaticalization process that occurs in naming marine animals based on the collected data reveals two prefixes frequently used by the Bima community to name or mark marine animals, namely {ka-} and {sa-}. The use of the prefixes {ka-} and {sa-} in the names of marine animals in the Bima community certainly has specific meanings and purposes behind them. The prefix {ka-} is used to mark marine animals that have the physical characteristic of being non-slime and having hard skin, while the prefix {sa-} is used to mark marine animals that are non-slime and non-shelled.

The use of the prefixes {ka-} and {sa-} functions as markers that express certain characteristics of these animals, reflecting how the Bima community organizes their knowledge about marine animals. This shows that the naming of marine animals is a profound linguistic entity that bridges the gap between biological reality and linguistic representation.

Moreover, the process of grammaticalization shows that language not only functions as a tool for communication but also as a means to convey experiences, understandings, and cultural principles related to the natural environment. As a result, the prefix {ka-} is used not only for classification but also to narrate the symbiotic relationship of the Bima community with their marine ecosystem. Therefore, grammaticalization in the naming of marine animals reflects the linguistic rules and the Bima community's understanding of their environment. This shows how closely intertwined language, culture, and the environment are, as reflected in the way people speak in their daily lives.

According to the Sapir-Whorf Hypothesis, language plays an important role in determining how humans think and understand the world. In this case, the use of the prefix {ka-} in the Bima language demonstrates the relationship between language and the way the Bima people understand their marine environment. This prefix reflects how the Bima community categorizes marine animals based on their physical characteristics, especially those related to the presence of shells and hard skins, traits that are very important for their relationship with the marine ecosystem.

Animals that have shells, such as keu (crabs) and kapanto (shrimp), are usually also more financially valuable. These animals are usually used more in trade and daily consumption. Therefore, the use of certain prefixes in naming animals indicates that society pays more attention to these species. This shows that naming in the language is not only a linguistic function but also indicates a strong social and economic relationship with their marine environment. Language not only serves to communicate but also reflects how the community perceives and interacts with its environment. The use of the prefix {ka-} indicates that the Bima people have a deep understanding of marine animals due to their own experiences, their relationship with the environment, and the cultural values attached to those species.

4.3 The Relationship Between Grammaticalization and the Marine Environment of the Bima Community

This study found that there is a relationship between the way the Bima community perceives their marine environment and the process of grammaticalization in naming marine animals. The names of marine animals prefixed with {ka-} and {sa-} indicate how the Bima community perceives and interacts with marine animals within the context of the marine ecosystem.

Hard-shelled marine animals, which are prefixed with {ka-}, are considered symbols of resilience and protection, reflecting their way of life in the harsh marine environment and the threat of predators. In addition, most or nearly half of the marine animals that begin with {ka-} are very easy to find along the shore without having to fish or dive, so these marine animals are more often consumed. Because of this, the marine animals that start with {ka-} are also used as one of the tools for survival. Besides the marine animals that start with {ka-}, there are also marine animals whose names begin with {sa-}. The marine animals that start with {sa-} are viewed differently. The prefix {sa-} is used to describe marine animals that have soft or tender skin. These marine animals are also rarely found along the coast

like those starting with {ka-} because most of those starting with {sa-} are fish that are generally caught by fishing or using special tools to capture them. Therefore, the prefix {sa-} is used to describe their soft nature, which can be interpreted as an inability to protect themselves from external factors, making these marine animals rarely found on the seashore. This indicates a relationship between grammaticalization in the Bima language and the ecological perception of the Bima community regarding the survival abilities of marine animals in their environment. Overall, this grammaticalization process demonstrates a strong connection between language and the marine environment, where language not only serves as a communication tool but also as a means to disseminate knowledge about nature that has been passed down through generations. Grammaticalization in the naming of marine animals shows how language reflects the world of the Bima community, which is greatly influenced by their interactions with the rich and diverse marine environment. Further information on the relationship between grammaticalization and the environment of the Bima community is explained in the image below.
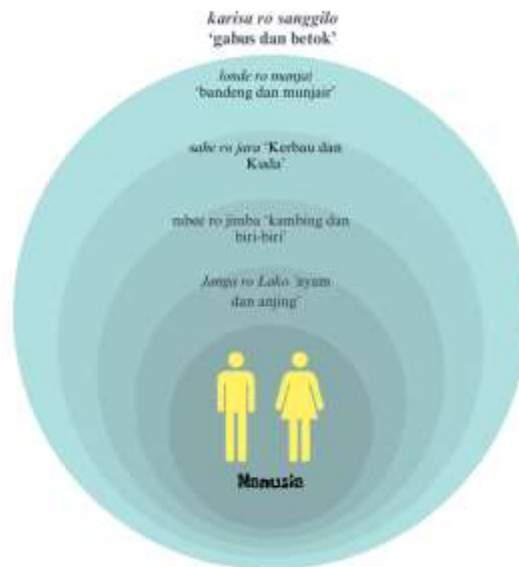

Figure 4.1 The Relationship of Grammaticalization with the Environment

4.4 Grammaticalization Patterns in Naming Marine Animals

Based on the collected data, these patterns appear consistent in the use of certain prefixes, the prefixes {ka-}, {sa-}, and naming without prefixes, which linguistically function to emphasize the physical or ecological characteristics of marine animals. Each pattern represents the relationship of the Bima community with these animals. The research results are based on the analysis of the following grammaticalization patterns:

1. Grammaticalization Pattern with the Prefix {ka-}

The prefix {ka-} is used to refer to marine animals with hard shells, indicating their ability to survive in harsh marine environments. The data shows that these animals usually have shells or possess high physical protection characteristics, such as certain types of shells and sea snails. The prefix {ka-} also indicates types of sea animals that can survive in conditions outside of water, which demonstrates protection and resilience. The durable and protective nature of the shellfish in Bima society is associated with this prefix, as described in the data.

2. Grammaticalization Pattern with the Prefix {sa-}

The prefix {sa-} is different from {ka-}, and is used for shell-less marine animals. Data shows that these marine animals with the prefix {sa-} are characterized by having slime and soft or non-hard

skin. In addition to describing their physical characteristics, marine animals with the prefix {sa-} also indicate that these marine animals do not live on the seashore like marine animals with the prefix {ka-}, which are quite easy to find on the seashore when the tide is low. In this case, it reflects the community's perception of the softness or inability of these animals to defend themselves, symbolizing vulnerability and the need for additional environmental protection. These animals also demonstrate how the Bima community understands the ecology of marine animals.

3. Without Prefix

In the Bima language, some marine animals are not given any prefix at all. Data shows that this pattern seems to apply to marine animals that do not exhibit specific resilience or vulnerability characteristics. These animals do not require special characteristics to be identified because they can be considered common components of the marine ecosystem. This naming pattern shows that the Bima community does not always feel the need to prefix all marine animals, allowing for simple naming while still reflecting the community's familiarity and understanding of the variety of marine animals in their surroundings.

5. *Conclusion*

This research examines the process of grammaticalization in the names of marine animals in the Bima language, focusing on the use of prefixes {ka-} and {sa-} as well as names without prefixes. Based on the discussion above, several main conclusions can be drawn as follows:

1. Naming Marine Animals in the Bima Language

In the Bima language, there are three main categories of marine animal names: names with the prefixes {ka-}, {sa-}, and names without prefixes. The prefixes {ka-} and {sa-} indicate the physical and ecological characteristics of the animals, such as prominent size or body shape, while the prefix {sa-} is more often used to describe physical traits, specifically, such as a distinctive body shape or smaller size. As a result, these prefixes not only function as linguistic markers but also serve to indicate the unique or ecological characteristics of each marine animal from the perspective of the Bima community. Variations in the use of these prefixes show how the local community understands the roles and identities of each marine species within their marine environment, as well as how language is used to identify and categorize animals based on linguistic foundations.

2. The Process of Grammaticalization in Sea Animal Names

The process of grammaticalization is clearly seen in the use of the prefixes {ka-} and {sa-} in sea animal names in the Bima language. These prefixes provide additional meanings that enable the Bima community to classify and understand sea animals based on their ecological and physical characteristics. This grammaticalization supports the Sapir-Whorf theory that language shapes the way a community perceives its world, where the Bima language helps the community understand and define the marine environment by naming animals with specific characteristics.

3. The Relationship of Grammaticalization with the Marine Environment of the Bima Community

The names of these marine animals are grammaticalized because they are not present in the community's environment. Their relationship with marine animals is not direct like with pets, but the use of marine animal names in the Bima language shows how the Bima community understands and interacts with their environment. This grammaticalization shows how language can represent and categorize important natural elements that cannot be controlled by humans.

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