Pelauw-Haruku Language: Inflection in Nouns (a PFM Analysis)

Ahmad Rifani Talaohu

Universitas Khairun, Ternate, Indonesia
Email: ahmadrifani@unkhair.ac.id

Abstract. This study explores the noun inflection system in the Pelauw-Haruku language through the lens of Paradigm Function Morphology (PFM). This language is one of the Austronesian languages spoken in Eastern Indonesia, which features a complex system of noun inflections driven by grammatical features such as number and case. Using PFM, an inferential-realizational approach, this research aimed to map the paradigm structures and realization rules governing noun inflections in Pelauw. The study systematically identified the base forms of nouns and the corresponding inflected forms by applying PFM's realization rules, which map grammatical features to word forms. Special attention was given to irregular patterns and extended exponence within the noun system, examining how competing rules affect noun morphology. This research contributes to the broader understanding of Austronesian morphology and offers insights into the application of PFM to lesser-studied languages, highlighting its utility in analyzing inflectional systems with both regular and irregular forms. The study results reveal several distinct paradigms in the Pelauw noun system, corresponding to grammatical categories such as number and case. Overall, the realization rules of PFM, which maps grammatical features to their respective inflected forms, effectively explains the inflection of Pelauw-Haruku noun forms.

Keywords: *Pelauw-Haruku language, noun inflections, Paradigm Function Morphology, Austronesian languages, morphological analysis*.

1 INTRODUCTION

Haruku is one of the languages spoken in Maluku, Eastern part of Indonesia, which also affiliates with Austronesian languages and approximately has 18.200 speakers [1]. Pelauw is one of the dialects that is used among any other dialects. As Simons et al. [2] stated, Pelauw, Kailolo, Rohomoni, Kabauw, Hulaliu use the Haruku language, and each village has its own dialect. Therefore, this language can be considered as Pelauw-Haruku. Like many Austronesian languages, Pelauw-Haruku language exhibits a rich morphological system, particularly in its inflectional processes. Inflection [3] plays a

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crucial role in marking grammatical features such as numbers and cases, making it an essential study area for understanding the language's overall structure.

The study of noun inflections in this language is vital for documenting the language and contributes to broader typological insights into Austronesian morphology. In many Austronesian languages, noun inflections tend to display a complex interplay between affixation, vowel alternation, and sometimes irregular morphological processes. Pelauw-Haruku, in this regard, presents an intriguing case where both regular and irregular patterns of noun inflection are observed.

In general, Pelauw-Haruku language has adequate complex forms of nouns which inflect based on what case and number the nouns are conditioned. Moreover, the inflectional nouns are categorized into two classes: Human vs Non-human [4], since the inflections differ between human and non-human nouns. In short, in the nominative case, if the noun is a singular subject, whether it's a human or non-human noun, the inflections never occur because the noun remains on the basic form (root). But if the noun is a plural subject, the inflections will occur in non-human noun such as *sia*'NOM.cat.SG' which becomes *sia-sia*'NOM.cat.PL'. Interestingly, this form of inflection is a full reduplication since the root of a noun singular reduplicates in the plural form.

In contrast to Nominative, the inflections occur in both human and non-human nouns in Accusative form. For example, human noun singular and plural *malona*'man' inflects to *malonau*'ACC.man.SG' with a suffix marker {-u} in the object position of accusative, and non-human noun singular *sia*'cat.SG' inflects to *siai*'ACC.cat.SG' with a suffix marker {-i} in the object position of accusative, while non-human noun root *sia* 'cat' inflects to plural form *siaerui*'ACC.cat.PL' with a plural marker {-eru} and a suffix marker {-i} in the object position of accusative.

The same issue is found in dative and comitative case. Since all the human nouns either plural or singular is inflected with suffix {-u} in the object position of dative and comitative, while the non-human noun singular is inflected with suffix marker {-o} in the object position of dative and suffix marker {-oti} in the object position of comitative. Subsequently, the non-human noun plural undergoes inflections with suffix marker {-o} in the object position of dative and suffix marker {-oti} in the object position of comitative, in which both are preceded by a plural marker {-eru}.

Based on the cases above, this study aims to describe the inflectional patterns of Pelauw nouns in clausal syntax and adopt Paradigm Function Morphology (PFM), a theoretical framework proposed by Gregory Stump [5], to analyze the inflectional morphology of Pelauw-Haruku nouns and explain how these patterns are structured within the language's morphological system. By focusing on nouns, this research seeks to uncover the paradigms governing inflectional processes and to highlight any irregularities or exceptions that challenge standard morphological rules. The findings of this study not only contribute to the basic understanding of Pelauw-Haruku but also demonstrate the broader applicability of PFM in analyzing inflectional systems in lesser-studied languages.

Additionally, this study is significant as it provides both a detailed description of Pelauw's noun morphology and a theoretical contribution to the field of linguistic mor-

phology. By using PFM, this research bridges descriptive linguistics and formal theoretical analysis, offering insights into how noun inflections function in an understudied Austronesian language.

2 METHOD

This present study used Paradigm Function Analysis (PFM) approach [5] to analyze noun inflection in Pelauw-Haruku language. PFM is a theoretical model in the field of linguistic morphology that focuses on how word forms are structured and derived within inflectional paradigms. In addition, this approach also offers a formal framework to explain how words, particularly in inflected languages, are transformed to convey different grammatical meanings, including number and case, through morphological rules. The research design for this study was qualitative, as it sought to analyze datasets related to Pelauw-Haruku inflection in nouns.

The data collection was drawn directly from Pelauw-Haruku language speakers through fieldwork, such as recording and transcribing natural speech, to gather the data related to singular, plural, and case variations in nouns and their use in different grammatical contexts. For the inclusion criteria, the data scope included the noun data into paradigms based on grammatical features like number (singular, plural), case (nominative, accusative, dative, comitative), and other relevant inflectional categories. As for the analysis, the Inferential-Realizational model from PFM [6] was used to analyze the noun inflections, which treated inflections as the mapping from an abstract paradigm structure to surface forms.

3 RESULTS AND DISCUSSION

3.1 Clausal Syntax Analysis

This section provides several examples of clausal syntax [7] to display how the inflections work in Haruku-Pelauw language. Fundamentally, the word order of this language is SVO, in which the subject for both transitive and intransitive is always in front of the sentence and mostly uninflected in nominative, like in the examples below.

(A) *malona* *to* *mahaka* *mintaurui*
HUM.man-NOM.SG that open NON-HUM.door-ACC.SG
'That man opens the door'

(B) *malona* *ti* *ane* *samata*
HUM.man-NOM.PL these eat continuously
'These men eat continuously'

(C) *asu* *ti ane* *siai* *to*
NON-HUM.dog-NOM.SG this eat NON-HUM.cat-ACC.SG that
'This dog eats that cat'

(D) *asu-asu* *ti* *lawa* *malari*
NON-HUM.dog-NOM.PL these run fast
'These dogs run fast'

As can be seen from transitive (A) and intransitive (B) in nominative, the human noun subject *malona*'man' is always in front of the sentence. And there is no inflection in both sentences even if the subject in (A) is singular and the subject in (B) is plural, as well as the subject that is non-human noun singular in (C). Nevertheless, if the subject is non-human noun plural as in (D), then the inflection is shown as full reduplication (redup). Next, here are some examples of how inflectional nouns occur in the Accusative case.

(E) *malona to ane manui to*
HUM.man-NOM.SG that eat NON-HUM.chicken-ACC.SG that
'That man eats that chicken'

(F) *malona to ane ianerui to*
HUM.man-NOM.SG that eat NON-HUM.fish-ACC.PL those
'That man eats those fishes'

(G) *yarimau-yarimau ti pamata mahinau to*
NON-HUM.tiger-NOM.PL these kill HUM.woman-ACC.SG that
'These tigers kill that woman'

(H) *aopol ti kuse aopolu to*
HUM.child-NOM.PL these punch HUM.child-ACC.PL those
'These children hit those children'

These examples attest that in case of Accusative, whether human noun is singular such as *mahina*'woman' in (G) or plural such as *aopol*'children' in (H), the inflection only occurs with an addition of suffix {-u}. However, different inflection processes are shown in (E) and (F). As in (E), the non-human object singular *manu*'chicken' is marked with a case marking suffix {-i}, while in (F) the non-human object plural *ianeru*'fishes' (its singular form is *ian*'fish') is marked with the same suffix {-i} but it is preceded by a plural marker {-eru}. Moreover, another process of grammatical relation marking, which is the dative case, also occurs in this language.

(I) *mahina ti kuwe ianerui waa siao to*
HUM.man-NOM.PL these give NON-HUM.fish-ACC.PL to NON-HUM.cat-DAT.SG that
'These women give fishes to that cat'

(J) *malona to kola waeli waa kaderaeruo to*
HUM.man-NOM.SG that flush NON-HUM.water-ACC.SG to NON-HUM.chair-DAT.PL those
'That man flushes water to those chairs'

(K) *tahinan ti kuwe mahaierui waa ocolu* to
HUM.oldwoman-NOM.PL these give NON-HUM.food-ACC.PL to HUM.brat-DAT.SG that
'These old women give foods to that brat'

(L) *matuan to kuwe pisi'i waa aopolu to*
HUM.oldman-NOM.SG that give NON-HUM.money-ACC.SG to HUM.child-DAT.PL those
'That old man gives money to those children'

The data above shows that, in the dative case, whether a human noun is singular, such as *ocol*'brat' in (K) or plural, such as *aopol*'children' in (L), the inflection only

occurs with an addition of suffix {-u}. Meanwhile, another inflection process is shown in (I) where the non-human object singular such as *sia*'cat' is marked with a case marking suffix {-o}. Also in (J), the non-human object plural such as *kaderaeru*'chairs' (its singular form is *kadera*'chair') is marked with the similar suffix {-o} but preceded by a plural marker {-eru}. Further, concerning the comitative case, the application of the grammatical relation marking are shown in some examples below.

(M) *malona to koto apalerui to kura seitoti*
HUM.man-NOM.SG that cut NON-HUM.pig-ACC.PL those with NON-HUM.knife COM.SG
'That man cuts those pigs with a knife'

(N) *mahina ti ane halai kura rua sendoeruoti*
HUM.woman-NOM.SG this eat NON-HUM.rice-ACC.SG with two NON-HUM.spoon-COM.PL
'This woman eats rice with two spoons'

(O) *malona to pahae hi'ubali kura mahinaputatu*
HUM.man-NOM.SG that play NON-HUM.football-ACC.SG with HUM.sissy-COM.SG
'That man play football with a sissy'

(P) *mahina to ninu kolawatirerui kura paninu'u*
HUM.woman-NOM.SG that eat NON-HUM.beer-ACC.PL with HUM.drunkard-COM.PL
'That woman drinks beers with drunkards'

All these samples attest that in the case of comitative, both human noun singular such as *mahinaputat*'sissy' (O), and plural, such as *paninu*'drunkards' (P) are inflected with an addition of suffix {-u}. However, a distinct inflection process is shown in (M) where the non-human object singular such as *seit* 'knife' is marked with a case marking suffix {-oti} and the non-human object plural *sendoeru*'spoons' (its singular form is *sendo*'spoon') as in (N) is also marked with suffix {-oti} but preceded by a plural marker {-eru}.

3.2 PFM Analysis

Based on the previous analysis and to realize all the word forms, PFM model is thus implemented here for mapping a root word to the correct inflected form by applying a set of realization rules. For example, given a root and the necessary grammatical properties of the given data, which is a grammatical case, the paradigm function will select the correct form for that word. This process helps explain how languages organize their word forms into structured paradigms to show how the inflections are executed in Pelauw-Haruku language.

Inflectional Noun (Human)
Here are the relevant defining features for the paradigm:
[CASE α:{nom, acc, dat, com}]

The Rule of Basic Stem Choice:
Based on what we have seen in the previous dataset, *malona* is the root, and the block is as follows:
[Root] :I]

X CASE

After mapping the value of feature and block, the Rule of Basic Stem Choice is given below:

PF(<MALONA,σ:{α}>) = PF(Stem(<L, σ:{α}>) = [[malona]:I]

The Rule of Exponence in terms of INPUT-OUTPUT functions/processes, with the respective block to account for the noun forms in the data:

BLOCK I.$_{CASE}$

a. I. PF(<MALONA, σ:{acc}>),
I. PF(<MALONA, σ:{dat}>),
I.PF(<MALONA, σ:{com}>) = PF(Stem(<MALONA, σ:{acc V dat V com}>))
⇒ Xu (Syncretic Exponent)

b. I. PF(<MALONA, σ:{ }>) = PF(Stem(<MALONA, σ:{ }>)) ⇒ X (default).

Inflectional Noun (Non-Human)

Here are the relevant defining features for the paradigms:

[PLURAL α: {pl}]
[CASE β: {nom, acc, dat, com}]

The Rule of Basic Stem Choice:

Based on what we have seen in the previous dataset, *sia* is the root and the blocks are as follows:

[[Stem] :I]: II]
X PL CASE

After mapping the value of features and blocks, the Rule of Basic Stem Choice is given below:

PF(<SIA, σ:{α,β}>) = PF(Stem(<L, σ:{α,β}>) = [[[sia]:I]:II]

The Rule of Exponence in terms of INPUT-OUTPUT functions/processes, with their respective blocks to account for the noun forms in the data:

BLOCK I.$_{PLURAL}$

a. I. PF(<SIA, σ:{pl, nom, redup}>) = PF(Stem(<SIA, σ:{pl, nom, redup}>)) ⇒ Xsia (specific)

b. I. PF(<SIA, σ:{pl}>) = PF(Stem(<SIA, σ:{pl}>)) ⇒ Xeru (less specific)

c. I. PF(<SIA, σ:{ }>) = PF(Stem(<SIA, σ:{ }>)) ⇒ X (default)

BLOCK II.$_{CASE}$

a. II. PF(<SIA, σ:{acc}>) = PF(Stem(<SIA, σ:{acc}>)) ⇒ Xi
b. II. PF(<SIA, σ:{dat}>) = PF(Stem(<SIA, σ:{dat}>)) ⇒ Xo
c. II. PF(<SIA, σ:{com}>) = PF(Stem(<SIA, σ:{com}>)) ⇒ Xoti

d. II. PF(<SIA, σ:{ }>) = PF(Stem(<SIA, σ:{ }>)) ⇒ X (default)

Syncretism

There is a syncretism [8] within the paradigms, which means there are specific rules that are just like other specific rules that take precedence over the general or canonical Paradigm Linkage Rule. Thus, syncretism can be realized using the Rule of Referral. For instance, here is the rule of referral:

If a. II. PF(<MALONA, σ:{acc}>) → PF(Stem(<SIA, σ:{acc}>)) = Xu
Then PF(<MALONA, σ:{dat}>) = PF(Stem(<SIA, σ:{acc}>))
Also PF(<MALONA, σ:{com}>) = PF(Stem(<SIA, σ:{acc}>))

Realisation of PFM rules

The final step involves the realization of each word to generate the following form. This means that word forms are deduced from base forms (roots) using rules rather than incrementally adding pieces like affixes. This distinction allows PFM to account for complex inflectional patterns, including cases where a word form may have multiple markers for a single grammatical feature.

Realisation of *malonau*

INPUT:
PF(<MALONA, σ:{acc,dat,com}>) = PF(Stem(<MALONA, σ:{acc,dat,com }>))
⇒ [[malona]:I] (Stem Choice)

BLOCK I:PF.CASE
a. INPUT: <malona, σ:{acc, dat, com}>
b. PF(<MALONA, σ:{acc}>),
PF(<MALONA, σ:{dat}>),
PF(<MALONA, σ:{com}>) = PF(Stem(<MALONA, σ:{acc V dat V com}>))
= [[malona]u] (Syncretic Exponent)
c. PF(<MALONA, σ:{acc,dat,com}>) = PF(Stem(<MALONA, σ:{acc,dat,com }>)) ⇒ Xu
malonau
OUTPUT:
< malonau, σ:{ acc, dat, com }>

Realisation of *sia-sia*

INPUT:
PF(<SIA, σ:{pl, nom, redup}>) = PF(Stem(<SIA, σ:{pl, nom, redup}>))
⇒ [[[sia]:I]:II] (Stem Choice)

BLOCK I:PF.PLURAL
a. INPUT: <sia, σ:{pl, nom, redup}>
b. PF(<SIA, σ:{pl, nom, redup}>) = PF(Stem(<SIA, σ:{pl, nom, redup}>)

= [[[sia]sia]:II] (Specific)
c. PF(<SIA, σ:{pl, nom, redup}>) = PF(Stem(<SIA, σ:{pl, nom, redup}>)) ⇒ Xsia
siasia
BLOCK II:PF.CASE
a. INPUT: <siasia, σ:{pl, nom, redup}>
b. PF(<SIA, σ:{ }>) = PF(Stem(<SIA, σ:{ }>) = X
[[[siasia]] (Default)
c. PF(<SIA, σ:{pl, nom, redup}>) = PF(Stem(<SIA, σ:{pl, nom, redup}>)) ⇒ X
siasia
OUTPUT:
< siasia, σ:{pl, nom, redup}>

Realisation of *siaerui*

INPUT:
PF(<SIA, σ:{pl, acc}>) = PF(Stem(<SIA, σ:{pl, acc}>))
⇒ [[[sia]:I]:II] (Stem Choice)

BLOCK I:PF.PLURAL
a. INPUT: <sia, σ:{pl, acc}>
b. PF(<SIA, σ:{pl}>) = PF(Stem(<SIA, σ:{pl}>)
= [[[sia]eru]:II]
c. PF(<SIA, σ:{pl, acc}>) = PF(Stem(<SIA, σ:{pl, acc}>)) ⇒ Xeru
siaeru
BLOCK II:PF.CASE
a. INPUT: <siaeru, σ:{pl, acc}>
b. PF(<SIA, σ:{acc}>) = PF(Stem(<SIA, σ:{acc}>)) = [[[siaeru]i]
c. PF(<SIA, σ:{pl, acc}>) = PF(Stem(<SIA, σ:{pl, acc}>)) ⇒ Xi
siaerui
OUTPUT:
< siaerui, σ:{pl, acc}>

Realisation of *siaeruo*

INPUT:
PF(<SIA, σ:{pl, dat}>) = PF(Stem(<SIA, σ:{pl, dat}>))
⇒ [[[sia]:I]:II] (Stem Choice)

BLOCK I:PF.PLURAL
a. INPUT: <sia, σ:{pl, dat}>
b. PF(<SIA, σ:{pl}>) = PF(Stem(<SIA, σ:{pl}>) = [[[sia]eru]:II]
c. PF(<SIA, σ:{pl, dat}>) = PF(Stem(<SIA, σ:{pl, dat}>)) ⇒ Xeru
siaeru
BLOCK II:PF.CASE
a. INPUT: <siaeru, σ:{pl, dat}>
b. PF(<SIA, σ:{dat}>) = PF(Stem(<SIA, σ:{dat}>)) = [[[siaeru]o]

c. PF(<SIA, σ:{pl, dat}>) = PF(Stem(<SIA, σ:{pl, dat}>)) ⇒Xo
siaeruo
OUTPUT:
< siaeruo, σ:{pl, dat}>

Realisation of *siaeruoti*

INPUT:
PF(<SIA, σ:{pl, com}>) = PF(Stem(<SIA, σ:{pl, com}>))
⇒ [[[sia]:I]:II] (Stem Choice)

BLOCK I:PF.$_{\text{PLURAL}}$
a. INPUT: <sia, σ:{pl, com}>
b. PF(<SIA, σ:{pl}>) = PF(Stem(<SIA, σ:{pl}>) = [[[sia]eru]:II]
c. PF(<SIA, σ:{pl, com}>) = PF(Stem(<SIA, σ:{pl, com}>)) ⇒ Xeru
siaeru
BLOCK II:PF.$_{\text{CASE}}$
a. INPUT: <siaeru, σ:{pl, com}>
b. PF(<SIA, σ:{com}>) = PF(Stem(<SIA, σ:{com}>)) = [[[siaeru]oti]
c. PF(<SIA, σ:{pl, com}>) = PF(Stem(<SIA, σ:{pl, com}>)) ⇒ Xoti
siaeruoti
OUTPUT:
< siaeruoti, σ:{pl, com}>

Overall, the realization rules in PFM can help determine how a base form – such as a root word or stem – is transformed into its various inflected forms based on plurality and grammatical case. PFM attests that these realization rules have been applied systematically to generate word forms that fill the cells of a paradigm.

4 CONCLUSION

The discussions and analysis using PFM above led to a general understanding about the noun infections in Pelauw-Haruku language. The results show that most of the inflections occur depending on the number and the case. All in all, these inflections can be easily captured by implementing the PFM model. This can be seen from the findings that demonstrate how PFM has mapped the inflection patterns in Pelauw-Haruku nouns, highlighting the various ways in which plurality and case are marked through both regular and irregular morphological processes.

Nevertheless, since this study focuses solely on noun inflections, it leaves verbal morphology unexplored. Hence, future research should also examine other parts of speech, such as verbs and adjectives, and consider grammatical features like tense, aspect, and mood.

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DISCLOSURE OF INTERESTS

The author declares that there are no financial, personal, or professional conflicts of interest that could have influenced the results or interpretation of this study. The research was conducted purely for academic and scientific purposes, with the primary aim of contributing to the linguistic documentation and analysis of the Pelauw-Haruku language. Furthermore, all data collected from native speakers was obtained with full consent, adhering to ethical standards for linguistic fieldwork and ensuring that the rights and cultural sensitivities of the language community were respected throughout the research process. Any potential funding sources or institutional affiliations were transparently acknowledged, with no undue influence on the research outcomes.

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