

Arrangement of Modifier Lexemes in Common Bird Names Based on Lexical Domains in Malay Language

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Abstract

The information and understanding regarding the arrangement of modifier lexemes based on lexical domains in Malay common bird names is needed in order to provide a more detailed and complete guide for the standardization process. In accordance with this necessity, a qualitative study was conducted, focusing on extracting the arrangement of modifier lexemes in Malay common bird names based on lexical domains and discussing the arrangement of modifier lexemes in Malay common bird names based on lexical domains. This study involved the application of document analysis method for data collection and use of the Delphi method for data validation. In line with the use of these two methods, this study utilized the Template Construction Procedure by Lei et al (2014) as an approach to analyze the Malay common bird names from the Malaysia Biodiversity Information System (MyBIS) database. Based on this procedure, the common bird names were analyzed through five main steps, namely; preparation of the main list, name segmentation, identifying the match between lexeme-lexical domain, replacement of lexeme with markers and updating the output. As the main results, this study revealed that there are 131 different arrangements of modifier lexemes in Malay common bird names which consist of two modifiers. This study also uncovered the presence, position, similarities, and differences of modifier lexemes in the structure of common bird names based on lexical domains. The findings of this study serve as valuable references, providing essential guidance for the standardization process of common bird names in the Malay language. The study of modifier lexeme arrangement based on these lexical domains should be further extended to include Malay common names for other categories of animals such as fish, insects, mammals and reptiles.

Keywords: Lexeme Arrangement, Modifier Lexeme, Common Name, Bird Name, Malay Language.

Introduction

In the Malay language, there are common bird names that can lead to confusion. For example, three different common names '*takur pipi hitam*', '*takur pipi biru*', and '*takur akar*', refer to only one species, which is *Psilopogon duvaucelii* (MyBIS, 2020). Additionally, there is one common name, '*helang laut*', which refers to three different species, namely *Haliaeetus albicilla*, *Haliaeetus leucogaster*, and *Haliaeetus leucocephalus* (MyBIS, 2020). This confusion can lead to adverse consequences for various parties, including translators, dictionary makers, zoological researchers, and the general public who use common bird names in the Malay language. To avoid this confusion, common bird names need to be standardized through various processes such as evaluating existing common names, creating new common names, and selecting appropriate common names (Ornithology, 2019). These processes require various guidelines, including guidelines regarding the arrangement of modifier lexemes based on lexical domains in common bird names.

A lexical domain is a set of lexemes that collectively encompass all or part of a concept (Faber & Usón, 1999). For example, the lexical domain color is a set that includes lexemes such as '*merah*' (red), '*biru*' (blue), and '*hijau*' (green), which share a similar concept. In other words, lexemes that share similar concepts are members of the same lexical domain. According to Vera (2003), the membership of lexemes in a lexical domain can be determined based on the genus. The genus represents the core meaning and category of information that can be found in the definition of a lexeme (Selja et al., 2017). For instance, the lexeme '*merah*' (red) has the genus '*warna*' (color) in its definition '*warna seperti darah*' (color like blood). This genus indicates that the lexeme '*merah*' is a member of the lexical domain of color. This explains that this genus can indicate the membership and lexical domain of a modifier lexeme. According to Lei et al (2014), the markers of membership and lexical domain can show the arrangement of modifier lexemes in a name structure more clearly.

Following that, the study by Koopman and Turner (2019) elucidated that there are six primary arrangements of lexemes in the structure of common bird names in the Zulu language. Two of these arrangements are 'action + animal' and 'animal + action'. The arrangement of 'action + animal' was extracted from the common bird name '*isixula-masele*', which carries the meaning of 'catching + frog' (Koopman and Turner, 2019). This arrangement indicates that the lexeme at the beginning of the common bird name is a member of the lexical domain of action. This shows the presence of the core meaning 'action' at the beginning of common bird names in Zulu. On the other hand, the arrangement of 'animal + action' was extracted from the common bird name '*inhlave-bizelayo*', which conveys the meaning of 'honeyguide + calling someone' (Koopman and Turner, 2019). This arrangement indicates that the lexeme at the end of the common bird name is a member of the lexical domain of action. This clarifies that there is a core meaning of 'action' at the end of common bird names in Zulu. Both arrangements of lexemes, 'action + animal' and 'animal + action', reveal differences in the position of the core meaning contained within the structure of common bird names in the Zulu language.

Besides, the arrangement of modifier lexemes based on lexical domains can also indicate the position of information categories related to aspects that have a connection with the referenced bird in a common name. According to research about English bird names by Kos (2011), the common bird name 'haw-finch' consists of the arrangement of modifier lexemes 'food + animal'. This arrangement show that the modifier lexeme 'haw' contains information about a type of 'food' related to the referenced bird. In other words, there is an information category of 'food' in the modifier lexeme at the beginning of the bird common name 'haw-

finch' (Kos, 2011). This 'food' category indicates that 'haw' refers to a 'nutritious substance eaten by an animal to maintain life' (Cambridge University Press, n.d.). The arrangement of modifier lexemes in this common name can illustrate common features of 'haw' that relate to the referenced bird and the position of 'food' information in the name 'haw-finch'.

However, current common names still lack comprehensive and detailed guidelines for standardization Tsukamoto (2020), especially guidelines that encompass the arrangement of modifier lexemes in common bird names. In the Malay language, the existing guidelines for standardization are still too general. For example, the General Guidelines for Term Construction (DBP, 2004) can only explain that the common bird name '*pucung danau india*' consists of a combination of lexemes. However, this General Guidelines for Term Construction (DBP, 2004) do not provide sufficient information to explain the arrangement and position of the modifier lexemes present in the common name '*pucung danau india*' based on lexical domains. As a consequence, the process of determining the position of the core meaning and information categories in existing common names becomes challenging. This limitation hinders the evaluation, construction, and selection of common names (Asrul et al., 2014). This issue can make the standardization of common bird names more difficult and time-consuming. Therefore, information about the arrangement of modifier lexemes in Malay common bird names based on lexical domains is highly necessary to provide a more comprehensive and detailed guide for the standardization process.

Objective

This study aims to acquire information and understanding about the arrangement of modifier lexemes according to lexical domains, which can facilitate in the preparation of guidelines for the standardization of common bird names in the Malay language. Based on this aim, two objectives have been established

1. To extract the arrangement of modifier lexemes in Malay common bird names based on lexical domains,
2. To discuss the arrangement of modifier lexemes in Malay common bird names based on lexical domains.

Methodology

This research constitutes a qualitative study that employs the method of document analysis. The documents used for analysis in this study are sourced from the Malaysia Biodiversity Information System (MyBIS) database, which is administered by the Malaysia Biodiversity Centre (MBC). This database contains common bird names in the Malay language with specific name structures. According to Berlin (1973), a specific name consists of a head lexeme and a modifier lexeme. The head lexeme in these common names represents the generic name or the general category of a bird species. Meanwhile, the modifier lexeme serves to indicate the specification and description of a group of birds (Fontaine, 2012; Halliday, 1994). To achieve the objectives of this study, a total of 1065 specific common bird names in Malay language from the MyBIS database were analyzed based on the Template Construction Procedure by (Lei et al., 2014). Following this procedure, the process of extracting templates for the arrangement of modifier lexemes in common bird names according to lexical domains was carried out through five sequential steps as follows:

Step 1: Preparation of the main list

To create the main list of common bird names, only Malay common bird names from the MyBIS database were selected and compiled into a database known as the Main Database. Scientific names and common names in foreign languages such as Latin and English were excluded. However, foreign common names and dialectal names borrowed into Malay language were also chosen and included in the Main Database.

Step 2: Name segmentation

The common bird names within the Main Database were segmented. Each space, which is the gap between lexemes within a common bird name, was replaced with the '+' symbol. This space replacement to '+' symbol was executed using the "Replace > Find [^w] > Replace with [+] > Replace All" function in Microsoft Office Word. For example, this segmentation process transformed the common bird name '*murai batu pulau*' into '*murai + batu + pulau*'.

Step 3: Identifying the match between lexeme and lexical domain.

All modifier lexemes present in the common bird names within the Main Database were listed. Next, definitions for each lexeme in this list were gathered from the *Kamus Dewan Perdana* (DBP, 2020), *Kamus Sains dan Teknologi* (DBP, 2017) and *Kamus Pelajar* (DBP, 2015). Next, the genus found within the definitions of these lexemes was examined to identify the membership of the modifier lexemes according to the lexical domains. Based on this membership, a list of matches between the modifier lexemes and the lexical domain markers was established, as shown in Table 1. This list of matches was then reviewed and validated by five experts on bird nomenclature through three rounds of the Delphi method.

Table 1

Matches between the modifier lexemes and the lexical domain

Modifier lexemes	Definition	Genus (Lexeme membership)	Matches: (Lexeme, Lexical domain markers)
merah	Warna seperti darah.	warna (color)	merah, color
besar	Ukuran sesuatu objek yang tinggi, panjang dan lebar.	ukuran (measure)	besar, measure
pongsu	Muka bumi yang terbentuk daripada sarang anai-anai.	muka bumi (landform)	pongsu, landform
bakau	Nama sejenis pokok yang tumbuh ditepi pantai.	nama tumbuhan (plant name)	bakau, plant name

Step 4: Replacement of lexeme with markers

The head lexemes found within the segmented common bird names were replaced with a generic name marker, namely [GN]. Meanwhile, the modifier lexemes were replaced with markers denoting lexical domains such as [color], [sound], [landform], [body_part], and [soil_particle]. This replacement was carried out using the Find and Replace - Multiple Text software. For instance, the replacement of head lexemes and modifier lexemes in the common bird name '*murai + batu + pulau*' with these markers resulted in extracting the template of lexeme arrangement 'GN + soil_particle + landform'.

Step 5: Updating the output

All the extracted lexeme arrangement templates were gathered. Then, these lexeme arrangement templates were aligned with their respective common bird names in a list.

The templates extracted through the five steps in this procedure can show the arrangement of modifier lexemes in 1065 Malay common bird names with one, two, and three modifiers. In this paper, the focus has been on discussing the arrangement of modifier lexemes for 438 common bird names that only have two modifiers.

Research Findings

This study shown that there are a total of 131 arrangements of modifier lexemes that have been extracted from 438 common bird names with two modifier lexemes. The following Table 2 shows the arrangement of modifier lexemes found in common bird names in the Malay language based on lexical domains.

Table 2

Arrangement of modifier lexemes in common bird names.

No.	Arrangement of modifier lexemes	Common bird names
1.	GN + action + body_part	<i>berek-berek + carik + dada</i>
2.	GN + action + cardinal_direction	<i>helang + sewah + utara</i>
3.	GN + action + exchange_medium	<i>rapang + minta + duit</i>
4.	GN + action + fabric	<i>hantu + carik + kafan</i>
5.	GN + action + family_member	<i>enggang + terbang + mentua</i>
6.	GN + action + measure	<i>helang + sewah + besar</i>
7.	GN + action + pattern	<i>tekukur + sewah + berjalur</i>
8.	GN + action + phenomenon	<i>berek-berek + tadah + hujan</i>
9.	GN + action + place_name	<i>helang + sewah + cina</i>
10.	GN + action+ animal_name	<i>pacat + gembala + pelanduk</i>
11.	GN + animal_name + body_part	<i>helang + ular + berjambul</i>
12.	GN + animal_name + color	<i>tirjup + layang-layang + kelabu</i>
13.	GN + animal_name + commonness	<i>falko + kestral + biasa</i>
14.	GN + animal_name + disease	<i>sambar + murai + gila</i>
15.	GN + animal_name + landform	<i>helang + rajawali + gunung</i>
16.	GN + animal_name + measure	<i>sewah + tekukur + besar</i>
17.	GN + animal_name + pattern	<i>cekup + belalang + berjalur</i>
18.	GN + animal_name + person_name	<i>stom + petral + wilson</i>
19.	GN + animal_name + place_name	<i>helang + lebah + asia</i>
20.	GN + animal_name + plant_name	<i>sambar + kumbang + padi</i>
21.	GN + animal_name + remnant	<i>rimba + merbah + sampah</i>
22.	GN + animal_name + soil_particle	<i>rimba + murai + batu</i>
23.	GN + atmosphere + landform	<i>kuang + raya + gunung</i>
24.	GN + body_part + action	<i>kekicau + tekak + kembang</i>
25.	GN + body_part + atmosphere	<i>kekicau + ubun + gelap</i>
26.	GN + body_part + body_part	<i>kekicau + ubun + sisik</i>
27.	GN + body_part + clamping_tool	<i>upih + paruh + sepi</i>
28.	GN + body_part + color	<i>berek-berek + kepala + perang</i>

29.	GN + body_part + cooking_tool	<i>kedidi + paruh + sudu</i>
30.	GN + body_part + crafting_tool	<i>punai + ekor + baji</i>
31.	GN + body_part + energy_source	<i>berkek + ekor + kipas</i>
32.	GN + body_part + farming_tool	<i>itik + paruh + bajak</i>
33.	GN + body_part + fruit	<i>punai + leher + jambu</i>
34.	GN + body_part + landform	<i>merbah + berjanggut + gunung</i>
35.	GN + body_part + measure	<i>hantu + sayap + panjang</i>
36.	GN + body_part + metal	<i>rimba + telinga + perak</i>
37.	GN + body_part + pattern	<i>kedidi + ekor + berjalur</i>
38.	GN + body_part + place_name	<i>tiong + jambul + cina</i>
39.	GN + body_part + position	<i>kedidi + paruh + tegak</i>
40.	GN + body_part + sewing_tool	<i>kedidi + paruh + jarum</i>
41.	GN + body_part + shape	<i>helang + ekor + cabang</i>
42.	GN + clothing + color	<i>camar + topi + hitam</i>
43.	GN + color + action	<i>sambar + biru + berhijrah</i>
44.	GN + color + color	<i>belatuk + hitam + putih</i>
45.	GN + color + defect	<i>sambar + biru + kerdil</i>
46.	GN + color + flower	<i>perling + hitam + ros</i>
47.	GN + color + landform	<i>sambar + biru + hutan</i>
48.	GN + color + life_stage	<i>sambar + biru + muda</i>
49.	GN + color + pattern	<i>belatuk + merah + berjalur</i>
50.	GN + color + place_name	<i>murai + biru + siberia</i>
51.	GN + color + plant_name	<i>sambar + biru + bakau</i>
52.	GN + cutting_tool + action	<i>kendi + pisau + raut</i>
53.	GN + cutting_tool + measure	<i>kelicap + sabit + besar</i>
54.	GN + cutting_tool + pattern	<i>kelicap + sabit + berjalur</i>
55.	GN + defect + jewelry	<i>pungguk + kerdil + bercekak</i>
56.	GN + defect + landform	<i>murai + kerdil + gunung</i>
57.	GN + disease + landform	<i>murai + gila + gunung</i>
58.	GN + disease + pattern	<i>murai + gila + berbintik</i>
59.	GN + disease + plant_name	<i>enggang + gatal + birah</i>
60.	GN + emotion + color	<i>kekicau + riang + hitam</i>
61.	GN + emotion + landform	<i>pekaka + riang + rimba</i>
62.	GN + emotion + plant_name	<i>kekicau + riang + halia</i>
63.	GN + energy_source + commonness	<i>sambar + kipas + biasa</i>
64.	GN + energy_source + measure	<i>kedidi + dian + besar</i>
65.	GN + energy_source + pattern	<i>sambar + kipas + berbintik</i>
66.	GN + food+ body_part	<i>merbah + coklat + berjambul</i>
67.	GN + fruit + landform	<i>belatuk + pinang + rimba</i>
68.	GN + fruit + life_stage	<i>belatuk + pinang + muda</i>
69.	GN + fruit + measure	<i>belatuk + pinang + kecil</i>
70.	GN + fruit_part + fruit	<i>belatuk + biji + nangka</i>
71.	GN + indicator + phenomenon	<i>takau + tanda + hujan</i>
72.	GN + jewelry + color	<i>takur + mahkota + kuning</i>
73.	GN + jewelry + life_element	<i>takur + jumbai + api</i>
74.	GN + jewelry + measure	<i>rapang + gelang + besar</i>

75.	GN + landform + color	<i>sambar + paya + merah</i>
76.	GN + landform + defect	<i>kekicau + rimba + kerdil</i>
77.	GN + landform + landform	<i>merak + pongsu + gunung</i>
78.	GN + landform + measure	<i>cekup + paya + besar</i>
79.	GN + landform + pattern	<i>kekicau + rimba + berlorek</i>
80.	GN + landform + phenomenon	<i>takau + rimba + hujan</i>
81.	GN + landform + place_name	<i>gagak + gunung + borneo</i>
82.	GN + landform + soil_particle	<i>sambar + hutan + batu</i>
83.	GN + life_element + body_part	<i>layang-layang + pokok + berjambul</i>
84.	GN + life_element + color	<i>kedidi + air + kelabu</i>
85.	GN + life_element + landform	<i>kedidi + air + hutan</i>
86.	GN + life_element + life_element	<i>pipit + tanah + pokok</i>
87.	GN + life_element + measure	<i>layang-layang + pokok + kecil</i>
88.	GN + life_element + plant_category	<i>layang-layang + pokok + palma</i>
89.	GN + life_stage + family_member	<i>sewah + mati + anak</i>
90.	GN + measure + body_part	<i>camar + kecil + berjambul</i>
91.	GN + measure + place_name	<i>belatuk + kecil + sunda</i>
92.	GN + metal + commonness	<i>pekaka + emas + biasa</i>
93.	GN + metal + plant_name	<i>pekaka + emas + bakau</i>
94.	GN + pattern + body_part	<i>kedidi + lurus + leher</i>
95.	GN + pattern + color	<i>pacat + belang + biru</i>
96.	GN + pattern + landform	<i>merbah + lorek + bukit</i>
97.	GN + pattern + metal	<i>segan + bintik + emas</i>
98.	GN + phenomenon + food	<i>petral + badai + coklat</i>
99.	GN + phenomenon + pattern	<i>murai + cegar + berjalur</i>
100.	GN + place_name + body_part	<i>camar + cina + berjambul</i>
101.	GN + plant_name + body_part	<i>murai + tarum + bersisik</i>
102.	GN + plant_name + color	<i>murai + tarum + biru</i>
103.	GN + plant_name + place_name	<i>murai + tarum + siberia</i>
104.	GN + plant_part + landform	<i>cekup + daun + gunung</i>
105.	GN + plant_part + measure	<i>kedidi + daun + besar</i>
106.	GN + plant_part + phenomenon	<i>sepah + bunga + pelangi</i>
107.	GN + plant_part + place_name	<i>cekup + daun + artik</i>
108.	GN + plant_part + plant_name	<i>cekup + daun + bakau</i>
109.	GN + remnant + status	<i>kelicap + sepah + raja</i>
110.	GN + soil_particle + body_part	<i>camar + batu + berumbai</i>
111.	GN + soil_particle + color	<i>murai + batu + putih</i>
112.	GN + soil_particle + container	<i>kedidi + pasir + kendi</i>
113.	GN + soil_particle + landform	<i>murai + batu + pulau</i>
114.	GN + soil_particle + measure	<i>murai + batu + pejal</i>
115.	GN + soil_particle + pattern	<i>murai + batu + belang</i>
116.	GN + soil_particle + person_name	<i>murai + batu + everett</i>
117.	GN + soil_particle + rock	<i>layang-layang + batu + kapur</i>
118.	GN + soil_particle + sound	<i>murai + batu + siul</i>
119.	GN + soil_particle + structure	<i>murai + batu + kubur</i>
120.	GN + sound + landform	<i>sambar + siul + belukar</i>

121.	GN + sound + measure	<i>pekaka + cit-cit + kecil</i>
122.	GN + sound + place_name	<i>murai + bersiul + titiwangsa</i>
123.	GN + status + action	<i>cekup + raja + berkawan</i>
124.	GN + status + animal_name	<i>cecawi + hamba + kera</i>
125.	GN + status + color	<i>merpati + raja + kelabu</i>
126.	GN + status + landform	<i>sepah + puteri + bukit</i>
127.	GN + status + phenomenon	<i>sepah + puteri + pelangi</i>
128.	GN + status + place_name	<i>cekup + raja + sunda</i>
129.	GN + status + sibling_level	<i>sepah + puteri + sulung</i>
130.	GN + status + status	<i>sepah + puteri + raja</i>
131.	GN + structure + color	<i>layang-layang + sarang + hitam</i>

Based on Table 2, this study show that there are various arrangements of modifier lexemes based on lexical domains in the common bird names with two modifiers in the Malay language. One of the arrangements extracted from this common bird name is 'GN + action + measure'. This arrangement was found in common bird names like '*helang sewah besar*'. In this common name '*helang sewah besar*', the first modifier lexeme, '*sewah*', is a member of the lexical domain of action, followed by the second modifier lexeme, '*besar*', which is a member of the lexical domain of measure. This is because the definition of the modifier lexeme '*sewah*' refers to '*perbuatan terbang rendah berhampiran dengan tanah*' (action of flying low near the ground). Within this definition, the genus '*perbuatan*' (action) is present. This genus indicates that the modifier lexeme '*sewah*' is a member to the lexical domain of action. Moving on, the definition for the modifier lexeme '*besar*' is '*ukuran sesuatu objek yang tinggi, panjang dan lebar*' (measure of an object that is tall, long, and wide) (DBP, 2020). The genus '*ukuran*' (measure) is present in this definition, indicating that the modifier lexeme '*besar*' is a member to the lexical domain of measure. The genus present in this definition indicates the lexical domain of a modifier lexeme. The lexical domains of the first and second modifier lexemes can highlight the arrangement of modifier lexemes in Malay common bird names.

These arrangement of modifier lexemes based on lexical domains can indicate the core meaning and information category position present in the common bird names (Koopman & Turner, 2019). For example, the arrangement 'GN + body_part + pattern' can show that there is core meaning of 'body part' in the first modifier lexeme that comes after the generic name in common bird names like '*belatuk leher berpetak*', '*kedidi ekor berjalur*', and '*merbah telinga lurus*'. This serves as a guide that the first modifier lexemes, namely '*leher*', '*ekor*', and '*telinga*' in these common names can convey specific meanings related to body part of the referred bird. Furthermore, the arrangement 'GN + body_part + pattern' can also signify the presence of the information category of 'pattern' in the modifier lexeme at the end of common bird names like '*belatuk leher berpetak*', '*kedidi ekor berjalur*', and '*merbah telinga lurus*'. This indicates that information about specific patterns related with the referred birds can found in the modifier lexemes '*berpetak*', '*berjalur*', and '*lurus*', which are the modifier lexemes that comes at the end of the common bird names with two modifier.

Arrangement of modifier lexemes based on lexical domains

The arrangement of modifier lexemes extracted in this study can indicate the lexical domains for the modifier lexemes arranged within all existing Malay common bird names. Furthermore, these arrangements can also highlight specific lexical domains for the modifier

lexemes in common bird names that have two modifier (Refer to Table 2). The comparison of the number of lexical domains for these modifier lexemes is presented in Figure 1 below;

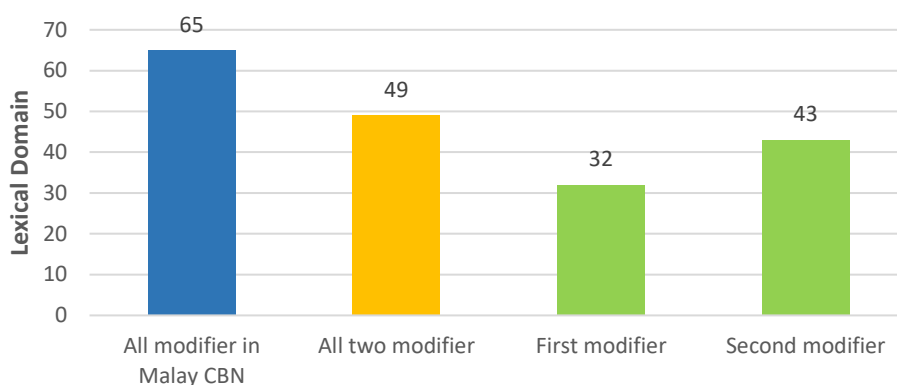


Figure 1: Number of lexical domain for modifier lexemes

This study has revealed that there are 49 lexical domains for modifier lexemes in common bird names with two modifiers out of the 65 lexical domains for modifier lexemes across all existing Malay common bird names. (Refer to Figure 1). The lexical domains of the modifier lexemes in the common bird names with two modifiers are the domain of action, animal name, atmosphere, body part, cardinal direction, clamping tool, clothing, color, commonness, container, cooking tool, crafting tool, cutting tool, defect, disease, emotion, energy source, exchange medium, fabric, family member, farming tool, flower, food, fruit, fruit part, indicator, jewelry, landform, life element, life stage, measure, metal, pattern, person name, phenomenon, place name, plant category, plant name, plant part, position, remnant, rock, sewing tool, shape, sibling level, soil particle, sound, status and structure. These lexical domains can be identified within the following arrangement, such as:

'GN + **action** + **family_member**', from the common bird name '*enggang terbang mentua*',
 'GN + **body_part** + **farming_tool**', from the common bird name '*itik paruh bajak*',
 'GN + **sound** + **measure**', from the common bird name '*pekaka cit-cit kecil*'.

This indicates that a total of 16 lexical domains for modifier lexemes in the entire Malay common bird names are not present in the arrangement of modifier lexemes for common bird names with two modifiers. These lexical domains consist of domains such as cosmetic, trap part, gemstone, light, ethnicity, fruit condition, surface condition, vehicle, quality, quantity, mythical creature, celestial object, appearance, weapon, behavior, and time. These lexical domains can only be observed in the arrangement of modifier lexemes for common bird names with a single modifier, as found in;

'GN + **time**', from '*helang malam*',
 'GN + **mythical_creature**', from '*ayam beroga*',
 'GN + **vehicle**', from '*takau rakit*'.

Figure 1 also indicates that out of the 49 lexical domains for modifier lexemes present in common bird names with two modifiers, there are only 31 lexical domains for the first modifier lexeme that appear after the generic name in common bird names. All of these lexical domains are domain of action, animal name, atmosphere, body part, clothing, color, cutting tool, defect, disease, emotion, energy source, food, fruit, fruit part, indicator, jewelry, landform, life element, life stage, measure, metal, pattern, phenomenon, place name, plant name, plant part, remnant, soil particle, sound, status and structure. These domains were found in the position of the first modifier lexeme in the arrangement of modifier lexemes, as shown in;

'GN + **cutting_tool** + measure', from '*kelicap sabit besar*',

'GN + **plant_part** + landform', from '*cekup daun gunung*',

'GN + **color** + landform' from '*sambar biru hutan*'.

On the other hand, a total of 18 lexical domains for modifier lexemes in the arrangement of common bird names with two modifiers do not exist in the position of the first modifier. These lexical domains include domain of cardinal direction, clamping tool, commonness, container, cooking tool, crafting tool, exchange medium, fabric, family member, farming tool, flower, person name, plant category, position, rock, sewing tool, shape, and sibling level.

Furthermore, the arrangement of modifier lexemes extracted in this study reveals that there are a total of 43 lexical domains for the second modifier lexemes in common bird names (Refer to Figure 1). The number of these lexical domains is lower compared to the 49 lexical domains for the modifier lexemes in all existing Malay common bird names with two modifiers. These 43 lexical domains for the second modifier lexemes encompass domain of action, animal name, atmosphere, body part, cardinal direction, clamping tool, color, commonness, container, cooking tool, crafting tool, defect, disease, energy source, exchange medium, fabric, family member, farming tool, flower, food, fruit, jewelry, landform, life element, life stage, measure, metal, pattern, person name, phenomenon, place name, plant category, plant name, position, remnant, rock, sewing tool, shape, soil particle, sibling level, sound, status and structure. These lexical domains can be observed in the position of the second modifier lexeme within the arrangement, such as:

'GN + soil_particle + **container**', from '*kedidi pasir kendi*'

'GN + soil_particle + **person_name**', from '*murai batu everett*'

'GN + clothing + **color**', from '*camar topi hitam*'.

Other than these 43 lexical domains, a total of 6 lexical domains for the modifier lexemes in the arrangement of common bird names with two modifiers do not exist in the position of the second modifier, namely the lexical domains of cutting tool, fruit part, plant part, clothing, indicator, and emotion.

Based on Figure 1, this study indicates that the number of lexical domains for the second modifier lexemes, which is a total of 43 lexical domains, is higher than the 31 lexical domains for the first modifier lexemes present in the arrangement of common bird names with two modifiers. This reveals that the variation in core meanings and information categories within the arrangement of the second modifier is greater compared to the first modifier in common bird names with two modifiers. Besides to these differences, there are also similarities

between the lexical domains for the modifier lexemes arranged as the first and second modifiers in common bird names with two modifiers. These similarities can be found on 25 lexical domains, which are domain of action, animal name, atmosphere, body part, color, defect, disease, energy source, food, fruit, jewelry, landform, life element, life stage, measure, metal, pattern, phenomenon, place name, plant name, remnant, soil particle, sound, status, and structure. These similarities demonstrate that there are 25 core meanings and information categories that can exist in both the positions of the first and second modifier lexemes in common bird names with two modifiers.

Arrangements of modifier lexemes with same lexical domains

This study found that there are five arrangements of two modifier lexemes that are members of the same lexical domain in Malay common bird names (Refer to Table 2). These arrangements of modifier lexemes can be observed as the following list:

GN + body_part + body_part

GN + life_element + life_element

GN + landform + landform

GN + status + status

GN + color + color

The arrangement of the modifier lexemes 'GN + body_part + body_part' can indicate that there is an arrangement of first and second modifier lexemes which are members of the same lexical domain in common bird names. This arrangement was found in bird names such as '*kekicau ubun sisik*'. Both the first and second modifier lexemes in this common bird name are members of the body part lexical domain. This is because the first modifier lexeme '*ubun*' in this bird name has the genus '*anggota*' (body part) in its definition, '*anggota badan di atas dahi di kawasan kepala*' (a body part above the forehead in the head region) (DBP, 2017). This bird name also has the second modifier lexeme '*sisik*', which also has the genus '*anggota*' (body part) in its definition, which referring to '*anggota badan berupa kepingan tersusun yang melindungi kulit*' (body parts in the form of arranged plates that protect the skin). According to Jeyarajasingam et al. (2016), the modifier lexemes '*ubun*' and '*sisik*' were chosen as the first and second modifier lexemes in the construction of the bird name '*kekicau ubun sisik*', to provide information about the bird's body part on head region which has a pattern resembling a body part in the form of arranged plate that protect the skin of fish.

Furthermore, the arrangement of the first and second modifier lexemes which are member of the same lexical domain can be observed through the arrangement of 'GN + landform + landform'. One of the common bird names that contains this arrangement of modifier lexemes is '*merak pongsu gunung*'. In this name, there are first and second modifier lexemes that are members of the lexical domain of landform. This is because the lexeme '*pongsu*', which serves as the first modifier in this bird name, has the genus '*muka bumi*' (landform) in its definition, '*muka bumi yang terbentuk daripada sarang anai-anai*' (a landform formed from termite mounds). The same '*muka bumi*' (landform) genus is also present in the definition of the second modifier lexeme '*gunung*', referring to '*muka bumi yang lebih tinggi daripada bukit*' (a landform that is higher than a hill) (DBP, 2015). The lexeme '*pongsu*' was selected as the first modifier in this bird's name '*merak pongsu gunung*' to convey the meaning that describes the landform formed from termite mounds, which becomes the place where this species of bird build their nest (Thai National Parks, 2023). Meanwhile, the lexeme

'*gunung*' was chosen as the second modifier in this bird's name to convey a meaning of a landform that is higher than a hill where is a habitat for this bird species.

The arrangement of the first and second modifier lexemes that are members of the same lexical domain can also be observed through the arrangement of the modifier lexemes 'GN + warna + warna'. An example of a common bird name that follows this arrangement is '*dendang hitam merah*'. In this common bird name, both first and second modifier lexemes are members of the lexical domain of color. This is because the lexeme '*hitam*', which is the first modifier in this name, has the genus '*warna*' (color). The genus can be observed through the definition of '*hitam*', which means '*warna seperti arang*' (color like charcoal) (DBP, 2015). Additionally, the genus '*warna*' (color) is also present in the lexeme '*merah*', which is the second modifier in the common bird name '*dendang hitam merah*'. This genus can be seen through the definition of '*merah*', which means '*warna seperti darah*' (color like blood) (DBP, 2020). According to Arlott & Perlo (2021), the lexemes '*hitam*' and '*merah*' were chosen as the first and second modifiers in construction of common bird name '*dendang hitam merah*' to provide information about the colors resembling blood and charcoal that can be seen on the bird body.

Arrangements of modifier lexemes with different lexical domains

Based on this study, there are 44 distinct arrangements of two modifier lexemes that are member of different lexical domains in Malay common bird names (Refer to Table 2). Several of these arrangements are outlined as follows:

GN + landform + measure

GN + color + pattern

GN + pattern + color

GN + body_part + measure

GN + measure + body_part

The arrangement of the modifier lexemes 'GN + landform + measure' can indicate that there is a arrangement of the first and second modifier lexemes which are member of different lexical domains. This arrangement was found in common bird names like '*cekup paya besar*'. The first modifier lexeme in this bird name is a member of the lexical domain of landform, followed by the second modifier lexeme that is a member of the lexical domain of measure. This is because the first modifier lexeme, '*paya*', in this bird name has the genus '*muka bumi*' (landform) in its definition, '*muka bumi berupa daratan yang digenangi air yang ditumbuhi berbagai jenis tumbuhan*' (landform in form of wetland covered with various types of plants). On the other hand, the second modifier lexeme, '*besar*', has the genus '*ukuran*' (measure) as seen in its definition, '*ukuran sesuatu objek yang tinggi, panjang dan lebar*' (measure of an object in terms of height, length, and width) (DBP, 2020). Research conducted by Kennerley & Pearson (2010) reveals that the lexemes '*paya*' and '*besar*' were chosen as the first and second modifier lexemes in the construction of common bird name '*cekup paya besar*' to provide information about the landform in form of wetland covered with various types of plants where is a habitat of the referred bird, followed by details about the larger measure of this particular species of warbler compared to other warbler species.

Next, the arrangement of the first and second modifier lexemes which are member of the different lexical domains can be found in the arrangement of 'GN + color + pattern'. One of the common bird names that follows this modifier lexemes arrangement is '*belatuk merah*'

berjalur'. The first modifier lexeme in this bird name is a member of the lexical domain of color, while the second modifier lexeme is a member of the lexical domain of pattern. This is because the lexeme '*merah*', which is the first modifier in common name '*belatuk merah berjalur*', has the genus '*warna*' (color) in its definition, '*warna seperti darah*' (color like blood) (DBP, 2020). The lexeme '*berjalur*', on the other hand, is the second modifier lexeme which has the genus '*corak*' (pattern) in its definition, '*corak garisan yang ada pada sesuatu permukaan*' (a pattern of lines on a surface). The arrangement of the modifier lexemes 'GN + color + pattern' conveys information about color followed by details about the pattern associated with the '*belatuk merah berjalur*' bird in its common name. This is supported by Arlott & Perlo (2021), who describe that this type of woodpecker has an obvious color like blood on its back and a pattern of lines on its chest.

This study also reveals the existence of a reversed arrangement of two modifier lexemes that are members of different lexical domains, contrasting with the 'GN + color + pattern' arrangement. This arrangement can be seen on the arrangement of 'GN + pattern + color,' was found in bird names such as '*pacat belang biru*'. The first modifier lexeme in this bird name is a member of lexical domain of pattern, followed by the second modifier lexeme that is a member of the lexical domain of color. This is due to the fact that the lexeme '*belang*', which serves as the first modifier in the common bird name, have the genus '*corak*' (pattern) in its definition, '*corak jalur yang lain warnanya dari warna dasar*' (a pattern of stripes that differs in color from the base color). On the other hand, the lexeme '*biru*', as the second modifier, has the genus '*warna*' (color) in its definition, '*warna seperti langit*' (a color akin to the sky) (DBP, 2020). The arrangement of the modifier lexemes 'GN + pattern + color' serves to convey information about the pattern followed by color related with the '*pacat belang biru*' bird in its common name. This aligns with the findings of Robson (2020), which explain that this species of kingfisher has bright striped patterns that are colored like the sky on its neck area.

Conclusion

Overall, this study revealed that there are various arrangements of modifier lexemes based on lexical domains in the Malay common bird names. The findings of this study also provide valuable information about the presence, positions, similarities, and differences of modifier lexemes in the structure of Malay common bird names based on lexical domains. The results of this study contribute important guidance regarding the syntactic structure and arrangement of modifier lexemes that are common or unique in Malay common bird names. Additionally, this study also reveals the position of core meanings and information categories contained within the Malay common bird names. This offers a valuable contribution to understanding how the Malay language conveys meanings and organizes information related to the referred birds in the existing common bird names. Furthermore, the exposure to linguistic patterns focused on the arrangement of modifier lexemes based on lexical domains in this study can contribute to a deep understanding of the practices and methods of bird naming in the Malay language. This understanding serves as an important asset for terminology experts, translators, ornithologists, and other specialists who responsible for the standardization of common bird names to provides a strong foundation to establish standardized bird naming practices. In the future, studies regarding the arrangement of modifier lexemes based on lexical domains should be conducted on Malay common names for animals in other categories such as fish, mammals, reptiles, and insects. The purpose of this further study is to provide a foundation of naming practices which can help to ensure that the efforts of standardizing common names in Malay language become easier, faster and

capable of providing accurate, precise, descriptive, and culturally and ecologically meaningful animal names.

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