

Color Terms and Mountain Culture in Thailand: A Sociocultural Linguistics Perspective¹

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Abstract

This article presents a sociocultural linguistics study aimed at exploring the relationship between color terms and the social and cultural context of mountain communities. These communities exhibit non-basic color terms, which are conceptualized as extending beyond basic color categories to reflect ecological and cultural influences. The study employs a sociocultural linguistics perspective to examine how language interacts with the social and environmental contexts of the communities. A mixed-methods approach is used, with data on color terms collected through interviews with key informants in the Phu Khiao Mountain Range, specifically in Kaset Sombun district, Chaiyaphum province. The participants include four individuals (two females, two males) aged between 40 and 50. The research tool utilized is a set of standardized color sheets consisting of 93 colors. The research findings are presented in both quantitative and qualitative terms. The results indicate that the social and cultural traditions of communities in mountainous areas include non-basic color terms that are closely linked to the colors of plants and animals indigenous to the mountains. Additionally, these terms are influenced by the geography, environment, way of life, and culture of the community, as well as by their dependence on the mountains for their livelihoods. Consequently, non-basic color terms exhibit a dynamic relationship with the society and culture of the people residing in close proximity to the mountains and relying on them. However, it is noted that these terms for non-basic colors may undergo changes in the future if the cultural practices of the people no longer involve access to the mountains or if natural conditions change.

Keywords: Berlin and Kay, color terms, language and society, sociocultural linguistics

Introduction

Classifying and identifying color terms in each language reveals the relationship between language and culture, not only showcasing linguistic differences but also reflecting the language user's natural perception system and worldview. Berlin and Kay (1969) conducted an analysis of color naming in 20 languages worldwide, discovering variations in the identification and naming of 11 basic colors: white, black, red, green, yellow, blue, brown, purple, pink, orange, and gray. The number of basic color terms is intricately tied to the complexity of cultural patterns. In a study by Kay (1975), information on terms for additional colors in several languages was collected, revealing that the terms for green often encompass blue as well. Consequently, Kay proposed the use of the term 'GRUE' as a basic color term that encompasses

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both ‘green’ and ‘blue’ to replace the linguistic distinction that some languages make between the two. In Thai there are three colors: green, blue and cyan.

Drawing from Berlin and Kay’s theory of color terms and the evolution of basic color terms published in the late 20th century, color terms in various languages, including Thai, have been widely studied. Over the past 40 years, research on color terms in Thailand has continued to the present day, primarily through field data collection. Approaches to researching color terms can be classified into four categories. The first approach involves analyzing online data to examine the creation of non-basic color term units in Thai and English (Pongsirilak and Saralamba, 2020). The second focuses on studying color terms using the Thai National Corpus; exploring metaphors and metonymy, color terms expressing emotions in Thai, and historical comparisons using color terms from a cognitive linguistics perspective; as well as investigating color terms in the digital age (Kanchina, 2016; Unthanon and Chanthao, 2020; Phornthippayaphanit, 2020). The third approach entails researching color terms using document data, analyzing color term usage in Thai society and culture by collecting data from Thai dictionaries and expressions, as well as conducting comparative studies across various periods. This approach also explores the relationship between color terms and Thai traditional wisdom, beliefs, traditions, and way of life, drawing from the research findings of Thai linguists (Nakasakul, 1985; Sumniengngam, 1998; Wattanasapert, 1985; Engchuan, 2000; Tipkongka, 2010; Phornthippayaphanit, 2014; Honghengsong, 2018; Lordee, et al., 2018; Lordee and Teeranon, 2018; Noybangyang, 2021a, 2021b; Taibanguai and Srichampa, 2022; Unthanon and Chanthao, 2018).

The fourth approach, which is the most common, involves collecting field data by interviewing speakers of the target language using research tools such as colored sheets, materials, or locally available items. Researchers inquire about color terms from speakers of various language families residing in Thailand. This approach focuses on descriptive and comparative studies of color terms across different languages. It utilizes social factors to identify differences in color terms and perceptions, analyzing basic color terms, the evolution of color terms, non-basic color terms, color perception, and attitudes towards colors. These aspects have been examined by numerous Thai researchers (Witchurot, 1986; Ratanakul, 1987; Premsrirat, 1992; Luangthongkum, 1992; Prasithrathsint, 1995; Trongdee, 1998; Chua-Maharwan, 1998; Wattanasawat, 2002; Petwichit, 2002; Laophairoj, 2005; Wattanaphongsakul, 2005; Unthanon, 2007; Saleh, 2009; Siriphan, 2011; Phumaran, 2007; Rodsap, 2012, 2013a, 2013b, 2014; Keadnok, 2013; Phornthippayaphanit, 2014; Kowin, 2017; Jiang, 2017; Kaewjungate, 2017; Phuchomsri, 2018; Chanthao, 2018; Panitanang, Phuangsuan & Ikeda, 2019; Aroonroek, 2021; Kiatyuddhajati, 2021).

Research on color terms in Thailand, as discussed above, continues to focus on non-basic color terms, as described in earlier works by Kay (1975). Kay discovered that terms for non-basic colors often have extensions beyond basic color terms. These extensions frequently reflect a relationship with the environment and people’s way of life. Many studies have provided explanations about non-basic color terms related to the surrounding environment of Thai people. For example, Nakasakul (1985), Honghengsong (2018), and Taibanguai and Srichampa (2022) have all explained that Thai people create color terms by drawing from nature and the environment around them. These terms include references to various natural elements, such as flowers (e.g., bungor, butterfly pea, fuchsia, grayish flowers), parts of flowers (e.g., jasmine stem, lotus petal, rose apple pollen), fruits (e.g., the colors of walnuts, bullet wood fruits, ripe areca nuts), parts of fruits (e.g., the color of marian plum seeds, the color of mangosteen peels,

color of corn husks); plants (trees) like bamboo, teak, and tamarind; foods such as honey and shrimp paste; objects such as bricks and cement; parts of animals such as ivory and insect wings; and minerals and precious stones like rubies, onyx, diamonds, and emeralds. This wealth of color term information serves as linguistic evidence demonstrating the close relationship between color terms and the natural environment surrounding Thai people.

International research conducted outside Thailand in the 21st century has increasingly focused on investigating color terms in various environmental contexts. For instance, Fortescue (2016) examined color terms used by speakers of languages in the Arctic region. Fortescue found that the physical environment of the Arctic plays a crucial role in shaping color terms, with everyday objects, animals, snow-covered icebergs, and the perpetually cold climate influencing terminology. For example, *'qatar-*' denotes 'white' or 'pale,' encompassing references to 'white fox,' 'polar bear,' 'white clothing,' and 'white weather,' while *'qakuqtuq'* refers to 'white whale' or 'beluga,' and *'qakurnaq'* signifies 'white' or 'pale,' particularly in describing 'white icicles on trees,' and *'qaulluq-*' represents 'snow in the sunlight,' among others. Additionally, Twomey, et al. (2021) explored color term communication across 130 different languages, highlighting geographical location and local biogeography as factors contributing to the variation in color terms worldwide. Moreover, research on color terms intersects with language diversity in societies and cultures, influencing place-naming conventions. The investigation by Purev, et al. (2023) into place naming in various regions of Mongolia exemplifies this perspective. Their study reveals how Mongolian people residing in diverse landscapes utilize color terms in naming places for their environmental characteristics. For instance, Mongolians inhabiting deserts and steppe areas, characterized by a lack of distinct colors, employ a broader spectrum of color terms in naming places compared to those in continental climates with prominent physical features such as slopes and valleys. Consequently, these distinctive environmental traits play a crucial role in place naming, with fewer color terms observed in Mongolian place names in continental climates compared to those in desert and steppe regions.

Research on color terms in various languages has evolved to encompass the relationships within environmental and sociocultural contexts of native speakers. Concurrently, studies examining the correlation between color terms and environmental context have expanded. Moreover, the analysis of the relationship between color terms and social and cultural contexts has become increasingly refined, particularly with regard to non-basic color terms. These terms often reflect the concepts and sociocultural milieu of the community. Extensive research on color terms conducted throughout the 21st century has established that the environmental context significantly influences both color terms and human color perception. This serves as the guiding principle of our research, which aims to analyze color terms within the context of Thai society characterized by its mountainous environment. Our research endeavors not only to elucidate color terms associated with the mountain environment but also to elucidate the relationship between these color terms and the social and cultural lifestyles of mountain-surrounded communities, utilizing the framework of sociocultural linguistics. Thus, we are interested in exploring color terms within an environmental context by selecting a mountainous setting as our case study, seeking to address three primary issues: the manifestation of color terms in a mountain context, the interplay between non-basic color terms and mountain environments, and the extent to which the mountainous environment influences non-basic color terms and perceptions of color terms.

Related Research

Research on color terms among speakers of various languages in Thailand continues to explore both basic and non-basic color terms, drawing upon the concepts outlined by Kay (1975). The examination of non-basic color terms, which are often linked to the environment and the lifestyle of the people, is a recurring theme in many studies. For instance, Siriphan (2011) investigated color terms among speakers of Thai, Pwo Karen, Mon, and Khmu languages in Kanchanaburi province. Siriphan's research revealed that non-basic color terms among Thai speakers in Kanchanaburi are frequently formed by combining basic color terms with terms for plants or plant parts, animal names or body parts, and specific objects. Similarly, Kiattyuddhajati (2021) studied color terms in the Shan language in Mae Hong Son province, while Aroonroek (2021) conducted a similar study in Chiang Mai province. Both studies found that Shan people in these regions employ terms that reference specific natural elements, such as plants, animal parts, and objects, to create their own color terms.

Research conducted by Rodsap (2014) examined color terms in the Urak Lawoi language of Phuket, while Kaewjungate (2017) investigated color terms in the Moken language. These studies focused on color terms within ethnic groups residing on islands. The findings revealed that the Urak Lawoi and Moken people create non-basic color terms utilizing words for elements found in their natural surroundings as color descriptors. This evidence demonstrates the relationship between human perception, the concept of nature, and the surrounding environment. As Prasithratsint (1995) noted regarding differences in color perception across languages, Thai people inhabit a country abundant with trees, mountains, forests, and lush rice fields, leading to a greater familiarity with the color green. Conversely, in Japan, the color blue holds significance and is used to distinguish various elements, including green traffic lights. This difference in emphasis on basic colors may be attributed to Japan's island geography, surrounded by seawater, fostering a stronger association with blue or dark blue hues. The aforementioned observations regarding color terms illustrate that the creation of color terms and color perception are intricately linked to the geographical characteristics and natural environment of each region.

However, research on color terms in Thailand over the past 40 years has focused predominantly on studying color terms among speakers of different languages. Yet, there has been a lack of research examining the environmental context that may influence variations in color terms and color perception. The unique characteristics of non-basic color terms stem from their comparison with elements found in nature, such as flowers, parts of flowers, fruits, parts of fruits, plants, vegetables, animals, soil, water, wood, leaves, sea, sand, and so on. The researcher posits that creating color terms based on comparisons with nature and the environment reflects the diverse relationships humans have with their surroundings, which may contribute to variations in color terms and color perceptions.

Research Design

Research Question: The present research addresses the question: "Are the basic color terms of communities that have access to the mountains and live in mountainous contexts influenced by the mountain environment?"

Research Methods: This research was structured within the framework of sociocultural linguistics, which posits that language is closely intertwined with the social and cultural characteristics of its native speakers. Basic color terms were collected following the methodology proposed by Berlin and Kay (1969) and Kay (1975). Non-basic color terms obtained were then analyzed in relation to the social and cultural

context of native speakers residing in hillside communities. These communities maintained traditional lifestyles, retained access to mountainous areas, and utilized the mountains for livelihood and cultural practices. Drawing upon the sociocultural linguistic perspective of Bucholtz and Hall (2005, 2008) and Hodges (2015), this research explored the relationship between social structure and culture through language usage, which varied among different societal groups, as language was viewed as an integral part of both society and culture.

Key informants: Color term information was collected from key informants aged between 40 and 50 years, who were born and raised in the area without immigrating, and who speak the Isaan language in their daily lives. There were two females and two males, totaling four individuals. All key informants are agricultural workers with experience in gathering forest products in the mountains, as well as in other environments such as forests, rice fields, and rivers surrounding the research area.

Research tools: Tools of this research included color sheets, interview forms, and color term data forms.

1) Color sheets: A color sheet was chosen from the RAL K7 CLASSIC 2021 collection. A color sheet was selected from among the 213 available color sheets, focusing on the central color range of the table. Specifically, colors numbered 4 through 9 from each row were chosen, out of a total of 18 rows. Shiny or reflective colored sheets were avoided. A total of 93 color sheets were obtained for collecting information on non-basic color terms. Each color sheet measured 5×2 cm and was affixed onto a white sheet measuring 15×21 cm. The color sheets were numbered for use as a tool in collecting information on color terms from key informants.

2) Interview form: An interview form was created for the interviewer, who was the data collector. The informants, whose first language is Isaan, were asked to specify their characteristics, perspectives on color terms, and sociocultural and lifestyle contexts related to mountains.

3) Color term data form: A unique code was assigned to each form in place of the informants' first and last names to record color term information and protect the data providers according to human research ethics.

Data Analysis: Analyzed non-basic color terms in the mountain context environment according to the concepts of Berlin and Kay (1969) and Kay (1975), and identified relationships of color terms with the environment, mountain context, society, and cultural practices of the people in the area using a sociocultural linguistic perspective proposed by Bucholtz and Hall (2005, 2008) and Hodges (2015).

Presentation of Data: Presented qualitative data regarding linguistics and socio-culture using a descriptive analysis method, provided meanings and examples of three-word color terms. Specified common or scientific names by referencing the Royal Institute's taxonomy. Wrote the color terms using the International Phonetic Alphabet (IPA) to represent sounds in the Isaan language and determined the tone level of the Isaan language by referring to the writing system and tone marks according to the criteria established by Trongdee (2014).

Research Field: The selection of the mountain environment for this research was based on the condition of the mountains and the selection of target communities with a long history of settlement. The villagers also had a way of life and a culture that was closely tied to their mountain environment. Therefore, this research chose the research area in Kaset Sombun district, Chaiyaphum province, in the northeastern region of Thailand.

Figure 1 shows the research area, the Phu Khiao Mountain Range, which is connected to Phetchabun province in the northern region. Located within the Phu Khieo Wildlife Sanctuary, this area consists of mountains and fertile forests. Because of the abundance of mountains, settlements, and a society with a way of life deeply tied to the mountains, it was selected to represent a mountainous environmental research area.



Figure 1 Map showing the research area in a mountainous context

Source: Adapted from <https://shorturl.asia/oB2qj>, retrieved January 24, 2024

Environment and Socio-Cultural Contexts

The environmental context of the research area is the Ban Kaeng Tat Sai community, located in Non Thong subdistrict, Kaset Sombun district. Situated to the west of Kaset Sombun district, it is approximately 120 kilometers from the provincial capital along the Mueang Chaiyaphum-Nong Bua Daeng-Kaset Sombun route, and 12 kilometers from the district center. The topography primarily comprises forests and mountains, accounting for 75.87 percent of the area, while lowland areas and hillsides constitute 19.60 percent, and water areas comprise 4.53 percent. The central area of the subdistrict is flat, with forests and mountains extending from the north, west, and south. Notable mountain ranges include Phu Nok Saeo, Phu Phakpha, and Phu Khiao (Figure 2).



Figure 2 Environmental context in the research area

Source: Authors

The Nam Sam river, where water flows year-round from the mountain, nourishes the community (Figure 3). Locally known as Phu Het Phu Nomai, meaning the mountain of mushrooms and bamboo, this mountain is part of the Phu Khieo Mountain Range, renowned for its abundance of mushrooms and various wild plants.

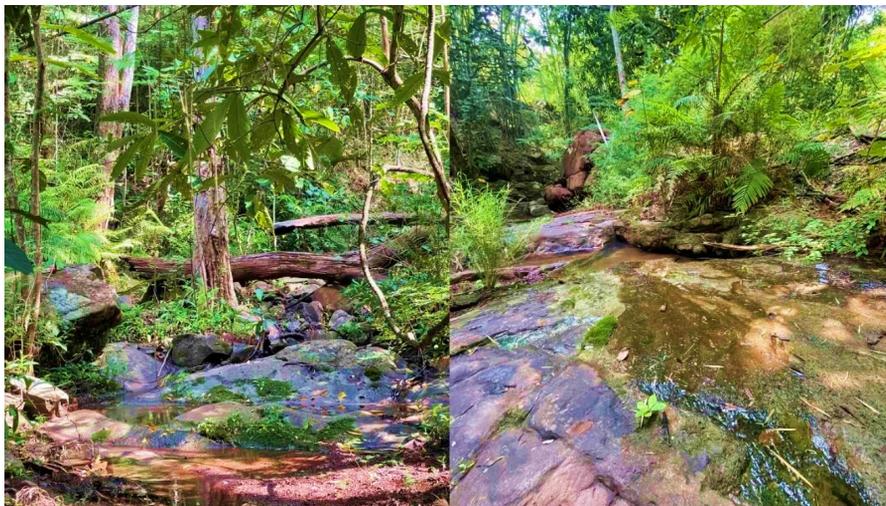


Figure 3 River source on the mountain

Source: Authors

Diverse plant life and abundance can be found on the mountain known as Phu Het Phu Nomai, where villagers frequently gather wild mushrooms, vegetables, and herbs for household consumption as food and medicine (Figure 4).



Figure 4 Wild mushrooms and herbs for household consumption

Source: Authors

The socio-cultural context of the Ban Kaeng Tat Sai community, the research area, is characterized by a social structure and cultural way of life deeply intertwined with the surrounding environment of mountains, forests, water sources, and rice fields. Villagers in the community engage in various agricultural activities, including rice and soybean cultivation, sugarcane and cassava farming, as well as maintaining pomelo and tamarind orchards. Additionally, they continue to gather forest resources from the mountains as a means of livelihood.

Figure 5 depicts the lifestyle and society of villagers in the community in relation to the surrounding mountains. Villagers frequently ascend the mountains to gather forest products such as mushrooms, bamboo shoots, and herbs for consumption in their households or for exchange within the community. When the quantity is substantial, villagers often sell these items to middlemen who visit the village.



Figure 5 Foraging for wild food in the mountains

Source: Authors

Figure 6 depicts the annual performance of the *Bun Kathin* festival, which is part of the *Hit Sipsong Khong Sipi* (12-month) tradition of the Isaan people. This ritual, observed annually, exemplifies the beliefs and way of life of the people in mountainous areas, which are deeply intertwined with the mountains.



Figure 6 Annual mountainous religious ceremonies

Source: Authors

Villagers believe in the sacred guardians of the mountain in the Kaeng Tat Sai community. They believe that Chao Pu Nam Taeng ensures their well-being and peace. Consequently, an annual ritual is performed to honor these sacred beings. Additionally, Buddhist beliefs are observed during the twelfth lunar month, known as *Bun Kathin*. During this time, villagers visit neighboring temples where they offer household items, home-grown vegetables, and forest products as a form of merit-making, believing that such acts will benefit them in the afterlife. The offerings include bananas, pomelo, wild mushrooms, pickled bamboo shoots, etc. (Figure 7).



Figure 7 Annual ritual based on belief in sacred guardians of the mountain

Source: Authors

Research Findings

The society and culture of communities living in mountainous areas feature non-basic color terms that clearly correspond to the colors of plants and animals in such environments, including the geography and mountainous terrain. Non-basic color terms in mountainous regions reflect socio-cultural perspectives in three dimensions: 1) non-basic color terms related to mountainous plants, 2) terms related to mountain-dwelling animals, and 3) those related to the geography and environment of mountainous areas.

Non-basic Color Terms Related to Mountainous Plants

The study found 237 of non-basic color terms related to mountainous plants. This revealed that various parts of plants, such as stems, flowers, leaves, fruits, and bark, were utilized to form numerous non-basic color terms. Most of these plants are indigenous to the mountains or forests, and villagers employ them for cooking, medicinal purposes, and other uses. Such practices reflect the social and cultural lifestyle of the villagers, which is closely intertwined with the mountain environment and manifested through non-basic color terms. Table 1 provides examples of non-basic color terms related to mountainous plants.

Table 1 Non-basic color terms related to mountainous plants

| Non-basic color terms | Common/ Scientific names | Non-basic color terms | Common/ Scientific names | Non-basic color terms | Common/ Scientific names |
|--|------------------------------|--|-------------------------------|---|------------------------------|
| 1. Food plants | | | | | |
| Mushrooms | | | | | |
| /het ¹ man ³ pu. ² / | ‘chanterelle’ | /si. ¹ het ¹ ham ¹ fa:n ³ / | ‘Mycoamaranthus cambodgensis’ | /si. ¹ het ¹ ka ⁴ da:ŋ ⁶ k ^h ɔ:n ¹ ta ⁴ k ^h ian ³ hin ¹ / | ‘Lentinus polychrous’ |
| Perennial plants | | | | | |
| /si. ¹ ton ⁶ bak ¹ si. ¹ da: ² pa: ⁴ / | ‘wild guava’ | /si. ¹ do:k ⁵ ŋiw ⁶ pa: ⁴ / | ‘Bombax anceps pierre flower’ | /si. ¹ jɔ:t ⁶ ʔɔ:n ⁶ k ^h i: ⁵ lek ⁶ pa: ⁴ / | ‘Cassia siamea lamk’ |
| Annual plants | | | | | |
| /si. ¹ wa:n ⁴ mu:p ⁵ / | ‘Kaempferia Marginata carey’ | /si. ¹ do:k ⁵ ke: ⁴ k ^h a: ⁴ pa: ⁴ / | ‘wild galangal flower’ | /si. ¹ nɔ: ⁴ maj ⁶ co:t ⁵ / | ‘bamboo shoot’ |
| 2. Medicinal plants | | | | | |
| /bak ⁶ bit ⁶ he:ŋ ⁵ / | ‘East Indian screw tree’ | /si. ¹ ke:n ⁴ maj ⁶ tiw ⁶ / | ‘cratoxylum’ | /si. ¹ ja: ² hi: ¹ jum ⁴ / | ‘Centotheca lappace’ |
| 3. Plants used for other purposes | | | | | |
| /si. ¹ k ^h i: ⁵ si: ³ / | ‘wild resin tree’ | /si. ¹ lam ³ maj ⁶ sa:ŋ ³ / | ‘Dendrocalamus sericeus’ | /si. ¹ bak ⁶ bia ³ / | ‘Diospyros ehretioides wall’ |

The examples in Table 1 demonstrate how non-basic color terms derived from plants reflect the social and cultural practices of villagers living in mountainous communities. These terms encompass various types of plants found in forests and mountains, which are used for food preparation, medicinal purposes, and other applications. In Isaan, ‘si’ literally means color. Thus, mushrooms like *Het Man Pu* /het¹ man³ pu.²/ or chanterelle mushrooms, *Si Het Ham fan* /si.¹ het¹ ham¹ fa:n³/ or *Mycoamaranthus cambodgensis*, and ‘*Si Het Kadang Khon Takhian Hin* /si.¹ het¹ ka⁴ da:ŋ⁶ k^hɔ:n¹ ta⁴ k^hian³ hin¹/’ or *Lentin*

us polychrous from a *Hopea ferrea* log are commonly used for food. Additionally, plants like *Bak Bid Haeng* /bak⁶ bit⁶ hε:ŋ⁵/ or dry east Indian screw tree are utilized for medicinal treatments. Moreover, plants such as ‘*Si Ya Hee Yum* /si:¹ ja:² hi:¹ num⁴/’ or *Centotheca lappacea* are employed to nourish women’s bodies after childbirth, while ‘*Si Kaen Mai Tiw* /si:¹ kε:n⁴ maj⁶ tiw⁶/’ or *cratoxylum* tree serves as firewood for post-childbirth lying-in as well. Villagers also utilize plants for various other purposes, such as making tools or equipment, as seen with ‘*Si Lam Mai Sang* /si:¹ lam³ maj⁶ sa:ŋ³/’ or *Dendrocalamus sericeus*, which is used to make tables. Furthermore, plant terms like ‘*Si Khi Si* /si:¹ k^hi:⁵ si:³/’ are utilized for gum to calk various utensils. Additionally, there is a cultural practice of catching fish using fruit such as *Si Bak Bia* /si:¹ bak⁶ bia³/ or *Diospyros ehretioides* wall (poisoning plants), where the fruit is pounded into fine pieces and scattered in water to act as fish poison, facilitating easier fish catching. These examples highlight the multifaceted role of plants in the villagers’ lives, encompassing both sustenance and cultural practices.

Non-basic Color Terms Related to Mountain-dwelling Animals

A total of 96 non-basic color terms related to mountain-dwelling animals were found in this study. Non-basic color terms often stem from combinations of parts of various types of animals. Many of these animals are indigenous to mountainous or forested areas, where villagers utilize them for food, medicinal purposes, and in rituals based on beliefs regarding supernatural entities that safeguard forested regions. Examples of non-basic color terms related to animals in mountainous areas are illustrated in Table 2.

Table 2 Non-basic color terms related to mountain-dwelling animals

| Non-basic color terms | Common/ Scientific names | Non-basic color terms | Common/ Scientific names | Non-basic color terms | Common/ Scientific names |
|--|----------------------------------|--|------------------------------------|--|-------------------------------|
| 1. Food animals | | | | | |
| Terrestrial animals | | | | | |
| /si: ¹ tun ⁴ / | ‘wild mole’ | /si: ¹ mu: ¹ pa: ⁴ / | ‘wild boar’ | /si: ¹ ka ⁴ cɔ:n ⁶ / | ‘Indochinese ground squirrel’ |
| <i>Amphibians</i> | | | | | |
| /si: ¹ kop ⁶ mu: ⁿ⁴ p ^h u: ³ k ^h aw ¹ / | ‘ <i>Limnonectes isanensis</i> ’ | /si: ¹ pu: ² hin ¹ t ^h ə:ŋ ³ p ^h u: ³ / | ‘wild spiny rock crab’ | /si: ¹ pa: ² fa: ¹ / | ‘Asiatic softshell turtle’ |
| Aquatic animals | | | | | |
| /si: ¹ pa: ² ca:t ⁵ / | ‘goldfin tinfoil barb’ | /si: ¹ bak ⁶ hɔ:j ¹ lek ⁶ si: ³ / | ‘ <i>Brotia costula</i> shellfish’ | /si: ¹ bak ⁶ hɔ:j ¹ kε:ŋ ⁴ / | ‘rapids water shellfish’ |
| 2. Medicinal animals | | | | | |
| /si: ¹ pu: ² lu: ³ / | ‘big-headed turtle’ | /si: ¹ lin ⁴ / | ‘pangolin’ | | |
| 3. Animals used in rituals | | | | | |
| /si: ¹ ʔon ⁶ / | ‘bamboo rat’ | | | | |
| 4. Animal droppings used as fertilizer | | | | | |
| /si: ¹ k ^h i: ⁵ ʔi: ² kia ² / | ‘bat guano’ | | | | |

Table 2 provides examples of non-basic color terms and the animals they are derived from. These terms encompass a variety of animals found in forests and mountains, including mountainous *Limnonectes isanensis* frogs (*si kob muen phu khao /si:¹ kop⁶ mu:ⁿ⁴ p^hu:³ k^haw¹/*), wild spiny rock crabs (*si pu hin terng phu /si:¹ pu:² hin¹ t^hə:^{η3} p^hu:³/*), and goldfin tinfoil barb (*si pajad /si:¹ pa:² ca:^{t5}/*). Villagers catch these animals for consumption. Animals used for medicinal purposes include the big-head turtles (*Si Pulu /si:¹ pu:² lu:³/*) and pangolins (*Si Lin /si:¹ lin⁴/*). Additionally, animals such as bamboo rats (*Si Oon /si:¹ ?on⁶/*), resembling small pigs, are used in rituals to worship Chao Pu Nam Taeng biennially. Bat guano (*Si Khi I-kia /si:¹ k^hi:⁵ ?i:² kia²/*) are collected and used as fertilizer for plants. These examples highlight the cultural practices of meat consumption, animal husbandry, and vegetable cultivation based on non-basic color terms derived from animals and their various parts.

Non-basic color terms related to geography

In this study, 29 non-basic color terms related to geography were found, indicating that characteristics of topographic areas, including soil, water, rocks, sky, and mountains, are combined to form non-basic color terms, reflecting topographic features associated with the mountain environment. Examples of non-basic color terms related to geography are found in Table 3.

Table 3 Non-basic color terms related to geography

| Non-basic color terms | Common/ Scientific names | Non-basic color terms | Common/ Scientific names | Non-basic color terms | Common/ Scientific names |
|--|-----------------------------|---|-----------------------------|---|-------------------------------|
| 1. Soil | | | | | |
| <i>/si:¹ din² po:^{η4}/</i> | ‘salt lick’ | <i>/si:¹ din² tap⁶ som⁵/</i> | ‘sour soil’ | <i>/si:¹ din² p^ho:ⁿ³ pua:^{k5} het⁶/</i> | ‘termite soil’ |
| 2. Water | | | | | |
| <i>/si:¹ na:^{m6} ke:^{η4}/</i> | ‘water in rapids’ | <i>/si:¹ na:^{m6} laj¹ p^hu:³/</i> | ‘water in running’ | <i>/si:¹ na:^{m6} sam³ pa:²/</i> | ‘water in permeating’ |
| 3. Rocks | | | | | |
| <i>/si:¹ hin¹ pa:⁴/</i> | ‘wild rocks’ | <i>/si:¹ hin¹ tap⁶ k^huaj³/</i> | ‘buffalo liver rocks’ | <i>/si:¹ hin¹ ?ə:ⁿ⁴ na:^{m6} sam³ t^hə:^{η3} p^hu:³/</i> | ‘wild permeating water rocks’ |
| 4. Sky | | | | | |
| <i>/si:¹ fa:⁶ sa⁴ wa:^{η4}/</i> | ‘bright sky’ | <i>/si:¹ t^hə:^{η4} fa:⁶/</i> | ‘sky’ | <i>/si:¹ fa:⁶ mu:^{t6} k^huum⁶/</i> | ‘gloomy sky’ |
| 5. Mountain | | | | | |
| <i>/si:¹ p^hu:³ k^haw¹ kaj⁶ kaj⁶/</i> | ‘nearby mountain’ | | | | |

From the examples in Table 3, it is evident that non-basic color terms derived from the landscape reflect the social and cultural practices of villagers in mountainous communities. These terms encompass various terrain features, such as Si Din Pong */si:¹ din² po:^{η4}/*, referring to nutrient-rich soil suitable for wildlife, and Si Din Phon Puak Het */si:¹ din² p^ho:ⁿ³ pua:^{k5} het⁶/*, denoting fertile soil conducive to mushroom growth. Additionally, colors associated with water, like Si Nam Kaeng */si:¹ na:^{m6} ke:^{η4}/* representing the water color of Kaeng Tat Sai, Si Nam Lai Phu */si:¹ na:^{m6} laj¹ p^hu:³/* describing mountain stream water, and Si Nam Sam Pa */si:¹ na:^{m6} sam³ pa:²/* depicting the color of perennial permeating water, are observed.

Various rock colors, such as Si Hin Pa /si:¹ hin¹ pa:⁴/ and Si Hin On Nam Sam Terng Phu /si:¹ hin¹ ʔɔ:ⁿ⁴ na:^{m6} sam³ tʰə:^{η3} p^hu:³/, are noted, with the latter indicating rocks found in forested areas and near mountain water sources. Sky colors, like bright sky, Si Fa Sawang /si:¹ fa:⁶ sa⁴ wa:^{η4}/ and gloomy sky, Si Fa Mued Khuem /si:¹ fa:⁶ mu:^{t6} k^hum⁶/, are also included, reflecting weather conditions. These non-basic color terms originating from the landscape underscore the deep-rooted social and cultural ties of mountainous communities.

Summary and Discussion

Summary

The findings of this research address the research question as follows: The Ban Kaeng Tat Sai community, situated in the Kaset Sombun district of Chaiyaphum province, close to the Phu Khiao Mountains, relies heavily on the surrounding forests and mountains for sustenance and preservation of traditional culture. Their use of non-basic color terms is intricately linked to the mountainous environment, particularly with respect to local plants, which are deeply ingrained in the community's way of life. Villagers use various plants for consumption, weaving, crafting fishing tools and traditional weapons, medicinal purposes, and various occupations. However, plants not directly associated with the community's way of life are not extensively categorized or assigned specific terms. For instance, orchids, despite being the largest plant family, do not feature prominently in the community's daily activities. Consequently, only three non-basic color terms are identified in relation to orchids: the wild orchid or Si Kuai Mai Pa /si:¹ kuaj⁶ maj⁶ pa:⁴/, the orchid flower or Si Dok Kuai Mai /si:¹ dɔ:^{k5} kuaj⁶ maj⁶/, and the wild yellow orchid or Si Lueang Ueang Pa /si:¹ luaj¹ ʔuaj⁶ pa:⁴/, As observed, the community exhibits numerous descriptive terms for colors, particularly for the various types of mushrooms used in cooking, totaling up to 44 distinct names.

In addition to discovering numerous non-basic color terms associated with mushrooms, there are also terms for non-basic colors derived from comparison with other plants used for oral herbal medicines. For instance, there are four terms for non-basic colors derived from the perennial plant *Rothmannia wittii*, locally known as Maak Mor. These include Si Nuai Suk Bak Mor /si:¹ nuaj⁴ suk¹ mak¹ mɔ:⁵/, Si Dok Maak Mor /si:¹ dɔ:^{k5} ma:^{k6} mɔ:⁵/, Si Dok Mak Mor /si:¹ dɔ:^{k5} mak¹ mɔ:⁵/, and Si Khao Dok Mak Mor /si:¹ k^ha:^{w1} dɔ:^{k5} mak¹ mɔ:⁵/, which describes the colors of its ripe fruit, flower (either Maak Mor or Mak Mor), and white flower, respectively. Similarly, there are four non-basic color terms derived from *Canarium subulatum guillaumin* or Bak Liam, namely Si Bai Ton Bak Liam /si:¹ baj² ton⁶ bak¹ liam⁴/, Si Nuai Suk Bak Liam /si:¹ nuaj⁴ suk⁶ bak¹ liam⁴/, Si Pueak Ton Bak Liam /si:¹ puak⁵ ton⁶ bak¹ liam⁴/, and Si Lueang Bak Liam /si:¹ luaj¹ bak¹ liam⁴/, which denote the color of its leaf, ripe fruit, trunk bark, and yellowness, respectively. These color terms reflect the mountain environment and the community's interactions with the mountains, as perceived through these two plants, whose parts are used as herbal medicine to treat various ailments. Furthermore, annual plants utilized by villagers for cooking and as herbal medicine, such as wild galangal, contribute three non-basic color terms: the wild galangal young flower or Si Dok On Kha Pa /si:¹ dɔ:^{k5} ʔɔ:ⁿ⁴ k^ha:⁴ pa:⁴/, wild galangal old flower or Si Dok Kae Kha Pa /si:¹ dɔ:^{k5} ke:⁴ k^ha:⁴ pa:⁴/, and green wild galangal leaves or Si Khiao Bai Kha Pa /si:¹ k^hiaw¹ baj² k^ha:⁴ pa:⁴/, etc. These examples underscore the significance of local plants in the community's way of life.

Discussion

The results demonstrate that the mountain environment influences color terms and perception, correlating with the social and cultural practices of communities living in mountainous regions. Non-basic color terms, often augmented to express features of the ecological setting, particularly local mountain plants, are abundant. This finding aligns with Berlin and Kay (1969, 1999) and Kay (1975), which observed that non-basic color terms frequently incorporate modifiers derived from basic color terms, often reflecting environmental elements and cultural practices. Such observations contribute to a deeper understanding of color terms across diverse cultural contexts and languages. Furthermore, the research findings corroborate the results of prior studies by Prasithratsint (1995), Siriphan (2011), Rodsap (2014), Kaewjungate (2017), Aroonroek (2021), and Kiatyuddhajati (2021) on color terms among speakers of various languages in Thailand. These studies similarly identified extensions in non-basic color terms influenced by different environmental conditions. However, previous research did not extensively explore the explanation of non-basic color terms in relation to diverse environmental contexts and their interconnectedness with social and cultural practices.

New Knowledge

This research has generated the following new knowledge.

1. Framework: Non-basic color terms in socio-cultural linguistics

The research findings indicate that non-basic color terms vary according to the environment in each area and are closely related to the social and cultural practices of the community. This study contributes new insights to the field by proposing a framework for analyzing non-basic color terms within the environmental context and community culture. This framework illustrates the relationship between non-basic color terms and the social and cultural practices of mountainous communities, as depicted in Figure 8.

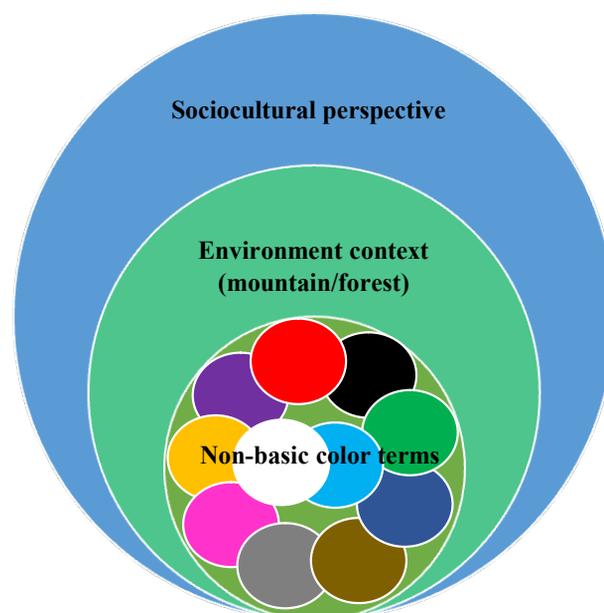


Figure 8 A framework for non-basic color terms in the sociocultural linguistic perspective

Figure 8 demonstrates that non-basic color terms are closely linked to the context of the area, encompassing the way of life, society, and culture of the community. These three components are dynamically interconnected, depicted as inseparable parts in the pie charts. Non-basic color terms often originate from the mountainous environment, reflecting people's interaction with their surroundings and shaping their societal and cultural practices. Consequently, any changes in lifestyle, society, or culture will impact the environmental context and, consequently, the non-basic color terms identified in this research.

2. Non-basic color terms and socio-cultural perspective

Non-basic color terms are closely related to access to forests, the environment, and the utilization of these resources. The results of this research relate to the mountainous context. All non-basic color terms identified in this study are associated with plants, animals, and topographical conditions specific to the Phu Khiao Mountain Range, the focus area of this research.

3. Suggestions for further study

Exploring color terms from a sociocultural linguistic perspective represents a novel research direction. Future studies should investigate color terms linked to the social and cultural practices of communities in other contexts, such as Phu Thap Boek, Khao Yai, etc., to identify non-basic color terms prevalent in mountainous environments. In addition, this research direction connects with the maritime society that prioritizes tourism. It will contribute to the research expansion on non-basic color terms within the sociocultural linguistic framework in Thailand amidst modern cultural societies that prioritize tourism. It will also contribute to the expansion of research on non-basic color terms within the framework of sociocultural linguistics in Thailand.

Conclusion

This study demonstrates how the use of non-basic color terms in mountain communities is intricately linked to their ecological surroundings and cultural practices. The findings underscore the idea that color perception in these regions goes beyond basic categories, reflecting the rich interaction between the environment and the community's social life. In the case of the Phu Khiao Mountain Range, the non-basic color terms reflect the unique flora and fauna, such as wild mushrooms, vegetables, fruits, and medicinal herbs, which play a vital role in the livelihood of the local people. These terms are shaped by the community's dependence on the mountains and forests and their deep-rooted cultural traditions.

More broadly, this research contributes to the understanding of how language evolves in response to environmental and social contexts, particularly in communities that rely heavily on natural resources. The study suggests that as long as cultural practices and access to the mountains persist, these non-basic color terms will continue to reflect the intimate relationship between people and their environment. However, future shifts in ecological or cultural conditions could lead to changes in these terms. Thus, this research highlights the dynamic interplay among language, culture, and the environment, offering insights that can be applied to other sociocultural and linguistic contexts beyond this specific case.

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