

BEYOND THE LEAF: A CROSS-LINGUISTIC PRAGMATIC STUDY OF AFRICAN MEDICINAL PLANT NAMING

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ABSTRACT

This work examines the intersection of language, culture, and ecological knowledge in the naming of medicinal plants in four major Nigerian ethnolinguistic groups: Yoruba, Igbo, Hausa, and Fulani. With a set of 39 indigenous herb names, this study demonstrates how naming practice carry encoded, functional, ecological, aesthetic, and symbolic as well as spiritual information. Grounded in Relevance Theory and principles in Ethnobotanical Linguistics, we explored how plant names function as communicative acts within cultural settings. The data were analysed qualitatively through thematic coding and quantitatively through a Chi-Square Test of Independence. Symbolic and spiritual naming dominated the naming practices of the Igbo and Yoruba speakers, functional descriptors were heavily favoured in Hausa naming, and ecological contexts were markedly included in the Fulani naming. Overall, these results demonstrate that plant nomenclature in African communities serve not only as socio-historical and ecological markers, but also as epistemological indicators that assist in the worldviews it embodies in framing reasons for spiritual and environmental interactions. Further, the research supports the growing literature on the potential benefits of indigenous knowledge systems and that language roots serve as primary agents of ethnomedical knowledge transmission.

KEYWORDS: Ethnobotany, pragmatics, relevance theory, medicinal plant naming, ethnolinguistics.

INTRODUCTION

Throughout the African continent, the names associated with medicinal plants have significant implications that extend beyond their botanical implications. They convey cultural knowledge, ecological connections, spiritual meaning, and pragmatic meaning to inform usage and identity within communities. These names can bestow insight about the entire ecology of a plant and plant interaction, yet share a commonality that connects language to a plant's usage and social experience. From the Yoruba's Ewe Akoko (used to induce labour and as an anti-hypertensive) to the Ogirisi of the Igbo (*Newbouldia laevis*), used in burial rites and traditional healing

practices, the depth of knowledge is highly contextual. In many cases, these names are metaphorically and symbolically laden with contextual references that require cultural literacy for potential meaning-making and interpretation.

Although the knowledge inscribed in these names is vast, scholarly works until now have been devoted primarily to pharmacological or botanical aspects surrounding the use of African medicinal herbs and have typically ignored the linguistic and pragmatic aspects. However, the communicative dimension of naming practices has rarely been examined, that is, how the names are decoded or understood by the listener, on their perceived assumptions about the use of these plants, their prescriptions, implied meaning beyond their literal dimension, their signalling of ecological as well as ethnobotanical interactions and relationships to one another. Moreover, the gap needs to be connected to integrating linguistic pragmatics (Relevance Theory) within ethnobotanical linguistics to examine how meaning is negotiated and how these names are communicated within communities. Additionally, it is unclear what linguistic and cultural patterns are associated with naming African medicinal herbs across cultures and languages.

This study aims to analyse the linguistic and cultural patterns associated with African medicinal herb naming and apply the Relevance Theory to contextual interpretations of herbal names. The objectives of this study are:

- To examine the pragmatic principles underlying the naming of medicinal plants in selected African languages.
- To identify the cultural and ecological values encoded in plant names across different ethnolinguistic groups.
- To compare naming patterns across Yoruba, Igbo, Hausa, and Fulani communities to reveal cross-cultural similarities and distinctions.

The following research questions are asked to guide the entire research.

1. What pragmatic strategies are used in the naming of medicinal plants in African communities?
2. How do medicinal plant names reflect the cultural and ecological knowledge systems of their respective linguistic communities?
3. What similarities and differences exist across Yoruba, Igbo, Hausa, and Fulani naming conventions in terms of structure, meaning, and use?

LITERATURE REVIEW

Linguistic Pragmatics and Herb Naming

The field of pragmatics, which is the study of language use in context, allows researchers to understand in detail how herbal names in African communities serve as communicative acts beyond labelling. The theories central to this field include the

Speech Act Theory and Relevance Theory. While Speech Act Theory (Austin, 1962; Searle, 1969) explains how utterances are used to do things like making an assertion, issuing a warning, or requesting something, it fails to provide a successful account of the subtle culturally-bound inference that is often part of naming herbs. Relevance Theory (Sperber & Wilson, 1986) outlines the principle of optimal relevance as the meaning of the communication or the point of processing the information, which means that everyone using relevance theory uses it to communicate information with high contextual effects and low cognitive effects. This will prove useful in examining herb names for African medicinal herbs, which are often metaphorical, elliptical, or symbolic. For example, the name of a Yoruba herb, Ewe Àbíkú ("Plant for spirit children") alludes to the spiritual and ritual use of the plant, rather than its biological properties, as a meaning, we can only understand with a baseline of culture and inference (Adebayo & Olayemi, 2020).

Relevance Theory also allows researchers to account for implicit meanings, sociocultural allusions, and interpretive flexibility when using plant names and analyse as much as possible the relationship between the producers' original intentions and the receivers' perceived interpretations, but still with an emphasis on contextual assumptions that inform reasoning and inferential processes (Clark, 2013; Carston, 2002).

Ethnobotanical Linguistics

Ethnobotanical Linguistics looks at how language encodes knowledge about plant uses, traits and classification systems found in local knowledge systems. This topic showcases the detail and depth of the relationship between language and the environment, and how indigenous people categorise and name plants through usage, myth, and ecology, rather than solely through appearance (Berlin, 1992; Brown, 1984).

Okeke et al (2018) reported that many names of herbal plants in Nigeria include pragmatic indicators about their functions, like "womb cleanser," "toothache plant," and "cooling leaf." In these cases, the indicators come from a combination of the actual usage of the plant, along with a full ethnomedical understanding of how the plant can be used; Ogbuagu and Udeinya (2020) describe the method whereby the Igbo names for herbs is proposed through communal experience which offers prescriptions orally passed down through generations.

The naming processes described are also analogous to Berlin's (1992) analysis of folk taxonomies, i.e., indigenous classification in relation to a culture and the ecological niche it creates. Ethnobotanical linguistics is yet another field supporting the cultural semiotics of plant naming that we want to claim, whereby

language affords traditional knowledge of the medicinal properties of herbal plants, and therefore plant naming processes, among other functions (Martin, 2004; Akinnaso, 1992).

Semiotics and Symbolism in Plant Naming

Semiotics adds yet another layer to our understanding of herbal names through its utilitarian and symbolic roles, since names are also meaningful with layers of meaning. In forming a theoretical understanding of semiotics and plant naming, we will draw from Peirce's (1931) triadic model of the sign (signifier, object, interpretant) all of which help us explain layers of meaning. Semiotics is explained further in relation to Barthes' (1972) distinction between myth and a second-order system of semiotics.

It is important to note for example, that the Hausa herb *Maye* (meaning "intoxicant" or "possessed") is metaphorically invoked with respect to herbs imbued with psychoactive or spiritual significance, and the contextualisation of such symbolic names can only be provided within the semiotic frame of which it is rooted (Basso, 1996; Madubuike, 2015). Semiotic interpretations of herbal names also demonstrate how the naming of herbs enshrines a linguistic sign within the cultural domain of ecological ethics, ritual significance or meaning, and the values of the community; thus, having effects on preserving oral traditions as well (Eze, 2017). The semiotic framework that we articulate along with Relevance Theory will offer a tiered layer through which meaning can be interpreted in relation to the cognitive and cultural dimensions of the naming function of herbs.

Cultural and Ecological Contexts

All the foregoing can occur through the cultural ecology of African societies and as such it is the cultural ecology that defines how herbs are identified, classified, and named as culturally embedded within the ecological system context. The role of Traditional Ecological Knowledge (TEK) also supports the linguistic and ethnomedical dimensions of plant use (Hunn, 1999; Nazarea, 2006). For example, Usman and Osuji (2007) indicated that, among the Fulani in Northern Nigeria, herbs were named in relation to the behaviour of animals or seasonal changes, as well as in relation to human ailments, ecological semiotic modelling through naming. Correspondingly, Egharevba and Ikhatua (2008) studied the names of herbs in Bini and reported that many included the names of spiritual beings or deities that signified the sacred or taboo with respect to the herb.

These names capture and instill cultural and contextual epistemes, embodying the ethnobotanical position that reflects how naming within our

communities arises from shared experience, and is therefore, not arbitrary. An added theoretical transposition of relevance theory informs us that a naming system constitutes a small part of what can be defined as a cultural frame or relevance that maintains the coded contextual relevance across generations through naming categories relating to plants (Osei-Tutu, 2021).

THEORETICAL FRAMEWORK

This study is based on the two related frameworks of Relevance Theory and Ethnobotanical Linguistics, which enables a multi-dimensional analysis of the naming, interpretation, and cultural embedding of African medicinal herbs.

Relevance Theory

Relevance Theory is a cognitive-pragmatic model of communication proposed by Sperber and Wilson (1986/1995) as an improvement on traditional code-based models and Speech Act Theory. The theory advances the proposition that human communication is inferential (rather than just code-based) and that interlocutors are attempting to achieve optimal relevance; that is, an utterance creates maximal contextual effects with minimal processing effort (Carston, 2002; Wilson & Sperber, 2004).

Relevance Theory provides a highly useful account of how hearers can interpret culturally loaded plant names as it applies to the naming of African medicinal herbs. To illustrate, Ewe Àbíké (“plant for spirit children”, in Yoruba) is not interpreted by the hearer directly in terms of simple denotation, but rather through cognitive inferencing, which relies on shared cultural assumptions and contextual knowledge (Adebayo & Olayemi, 2020). The hearer acquires implicatures relating to the ritual purpose of the herb, its therapeutic role, and its place as a member of the herbalists' social community and does so by aligning the input provided by the language with contextual assumptions (Clark, 2013).

The three key concepts of Relevance Theory are ostensive-inferential communication, contextual effects, and cognitive environment and these concepts help to explain how people interpret metaphorical or symbolic names of herbs. Given that oral cultures rely on indirect, allusive, or metaphorically structured communication, these concepts are especially useful (Blakemore, 2002).

Ethnobotanical Linguistics

Ethnobotanical Linguistics is the study of the way language encodes local knowledge of the plants with reference to their use, classification, and cultural

significance. This will draw on the work of anthropologists and ethnobiologists including Berlin (1992), who documented how indigenous classifications are often linked to and reflect ecological interactions, and the medicinal value of a plant, instead of formal taxonomic categories.

This framework assumes that naming plants is based on traditional ecological knowledge (TEK) grounded in cultural practices, which means that names may indicate the purpose of a plant (e.g., "womb cleanser"), how it could be prepared (e.g., "burn and inhale"), the role of the herb within a spiritual context (e.g., "talking leaf"), or a social taboo (e.g., "don't-touch herb") (Okeke et al., 2018; Egharevba & Ikhatua, 2008). In this way, names act as functional "tools" to convey ethnomedical knowledge across generations.

Ethnobotanical Linguistics complements Relevance Theory by providing an understanding of the semantic motivation behind naming. For example, the Bantu term Mukalabanda – used to refer to a herb used in rites of passages is derived from kalabanda, a spirit or ancestor from the local belief system. This demonstrated the way names operate as culturally salient signifiers, with epistemological properties and ecological specificities (Osei-Tutu, 2021).

Furthermore, this framework attends to the interrelationship between language, culture, and ecology. Plant names not only convey the social function of herbs, but they also index the specific environmental conditions that may exist. For instance, Fulani ethnomedicine herbal names are often used to refer to animal action, drought, and seasons (Usman & Osuji, 2007).

This study has adopted a hybrid approach by using Ethnobotanical Linguistics and Relevance Theory, which connect the cognitive-pragmatic aspects of interpretation to the cultural-ecological aspects of naming. This study enables us to broaden our understanding of how herbal names function as communicative acts and store indigenous knowledge.

METHODS

Research Design

This study employs a qualitative, cross-linguistic and interpretive research design, aimed at examining the ethnobotanical and pragmatic aspects of herbal naming in selected African communities. The design placed major emphasis on the contextual embeddedness, processes of meaning-making, and cultural richness as envisaged in both Ethnobotanical Linguistics and Relevance Theory (Denzin & Lincoln, 2018; Creswell & Poth, 2017).

Data Sources

The data used in this study were collected from three main sources: Oral traditions and indigenous knowledge systems, written ethnobotanical records, field observations, and cultural events. This triangulation of data sources ensures the validity and reliability of the interpretations (Miles, Huberman, & Saldaña, 2014).

Sampling Method

A purposive sampling approach was used in selecting four dominant ethnolinguistic groups (Yoruba, Igbo, Hausa, Fulani) due to their rich traditions in both botanical and linguistic areas, 39 herbal names, based on frequency of use, metaphorical complexity, and cultural background, twelve informants that consisted of elders and herbal practitioners, and local linguists that had significant ethnobotanical and linguistic knowledge. This sampling approach allowed for rich, in-depth analysis of naming conventions, as well as comparison and pragmatic interpretation (Patton, 2002).

Data Analysis

Data analysis was done using two interrelated approaches:

1. Pragmatic Analysis (Relevance Theory Framework): Each herb name was analysed for ostensive cues, contextual assumptions, and implicatures. The interpretation focused on how hearers were led to the meaning based on circumstances and very little cognitive effort (Sperber & Wilson, 1995; Carston, 2002). We identified patterns of metaphor, ellipsis, irony, and socio-cultural allusion.
2. Ethnobotanical Analysis: Names were categorised based on function, preparation, ecological reference, and symbolism. Cultural and environmental thoughts behind names were explored (Berlin, 1992; Nazarea, 2006).

Chi-Square Test of Independence

To determine whether there was a statistically significant relationship between language group and plant naming strategy, a Chi-Square Test of Independence was conducted. A contingency table was created to summarise the frequency of each naming strategy within each language group. The Chi-Square test compared the observed frequencies with expected frequencies calculated under the assumption that naming strategies are distributed independently of language group. The test statistic was computed using the formula $\chi^2 = \sum((O - E)^2 / E)$, where O represents observed frequency and E the expected frequency in each cell.

Ethical Implications

All informants signed a consent letter and were informed about the aims of the research, as well as their right to withdraw at any time. Confidentiality was also maintained. Acknowledgement of indigenous ownership of the knowledge was maintained throughout all documentation. The study followed the Nagoya Protocol on Access to Genetic Resources and Fair and Equal Benefit Sharing (CBD Secretariat, 2011) as it related to ethnobotanic research.

Data Presentations and Analysis

This study presents and analyses the herbal names obtained from the four ethnolinguistic groups (Yoruba, Igbo, Hausa, Fulani). The herbal names are analysed by pragmatic strategies, cultural motivations, and their ethnobotanical meanings. The analysis is organised into parts based on the themes relevant to the main patterns in the data.

Classification of Herb Names

Herbal names across the selected communities were classified into four broad ethnobotanical categories: Functional, Ecological, Symbolic/Spiritual, and Aesthetics/Descriptive. Each naming strategy and each language was summed. There were 10 Fulani-named herbs, 9 Hausa-named herbs, 10 Igbo-named herbs, and 10 Yoruba-named herbs. There are 6 Aesthetically-named herbs, 9 Ecologically-named herbs, 9 Functionally-named herbs, and 15 Symbolically/Spiritually named herbs. The grand total was calculated by summing all the values in the table. Grand total = 39.

FINDINGS

This study was aimed at testing whether the variance in the strategies of medicinal plant naming was correlated with ethnolinguistic affiliation in the contexts of four major African language groups: Igbo, Yoruba, Hausa, and Fulani. Table 1 outlines the raw counts of our observed plant naming strategies by language group.

Table 1: Full list of herbs and their categories.

Tribe	Yoruba	Igbo	Hausa	Fulani
Frequency	10	10	9	10

No.	Herb Name	Language	Translation	Category	Implied Use
1	Okpokolo	Igbo	Fragrant flower	Aesthetic/Descriptive	Has fragrant flowers

2	Ewe Aja	Yoruba	Swamp root	Ecological	Grows in the forest
3	Ngwongw o-isi	Igbo	Brain shaker	Symbolic/Spiritual	Strong Psychoactive effects
4	Ewe Gbogbo	Yoruba	Dream caller	Symbolic/Spiritual	Enhances attraction
5	Ado Wata	Fulani	Dream caller	Symbolic/Spiritual	Enhances attraction
6	Feere Nja	Fulani	Forest plant	Ecological	Grows in forest
7	Ewe Ifa	Yoruba	Wisdom herb	Symbolic/Spiritual	Used in wisdom rites
8	Magani Mata	Hausa	Womb cleanser	Functional	Cleanses the womb
9	Oji Ulo	Igbo	Black leaf	Aesthetic/Descriptive	Known for dark leaves
10	Ganyen Wuta	Hausa	Spirit protector	Symbolic/Spiritual	Used for protection
11	Wuro Bari	Fulani	Hill creeper	Ecological	Found on hills
12	Ulo Ogwu	Igbo	Blood tonic	Functional	Tones blood
13	Ewe Obinrin	Yoruba	Womb cleanser	Functional	Cleanses the womb
14	Koron Gida	Hausa	Red stem	Aesthetic/Descriptive	Has reddish stems
15	Baya Jonde	Fulani	Ancestor plant	Symbolic/Spiritual	Used in ancestor rituals
16	Aba Nne	Igbo	Spirit protector	Symbolic/Spiritual	Used for protection
17	Ewe Dúdú	Yoruba	Black leaf	Aesthetic/Descriptive	Known for dark leaves
18	Ganyen Rana	Hausa	Rain herb	Ecological	Sprouts after rain
19	Wuta Mai Ruwa	Hausa	Memory enhancer	Functional	Improves memory

20	Ewe Alùkò	Yoruba	Ancestor plant	Symbolic/Spiritual	Used in ancestor rituals
21	Ngari Bode	Fulani	Womb cleanser	Functional	Cleanses the womb
22	Maganin Zafi	Hausa	Pain reliever	Functional	Relieves pain
23	Onyeukwu	Igbo	Wisdom herb	Symbolic/Spiritual	Used in wisdom rites
24	Akpuru	Igbo	Black leaf	Aesthetic/Descriptive	Known for dark leaves
25	Laga Sidi	Fulani	Forest plant	Ecological	Found in forest regions
26	Ewe Eniyan	Yoruba	Spirit protector	Symbolic/Spiritual	Used for protection
27	Ogirisì	Igbo	Ancestor plant	Symbolic/Spiritual	Used in ancestral rites
28	Ruwan Zuma	Hausa	Honey water	Functional	Used to calm and soothe
29	Wuro Jombe	Fulani	Forest plant	Ecological	Grows in wild terrain
30	Ewe Oorun	Yoruba	Sunleaf	Ecological	Sprouts after sunlight
31	Daji Shuka	Hausa	Hill creeper	Ecological	Found on hills
32	Silla Diko	Fulani	Blood tonic	Functional	Tones the blood
33	Ngaji	Igbo	Spirit protector	Symbolic/Spiritual	Used for protection
34	Ewe Àbíkú	Yoruba	Plant for spirit children	Symbolic/Spiritual	Used in spiritual rituals
35	Ewe Igbo	Yoruba	Forest plant	Ecological	Grows in forest
36	Akwu Ogwu	Igbo	Red stem	Aesthetic/Descriptive	Has reddish stems

37	Zuma Rafi	Hausa	Honey water	Functional	Used to calm and soothe
38	Ndiyam Jonde	Fulani	Water of the elder	Symbolic/Spiritual	Enhances memory in elders
39	Hendu Mayi	Fulani	Spirit protector	Symbolic/Spiritual	Used for protection

Chi-Square Test of Independence

The test of independence analysis yielded a Chi-Square value of 17.69 with 9 degrees of freedom, and a p-value of 0.0389. This result indicates a statistically significant association between language group and naming strategy, thereby rejecting the null hypothesis of independence.

The results of the test were: $\chi^2 (9, N = 39) = 17.69, p = .0389$

This p-value is below the traditional alpha level of .05, providing evidence for a statistically significant association between ethnolinguistic group and naming strategy—that is, we can reject the hypothesis that the distribution of naming strategies is independent of language group. Ethnolinguistic identity is an important and relevant aspect of naming medicinal plants.

Expected Frequencies

Table 2 shows the expected frequencies where we assume the null hypothesis of independence. These expected frequencies are those we would expect to see if naming strategies were randomly distributed across all language groups. Table 3 shows the calculated expected frequencies.

Table 2: Observed Frequencies

This is the actual count of herb naming strategies across language groups.

Language	Aesthetic	Ecological	Functional	Symbolic/Spiritual
Fulani	0	4	2	4
Hausa	1	2	5	1
Igbo	4	0	1	5
Yoruba	1	3	1	5

Table 3: Calculated Expected Frequencies

Language	Aesthetic/Descriptive	Ecological	Functional	Symbolic/Spiritual
Fulani	1.42	2.13	2.13	3.32
Hausa	1.42	2.13	2.13	3.32
Igbo	1.58	2.37	2.37	3.68
Yoruba	1.58	2.37	2.37	3.68

Notable Deviations and Interpretations

When comparing observed and expected values, some language groups experience particularly notable deviations:

- Hausa speakers used Functional naming much more than expected (observed = 5, expected ≈ 2.08).
- Igbo speakers used Aesthetic/Descriptive naming considerably more than expected (observed = 4, expected ≈ 1.54).
- The Yoruba made a similar statement in terms of using Symbolic/Spiritual naming (observed = 5, expected ≈ 3.85).
- Fulani naming strategies clearly leaned toward ecological contexts of naming (observed = 4, expected ≈ 2.31).

Overall, these deviations represent the most important aspects of the statistically significant Chi-square results.

DISCUSSION

The discussion section seeks to synthesise the results from the data analysis and interpret these results by considering the two theoretical frameworks used in this study. In essence, the discussion will provide insight related to how names of African medicinal herbs are complex semiotic and pragmatic elements that draw intensive relationships from cultural, ecologically embedded, and communicatively exploitable habits.

The frequency distribution showed initial evidence of cultural patterning regarding naming strategies. For example, there was a clear predominance of Symbolic/Spiritual naming in Igbo and Yoruba speakers (5 out of 10 names for each), indicating a possible culturally embedded connection between languages,

ritual, and botanical knowledge. By contrast, Hausa naming clearly leaned towards the Functional naming strategy (5 out of 9 names), indicating more of a focus on the pragmatic uses of herbs. Whereas gratification of naming was more evenly distributed for the Fulani, we noted a slight leaning toward Ecological and Symbolic/Spiritual naming strategies.

Consistent across the ethnolinguistic groupings in this study was the fact that the names were not random or only denotative; they were ostensive cues that activated mental contexts that were culturally endowed with meanings. For instance, Yoruba Ewe Àbíké involves the hearer engaging their culturally rooted assumptions related to reincarnation, infant mortality, and some spiritual rites. The principle of optimal relevance (Sperber & Wilson, 1995) applies here, whereby we find that relatively minimal lexical input can lead to maximum contextual interpretation in name hierarchies. This notion of relevance cues for other cultural actors of oral cultures, where all details may not be fully explicated, facilitates quasi-instantaneous processing, as use and subsequent re-use can support intergenerational cues allowing for successful transfers of knowledge for "onward" generations (Wilson & Carston, 2006; Blakemore, 2002).

Furthermore, interpretation is dependent on the audience. Ngwongwo-isi ("brain shaking"), for instance, will elicit either caution from older audiences or curiosity from youths. This variation highlights the dynamic nature of contextual assumptions, as Relevance theorists indicate (Carston, 2002; Clark, 2013).

Ethnobotanical Linguistics can help explain why certain names are used for certain plants. Typically, names will reflect the ecological niche, medicinal function, or symbolic status of the herb. For instance, Ruwan Zuma ("honey water") in Hausa represents models not just a taste metaphor, but a calming or sweetness-inducing effect, acknowledged in ethnomedicine. Ndiyam Jonde (water of the elder) in Fulani refers to the elder's older age-based knowledge, wisdom, and prevailing knowledge of the herb.

The semiotic power of names provides a Peircean analysis, where signs (herb names) link an object (the herb) and an interpretant (cultural knowledge of the herb and its function) (Peirce, 1931). Such naming practices reinforce collective epistemologies, encoding moral, environmental, and spiritual codes in everyday language. The process of naming is both an act of communication and a cognitive map through which to navigate: healing, social behaviour, and environmental awareness (Martin, 2004; Nazarea, 2006).

The current study's innovative combination of Relevance Theory with Ethnobotanical Linguistics illustrates that naming of herbal plants is influenced by pragmatic-ethnoscience and that while Relevance Theory explains how the process

of interpretation happens, Ethnobotanical Linguistics explains what influences the name and what type of knowledge the name embodies. For instance:

- The Yoruba name Ewe Alùkò ("plant of the fertility goddess") presupposes both culturally situated knowledge (that is, knowing who or what Alùkò is) and inferential working to connect the name to its functionality.
- The Igbo term Nsi Oji ("black poison") invokes interpretive knowledge around taboos - not just knowledge of toxicity.

Therefore, naming is indicative of a triadic relation (language/thought/world). The study greatly advances the burgeoning field of ethnobotanical linguistics and pragmatic anthropology by:

- i. Addressing a gap in scholarship by applying Relevance Theory to ethno-scientific data.
- ii. Providing a cross-linguistic comparative model in which to view plant naming practices in Africa.
- iii. Showing how naming encompasses a mechanism for transmitting knowledge, reinforcing identity, and holding ecological meaning.
- iv. Allowing for advances in linguistic pragmatics to now include non-Western, oral, and symbolic naming conventions.
- v. Encouraging linguists to view indigenous naming as more than a lexicon, but also as communicative action in the social, cultural, and ecological contexts in which naming happens.

A few limitations exist with this study. Firstly, the sampling included 4 major language groups, but the linguistic and ecological diversity of Africa means there are still many naming systems not explored. Secondly, in the English translation, some names may have lost layers of meaning; they may have been reduced in metaphor and/or implication. Also, in some cases, there are herbal names and/or meanings that would only be accessible to herbal specialists - it is not possible to unveil the full ethnobotanical meaning. Names may not be static and might have changed over time, while this study does not fully capture the diachronic variations in meaning. The study offers a starting point for more wide-ranging cross-linguistic and diachronic explorations into the naming of herbs and Indigenous epistemologies.

CONCLUSION AND RECOMMENDATIONS

This study aimed to show the intersection between reconciling a pragmatic linguistic investigation and Indigenous epistemology on the naming of African medicinal herbs using Relevance Theory and the Ethnobotanical Linguistics framework. The findings indicate that herbal plant names in Yoruba, Igbo, Hausa,

and Fulani peoples are far more than mere referential markers; their names encode pragmatic social cues and spiritual elements of connectedness made within their ecological contexts, with layers of inter-generational deference built into them. The two frameworks applied indicated that the naming of herbal plants is a pragmatic-ethno-scientific way of understanding and linking cultural cognition, oral tradition, and ecological strategies.

In light of the above findings and conclusions, we offer the following recommendations for future studies: Linguistic documentation as there is a pressing risk of losing indigenous ways of knowing before they are even documented; Interdisciplinary collaboration between Linguistics, botany, and anthropology researchers who need to work in interdisciplinary teams to examine the full meanings and functions of plant nomenclature; More thorough comparative studies spanning more African languages and ecological contexts would increase the generalisability of findings, while broadening the possibilities for synthesising meanings of herb semantics; Indigenous herb naming and ethno-botanical literacy should be documented, recorded, and implemented in local educational curricula, and adopted in health education courses to enhance cultural pride and provide culturally and ethically grounded environmental health literacy.

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