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The Significance of Setswana Vocabulary Used in English Taxonomy to Enrich the Language of Biodiversity

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ABSTRACT The paper explores the use of Setswana vocabulary in biodiversity-related English-taxonomy. Its object is to highlight the importance of using names of flora and fauna borrowed from indigenous African languages in biodiversity taxonomy to create conservation awareness. Based on sampled data from archives and documents and applying the theory of knowledge, the study argues that the selected names borrowed from African language are a major influence on increasing an awareness of indigenous knowledge to promote conservation in South Africa. During colonialism Africans were alienated from nature by massive urbanisation and relocation, which in South Africa led to a loss of indigenous knowledge on biodiversity. The use of indigenous names in biodiversity taxonomy may act as a meaningful symbol in the reclaiming of African knowledge and advancing scientific literacy and awareness of communities. The results of the study stress the importance of preserving indigenous nomenclatures in the context of understanding African biodiversity in southern Africa.

INTRODUCTION

Among Africans indigenous names hold a special place for cultural rentation (Motsamayi 2020: 296). Names, for example, connect society with ecosystems (Franco 2021: 3). Today, in view of humanity's urgent need to protect endangered nature (Gorenflo et al. 2012: 8035), it is of interest to note that many Africans express an enduring respect for nature, for instance by celebrating the names of plants and animals that they consider as their totems or as a link with their cultural identity. In such cases the particular animal or plant involved is protected and cannot be destroyed. A totem is associated with fauna and flora honored by a specific group and considered as a family heirloom (Schapera 1938). English, and Setswana names (nouns), have been adopted and used as equivalents for modern scientific names, among others in Latin.

The plants and animals featured this context belong to cultural keystone species. They are meaningful because they link African communities to their languages and heritage. As such, they shape a community's identity (Nabhan and Carr 1994). The Setswana names used for flora and fauna are native in Southern Africa where language is distributed.

Research Background

The study of indigenous languages has been somewhat neglected in broader scientific studies in Africa, in spite of the existence of rich indigenous vocabularies that may be of global interest and assist in the promotion of biodiversity (Gillman and Wright 2020). Innovations brought about by local cultures through languages have benefited indigenous environmental knowledge (Fairhead 1992) and could be used to advance scientific literacy, positively influencing communities' perceptions of biodiversity and nature conservation affecting people's ways of knowing and living (Campos 2021: 236).

In cases of scientific naming that makes use of indigenous vocabularies, the borrowing is generally limited to the identification and classification of animals and plants in relation to the symbolic cultural identity of the indigenous group concerned. Lustig and Koester (2006: 141-142) emphasize that "cultural identity refers to one's sense of belonging to a particular culture or ethnic group. It is formed in a process that results from membership in a particular culture and it involves learning about and accepting the traditions, heritage, language, religion, ancestry, aesthetics, thinking patterns, and social structures of a culture". Names are symbolic to culture.

Fairweather and Johnson (1981: 136) consider a symbol as "man's way of relating himself to his cosmos". The borrowing of biodiversity names by English-language taxonomy signifies continuation and memory. A point to consider is that names are

verbal symbols that define a person even in his absence (Kripke 1980). Based on the names that have been borrowed from Setswana, it can be argued that this process stimulates an awareness of biodiversity among local Setswana-speakers. Many animals native to the African continent are still known by the Western names given to them in the colonial era by colonial administrators, explorers, missionaries, travellers, hunters, and naturalists who were exploring and documenting the continent's rich biodiversity. The evidence of biodiversity taxonomy adopting African vocabularies indicates that in various communities' African names are a vital part of the promotion of nature and wildlife conservation (Berlin 1992: 5). Apparently, many Africans living in urban and rural areas have never seen the wild animals they revere as totems in the wild, but only in photographs, television or on social media linked to their cultural identity.

Literature: Dialogue between Native Language and Colonial Language

Indigenous knowledge has the power to harness the future of biodiversity in Africa by instilling the values of, and the priorities in, nature conservation (Das 2010). The use of indigenous languages in global scientific terminologies will foster a greater understanding of our environment (McKiernan 1990: 12). The previous neglect of indigenous languages risked destroying existing links between individuals and communities and their surrounding ecosystems. African societies have a culture of naming people after animals and plants. This living tradition is characterized by sentimental values that are inherent in language. Hence, in addition to basing oneself on information extracted from historical documents, other relevant records, and indigenous sources, an understanding of names leads to insights into the relation between people's cultures and their interest in biodiversity and conservation.

Linguistic proficiency is needed to preserve linguistic connections between a lending and a borrowing language (Hulstijn 2015: 11). A coherent vocabulary stimulates dialogue about biodiversity between and within communities whose livelihoods depend on the preservation of nature. Taking native vocabularies into consideration broadens the awareness of the scientific community of ideas living and practised among Setswana-speakers on biodiversity and its sustainable conservation. In this regard, so-called "folk taxonomy" reflects how indigenous people explain an organism in the natural ecosystem, relating it to their local culture.

"Naming and classifying organisms help us to understand our natural world" (Ross 2014: 121). According to Vrbinc (2019: 6), names are not given simply for the sake of giving a thing a name, but they are an aspect of heritage. This implies that name-giving is a special task that should be performed by certain members of a family. Even the naming of animals may be a matter of family tradition and requires knowledge of the family's culture so that a selected name will be meaningful (Nyström 2016: 41; Ainiala 2016: 374). Some Tswana names are believed to have been used expressly to preserve indigenous knowledge.

In the African context, languages classify animals and plants and by functioning as a way of knowing they can benefit a collective understanding of biodiversity (Ross 2014: 129). Since language is a product of societies and systematically organizes naming, it can also contribute to the dynamic development of vocabulary, to an awareness of biodiversity and to the preservation of indigenous knowledge in scientific terms. Such awareness and knowledge are transmitted through language communication. In relation to language, Lustig and Koester (2006: 13) note that "communication is a symbolic, interpretive […] process in which people create shared meaning". Communication is thus characterized by being transactional, contextual, a process, and an expression of shared meaning, as in the case of English biodiversity taxonomy that borrows words from indigenous Setswana. In later colonial years, Afrikaans names were introduced as part of a local South African language to compete with local naming using indigenous languages. Hence, it became difficult to expand the presence of African vocabularies in Western-language writings on biodiversity.

Objectives

The present study focuses on names which are significant in Setswana vocabulary and associated with the naming and conservation of animals and plants in Southern Africa. These names have been adopted in English-language biodiversity taxonomy. The objective is to identify a sam-

ple of names borrowed from Setswana and used in modern English-language biodiversity, so as to develop an insight into the perceived enriching effect on English biodiversity nomenclature of including local vernacular names. Thereby it is necessary to appreciate that nomenclatures and general terminologies used in relation to biodiversity may differ, depending on the situation of their application and on specific theoretical aspects (Pike 1967). It is through their names that species are today identified and recognized in their wider natural communities, while taxonomy in relation to biodiversity conservation has improved. This study wishes to encourage biodiversity literacy in relation to nature conservation which itself is in its origin a part of African culture.

MATERIAL AND METHODS

The paper relies on qualitative data sourced from scholarly papers, diaries, observation and field research, and secondary sources (Dey 2003: 13). The research is thus of an archival nature, which in the present context means that the focus is on analyzing data that have already been collected while, using procedures suitable for this type of research, it seeks to explain data content by applying primary sources based on present information obtained from, for instance, the online sourcing of keywords, relevant documents, and books.

Archival research has been used in primary research to extract data from original archival sources to support the hypothesis that Setswana nomenclatures help in communicating indigenous ideas, meaning, and culture. According to the classic definition, "archival sampling consists in the selection of some part of a body of homogeneous records (files) so that some aspect of an organization's or government's work, or the information received or developed by that organization or government, may be represented or illustrated thereby" (Harrison 1984: 54). Researchers found certain documents in colonial archive repositories and sourced other documents from the institutions that originally generated them. This archival research hence relies on analysing data already collected based on information that previously existed and was collected from other sources. Leach (2018: 126) indicates that "archival research is a type of primary research which involves seeking out and extracting evidence from original archival records. These records may be held either in institutional archive repositories, or in the custody of the organisation (whether a government body, business, family, or other agency) that originally generated or accumulated them, or in that of a successor body".

For data analysis, the paper applied "thematic analysis" (Kiger and Varpio 2020: 846). Simple random sampling was adopted, by randomly selecting selected names borrowed from Setswana and used in the context of English-language biodiversity. Thematic analysis was useful as it can be applied deductively, relying on archival materials and transcripts to present qualitative data to be analysed and themes related to areas of the study. Terry and Hayfield (2021) describe the theme as a subject that carries the meaning of the research content from a chosen text document associated with a research subject. In this context, thematic analysis helps in systematic identification, the connecting of data, and the interpretation of the subject studied.

In this research process the use of online sources, books, notes, and community archives is vital to collect information concerning biodiversity vocabulary based on Setswana, necessary for the description and interpretation of data. Kiger and Varpio (2020: 2) state that, the most widely accepted framework for conducting thematic analysis involves a six-step process: familiarizing yourself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

Thematic analysis proved a useful method for analysing qualitative data, focusing on the exploration of different sources to obtain information concerning names borrowed from Setswana and used in English with the more specific aim of identifying data connected to enquiry related to the outlining of Setswana names that, after using "tale format" to analyse their application and the areas of their prevalence, have been adopted into English. Based on "thematic analysis" to examine available qualitative data obtained from online sources, texts and transcripts, the study was able to identify vernacular names that are frequent features in English vocabularies, relying on prior knowledge of African languages.

Theoretical Framework

Corbetta (2003: 60) defined a theory as, "a set of organically connected propositions that

are located at a higher level of abstraction and generalization than empirical reality, and which are derived from empirical patterns and from which empirical forecasts can be derived". Theory is of importance in respect of discussions on naming and to support the analysis needed to fully appreciate the subject matter. An indigenous maxim in Setswana says: *leina lebe ke seromo* ("a bad name is a curse"). This seems to imply that the meaning of a name is of importance. In the African context, indigenous nomenclatures preserve language and cultures, leading present and future generations to be aware of their surroundings.

As a theory the study applied epistemology, or the theory of knowledge, which emphasises that there are various ways of knowing (Hamilton 2003: 43). In the present context, epistemology requires a consideration of the meaning of Setswana words and how these have come to be adopted in discussions of biodiversity. Epistemology is, in other words, concerned with the creation of meaning in knowledge production (Moses and Knutsen 2019: 23). Thus, the theory was applied in the research to explore in what sense the adoption of an African vocabulary can be critical to the enhancing of meaningful language in circles concerned with biodiversity, and how the English language conveys and strengthens information on biodiversity by using words adopted from African indigenous languages and, among others, sourced from Setswana lexicon.

Theory of epistemology, referring to various ways of knowing (Moses and Knutsen 2019: 7), was in the present research also applied to the interpretation of archival data. As it promotes obtaining an analytical view of subject matter, the theory was used in combination with a relevant methodology, to interpret information collected from sampled archives that provides insights into the construction of names focused on biodiversity. Departing from an emic viewpoint Schwandt (2007: 81) posits that "emic terms are indigenous and specific to a language or culture, whereas etic terms are developed by a social inquirer and used to describe and compare sociocultural systems". Thus, this paper considers the Setswana language as a meaningful communication tool use to convey ideas as a way of knowing link to scientific vocabulary in biodiversity. Most information pertaining to archival data used in this paper was available prior to the research in the form of primary data documents and relevant records (Burchell 1822-4; Brown 1923; Roberts 1940; Palgrave 1977; Cole 1990), helping the study to explore and determine how archival research on biodiversity connects with the history of, for example, English biodiversity borrowing Setswana nomenclature to enrich its taxonomy. Existing historical records and juxtaposed contemporary documents available in libraries and online need to be examined in order to become aware of mutual interfaces between the language of biodiversity and indigenous languages.

RESULTS

The borrowing of words from other languages is a common and mutual process. Africans have in turn also adopted English words. Groups rely on each other's languages to advance their vocabularies (Nyström 2016: 39). The borrowing of words is beneficial, especially if adopted names are used by a wider public without losing their original meaning such as in the case of Setswana names having become anonymous within the English biodiversity vocabulary. It does occur that a vocabulary holds multiple names that are applied in different settings and in communication with different people. Thus, the names of humans differ from names that indicate inanimate objects or places (Jenkins 2007).

Although people may be called by animal names, such names are symbolic. Names of African men and women continue to function, in addition to being proper names, as a way of claiming African identities (Clasberry 2012: 43). The heterogenous Setswana language is one of the top five most spoken languages in Southern Africa and neighbouring countries. In comparison to other indigenous languages, more words originating from Setswana have been borrowed by, and are used in, the English biodiversity vocabulary (Table 1).

In the present study, the indigenous Setswana names referred to are proper names, rooted in African cultures and transmitted from one generation to the next through word of mouth and custom. The names selected for the study have been borrowed into English and may also be found in other African languages, for instance in Sesotho and Sepedi. There is mutual intelligibility between selected borrowed names, used in English and found in languages spoken by different African groups

Table 1: Selected Setswana names borrowed into English biodiversity taxonomy

Setswana	*English*	*Scientific name*
a. *Kgôri* (fauna)	Koribustard	Ardeotis kori
b. *Kudu* (fauna)	Koodo/ Kudu	Tragelaphus strepsiceros
c. *Letswee* (fauna)	Lechwe	Kobus leche
d. *Mabele* (flora)	Mabele	Sorghum bicolor
e. *Marula* (flora)	Marula	Sclerocarya birrea
f. *Mopani* (flora)	Mopani	Colophospermum mopane
g. *Puku* (fauna)	Puku	Kobus vardonii
h. *Tsetse* Fly (insect)	Tsetse Fly	Glossina palpalis gambiensis
i. *Tlhapi* (fauna)	Tilapia (Latinization)	Oreochromis
j. *Tsessebe* (fauna)	Tsessebe	Damaliscus lunatus lunatus

like Nguni and Sotho-Tswana. In, for instance, isiZulu and Sepedi respectively, *Inyala, impala/ phala* are words borrowed into English and existing in both African languages. Mutual intelligibility between Setswana and English seems to have occurred before European missionaries established contact with Tswana groups, for instance the word *melodi* in Setswana sounds equivalent to the English word melody for music/tunes.

These identified names, having become part of an English vocabulary focused on the science of biodiversity, reaffirm the survival of Sotho-Tswana culture as they communicate the essential relationship communities with their environment. Thus, indigenous languages influence the conservation of nature, encouraging literacy, and the sustaining of biodiversity. The adoption of Setswana names to enhance the English vocabulary concerning matters of biodiversity in South Africa is meaningful for indigenous cultural heritages, even though the process of naming in English-language taxonomy of biodiversity is still dominated by colonial perspectives based on the honouring of collectors and sponsors. Hence, taxonomists need to continue consulting and engaging with indigenous peoples regarding the use of an indigenous nomenclature for specific species, in order to create a relevant taxonomy taking regional distribution into account.

DISCUSSION

Vocabulary Promoting Biodiversity in African Surroundings

Undoubtedly, Anglicization and Latinization of African nomenclatures of flora and fauna have benefited global dealings with biodiversity, including those by speakers of African languages (Lyster 1985). The words borrowed from native Sotho-Tswana languages spoken in Southern Africa (from former Cape colony to Zambia), have been borrowed by, and become part of, the contemporary global vocabulary of biodiversity. In this context, linguistic analysis provides an understanding of how language functions, in conjunction with document research methods related to lexical borrowing that leads to Setswana language being adapted. African language loanwords originating from different regions and periods have been adopted by Western scientific communities. Linguistically the process is known as the borrowing of words. It entails that one culture borrows or adopts words from an outside language into its own language without changing their meaning (Lizarralde 2001: 265).

According to Munro (2021), "colonial wildlife conservation initiatives in Africa emerged during the late 19th century, with the creation of different laws to restrict hunting as well as with the setting up of game reserves by colonial governments. Key influential figures behind this emergence were aristocratic European hunters, who desired to preserve African game populations-ostensibly protecting them from settlers and African populations- so that elite sports hunting could persevere". However, this paper is not concerned with regulation matters and the creation of laws, but focuses on selected Setswana names, used to enhance an English vocabulary for the development of biodiversity terminology in Southern Africa. The paper wishes to create awareness of the role fulfilled by flora and fauna in the identity of Setswana society and in its collective memory, for the sake of reclaiming the Setswana linguistic contribution to the identification of biodiversity.

During the colonial era, naming was focused on identifying places, buildings, and institutions, later extended to include the conservation of names given to people and animals living in their environment. To attest to this, Munro (2021) indicates that, "these wildlife conservation measures became more consolidated at the turn of the 20th century, due to the 1900 Convention for the Preservation of Animals, Birds and Fish in Africa (an agreement between European imperial powers and their representatives in the African colonies to improve wildlife preservation measures), and resulted also from the establishment in 1903 of the Society for the Preservation of the Wild Fauna of the Empire. In the post-apartheid era, the South African government has taken the initiative to change the names of places, towns, streets and even provinces that were perceived as deeply offensive, thus correcting aspects of past injustice (Orman 2008: 126). It is through names that people connect to past generations and experience a sense of continuity (Hough 2016). Whereas names of geographical destinations around the country have been changed for political reasons, the interest of the study is in the presence of indigenous names in English biodiversity vocabularies is not motivated by politics but by the understanding that a primary way of acquiring important knowledge on biodiversity is by advancing its language.

The Department of Environmental Affairs (2015) notes that it "is responsible for the protection and management of South Africa's natural resources in a manner that fosters sustainability and creates a healthy living environment for all the citizens of the country". Biodiversity can indeed be seen as the soul of African cultures, spirituality and livelihoods. African languages, being dynamic, are receptive and open to understanding the dynamic character of other languages (Lizarralde 2001: 267). For instance, a receptive language in the process of developing names in vernacular language, is ready to identify names and comprehend words associated with the new names. This receptive approach can encourage Africans to value animals as part of their ecosystems and as being in need of preservation. Lyster (1985: 12) states that, "The first international agreement to conserve African wildlife was signed in London on 19 May 1900 and called the Convention for the Preservation of Wild Animals, Birds and Fish in Africa. It was signed by the colonial powers then governing much of Africa - France, Germany, Great Britain, Italy, Portugal and Spain". Its objective was "to prevent the uncontrolled massacre and to ensure the conservation of diverse wild animal species in their African possessions which are useful to man or inoffensive". In the context of the preservation of wild animals, birds and fish in Africa, the adoption of African nomenclatures allows for natural linguistic diversity to occur, which brings different languages together through a partly common vocabulary that opens up the possibility to trace the origins of borrowed names and their meanings and of associated phrases. Such a process could lead to the development of a cohesive vocabulary and promote the maintaining of biodiversity within African communities by providing an indigenous perspective (Hewson 2015).

Setswana Contacts with Europeans

In 1806, German botanist and zoologist, Hinrich Lichtenstein, mentioned Setswana in his writings in Cape region (Otlogetswe 2011:23). In the early 19th century, Europeans used the name "Bechuana" in reference to Sotho-Tswana groups that lived in the South African interior (Anderson 1888). Historically, Batswana's formal linguistic exchange with English language occurred when Scottish missionary Robert Moffatt arrived in South Africa, followed in 1821 by the arrival of his colleague David Livingstone in Kuruman (Marsh 2013). This is the earliest period in which the English language had a meaningful impact on the indigenous Setswana language. Setswana is closely related to other Bantu languages in South Africa, namely, Northern Sotho and Southern Sotho. The current Setswana orthography was codified after this early missionary contact. Contemporarily, Setswana which was modified by Europeans, is today accepted as representative of Standard Setswana (Fraser 2008: 9). In fact, Batswana include heterogeneous groups with different regional dialects and, thus, the Setswana language as spoken in South Africa is far from being standardized. However, indigenous vocabularies concerned with matters of biodiversity are similar and may reveal much about the geographical distribution of regional languages.

Robert Moffatt was one of the earliest European missionaries to encounter Tswana peoples and he became a pioneer translator of the Bi-

ble into Setswana, which helped to popularise the language within English community. Thus, Moffatt is credited with being the first European responsible for the codification of the Setswana language for the purpose of spreading literacy and Christianity among Batswana (Moffatt 1842). Hence, a link was created between literacy and religion. According to Runesson (2010), the compilation of the first Setswana dictionary by John Brown in 1870 was linked to the realisation of the Setswana Bible (Runesson 2010: 159).

Moffatt began translating the Bible in 1817, soon after his arrival in Kuruman. He was assisted by William Ashton in translating as well as in the 1857 printing of the completed manuscript (Runesson 2010: 159; Moffatt 1842). Consequently, Setswana was the first South African indigenous language in which a complete Bible became available. It gave the language exposure among Europeans. This past popularization of the language and the implied cultural contact between Batswana and European communities is considered as being at the roots of the borrowing of Setswana names into English-language taxonomy of biodiversity. ''The reasons for the preponderance of Khoisan and Tswana names are not far to seek. A number of the early explorers and travellers were attracted to the western and northern half of South Africa, including portions of the western Orange Free State and Transvaal'' (Cole 1990: 179-189).

Link between Language, Community, and Biodiversity

A significant number of Setswana names/ words were adopted into the English-language biodiversity vocabulary during the colonial era and are still used to identify and classify African flora and fauna. Cole (1990: 180) notes that ''After the Khoisan languages, Tswana is the major contributor of neo-Latin epithets relating to southern African fauna and flora. This is the language of large areas in the northern Cape, western Orange Free State and western Transvaal, and, of course, Botswana (the former Bechuanaland Protectorate). Tswana is the major single contributor, for the Khoisan acquisitions derive from several distinct languages - precisely how many we do not know, nor shall we ever know, for most of them are extinct, and relationships cannot be established on the basis of the fragments of information available to us from early travellers' scant records''.

It is inherent in many African cultures to honour animals and plants by using them as totems. Hence, within African communities some of these animals and plants are protected and may not be eaten. Clans and individuals as well as places may be named after these totems of which the names are also used as clan symbols.

These traditions also contributed to the preservation of indigenous nomenclatures from one generation to the next, as they were repeated in oral histories and affirmed by modern science (Pilgrim and Pretty 2010: 3). It is therefore relevant to acknowledge the impact of indigenous vocabularies such as that of Setswana on the shaping of a Western biodiversity vocabulary. It does not make sense for native African animals to be known only by foreign names that cannot meaningfully express their character. Hence, it is vital to acknowledge that names of indigenous animals and plants have now been adopted in Western science concerned with biodiversity due to historical contacts between Africans and Europeans. This fact is of importance for the advance of scientific name-giving in the context of conservation. Naturally, missionaries, travellers, and nature conservationists (Flood 1960) acknowledged African names for identification of specimens of flora and fauna while exploring the continent's rich biodiversity (Daniell 1805).

Several names continue to be used today and are widely adopted as an enduring part of Western nomenclatures linked to African biodiversity (Rookmaaker 1989). It is well-known, that in the colonial era a social construct was applied to classify the various indigenous peoples in Southern Africa according to their languages and cultural identities. As such Setswana offers a linguistically sound basis, as do Sepedi and Sesotho. As stated above, Africans have family names, in some cases praise names, and sometimes nicknames (used only by their peers). In this context the study focuses on names that are associated with proper names, as noted by Kripke (1980: 24).

Nyström (2016: 40) notes that "all proper names (that is, place names and personal names, (...) animal names, (...), products, etc.) are a type of word that people use to identify and refer to objects individually without having to describe them". In vocabularies focused on biodiversity, African languages are used along with English, Latin and other languages. The process of borrowing words from indigenous languages is a consequence of colo-

nial contacts between Africans and Europeans. A name has connection to the identity. In an African context, the naming process in the past was used to record important events (Motsamayi 2020: 297). Names were thus products of ways of living and of daily experiences in one's surroundings. The right to name a person rested with them or their family, depending on prevalent traditions.

Roles of Indigenous Languages in Biodiversity Conservation

African names are cultural signifiers and some of them function as symbols. Certain animals and plants in Setswana culture have a symbolic value and, when linked to a cultural keystone species, they can significantly contribute to the survival of the culture in question. Campos (2021: 243) argues that "cultural keystone species are those species that play an important role in local communities or particular social groups, being vital to their stability and helping to define the identity of a region". African names are informed by, and embedded in, African culture and customs. Setswana language has, as shown earlier, played a role in shaping the vocabulary that gives expression to biodiversity knowledge. Hence, indigenous names contribute to the production of knowledge that is to be shared globally. In that context, "the species name is a fundamental unit. However, the name in its vernacular form may also embody history, a sense of place, and a right to belong" (Hough 2016: 7). "Like the Latin binomial, indigenous names for plants and animals can also be knowledge conduits. When Europeans colonized 'new' lands, they often claimed possession merely by a proclamation of discovery", deposing local geographic place names for new ones. Similarly, biologists have introduced new species names through nomenclature publications that often set aside long-standing indigenous names. There are, however, exceptions and examples of indigenous names having been used, as claimed by Gillman and Wright (2020: 1). Folk names included in taxonomies may incorporate the names of persons who are thereby acknowledged for having contributed to biodiversity, for example by introducing germplasms **(**Franco 2021: 1).

CONCLUSION

This paper highlights African naming traditions and the phenomenon of indigenous names of flora and fauna being adopted in an English-language vocabulary concerned with matters of biodiversity. Indigenous names as used in English biodiversity nomenclature have proved to be a catalyst in the context of sustainable African-language names dealing with biodiversity. This study shows that Indigenous African nomenclature preserve vernacular linguistic heritage of botanical and zoological fields, as today many Setswana personal names, toponyms and ethnonyms have been adopted into English vocabulary which sustain language. Being a part of heritage, name-giving in African groups play a role in confirming a society. Some names are also used as a measure of one's status within the community at large. Generally, Africans use clan names, praise names, family names, honorary names, initiation names and ceremonial names. Names may thus indicate seniority, status, or the development of one's position in one's community. When naturalists were renamed in the context of their work environment, the choice of name often followed a scientific pattern. African name-giving is culturally based, which implies that names are not made up, but have to be meaningful in the context of conservation and community. Chosen as such names may be like mirrors that reflect origin. Names cannot be separated from biodiversity heritage. In African societies, names have positive and negative meanings and they comment on situations affecting a community. The name may thus be seen as indicating identity.

Hence, it is clear that, with the adoption of Setswana names in an English-language scientific vocabulary, the broader community may be empowered to learn and communicate the meaning of flora and fauna in vernacular terms. This happens in both formal and informal ways. The names used have been agreed upon and are sometimes confirmed in altogether conventional ways. For this purpose, a set of rules is used, designed for the formulation and communication of ideas meant to preserve biodiversity knowledge in various ways, through sound, sign, visual representation, whereby symbolic meaning is adopted as a form of language. Thus, animal and plant names are used as representations of nature. It requires care to correctly follow specific rules applying to language and naming. Some naming becomes problematic if not used properly or mentioned out of context. There are, for instance, some animals that share names with human beings and plants.

Linguistically, Setswana play an important role in communicating knowledge and advancing science concerned with wildlife. It is a vital tool in

the construction of meaning. It can start as a language shared only by a limited number of people and eventually become globally used. Humans rely on communication to connect with fellow humans. It occurs, during communication, that specific words from one language are adopted by, and frequently used in, another and dominant language and over time become accepted as part of a new vocabulary.

RECOMMENDATIONS

This paper stresses the potential contribution of indigenous languages to scientific vocabularies. The mere fact that many Africans have been named after revered aspects of nature reflects the centrality and the perceived symbolic significance of animals and plants in African worldviews. In African society the adoption and use of names as symbols is part of preserving culture.

The research recommends a need to reclaim African names of indigenous flora and fauna as part of an African heritage. The study hopes that outcomes will revitalize the use of the Setswana language, advancing indigenous taxonomy concerned with biodiversity and leading to the generation of new data for the development of linguistically oriented human cultures and nature conservation. This study may act as a catalyst helping to bridge the gap currently existing between different languages and affecting local indigenous languages that have been neglected in respect of biodiversity nomenclatures. Raising an awareness of the importance of using local vocabularies, and thus promoting mutual understanding and fostering a sense of ownership in African communities, along with convincing these communities of the need for wildlife conservation. In this context the study advocates increased participation and active engagement in science literacy. The findings of the study, corroborated by sampled Setswana and English taxonomy recommends the benefits of using binomial nomenclature within indigenous communities. Thus, Setswana names used in English biodiversity are recognised within the African communities, in which it increases the interest in biodiversity and in the sustaining of plant and animal life on earth. The study argues that indigenous nomenclatures connect Africans with their roots. African naming of flora and fauna is closely linked with traditional, cultural values which in their turn are concerned with humanity and, as a result of the African attachment to nature, with nature conservation. In view of these associations it may be beneficial to create awareness on the role of culture in preserving biodiversity by making use of indigenous knowledge.

LIMITATIONS

The study only focuses on Sotho-Tswana languages (Setswana, Sepedi and Sesotho) that intertwined. Although English actually also borrowed words from Khoisan and other South African languages, thus the study was only limited to Setswana vocabulary.

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