




## Bird names as critical communication infrastructure in the contexts of history, language, and culture

KEVIN WINKER

*University of Alaska Museum and Department of Biology and Wildlife, Fairbanks, Alaska 99775.*

✉ [kevin.winker@alaska.edu](mailto:kevin.winker@alaska.edu);  <https://orcid.org/0000-0002-8985-8104>

### Abstract

Standardized taxonomies and lists of birds were created to improve communication. They are linguistic infrastructure—biodiversity indices and dictionaries—that have been painstakingly built and maintained and that have enhanced regional and global participation in the study and enjoyment of birds. Inclusion of people has been a core objective in creating and maintaining these standardized lists, and dissatisfaction and desires to overwrite objectionable names have been associated with them for nearly two centuries. Suggestions that bird names should be changed are continuous. Today, these suggestions include the view that some bird names must be changed to make them more accurate, inoffensive, and culturally appropriate to further increase diversity and inclusion among ornithologists and bird watchers. The latter, meritorious goal has been largely successful thus far despite many ongoing objections. Historic examples indicate that large-scale name changes, however, are not needed to accomplish major societal goals of inclusion. Some barriers to inclusion likely remain, and some changes are likely needed for English names. Often overlooked or underappreciated in name change discussions are that: 1) standardized names lists have had numerically staggering success in fostering inclusion of diverse participants globally; 2) stability is vital in such systems, and destabilization has exclusionary effects; 3) dissatisfaction with such lists and the names they include has been ongoing since these naming systems began; 4) important flexibilities exist in conjunction with these communication systems that enhance local and regional communication (e.g., alternative names in English and other languages); and 5) cultural values, important as they are, are neither universally shared nor constant, and thus risk bringing divisiveness and instability when used as a central reason for change. Consideration of standardized lists of bird names as communication systems in the fuller context of history, language, and culture will improve our management of these systems and their continued utility in fostering inclusion. With standardized, stable naming systems acting as a skeleton, proactively building outwards, both within and among languages and cultures, offers a positive and productive way to increase inclusion and to improve cultural and biodiversity conservation.

**Key words:** biodiversity, culture, diversity, history, inclusion, linguistics, nomenclature, ornithology

### Introduction

“There is not, perhaps, any subject connected with ornithology on which so great a variety of opinions is entertained, as its nomenclature; and while all Naturalists admit that the evil should be remedied, there are scarce any two who can agree as to the course to be adopted to effect this object.” (Morris 1837:160).

People often have strong feelings about birds—watching, studying, hunting, eating, depicting, feeding, owning, loving, hating, writing, and singing about them. Consequently, we have given birds an immense number and variety of names, within and between languages (e.g., McAtee 1948; Desfayes 1998). The recognition that common language can enable human society to work together in harmony and that multiple languages can cause confusion and discordance is evident in deep oral and religious traditions, such as the Tower of Babel and stories with similar parallels from diverse cultures (Frazer 1919). As Western science grew, the study of global biodiversity required common language and labels. This need to communicate among widening groups of people about birds motivated the creation of standardized lists of names for them. These efforts began with Western scientific ornithologists, among whom the topic has generated passions and occupied considerable time and attention for most of two centuries (and likely longer). For animals, scientific names, Latin or Latinized, were adopted or created using binomial nomenclature. The process of successfully developing a rules-based framework for this was difficult and protracted

(e.g., Strickland *et al.* 1843; AOU 1886; Blanchard *et al.* 1905; ICZN 1961). Given its long and ongoing nature, there is probably no more contentious subject in the history of biology than organismal names.

Birds differ from most other organisms in having rather tightly coupled proper-name English and scientific nomenclature systems used by both amateurs and scientists. The convention in scientific and popular ornithology is that English bird names in these standardized lists are (mostly) unique proper nouns or names, capitalized and equivalent to the names of cities, towns, rivers, lakes, mountains, and seas (BOU 1883; AOU 1886; Parkes 1978; National Geographic Society 1983; Dickinson & Remsen 2013). Proper nouns give us a formal name for a species that make it instantly clear in English whether we're talking about a gray flycatcher or a Gray Flycatcher (*Empidonax wrightii* Baird), a yellow warbler or a Yellow Warbler (*Setophaga petechia* Linnaeus), etc. This choice for most English ornithological literature enables us to write clearly and unambiguously for "the widest possible readership." (Potter 1984:895). Furthermore, these standardized English names have proven to be more stable than scientific ones, likely due to ongoing developments that have forced changes in the binomial scientific names because of increased knowledge of systematics (phylogenetic relationships) and of the limits of genera and species (e.g., AOU 1886; White 2006). This gives the English name a nomenclatural advantage in numerous aspects of communication, e.g., with a non-scientific public.

Our taxonomic lists are biodiversity indices and dictionaries. For example, they are dictionaries of orders, families, and genera, each defined by their members and the associated characters unique to each group but shared among that group's members. At the same time, they are indices by serving as a guide to what a geographic area or taxon contains. They also facilitate access to a vast and rapidly growing ornithological literature. Nomenclatural standardization and stability enhance communication and make access to this literature easier (e.g., Strickland *et al.* 1843; Dickinson 2016; Winston 2018).

Despite the importance of stability, concerns about bird names and desires to change them are not new. Recent proposals (e.g., Foley & Rutter 2020) to make substantial changes to the English names of birds echo dissatisfactions that have existed since authoritative taxonomic naming systems were first created (e.g., Strickland *et al.* 1843; Lewis 1920). The current discussion is part of an important broader societal effort to increase diversity, equity, and inclusion, evident in different aspects of the life sciences (e.g., Cahan 2020; Khan 2021; Gewin 2022; Nobles *et al.* 2022; Park *et al.* 2023; Cheng *et al.* 2023).

Our names for animals have been of great interest and passion for a very long time. Here I briefly review the landscape of our bird nomenclature (or naming) systems, consider some of the major issues that have been involved in shaping them, and summarize several linguistic and cultural aspects that bear on discussions of how to continue developing and maintaining them. I also offer suggestions for pursuing a more collective and inclusive goal for these naming systems. Our culturally rich and ongoing human heritage about birds and their names has been relatively neglected in scientific ornithology and yet is important in education, outreach, and conservation (e.g., Gosler 2019; Amano *et al.* 2021). Because our Western bird naming systems exist at an interface of natural sciences, social sciences, bodies of knowledge, and culture, we have an opportunity to use these systems as a nexus to bring together and improve all of these areas.

In reviewing this landscape and its complex dimensions, I will present ideas and offer observations with which some will likely disagree. And for conciseness I have probably excluded some aspects that others consider important. But I hope that this introduction will foster fuller and more balanced discussions of how we should be managing these critical biodiversity naming systems. Even a casual reading of nomenclatural history shows that disagreements are normal for this topic. No offense is meant on my part, should any be taken. Insofar as this subject is deeply embedded in the social sciences, I include at the end a positionality statement so that others can understand me in relation to my approach to this subject (Holmes 2020). I hope that those of us interested in this topic can touch on the many dimensions of the relevant issues and have frank discussions about all of them. Ultimately, it is our own acceptance and use of these systems, imperfections and all, that make them successful in their mission of maximizing effective communication.

## History

"Scientific nomenclature is becoming so vast and so important, and the haphazard way in which much of it has been coined and applied is so provoking, that it imperatively commands from its votaries intelligent and scientific review." (Merriam 1884:36).

The history of our nomenclature systems provides important lessons for current discussions of names and name changes. Chief among these are clear needs for standardization and stability, perennial complaints about (and ideas for) reforming names and naming systems, and the numerically staggering success that these systems have had (which does not mean that no barriers remain). The success of these naming systems in fostering inclusion and diversity in scientific and popular ornithology is evidenced today by the global dominance of Latinized binomial scientific names and English bird names, with the latter being linked to the dominance in science of English itself. How did we get here?

### ***Coupled naming systems in birds***

Nomenclatural standardization for zoology was an integral part of the development of ornithology as a discipline in the 19<sup>th</sup> century (occupying much of it), and ornithologists were leaders in this drawn-out effort (Stresemann 1975; Farber 1982). English names were routinely used in ornithological works from the 17<sup>th</sup> through 19<sup>th</sup> centuries (e.g., Willughby & Ray 1678; Latham 1781–1785; Donovan 1794–1799; Jardine & Selby 1826–1835; Wilson 1828–1829; Audubon 1831–1839; Yarrell 1837–1843; Morris 1851–1857). This tradition continued with the first major checklists created by the British Ornithologists' Union (BOU 1883) and the American Ornithologists' Union (AOU 1886), and this use—the paired appearance of English and scientific names for each species—continues today. It is also the typical approach in English field guides of birds. In comparison, major technical ornithological works that did not include English names (e.g., Sharpe *et al.* 1874–1898; Peters *et al.* 1931–1987) have seen much more limited popularity.

Thus, for birds, unlike for most other organisms, English and scientific nomenclatures have long been tightly coupled, wherein a term in both languages is present for each species. Given this history, it is not possible to effectively decouple these tandem naming systems to independently assess their respective linguistic importance in the dramatic global expansion of scientific and popular ornithology.

What we term 'inclusion' today is not a new concept, and this coupling of scientific and English naming systems was a key component of historical efforts to be more inclusive. "SDW" (1836) stated that this coupling of the two naming systems was to make English literature accessible to foreigners. All were not in agreement, though. Morris (1837), for example, opposed using English names as being "of little or no use to the scientific Naturalist," but allowed that "their use for others will be done away with if they are to be changed incessantly,...thus rendering confusion only worse confounded, no doubt with the best intentions." (Morris 1837:219). When the American Ornithologists' Union (AOU) first created a formal list of standardized English bird names, they stated clearly that some names were more suitable for wide communication than others and that using vernacular names would be doing a favor both to fellow naturalists and to the public—i.e., by fostering more effective communication (AOU 1886:69).

### ***Standardization and Stability***

"...it is the object of nomenclature to denote each taxon by a name which is unique, unambiguous and universal..." ICZN (1999:125).

Taxonomic nomenclature was in a rather chaotic state in the 19<sup>th</sup> century, and a system was needed to provide stability and wide acceptability for scientific names (Strickland *et al.* 1843; AOU 1886; Melville 1995; Minelli 2003). The proliferation of scientific names in the absence of clear, widely accepted rules caused tremendous confusion among biologists. Without formal nomenclatural rules, scientific names often existed in an unruly jumble of different names for the same species, creating problems with determining what labels applied to what species and a need for taxonomic synonymies (e.g., Ridgway & Friedmann 1901–1950; Mathews 1938; Melville 1995). In addition to this problem, many of the names being used "were felt to be unfortunate or even offensive to good taste and to good science." (Melville 1995:6).

Early efforts for standardization clearly recognized that a common language was needed, using the same labels for a species, and that the "chaos," "barbarity," and simple bad manners that some authors of the time felt existed among names zoologists had chosen was undesirable at best and unacceptable at worst (e.g., Agassiz 1842; Strickland

*et al.* 1843; Coues 1882). Some nomenclatural system was needed for “advancing zoological nomenclature beyond its present backward and abnormal state.” (Strickland *et al.* 1843:121). In zoology, the process for developing this system was long and highly contentious, but it resulted in the International Code of Zoological Nomenclature (ICZN; Melville 1995; Minelli 2003). This code is not a list of accepted names, but it was critical in providing a stable framework of rules for names and naming. And although it applies only to scientific names, its early coupling with English names in the study and enjoyment of birds enabled what proved to be a highly effective development of stable, tandem naming systems.

In proposing a code of nomenclature that would standardize scientific names in zoology and eliminate the ongoing anarchy of using various names for the same taxon, Strickland *et al.* (1843:107) wrote that the source of this “evil” was

“...the practice of gratifying individual vanity by attempting on the most frivolous pretexts to cancel the terms established by the original discoverers, and to substitute a new and unauthorized nomenclature in their place. One author lays down as a rule, that no specific names should be derived from geographical sources, and unhesitatingly proceeds to insert words of his own in all such cases; another declares war against names of exotic origin, foreign to the Greek and Latin; a third excommunicates all words which exceed a certain number of syllables; a fourth cancels all names which are complimentary of individuals, and so on, till universality and permanence, the two great essentials of scientific language, are utterly destroyed.”

The evidence in this quote of efforts to change names by fiat because of differing views (i.e., ‘cancel culture’) represents just one of many aspects of these historic debates about creating and maintaining effective naming systems that remain relevant today. For example, in providing recommendations for nomenclatural improvements going forward, Strickland *et al.* (1843) included 17 categories of objectionable words that should probably not be used in scientific names, part of a long and ongoing tradition of discussion and debate over how we might improve our nomenclatural systems. Highlights of these debates include vociferous and erudite expositions for nomenclatural purity (e.g., Agassiz 1842; Coues 1882) and attempts to impart good taste and manners in nomenclature (Strickland *et al.* 1843; Melville 1995; ICZN 1999; Shiffman 2019; Poulin *et al.* 2022).

Although admonishing taxonomists to do better going forward has been a perennial approach, these suggestions have had limited influence (e.g., Verrill 1869), and many have been largely ignored (e.g., in naming animals after people; Poulin *et al.* 2022). They haven’t come close to eliminating the poor naming practices they identified (Strickland *et al.* 1843; Shiffman 2019; Poulin *et al.* 2022). This should probably be no surprise: ideals of taste and manners vary, authors are individuals with considerable freedom, and there will always be something for people to disagree with in these systems (considered more in Culture, below). Most of the myriad ways in which nomenclature was found to be faulty failed to gain priority over the need for standardization and stability. After extensive debate, this need eventually drove adoption of rules such as the law or principle of priority, in which Linnaeus’s 10<sup>th</sup> edition of the *Systema Naturae* (Linné 1758) was chosen as its temporal base (e.g., Stejneger 1884; Melville 1995).

The Strickland code set vernacular names aside, preferring instead to focus on Latin binomial nomenclature, “which, being far removed from the scope of national vanities and modern antipathies, holds out the only hope of introducing into zoology that grand desideratum, an [sic] universal language” (Strickland *et al.* 1843:108). While Latin (or Latinized) binomial nomenclature went on to become the universally accepted standard for scientific names, the standardization of English bird names occurred over a similar period. William Yarrell (1784–1856), for example, was a member of the committee that produced the Strickland code (Strickland *et al.* 1843), and his ornithological works were important in establishing English names for British birds (McOuat 1996; Knox 2007).

A key characteristic of our coupled scientific and English bird naming systems is the operation of two very different nomenclatural frameworks, although each has the same goals of standardization and stability (e.g., AOU 1931, 1983). But an odd thing happened as these systems were developed and employed. Although vernacular names are potentially less stable than scientific names because they lack rules and at best have only guidelines for their choice (e.g., AOU 1886; Chesser *et al.* 2020), the opposite has proven true. Having English names as capitalized proper names has provided added stability, and our knowledge of taxonomic relationships has grown profoundly, greatly affecting scientific names. Therefore, English bird names overall have been more stable in practice (e.g., in North America, AOU 1931; White 2006) and are now closer to that long-desired state expressed during the creation of our nomenclatural systems: “language can only attain its end effectually by being permanently established and generally recognized.” (Strickland *et al.* 1843:108); and “fixity of names is the prime desideratum in our nomenclature.” Allen (1884:304).

The increased stability and preferential use of proper English names in ornithological literature has made them important to vast numbers of people and user groups (Winker 2022). Not surprisingly, this importance in a system that lacks the rule-based nomenclature imposed by ICZN (1999) for scientific names has caused an increase in the length and complexity of the guidelines used when choosing or changing these names (e.g., Winker 2022, appendix). So, contrary to what one might expect, the more flexible English naming guidelines have resulted in a more stable naming system than the highly inflexible scientific naming system. The comparative lack of rules for English names thus creates opportunities to effect changes that directly counter the goals of standardization and stability precisely where they have achieved their greatest success (i.e., in the English side of these coupled naming systems).

Some nomenclatural details are important, too. One of the key differences between scientific and vernacular naming systems is that in cases where there are synonyms, the scientific name with priority must be used (except in tightly regulated conditions, such as when a new name is found to be preoccupied; ICZN 1999). In contrast, in vernacular systems different audiences can use the synonym of their choice, except in formal communication when there is a mandated (or strongly suggested) standard name, such as with scientific journal nomenclature requirements. This is an important flexibility that will be explored further below.

Another aspect of synonyms is also important. The extensive synonymies developed by 19<sup>th</sup> and early 20<sup>th</sup> century taxonomists (e.g., Sharpe *et al.* 1874–1898; Ridgway & Friedmann 1901–1950), show that it takes considerable effort to keep track of the many different scientific names used for the same taxon. In contrast, today's taxonomic lists rely on the existence of these extensive historic synonymies, and our modern usage often just references the taxon's original description as accepted under the rules of the International Commission on Zoological Nomenclature (e.g., ICZN 1999; Peterson 2023). Furthermore, it would be difficult to overstate the value of synonymies of vernacular names (e.g., McAtee 1948; Desfayes 1998) to students of temporally deep and geographically broad avian literature. We tend to take these tools for granted today, not realizing how difficult it is to bring a semblance of order and to provide an interpretive guide to the riotous cacophony of names in the ornithological literature. In lauding the early volumes of Ridgway & Friedmann (1901–1950), Oberholser (1933:161) wrote "...on the synonymy alone Mr. Ridgway spent all of his available time for ten years". Because we benefit enormously from painstaking work to make a highly fragmented literature accessible, we should remember these lessons from the past as we contemplate changes, which will increase fragmentation (i.e., by creating linguistic fragmentation at the label level).

In sum, standardization and stability are core foundational principles in our nomenclature systems. Strickland (1835a) stated these principles regarding names: "they should be universally adopted" and "when once established, it should remain unaltered." Over a century later, these foundations remained: "While based on principles, the Code recognizes none as paramount as its fundamental aim, which is to provide the maximum universality and continuity in zoological nomenclature compatible with freedom in taxonomic practice." (ICZN 1961:iv). Placing efforts for standardization into the trust of groups of expert practitioners rather than individuals to achieve wider effective communication was a key development in the creation of authoritative taxonomic lists, and it remains a core component of the maintenance of taxonomic infrastructure today (e.g., Strickland *et al.* 1843; AOU 1886; Gill *et al.* 2022). In creating such standardized lists and promoting their stability, these workers made communications systems (modified and maintained through time) that have proven remarkably effective in fostering inclusion by enabling broad communication about biodiversity, including birds.

### *The pace and nature of change*

Two words sum up the history of nomenclatural change: slow and controversial. Standardization achieved stability, but achieving standardization in zoology was a contentious, decades-long process (e.g., Agassiz 1842; Coues 1882, 1884; Melville 1995; Minelli 2003). From its beginnings in the Strickland Code (Strickland *et al.* 1843) to the first major gains of global agreement (Blanchard *et al.* 1905; ICZN 1961), zoologists were involved in numerous, often bitter controversies (Melville 1995). English bird nomenclature has not been comprehensively reviewed, but it, too, has been controversial and is still undergoing regional-to-global reconciliation (Gill *et al.* 2022). Although stability is a key attribute of our naming systems and the main reason for their success, absolute stability is not only impossible, it would also stymie scientific progress (e.g., Schuh 2003).

Recently, a controversy developed over a desire to make taxonomy and nomenclature even more stable for conservation applications (Garnett & Christidis 2017; Raposo *et al.* 2017; Thomson *et al.* 2018). This debate arose

between the creation and maintenance of biodiversity knowledge (the purview of taxonomy), with its inherent unruliness, and the desire for more taxonomic certainty in order for conservation to have authoritative, widely accepted global species lists. To their credit, the opposing sides came together to propose possible solutions for the creation of a globally shared species list, while recognizing that success in this endeavor would likely take decades (Garnett *et al.* 2020). The key issue is adoption by stakeholders (buy-in), and the goal will make that arduous: “A global taxonomic list will transcend borders, individual preferences, politics, and history.” (Garnett *et al.* 2020:9). The history of the Code (e.g., Melville 1995) shows that it takes a long time for pragmatic acceptance of the global good to eventually dominate over our natural desires for individual, national, linguistic, scientific, and social freedoms.

It was recognized well before a universal Code was accepted that name changes cause confusion, and that a system could neither be perfect nor please everyone, but that “It must be a matter of compromise” (Verrill 1869:94, 95). These imperfections and compromises are never over and done: English bird names, for example, are perennially found to be unsatisfactory, for many different reasons (e.g., Wood 1835a,b; Bourne 1961; Eagles & Ceballos-Lascurain 2009; Driver & Bond 2021).

Importantly, squabbling over names can turn off the public (e.g., Hazard 1884), as can name changes. Cyffin (1835:239), who was not a scientist, made two points that are still useful: “Frequent changes in the nomenclature of natural productions is highly to be deprecated,” because “the student...is for ever [sic] groping his dark and dubious way...and frequently compelled to *unlearn* to day [sic] what he learnt yesterday” (*ibid.*). This exasperation includes scientists and spans centuries: “Changing scientific names are a constant cause of irritation and frustration to all who use them.” (Hawksworth 2013:556). Today, there is an additional risk of socially motivated change causing asymmetric polarization, an outsized negative reaction from people or groups that disagree with perceived underlying cultural aspects, real or imagined (e.g., Avlon 2023).

The work of White (2006) suggests that English names of North American birds underwent substantive changes over more than a century at a rate of less than one per year (Winker 2022). Many names in current use have been stable for over two centuries. This pace of change seems similar to the rate of change of aspects of English itself (e.g., Newberry *et al.* 2017), but careful study is lacking on the type of linguistic stabilizing selection we would anticipate these naming systems to possess relative to the evolution of English as a whole.

Although today we focus on smaller components of our naming systems, it is useful to understand changes involved in the systems themselves, including their establishment. Efforts to expand participation (inclusion) in the natural sciences predated nomenclature debates. In England in the early 19<sup>th</sup> century there was friction between metropolitan and provincial scientists, with the latter espousing in 1833 the sentiment that “Science is a republic, that knows no distinctions but those of talent and acquirement.” (McOuat 1996:488). These provincial reformers were active in natural history, advocating for opening natural history museums to the public and for using the vernacular (here English, and not Latin) for science, among other things (McOuat 1996). Insistence that names include descriptive terms that fit the animal and on the need for improvement was common (see the section on Language below). The reformists were confident that their systems (e.g., the quinarian and other ‘natural systems’ of zoological classification) were correct, probably affecting their views that nomenclatural changes would be slight and would stabilize (e.g., Wood 1835b; McOuat 1996). In contrast, Strickland, who among others opposed the concept of a priori natural systems, realized that our understanding of relationships was likely to continue to change with increasing knowledge and that stability thus had to be achieved through the species’ names (McOuat 1996).

A compromise solution was worked out among these early debaters, and ornithologists were deeply involved (Melville 1995; McOuat 1996). Scientists such as Strickland (1835a) had felt English was not part of the language of science, but the reformers (e.g., Wood 1835a,b) got the vernacular, and the conservatives got binomial nomenclature for the scientific names with a basis for stability in the law of priority (e.g., Strickland *et al.* 1843).

To understand the nature of nomenclatural change, we also need to address when and how changes were determined to be unwarranted. Strong opinions about names and suggestions for improvement have been offered throughout the history of our discipline (e.g., N.F. 1835; Agassiz 1842; Coues 1882; Foley & Rutter 2020; Driver & Bond 2021; Guedes *et al.* 2023). Many scientific names are misapplied from classic Latin or Greek words. For example, ‘trochilos,’ originally a wren in Greek, was applied to both the wren (*Troglodytes troglodytes* Linnaeus) and the Egyptian plover (*Pluvianus aegyptius* Linnaeus) by the 16<sup>th</sup> century (Morel 1583; Aldrovandi 1603; Brown 1956), and is now *Trochilus*, a genus of hummingbird. As Coues (1882:11) complained, “...many proper names, and many of the epithets which classic writers were so fond of bestowing, have been adopted as generic or specific

names of birds, with little reason or with none, except the will of the namer.” Strickland (1837) pointed out another type of error, that names such as *Caprimulgus* and *Paradisaea apoda* Linnaeus are clearly erroneous (the birds referred to do not suck goats, and they do have feet, respectively), but they are nevertheless useful because they have been linked to these birds for a long time. We can agree that they are wrong, but ‘improving’ them causes more harm than good. The principle that meaning is less important than standardization (“universality”) is at the core of any naming system.

Another common theme in our nomenclatural history is an ongoing series of suggestions for improvement going forward. Merriam (1884:36), for example, attempted to both flatter and shame ornithologists into correct usage of Latin and Greek in creating scientific names. He wrote that authors of these names “...will wish to know not only what the terms are, but why they are so and so, or else he possesses no true scientific spirit, none of that divine seeking which longs to be right and know why it is right—that divine seeking which absorbs and masters every true devotee of nature and its countless marvels. How necessary is it then that he should be rightly taught, that the information laid before him should be as accurate, and conceived in as scientific a spirit, as the knowledge of the day will permit.” Laudable goals, but in the end they were ineffective (ICZN 1999).

Even when English naming systems were still fairly malleable, in the 19<sup>th</sup> century, authors nevertheless often refrained from making improvements because they recognized the importance of prior or existing use. For example, Wilson (1828:46), considered that the term ‘bald’ in Bald Eagle (*Haliaeetus leucocephalus* Linnaeus) was “improper and absurd,” because its head was “thickly covered with feathers,” but he retained it because it was “now almost universal.” Similarly, Audubon (1834:394) refrained from changing the Belted Kingfisher (*Megaceryle alcyon* Linnaeus) to the United States Kingfisher, stating “But names already given and received, whether apt or inapt, I am told, must not be meddled with. To this law I humbly submit...”

SDW (1835:37), a 19<sup>th</sup>-century reformer, stated that language changes, and that “reform *will* take place, however great the authority which opposes it,--hand joined in hand would in vain attempt to stem the tide of improvement.” But proposed reforms undergo a trial of assessment and usage, and, as with the names SDW proposed (Olson 1989; Birkhead & Montgomerie 2016), the changes suggested are often not adopted. Although historic errors (or bad taste, etc.) have been an ongoing sore spot with many, corrections have generally been deemed to warrant a lower priority than stability.

There are three ways in which we can be confident our standardized lists of bird names will continue to change. 1) As our knowledge of avian relationships changes, so too will our scientific names. When this changing knowledge involves species limits, English names will also change (e.g., Chesser *et al.* 2022). 2) As we continue to harmonize world lists (Gill *et al.* 2022), some English names will be changed at the global scale. 3) As we continue to harmonize the various organismal Codes, some scientific names will be changed (Hawksworth 2013; cf. Pavlinov 2022). A fourth way in which we can anticipate vernacular changes in the near-term involves social considerations. It is unlikely that this last factor will be confined to a short bout of name changing, because social considerations vary through time and space, and names acceptable today might not be acceptable tomorrow. This point suggests that local and regional changes will predominate in socially driven changes, and that, unlike the three other sources noted above, they will wax and wane as social mores and associated pressures shift (see Culture, below).

### *Naming system flexibilities*

Important flexibilities exist in tandem with our naming systems that enhance local and regional communication. By the rules of the ICZN (1999), there can be only one scientific name for an animal species. This is not the case for vernacular names, either among languages or within them. This is a strength of vernacular names; you can name a bird anything you wish. You only become constrained in what name(s) to use when your efforts to communicate about that bird broaden. This flexibility improves local communication while ensuring that standards are used for wider communication. For example, the journal *Ibis* requires its authors to use Gill *et al.* (2022) for taxonomy and nomenclature, whereas the journal *Ornithology* uses Chesser *et al.* (2022) and other authorities on birds outside North America as its standard. The strengths of local and regional variation from a global standard are formally recognized by the International Ornithologists’ Union’s Working Group on Avian Checklists (IOU 2022), which will effectively use a two-tiered regional and global system for English names. This English name system exists while coupled to the scientific or Latin name system. The latter has universal communicative properties, whereas

the former often exists together with vernacular names in other languages, whether these have been formalized in that language or not (e.g., AOU 1998). And, in addition, abundant local names for birds still exist within and among languages.

We are individually free to call a bird any name we wish in any language we wish, but our power to oblige others to use our preferred names weakens first as group size increases, then as a vehicular language becomes needed (i.e., the strongest language in common between you and your audience), and finally with implementation of communications infrastructure like standardized bird name lists. It is in these final stages that decisions should be made by groups.

Compatible flexibility in our biodiversity language tools is a built-in feature that simultaneously constricts and frees use. The pairing of English and scientific names in many bird lists is not accidental (e.g., Yarrell 1837–1843; AOU 1886; National Geographic Society 1983), and effectively states that of the many possible names in English and other languages, these are the ones chosen for formal communication and this is what they mean. From there, we can add additional names, in English and other languages. Or we can make entirely new lists. For example, I usually refer to *Branta sandvicensis* by its local name, ‘nene’ (the official bird of the U.S. state of Hawaii), but for formal communication it is Hawaiian Goose (AOU 1998). For global users of English, ‘nene’ (with or without its Hawaiian diacritics) requires learning something new, whereas Hawaiian Goose immediately places the species geographically and taxonomically using familiar English words (e.g., AOU 1983). Both labels are important in different contexts, and the coexistence of both (and in technical literature the scientific name) is a built-in historic strength of our nomenclatural landscape: standardized lists do not take anything away from the existence and use of other names. Recognizing where we have freedom and where we have constraints in our naming systems helps us understand how we can use, accommodate, and maintain them (see Going Forward).

## Language

“Like all language, zoological nomenclature reflects the history of those who have produced it, and is the result of varying and conflicting practices. Some of our nomenclatural usage has been the result of ignorance, of vanity, obstinate insistence on following individual predilections, much, like that of language in general, of national customs, prides, and prejudices. Ordinary languages grow spontaneously in innumerable directions; but biological nomenclature has to be an exact tool that will convey a precise meaning for persons in all generations”. (J. C. Bradley, in ICZN 1961:iv).

How do linguistic principles and language traits relate to, affect, and inform these biodiversity tools? As noted above, our nomenclature systems serve simultaneously as dictionaries and indices of biodiversity. Just as a standardized list of bird names is a constrained, narrowed set of all names used, so too is scientific English a purposely narrowed language and vocabulary (Britton 1970; Gordin 2015). Conformity enhances communication by lowering barriers to understanding. This is inherently inclusive by making it easier to learn the terms necessary to participate effectively, easing entry for newcomers (whether in terminology or language) to ornithology, science, business, etc. The cost is loss of variation, as denounced by Seton (1919) and others, but the benefits of lowered barriers and enhanced communication are widely recognized at the level of language in science and business (Neeley 2012; Gordin 2015).

Extensive decolonization after World War II, when former colonial countries gaining independence might have been expected to avoid using English, instead saw many of these countries adopt it for more effective global communication (Gordin 2015). English was chosen not because it was the best, but largely because it was perceived as the most neutral (Gordin 2015). This is not to say that it is neutral; it is not (Tardy 2004). Nevertheless, it has been so widely adopted that there are now more *non*-native than native English speakers using English for communication in science and business (Neeley 2012; Gordin 2015). These users have overcome major barriers for the gains of wider communication—the goal being to understand and contribute to a larger whole.

Our English bird naming systems have been part of this broader history. The standardization of English bird names by the British and American ornithologists’ unions (BOU 1883; AOU 1886) preceded the widespread, largely post-WWII adoption and growth of English as the global language of science (Gordin 2015). Thus, some of the global success of our bird naming systems is attributable to this widespread change; the scientific dominance of English has been recognized in ornithology for over three decades (LeCroy & Vuilleumier 1992). English has therefore been an important part of the global development of our knowledge of birds, and it remains the dominant

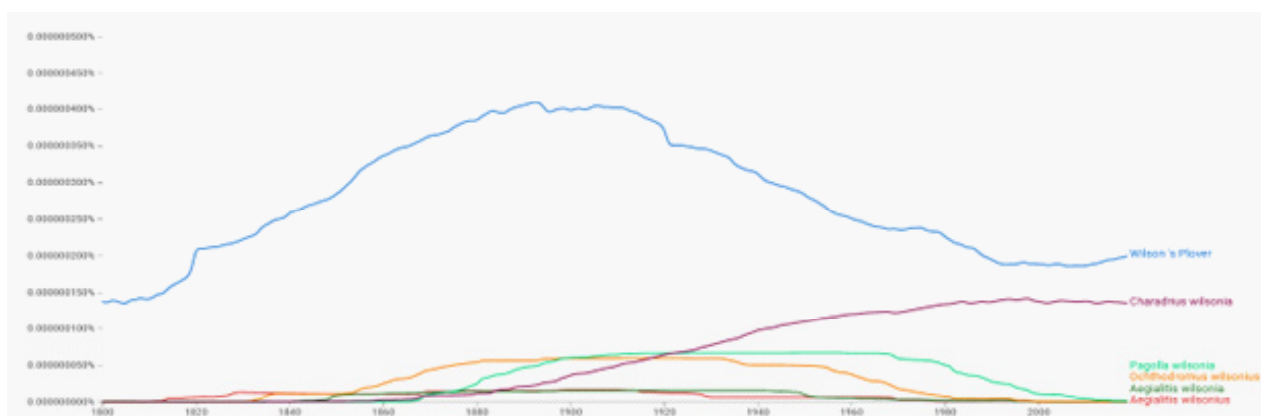


vernacular language for these biodiversity lists (see, for example, the British Ornithologists' Union's checklist series, many of which were the first lists for the countries treated).

Gordin (2015) discussed the tensions between identity—using the language that is most comfortable for you—and communication, in which you use language to increase your audience reach and the pool of knowledge available to you. This is similar to what linguists call situational code switching, i.e., choosing language depending on one's situation, and it is important both across languages and within English itself. It is fair to ask what benefits and costs exist with the use of each language and each word. Such cost-benefit calculations are ubiquitous in our daily use of language as individuals. For example, word aversion, strong distaste for a word or phrase, is common, even for seemingly normal words, such as 'moist'; and even among highly multilingual people there is the opposite, namely word preference (Dewaele 2010; Malady 2013).

In addition to individually variable word aversion or preference, everyday language is rife with terms that can have broad, more predictable group-dimensionality in terms of negative qualities. This includes words that are acceptable in some contexts but not others, producing reactions ranging from making someone uncomfortable to being illegal (e.g., swearing, and obscenity laws). Thus, words often create barriers, and one can see how individuals might take offense at widely accepted English bird names like American Coot, Eurasian Woodcock, Common Loon, Great White Pelican, Bald Eagle, Brown Booby, Great Tit, or many others containing potentially offensive words (although the names have long histories and were not chosen to be offensive). How we choose to use and interpret words as individuals is a constant balancing act. In taking care to use acceptable language we also have to be careful in not speaking for others for fear of putting them into an unwanted role as victims (that care can be noted in the previous sentence listing a series of English bird names).

Within a language, it is imperative to communicate effectively, and we create tools to aid this task (e.g., Johnson 1755; AOU 1998; Erritzoe *et al.* 2007; BOU 2018). Changes have exclusionary effects in that they erect new barriers to users of the former words and require retention for some time of two equivalent words for one thing. These effects scale up with the size of the user group and the number and nature of the changes. At the language level, this is well understood in business and science, and buy-in and mitigation are considered critical (Tardy 2004; Drubin & Kellogg 2012; Neeley 2012; Ramírez-Castañeda 2020). Within our naming systems, the now very large user group that depends on our standardized names needs accuracy and stability, insofar as possible, so as not to raise the cost of participation (e.g., Amano *et al.* 2023). Thus, making changes that degrade those needs can have exclusionary effects and thus be problematic. This raises the bar for justifying changes, resulting in conservatism. Our predecessors fought successfully against nomenclatural chaos, and our discipline has benefitted immensely from that success. Minimizing barriers to inclusion of both native and non-native English users in ornithology includes nomenclatural stability.



**FIGURE 1.** An example of the greater stability of English bird names relative to scientific names for a single species, which also shows the gateway effects of an eponymous English name to the literature (i.e., the area under the blue curve indicates the importance in communication and access of that name relative to all the others). This is an historic overview of the use of Wilson's Plover (blue) as an English bird name relative to the five scientific names the species has had from the early 1800s through 2019, *Aegialitis wilsonius* Ord (red), *Aegialitis wilsonia* (dark green), *Ochthodromus wilsonius* (golden), *Pagolla wilsonia* (bright green), and *Charadrius wilsonia* (purple), using Google Books Ngram Viewer.

Steady use of one word or name through time establishes a vast literature immediately open to anyone who has learned that name, and such an advantage is diminished when that name is changed (Fig. 1). As the Code put it, "...an important function of classifications is information retrieval." (ICZN 1999:xvii). Today's powerful electronic search tools and instant access to global knowledge bases make this continuity even more important. Since the first half of the 20th century, the number of people interested in birds has increased enormously, as has the number of people using English to communicate globally (Neeley 2012; Gordin 2015). This means that the costs of changing any English standard have increased substantially. It is a price we pay for enhanced communication—both in access and in sharing. This is why many abhor changes to the language they have learned to use, despite the flexibility of the English language (one of the reasons it became the scientific lingua franca; Gordin 2015). Language changes are generally slow because they require broad societal acceptance (Britton 1970; Newberry *et al.* 2017).

### *Names are often simply labels*

Strickland *et al.* (1843:108–109) chastised those who "persist in confounding the *name* of a species or group with its *definition*; and because the former often falls short of the fullness of expression found in the latter, they cancel it without hesitation, and introduce some new term which appears to them more characteristic, but which is utterly unknown to the science, and is therefore devoid of all authority." Insisting that a bird's name should have meaning relative to that bird has been expressed for a long time (e.g., Strickland 1835a, 1837; Foley & Rutter 2020). A name for a bird certainly can have obvious meaning, e.g., 'redbird' for Northern Cardinal, *Cardinalis cardinalis* Linnaeus (McAtee 1948), but a name not having such descriptive properties is also valid.

The idea that an organism's name must have clear meaning relative to what it labels is in opposition to two important issues. The first is a fundamental linguistic principle going back to Plato's *Cratylus* (in the fifth century BCE; Jowett 1892), embodied as the first linguistic principle of Saussure (1960): our names for things are arbitrary. Park *et al.* (2020) correctly elucidated that in bird names this represents one end of a continuum, and that our names are often not arbitrary but rather have some inherent meaning within our language (e.g., duck). Forcing a curtailment of the full scope of this continuum would go against this linguistic phenomenon which exists in our bird names as it does in our language. The second issue is that incorporation of this linguistic principle (and continuum) into our nomenclature has helped it to be so successful. Linnaeus and others of his time chose to view names as labels (signs, which could be arbitrary) rather than descriptions of the organisms being labeled and described. Over a century before Saussure (1960), Strickland (1835b) was similarly blunt about this, stating that organismal names are "*arbitrary signs adopted to represent real things or conceptions.*" Later, in a letter to Charles Darwin in 1849, he considered this issue settled for nomenclature, stating that "The principle of selecting a name solely because it is the *best in point of meaning*, is hardly worth discussion as no one I believe, would now defend it. A *name* is not a *definition*, and it may have no *meaning* or etymology at all, and still accurately indicate its object." (Darwin Correspondence Project, letter no. 1216). Thus, biological nomenclature underwent a transition from essentialism to nominalism, and we have since followed this approach for our naming systems (McOuat 1996; Aescht 2018; Pavlinov 2022; Saliba 2022).

Decoupling names from meaning (names are labels, which can be arbitrary) and decoupling names from systematics and taxonomy (relationships are often not reflected in the names) were two of the most important developments of the 19<sup>th</sup> century that laid the groundwork for useful systems of nomenclature (McOuat 1996, 2001). These developments were very contentious and took decades to resolve. We would be remiss to ignore these lessons of history and overthrow stability simply to 'improve' names to be more meaningful and better reflect species relationships, e.g., changing long-recognized names like Willet, *Tringa semipalmata* Gmelin, or to 'fix' the taxonomically mixed usages of crane and rail, or to change widely recognized names like Bald Eagle for something more accurate (Wilson 1828). Accepting these historically settled issues could save some debate about names today.

### **Culture**

"Unhappily, the evil has taken such extensive root, that a man must possess no ordinary degree of perseverance who would sit down to revise and correct the whole [British bird] list; but something, it is evident, should be done, and I think the existence of the evil alluded to in any species to be quite a sufficient reason for its alteration." (Morris 1837:162).

Given current discussions and debates about English bird names from a social justice perspective, other disciplines besides history and linguistics are relevant. Psychology in particular offers insights into applicable topics such as perspective taking, moral superiority, and victimhood, the latter with its associated and complex moralities (e.g., Gabay *et al.* 2020; Kaufman 2020). For example, renaming eponymous birds that are rare or extralimital in one list's coverage area (e.g., AOU 1998) could be interpreted as a form of moral imperialism (Jenkins 2011), whereby one group's social views are imposed onto other cultures where these birds are more common. This perspective also presents a conundrum within our own culture: in rejecting historic moral imperialism (species naming as part of colonialism), rectifying it through changing names requires that we must ourselves engage in moral imperialism. Thus, philosophical considerations are also warranted.

Changes in culture through time also offer important perspectives, for example on the inappropriate tendency to judge actions of the past by today's standards (presentism) and to engage in historian's fallacies (historical writing biased by hindsight; Rivera 2019). Transforming nomenclature for ideological reasons, no matter how well intentioned, should be undertaken with great caution and with an understanding of the often-negative histories attached to former, similar efforts (Krylov 2021). Large-scale expurgation and bowdlerization are generally not viewed favorably. Science, as a human endeavor, is not completely apolitical, but it is easily weakened when ideology plays an increased role; consider the frictions arising from the intersections of ideology and science associated with historic examples such as Galileo, Lysenko, Turing, medical cannabis, global warming, etc. Bird names are a small issue compared to these, but many people are passionate about them, ensuring similar frictions.

Bright's (2023) analysis of today's culture wars in the U.S.A. is highly relevant to changing English bird names based primarily on cultural values. This topic fits well into his broader framework, being ripe for disagreements between 'repenters' and 'repressers.' Bright's thesis is that repenters and repressers are primarily white, and that these wars between them, even if oriented around improving the lot of people of color, actually do little for that and are mostly about providing psychological relief for the protagonists. Overcoming this division, 'winning,' is unlikely, making direct intervention in solving the underlying problems a more important pursuit. Bright (2023:16) put it bluntly: "...earnestly trying to win the culture war in the sense of achieving victory for either Repenter or Represser is a fool's errand; if those are the teams then the only winning move is not to play." Further, "...in a highly connected and ideologically diverse society everyone will always be able to find sympathetic intellectual spokespeople to bolster their faith in their preferred narrative. Under these conditions we should not expect any grand coherent narrative to achieve consensus...Strategic participation on one side might seem like the pragmatic hard-nosed response of a realist, but it is doomed and in fact simply a waste of time."

With respect to our naming systems, Mosyakin (2022a:3) was similarly dismissive: "I think that for some people to chase the ghosts of the distant past is much easier, definitely safer, and probably even more profitable than to firmly oppose or combat the real (unfortunately, too real) monsters of today and emerging menaces of tomorrow." As Strickland *et al.* (1843) and Mosyakin (2022a) recognized, debate over names is divisive, and finding and agreeing on ways to work together for the common good is hard work.

Bright (2023:17) advocated that one should strive to be a 'non-aligned' person in these disagreements, and "tune out the culture war noise while being attentive to what is of value given their distinctive projects." Such projects would be evidence-based efforts addressing, in the broader culture wars, things like "the provision of resources and technology to counter-act the ecological and political effects of climate change." Bright (2023:19) suggested that we step aside from the unwinnable culture wars and instead work together toward goals whereby "...one may help create a political community and material circumstances where all, now properly inclusive of non white people, may freely exercise and live according to their own judgements..."

Just as his framing of these cultural divisions helps us understand bird names in this context, so too does his observation that "Confusion is a characteristic of a transitional society." (Bright 2023:19). These transitions contribute to our turmoil and disagreements over changes with (or perceived as having) cultural bases. And this landscape is a minefield. As we've now seen with the politicization of a viral disease, many will take culturally based positions that are not in their own best interests. In the U.S.A., the COVID-19 pandemic caused substantial differences in mortality between political parties (Wallace *et al.* 2022). Even acceptance of vaccination generally, one of the most effective medical inventions in history, became twisted through a cultural lens and actually decreased in one party (Fridman *et al.* 2021). Once a topic becomes a football in the culture wars, the game is on, and the original objective of improving our collective lot is put at risk by alienating members of one of the teams. Now think of bird name changes putting ornithology and the enjoyment of birds in such a spotlight.

Pushback against socially motivated name changes will be perceived by some as representing opposition to the underlying social goals, or as being supportive of the historic wrongs that are presumably being righted. Neither need be the case, but having non-polarizing dialogue will likely be a challenge, given the rich historic record of the lack of it in discourse about our naming systems. Yet we must have those discussions without further polarization. Increasing participation among people who share certain values and decreasing it among people who don't is not a healthy approach to inclusion and could be viewed instead as another form of 'othering' (here, excluding others with opposing views).

## *Eponyms*

Taxonomists have been naming animals after people since Linnaeus, and this practice remains popular today (Westwood 1836; Beolens *et al.* 2014; Poulin *et al.* 2022). Eponymous names are also popular in society, and in the sciences they can even be preferred and have gateway effects (Azaryahu 2021, Winker 2024; Fig. 1). Another form of eponymous names occurs in folk names. In analyzing folk names of British birds, Gosler (2019) found that names associated with the first names of people ('familiar' names) were the second-most common form. This speaks to the popularity of linking birds to people, and characterizes their relationship to us as familiars, like friends and family (Gosler 2019). Some of our formal eponyms also include only the honoree's first name. This was common for names honoring women, for example, in patronymic societies in which the predominant use of surnames caused women to in effect lose some of their identity with marriage, or to be confused with their male relatives. In naming *Dendroica graciae* Coues, Grace's Warbler, Coues (1882:38) illustrated the issue well: "To Mrs. Charles A. Page, *née* Grace Darling Coues, the author's sister." In a male-dominated society, using only Grace's first name clarifies that she is the one being honored, not her father, brother, or husband. This quaint practice was a logical maneuver to unequivocally honor a woman in such a society, and use of women's first names in bird eponyms was common (Beolens *et al.* 2014). More rarely, two words were used for this, e.g., Lady Amherst's Pheasant (*Chrysolophus amherstiae* Leadbeater).

Eponymous names in our nomenclature systems have long been contentious. Strickland *et al.* (1843:117), for example, felt that it was acceptable to use them in moderation for eminent zoologists, but added that "...we fully concur with those who censure the practice of naming species after persons of no scientific reputation..." (cf., Swainson 1836). Lewis (1920) and Foley & Rutter (2020) felt that eponymous names should be eliminated entirely from the English names of birds. Widespread decommemoration of bird names would be out of step with broader Western culture, but gradual attrition of existing honorific names is culturally normal, especially with erosion of knowledge about the persons honored (Azaryahu 2021). In bird names, however, we have a vast biographical knowledge of the people commemorated; Beolens *et al.* (2014) lacked information on only 17 names out of over 4,000 entries in their eponym dictionary of birds (though there were numerous cases in which the exact person being honored was unclear).

Eponymous names for organisms have reflected the societies generating the publications of their descriptions, and thus often show societal and global inequities, e.g., relatively few women, few people of color, and few citizens of the countries where many of these organisms occur (Pillon 2021; DuBay *et al.* 2022; Guedes *et al.* 2023). We can and should do better to be inclusive as we generate new knowledge, welcoming diverse contributions to biodiversity science. That is a widely agreed goal. Debate has arisen, however, on whether and how to change historical names (e.g., Driver & Bond 2021; Goska 2021; Rimmel 2022; Guedes *et al.* 2023; Garbino 2023). The two extremes in this debate are to change them all or to make no changes.

Arguments to make large-scale eponymous name changes center on broad attributes of the individuals honored. For example, Foley & Rutter (2020) stated: "...these honorific names—known as eponyms—also cast long, dark shadows over our beloved birds and represent colonialism, racism and inequality. It is long overdue that we acknowledge the problem of such names, and it is long overdue that we should change them." Guedes *et al.* (2023) stated that "...those commemorated were almost universally white, male upper-class Europeans..." I am troubled by the desire to do away with eponymous names just because too many of the honorees were white, or male, or members of colonialist societies. These names were given primarily to recognize the contributions of individuals. Those individuals had no control over the color of their skin, their gender, or the society into which they were born. Penalizing such individuals retroactively for these perceived sins through group membership seems wrong, and I am

not clear on how this form of oppression improves our collective lot. The urge to make such changes seems in a sense equivalent to greenwashing—ostensibly engaged in vaunted principles but not in deed. Mbembe (2021:60) used the powerful phrase “models of popular racism,” a reminder of an important concept. From this perspective, blanket de-eponymization could be seen as not meeting modern standards of equality. Fundamental principles of fairness and treating people as individuals rather than as representatives of their demographic group should prevail.

Eliminating all eponymous bird names could thus be considered unwise from numerous perspectives. 1) It can be viewed as oppression, racism, sexism, and moral imperialism (e.g., imposing today’s morals on historical societies). 2) In its advocacy that a name should mean something about the bird, it opposes the fundamental linguistic principle that perfectly valid names are often arbitrary. 3) It goes against a practice that is widespread in society (honoring people who contributed in meaningful ways) and that has been part of taxonomy and nomenclature since at least the time of Linnaeus (Westwood 1836). 4) It ignores the gateway effects that eponymous names can have, e.g., as a mnemonic, a preferred name, and an opening to existing literature (Fig. 1; Aronson 2014; Becker *et al.* 2021; Slabin 2023). 5) It is divisive and unpopular (Winker 2024). Finally, 6) There are now numerous ways in which the idea of large-scale eponym canceling is being cast as morally and ethically questionable (Goska 2021; Pethiyagoda 2023; Orr *et al.* 2023; Thiele 2023; Jost *et al.* 2023; Winker 2024).

However, making no changes to eponymous names seems equally unwise, and changes are being made given sufficient justification (e.g., Chesser & Driver 2020; Chesser *et al.* 2021a,b). Eponymous names were in most cases not bestowed on people widely judged to be bad in their times. So decommemoration relies on judgment that in many cases would not have arrived at the same conclusions at the time of naming (e.g., Chesser & Driver 2020). Also, the idea that there might have been large numbers of people opposed to the bad actions of the honoree in their times (e.g., Shiffman 2019) sidesteps the fact that opposed actions were often perfectly acceptable to large numbers of people in those times and societies. So we are left with a difficult task. We have freedom as individuals to define and diminish others by labeling them as being something we’re against, and canceling them accordingly (e.g., single-issue voting). But as a non-authoritarian society, careful deliberation is needed when we consider how to treat an individual. This requires fair assessment of positive and negative attributes and contributions; single-issue cancelation of our shared history is the opposite.

When sitting in judgment of scientists of the past (e.g., Chesser & Driver 2020; Bodmer *et al.* 2021; Chesser *et al.* 2021a,b; Ehrler *et al.* 2021), we might pause and look in the mirror, recognizing that we ourselves are part of a society that is largely carnivorous, biodiversity-killing, climate-warming, and with our own injustices. Will future scientists judge our own contributions relative to societal phenomena once accepted but later perceived as negative, or perhaps cancel us (e.g., not citing our work) by considering only our weakest traits without due consideration of our full contributions (especially in the context of membership in a greater society over which we have little or no control)? Likely so, and we can only hope that they are thoughtful and balanced (e.g., Bodmer *et al.* 2021; see also the risks of presentism and historian’s fallacies above). When we wish to decommemorate an individual by changing an eponymous bird name, I think we should do so honorably and with due diligence in considering all of the facts.

## ***Decolonization***

Decolonization has meant many things to many people. It is complex, ranging historically from a topic with strong threads of violence and Marxism (Fanon 1961) to modern advocacy to decolonize university curricula, research, and entire disciplines (e.g., Trisos *et al.* 2021; Cronin *et al.* 2021). Although decolonization has had many definitions, here I consider it to be opening up Western knowledge to include other cultures and knowledge systems—proactively making room for inclusion of other views and cultures to produce knowledge derived and tested through broadly inclusive participation. Considered this way, it is a widely agreeable objective and fits well under the broader umbrella of decolonization writ large, which Mbembe (2021:61) described as “the disenclousure of the world.”

In the context of standardized bird name lists, it has been pointed out that individual English and scientific bird names are rife with colonialist history (e.g., Foley & Rutter 2020; Trisos *et al.* 2021; Guedes *et al.* 2023). But this sidesteps the larger fact that one could scarcely choose more colonial languages than English and Latin. As long as these are the linguistic frameworks, name changing could be considered nothing more than tending the garden of colonialism. To truly decolonize bird names for most of the world, we’d have to eliminate formal English and

scientific names lists, insofar as these highly constrained lexicons are so often the direct result of colonialism and indeed epitomize linguistic colonization. We could not have effective global communication without such lexicons, even though their very existence will cause some degrees of exclusion (up to, at a larger scale, potentially lost languages). One bold solution to step away from such frictions would be to create an auxiliary system that leaves undesired cultural baggage behind and creates a level playing field for more people across more cultures. Examples of how this can be done include the artificial or constructed languages Volapük and Esperanto, created for similar reasons, or even alphanumeric codes for the world's birds (Edwards 1974; Hawksworth 2013; Gordin 2015). However, it seems unlikely that such total linguistic decolonization would be successful in attaining current levels of inclusion using English and Latinized terms.

Full de-Westernization is usually not considered a central goal of decolonization, particularly given that 'Western' includes components of other cultures (e.g., OED 1989; Gilroy 2005; Gordon 2015; Mbembe 2021). Therefore, we are reasonably left, for both practical and theoretical purposes, with considering decolonization within our existing naming systems. Given their deep colonialist histories as languages, this might seem like a goal with a distant and likely ever-retreating finish line. Furthermore, it is also a goal that will foster considerable disagreement, given the history of our naming systems, in which it seems few major points have achieved wide consensus. We should not shy away from the task because it is hard, but we should also not expect simple solutions if we operate strictly within these systems. I propose that we seek faster and more constructive relief by coloring outside the lines, so to speak, redefining the dimensions of both the problem and its solution.

Proposals to replace individual English or scientific names with indigenous names are common (e.g., Gillman & Wright 2020; Driver & Bond 2021). Such names are not absent in our naming systems, having been incorporated organically much as English itself has grown (OED 1989). Purposely replacing existing names for decolonization goals is different, however. Even if we assume broad agreement with decolonization as I consider it above, using naming systems as a vehicle to advance these goals bears considerable risk and might do little to achieve them (see also Bright 2023). Apart from creating a football for the culture wars, it must also be asked whether such changes would be more than just tokenism, creating linguistic micro-reservations within a vastly dominant Western knowledge and language system. We must also consider the conflict involved in selecting just one indigenous name when alternatives are available. Linguistic micro-reservations offer very narrow, restrictive inclusiveness, accentuating the rejection of other languages and cultures by providing only a glimpse of them—rather than fostering an open door into another language and culture. Instead, wouldn't it be better to couple culturally and linguistically robust naming systems together so the full systems are open to all for participation and inclusion? If changes within our naming systems for decolonization can be viewed by some as virtue signaling, tokenism, cultural appropriation, or reminders of victimization, otherness, and minority status, then their implementation requires great care.

An important goal of decolonization is to create knowledge together in an inclusive way involving mutually respectful partnerships (Gewin 2022). Unfortunately, it can be a loaded term that distracts us from this positive direction, in that at times "...the injunction to decolonize may be, at least for the time being, better understood as a *compensatory act* whose function is to heal what amounts to racial shame." (Mbembe 2021:56). Any purportedly good project or cause can be misused or misinterpreted.

I lack expertise in decolonization, but I find in it principles that are shared widely among diverse people, many of whom might never have heard the term. It can also help us realize how common patterns of Western thought can artificially constrict both the problem and solution spaces in which we operate. For example, Hountondji (2009) urged replacement of a vertical approach to knowledge development with a horizontal one. And Mbembe (2021:59) observed that several foundational assumptions and practices of Western thought "have enabled a range of binary oppositions such as same/other, human/nonhuman, mind/matter, culture/nature, conscious/unconscious, normal/abnormal...men/women, idealism/materialism." Consider that putting one name down to raise another for cultural reasons is often likely to polarize people, with a winner-loser, inclusion-exclusion dynamic. These ways of thinking can trap us in vertical or binary positions, creating a zero-sum game, when instead we are likely to be more productive working horizontally, within and across languages and cultures.

Use of English and Latinized bird names, despite the languages' colonialist histories, has demonstrated enormous utility, and their use does not condone those histories. It will continue to be challenging to work within these languages, balancing utility and inclusion with the negative implications of individual word use. Below, I suggest that multilingualism and multiculturalism offer a more constructive route to work together to achieve our goals of inclusiveness than squabbling over the best and worst of individual bird names in any language.

## *Two natural experiments of naming systems and inclusion*

History provides two very different examples of English bird names in conjunction with accomplishing desired societal changes. The first was Seton's (1919) hypothesis that formal adoption of the many vernacular names he considered inappropriate by the American Ornithologists' Union's *Check-list of North American Birds* would be a barrier and harmful to studies and interest in birds. Yet standardized English bird names are clearly not the general barrier to interest and participation that Seton (1919) envisioned, given the enormous popularity of birds in North America today and that many of the very names he despised are still in use (e.g., Western Grebe, Nashville Warbler, Black-and-white Warbler, and White-throated Sparrow). Audience growth has even been nonlinear, with the percentage of the U.S. population interested in birds almost tripling in the last two decades of the 20th century (Cordell & Herbert 2002). Cordell and Herbert (2002:61) stated that "If birding participation represented growth in the customer base of an industry, market analysts would tell us that industry is doing quite well. In fact, they would probably tell us that the industry is doing great." It is difficult to estimate, but the audience size of the *Check-list* (AOU 1998) today seems likely to be 100 million people or more (considering Cordell & Herbert 2002, the entire continent, and interest abroad in North American birds). Numerically, this is a staggering level of success in inclusion (although it does not mean that no barriers remain).

The second example is another societal effort of inclusion. The participation of women in the life sciences in the United States has approximately doubled since 1980, and in 2017 women accounted for about half of the college-educated workforce and of employees in the life sciences (NSB 1996, 2020). Academic science in general has also seen a pronounced decrease in gender bias (Ceci *et al.* 2023). Our collective efforts to increase the inclusion of women have been successful so far, although we still have work to do (e.g., with increased participation, retention, and opposition to bias). Importantly, these efforts did not include changing English bird names to achieve this goal. Inasmuch as many English bird names recognize a man or a male plumage trait, they can be interpreted as being sexist (e.g., Merriam 1889). Those names were not given or chosen to be purposely sexist, however; almost all 19<sup>th</sup> century ornithologists were male, and male birds of dichromatic species are typically more colorful and often have distinctive markings more easily seen than in females. There is some degree of personal choice in how we choose to interpret words and language.

These two historical examples can be considered natural experiments, and they suggest that English bird names have generally been neither a barrier nor a springboard to effecting important societal changes in inclusion and diversity. Indeed, these two very different social change phenomena suggest that other factors are far more important. This is not to imply that remaining barriers to inclusion of other groups do not exist or are not important; further changes to address these are warranted. Rather, it suggests that getting overly invested in English bird names risks putting less effort into more effective means to increase diversity and inclusion in ornithology and science generally.

Given the passion many feel about animal names, socially motivated changes also risk alienating many who might otherwise agree with the underlying social goals. Recent examples of linguistic changes suggested or even dictated show how well-intentioned efforts can backfire in asymmetric polarization (e.g., 'field,' and 'Latinx;' Avlon 2023). These are useful data points, and further research into these questions, going beyond small numbers of like-minded people (e.g., Liu *et al.* 2024), would likely help our efforts to minimize harm, address barriers to inclusivity, and avoid unintended consequences (e.g., <https://birdnamesforstability.org>).

## **Cultural churn**

Today's social discussions focus heavily on colonialism and racial issues. Tomorrow's might be on such important topics as religion and animal rights (although on religion, see Wood [1835a] and Westwood [1836]). Dissatisfaction with our naming systems on cultural grounds has existed since they began. Two quotes spanning nearly two centuries illustrate this persistent unhappiness, condemning judgement, and appeals to group sensibilities and perceived enlightenment (i.e., our better natures):

"...I would urge that specific and generic names should be classical; and if anyone think this is a matter of minor importance, I would refer him to either of the classes in zoology, and then to determine whether the *unintelligible* barbarisms which will everywhere offend his eye and ear (if he has been at all used to more orthodox combinations)

and the absolute jargon of such semi-graeco-latino-anglio forms as there abound, do not call loudly for ‘reform.’” (Morris 1837:162).

“Relinquishing honorifics does not absolve the bird community of its role in supporting social oppression. But it’s an imminently achievable step we can take out of respect for birds and the growing community of people empowered to take action as their stewards.” (Remmel 2022).

We can benefit from asking ourselves philosophical questions about the sorts of cultural sensibilities our naming systems are part of. For example, what is the difference between changing English bird names to foster diversity and inclusion and banning certain books? Both are promoting social change through persuasion and coercion. The answer is not simply that one is for a good cause, because both ostensibly are. Establishing consensus on complex issues like these can create broadly agreed societal norms. We can come together and achieve goals along both of these seemingly disparate lines. For a hypothetical example, I can be fairly confident that I won’t pick up a field guide and find a species named something like ‘Hitler’s Finch’ in it, and that I couldn’t go into a library and check out a book entitled ‘*Pedophilia Illustrated*.’ Yet I can also be fairly confident that my extreme distaste for either of these concepts is neither universally shared nor constant across cultures and time. Most of the names and books in use do not represent such extremes that nearly all would agree must be changed, and so the job of reaching consensus on changing or eliminating any particular one is made harder.

Geographic and temporal variation in cultural issues, coupled with individuals’ passions about animal names, ensure that debates on manners, good taste, and other social concerns about our naming systems, which have existed since their inception, will be a part of their futures. Yesterday’s reformers are not unlike today’s, having in common a desire to change the words used by others. Fashions change, and people disagree. The names we use as labels are small pieces on this ever-shifting board. But when they are needed, standardized, and widely accepted (as biodiversity labels for species generally are), we have come to expect conservatism and increased stability because we have learned that this approach is highly effective. The hard work of groups of experts in optimizing and maintaining these naming systems will continue to be important. And ever-changing cultural drivers to effect change will be an ongoing challenge to balance with the many other factors making our naming systems effective.

## Going forward

“...it is not to individual things, but to broad principles, that I am attached.” (SDW 1836:117)

The frictions that develop between individual freedoms and feelings and the pragmatism of a consensus approach to the (alleged) greater good cause strife in human society from the family up to country and global scales. It is no surprise, then, that these same frictions appear around our biodiversity naming systems. History shows that these conflicts are not going to vanish, although their foci will shift through time. We will continue to struggle to balance desires for change against the standardization and stability that make these naming systems so effective. It is a lot to expect these biodiversity tools to also carry today’s (and, thus, tomorrow’s) social justice goals to fruition. But they will likely be a part of that, with verbiage from today’s social milieu absorbed just as in English itself. The juggernaut of global society and its taxonomists and biodiversity experts will continue to create new knowledge and determine what proposed changes should be carried forward. This is an active, collective process, with the inherent frictions that such efforts include.

Driver & Bond (2021) rightly decried the racial, ethnic, and gender biases remaining in science and society today, but they consider that addressing them directly “would be impossible” and instead suggested we look to English bird names to indirectly address them in ornithology. Three lessons of history are relevant: First, people are passionate about animal names, and discussions about changing them are often contentious. Second, major, shared societal goals of inclusion can be accomplished without large-scale animal name changes. It is possible to not get too caught up in these contentious and divisive issues that only indirectly address our underlying problems. Finally, against the high numeric success of inclusion that these naming systems have had, there seems to be little evidence that the indirect approach of widespread name changes will have the desired effects of increasing diverse participation. How might we focus on less contentious and more direct means of addressing diversity and inclusion within and around our biodiversity naming systems? To answer this question, we must consider the full scope of these systems, especially their freedoms and constraints. I’ll start with constraints—a within-system, vertical perspective.



Although many different English names have been and continue to be used for particular bird species, standardization efforts have been made to choose just one (e.g., AOU 1998). These standardization efforts continue today (e.g., del Hoyo 2020). This standardization is a core element of the linguistic infrastructure upon which the science, management, and conservation of birds is based (Winker 2022). These names are not statues, as some have suggested (e.g., Foley & Rutter 2020), so much as bridges, roads, railways, and airports. They support a tremendous amount of traffic from many stakeholders. Improvements to these systems are warranted, as more than a century of ongoing changes indicate. However, large-scale changes that have been suggested by taking very broad aim at names that might be considered inaccurate, inappropriate, offensive, colonialist, or derogatory (e.g., Gillman & Wright 2020; Driver & Bond 2021; Guedes *et al.* 2023) would risk seriously degrading this heavily used linguistic infrastructure.

Who are the enforcers? We are, collectively. For scientific names, the ICZN does not have an enforcement role (although it adjudicates disputes through a complex mechanism, often taking years; see its web site). It steps aside from enforcement. In the first edition, Bradley (in ICZN 1961:iv) referred to the "...zoologists in whose consciences its enforcement lies." In the current Code (ICZN 1999:124), "...the Commission is not empowered to investigate or rule upon alleged breaches of them." When it comes to the rarefied environment where there literally can be only one accepted name (i.e., scientific names, where full escape is extremely difficult; e.g., ICZN 1999: Article 79), changing established names for cultural reasons should likely require a proposal-driven system with careful, transparent, scholarly evaluation as well as checks and balances for oversight and broad agreement. Something like this is being proposed in plant taxonomy for scientific names, although not without debate (e.g., Hammer & Thiele 2021; Mosyakin 2022a,b; Thiele *et al.* 2022). As Mosyakin (2022b) noted, the issue of changing names based on social values is divisive (see also Goska 2021), and we can anticipate that in many cases the decisions made "will definitely fail to satisfy many people and groups of people and that will bring mostly deepened confrontation, not universal satisfaction and happiness." (Mosyakin 2022b:254). Both sides of this debate raised excellent points. However, creating a loophole for the rule of priority for cultural issues without a clear and demonstrably functional set of checks and balances (that are themselves not subject to overly sociopolitical biases) risks ignoring the long-fought gains of our predecessors and throwing us back into the decades of debate it took to achieve consensus.

In zoology, such an outlet for change currently remains largely closed (though see ICZN 1999 Article 79). Ceriaco *et al.* (2023) reiterated the ICZN's commitment to its core principles and to its not entertaining proposals to change names on ethical grounds. In sum, the world's zoological taxonomists have agreed to create and use scientific names as dictated by the Code (though this is still debated; Bae *et al.* 2023; Harris & Xavier 2023). That is a very firm constraint. Vernacular names, although more flexible, come with their own constraints. To be most effective in our English communications about birds, for example, we collectively accept and occasionally enforce regional or global standards (e.g., *Ibis* and *Ornithology* instructions for authors). The facts that English names have been more stable than scientific names (e.g., AOU 1931; White 2006) and that English has become the global language of science puts added constraints on changing these standards.

Change and destabilization are inherently exclusionary, in that they raise barriers (e.g., by increasing costs) and thus diminish effective participation in that domain. We need to account for the exclusionary effects involved in changing a vehicular lexicon that has been built as linguistic infrastructure specifically to foster inclusion and diversity. That this lexicon does so imperfectly and that some barriers to inclusion remain in existing names is not in debate. Some changes are warranted, and it is up to us as users of these communications systems to maintain and upgrade them in all of their intended dimensions (e.g., enhanced communication, maximal inclusion). But reintroducing instability on an increased scale would come with costs, and history indicates that these would include divisiveness and degradation in effective communication about birds (see, e.g., Melville 1995; Goska 2021). Stability is thus very important, but complete inflexibility is undesirable (Melville 1995). It is as unrealistic to expect no changes at all as it is to expect to effectively have to relearn large portions of our shared vocabularies all one's life.

Careful consideration of all the relevant issues and of the costs and benefits is needed. Although there is a lot of personal freedom (you can use any name you wish for any animal), constraints necessarily increase (options and rates of change decrease) as the group with whom one intends to communicate increases. Where do we as users and systems managers find the broadest possible agreement? Probably in wrangling through the complex landscape described above. Some data would help, too—many very strong opinions have been expressed through history about how to improve nomenclature, and those opinions that have proven the most accurate in driving the systems we have to their present levels of success have focused on the two pillars of standardization and stability. We have yet

to study these systems to know what amounts of stability versus flexibility they can sustain. Unanswered questions include quantifying whether changes to promote inclusion have the desired effect (e.g., increasing inclusion of underrepresented groups) and how many feel or become excluded. However, we need not let these constraints blind us to the opportunities to directly increase inclusion more broadly using the wide freedoms that our naming systems possess. In addition to working within systems, where there are inherent constraints and verticalities, we have considerable freedoms available in more horizontal approaches, as discussed below.

### *Escaping “there can be only one”*

“They paved paradise, put up a parking lot.” (Mitchell 1970).

Colonization can supplant existing cultures as effectively as replacing a forest with a parking lot. This analogy is useful when considering a more constructive and collective endeavor with respect to our naming systems than battling over individual names. Arguing about whether and how to plant a few trees on that parking lot (e.g., creating linguistic micro-reservations) is unlikely to be very satisfying for many. Yet we saddle ourselves with this viewpoint when we insist on struggling under the “there can be only one” fallacy in our naming systems. This framework can be good entertainment (e.g., *Highlander* 1986), but there are other, more constructive ways to focus our efforts to improve these systems. Linguistically, we have many more dimensions: We can have the parking lot *and* the forest—and grasslands, and tundra, and savannah, and desert, to carry this analogy further. Multilingualism offers a multidimensional opportunity to escape “there can be only one,” both among and within languages. This also offers a way to escape the constraints that vertical thinking and binary opposition often impose (Hountondji 2009; Mbembe 2021).

Natural features and inherent strengths in our naming systems lend themselves well to increasing inclusion of cultural and linguistic diversity. These are underappreciated and ripe for further development. First, standardized nomenclature lists do not impinge on a major strength of language use: as individuals we can call a bird anything we want in order to foster local and regional communication. It is only when we choose to or are constrained to communicate widely through standardized names lists that the issue gets closest to becoming a zero-sum game, i.e., where a change means someone wins only by taking something away from another. We can expect such zero-sum situations to be contentious.

Even within English we commonly have more than one name in circulation and current use. BOU (2018) outlined it thus: “Extensive changes to names can be disruptive, especially when many of the established vernacular names have historical and cultural associations. Thus, to assist both the acceptance and use of the new proposed international names, the British List has, since the sixth edition, used the new international English names in bold and, where they differed, vernacular names...” Similarly, AOU (1998) routinely presents alternate English names where relevant in the Notes section of each species account (e.g., Pacific Loon is also known as Pacific Diver). Thus, even our most rigorous taxonomic lists do not fall for the “there can be only one” fallacy. They exist to facilitate communication and understanding. We should not have an explosion of alternative names in our standardized taxonomies, or we would soon be back to having “...to rescue the science from becoming a mere chaos of words.” (Strickland *et al.* 1843:108). But we could collectively develop and maintain these within-language vernacular lexicons to enhance local and regional communication (e.g., McAtee 1948; Desfayes 1998).

There is even more freedom among languages. The foundational structure of a coupled naming system for birds with paired English and Latin (or Latinate) terms was an excellent beginning, and that vernacular-scientific pairing has a long, strong tradition in ornithology. This inherent horizontalism (as opposed to verticalism) is explored more in the next section.

I am not suggesting we make no changes within the current framework for vernacular names. Judicious changes are warranted for scientific and cultural reasons. Although I am not fond of the idea of purposely creating linguistic micro-reservations (see above), symbols matter. Signals of devaluation or exclusion (stereotype threats) exist for everyone, but for some more than others, and they can clearly affect performance independently of individual ability (e.g., Steele 2007; Pennington *et al.* 2016). Stereotype threat is not the only reason for lowered performance levels and disinterest in the topic where the perceived threats exist, but proactive attention to the issues can alleviate some of the barrier effects, whether through external or internal changes (the latter, for example, might be changing one’s

self-categorization from group membership to that of an individual; Croizet *et al.* 2001; Steele 2007; Pennington *et al.* 2016).

Both in nomenclature and society generally we do alter some of our names as we evaluate, for example, the individuals those names honor or the modern perception of particular terms (e.g., Wyden 2013; Chesser *et al.* 2021a). Driver & Bond (2021) offered other bird name changes in this context. Such efforts might go too far, however. For example, eliminating all eponymous names in ornithology could be perceived as a stereotype threat to individuals of European descent or to people with no racial biases (e.g., see Goska 2021:11 on this ‘punishing whites’). Such a change could be seen as representing a discipline in which individual (primarily Eurocentric) contributions are suddenly devalued. That could thus be an overreach in symbol modification, causing substantial levels of exclusion. Judiciousness is required, and I suggest we can achieve a lot more outside this framework.

### ***Thinking bigger***

Today’s name-change advocates have yet to adopt the more far-reaching strategies of those in England in the 1830s. Those reformers established new journals and made their own lists, using names they felt were more appropriate (McOuat 1996). While constructive, this requires exclusion of those we disagree with and thus might not increase inclusiveness over the long term. Working together on larger projects to directly increase participation will likely be more productive.

Although English has become dominant in global science, excellent work is also being produced in other languages. For example, the number of non-English works in conservation biology is increasing at a prodigious rate, and there are still considerable language barriers between English and non-English scientific literature, including ornithology (Amano *et al.* 2016, 2021; Chowdhury *et al.* 2022; Negret *et al.* 2022; Ruelas Inzunza *et al.* 2023; Soares *et al.* 2023). These barriers are an impediment to conservation in both linguistic directions, and proactive efforts of multilingualization of this literature and knowledge are seen as an important goal to improve biodiversity management and conservation and other global challenges (Amano *et al.* 2016, 2021). Breaking down these barriers enables local practitioners to access English information and vice versa (Amano *et al.* 2016).

Negret *et al.* (2022) have analyzed the number of languages used across the ranges of the world’s bird species, providing a powerful resource for developing customized outreach and educational materials for conservation and management in particular species and regions. These and other multilingual efforts of inclusion (e.g., Khelifa *et al.* 2022) will be improved by having robust multilingual naming systems. Coupled naming systems in multiple languages would also be important for lowering barriers among knowledge bases (e.g., in biodiversity databases; Amano *et al.* 2016). Importantly, maintaining a diversity of English names is also likely to benefit conservation by enhancing local understanding and appreciation (e.g., Gosler & Jackson-Houlston 2012; Park *et al.* 2020).

Ornithology has a long tradition of multilingual treatment in major works. Early authors such as Gesner and Aldrovandi in the 16<sup>th</sup> and early 17<sup>th</sup> centuries attempted to include knowledge from multiple languages and cultures, albeit unevenly (Aldrovandi 1599–1603; Stresemann 1975). Regional works have commonly included local names in other languages (e.g., Gabrielson & Lincoln 1959; Ridgely & Greenfield 2001; Latta *et al.* 2006), and standard reference works in English frequently include bird names in other major languages (e.g., Cramp *et al.* 1977–1994; AOU 1998; del Hoyo *et al.* 1992–2011). In short, we already have these skills. But we could be using them more effectively and on a larger scale.

We have a lot to learn from all people interested in birds. For example, Gosler (2019) related that folk knowledge of the three species of leaf warblers (*Phylloscopus* species) that breed in England preceded—evidenced by having different names—the scientific recognition of these different taxa, attributed to the famous naturalist Gilbert White (1720–1793). Ethno-ornithology, the study of the relationships between birds and people, is a relatively young discipline with phenomenal potential (e.g., Diamond 1966; Majnep & Bulmer 1977; Russell & West 2003; Tidemann & Gosler 2010). Bringing multicultural naming and knowledge systems together in this and broader contexts offers additional ways to foster the inclusion of vast numbers of people in ornithology. We must be careful to do this work in close partnership with people of different cultures whenever possible (e.g., when not purely historic) so as to shed any aura of “epistemic coloniality” caused by the perception of “‘anthropologizing’ Others” (Mbembe 2021:59). Social scientists across the world are showing us how this is done effectively, and we also have excellent examples in ornithology (e.g., Majnep & Bulmer 1977).

Broadly collaborative multilingual and multicultural efforts like Conservation Evidence ([www.ConservationEvidence.com](http://www.ConservationEvidence.com)), the Ethno-Ornithology World Atlas (<https://ewatlas.net/>), and the European Bird Census Council (<https://www.ebcc.info>) would likely be more inclusive and better positioned to thrive with robust multilingual coupled naming systems (Wyndham *et al.* 2016; see also Amano *et al.* 2021). The opportunities for online interactive resources (including pictures, videos, pronunciations, etc.) are limitless. Linkages within and among them using naming systems—existing and enhanced—are essential (e.g., Lepage *et al.* 2014).

Given such needs and the inclusiveness potentials of increasing linguistic diversity, why should we be content with creating a few linguistic micro-reservations or possibly lowering a couple of waves in an ocean of two colonialist language naming systems? Controversy is guaranteed, whereas desired outcomes are unclear (who becomes included, and who excluded?). Why not directly address the need to increase diversity and inclusion? Languages themselves coexist in a complex environment, and there is a need in biodiversity management and conservation (at least) to improve this coexistence. Beyond our typical Western biodiversity and ornithology usage, a vast, rich multicultural heritage and appreciation for birds appears in stories, art, music, and literature. People love birds. We should be doing more to celebrate and develop the rich linguistic and cultural heritages of bird names and associated knowledge. Further erosion of the names people know (or knew) diminishes our capacity to communicate, whether using our formal naming systems or through neglecting to bring along with these systems the diversity of cultures and names that exist alongside them. Engaging a diverse audience and bringing these other bodies of knowledge along together with our expanding global culture and knowledge should be a major modern goal, and it is one in which multilingual naming systems are crucial. At a larger scale, such non-divisive group efforts (i.e., outside of a win-lose structure) offer opportunities for ornithology to lead on projects furthering wider societal goals of inclusion and equality (Gilroy 2019; Bright 2023).

## Conclusions

English bird names and scientific names exist in tandem and underwent standardization over roughly the same historic period. These linguistically coupled bird name lists share the goal of having standardized and stable names for each species. They are carefully crafted, highly honed communications tools maintained to be effective as biodiversity indices and dictionaries. Although they are riddled with imperfections, they have grown to be among the most inclusive communications systems for vernacular animal names. The core pillars of the success of these systems are standardization and stability. Scientific bird names have greater utility, penetration, and maximal inclusiveness, but they are also predominantly used in more technical communication (usually in conjunction with vernacular names) and have proven less stable. In ornithology, the two work very well together, e.g., in the scientific literature and field guides, where vernacular names accompany their scientific names, which serve as reference to the technical definition. Neither system is likely to replace the other. This tandem coupling is a key strength.

The grounds for objections about our nomenclatural systems are vast and well-plowed. The urge to correct the perceived errors and weaknesses in these systems has been effectively constant. Current discussions, focused on improving names to increase inclusion, are at their core little different from historic discussions over improvements for these and other reasons. Few of these suggestions have been effective. This is not because they are invalid, but rather because a widely useful system needs standardization and stability, requiring that these be prioritized over other considerations. Reformers have seemed confident that what they propose will entail relatively few changes and that things will be right and stable thereafter (e.g., Wood 1835a; Thiele *et al.* 2022). They overlook the facts that there are many opinions, changing through time, on what improvements are necessary; that people are often passionately attached to particular names; and that most proposed changes on cultural grounds will provoke dispute.

Through the course of over two centuries of debates and discussions about names and our naming systems, several fundamental properties have emerged (Table 1). As these systems were gradually hammered out, accuracy, appropriateness, correctness, manners, etc. effectively became mostly unattainable objectives in achieving a rough consensus for what these lists should contain. We have come to accept the many imperfections in these systems and exchanged ‘correctness’ (in multiple contexts) for stability, recognizing that the utility of these systems requires that we have standardized terms with universal (scientific) or close to it (vernacular) acceptance and stability. There will always be friction at this interface, generating passions and consuming time. Recognizing this, the ICZN (1961, 1999) formally stepped aside from arbitrating what are likely to be the most contentious of these frictions

for scientific names (e.g., ICZN 1999: appendix A, point 7; Ceriaco *et al.* 2023). There are fewer restrictions for vernacular names, but there is still a need for standardization and stability, and we can see how drawn-out and contentious these discussions and debates have been and realize that achieving consensus about these systems takes time.

**TABLE 1.** Over two centuries of work on our bird naming systems have produced widespread, if not universal, agreement on these fundamental attributes.

- 
- Standardization and stability are enormously effective in fostering inclusion.
  - Types, binomial nomenclature, the rule of priority, Linné (1758) as a core temporal base, and the capitalization of genus with lower-case species, represent the global scientific zoological nomenclatural standards for species.
  - Names are often simply labels, and this is a central linguistic principle. While names can have descriptive properties, they need not do so—they serve as an index, and the description is separate. Eponymous names are common.
  - Vernacular bird names are a standard component of English bird naming systems, coupled with scientific names. Since this began, they have proven to be an invaluable component of these systems.
  - For clarity, English names for birds are proper names or nouns and thus capitalized. (Scientific names from kingdom to subgenus are also capitalized proper names.)
  - These naming systems are necessarily pared-down lexicons, and thus cannot effectively contain all the diverse verbiage their users might wish.
  - Overall, English bird names have proven more stable than scientific names.
  - Trinomials, denoting subspecies, are now a standard component of ornithological literature. These often have their own vernacular names, though mainly for major subspecies or subspecific groups.
  - Dissatisfaction with aspects of names and our naming systems have always been present. This is inevitable in creations that work well enough for the majority but which, because of compromises, are almost guaranteed to make no individual completely happy.
  - In conjunction with these formal naming systems, other names exist and are extensively used. This is especially useful for improving local and regional communication.
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Perhaps because of this time factor, as the two natural experiments outlined above show, desired social changes have occurred on large scales despite the presence of animal names that might be viewed as barriers to those goals. This should help us realize that our naming systems are not only indirect but also rather weak tools to influence such changes: a pared-down, simplified vocabulary built to improve wide communication cannot accommodate the variety of verbiage required to encompass the very diversity we wish to include. And the nomenclatural instability generated by marginally relieving this constraint erodes the core strengths (standardization and stability) that make the systems so successful in the first place. Organismal nomenclature is not a good tool for social activism.

With massive challenges ahead of us like biodiversity conservation and climate change, debates about changing bird names for cultural purposes seem rather small. We risk name changes causing new dimensions of exclusion from ornithology, through instability and decay of our vehicular language (standardized English, used globally) and through the passion and polarization that name changes often create (see also Bright 2023). Another risk is that an overly tight focus on such debates under the “there can be only one” framework is likely to distract and divide us, diverting us from working collectively to directly address our larger goals in conservation, inclusion, and diversity.

Nevertheless, there are merits to making some name changes for purely cultural reasons (e.g., Pennington *et al.* 2016). It is also reasonable to anticipate that opening that door will bring an endless series of proposals for changes based only on cultural beliefs and values. We should not effectively tear out whole pages from our biodiversity dictionaries, rampantly replacing them with unfamiliar terms for entries already widely and well understood. Making comparatively rapid changes on temporally and geographically variable cultural fashions might increase inclusion locally, but this would also cause some degree of exclusionary effects. At the global scale such changes risk diminishing the effectiveness of this infrastructure in its core goal of maximizing communication effectiveness among all people using English. Destabilization is inherently exclusionary.

Personally, I support an “all of the above” approach: 1) Working within our existing systems to improve them, recognizing that the bigger the changes, the larger the exclusionary effects, and that we should be more data driven. 2) Working proactively to record and enhance our within-language lexicons (e.g., McAtee 1948; Desfayes 1998). 3) Improving and further developing multilingual naming frameworks. Within our naming systems, changes will continue to be contentious, and it would be best to avoid having bird names become part of identity politics and the culture wars. Consider that those most passionate about bird names are already included, and that fostering a win-lose battle among them will create some degree of loss. Like Bright (2023), I want to be a non-aligned person, avoid that divisive framework, and instead work together to find effective solutions to our problems. We can improve our naming systems within and across linguistic and cultural landscapes on the widely shared common ground of the study and enjoyment of birds. There is a need for the multilingualization of naming systems and for much more robust multicultural biocultural frameworks for biodiversity management and conservation (e.g., Park *et al.* 2020). The observation that “language diversity protects biodiversity” (Kohl *et al.* 2020) reflects a highly necessary growth opportunity. It is in multilingual frameworks where efforts will likely have the greatest effects in diversity, equity, and inclusion. Working within systems is a traditional, binary, winner-loser framework. In contrast, the latter two projects—broadening within-language lexicons and deepening them among languages—don’t deny anyone their hard-won knowledge or the aspects of the naming systems they like, and instead offer robust frameworks in which to grow and consume knowledge in a sort of expanding virtuous circle.

Ultimately, I am like Wilson and Audubon in this small way. I grudgingly accept the use of names like Bald Eagle, recognizing that while it’s a very faulty name (being both wrong in terms of its most common usage and possibly offensive), using it enables me to communicate with a vast number of people. Changing it to be more accurate and less offensive will diminish the effectiveness of our communication. Each time we propose such changes, we have to ask whether it’s worth it to the vast (and increasing) numbers of people relying on that piece of our shared communications infrastructure. In most cases, that answer will be “no.” Studying how often and where we can say “yes” and still maintain the utility of these systems should be undertaken, recognizing that our audience size is much larger than ever before (both now and in the future, considering ornithological literature). In addition to gathering more data, we have yet to employ powerful new tools to more scientifically manage these systems, such as sentiment analysis, the Delphi technique, and Q methodology (Linstone & Turoff 1975; Mukherjee *et al.* 2018). But philosophical questions should also play a central role in our discussions. Does excluding people who do not share our views achieve our objective of inclusiveness? When is it okay to take away someone’s hard-won knowledge by changing key terms in that knowledge base?

Despite their many recognized faults, our naming systems have achieved unprecedented successes in broad inclusion. This does not mean that no barriers to additional inclusion remain, but such successful inclusionary systems require working very carefully to reduce their imperfections. Given their necessary conservatism and already vast success, confining ourselves to working within these naming systems offers limited potential to achieve new scales of inclusion. Much greater opportunities exist in proactively broadening these systems to be more diverse within and among languages. Our systems function this way already, but do not come close to realizing their full potential. Using our naming systems as master keys to humanity’s rich cultural and linguistic heritage about birds, and fully developing and bringing along vernacular languages and knowledge, can have large and immediate positive effects in inclusion and conservation.

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## Positionality statement (per Holmes 2020):

I am a 62-yr old white male living in Alaska, USA. I am the son, brother, and spouse of strong women. I am married to Dr. Rose Meier, a botanist and musician. I have no political affiliation; I am a centrist. I strongly support equality and inclusion, and I am opposed to discrimination against people based on their ethnicity, sex or gender, class,

nationality, or religion. We are all people, and we have important things to do together. My formative years included living abroad, living and working on a farm, and hunting, fishing, and trapping. My formal training and degrees are in biology; American Indian studies; zoology; and ecology, evolution, and behavior. I have lived in four countries and four U.S. states (visiting many others) and have formally and informally studied five languages. I am a professor and curator of birds at the University of Alaska Museum and Department of Biology and Wildlife at the University of Alaska Fairbanks. With respect to zoological naming systems, I have created, used, evaluated, and proactively worked both to change and not to change scientific and English bird names as our knowledge has improved. I am a former member of the American Ornithological Society and its North American Classification Committee. I do not speak on behalf of any of these organizations; the views expressed are mine.

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