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Introduction: The languages of Amazonia

1 Introduction

Greater Amazonia, the vast area of the South American lowlands encompassing the watersheds of the Amazon and neighboring rivers, is one of the most linguistically diverse regions on Earth. With hundreds of Indigenous languages corresponding to some 100 distinct lineages, the South American continent hosts nearly a quarter of the world's language families, and the majority of these are concentrated in Greater Amazonia (Rodrigues 2000; Campbell 2012a: 259). Some thirty of these genealogical units are isolates, individual languages with no demonstrable relatives. This diversity was undoubtedly still higher prior to the European invasion, which devastated many Indigenous societies across the continent.

Despite its many languages, South America, and Greater Amazonia within it, was until recently among the most poorly linguistically documented regions in the world. Characterized as the area of "greatest ignorance concerning the native languages" (Mason 1950: 163), "the least known continent" (Lyon 1974), and a "linguistic black box" (Grinevald 1998: 127), the region has been vastly underrepresented in typological, historical, and theoretical research (see also Derbyshire & Pullum 1986: 1; Dixon & Aikhenvald 1999b: 1). However, recent years have seen a rapid increase in high-quality studies of Amazonian languages,[1] together with ethnographic, archaeological, historical, and other studies that provide deepening insights into the peoples of the region, their cultures, and their languages. Nonetheless, a significant

1 Following common practice, we refer to the languages of Greater Amazonia as "Amazonian", although Amazonia *per se* is only a part of this larger region.

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fraction of the linguistic work carried out in the region has remained difficult for an international audience to access, and even Amazonianists can find themselves somewhat isolated from each other by research traditions linked to particular countries or institutions.

This Handbook seeks to address these issues by systematically compiling comprehensive, accessible grammatical overviews for every Amazonian language family and isolate for which adequate documentation exists. Fortunately, the burgeoning number of high-quality descriptive studies of Amazonian languages that have emerged over the past few decades makes it possible to say something concrete about almost all the language families and isolates encountered in the region. These new advances are reflected in the comprehensive approach taken in the volumes of this Handbook – with respect to the language families addressed, the spectrum of languages considered within each family, and the robust scope of grammatical description from sounds to discourse. As seen in the following chapters, this Handbook aims to facilitate comparability by presenting a relatively consistent approach to grammatical description across the chapters, while at the same time respecting the importance of describing the languages "in their own terms" (see e.g., Boas 1911; Rice 2006), with ample attention given to structures and categories that emerge as particularly meaningful in the languages at hand.

The present volume focuses on the large number of Amazonian isolates, while smaller and larger families are addressed in the subsequent volumes. We note that the term "isolate" can be understood in a number of ways, including a language with no living relatives, or a language with no known relatives, whether living or extinct. For the purposes of this volume, we reserve the term principally for languages for which there are no well-attested sister languages.[2] We also observe that, in light of the traumatic colonial history and the ongoing erosion of languages across the region, there are many language groups that are only marginally attested in the historical literature, and others that may still have speakers but for which only minimal documentation exists. These poorly understood families, isolates, and unclassified languages are addressed together in one chapter in a subsequent volume (authored by Raoul Zamponi), in the spirit of creating a truly comprehensive overview of Amazonian linguistic diversity.

In addition to its grounding in the rapidly mounting number of focused investigations of Amazonian languages and families, this Handbook builds on important prior works that have addressed the region's languages from a range of perspectives. Its publication marks roughly 25 years since the publication of the four-volume *Handbook of Amazonian Languages* (1986–1998, Mouton de Gruyter), edited by

2 In some cases, such as Pirahã (Ch. 21), languages that we treat as isolates have poorly attested sister languages with no remaining speakers, while in others, such as Harakmbut (Ch. 10), our decision to treat a language as an isolate stems from an assessment of the living and named varieties as co-dialects, rather than as distinct languages.

Derbyshire and Pullum; those volumes provided grammatical descriptions of particular languages belonging to a range of families, alongside a number of comparative and typological studies. Other works have provided overviews of some major families, including Cariban (Gildea 2012), Tupian (Rodrigues & Cabral 2012), Panoan (Fleck 2013), and Arawakan (Ramirez 2020);[3] historical and comparative observations; and discussions of particular linguistic domains as they manifest across the region's languages, such as sound systems, verbal argument marking patterns, and constituent order. Landmark overviews of this sort include Klein and Stark (1985), Payne (1990a), Campbell and Grondona (2012a), and O'Connor and Muysken (2014). Dixon and Aikhenvald (1999a) provide synopses of the larger families and briefer discussions of small families and isolates, while country-by-country overviews of attested languages and families are found in Queixalós and Renault-Lescure (2000) for Amazonia generally, Rodrigues (1986) for Brazil, E. E. Mosonyi and J. C. Mosonyi (2000) for Venezuela, González and Rodríguez (2000) for Colombia, Solís (2003) for Peru, and Crevels and Muysken (2009–2015) for Bolivia.

The focal region for the language families described in the volumes of this Handbook is Greater Amazonia, which corresponds mainly to the tropical regions of South America east of the Andes. This region includes the Amazon basin proper, as well as large regions adjacent to it, such as the Orinoco, Araguaia, and São Francisco River basins. The western and southern boundaries of Greater Amazonia are often defined somewhat vaguely by those that use the term, but ecological considerations play a major role. In the west, for example, the boundary corresponds roughly to the transition between subtropical and temperate climatic zones, occurring at approximately 1000 m of elevation (Young et al. 2007). In the south, it is bounded by the arid area of the Gran Chaco in the western part, while the east is defined roughly by the pampas lowlands of what is now southern Brazil, Uruguay, and northern Argentina.

The sense among scholars that large parts of this region are culturally and linguistically coherent – at least with reference to the period preceding the European invasion – dates from at least the early 20th century (e.g., Kroeber 1931; Lowie 1958; Meggers & Evans 1955; Steward 1947; see Weiss 1980), with Denevan's (1970, 1976) work on pre-Columbian population estimates responsible for popularizing the term "Greater Amazonia" to refer to this area. At the same time, even scholars concerned with defining large culture areas in South America, such as Steward (1948: 883–

3 Many South American language family names have two variants, one bearing the suffix -an, e.g., Arawakan and Panoan, and one without it, e.g., Arawak and Pano. These variants have their roots in the different language family naming conventions among Anglophone and Iberophone linguists, although now one finds many linguists writing in English who use Iberophone-style language family names. In this introduction we use the Anglophone-style language family names, except in cases where they are avoided even by most linguists writing in English, e.g., (Macro-)Jê, which is much more common than (Macro-)Jêan. The choices of language family names in other handbook chapters reflect the preferences of their authors.

899), recognized that although there were broad similarities among the societies of the region, there were also important differences (Murdock 1951). For example, while shifting manioc agriculture and a variety of products derived from manioc were (and in many cases still are) crucially important for the majority of the peoples of Greater Amazonia, the region is also home to peoples with a hunting and gathering orientation, who historically grew little or no manioc. Similarly, while ethnographic studies point to a set of moral and cosmological principles that are widely shared among Amazonian peoples – see, for example, Londoño Sulkin's (2017) proposal of an "Amazonian package" involving perceptions of a socially fabricated body, a perspectival cosmos, and the role of alterity in the formation of the self – many ethnographers have emphasized regional and local variations in these generalizations on the one hand and potential relevance beyond the region on the other.

Rather than risk slipping into essentialist thinking and struggling to define universal (or near universal) Amazonian cultural traits or practices, it is perhaps more useful to think of Greater Amazonia as a space in which inter-societal contact was frequent, rich, and intense, and an area in which cultural, linguistic, and demographic spreads and diffusion (Sanoja 2013) were facilitated by ecological and geographical factors, such as the numerous riverways spanning the region and by the cultural practices of the peoples living there (e.g., Santos-Granero 2002, 2010; Hornborg 2005). Turning specifically to linguistic dimensions, Greater Amazonia has historically been an arena in which language diversification, and likewise language contact and convergence, have operated on various scales, some encompassing large parts of the region. For example, we find certain language families – such as Arawakan, Macro-Jê, and Tupian – distributed across large portions of Greater Amazonia, reflecting language spreads across vast distances within the region, but for the most part not extending beyond it. Similarly, we find evidence for the widespread diffusion of phonological, morphosyntactic, and discourse features, transversing language families and sometimes spanning wide geographic areas, as discussed in Section 6.

In defining the linguistic focus of this Handbook, we have included all language families that are wholly or principally found in Greater Amazonia as we have defined it. This includes those large families whose members are mostly found in Greater Amazonia but who have some members in adjacent areas – notably Arawakan and Tupian. Conversely, we have excluded languages that are indeed spoken in Greater Amazonia but belong to families whose members are mostly located outside the region, such as varieties of Amazonian Quechua or Kichwa, and Chibchan languages found east of the Andes. We have also excluded creoles whose lexifier languages do not belong to Amazonian language families and languages that were introduced to South America during or following the colonial period. Clearly this division is somewhat arbitrary, and we look to future efforts to complement the work we have undertaken here in providing a truly comprehensive vision of South American linguistic diversity.

Finally, it is important to note that although this volume focuses on the languages of Greater Amazonia, it is clear that these languages and the societies that speak them have long histories of interactions with neighboring regions. For example, as we discuss in Section 6, many languages of western Amazonia have been heavily influenced by Andean languages, a testament to the rich history of trade and migration between the western highlands of the continent and the adjacent foothills and lowlands (Pearce et al. 2020). Similarly, the peoples of the north have long interacted with those of the Caribbean (Strauss 1998; Granberry & Vescelius 2004), with one of its major language families, Arawakan, having expanded to occupy most of the region. The southern limits of Greater Amazonia have also been porous, with languages of the Tupi-Guarani and Arawakan families extending far into the Chaco.

In what follows, we begin with a brief overview of the history of the Indigenous peoples of Greater Amazonia prior to and following the European invasion of the continent, and the implications of these experiences for the ongoing vitality of their languages. From this vantage point, we consider the genealogical diversity of Amazonian languages and issues concerning their classification, together with the patterns of language contact and linguistic areality evident across the region. This introductory chapter concludes with a brief history of the linguistic research that has been carried out in Greater Amazonia and a discussion of some of the key insights it has generated.

2 Indigenous histories: A long view

The current consensus is that humans first arrived in South America in approximately 13,000 BCE via the Panamanian land bridge; within 1,000 years they had settled most of the continent using western and eastern coastal routes, penetrating inland along major waterways (Sutter 2021: 100; see O'Connor & Kolipakam 2014 for another useful, more linguistically-oriented overview). This view replaces an earlier Clovis-centric understanding of the peopling of the Americas that posited much more recent dates for the peopling of South America, and there are finds, such as those of the Monte Verde site in Chile, that may push back the arrival of humans in South America yet further (Dillehay et al. 2015).

Indigenous Amazonians made rapid strides in developing a deep knowledge of their new home, with substantial plant domestication beginning in approximately 9500 BCE in northwestern Amazonia, centered on the montane forests of modern Colombia, and a little later in southwestern Amazonia, centered on the Llanos de Mojos in Bolivia (Iriarte et al. 2020: 8–11). Indeed, accumulating research shows Greater Amazonia to be one of the world's major regions for plant domestication (Iriarte et al. 2020: 3; Shepard et al. 2020), including manioc (*Manihot esculenta*),

sweet potato (*Ipomoea batatas*), yam (*Dioscorea trifida*), cocoyam (*Xanthosoma sagittifolium*), peach palm (*Bactris gasipaes*), chili pepper (*Capsicum spp.*), squash (*Cucurbita spp.*), pineapple (*Ananas comosus*), papaya (*Carica papaya*), peanut (*Arachis hypogea*), cashew (*Anacardium occidentale*), guava (*Psidium guajava*), tobacco (*Nicotiana tabacum*), achiote (*Bixa orellana*), and cupuaçu (*Theobroma grandiflorum*), among many others. Iriarte et al. (2020) also observe that cacao (*Theobroma cacao*), long thought to have been domesticated in Mesoamerica, was likely first domesticated in Ecuador.

Evidence of Amazonian agricultural societies, which additionally adopted maize (*Zea mays*) from Mesoamerica, date to approximately 6000 BCE (Iriarte et al. 2020: 11–12). Starting around 4000 BCE, but increasing rapidly after 500 BCE, long-term agriculture and human habitation led to the development of deposits of rich Amazonian Dark Earths (ADEs), especially along the main course of the middle and lower Amazon and its major tributaries. These deposits supported intensive agriculture and correspondingly dense populations (Clement et al. 2015: 5). A variety of forms of landscape modification, including earthworks, supported food production that allowed the population of Greater Amazonia to reach an approximated minimum of 8–10 million individuals prior to the European invasion (Clement et al. 2015: 4).

Although our knowledge of pre-Columbian Amazonian history still has tremendous gaps, Amazonia clearly sustained a diverse and complex social mosaic that included sedentary chiefdoms, with settlements of many thousands of people who practiced intensive agriculture and management of fish and game; small groups of mobile hunter-gatherers; and in between, groups that practiced shifting agriculture (Heckenberger & Neves 2009). These societies interacted in complex ways: peacefully, via long-range trade networks (Lathrap 1973, Erikson 2011), regional alliances (Vidal 1999, Hornborg 2005), and intermarriage, including linguistic exogamy (Epps & Michael 2017); and violently through captive slavery practices (Santos-Granero 2010, Whitehead 2011) and warfare (Beckerman & Yost 2007). This modern view supplants an earlier view of Greater Amazonia that essentially projected the devastated Indigenous cultural and demographic panorama of the early 20th century into the remote past and considered Amazonia to be an environmentally inhospitable region – a "counterfeit paradise" – incapable of sustaining large and complex societies (Meggers 1971).

3 The European invasion and beyond

The first recorded interactions between Europeans and Indigenous Amazonians occurred in 1498, when Christopher Columbus' crew made a number of brief landfalls on the coast of what is now Venezuela (Bergreen 2011). A more consequential contact occurred in 1500 CE, when a fleet of vessels commanded by Pedro Álvarez Cabral, who was seeking a route to India, accidentally encountered the coast of what

is now Brazil.[4] Over the course of nine days, Cabral's men and a community of speakers of the Tupi-Guarani language Tupinambá (Couto 2003) interacted and traded peacefully before Cabral's fleet continued its voyage. Crucially, in this encounter the Portuguese learned of brazilwood, valuable as a source of red dye, and determined that the people with whom they interacted had no metal tools, valuing greatly the ones the Portuguese traded with them. These two facts served as the basis for several decades of trade between the coastal Tupinambá and traders from a variety of European nations, including the French, Dutch, and English. Some Europeans came to live in Tupinambá communities (both voluntarily and as captives), and complex, shifting alliances emerged between competing European powers and different groups of mutually hostile Tupinambá. The Portuguese began to found colonies in the early 1530s, and other European nations soon followed suit.

Although the relationship between the Tupinambá and Europeans along the eastern coast began with simple trade, the Europeans throughout this region came to rely increasingly on enslaved Indigenous people to harvest brazilwood. These people were purchased from the Europeans' Tupinambá allies, who captured them through traditional captive slavery practices (Santos-Granero 2010). However, with the founding of sugar plantations in the 1540s, the Europeans' demand for slaves escalated sharply; they first encouraged the Tupinambá to increase the frequency of their slaving raids and soon began directly enslaving Indigenous Amazonians to work in the new sugar plantations, sometimes with the assistance of allied Tupinambá groups. The attacks by European colonists on coastal Indigenous Amazonian settlements galvanized Indigenous armed resistance, often successful, against the new colonies throughout the 1550s and 1560s. The tide began to shift in the 1570s, however, as especially aggressive and violent colonial leaders intensified attacks against their Indigenous neighbors that increasingly became genocidal in purpose, leaving large parts of the coast without Indigenous inhabitants.

As Portuguese colonists invaded further inland from the Brazilian coast, other European nations stepped up their efforts to establish a foothold in the region, creating further pressures on its Indigenous inhabitants. Seeking colonial territories in the area, the French occupied Maranhão, south of the mouth of the Amazon River, sending their first expedition to the region in 1611. There they sought and obtained alliances with the Tupinambá of the region who, like the French, sought aid against the Portuguese – who were steadily pushing north, subjugating communities and enslaving large numbers of Indigenous people as they advanced. The Portuguese succeeded in expelling the French from Maranhão in 1615, and in 1619 they launched a genocidal campaign against the Tupinambá, killing or enslaving most who did not flee. With the elimination of the powerful Tupinambá, Portuguese colonists launched several decades of largely unrestrained theft of Indigenous lands in

4 The material in this section that addresses early colonial interactions in what is now Brazil draws heavily on Hemming (1978).

the lower Amazon area, as well as genocidal campaigns against, and enslavement of, its inhabitants, advancing further upriver in search of land and slaves. Within a few decades, the Portuguese onslaught had expanded beyond the coastal region and far up the Amazon and many of its tributaries.

The experience of the Omagua of the upper Amazon illustrates the magnitude and impact of disease and slave-raiding activity on Indigenous peoples across large areas of Greater Amazonia. With an estimated population of many tens of thousands,[5] the Omaguas were one of the largest and most powerful Indigenous Amazonian societies when Europeans arrived in South America (Michael 2014a: 317–318, 2017), militarily dominating their neighbors and occupying a central node in the trade network linking the upper Amazon to the Guianas and lower Amazon. At the same time, their large, permanent communities occupied the banks and islands of the Amazon proper between the mouth of the Juruá and that of the Napo, making them easily accessible to Portuguese slavers from further downriver, who had by that time largely depleted the Indigenous communities closer to them. By the 1680s the Omaguas had begun to suffer so severely from slaving raids that they sought protection from Jesuits based in the Spanish colonies to the west. Despite Jesuit presence among them from 1685 on, however, slaving raids intensified, and epidemics of introduced diseases decimated the Omagua communities. By the early 1690s, the Omagua survivors had abandoned most of their communities further downriver and sought protection in the principal Jesuit mission near the mouth of the Napo River. In 1710, the Portuguese directly attacked the mission, capturing the Jesuit priest and many Omaguas and killing others. By the time the survivors regrouped in a new mission settlement in the 1720s, only some 500 Omaguas survived in the upper Amazon, with another small group of survivors sheltered in Carmelite missions in Brazilian territory.

The general shift from early trade to expropriation of Indigenous lands, genocide, and enslavement, as evident in the early history of Indigenous-European interactions of the Atlantic coast of Brazil and the lower Amazon, was widely repeated throughout coastal South America and beyond. As a result, many Indigenous societies near coastal areas, or those like the Omagua, who inhabited the banks of major rivers, were nearly (or entirely) destroyed by the late 1600s. In the Guianas to the north, for example, a sustained colonial presence was initiated somewhat later than it was on the eastern coast, but followed a similar trajectory: Following Walter Ralegh's 1595 journey to the region and subsequent account of his travels (first published in 1596; see Lorimer 2006) – including claims of a city of gold in the area of the upper Orinoco – French, British, and particularly Dutch interest intensified by the early 17th century. The European presence in the region began with the establish-

5 Colonial era estimates of the main Amazon Omagua population range from 30,000 to 60,000 to 100,000 (see Grohs 1974: 24, 76 for summary). Modern estimates range from 43,000 (Myers 1992) to 91,000 (Denevan 1992: xxvi).

ment of trading posts but was soon followed by permanent settlements and the development of large-scale sugar plantations. The Dutch, especially, developed a massive initiative to enslave Indigenous people throughout the area north of the Amazon River, in which they leveraged their alliances with Cariban groups (Sweet 1974), much as the Portuguese had done with the Tupinambá along the Brazilian coast.

The impacts of the European invasion in the western parts of Greater Amazonia tended to be less intense during the early colonial period than they were along the eastern coast, although there was also tremendous loss of Indigenous life due to introduced diseases. This region was relatively protected by its distance from the Atlantic coast on one hand, and the Andean barrier to the Pacific coast on the other, as well as by the economic focus of the Spanish on the coastal and mountain regions. However, while settler colonialism played a smaller role in early colonial expansion in this region, missionary efforts led by Franciscans and Jesuits were significant. For example, by the mid to late 1600s Franciscan and Jesuit missions had been established in the lowland regions of Maynas in what is now northeastern Peru, the eastern foothills of the central Peruvian Andes, and Moxos and Chiquitos in the south, bringing large numbers of indigenous peoples together in concentrated mission communities (e.g., Pearce 2020).

These observations bring us to the fact that parallel to the colonial enterprise of land theft and enslavement, a second colonial enterprise of a quite different nature was underway throughout Greater Amazonia: the Christian missionization of the region's Indigenous people. Although the Franciscans had been in South America since 1515, it was only after the arrival of the Jesuits in 1549, as Hemming (1978) describes, that the conversion of Indigenous Amazonians to Christianity began in earnest. In the first years, the Jesuits had great success with nominal conversions, as many Indigenous survivors saw the Jesuits as potential allies against the colonists. However, Indigenous Amazonians resisted the radical changes to their lifeways that the missionaries sought to enforce. In response, the Jesuits developed the strategy of establishing *reducciones*, permanent missions in which Indigenous populations were concentrated, resorting to the use of military force supplied by colonial governments when persuasion failed.[6] Consider again the example of the Omagua: although driven by the exigencies of Portuguese slave raids to seek protection from the Jesuits in the 1680s, by 1697 they had grown so dissatisfied with the oppressive nature of Jesuit rule that they rebelled (Michael & O'Hagan 2016: 122–123). The Jesuits responded by calling for colonial military assistance to suppress the rebellion, and annual visits by colonial military forces were organized to keep the Omaguas from rebelling in the future. Thus, like other colonial entities, the missionary orders were also guided by programs of subjugation – which were cul-

6 Also prominent in the Jesuit approach to missionization was their focus on learning and using Indigenous languages as the medium of conversion, a fact that had important repercussions for the description of Amazonian languages, as we discuss in Section 7.

tural and religious, rather than focused on land and slaves – that left little space for Indigenous self-determination.

However, to the degree that Jesuit missions protected the physical well-being of their Indigenous charges, they also interfered with the political and economic machinations of the Spanish and Portuguese crowns, leading to their eventual expulsion, first from Brazil 1759, and then from Spanish territories in 1767, as well as from French holdings in the Guianas. Although the missionary territories formerly under the control of the Jesuits were subsequently reassigned to a variety of other orders and civil administrators, none of them showed the Jesuits' evangelical zeal and industry, or their systematic and sophisticated use of Indigenous languages in their evangelical efforts. It was not until the 20th century that another group of Christian sects, associated principally with evangelical Protestantism, made a similar effort to convert non-Christianized Indigenous Amazonian peoples, a point we return to in Section 7.

The early 19th century saw a significant political reconfiguration of South America with the successful wars of independence by the Spanish colonies and Brazil from the Spanish and Portuguese crowns, respectively, as well as through shifting British, Dutch, French, and Portuguese colonial rule in the Guianas. This political restructuring had little positive impact on the Indigenous peoples throughout the region, as power remained in the hand of *criollo* elites who did not identify as Indigenous. Types of extractivist economic and political models developed during the colonial period remained in place and even intensified during this early Republican period (Hill 1999).

The situation faced by Indigenous Amazonians suddenly and dramatically worsened in the late 19th century, when commercial and industrial applications for rubber were developed. This created a vast demand in Europe for natural rubber latex, which at that time could only be obtained by tapping wild-growing latex-producing tree species, especially *Hevea brasiliensis*. The opportunities for tremendous wealth in harvesting rubber and exporting it to Europe triggered a frenzy, known today as the Rubber Boom, in which non-Indigenous individuals of all economic levels and varied nationalities flooded to Amazonia to seek their fortunes. Tragically for Amazonian Indigenous peoples, however, their knowledge of the local environment meant that their ability to find suitable trees and harvest latex far outstripped those of the new invaders, who developed an economic model in which Amazonian Indigenous people were enslaved or economically subjugated to harvest wild rubber (Santos-Granero & Barclay 2000; Stanfield 1998; Wasserstrom 2017). Numerous Indigenous groups who had eluded or successfully survived the initial European invasion of Amazonia by already occupying, or fleeing to, regions far from the larger rivers favored by the invaders, now found themselves unable to avoid the rubber industry, which pushed far into regions that had formerly been mostly free of non-Indigenous interference (Weinstein 1983; Wasserstrom 2014). This economic model was often enforced by terroristic violence and murder, in some cases reaching genocidal levels (Hardenburg 1921; Taussig 1984; Pineda 2000).

The Amazonian Rubber Boom ended in 1912, when colonial British rubber plantations in Malaysia, initiated using rubber plants surreptitiously taken from Brazil, replaced wild-gathered Amazonian rubber as the world's principal source of this material (Jackson 2008). Many Indigenous peoples remained enmeshed, however, in the debt-peonage system that burgeoned during the Rubber Boom, and which continued in many parts of Amazonia through the 1950s or 1960s. Indeed, the Rubber Boom was followed (and in fact preceded) by extractivist booms focused on other rainforest products and materials (e.g., *chicle* (*Manilkara spp.*), *sarrapia* (*Dypteryx odorata*), rosewood (*Aniba rosaeodora*), piassava (*Leopoldinia piassaba*), prized animal skins, and timber in general, which were less intense but nonetheless had significant impacts on many Amazonian communities (Santos-Granero & Barclay 2000).

The post-WWII period also saw a resurgence of highly intrusive missionary efforts aimed at Amazonian Indigenous peoples, spearheaded principally by evangelical Protestant missionary organizations mainly based in North America, such as the New Tribes Mission, South American Mission, and the Wycliffe Bible Translators.[7] While different in important ways, they resembled each other in a focus on evangelizing "unreached" groups, including ones living in voluntary isolation; and, like the Jesuits two centuries earlier, in prioritizing the use of Indigenous languages for conversion purposes, including the translation of Christian scripture into Indigenous Amazonian languages.

By far the most significant actor during this new phase of missionary activity in Amazonia was the bipartite Wycliffe Bible Translators (WBT)/Summer Institute of Linguistics (SIL) organization,[8] where the former organization faced the evangelical Christian community, especially in North America, and the latter was its governmental- and academic-facing aspect (Aldridge 2012). Especially active in the 1950s–1980s, WBT/SIL gained entrée into several South American countries (see, e.g., Hartch 2006) by forging alliances within the *indigenista* movement (Barros 2004) and offering to help with the "Indian problem", that is, the problem perceived by national governments of the period regarding what to do with Indigenous Amazonian peoples (Svelmoe 2009: 634), who were seen as an obstacle to national development and advancement. In Peru, for example, SIL was effectively in charge of bilingual education for Indigenous Amazonian peoples for several decades, starting in the 1950s (García 2009), while in Brazil, the Serviço de Proteção aos Índios (SPI) and the Museu Nacional reached an agreement with SIL to document and describe

7 Such efforts are nonetheless certainly not unique to Protestant groups; e.g., in southeastern Peru, the Catholic Dominican order has prioritized contacting Indigenous groups living in voluntary isolation and missionizing recently-contacted groups (Quispe Dávila 2021: 200).

8 We note that in some countries, such as Colombia and Venezuela, particularly active Protestant evangelical efforts have been led by other missionary organizations, such as the New Tribes Mission (Gallois & Gruponi 1999).

Brazilian Amazonian languages and to develop Indigenous Amazonian education programs (Barros 2004).

The actions and legacy of WBT/SIL, and Protestant missionaries more generally, in Latin America are highly controversial (for one set of contrasting perspectives, see Dobrin 2009; Dobrin & Good 2009; Epps & Ladley 2009; and Olsen 2009). For one, its dual-faced structure is misleading, if not, as Stoll (1982a: 84–85) argues, actively deceptive, and its methods and goals have been argued to be neo-colonialist (Stoll 1982b). Criticisms have also been leveled regarding the destructive effects of WBT/SIL activities on recently-contacted Amazonian peoples (T. Moore 1979), and the "profound cultural destruction that results from the WBT/SIL missionary activity" (Smith 1981: 132), even among groups that have long been in contact with non-Indigenous peoples. Nevertheless, the neo-colonialist and ethnocidal goals and methods of WBT/SIL are frequently coupled with substantive benefits for indigenous communities (Epps & Ladley 2009). These include literacy (Hornberger 1991), health care, and even degrees of political and economic emancipation, particularly in cases where WBT/SIL and other missionary organizations have played an important role in dismantling the debt-peonage system which held many Amazonian people in servitude; see Stoll (1982a: 91), Uzendoski (2003: 136), and Assis (2006) for examples from Peru, Ecuador, and Brazil, respectively. Many Indigenous Amazonians have also shown considerable cultural resilience in the face of missionary-driven efforts to change their way of life (e.g., Vilaça & Wright 2009, Villar 2015).

In the wake of post-WWII global post-colonial movements, Amazonian Indigenous peoples began to make important strides towards self-determination. Although some paternalistic state entities had existed since the early 20th century, such as the Serviço de Proteção aos Índios (SPI) (later, the Fundação Nacional do Índio, FUNAI) in Brazil, beginning in the 1970s Indigenous rights to language, culture, and land began to be more broadly recognized in national constitutions and laws. The rapid subsequent growth of regional, national, and international Amazonian indigenous federations has tracked the increasing success of Amazonian peoples in obtaining title to their lands, having their linguistic and cultural rights recognized, and winning greater political autonomy (Gray 1997, Yashar 2005, Erazo 2013). Indigenous organizations have successfully forged alliances with international actors such as human rights and environmental NGOs (Conklin 2002, Martin 2014) and have become particularly powerful political forces in some South American nations, such as Ecuador.

Despite the advances made by Amazonian Indigenous peoples in recent decades, many Amazonian communities continue to fight against illegal extractive activities in their lands, especially logging and gold mining. Amazonian peoples have also been heavily affected by national governments' projects of "internal colonization" that have encouraged and facilitated the settling of lands currently or formerly belonging to Indigenous peoples, for example, through the construction of highways. These communities have also been jeopardized by large-scale extractivist

projects sanctioned by national governments, especially oil and natural gas projects, which have a notorious history of polluting areas crucial to Indigenous peoples.

4 Language endangerment, shift, and revitalization

The history of genocide, introduced diseases, slavery, and political and economic oppression has had an unmistakable and massive impact on the vitality of Amazonian languages. The policies of colonial and, subsequently, national governments toward these languages have varied from indifference to deliberate suppression – as in the case of Nheengatú or Lingua Geral, a contact-influenced form of Tupinambá that promised to become the national language of Brazil until its use was prohibited in 1757 (Massini-Cagliari 2004). While the picture is constantly shifting and accurate information is not always available, estimates indicate that of the 443 languages of Greater Amazonia of which we have knowledge, 157 no longer have any known speakers, 48 have only a few (mostly elderly) speakers, 22 are no longer being transmitted to children, 157 are shifting, 55 are threatened, and only four are assessed as relatively unthreatened.[9] Significantly, even languages that are still robustly being transmitted to children tend to be spoken by small numbers of individuals, making them vulnerable to sudden shifts affecting the communities in which they are spoken.

With linguists' growing recognition of language endangerment as a major concern for speaker and heritage communities, the discipline, and humanity as a whole (Hale et al. 1992), a series of overviews have repeatedly raised the alarm, in increasingly urgent terms, regarding language shift and loss in South America (Adelaar 1991, 2007; Grinevald 1998; Crevels 2007; 2012; D. Moore 2007; D. Moore et al. 2008; Rodrigues 2014; Messing & Nava Nava 2016). Studies of the historical context and social dynamics of language endangerment in particular communities (e.g., Crevels 2002; Valenzuela 2010, 2012; Beier & Michael 2018; Shulist 2018; Grzech et al. 2019) complement these overviews, revealing the role of anti-Indigenous racism, political and economic marginalization, and government policies in driving language shift in the modern era. The precarious future of most Amazonian languages has also stimulated numerous language documentation efforts (see, D. Moore & Galucio 2016) – many of which have directly informed the chapters in this Handbook.

9 These figures are drawn from GlottoScope (Glottolog 4.5; Hammarström et al. 2021), which aggregates information from the The Catalogue of Endangered Languages (2022), the UNESCO Atlas of the World's Languages in Danger (Moseley 2010), and Ethnologue (Eberhard et al. 2022). The languages listed as unthreatened include, for example, Paraguayan Guaraní; however, we note that their status may be a matter of some debate, and that even languages with a relatively large number of speakers may be experiencing an abrupt decline in their transmission to children.

Increasingly, documentation initiatives in Amazonia (and elsewhere) are incorporating community-centered methodologies that link documentation to language revitalization activities and aim to support and promote the vitality of Indigenous languages within communities (see D. Moore & Galucio 2004; Franchetto 2007; Granadillo & Villalón 2007; Yamada 2007, 2014; Becquelin et al. 2008; Stenzel 2014; Vallejos 2014a; Facundes et al. 2020; Echeverri 2021; Beier & Michael to appear; also Fitzgerald 2020 for an overview). In some cases, revitalization contexts have even led to the emergence of new language varieties, as in the case of Kukama-Kukamiria, which is discussed by Vallejos (2016). Language endangerment and revitalization have also emerged as key issues in the struggle for Indigenous rights in Amazonia, coupled to central concerns such as rights to land and control over traditional knowledge (Hornberger 1998; Viatori & Ushigua 2007; Lanyon-Pereira & Harman-Vargas 2013; Shulist 2018; King & Arnal 2016).

National education systems in South America have contributed in complex ways to both the erasure and maintenance of Amazonian languages. Educational policies aimed at the assimilation of Indigenous peoples began to give way in the 1970s to approaches that – at least nominally – recognized the rights of Indigenous peoples to their languages, the right to be educated in them, and the right to have the services of the state delivered in their native languages. This led to the emergence of approaches that – again, nominally – prioritized bilingual and intercultural educational models. In practice, the promise of these approaches has tended to outstrip their actual efficacy (Castillo Guzmán & Caicedo Ortíz 2008; Vigil 2008; Villalón 2011; López & García 2016), which has led to a variety of local endeavors seeking to make education more supportive of Indigenous self-determination and cultural and linguistic maintenance and tradition (Dean 1999; Haboud & King 2007; Trapnell 2008).

5 Linguistic diversity and language classification

The thirty chapters in Volumes 1 and 2, entirely devoted to language isolates, directly reflect the genealogical diversity of Greater Amazonia, in which some 286 living, and 443 historically known, Indigenous languages correspond to over 50 distinct lineages. New Guinea is the only world region with a comparable density of distinct language families, a fact that is particularly noteworthy given South America's status as the last continent to be reached by human expansion across the globe. The great majority of the attested genealogical units across the region are very small; indeed, roughly half are isolates (Campbell 2012b: 59; Seifart & Hammarström 2018). Accordingly, in comparison to the rest of the world, the overall proportion of language families in Amazonia greatly outweighs that of the number of languages. This pattern is particularly notable in western Amazonia, throughout the region abutting the Andes. As the map provided before this introduction illustrates, Amazonian iso-

lates are concentrated in the northwest and southwest; however, several other apparent, mostly minimally documented, isolates were once spoken in eastern Brazil. The latter are addressed in the chapter in a subsequent volume that considers minimally documented and extinct Amazonian isolates and families.

An obvious consideration in assessing Amazonian linguistic diversity is our level of confidence in the identification of families. Despite considerable advances, the classifications of many Amazonian families are far from fully worked out; nevertheless, it appears unlikely that further work relying on established comparative-historical methodologies will significantly reduce the overall number of families that are currently understood to exist in this region (see Hammarström 2014). We return to these questions of classification later in this section.

The reasons behind the diversity and distribution of Amazonian languages and families are not well understood. While the puzzle of global variation in patterns of linguistic diversity has received considerable attention recently, much of this has focused on diversity of *languages*, as opposed to diversity of *families*. These patterns are likely to be grounded in somewhat different mechanisms, at least with respect to more shallow time-depths. In particular, a high proportion of languages to families implies relatively recent processes of diversification (typically associated with language spread, which may take place at the expense of other genealogical units), while a high proportion of families is likely to be associated primarily with maintenance over time, with or without more recent processes of diversification or spread. A large number of small families could also be plausibly related to the general pruning of family trees over time, which has certainly occurred in South America via the trauma of European intervention. However, the post-colonial historical record suggests that such pruning did not greatly alter the overall distribution of diversity and that many isolates and small families have been lost altogether alongside the reduction of larger families.

The origins of Amazonian linguistic diversity are rooted in the initial peopling of South America. We may never know to what extent contemporary patterns reflect pre-existing diversity within the populations of first settlers (possibly harking back to Beringia) or early processes of diversification associated with their rapid dispersal across the continent, which would have occurred at a point beyond the horizon of the comparative method, such that prior connections would by now be virtually impossible to detect (Nichols 1992). The development of Amazonian linguistic diversity cannot be linked straightforwardly to geographic factors, since rivers and interfluvial zones in the region may act as both conduits for and impediments to language spread, and mountains are largely absent in Amazonia (cf. Nichols 1992). The intensity of agriculture is also not a clear correlate to language diversification and spread, in light of extensive spreads of non-agricultural language groups in other parts of the world, such as the Pama-Nyungan peoples in Australia or Yupik-Inuit groups in the Arctic (cf. Bellwood 2001), as well as the widespread presence of horticultural practices in South America (see Section 2; also Fausto & Neves 2018;

Neves & Heckenberger 2019). It is also noteworthy that the languages of the few large families in Amazonia – Tupian, Arawakan, Cariban, and to some extent Macro-Jê – exhibit a relatively non-contiguous distribution, in contrast to the large, contiguous family spreads evident in many other parts of the world (of which Indo-European, Bantu, and Sino-Tibetan are just a few examples).

One point that seems to be emerging is that Amazonian linguistic diversity cannot be attributed straightforwardly to a predominance of small groups living in relative isolation from each other. At least within the millennium prior to European arrival, maintenance of diversity occurred in the context of significant population densities and relatively complex societies (Heckenberger & Neves 2009), many of which were associated with widespread, intensively interactive multiethnic and multilingual networks. Recent work suggests that the particular social and cultural dynamics of these networks, with their emphases on trade, intermarriage, and ritual exchange, may have done much to bolster language maintenance, rather than to weaken it (Muysken & O'Connor 2014: 7; Epps 2018, 2020, 2021).

Research on the genealogical relationships among the languages of Greater Amazonia has in recent years been re-energized as its importance for insights into the deep history of the continent has received new attention (O'Connor & Muysken 2014; Michael 2021) and as new phylogenetic methods have become available (Michael & Chousou-Polydouri 2019). One major line of research focuses on the evaluation of long-distance relationships among the established genealogical groupings of the continent. Some of this work stems from wider mid-20th century efforts to group Indigenous languages of the Americas into ever-larger genealogical groupings (e.g., Swadesh 1959, 1960), culminating in Greenberg's (1987) proposal that all the languages of the Americas belong to one of three language families: Eskimo-Aleut and Na-Dene – both restricted to North America – and Amerind, which included all other Indigenous languages of North, Central, and South America. Amerind was divided into six major subgroups, three of which subsumed all the well-established genealogical groups of South America: Andean-Chibchan-Paezan, Equatorial-Tucanoan, and Ge-Pano-Carib. These ambitious long-distance proposals were strongly criticized for their reliance on the method of mass comparison – essentially the use of superficial similarity among forms in different languages as evidence for genealogical relatedness – in place of long-established criteria used by historical linguists, especially the reliance on systematic sound correspondences to evaluate cognacy (Poser & Campbell 1992; Campbell 1997: 210–213).

While no South Americanist or Amazonianist specialists currently seriously entertain Greenberg's proposals, a number of more modest and plausible proposals involving large language families still inspire some interest. These include the suggested Tupi-Carib or Tupi-Carib-Jê macro-family, which is based on certain morphological and morphophonological parallels (see Michael 2021 for an overview of these and other long-distance proposals).

What is clear is that systematic applications of the comparative method are necessary to evaluate long-distance proposals, and various important advances in re-

cent years show the promise of doing so. One such case is the delineation of Macro-Jê, a hypothesized genealogical grouping of languages that has the approximately 17 undisputed Jê languages of eastern Brazil as its core, with a variable penumbra (depending on different linguists' judgments) of additional members consisting of what are otherwise considered small families and isolates (e.g., Rodrigues 1999; Ribeiro 2006, 2012: 262–268; Nikulin 2020: 38–48, 54–81). Careful application of the comparative method has made it possible to decisively settle the Macro-Jê membership of certain languages, such as Jabutí (Ribeiro & van der Voort 2010) and Karajá (Ribeiro 2012: 269–284), and Nikulin (2020) has provided a reconstruction of Proto-Macro-Jê phonology and aspects of its morphosyntax that puts the membership of Macro-Jê on much more solid footing.

Another promising proposal for long-distance relationships among larger Amazonian languages involves two important southwestern Amazonian language families: Panoan and Takanan. With some support from the comparative method (Key 1968; Girard 1971), and striking grammatical similarities between the languages of the two families (Valenzuela 2017; Valenzuela & Guillaume 2017), this hypothesis is an obvious priority for the attention of South Americanist historical linguists. Other recent long-distance proposals based on the comparative method include Adelaar's (2000) Harakmbut-Katukinan proposal, Pache's (2015) linking of the Amazonian language Yaruro to the Chocoan family, which is mainly spoken in the Colombian lowlands east of the Andes (but see Brown [2017] for a negative assessment of this hypothesis), and Rosés Labrada's (2019) linking of Jodï with the Sáliban family.

Work based on the comparative method has in some cases led linguists to split putative single language families into multiple distinct families. For example, Epps and Bolaños (2017) demonstrate that the erstwhile seven-member "Makú" family should be split into three distinct groupings: the Naduhup and Kakua-Nukak families, and the isolate Wa̋nsöjöt/Puinave (as reflected in these volumes). Similarly, Seifart and Echeverri (2015) argue that the former Witotoan family is in fact two distinct families: Witotoan proper and Bora-Muinane, where the latter language group has borrowed lexical items and morphology from Witotoan and morphosyntactically converged with it. Similar work was responsible for the earlier reclassification of Resígaro, formerly believed to be Witotoan, as Arawakan (Payne 1985).

The evaluation of long-distance relationships is far from the only important dimension of linguistic classification for Amazonian languages, however. Improving the internal classification of established families is also critical for identifying and better understanding language contact phenomena and for inferring the homelands of proto-languages and the diasporas associated with their diversification. In some cases, the comparative method and the use of shared phonological innovations have proved fruitful for developing fine-grained internal classifications, as in the case of Tukanoan (Chacon 2014), Panoan (Shell 1965; Oliveira 2014), and some branches of Arawakan (Carvalho 2021). But in other cases, as with Tupi-Guarani (O'Hagan et al. 2019: 21–22), the unexceptional nature of the sound changes involved, and

their distribution among the languages of the family, render them not particularly useful for subgrouping purposes. In this context, computational phylogenetic methods (CPMs), when properly applied, have a great deal to contribute (see Michael & Chousou-Polydouri 2019). Methodologically sound applications of CPMs have advanced our understanding of the internal classification of both Tukanoan (Chacon & List 2015), and Tupi-Guarani (Michael et al. 2015); ongoing projects on Arawakan, Cariban, Panoan, and Tupian promise similarly substantive results.

6 Language contact and linguistic areality

South American genealogical diversity is situated in a complex panorama of typological diversity and similarity which both parallels and cross-cuts family-level distinctions across the continent (Campbell 2012a; O'Connor & Muysken 2014). At least some of the linguistic features shared by the languages of Greater Amazonia have diffused via interactions among the many Indigenous societies of the region. Linguistic phenomena are just one reflection of these interactions, alongside the diffusion of aspects of material and ceremonial culture (e.g., domesticated crops, bitter manioc processing technology, hammocks, beer-making practices, and sacred flute complexes; see Carneiro 2000; Hill & Chaumeil 2011; Clement et al. 2015) and discourse practices (e.g., ritual wailing, dialogicality, and shamanic registers; see Urban 1986, 1998; Beier et al. 2002). The vehicles for this diffusion must have included large-scale trade networks, which crisscrossed the continent prior to the European invasion, and perhaps also the spread of widely distributed language families, particularly Arawakan and Tupian (Vidal 2000; Hornborg 2005; Epps & Michael 2017).

While earlier proposals emphasized the possibility of a general set of typological affinities distinguishing Amazonian languages from those of the central Andes and the Andes-Amazonia transition zone (Derbyshire 1987; Derbyshire & Payne 1990; Dixon & Aikhenvald 1999b; Torero 2002), most of these proposals have not held up well to closer scrutiny (see Campbell 2012a: 301–308; Epps & Michael 2017). However, more recent work suggests a robust distinction between western and eastern zones within South America, in which western Amazonia groups together with the Andes and Southern Cone, in contrast to the region east of the Rio Negro and Purus basins. Relevant regional trends have been noted in relation to, among other features: polysynthesis, noun phrase structure, the encoding of grammatical relations, and phonological inventories and processes (Payne 1990b; Birchall 2014; O'Connor & Muysken 2014; Chang & Michael 2014; Michael et al. 2014; van Gijn & Muysken 2020).

Our understanding of language contact and areal diffusion within Amazonia is deeply informed by investigations within smaller geographic regions. For example, the Upper Rio Negro area, and particularly the Vaupés River basin within it, has been recognized for decades as an interactive, multilingual regional system, in which

intermarriage (including linguistic exogamy), trade, and ritual exchange have encouraged long-term, intensive, and stable multilingualism among its inhabitants (e.g., Sorensen 1967; Jackson 1983; Aikhenvald 2002; Stenzel 2005; Epps & Stenzel 2013). The dynamics of this region are reflected, to varying degrees, in other regions throughout lowland South America, which are likewise characterized by extensive interaction among speakers of multiple languages (see Epps & Michael 2017; Hill & Rodriguez 2015). These include the Caquetá-Putumayo river basins of northern Peru and southern Colombia (Echeverri 1997; Seifart 2011); the Marañón-Huallaga area (Valenzuela 2015); the Guaporé-Mamoré region on the border of Bolivia and Brazil (Crevels & van der Voort 2008; Muysken et al. 2015); the Upper Xingu (Seki 1999, Franchetto 2011); areas of the Guianas and Orinoco basin (Migliazza 1985: 20; Rivière 1999; Carlin 2017); and – on the borders of Greater Amazonia – the Chaco (Comrie et al. 2010; Campbell & Grondona 2012b). Intriguingly, many of these regions are characterized by similar constellations of phenomena: multilingual interaction, whether on everyday and/or ritual/ceremonial levels; shared cultural and discursive practices; structured approaches to intermarriage and exchange (such as linguistic exogamy and trade specializations by group); and evidence of grammatical convergence coupled with constrained lexical borrowing (Bowern et al. 2011; Epps 2020).

A number of grammatical categories attested in Amazonian languages show evidence of contact-driven development and/or elaboration. Notable examples include systems of nominal classifiers (see Seifart & Payne 2007: 384–385, Krasnoukhova 2012: 263), associated motion markers (Guillaume 2016), and evidentials (Aikhenvald 2004: 21, Müller 2013: 227), as further discussed in Section 8. Patterns of Wanderwörter (widely distributed lexical borrowings) are also broadly evidenced within these zones and beyond, in some cases extending widely throughout the Amazon basin (e.g., an etymon resembling *wakara*, meaning 'heron' or 'egret'; see Nordenskiöld 1922, Haynie et al. 2014; Zamponi 2020). Widespread lexical phenomena also include calques, of which a notable example is seen in numeral terms for 'four' (and occasionally 'three' or 'five'), which are etymologically associated with the expression 'having a sibling/companion' throughout much of Greater Amazonia (Epps 2013).

The dynamics of these regions probably have much to tell us regarding the mechanisms behind the development and maintenance of Amazonian linguistic diversity. They are also making significant contributions to our understanding of small-scale multilingualism as a stable and long-term dynamic (Urban & Sherzer 1988: 297–298; Lüpke et al. 2020). While multilingualism of this kind has long been neglected in linguistic research, recent work points out its potentially key role in human history (Evans 2018). Further underexplored mechanisms of language contact that may have particular significance within Amazonia include captive incorporation (Michael 2014a, 2017) and the practices of ritual and ceremonial specialists.

Finally, we note that several important methodological and analytical advances for assessing linguistic areality have been made in recent years, contributing to a

deeper understanding of Amazonian linguistic histories. These include approaches informed by statistical modeling, such as Chang and Michael's (2014) study of phonological borrowing among South American languages and Ranacher et al.'s (2021) identification of linguistic areas in South America based on typological features. They also include fine-grained, historically grounded investigations of contact-driven change in particular languages and families, as seen, for example, in Aikhenvald's (2002) study of contact-driven change in Tariana, an Arawakan language of the Vaupés region.

7 Linguistic research in Amazonia

The earliest documentation and description of Indigenous Amazonian languages was carried out by Catholic missionaries. These works were largely motivated by efforts to convert Indigenous Amazonians to Christianity, beginning in earnest with the 1596 order by King Philip II of Spain that Indigenous peoples should be catechized in their own languages (Adelaar 2012: 2). Franciscan, and especially Jesuit, missionaries carried out extensive linguistic work, some of very high quality, throughout the 17th and early 18th centuries. Particularly notable examples of these works include Joseph de Anchieta's grammar of Tupinambá, a Tupi-Guarani language of coastal Brazil (1595); Montoya's (1640) grammar of Guaraní; Marban's (1701) grammar of Moxo (Mojeño), an Arawakan language of the Bolivian lowlands; and the collection of materials organized by Leonardo Hervás y Panduro (1784–1787, 1800–1805). Jesuit missionaries were also the first to call attention to relationships among languages, as with Gilij's (1782) observations concerning Arawakan and Cariban languages, and Hervás y Panduro's (1787: 26) on Tupi-Guarani (see Adelaar 2012; O'Connor & Muysken 2014: 2). Many of the Jesuit manuscripts were lost or even deliberately destroyed by the Jesuits themselves, during and following the suppression of their order and expulsion from Spanish territories in 1767 (Michael & O'Hagan 2016: 111). However, our primary knowledge of various now-extinct languages comes entirely from these early missionary records, as in the case of Cholón, which was described by the Franciscan missionary Pedro de la Mata ([1748] 2007; see Ch. 8, this volume).

The next significant wave of linguistic work came in the early 19th century, when European naturalists and explorers gained access to the region. Many of these visitors, such as Carl Friedrich von Martius (1867), Johann Natterer (1831), and Alcide d'Orbigny (1839), collected lists of vocabulary in the native languages they encountered – typically seen as "samples", assembled alongside those of plants and animals. Advances continued into the late 19th century, carried out by such notable figures as Karl von den Steinen (1892) and Paul Ehrenreich (1894). The early 20th century saw further important contributions by scholars such as Theodor Koch-Grünberg (1923), Claudius de Goeje (1928), Günter Tessmann (1930), and perhaps

especially Curt Nimuendajú (1955, 1981 [1944], *inter alia*). Some of these materials now comprise the sole record of extinct languages.

Through much of the 20th century, missionaries played a major role in producing documentary and descriptive works on Amazonian languages. After a long lull following the Jesuit expulsion, Catholic missionaries resumed work in linguistic description, as exemplified by Sala's (1905) work on Ashéninka and Yanesha'; Aza's (1924) on Matsigenka; Hoeller's (1932) on Guarayu; de Melo's (1942) on Pareci; Armellada's (1948) on Pemon; and Espinosa Peréz's (1955) work on several languages of northern Peruvian Amazonia, including a crucial description of the now-extinct Peba-Yaguan language, Yameo. However, the bulk of linguistic work in this period was undertaken by Protestant missionaries associated with the SIL and its partner organization, WBT. Their output comprises the majority of available sources for South American Indigenous languages through the 1990s; indeed, most of the chapters in the Derbyshire and Pullum volumes (1986–1998) are authored by WBT/SIL missionaries, as are many in Dixon and Aikhenvald (1999a). Among the many examples of descriptive works by WBT/SIL missionaries, we mention Payne (1981) for Ashéninka, Derbyshire (1985) for Hixkaryana, Wheeler (1987) for Siona, Kakumasu and Kakumasu (1988) for Ka'apor, D. Everett and Kern (1996) for Wari', Snell et al. (2011) for Matsigenka, and Thiesen and Weber (2012) for Bora. These works include grammars, dictionaries, and other materials; however, many WBT/SIL-produced grammatical works from the 1960s and 1970s employed the now-defunct tagmemic framework (Allin 1976 on Resígaro is one example), that unfortunately limits their present-day useability. Other WBT/SIL-authored works engage with questions of classification, reconstruction, and comparison, such as Shell (1965) for Panoan, Payne (1991) for Arawakan, and Aschmann (1993) for Boran and Witotoan.

The academic study of Indigenous Amazonian languages gained momentum in the second half of the 20th century.[10] Brazilian linguist Aryon Rodrigues carried out pioneering work, focusing on languages of the Tupi and Macro-Jê families (e.g., Rodrigues 1985, 1986, 2000). Significant grammatical descriptions from this period include E. E. Mosonyi (1966) for Yaruro (Pumé), Gregores and Suarez (1967) for Guaraní, Migliazza (1972) for Yanomaman languages, Jusayú (1975, 1977) for Wayuu,[11] Landaburu (1979) for Andoke, Grenand (1980, 1989) for Wayãpi, Gomez-Imbert (1982) for Tatuyo, D. Moore (1984) for Gavião, Patte (1989) for Añun, Gómez (1990) for Yanam, Estrada (1996) for Sáliba, González-Ñáñez (1997) for Warekena, Ramirez (1997) for Tukano, Meléndez (1998) for Achagua, and Seki (2000) for Kamayurá; a number of these scholars are authors of chapters within the volumes of this hand-

10 We focus here primarily on the work of non-missionary academic linguists, but we note that some overlap exists between WBT/SIL missionaries and linguists who are academically trained and/or hold academic positions.

11 Miguel Angel Jusayú is also notable as possibly the first published Indigenous linguist of a language of Greater Amazonia.

book. Further important works from this period include edited collections containing typological, descriptive, and historical overviews of the region's languages, cited in Section 1. The latter half of the 20th century also saw a significant number of anthropologically oriented contributions relating to the sociocultural dynamics of multilingualism (e.g., Sorensen 1967; Jackson 1983; Chernela 1993) and to traditions of discourse and verbal art (e.g., Reichel-Dolmatoff 1971, 1996; Basso 1985; Urban & Sherzer 1986; Seeger 1987; Franchetto 1989; Jusayú 1989; Urban 1991; Briggs 1993; Hill 1993; see also Urban & Sherzer 1988).

As we observe in Section 1, the 21st century has ushered in an explosion of high-quality work on Amazonian Indigenous languages, including comprehensive grammars, dictionaries, text collections, and historical studies (for overviews, see D. Moore et al. 2008; C. Everett 2010; Epps & Salanova 2013; D. Moore & Galucio 2016). Much of this work has been spearheaded by linguists from South American countries and promoted by programs in linguistics throughout the region; notably, the Museu Paraense Emílio Goeldi and the Universities of Brasília, Rio de Janeiro, Campinas, and Pará (Brazil); the Universidad de los Andes and the Instituto Caro y Cuervo (Colombia); the Universidad Nacional Mayor de San Marcos and the Pontificia Universidad Católica del Perú (Peru); and others. Furthermore, a growing number of established archives are providing long-term and reliable preservation and internet-based access for documentary materials associated with these and many other studies, including legacy materials. Principal examples are the Archive of the Indigenous Languages of Latin America (AILLA), the Archivo de Lenguas y Culturas del Ecuador, the California Language Archive (CLA), The Language Archive (TLA), the Endangered Languages Archive (ELAR), and the archives of the Museu do Índio in Rio de Janeiro and the Museu Paraense Emílio Goeldi.

In addition to language archives, other digital resources developed for Amazonian languages include parsed dependency-relationship corpora (e.g., for Shipibo-Konibo, Vasquez et al. 2018), comparative lexical databases (e.g., for Tupian, Gerardi et al. 2021), databases of typological features (e.g., the South American Indigenous Language Structures database (SAILS), Muysken et al. 2016), phonological inventory databases (South American Phonological Inventory Database (SAPhon), Michael et al. 2021), and databases that combine lexical data and typological features to explore language contact and areality (South American Hunter-Gatherer Database, Epps 2013+).

Grammatical and lexical studies have been complemented by work on culturally, socially, and discursively grounded aspects of Amazonian languages. One especially important area in this regard is work on Amazonian verbal art, including incantation, ceremonial discourse, and song; see for example: Beier (2003) and Michael (2019) for Nanti, Déléage (2005) for Sharanahua, Cesarino (2011) for Marubo, Prieto (2018) for Kakataibo, and Ramos (2018) for Hup. Other speech modalities and language surrogates have also received attention, for example: D. Moore and Meyer (2014) on whistled speech, Seifart et al. (2018) on Bora drummed communication, and Godoy (2020) on Ka'apor sign language. Further work has explored the

linguistic expression of emotion in Amazonian societies (Zariquiey 2018, Neely 2019), the role of cultural ideologies in shaping discursive practices and/or grammatical structure (Aikhenvald 2002; Michael 2012, 2015, 2019), and the pragmatics of information structure (Vallejos 2014b; Valle 2017; O'Hagan 2020). Recent work has also highlighted the importance of ethnographically grounded research and "thick" (rich, detailed, and comprehensive) linguistic documentation in general (e.g., Lehmann 2001; Franchetto 2006).

Finally, and importantly, documentation has been greatly enriched by a growing commitment to community-based initiatives and to the involvement of Indigenous scholars. Many contemporary projects have emphasized training of and collaboration with native and/or heritage speakers in carrying out documentation. Increasingly, significant contributions to the study of Amazonian languages, including MA and PhD theses, are being made by Indigenous Amazonian scholars; these include: grammatical and lexical studies (e.g., Melgueiro 2009; Nascimento 2013, 2017; Vallejos & Amías 2015; I. Tapirapé 2020; Tikuna 2020; Machuqui 2021), investigations into linguistic vitality, dialectology, and language pedagogy (e.g., Rubim 2011, 2016; Gonçalves 2018; Serra 2018; G. Tapirapé 2020), and works focusing on the intersection of discourse and cultural practice (e.g., Mehináku 2010; Azevedo 2018; J. P. L. Barreto 2013; J. R. R. Barreto 2019; Santos Angarita 2022).

8 Linguistic insights from Amazonia

It has frequently been observed that Amazonian languages exhibit a variety of unusual typological features, some of which are virtually unattested elsewhere in the world (Urban & Sherzer 1988; Dixon & Aikhenvald 1999b: 1; C. Everett 2010; Campbell 2012a; Muysken & O'Connor 2014: 9). With its diversity of linguistic lineages and history of independent development via-à-vis other world regions beyond the Americas, the presence of typological *rara* is not in itself surprising. Yet we cannot overestimate the importance of Amazonian languages in informing our typological and theoretical generalizations concerning human language, both from synchronic and diachronic perspectives. Many of these noteworthy features appear to have emerged and/or been elaborated via language contact, while others may have been represented in the languages of the original arrivals to the continent and retained over time (see Muysken et al. 2014).

In the domain of sounds, features that have drawn the attention of linguists include theoretically important patterns of epenthesis (McCarthy & Prince 1993); typologically unusual stress systems (Crowhurst & Michael 2005; Elias-Ulloa 2006; Wetzels & Meira 2010; González 2017); nasal harmony (Kaye 1971; Bruno et al. 2008; Miranda & Picanço 2020; Lapierre 2021); nasal-oral contours in voiced obstruents (Wetzels & Nevins 2018); and tone and laryngealization phenomena (Montes 1994; Stenzel 2007; Hyman 2016; Bertet 2021). Also of note is the presence of rare or even

unique speech sounds (whether understood as phonemes or allophones), such as a linguo-labial segment (where the tongue contacts the upper lip) in Umotina (Macro-Jê) and a phonemic uvular tap in Kuikuro (Cariban); see Campbell (2012: 265). Typologically unusual inventories are also attested, as, for example, in Southern Ninam (Yanomaman), which has voiced stops but lacks voiceless ones (Migliazza 1972; see Campbell 2012a: 263–272; Storto & Demolin 2012), and in one dialect of Yanesha', which does not contain high vowels (Fast 1953).

Among notable morphosyntactic features, OVS and even OSV basic constituent orders are attested in a number of Amazonian languages, despite being vanishingly rare in broader typological perspective (Derbyshire 1985; cf. Dryer 2013). Multifunctional classifier systems – in which classifiers may associate with multiple elements of the clause – have also been identified as typologically distinctive, despite being quite frequent in western Amazonia (Derbyshire & Payne 1990; Grinevald & Seifart 2004; Seifart & Payne 2007; Krasnoukhova 2012; Farmer 2015). Other grammatical domains stand out for their elaborate inventories, often involving many fine-grained values. In western Amazonia, for instance, we find complex systems of associated motion (Guillaume 2016), engagement (Zariquiey 2015; Evans et al. 2018), evidentiality (Aikhenvald 2004), switch-reference (van Gijn & Hammond 2016; Zariquiey 2016), tense (sometimes interacting with evidentiality; Fleck 2007), and applicatives (Wise 2002). Some of these systems reveal evidence of their elaboration via discourse-driven grammaticalization, often involving language contact (e.g., Aikhenvald 2002; Michael 2015; Tallman & Epps 2020). Other typologically noteworthy phenomena include: the presence of frustratives (Overall 2017); sociative causatives (Guillaume & Rose 2010; Rose et al. 2021); nominal tense (e.g., in varieties of Guaraní; Nordlinger & Sadler 2004; Tonhauser 2006; Thomas 2014); reality status systems (Michael 2014b; Danielsen & Terhart 2016); verbal number (sometimes corresponding to lack of nominal number; e.g., Itonama, Crevels 2006); semantically fine-grained demonstrative systems (Skilton 2019, 2021); intricate systems for expressing spatial relations (Ospina 2013; Vallejos & Brown 2021); genderlects (Rose & Vuillermet 2022); and numeral systems that tend to relatively low limits (Epps et al. 2012), which in some cases have been shown to correlate with speakers' constrained facility for calculation and enumeration of quantities (Gordon 2004; Pica et al. 2004; Frank et al. 2008). Also of note are unusual alignment splits (such as an association between past tense and accusative alignment, and non-past and ergative alignment; Gildea & Queixalós 2010), gradience between core arguments and adjuncts (Zariquiey 2017), a high functional load for nominalization (van Gijn et al. 2011), and evidence that the distinction between morphology and syntax may be somewhat less clear-cut compared to languages in other parts of the world (Payne 1990b; Tallman & Epps 2020; see also Lemus Serrano forthcoming and other chapters in Tallman et al. forthcoming).

Amazonian Indigenous languages also invite us to rethink generalizations concerning the dynamics of language use, contact, and change. For example, assump-

tions that extensive lexical borrowing will necessarily accompany grammatical convergence have been challenged by stable, small-scale multilingual contexts such as the Vaupés (Aikhenvald 2002; Epps 2018; Lüpke et al. 2020). At the same time, ideas of how multilingualism itself should be defined and conceptualized are informed by the high frequency of lects and registers across the region, many of which are notably distinct from everyday speech; these include ritual and ceremonial speech forms (Taylor & Chau 1983; Déléage 2005), genderlects (Fleming 2012; Rose 2015), hunting and pet registers (Fleck & Voss 2006; Dienst & Fleck 2009), and many others (Epps 2021). The documentation of Amazonian discourse has also provided important opportunities to explore and appreciate forms of verbal art that are rare, unattested, or no longer practiced elsewhere in the world and to engage with the interplay of grammar and culture (Urban & Sherzer 1986; Beier et al. 2002).

Finally, Amazonian languages provide a source of insight into the histories of their speakers, potentially reaching back in time to its earliest settlement. By triangulating with archaeology, ethnohistory, genetics, and other disciplines, linguistic inferences can inform our understanding of migration histories, past social relations and interactive networks, changes in subsistence patterns and cultural practices, and other questions (see Balée 1999; Facundes 2002; Chacon 2013; Arias et al. 2020; Heggarty & Epps forthcoming).

9 The view ahead

As the chapters of this Handbook demonstrate, Amazonian languages are a resounding testament to human expressive capacity. The range of grammatical and lexical resources, the processes by which they are elaborated, and their implementation in verbal art and other forms of discourse underscore the degree of linguistic diversity evident across the globe while also reminding us of our shared capacity for social, intellectual, and artistic expression. Nonetheless, the many Amazonian languages that have vanished in the centuries following the European invasion, alongside the ever-accelerating pace of contemporary language endangerment, remind us of the fragility of this diversity and of the urgent need for further documentation and description. Even the most thoroughly studied languages represented in these volumes have received only a tiny fraction of the attention devoted to the great majority of Indo-European languages. At the same time, the Indigenous communities in which these languages are or have been spoken face enormous challenges, ranging from invasions of their lands; struggles for official recognition; threats to their health and well-being from miners, loggers, and other entities; and devastating epidemic diseases, of which the COVID-19 pandemic has been just one more iteration. Collaborative, community-based efforts in the documentation and revitalization of Indigenous languages can make significant contributions to the vitality and autonomy of Amazonian communities. Such efforts are positioned to promote

the valorization and recognition of Indigenous languages and cultural practices; provide support for native-language pedagogical resources and community-driven school curricula and teaching models; foster a sense of self-esteem among young people and other community members; and assist communities in upholding their rights to their lands and to self-governance. In sum, the study of Amazonian languages is of urgent priority and enormous intellectual and humanistic value. We hope that these volumes will stand as a reminder of the importance and urgency of this work.

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