South-American languages in a formal perspective

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1. Linguistic diversity in South America

South America extends, north to south, from Punta Gallinas in Colombia to the Drake Passage in Cape Horn, and, east to west, from Cabo Branco in Brazil (Ponta do Seixas) to Punta Pariñas in Peru, being the fourth largest world's continent in territory and fifty in population. It is one of our last storehouses of natural resources, including fauna, flora, mineral and hydric reserves. However, for centuries, South America's natural reserves have been increasingly depleted without much concern and planning. The present book is devoted to another, even less minded, often ignored, treasure of South America: linguistic diversity. Although some of us, linguists, defend that language is part of our genetic endowment, while others take it to be a cultural asset, we all agree that languages are a humankind patrimony, and linguistic preservation, documentation and analysis are priorities, especially when minority languages are considered. Thus, studies on languages of South America are first concern.

One fourth of the language families of the world is located in South America (Campbell, 2012), with the majority of local languages being spoken by communities with much less than one million speakers. Also, there are about 625 living languages in South America, but, according to Lewis (*Ethnologue*: *languages of the world, 2009*), 179 of them are dying.

Recently, linguists from different areas have shown an increasing interest in these languages. Nevertheless, the conducted studies are mostly typological in nature, being specially devoted to the indigenous languages, 420 in total. The languages of the colonizers, which include Brazilian Portuguese, non-peninsular varieties of Spanish and French, and a number of local sign languages, are usually left out of purview in studies about native languages of South America.

The languages European colonizers brought to South America underwent processes of transformation giving rise to new, local grammars. For example, there are major parametric differences that clearly set apart Brazilian Portuguese and

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varieties of South American Spanish from their European origins. Some of these parametric differences will be discussed in the second part of the book.

As for sign languages, although present classifications and counting are uncertain, there are around 30 sign languages in South America, which are composed by numerous dialects. Similarly, to Brazilian Portuguese and the local varieties of Spanish, some of South-American sign languages were subject to influences from non-autochthone, overseas Sign Languages. For example, Libras - Brazilian Sign Language, was influenced by French Sign Language and Argentinian Sign Language by Italian Sign Language. However, they should also be classified as native languages of South America, as they have their own linguistic systems, which emerged within local deaf communities.

2. Formal approaches to human languages

The perspective under which each chapter of this book approaches the linguistic diversity in South America is deeply rooted in the tradition of formal grammar. Human languages are complex objects, the result of certain genetic disposition of humans and myriads of historic culture encoded in the atoms (i.e., roughly, words or morphemes) that form the vocabulary of each particular language. We can see languages from two points of view: (i) as mere corpora attested in oral or written production, or (ii) as a cognitive capacity, partially responsible for the attested corpora. This characterization roughly corresponds to the well-known Chomskyan distinction between E-language (E for external) and I-language (I for internal) (Chomsky 1986). Both objects can be represented formally. On the one hand, the utterances that form particular E-languages can be segmented and decomposed in various ways, given certain degree of abstraction. A reasonable linguistic decomposition would attribute to a single utterance several levels of linguistic analysis, each of which corresponds to the phonetic, phonological, morphological, syntactic and semantic dimensions of the said utterance. On the other hand, genetic attributes endow humans with a recursive system of atom combinations, whose ultimate output are language sentences, externally interpreted by systems of thought and language production, i.e., the so-called linguistic interfaces (Chomsky 1995). In a sense, what is common to all human, at least under normal circumstances, is then some sort of Universal Grammar (UG). UG can also be formally represented through a complex system of *principles* (or equivalently, of *natural laws*). If such system is correctly modeled, then linguistic theory can be conceived of a theory of an essential aspect of human cognition.[2]

Now, under normal conditions, any child is exposed to the imperfect input of an E-language (or more than one) on the basis of which she will be ending up generating her own I-language. Myriads of children under similar conditions will acquire

[2] But note that even if one does not ascribe to the idea that linguistic theory is a branch of cognitive psychology, one can still characterize syntax as a complex system of axioms under which each sentence of a given language is formally derived as a theorem of such axiomatic system.

similar I-languages in the same period of time. The key to understand why the acquisition process is relatively fast is genetic endowment, more specifically, UG, which in combination with external data will help the child to fix her I-language. Now, external data depend on many factors that are in essence external to the language faculty itself. The historical and socio-cultural complexity of such a vast territory like South-America will obviously impact on the development and growing of many local grammars, which also interact among themselves in complex ways. For instance, a child who was born in the city of Buenos Aires in the 40's was probably exposed to many fragments of Italian dialects, varieties of Peninsular Spanish and even Galician. In addition, the same child was also exposed to sociolectal varieties of Rioplatense Spanish that at that time was already relatively fixed. As noted by Muñoz Pérez and Saab (in prep.), this entire mass of linguistic evidence does not count as a consistent set generated by any particular I-language. However, in a relatively short period of time, she will produce utterances entirely determined by her own I-language. This situation is replicated in myriads of Buenos Aires neighborhoods, where at least half of the immigrants came from different parts of Italy in that period of time. Any particular I-language acquired by those children is a pure individual language, but given that the external factors conditioning the process of language acquisition is quite similar for each of these children, their I-languages will have many common properties regarding their phonetics, phonology, morphology and syntax. A close observation can be made about Brazilian Portuguese, which is not a language in itself, but a set of dialects defined by different regional and socio-economic populations of speakers. Language contact in Paraguay, where local Spanish coexists with different varieties of Paraguayan Guarani, including a language mixing, provide us with yet another similar acquisition issue (Estigarribia 2020).

Given this perspective, the tasks for any plausible formal approach to human language would be (i) to describe the type of knowledge internalized in the mind of the individual that fixed a particular I-language (varieties of Spanish, Quechua, Chinese, Brazilian Sign Languages and so on), and (ii) to abstract from the complex body of available evidence general principles (i.e., natural laws) common to all particular I-languages. Such tasks require a comparative approach to human languages. In addition, comparisons must take place at different macro and microscopic levels. As lucidly argued by Kayne (2005), microscopic dialectal comparison allows to the linguist isolate the properties under study in a sort of natural laboratory. As is clear, comparing a certain property P in two close varieties, in which other factors remain identical, considerably reduces the risk of introducing unwanted confounding factors and allows to the linguist to focus on P alone. Methodologically speaking, this is an obvious advantage, specially, if it is true that macro and micro differences among language types is just a matter of degree, as claimed by Kayne himself. But given our current state of knowledge on linguistic diversity, the language = dialect thesis cannot be categorically asserted, and there is the possibility that micro-linguistic differences interact in various complex ways with macro-parameters of the well-known type (Baker 2008). Roberts (2019) seems to agree with the latter position and provides a hierarchy of parameters that would underlie both big qualitative linguistic types but also minimal differences sometimes, reduced to a mere lexical

item (his nano-parameters). We don't want to take a particular stance regarding this fascinating debate, but we are convinced that any methodology, including macro and micro approaches to language diversity and modality comparisons among oral and sign languages, is welcome and all have different contributions to make to a better understanding of the language faculty. This is one of the essential reasons this book is divided in three different parts, each of one approaching linguistic diversity from different, but needed, points of view, from dialectological to typological approaches and from sign to oral languages.

3. Part I: South-American Sign Languages

Not long ago, linguists were mostly preoccupied in gathering comparative data verifying points of convergence and divergence between sign and oral languages in order to establish whether sign languages (SLs) were natural languages or not. Bloomfield's (1933) characterization of SLs as primitive gestural systems and Hockett's (1960) assumption that the vocal-auditory channel is one of the defining features of human language had previously contributed to an erroneous understanding of natural as synonymous of oral. But this understanding was soon challenged. Stokoe's (1960) groundbreaking work, further developed by Friedman (1977) and Klima and Bellugi (1979), among others, on the phonemics of ASL (American SL), indicated that SLs are identical to oral languages in duality of patterning (Hockett 1960), which pointed towards an identity between sign and oral languages in terms of combinatorial power. In the eighties and nineties, comparative research on grammatical structure (Liddell 1980, among others), on acquisition (Petitto 1997, among others) and on the brain structure and function of language (Bellugi, Poizner and Klima 1983, and Poizner, Klima and Bellugi 1987) cemented, as an uncontroversial empirical fact, the conclusion that deaf and hearing populations have the same linguistic ability.

The history of SL linguistics has had consequences far beyond the study of SLs in itself. First, it shows that applying analytic tools to the analysis of a linguistic phenomenon, providing an explicit account, is a necessary step in deciding whether that phenomenon reflects some natural systematic body of knowledge or not. The aforementioned findings on ASL phonemics emerged because a structural analysis of the elementary units of the language was applied first by Stokoe and later on by Friedman on phonotactics and by Klima and Bellugi's explicit comparisons with oral language phonology. Second, it paved the way to a perspective of language according to which the linguistic code of a language L is to be differentiated from L's mode of externalization (Sandler and Lillo-Martin 2006). While oral and sign languages present patent differences in mode of externalization, their underlying grammatical cores are quite comparable, resulting from the same brain mechanisms and cognitive architecture. This resonates with the fundamentals of Generative Grammar theory, according to which all languages share deep-seated structural regularities (I-language – Chomsky 1965, 1986, see section 2 above), with linguistic diversity reflecting differences at PF. Thus, modality (oral-aural and gestural-

visual) raises interesting issues related to externalization (e.g., linearity vs. simultaneity), rather than pointing towards differences in grammar architecture. This change in perspective promoted a balanced and informed discussion on the centrality of gestures to human communication and its effects on the components of language, resulting in a more refined view of the role played by iconicity in language development, production and processing (Perniss et al. 2010, Meteyard et al. 2015, Schlenker 2022, among others) and on the relationship between speech, sign and gesture (Messing and Campbell 1999, Kendon 2008, Goldin-Meadow and Brentari 2017, among others).

As SL linguistics is now a well-established field of research, there are an increasing number of investigations on different SLs, and a great number of comparative studies focusing on SLs. But still, it is to be acknowledged that, much like what is observed for oral languages, current formal investigations concentrate mostly on ASL and sign languages of large communities within Europe. The bulk of cross-linguistic comparative studies promote comparisons among these languages or with them, leaving non-American and non-European SLs out of purview. This is not necessarily an unnatural outcome - comparisons are based on those languages because we know more about them, but still, it indicates a pressing need for research on less well-known languages.

The *ethnologue* website lists 154 SLs in total (129 deaf communities sign languages and 27 shared sign language https://www.ethnologue.com/subgroups/sign-language). Of those, 13 are in South America, 10 languages of deaf communities and 3 shared languages. This is, however, an under-representation of South America SLs. Brazil alone is a linguistic nebula, where more than 12 emerging SLs were already identified, being located mostly within indigenous communities (Silva and de Quadros 2019, Almeida-Silva and Nevins 2020). Mapping, describing, documenting and analyzing these languages should be of most important consideration, as they can provide us with information about I-language evolution (e.g., how linguistic complexity emerges) and how language development is shaped by biological and environmental forces (the nature / nurture debate). Particularly, emerging SLs are a fertile empirical ground to investigations on synchronic and diachronic relation between gestures and signs (Sandler et al. 2014, Meir et al. 2003). Thus far, we don't have comprehensive formal analyses of South-American emerging SLs, but hopefully in a near future we will.

The first part of our book is dedicated to well-established deaf communities' languages SLs of South America. The four chapters that compose it focus on Brazilian Sign Language (Libras - Língua Brasileira de Sinais), Argentinian Sign Language (LSA - Lengua de Señas Argentina) and Peruvian Sign Language (LSP- Lengua de Señas Peruana). These languages have different degrees of official recognition. Libras was legally recognized as the national language of the deaf community of Brazil in 2002, and, in 2021, bilingual education to deaf students (Libras, Brazilian Portuguese) became mandatory by law. Libras is signed in all regions of the country, presenting some dialectal variation that hasn't been extensively mapped up to now. For a detailed presentation and analyses of Libras, we refer the reader to the book *Brazilian Sign Language Studies* (2020), organized by Ronice Müller de Quadros. LSA is the national sign language of Argentina and, according

to Massone and Martínez (2015), it presents regional lexical and phonetic variation. Despite the presence of local strong committees and organizations in its defense, LSA hasn't been legally recognized as a national language yet. LSP is composed by many generational and regional varieties (Parks and Parks 2010, Clark, 217)) and it does not really figure as an official national language yet, although in 2010, the Peruvian government recognized it as a Peruvian language (Rodríguez-Mondoñedo, this volume). Thus, all in all, although Libras, LSA and LSP may well be secured in number of signers, they are still vulnerable in that they haven't being fully accepted as part of the linguistic identity of the nations where they are located. See Ramsey and Quinto-Pozos (2010) for an elaborate overview of political and social issues standing in the way of sign language transmission in Latin America. We, the editors, concur with local deaf communities and SLs researchers in supporting these languages, as well as emerging and isolated SLs, as part of our linguistic heritage.

Chapter 2 of the present book, *The morpho-phonology of nominal plurality in Argentinian Sign Language (LSA)* by Yanina Boria and Carlos Muñoz Pérez, presents a comprehensive study of nominal plurality in LSA, which is expressed either via sideward reduplication of the lexeme (e.g., *child*, *children*) or via reduplication of a meaningless epenthetic classifier (e.g., *pencil*, *pencils*). Thus, the chapter's driving question is: how does this plural allomorphy come about? Boria and Muñoz Pérez advance a unified analysis, suggesting that LSA has only one plural morpheme, which is expressed by repetitions of an arch-like movement carrying over the noun. As the plural morpheme lacks inherent phonological features, it needs to be combined with a nominal base at PF. When the phonological features of the nominal base impede it from hosting the plural affix, a sign-movement epenthesis à la Brentari (1998) occurs to rescue the derivation, resulting in an intruder classifier-form.

In chapter 4, *Argument structure in Peruvian Sign Language,* Miguel Rodríguez-Mondoñedo's quest is providing a formal analysis for the fact that in LSP types of verbal classifiers vary in function of predicate types. Taking verbal classifiers to be exponents of a functional head akin to little *v* (see Benedicto and Brentari 2004 for a proposal along these lines), Rodríguez Mondoñedo suggests that the observed variation is predicted by the Unaccusative Hypothesis. Handling classifiers, which occur with transitive predicates, are agentive heads that agrees with the internal argument in form/shape feature, while theta marking the external argument. Conversely, entity classifiers are non-agentive elements, heading, thus, an unaccusative structure. They agree with the internal argument in form feature, but they do not project an external argument. On its turn, body part classifiers occur with unergative predicates. Assuming unergative predicates to be hidden transitive structures, formed by incorporation of an internal argument into the verb (Hale and Keyser 1993), Rodríguez-Mondoñedo suggests that LSP unergatives verbs are formed via incorporation of a body-part inalienable possessed noun. Thus, body part classifiers are similar to handling classifiers in that they agree with the internal argument and theta mark the external argument.

Classifiers are tough to work on because there is a lot of variability in the systems employed by languages (Aikhenvald 2000, 2005). Also, classifier constructions in SLs have a somewhat unexpected behavior, presenting some unique properties that

might be related to the visual-gestural modality (Emmorey 2003, Sandler and Lillo-Martin 2006). In despite of these issues, Boria and Muñoz Pérez's and Rodríguez-Mondoñedo's chapters, focusing on different classifiers systems, provide us with a generalization: classifiers are exponents of functional categories (presumably little *v* in Rodríguez-Mondoñedo's analysis and Num^0 in Boria and Muñoz Pérez's). This is by no means unique of SLs; see for example Watanabe's (2006) and Simpson's (2021) analyses for numeral classifiers in Japanese and Korean. Thus, the functional status of classifiers might be a universal, which Boria and Muñoz Pérez's and Rodríguez-Mondoñedo's analyses are carving out of LSA and LSP.

Chapters 3 and 5 are dedicated to Libras. Chapter 3, *The grammar of agreement in Libras*, authored by Guilherme Lourenço, calls for a revision of verbal agreement in SL. It is traditionally assumed that in these languages, verb agreement is expressed via directionality: verb path movement between the referential locations specified for the verbal arguments (Padden 1988, Sandler and Lillo-Martin 2006, Lillo-Martin and Meier 2011, among others). Lourenço disagrees with this view, arguing that agreement is expressed via co-localization, not movement. Co-localization, as defined by the author, is a change in the location of the verb to match that of an argument. A corpus of Libras was analyzed for verb agreement, and almost half of the tokens displayed co-localization (agreement). Verbs that did not were either verbs with a first-person argument or body-anchored verbs. Lourenço takes first-person marking to be default agreement in Libras, and reasons that body-anchored verbs block co-localization because their point of articulation cannot be altered at PF.

A great body of work in many different and unrelated languages has pointed towards the universality of agreement, but how verbal agreement is expressed in SLs is a moot question, with literature offering many different accounts (see Quer 2021 for an overview). One interesting feature of Lourenço's account is that it ties the proposed PF process of co-articulation to a minimalist syntax, arguing that co-articulation is a PF realization of Agree applied to phi-features. Hence, Lourenço's proposal seeks for a unified, universal syntax.

The last chapter of Part I, chapter 5 – *Blending Libras and Portuguese: acceptability variables*, by de Quadros, Lillo-Martin and Klamt, brings forward an experimental study on code-blending. An acceptability judgment task, followed by an explicit elicitation of the target items, was conducted with 22 codas, all natives of Libras and spoken Brazilian Portuguese, to verify constraints on blended sentences. The following linguistic factors were manipulated: match/mismatch in word-order (OV with VO; post-verbal with pre-verbal negation), (b) match/mismatch voice (active with passive) and (c) match/mismatch in idiomatic reading (idiomatic with non-idiomatic). Results show a preference of matching structures. Mismatching in voice as well as in idiomatic reading block code-blending. Conflicting word orders received lower rating, with mismatches in the position of negation being more accepted. Overall, results indicate that blending requires both derivations to be convergent, syntactically compatible and mapped into a single proposition.

We start our presentation of SLs by calling attention to the fact that I-language is stable throughout modality. de Quadros, Lillo-Martin and Klamt's experimental observations provide beautiful evidence for this. In fact, they argue, in accordance

with the Synthesis Model (Lillo-Martin et al. 2016 and de Quadros et al. 2020), that code-blending are cases in which a single derivation has multiple externalizations. This is, spoken and signed utterances are produced by the very same computational system.

4. Part II: Linguistic innovations at the south of the *Romania Nova*

The second part of this book is devoted to the analysis of certain remarkable properties of the grammars of Brazilian Portuguese and two varieties of South-American Spanish (Chilean and Argentinian), the two main Romance languages spoken in the *Romania Nova*.[3] The *Romania Nova* area makes pretty evident to linguists how dynamic language change is. In effect, the three varieties of Romance explored in the chapters below have some formal particularities that are substantive for a formal perspective to language evolution. To a great extent, this is intimately related to a set of complex interactions of historic, cultural and social facts, which are constitutive of the enormous human diversity in the South-American territory. Brazilian Portuguese, a broad term covering many local grammars within Brazil, illustrates this point paradigmatically. As is well-known, the European Portuguese that the colonizers brought to Brazil ("a língua das caravelas", see Galves 2020) was progressively affected for the aforementioned factors giving rise to a more stable situation in the 20th and 21st centuries. For instance, the person and number verbal paradigms and the pronominal systems were radically eroded at least since century 19th century (see Duarte 1993, 2000). The first-person plural pronoun *nós* was replaced by the third-person singular *a gente*, the distinction between *tu* and *você* vanished in favor of the unique second person pronoun *você*, which is morphologically third-person singular, and the same happened in the second-person plural slot, with *vocês* as the unique second-person pronoun. This obviously impacted on the verbal paradigm, which in most Brazilian Portuguese dialects contain only three morphological distinctions: first-person singular, third-person singular and third-person plural: *eu amo*, *você ama*, *ele/ela ama*, *a gente ama*, *vocês amam*, *eles/elas amam* (*I love*, *you love*, *he/she loves*, *we love*, *you love*, *they love*). Compared with Latin-American varieties of Spanish, which lost only the second-person plural *vosotros*, these changes in the pronominal and verbal paradigms in Brazilian Portuguese produced a radical typological change as far as the interpretation, syntactic distribution and phonetic realization of subjects are concerned. In effect, the evidence recollected in the last thirty years leads to the conclusion that most varieties of Brazilian Portuguese pertain to the partial *pro*-drop type. This type is known for

[3] Romania Nova is a term coined by Francisco Ordóñez and Mary A. Kato to refer to the Romance languages spoken in the Americas and to the research project #14 within the *Asociación de Lingüística y Filología de América Latina (ALFAL)*. The reader can visit the website of the project at https://sites.google.com/view/romania-nova/p%C3%A1gina-principal, where a list of activities including recent publications is available.

a series of perplexing properties, in particular, the almost absolute absence of referential null subjects, the presence of null generics, and hyper-raising effects in finite clauses (see Rodrigues 2004 for Brazilian Portuguese and Finish, Holmberg 2005, 2010 for Finish, and Kato 1999, 2000, Barbosa et al. 2005, Modesto 2000, Ferreira 2000, Nunes 2020 for Brazilian Portuguese). According to a prominent approach to the topic, the erosion of agreement morphology in the verbal paradigm is associated to an impoverishment of the T^0 node. This sort of functional impoverishment seems to generalize to other formal heads in the Brazilian Portuguese spine. For instance, in chapter 7, "Approaching the so called "topic-subjects" in Brazilian Portuguese from below", Kato and Nunes revise the properties of the so-called "topic-subject" construction, a well-known characteristic of Brazilian Portuguese, non-attested in the European varieties of Portuguese. Two relevant examples are provided below:

(1) a. [Os relógios] **quebraram** o ponteiro.
the watches broke-**3PL** the arm
'The arms of the watches broke.'
b. [Essas gavetas] **cabem** muita coisa.
these drawers fit-**3PL** many thing
'Many things can fit in these drawers.'

Mainstream approaches in the Lusophone tradition correlate the emergence of this property precisely to the fact that Brazilian Portuguese is becoming a non-*pro*-drop language. Yet, Kato and Nunes convincingly show that this is indeed a fake correlation and claim that the crucial trigger that gave rise to this "construction" must be found within other formal properties of the clause. More specifically, they propose that with the reduction of structural Case assignment possibilities at the *v*P level, Brazilian Portuguese started to make pervasive use of inherent Case within the verbal domain. This is a substantive result on two counts: (i) first because it clarifies the empirical domain by establishing where the locus of change is regarding topic-subjects, and (ii) because it shows that the change that Brazilian Portuguese suffered goes well beyond the T^0 node. If Nunes and Kato are correct, Brazilian Portuguese suffered a massive reduction or impoverishment of the formal content of the set of functional heads that compose the sentence structure, a fact that obviously impact in the syntactic distribution, interpretation and realization of predicate arguments.

Other formal changes in most Portuguese varieties spoken in Brazil also affected crucial aspects of phrase interpretation. A prominent example in this domain is the meaning of bare singular nominals. In chapter 9, *Ways of number marking: English and Brazilian Portuguese*, Roberta Pires de Oliveira critically revises different versions of Chierchia's Nominal Parameter on the basis of comparison between English and Brazilian Portuguese, two Type I languages, according to Chierchia's parameter.[4] A crucial difference between the two languages is that Brazilian

[4] "Type I are languages where numerals combine directly with some nouns, but not with others, which require insertion of a measure phrase. English is an example of Type I, because of the

Portuguese, but not English, allows for bare singulars in argument position, a fact that seems to contradict one important prediction of the parameter:

(2) a. Gato tem bigode.
cat has whisker
'Cats have whiskers.'
b. * Cat has whisker.

After showing why previous attempts to solve this problem fail, Pires de Oliveira proposes a microparameter which puts the burden of the explanation in the locus of atomicity. According to the author, English is a noun-centered language, that is, a language in which the first layer of the nominal projection projects atomicity. In turn, Brazilian Portuguese is a determiner-centered language, that is, a language in which atomicity is computed later in the derivation, at the DP level. This implies that a singular bare noun in English is always atomic and cannot be interpreted as an individual in argument position, although it can be re-interpreted as a mass noun through well-known coercion processes. In Brazilian Portuguese, a bare singular is underspecified for atomicity and, consequently, can be converted into an individual by particular conditions.

Although the changes that Peninsular Spanish suffered in different areas of America didn't seem to affect the typological nature of the new local grammars, or not at least in the same evident way Brazilian Portuguese varieties show, the innovations imposed by these local grammars are extremely substantive from a phonological, morphological and syntactic point of view. The two studies on Chilean and Argentinian Spanish contained in Part II of this book analyze different dimensions of the relevant grammars (syntactic and lexical dimensions, respectively). In chapter 8, *Is Chilean Spanish a canonical Pro-Drop variety? On Subjecthood in Chilean Spanish*, Iván Ortega-Santos explores the extent to which Chilean Spanish meets the classic properties of the null-subject parameter. Concretely, he claims (i) that Chilean Spanish is not a canonical *pro*-drop language, but (ii) that it is not a partial *pro*-drop language of Brazilian Portuguese or Finish type, either. On the one hand, using data from corpora as well as from acceptability judgments, Ortega-Santos argues that Chilean Spanish displays some non-trivial overlapping with Caribbean Spanish with respect to *pro*-drop properties, a Latin-America variety well-known for not fitting the *pro*-drop pattern consistently. On the other hand, a brief comparison with Brazilian Portuguese, a typical partial *pro*-drop language, shows that Chilean Spanish, even being a non-canonical representative of this linguistic type, still pertains to the family of *pro*-drop languages.

In turn, chapter 6, *The grammaticalization of* igual *in Argentinean Spanish* by Ángela Di Tullio, Mercedes Pujalte and Pablo Zdrojewski, focusses on two characteristic uses of the word *igual* 'equal' in two Spanish varieties: Argentinean and Peninsular Spanish. As is well-known, among the many functions *igual* can have in

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contrast between *three chairs* and **three blood(s), three ounces/drops of blood*." (Pires the Oliveira, this volume).

the sentence, most of them shared by any Spanish dialect, Argentinean Spanish has also a particular use which can be characterized as concessive:

(3) Está lloviendo a cántaros. *Igual* voy a tu casa.
is raining to pitchers equal go.1SG to your house
'It is raining cats and dogs. But I'll go to your house.'
[Argentinian Spanish]

In Peninsular Spanish varieties, instead, like in many other Latin-American ones, *igual* can be used as an epistemic marker, an option banned in Argentinian Spanish. Thus, in a sentence like (4), *igual* can be straightforwardly paraphrased (or even replaced) by *quizás* 'maybe', clearly pointing out to the conclusion that the original adjective was reanalyzed as an epistemic adverb expressing uncertainty.

(4) *Igual* mañana nieva.
Equal tomorrow snows
'Maybe it will snow tomorrow.'
[Peninsular Spanish]

The authors' observation is that the epistemic and the concessive uses of *igual* are the result of two different grammaticalization paths, which bifurcated at a stage where *igual* got in both varieties the value of a focalizing adverb. Concretely, both dialects (and related ones) began to bifurcate when they took different grammaticalization paths for exactly the same original adjective. Thus, whereas Peninsular Spanish grammaticalized *igual* from comparative constructions of identical possibility, Argentinean Spanish followed a different path taking as a crucial step the grammaticalization of *igual* as a concessive head.

In sum, the four chapters we offer to the reader in this second part cover lexical, syntactic and semantic particularities of some of the aforementioned Romance varieties at the south of the *Romania Nova* with the aim (i) of providing a better description of the relevant varieties (in some cases by correcting certain empirical observations in the previous literature and, in others, by adding novel data), and (ii) of offering new theoretical insights which are of great concern in formal approaches to language evolution/change, such as the nature of grammaticalization and the hierarchies of parameters (Di Tullio, Pujalte and Zdrojewski), the impact that the Case/Agreement system has in the emergence of innovative constructions (Kato and Nunes), the status of the *pro*-drop parameter (Iván Ortega Santos), and the semantic parameter of number marking (Pires de Oliveira).

5. Part III: Indigenous South American Languages

South America was the last habitable continent to be populated by humans, and its prehistory is wrapped up in mystery. However, although most of the past is just silence, being still lost in the mists of time, recent comparative interdisciplinary

investigations have brought light to some of the gaps, incrementing bit by bit our knowledge about the process of peopling the territory. According to the conservative hypothesis, this process started around 11.000 years ago. Following a coastal pacific route, a wave of decedents of North American Paleoindians – originally from Eurasia, crossed Panama, reaching and settling down in the uppermost west part of South America, expanding later towards east and south (Lynch 1999). This hypothesis is challenged by recent findings that pull back to thousands of years the primal human arrival in the continent (Gruhn 2020 and Prates et al. 2020). Particularly, archeological data from the Monte Verde complex site in south-central Chile suggests that humans were in South America before 15 kya. (Dillehay et al. 2015, Dillehay et al. 2019). More dramatically, a recent stone artifact found in the site of Pedra Furada, state of Piauí, Brazil, helped dating the presence of modern *Homo sapiens* in that place in 24 kya (Boëda et al. 2021). Be this dating as conflicting as it is, it still indicates that indigenous South Americans are ancient local populations, being rightfully our oldest natives.

Anchoring the time-depth of South Amerindians to our current time and interests, consider Quechua and Tupi languages. Historical and linguistic evidence points to Central Peru as the homeland of Proto-Quechua, which coexisted in that territory with Proto-Aymara, maintaining with it close linguistic exchanges (Adelaar 2012a,b and Emlen 2017). Afterwards, Quechua expanded geographically, branching out in two different varieties: Quechua I and II, followed by a subdivision within Quechua II (Heggarty 2005). Thus, although Quechua is often called the language of the Incas, its origins are much older than the rise of Inca Empire, in the Cuzco region, at the beginning of the 13th century (Adelaar and Muysken 2004). As for Tupi, convergent information from history, linguistics, genetics and archeology indicate that Proto-Tupi emerged around 5.000 years ago in central-western Amazon, in an inter-fluvial zone bounded by the rivers Amazon, Tocatins, Madeira and Guaporé, a region within the actual Brazilian state of Rondônia (Rodrigues 1964, Brochado 1984, Noelli 2008, Rodrigues and Cabral 2012, among others). Around 3.000 years ago, Tupi diversified in different linguistic varieties, which correspond to the ten families that currently form the Tupi stock. Some of these varieties expanded in a fast radial fashion towards south, north and east. About 2.000 years ago, Guarani, a linguistic subgroup of the Tupi-Guarani family, was already in the lowlands of South America, in the Paraná-Paraguay basin (Urban 1996). Thus, the prehistory of South American Indians is to be told from a linguistic perspective as well, considering grammatical consequences of ancient migrations and encounters with other languages. This is an understudied topic, with almost no formal investigation being conducted so far.

Some of the remarkable prehistorical migrations within South America left linguistic footprints that can still be traced. Consider for example the so-called founder effect. Much like what is observed in genetics, when a subgroup of speakers of a language A spread across a vast territory, reaching unconnected distances from A and founding a new language B, a founder effect is observed: the founders' language (B) exhibits less phonemic variability than the original language (A) (Mayr 1963, Cavalli-Sforza 2001, Atkinson 2011). This is observable within the Tupi stock. Compared to Tupi languages still located in central-western Amazon, South

Guarani languages have less variability in their vowel inventories. Almost all Guarani languages have a 6x2 harmonic vocalic system (6 oral, 6 nasal), while Amazonian Tupi languages present among themselves greater vowel variability (Rodrigues 2020). Interestingly reconstruction studies ascribe to Proto-Tupi-Guarani this very same harmonic vowel inventory (Lemle 1971, Rodrigues and Dietrich 1997, Meira and Drude 2015), suggesting that Guarani grammars are very conservative with respect to vowels. Following the CV hypothesis of Nespor and colleagues (Nespor et al. 2003, Hochmann et al. 2011, among others), Rodrigues (2020) associates this finding with the observation that Guarani languages are quite similar in structure (Rodrigues 1985), raising, thus, the hypothesis that there is less parametric variation among Guarani languages than among the Tupi languages that stayed within Amazon.

Although ¼ of the family languages of the world are in South America, the number of languages in the continent is rather small: there are currently 53 indigenous-language families and 55 isolates, but only 420 indigenous languages in total (Campbell 2012). This unbalanced family-language ratio (approximately 6.9 languages per family) is not observed in older continents, such as Africa, Asia and Europe (Nicols 1990, Nettle 1999, Seifart and Hammarström, 2017), raising questions related to the linguistic profile of prehistory South America. Although these questions haven't been fully addressed yet, they have large implications for theories of language and language evolution. This unbalance might reflect language loss as discussed below, but it might have resulted from territorial expansions as well. Long-distance, disconnecting migrations of speaking populations could have led to severe phonemic founder effects, which, in its turn, brought about linguistic differentiations first at the phonemic level then at the structural level, creating, thus, multiple speciation within one single linguistic lineage. Obviously, verification of this hypothesis requires a better understanding of how phonemic changes affect grammar.

Events of peopling and migrations might have shaped language diversity in prehistory South America in unexpected ways; and in addition to this, the recent past and the present indicate reduction of diversity. The European colonization took its tolls, reducing dramatically the number of local languages in the whole territory (Kaufman 1994, Crevels 2012). For example, the Charrúa language that flourished in the south of Uruguay in the pre-Columbian period died during the first half of the nineteenth century due to dispossession of their speakers by the Spanish founding fathers of modern Uruguay (Kaufman 1994). The Brazilian territory lost 75% of its indigenous languages during and after Portuguese colonization (Rodrigues 2014), and, according to information on the 2021 edition of the *ethnologue website* (https://www.ethnologue.com/guides/how-many-languages-endangered), 62% of Brazilian living languages are endangered. This is not the highest percentage, as it reaches 86% in Chile. From our point of view, this is an alarming situation. Most of these languages are still poorly documented, underdescribed and underanalyzed. Also, although in the last decades there has been a significant increasing in linguistic awareness and recognition of indigenous languages as full-fledged complex grammars, accompanied by an increment on local research, it is to be emphasized that

the bulk of the investigations conducted so far are typological and descriptive, with formal analyses being quite limited for now.

This scarcity of systematic and deep analyses is in tension with the fact that important considerations about language and cognition are quite often based on empirical evidence coming from understudied languages. To exemplify this, consider Gordon's (2004) work on Pirahã (Mura language, Brazilian Amazon) and Pica et al.'s (2004) work on Munduruku (Tupi language, Brazilian Amazon). Their experimental observations led to the conclusion that language underlies numerical cognition, supporting cognitive tasks involved in exact arithmetic. This showcases the importance of promoting detailed investigations on understudied languages, while calling attention to the potential of South American languages for research on human neurocognition.

The present publication undertakes efforts to promote formal studies on South-American indigenous languages, aiming at adding to a better understanding of local grammars and to the development of a general theory of human language. The four chapters that compose the third part of the book are devoted to analytical studies of Quechua, Paraguayan Guarani, A'ingae and Macro-Jê languages, addressing different levels of analysis.

Chapter 10 – *Compounding process in three Macro-Jê linguistic branches*, elaborated by Andrew Nevins and Mario da Silva, centers on compoundhood in Macro-Jê, a stock located in the south of Amazon River, mostly within the Brazilian territory, but also, in smaller numbers, in Argentina and Paraguay (Nikulin 2020). Although classifications of Macro-Jê are uncertain, the stock comprises approximately 10 families and 40 languages, including those already extinct (Rodrigues 1999, Nikulin 2020). Nevins and da Silva's study aims at identifying grammar-specific conditions on compound formation in four Macro-Jê extant languages: Maxakalí (Makalí family), Krenak (Krenak family), Xerente and Xavante (Jê family). Although in these grammars, compounds are more productive than derivational mechanisms in word formation, Nevins and da Silva show that, due to language specific conditions, different criteria are needed to identify compoundhood. In Maxakalí, phonological criteria, such as lexical stress and number of syllables, might not be effective in identifying compounds. Thus, semantic properties related to reference must be considered. Conversely, compounds in Krenak are easily identified via phonological criteria, such as place of assimilation and nasal-voice interaction, where a nasal feature in the last segment of the first root triggers devoicing in the first segment of the following root. In contrast, noun-form might be a good criterion for detecting compoundhood in Xerente and Xavante, as these languages have two forms of nouns, the first one restricted to the rightmost position (first root) within a compound, and the second occurring everywhere, but not in the last position.

Paraguayan Guarani, a Tupi-Guarani language, is the focus of chapter 11, *Poro-/mba'e- antipassive prefixation in Paraguayan Guarani*. Bruno Estigarribia and Ernesto Almada argue, against typological previous analyses (e.g., Heaton 2017, 2020), that Modern Paraguayan Guarani uses the prefixes *poro* and *mba'e* as antipassive voice markers rather than incorporated nouns. The proposal is that insertion of these prefixes yields syntactically intransitive argument structures that are semantically dyadic with a non-specific, generic internal argument. The following

pieces of evidence are given in favor of antipassivization and against noun-incorporation: (a) noun-incorporation does not explain the affix *poro*, which has no corresponding lexicalized noun; (b) the noun *mbá'e* (*thing*) might incorporate into the predicate, but, if so, it triggers a reading of the predicate as an institutionalized and socially important activity, which is not observed in the data at hand, (c) while structures with noun-incorporation allow for a manifested object, structures with *poro* and *mba'é* do not.

In our assessment, chapters 10 and 11 are very good theoretical exercises. Nevins and da Silva show the need for establishing general, non-language specific criteria for identification and characterization of word-formation processes being at the same time sensitive to language-specific properties in deciding which criterion is to be applied to which language. Estigarribia and Almada show that separating "apples from oranges" is a crucial step at descriptive level. They do not provide us with the structure of Paraguayan Guarani antipassives, but give us clean data, contributing, thus, from a cross-linguistic perspective, for formulation of a general morphosyntactic theory of antipassivization.

Neil Myler, the author of chapter 12 – *Argument structure and morphology in Cochabamba Quechua (with occasional comparison with other Quechua varieties)*, is also interested in the morphosyntactic properties of argument structure, but his research-language is Quechua, in particular the Cochabamba variety (variety of Quechua IIC, Bolivia), and his focus is on causative, reflexive and applicative morphemes. Working on the interface between syntax and morphology, Myler concludes that (a) the reflexive marker *ku*, a portmanteau morpheme, is better analyzed as a pronominal clitic merged in an argument position, reducing the predicate valency before adjoining to Voice^0 via head movement; (b) the morpheme *pu* is the head of high applicative phrasal that does not project arguments, but serves as a host for displaced oblique arguments; (c) *chi* is a *v*P-selecting causative functional element.

The last chapter, *Definiteness in A'ingae and its implications for pragmatic competition*, chapter 13, is dedicated to A'ingae, also known as Cofán, an isolate language spoken in Ecuador Colombia. In both countries *A'ingae* is endangered, having a very low number of speakers, but in Colombian it is in greater danger due to lack of protective language policies (Dabkowski 2021). The authors of chapter 13, Holly Zheng and Scott AnderBois, analyze the semantics of definiteness based on fieldwork data from A'ingae spoken in Ecuador. In this language, bare nouns are freely available to encode indefiniteness, unique and anaphoric definiteness, despite it having dedicated indefinite anaphoric definite forms, *fae* and *tsa* respectively, with *tsa* being a stronger exclusive definite anaphoric form. This challenges leading accounts for the distribution of definite forms based on hard pragmatic competitions, such as *Maximize Presupposition!,* developed by Schwarz (2013) for German, and *Index!,* developed by Jenks (2018) for Mandarin. Assuming these pragmatic principles to be universal, it is predicted that in any language with dedicated forms, complementary distribution will be observed, with the anaphoric definite form being used whenever possible. After demonstrating that A'ingae's non-complementary distribution between bare nouns and *tsa* in the expression of anaphoric definiteness counterexemplifies the prediction of competition principles put

forward in the literature, Zheng and AnderBois propose a semantic-based analysis, suggesting that A'ingae bare singulars have an existential component, but lack an anti-uniqueness condition. As such, they have no presupposition, being felicitous as indefinite as well as in unique and anaphoric definite contexts. Anaphoric *tsa,* on the other hand, is semantically specified for uniqueness and familiarity, being, thus, restricted to contexts where a unique and familiar referent is provided.

Chapters 12 and 13 highlight the importance of comparative research involving less-studied languages. Myler's chapter provides with an analysis of morphosyntax microparametric variations at the argument structural level. Centering on Cochabamba Quechua, it promotes comparisons with other Quechua varieties such as Tarma (variety of Quechua I, center of Peru), Cajamarca (variety of Quechua IIA, northern of Peru) and Santiago del Estero (variety of Quechua IIC, Argentina). By doing so, Myler's analysis adds to the general syntax of argument structure, especially his observations on how the c-selection properties of functional heads interacts and determine the final structure of a verbal thematic domain. Zheng and AnderBois' chapter focuses on macroparametric variations on the expression of definiteness, showing how comparative analyses are important for revising and tuning theoretical hypothesis. Very often grammatical principles are put forward on the basis of evidence from well-known languages, because we know more about these languages, but, as Zheng and AnderBois fully demonstrate, these principles are to be carefully tested in other languages. This is the real gist of comparative work.

6. Conclusions

The following chapters offer an overview of a subset of the different grammatical systems found in South America, emphasizing research questions important to the present stage of linguistic theory, while raising issues to be addressed and better understood in a near future. Also, the content of this book, particularly Parts I and II, invites us to revise the expressions *Native languages of South America*. All the languages currently spoken in the continent are native languages. Their synchronic grammars resulted from changes that occurred here, in the south hemisphere, some in response to external forces such as language contact and language expansions. As Jorge Drexler, a Uruguayan singer and composer, beautifully puts it in his song *Movimiento*:

Yo no soy de aquí
Pero tú tampoco
De ningún lado del todo
De todos lados un poco

Products of science are restricted by time, space, current interests and what is available at a given moment. Thus, as emphasized above, this book does not offer a complete picture of South America linguistic diversity. For instance, the so-called immigrant dialects (e.g. Italian, German, Finnish and Welsh), French varieties

spoken in French Guiana and languages of quilombola communities were not represented in this volume. While acknowledging these limitations, we take them as a motivation for continuing our work.

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