

Minimalist Inquiries into Child and Adult Language Acquisition



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Editor

Peter Jordens

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Minimalist Inquiries into Child and Adult Language Acquisition

Case Studies across Portuguese

Edited by

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Foreword

David Lightfoot

Over the last generation, we have seen the emergence of an international community of scientists investigating various forms of Portuguese. This community is rooted for the most part in Brazil and Portugal but involves people from many countries, including many talented Brazilians who have pursued graduate degrees in the US. The investigations have focused on the many varieties of Portuguese spoken both in Portugal and Brazil at the present time and in previous generations, examining the ways in which the languages spoken in each country have come to diverge more and more over the last few hundred years. The differences include morphological properties that seem to have syntactic consequences, and there has been a lot of productive, theoretically engaged work aiming to understand and explain the way that phenomena cluster in the many various forms of Portuguese under investigation, particularly morphological phenomena co-occurring with certain syntactic constructions.

This work has brought together sociolinguists, theoreticians and specialists in language acquisition and historical change. The work has focused on the macro variation between the families of languages on each side of the Atlantic and the micro variation between forms within each family. I know of nothing quite like this for any other language.

The theoretical interest of this work is enormous. For each descriptive statement in each I-language, there needs to be an explanation. Following what has become the usual explanatory schema in the field, an explanation requires an account of the acquisition of that property. The properties, of course, are stated abstractly, elements of an individual I-language or “grammar,” and the descriptive challenge is to find the right statement of the property in such a way that the relevant phenomena cluster correctly. The explanatory challenge is to specify exactly what in a child’s experience might trigger the emergence of that particular property.

So we now have a rich cornucopia of data and analyses, and the theoretical import of this work is of great interest to linguists working on other language systems. Linguists of many stripes will find much to work with in the collection of papers that Acrisio Pires and Jason Rothman have put to-

gether. The papers deal with a wide range of phenomena in different forms of Portuguese at different times and places, with changes over time, and they focus on how the various phenomena are acquired by children and by adults, using different methodologies (exploiting both experimental data and corpus data from spontaneous production). Pires and Rothman's introduction summarizes the range of the papers and identifies cross-cutting themes, methodological issues, and consequences of the different papers.

If there are different mature systems, then they must be triggered by different sets of childhood experiences in the case of first-language acquisition. As a way of illustrating the usefulness of the book, let us consider that fundamental matter for two approaches to language acquisition: grammar evaluation and cue-based acquisition.

The most common approach in generative studies of language acquisition sees children converging on the grammar that is most highly valued in the context of exposure to a particular set of sentences, a corpus. Chomsky (1957) postulated possible goals for an explanatory linguistic theory, whereby analysts might seek a discovery procedure that yields a grammar for a corpus of sentences, a decision procedure that specifies whether a particular grammar is the right one for a corpus of sentences, or, most weakly, an evaluation procedure specifying which is the best of a set of grammars with respect to a particular corpus of sentences. He argued that an evaluation procedure offered the most feasible goal and the argument was quickly translated into a claim about language acquisition. For discussion of the history of this notion and its translation from a claim about linguistic theory to a claim about language acquisition, see Lightfoot (2002). This model has been adopted widely in acquisition studies.

For example, Clark and Roberts (1993) postulated an elaborate Fitness Metric that assigns a fitness measure to grammars with respect to a corpus of sentences, so that children eventually converge on the fittest grammar for their corpus. Gibson and Wexler (1994) postulated a Trigger Learning Algorithm prescribing how children might adopt new parameter settings when their current grammar confronts a data-set that it fails to generate. Gibson and Wexler's error-driven child responds to particular sentences, while Clark and Roberts' child does not respond to particular sentences but has a precise value for the global success of all grammars. Under each of these evaluation models, children adopt particular grammars in response to a corpus of sentences. Linguists, examining different forms of Portuguese, would key the different I-languages to different sets of sentences in childhood experience. There are enormous feasibility problems with these ap-

proaches, I have argued, and they might be revealed in detail in a careful comparison of the forms of Portuguese discussed here.

The kind of cue-based acquisition discussed in Dresher (1999), Fodor (1998) and Lightfoot (1997, 2006) makes children quite insensitive to the set of sentences that an I-language can generate. Rather, children's grammars are forced to grow particular structures, cues, if they experience sentences that express those cues, i.e. sentences that require those structures in order to be understood. That entails that for the range of Portuguese grammars postulated in this collection of papers, their acquisition will be explained by identifying sentences that express cues differently.

I discuss these two kinds of models in chapter 4 of Lightfoot (2006), arguing that evaluation models are driven directly by E-language phenomena while cue-based models take E-language as a source of cues and are therefore more I-language driven. Evaluation and cue-based models work very differently and the papers in this volume provide a unique testing ground to see the consequences of each model.

The opportunity arises through dealing with the large set of closely related systems that this collection and the related literature offer. In many cases the systems are "minimal pairs" in the sense that they differ by only one parameter setting or one structural element. For each of those cases, a different explanation must be found: we should be able to point to some difference in childhood experience that would have exactly that effect. That means either a different set of sentences for people working with some kind of grammar evaluation model or a set of sentences that express cues differently for those pursuing some kind of cue-based model. At the next level, this would provide a very good means to compare the two fundamental approaches, grammar evaluation and cue-based approaches. That comparison goes to the heart of the explanatory enterprise in work on the human language faculty.

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Child and adult language acquisition, linguistic theory and (microparametric) variation

Acrisio Pires and Jason Rothman

1. Introduction

The question of explanation in linguistic theory involves at least two major goals, as they were clearly stated in the context of generative linguistics (e.g. Chomsky 1986 and references therein). The first goal is to explain the properties of the underlying cognitive mechanisms (faculty of language) biologically endowed in all humans, which make them equally equipped to acquire any and all human languages to which they have sufficient exposure, at least in childhood.¹ This involves the tasks of specifying a model for a general or universal faculty of language (Universal Grammar²) and which of its properties come into play in defining the properties of individual linguistic systems (individual grammars) or, following widespread terminology, grammars of particular languages, such as English, Berber, Korean and Portuguese.

The second goal is to explain the steps by which individuals proceed from an initial state (common across the species) through a series of subsequent states that can each be characterized as an individual grammar, with properties that make it similar or distinct from the ones attained by other individuals. In simpler terms, this is the task of explaining the path of linguistic development, which has more schematically been characterized in the context of child language acquisition as the task of explaining how humans proceed through the developmental steps that ultimately lead them to a steady state grammar – to use some early terminology (see e.g., Crain and Thornton 1998; Guasti 2002; Hyams 1986; Friedemann and Rizzi 2004; Chomsky 2007 for extensive discussion of relevant theoretical and empirical issues).³ According to the generative approach, the child, once exposed to sufficient primary linguistic data (i.e., input), is able to identify in the data relevant properties that constitute the triggers that lead to the transition from an initial state (unspecified for properties that are exclusive to any

individual language) to a sequence of later states resulting in the acquisition of a mature grammar (arguably a final steady state).⁴

Both goals amount to daunting tasks in the face of the complexities that have been extensively and substantially documented in the course of linguistic research since the field of linguistics was formally established in the course of the 20th century. Both goals were defined in Chomsky 1986 by the terms descriptive and explanatory adequacy, respectively, as evaluation criteria for grammar models. The term descriptive adequacy might lead non-specialists to think of the corresponding task as a trivial and non-explanatory one, which is far from correctly characterizing it or reflecting the challenges it involves. Therefore, we emphasize that both goals in fact involve a quest for explanatory adequacy at two different levels: in the description of the object that is to be acquired (a primary focus of formal linguistic theory) and in showing how it comes to be acquired (a primary focus of language acquisition research). We refer to this twofold quest as both *explaining language cognition* and *explaining the path of linguistic development*. This quest for explanatory power is one of the main motivations for changes to formal models of human linguistic knowledge over time.

Although the pursuit of both goals in the context of research in formal linguistic theory and language acquisition has to a certain extent progressed more or less independently, few would deny the inherent connection of the two sub-fields. On the one hand, the success of models that attempt to explain the properties of human grammatical knowledge and how it is manifested across different human languages cannot be fully achieved without providing clear answers about how this knowledge is acquired. On the other hand, the success of models to explain the path of human language acquisition is directly dependent upon precise explanatory models of the (mature) linguistic systems whose emergence needs to be explained.

We argue in this chapter for some domains in which research on child and adult language acquisition and formal linguistic theory can benefit from closer interdependence and collaborative efforts. Second, given the scope of this collection, we highlight how intensive research in a single language and its dialects can constitute productive groundwork for fostering such interdependence among different sub-fields of linguistic research.

The chapter is organized as follows: section 2 discusses briefly some main aspects of linguistic theory, especially within Minimalism, and relevant connections to language acquisition. Section 3 distinguishes two aspects of linguistic variation relevant for research in theoretical linguistics and language variation. Section 4 emphasizes the interaction between re-

search in language acquisition and language change. The last sections summarize the relevance of research on Portuguese dialects and their core properties, and introduce the studies presented in this volume.

In addition, the volume foreword by David Lightfoot sets the tone of the volume and highlights its significance and implications for different fields of linguistic research. An afterword by Carlos Quicoli caps the volume off with a discussion of the collective significance of these works for linguistic theories and for future directions in the study of Portuguese linguistics and language acquisition.

2. Linguistic theory, Minimalism and language acquisition

The Minimalist program (Chomsky 1995 and references therein) brought to the forefront of linguistic research two goals regarding theory construction: methodological minimalism and substantive or ontological minimalism. Neither one of these goals was in principle incompatible with previous approaches to linguistic theory, especially within Principles and Parameters. Methodological minimalism focuses on developing theories that are compatible with the Ockham's razor principle: attempt to achieve the same results in terms of description and explanation by using the least amount of primitive elements and axioms. One can say that considerations of parsimony and elegance are also part of methodological minimalism (see, e.g., Epstein and Hornstein 1999). Whereas parsimony can to a large extent be defined in terms of methodological economy and be subsumed under Ockham's razor, elegance considerations are less obviously useful, given that there are no working models (to the best of our knowledge) of how elegance can be formally defined, specifically in the context of linguistic theory.

Substantive or ontological minimalism focuses on constructing linguistic theory in more restrictive terms, stripping from proposed cognitive modules of a strict linguistic nature (e.g., narrow syntax) principles that are not absolutely required (nor virtually conceptually necessary, in Chomsky's 1995 terms) for these modules to be fully and correctly specified. Substantive minimalism in fact builds upon methodological minimalism, but focuses on specific assumptions regarding the properties of the human capacity for language, especially about narrow or core syntax (see Chomsky 1995, 2005 and references therein). Given that general considerations applying to narrow syntax (or the overt component of syntax) in general apply to syntax as broadly defined, we will proceed by referring only to

syntax, and not to the more restrictive term narrow syntax. Among the most prominent aspects to consider regarding substantive minimalism are bare output conditions, or the notion that syntactic operations are evaluated (only) with respect to their output, i.e., whether these outputs satisfy conditions of the interfaces. These interfaces have been defined in different ways, but have been divided in two domains: a semantic component/conceptual-intentional interface and a phonological component/articulatory-perceptual interface (see e.g. Chomsky 1995, 2000, 2001). This partially maintains the classic tripartite (Y) model of generative linguistic theory.⁵

Minimalist approaches have attempted to restrict the operations that are minimally required as part of syntax. Merge (External Merge, in more recent terminology, Chomsky 2005) and Move (Internal Merge) are the only structure building operations. Merge, a binary operation, concatenates two lexical items for the first time, or concatenates a new lexical item introduced into the syntactic derivation with an existing syntactic object that resulted from previous Merge. For instance, Merge concatenates *she* with the previously merged syntactic object represented by the string *likes coffee* in (1). Move takes a syntactic component of an existing syntactic object and (re-)merges it with the existing syntactic object. For instance, the *wh*-phrase *what* is extracted from an existing syntactic object in (2) and (re-)merged in a higher position in the structure. In both cases a more complex syntactic object is formed.

- (1) [_{VP} *She* [*likes coffee*]]
 (2) What will she like ~~what~~?

There have been different attempts to reduce Move to the properties of Merge, thus recasting it, for instance, as Internal Merge. An independent operation Copy was also introduced as a possible part of Move, creating additional copies of a moved syntactic object, as in (2). Move could then be redefined as being a complex operation resulting from the combination of Copy and Merge (see e.g., Chomsky 1995, 2001 and references therein).

Another prominent operation introduced as part of syntax is Agree, by which matching features of two different lexical heads have to interact, so that the features of one of these lexical items are valued (see e.g. Chomsky 2001). For instance, subject-verb agreement and nominative case on the subject *Peter* in (3b) results from the interaction, through partial or full identity, between the agreement (person, number) and case (nominative) features of *Peter* and the inflectional head (Tense) that also determines the agreement morphology on *dances*.

Given current models of syntactic theory, at least within the Principles and Parameters (P & P) framework, linguistic variation across languages is delimited or restricted by properties of the human language faculty. Principles and Parameters can itself be defined as a restrictive model of linguistic variation, by which general principles intrinsic to the innate human faculty of language also include a subset of principles (parameters) with open settings, which are then set with a specific value in the course of child acquisition/development. Widely studied examples within earlier P&P approaches included the null subject parameter (e.g., lack of null subjects in English vs. their presence in Romance languages such as Italian and Spanish) or the V-raising parameter (possibly a subtype of a more general parameter specification), by which the verb, after merging in the syntax and projecting a VP, may overtly Move to the left – raising in a tree structure – in some languages (distinguishing for instance English, in which the verb *dances* stays in its base position to the right of the adverb in (3b), from French, in which the verb *danse* ‘dances’ moves to the left of the adverb *souvent*, arguably raising to the inflectional head I or T in (3a); see Pollock 1989; Chomsky 1995 for early analyses of this phenomenon in minimalist syntax).

- (3) a. *Pierre* *danse* souvent
 Pierre dances often
 b. *Peter* often *dances*.

Within the Principles and Parameters framework the locus of parameterization of syntactic properties has in fact been taken to lie in the specification of features of individual lexical items, more specifically, functional categories (inflection, tense, complementizers, determiners; see, for earlier suggestions of this, Borer 1984 and Hyams 1986; as well as Snyder 2007 for detailed review). Minimalism fully embraces this approach, by which operations in the syntax are significantly, if not entirely, dependent on the interaction among features of lexical items (e.g., by the application of the operation Agree). In this approach, the locus of syntactic variation is restricted to the properties of individual lexical items.

If we adopt this feature-based approach, especially as developed recently in Minimalism, one important component of linguistic variation (parametric variation, in PandP terms) can be defined in terms of the feature specification of (functional) lexical items that determine syntactic structure and syntactic variation (see also section 3 below). For instance, a prediction is that the verb raising contrast between English and French in

(3) is determined by variation in the feature specification of the inflectional head which attracts or probes the verb overtly in French (as well as in other Romance languages) but not in English. This inflectional head is the one that carries tense and/or agreement (see, e.g., Pollock 1989; Chomsky 1995). In this theory, a syntactic functional head – the locus of inflection (tense and/or agreement) – displays the feature specification which forces the verb to raise overtly to the inflectional head in French, but not in English.

Advances in research about human knowledge of language in different fields crucially depend upon the development of successful approaches to linguistic theory. Minimalism highlights the need to develop theoretical approaches that satisfy more stringent criteria for theory evaluation, beyond conditions for descriptive and explanatory adequacy that have guided the development of linguistic theory in the last decades (see section 1).

In the context of the Principles and Parameters approach in general, a unique contribution of theoretical language acquisition research is that it provides tools and results that allow formal linguistic theoreticians to undertake the task of evaluating the explanatory adequacy of their proposals. The main concern of theoretical acquisitionists is not one of testing theoretical linguistic choices *per se*, but that of uncovering the ‘hows,’ ‘whens’ and ‘whys’ of linguistic development and ultimate attainment. However, acquisition research winds up, by design or happenstance, testing theoretical proposals themselves by providing actual empirical results that are born out from these proposals or otherwise motivate modifications to them. That is, one important contribution of research in language acquisition is to show whether a Principles and Parameters model can explain the emergence and the path of development of linguistic knowledge in the individual. In this context, it is necessary to explain not only how an individual can converge on the development of a mature grammar that instantiates the universal properties of human language, but also to explain how individuals acquire the properties of individual grammars that distinguish them from other possible grammars (the task of acquiring the grammars of particular languages, such as French, Greek, Hindi and Portuguese). Similar goals also apply to adult/L2 acquisition, although in this context there has been more intense debate regarding the role previous linguistic experience and extra-linguistic factors play in determining how adult language acquisition proceeds (see e.g., White 2003 for discussion and relevant references). The relevance of research in language acquisition in these respects has remained the same in the last four decades, given the

goals to explain the emergence of both universal and varying properties of human language.

In the more specific context of Minimalism, one further question that arises regarding research in language acquisition is whether this research incorporates new goals concerning its interaction with linguistic theory. Given significant modifications in the core properties of syntactic theory in Minimalism, research in language acquisition also changes in certain respects, especially given the formal treatment of linguistic variation in the context of parametric theory – which in fact lends new meaning to what exactly parameters are meant to represent. As in other Principles and Parameters approaches, Minimalist theorizing takes the core operations of syntax to be universal and common across all human languages, including primarily the structure building operation of Merge and the possibly dependent operation Move. To the extent that it can be argued that such properties are innate, a goal of language acquisition research is then to explain which properties of a particular grammar need to be acquired on the basis of the linguistic experience (more specifically, primary linguistic experience) so that the path of development observed in the acquisition of different syntactic properties can be effectively accounted for. As we pointed out above, the task of the learner regarding syntax is then to acquire the feature specification of lexical items, which are the primary (and arguably only) elements driving the operations of syntax, or more broadly defined, of the computational component of human language.⁶ In this context, the contribution of research in language acquisition for the development of linguistic theory is twofold. First, it can unveil the mechanisms by which the individual acquires the set of feature specifications that are instrumental in driving the application of universal operations of the computational component of human language. Second, it can explain how distinct feature specifications can drive the emergence of distinct grammars characterizing individual human languages.

3. (Microparametric) linguistic variation and language acquisition

One question that has been raised regarding formal linguistic theory is whether it idealizes or abstracts too much away from the empirical phenomena it considers for theory construction. One concern is to what extent a model of I-language (or language cognition, in our terms) is successful to account for properties of E-language (the data that constitutes the linguistic output produced by different individuals, which makes part of the possible

empirical data that can be used to construct models of I-language; see e.g., Chomsky 1986). Some critics contend that generative theory idealizes a situation in which all speakers of language X are provided with similar input, yielding the acquisition of the same grammar across speakers of the same language. This criticism may be based primarily on still limited exploration within linguistic theory of aspects of linguistic variation in syntax, including regarding English. More importantly, it results from the multiply ambiguous uses of the term language that have yielded substantial misunderstandings in the field (see e.g., Pires and Thomason 2008 for review). In addition, such a criticism fails to recognize the fact that there is no intrinsic requirement, on the basis of a generative model of linguistic theory, for any two individuals to share exactly the same particular grammar at their mature state. In this respect, a speaker of English growing up in Ann Arbor can have a substantially distinct I-grammar from a speaker of English growing up in Iowa City, as the result of even subtle differences in their PLD in the course of child language acquisition.

In fact, to take an extreme case, two twins growing up in the same family, and exposed to very similar linguistic experiences throughout childhood, can converge on distinct adult grammars (albeit similar ones) as the result of the possibly distinct ways in which their minds make use of the linguistic input to which they were exposed. First, the distinction between their adult grammars does not rule out the fact that these grammars share a substantial number of common properties, which is to be expected not only in this case, but across the native grammars acquired by any normal individuals, given the overarching common properties of human language as determined by Universal Grammar. Second, the possible variation across the I-grammars of any two individuals is entirely within the realm of what is predicted by a model of I-language, by which the factors determining the properties of an individual's grammar are encoded in the individual's brain in the course of language acquisition/development.⁷ Such distinctions across the grammars of different individuals result from different choices regarding parameter/feature specification options determined by Universal Grammar, and are imprinted in their brain in the course of their language acquisition experience independently of similar mechanisms affecting other individuals, thus explaining why grammars of particular languages can be successfully characterized at the level of the individual.⁸

Finally, generative linguistics approaches are also consistent with the possibility that any individual speaker (of any given language X) are quantitatively and qualitatively exposed to different types of input and that such exposure differences can yield substantially distinct consequences to com-

petence outcomes (i.e., the acquisition of different mature grammars). The quote below characterizes this situation, although it makes use of the multiply ambiguous term ‘language’ in its different senses.⁹

Everyone grows up hearing many different languages. Sometimes they are called ‘dialects’ or ‘stylistic variants’ or whatever, but they are really different languages. It is just that they are so close to each other that we don’t bother calling them different languages. So everyone grows up in a multilingual environment. Sometimes the multilingual environment involves systems that are so unlike that you call them different languages. But that is just a question of degree; it is not a question of yes or no (Chomsky 2000: 59).

These aspects of variability both in the input and the output of the acquisition process raise relevant questions for different acquisition theories. For instance, what is the relevant connection between linguistic variation and language acquisition? Consider more specifically now the case of intra-linguistic (or intra-dialectal) variation, say, between different dialects of American English, as opposed to cross-linguistic variation, say between English, French and Korean.¹⁰ The fact that intra-linguistic variation can be represented in the primary linguistic data to which individual speakers and groups of speakers are exposed means that individuals and groups can converge on different grammars and/or multiple grammars for ‘language X’ in the sense of the above quote from Chomsky.

If we take seriously the idea that most, if not all, adult individuals, whether we call them monolingual or not, are *de facto* multilingual/multidialectal speakers, then this forces us to consider implications for acquisition development and acquisition outcomes. If monolingual individuals can in fact come to acquire different grammars (or stylistic variants, registers, or dialects, terms which unfortunately have not been precisely distinguished in formal terms), it is expected that much more substantial intra-linguistic variation will be found than what is standardly assumed to be the case in monolingual contexts. For example, this situation may arise if certain syntactic properties are not actually part of some vernacular grammars of language X (given previous diachronic change or dialectal variation), but the standard variety instantiates them and knowledge of such grammatical properties obtains in educated adults (see, e.g., Kato et al. this volume, Pires and Rothman this volume and references therein).

Crucially, interdisciplinary research in generative linguistics and language acquisition can bring important insights into the understanding of intralinguistic variation, the same way generative approaches such as Prin-

ciples and Parameters have offered relevant contributions to modeling the properties of cross-linguistic variation and how it can arise as the result of language acquisition (e.g., across and within language families, such as the Indo-European languages). Regarding intralinguistic variation, the investigation of sociolinguistic variation and diglossia – the co-existence of multiple dialects in the same community – can benefit from research regarding the linguistic competence counterparts of these phenomena.

The investigation of the formal properties and acquisition of Portuguese, Brazilian Portuguese as compared to European Portuguese in particular, is an especially interesting case both from intralinguistic and crosslinguistic perspectives, when one considers the important and clear differences that arise across and within dialects. However, the fact that these dialects also show strong similarities allows researchers to focus to a large extent on the investigation of potentially distinct phenomena across dialects (e.g., properties of verbal inflection, null subjects, pronominal systems, complementation, aspect, etc.) while at the same time having to deal with substantial mismatches across other domains of the grammar. This approach has been undertaken at least with respect to crosslinguistic variation within microparametric syntax (see, e.g., Kayne 2001 and references therein).

4. Language change and language acquisition

Another domain in which research in theoretical linguistics and language acquisition can come together to provide relevant contributions is the investigation of language change. A statement of language change (e.g., French lost null subjects between Old French and Modern French, the Romance languages developed overt determiners, which were absent in Latin, etc.) can be understood as a reference both to the initial linguistic innovation and to the spread of the innovation among a group of speakers. The spread of the innovation among adult speakers is the primary focus of traditional historical linguistics. Within generative diachronic syntax, linguistic innovation results from the process of language acquisition by which a new grammar (distinct from previous generations) is acquired/learned by the individual (see e.g., Lightfoot 1991, 1999; Pires 2002, 2006; Roberts 2007; Yang 2002 for proposals along these lines). Within such approaches, syntactic change is cast in terms of child language acquisition, resulting from the interaction between the human language faculty and the properties of the primary linguistic data to which each child is

exposed. This perspective can also be extended to adult and L2 language acquisition and learning, although this alternative has been much less extensively explored. Given the combined perspectives of formal linguistic theory and language acquisition, statements of change refer to a sequence of independent events that correspond to the acquisition of different grammars across two or more generations: the first generation introduces the innovation, whereas the acquisition of the grammatical innovation by subsequent generations ensures its spread.

As we discussed above, the learner identifies in the primary linguistic data relevant features that permit progress from an initial grammar unspecified for the properties of any individual language through a sequence of later states in the course of which the properties of a mature grammar are acquired. Children with similar linguistic experience may converge on different adult grammars. More interestingly from the perspective of diachronic syntax, individuals may acquire grammars that are substantially distinct in their formal properties from the grammars of their ancestors, especially given variation in each individual's linguistic experience or in the PLD to which different individuals are exposed (see, e.g., Lightfoot 1991, 1999; Hale 1998; Roberts 2007 for different implementations of models along these lines).

The basic steps of the process of language change are illustrated in (4) (see Pires and Thomason 2008 for extended discussion). A child from generation 1 is exposed to the PLD set y , acquiring grammar 1, as in example (4a). Children from a subsequent generation (generation 2) undergo a similar development, with the difference that the grammar they acquire is distinct in certain ways from the grammar of generation 1. A subset of the linguistic outputs X produced by generation 1 is at least part of the PLD set x' that individuals from generation 2 are exposed to. Language change corresponds to the innovative properties of grammar 2 as compared to grammar 1.

- (4) a. Individual from generation 1:
 PLD _{y} → faculty of language → Grammar 1 → set of outputs X
- b. Individual from generation 2:
 PLD _{x'} → faculty of language → Grammar 2 → set of outputs Z

As argued by Pires and Thomason, given this formal account, the term 'language change' itself is taken to be simply a shortcut to refer to the ac-

quisition of innovative grammars by new generations of individuals, due to the inability of the learners (children, in the usual case) to infer from the PLD grammatical settings that match in different respects the grammars that were the source of the PLD.

Especially due to Lightfoot's (1991, 1999) and related work the foundations have been laid out for a clear formal connection between language acquisition and language change from the perspective of generative linguistics (see also, e.g. Clark and Roberts 1993; Pires 2002, 2006; Roberts 2007; Yang 2002). However, there have not been detailed attempts to conduct empirical research in language acquisition with the purpose to explore aspects of language change. However, there are various domains in which language acquisition and language change research can mutually benefit from further integration.

First, given models of language change formally defined in terms of language acquisition, as summarized above, research in language acquisition can serve to independently corroborate the predictions of these models. For instance, given possible explanations in terms of language acquisition for processes such as the rise of overt determiners in the Romance languages, it is expected that empirical and theoretical research involving language acquisition can provide an independent testing ground for the different aspects of formal models that would explain how this process of language change took place. Second, language acquisition and language change research can be explored interdependently in order to address processes of ongoing language change, involving innovation and loss or recovery of grammatical properties. In particular, language acquisition research in this domain has the potential to provide clear insights into the actual course of an ongoing language change process. It can also contribute to the understanding of the process by which language change proceeds to yield dialectal variation, understood as the result of a preceding process of language change, both with respect to individual speakers (diglossia) and across speakers, at the group level (see also section 3). In the context of the current collection, the significant changes that have taken place between Brazilian and European Portuguese especially since the 19th century make the inquiry into the acquisition of the different dialects a source for very productive insights about the connections between linguistic theory, language acquisition and language change.

5. The Portuguese language, history and dialects

Within the generative paradigm alone there are various book volumes on the acquisition of other languages, but there are no previous books focusing primarily on the acquisition of Portuguese. In this respect this volume is very timely, considering different factors. First, the different dialects of Portuguese offer productive testing grounds for different aspects of interdisciplinary research involving theoretical linguistics and language acquisition, as discussed in the previous sections. Second, Portuguese is the seventh most widely spoken language in the world, and boasts the second largest number of native speakers among the Romance languages (second only to Spanish), with an estimated 230-250 million native speakers. In addition, although there has been extensive linguistic research on Portuguese, this body of research is still disproportionately underrepresented in the linguistic literature and not abundantly or readily available to researchers outside of countries where Portuguese exists as (one of) the main language(s), especially Brazil and Portugal. This is especially true of formal linguistic research on the acquisition of Portuguese as a native language (in monolingual and bilingual contexts) and Portuguese learned as a subsequent language by children and adults (L2, L3) in and outside of naturalistic learning environments. A decade ago, the same situation could be said of Spanish, especially as compared to languages like English, French and German, although this has changed significantly in recent years. Having a collection of original articles in one place pays homage to the importance for linguistic research of investigations into the acquisition of the Portuguese language.

A direct descent of the Latin spoken in the northern part of the Iberian Peninsula from about 2000 years ago, Portuguese is a Romance language that developed in northern Portugal and in what is present-day Galicia (where Galician, a very closely related language, currently co-exists with Spanish as one of the official regional languages of Spain). Portuguese spread to other parts of the world, much like various other Indo-European languages, in the 15th and 16th centuries, as Portugal participated in the wave of European Imperialism in Asia, Africa and the Americas. Portugal's diasporic empire established colonies across several continents and maintained control of many of them well through the 20th century. In doing so, the Portuguese language was transmitted to Brazil in the Americas, to Mozambique, Cape Verde and Angola in Africa, and to Goa and Macau (India and China respectively) in Asia. As a natural consequence of this linguistic diffusion, new dialects of Portuguese began to emerge in areas

that now claim Portuguese as an official language. Today, less than 5% of all the native speakers of Portuguese in the world are native speakers of continental or European Portuguese.

The many dialects of Portuguese combine to be one of the world's most important and copiously spoken languages. Portugal has approximately 10 million speakers of Portuguese, and Brazil 187 million. Portuguese is also an official language of seven other countries (Angola, Cape Verde, East Timor, Guinea-Bissau, Equatorial Guinea, Mozambique, and São Tomé and Príncipe). Not surprisingly then, the monolithic label 'Portuguese' is a misleading one (in the same sense that a singular all-inclusive label for any language may be; see section 2). That is to say, there is not one Portuguese language, but many Portuguese languages or dialects. In the same vein, isolating the two most numerous varieties of Portuguese, Brazilian and European Portuguese, it would be disingenuous to treat these two varieties holistically to the exclusion of the many differences found in the Brazilian and European Portuguese dialects that reflect the independent development these vernacular varieties have experienced through time. Partly due to the still limited amount of research regarding the acquisition of morphosyntax across different dialects of Portuguese, the studies in this volume focus on the investigation of dialects of Brazilian and European Portuguese. Still, these studies discuss the acquisition of properties that are likely to be shared across different dialects of Portuguese or point out the dialectal differences that they seek to investigate. In the next section, we present some relevant properties of Portuguese morphosyntax and highlight a few major differences between the European and Brazilian varieties of Portuguese.

6. Portuguese morphosyntax: Some core aspects

Although many aspects of the morphosyntax of Portuguese find close correspondents in the grammar of other Romance languages, especially Galician and Spanish, it has a number of grammatical features that distinguish it from most other Romance languages, such as a future subjunctive tense, the inflected/personal infinitive, a present perfect with an iterative sense, and mesoclysis, a unique feature by which clitic pronouns undergo infixing to some verbal forms. These properties are productive especially in European Portuguese (EP), whereas dialects of Brazilian Portuguese (BP) have changed in various respects.

Nouns, adjectives, pronouns and articles are moderately inflected, and agree with each other when they co-refer: there are two genders (masculine

and feminine) and two numbers (singular and plural). Feminine and plural forms are often overtly distinguished (5). These inflectional distinctions show a substantial use of regular forms (see, e.g., Correa this volume).

- (5) *Ela lavou as botas brancas.*
 She.NOM washed the.FEM-PL boot.FEM-PL white-FEM-PL
 ‘She washed the white boots.’

Like all western Romance languages, the case system of Latin has been lost in Portuguese. It does not inflect nouns for case to indicate their grammatical function, but personal pronouns are still declined (with nominative, accusative and dative/oblique forms). The use of noun phrases may rely on the use of prepositions, instead of dative and locative phrases, for instance.

Verbs are highly inflected: there are three tenses (past, present and future), three moods (indicative, subjunctive and imperative), three aspects (perfective, imperfective and progressive), two voices (active and passive), and participle, gerund and infinitive verbal forms. Imperative sentences use the imperative mood for the second person. For other grammatical persons and for every negative imperative sentence, the subjunctive is used, although colloquial Brazilian Portuguese (colBP) also allows distinct forms in these cases. The infinitive verb forms can be inflected according to the person and number of the subject, as shown in (6):

- (6) *É melhor voltarmos.* (inflected infinitive)
 Is better return-INF-1PL
 ‘It is better that we go back.’

Portuguese is basically an SVO language, although word order is generally not as rigid as in English, with the possibility of alternative orders such as SOV and VS(O), for instance, due to topicalization or focus, especially in EP (e.g., Costa 2004).

- (7) a. *Esses livros o Paulo leu.* OSV (EP/BP)
 these books the Paulo read.
 b. *Leu o Paulo esses livros.* VSO (EP)
 read the Paulo these books.
 ‘Paulo read these books.’

European Portuguese is clearly characterized as a null subject language, whereas Brazilian Portuguese has undergone significant changes that have

significantly restricted the possibility of null subjects in the language (see e.g. Duarte 2000). Both dialects also allow null object pronouns, which alternate with object clitics under specific conditions in EP (e.g., Raposo 1986; Costa and Lobo this volume). Null objects have for the most part replaced third person clitics in colBP (Cyrino 1997; Kato, Cyrino and Correa this volume). Null subjects or objects can be inferred from verbal agreement (in the case of the subject) or from the context. Sometimes, though an explicit subject is not necessary to form a grammatically correct sentence, one may be stated, for instance, to mark focus.

- (8) *(EU) vou para casa.*
 I go to home
 ‘I will go home’

Yes/no questions have the same structure as declarative sentences, and are marked only by a different tonal pattern (mostly a raised tone near the end of the sentence). *Wh*-questions normally allow overt *wh*-movement, although *wh*-in-situ is also common, especially in echo-questions (see, e.g., Kato 2004; Grolla this volume). Overt *wh*-questions may also include a cleft-structure *é que* ‘is that’ similar to French *est-ce que* ‘is-it that.’

- (9) *O que (é que) ela fez?* (overt *wh*-movement)
 the what (is that) she did?
 ‘What did she do?’
- (10) *Ela fez o quê?* (wh-in-situ)
 she did the what?
 ‘What did she do?’

The natural negative answer to yes/no questions is *não* ‘no.’ However, positive answers are usually made with the inflected verb of the question in the appropriate person and number. The use of *sim* ‘yes’ before the verb does not add emphasis, and may, on the contrary be less assertive.

- (11) Q: *Gostou do filme?* A: *(Sim), gostei. / Não.*
 liked.3sg of.the movie (Yes), liked.1sg / No.
 Q: 'Did you like the movie?' A: 'Yes, I liked (it)?' / 'No.'

7. Cases studies across Portuguese

The studies brought together in this volume demonstrate the value that studying Portuguese acquisition in various contexts has for different sub-fields of linguistic inquiry, including primarily psycholinguistics/language acquisition (childhood L1, adult L2 and bi/multilingualism), syntactic theory, comparative syntax and language change. These studies present original research on child (L1) and adult (L2, L3) language acquisition from the perspective of current generative linguistics, focusing on issues that are in different respects relevant for the sub-domains of research discussed in this paper. These studies explore both empirical/experimental and theoretical aspects of the acquisition of syntax and its interfaces with morphology, with semantics/pragmatics, with language change, exploring the child and adult (L2/L3) acquisition of European and Brazilian Portuguese. Given the primary empirical focus of each contribution, the chapters are divided into two units, Child Language Acquisition and Adult Language Acquisition.

The contributions in this volume employ primarily Principles and Parameters and the Minimalist Program as points of departure regarding the theoretical framework. In particular, minimalist proposals about the architecture of the language system, focusing especially on the role of syntax and its interfaces with the articulatory-perceptual and the conceptual-intentional systems, have become very influential in contemporary language acquisition theorizing (e.g., minimalist proposals about the mechanisms involved in L1 acquisition, alternative proposals for L2 variability), enabling researchers to explore new questions and more precisely explain the phenomena they investigate (see also section 2).

Methodologically, the contributions examine both production and comprehension data. They also make use where appropriate of the two main approaches to acquisition data collection, primarily experimental data and naturalistic corpus data from spontaneous production. The experimental data were collected using a range of different experimental techniques that have been standard in language acquisition research, including for instance elicited production tasks, picture selection tasks, act-out tasks and truth-value judgment tasks (for extensive discussion and application of different

techniques see, e.g., McDaniel, McKee and Cairns 1996; Crain and Thornton 1998 and references therein).

Turning to the main aspects of the different studies, the chapter by Correa addresses the bootstrapping problem of language acquisition and focuses on the identification of phi-features by children acquiring Brazilian Portuguese (PB). A procedural account for the identification of formal features in the parsing of incoming data is considered by her to be instrumental for grammatical acquisition. The requirements for the identification of phi-features are taken to include children's perception of morpho-phonological variation within closed lexical classes, the presumption of agreement between syntactically related elements, and the processing of underspecified DPs as referential expressions. Brazilian-Portuguese (BP), with gender/number morphology crucially expressed in D (determiner), a two-value person feature (first, marked; third, unmarked) and ongoing null-subject parametric change is a particularly suitable language for illustrating this proposal. A series of experiments is summarized to provide a picture of the early identification of phi-features in BP. It includes an assessment of young children's (9-18 months) sensitivity to determiners and verbal affixes, making use of the Head-turn Preferential Procedure; an assessment of two-year-olds' perception of gender agreement mismatch and of 2 to 4-year-olds' reliance on agreement within the DP in the identification of the gender of novel words; and a study of 2-year-olds' interpretation of the gender morphology and their reliance on number morphology and number agreement in the identification of the referent DPs. The locus of the interpretation of the person feature is also considered in an interactive task with 3 and 5-year-olds, in which subject-verb agreement matching was manipulated. The results are argued to support the theory of the acquisition of phi-features proposed by Correa, in which minimalist assumptions and psycholinguistic hypotheses are reconciled.

Two chapters explore the acquisition of clitic pronouns in European Portuguese, both in child language (Costa and Lobo) and in L2 acquisition (Madeira and Xavier). Costa and Lobo focus on clitic omission, a much debated topic in the acquisition of several languages. There are several debates regarding (i) whether omission is a universal phenomenon or not; (ii) the nature of omission; and (iii) the age at which clitics cease being omitted. An important issue in the discussion of clitic omission is to know what structure is assigned to a sentence without a complement: is there a null form? Is the verb's transitivity preserved? For this matter to be settled, it is important to assess children's comprehension of null object constructions. Costa and Lobo test L1 European Portuguese in order to determine whether

EP speaking children are able to comprehend null objects. Preliminary results show that, unlike French speaking children, European Portuguese speaking children correctly accept null object sentences. The mismatch between the results for French and for European Portuguese is interesting since it confirms the distinct nature of clitic omission in the latter, and it shows the non-universality and non-uniformity of this phenomenon. Also, it reinforces the idea advocated by some authors that the interpretive nature of the omitted element is crucial for an understanding of these facts.

Madeira and Xavier investigate the acquisition of object clitics by adult (L2) learners of European Portuguese (EP). Previous studies on the acquisition of Romance clitics have shown that learners follow a common path, similar to that observed in first language (L1) acquisition, with rapid development and no evidence of clitic misplacement, which indicates that syntactic (but not necessarily morphological) properties are available from the initial stages. Since EP displays unique clitic placement patterns among the Romance languages, and a different L1 developmental path has been observed, with initial generalized enclisis and gradual acquisition of the conditions for proclisis, Madeira and Xavier predict that a similar path will occur in L2 acquisition, with a mismatch between the development of syntactic and morphological properties. They conducted a study based on (a) naturalistic data drawn from a learner's corpus and (b) experimental data, gathered through a production and a judgement task. A preliminary analysis of the data suggests a similar developmental path to that observed in the L1 acquisition of EP, with evidence of initial defective functional structure and gradual acquisition of the relevant properties for clitic placement. Furthermore, the data provide evidence of slower development of clitic morphology, indicating a separation between morphology and syntax in L2 acquisition.

Five chapters focus on aspects of the acquisition of empty categories, and several of these chapters also address relevant aspects of the syntax interfaces with semantics and discourse. Lopes examines the child acquisition of null objects in Brazilian Portuguese (BP), which is known to exhibit third person null objects in any syntactic context with inanimate antecedents. She hypothesizes that null objects in BP are instances of nominal ellipsis, which are locally licensed by an aspectual category (Asp). As such, she argues that convergence on the adult grammar is dependent upon the acquisition of (im)perfectivity features in Asp. She examined longitudinal spontaneous production data from three monolingual children (aged 1;8 – 3;7). All of them started out with 100% of null objects, all instances of deictic-like elements in imperative contexts. Imperative sentences lack

Asp; therefore, the only null objects derivable by the grammar are deictic ones. Data from two of these children were examined for mood, tense and aspect as well. The results show that about 20% of both children's utterances with a verb were instances of imperative sentences, a figure that dropped to around 5% when anaphoric objects developed. During the "deictic-object" stage, the children produced 86.9% of state verbs in the present tense and 13.1% of verbs in the past tense, all of them with achievement verbs. The latter forms are clearly used to mark perfective aspect and telicity, and contain a null deictic object as well. At this point in the grammar's development, VP-ellipsis in short answers to yes/no questions is not to be expected, nor is the production of aspectual adverbs. Such predictions are borne out by her data. The age at which children start producing anaphoric null objects coincides with the age when imperfective forms are found (imperfect preterite is attested and present continuous becomes productive). These results indicate that the Asp head and its relevant features have become fully operative in the children's grammar, thereby licensing anaphoric null objects.

Santos's paper investigates child VP ellipsis in European Portuguese. The literature suggests that three-year-olds and older children comprehend and produce VP ellipsis (VPE). In previous work, Santos showed that children acquiring European Portuguese spontaneously produce VPE in contexts of answers to yes/no questions well before 3-years-old (MLUw around 2). This suggests a very early ability to deal with constraints on VP ellipsis, namely an identification constraint defined at the syntax-discourse interface. However, Grodzinsky (2005) argues that there is not sufficient evidence that children's interpretation of VPE environments is constrained in the same way as adults' interpretation. This would undermine the idea that children have innate knowledge of the identification constraint on VPE. Santos's current study shows that children do constrain their interpretation of VPE, as expected. She applied a Truth Value Judgment Task to 44 children (4 to 6-years-old). Her results show that children are at ceiling in rejecting sentences such as (12) in A contexts and well above chance (around 70%) in rejecting it in B contexts, which are similar to Grodzinsky's contexts, confirming an adult interpretation.

- (12) *O crocodilo estava a dar comida ao leão e o cão*
 the crocodile was PREP give food to.the lion and the dog
também estava.
 also was
 'The crocodile was giving food to the lion and the dog was too.'

A: The crocodile was giving food to the lion but the dog wasn't.

B: The crocodile was giving food to the lion and the dog was giving food to the crocodile.

Montrul, Dias and Thomé-Williams's chapter focuses on subject pronominal expression in non-native BP. As a language that is progressively moving away from the null subject option, Brazilian Portuguese presents linguistic characteristics of pro-drop and non-pro-drop systems. This study investigates how adult learners of BP with Spanish (pro-drop) and English (non-pro-drop) L1 backgrounds acquire subjects in BP. If L1 transfer plays a role in the acquisition of null subject properties (Schwartz and Sprouse's 1996 Full Transfer/Full Access Hypothesis – FTFAH), English speakers will predominantly produce overt subjects in Brazilian Portuguese whereas Spanish speakers will produce more null subjects in specific pragmatic contexts. If transfer is not a factor, all learners should assume the unmarked overt subject option (Sorace's 2004 Interfaces Hypothesis). Results of 20 BP native speakers who were asked to participate in three semi-spontaneous oral production tasks confirmed the rate of overt/null subjects in present day BP as reported by Duarte's (2000) diachronic account. Results of 20 adult English speakers and 10 Spanish speakers learning BP performing the same task showed overall convergence with the monolingual BP system. Yet, a few, subtle effects for L1 influence were also evident. Overall, the Spanish speakers were more accurate than the English speakers on agreement and their rates of production of null/overt subjects with different persons were closer to those of the BP native speakers than those of the English speakers. As a result, the L1 transfer hypothesis receives overall more, albeit weak, support in this study than the Interfaces Hypothesis.

Two chapters investigate the acquisition of nominal ellipsis in adult acquisition. Cabrelli-Amaro, Iverson and Judy focus on N-drop at the L3 initial state and its relationship to the L2 steady state. Leung (2005) contends that an examination of the L3 initial state can shed a revealing light on competing SLA steady-state hypotheses, specifically the Failed Functional Features Hypothesis (FFFH; Hawkins 2005) and the Full Transfer/Full Access Hypothesis (FTFAH). Since each hypothesis makes different predictions regarding L2 ultimate attainment, they implicitly make predictions about the L3 initial state. According to the FFFH, L2 learners are unable to acquire features not found in their L1, while the opposite is true of the FTFAH. Therefore, FFFH predicts that the L3 initial state cannot demonstrate features unavailable in the L1, since the L2 steady state is

predicted to be devoid of new L2 features. However, assuming L2 transfer to the L3 initial state, FTFAH predicts that L3 initial state grammars can exhibit evidence of L2 features that are not part of the L1. This is testable by examining the L3 initial state of adult learners whose L2 and L3 share a particular feature that the L1 lacks. In light of this, Cabrelli-Amaro, Iverson and Judy test N-drop in the initial state of English learners of L3 Portuguese whose L2 is Spanish and compare them to English learners of L2 Portuguese. The data demonstrate that the L3 group has N-drop at the initial state, while the L2 group does not. Since L2 Spanish is the only differentiating variable among the groups, it is assumed that L2 transfer occurs, which must entail that FFFH is not supported for their L2 Spanish.

Assuming a similar background to Cabrelli-Amaro, Iverson and Judy regarding the potential connections between transfer and L3 initial state, Iverson's chapter also explores N-Drop at the Initial State of L3 Portuguese, this time comparing child simultaneous and adult additive bilinguals of English/Spanish. Iverson tested for knowledge of N-drop at the initial state of two groups of L3 Portuguese learners: simultaneous Spanish/English bilinguals (so-called heritage speakers) and additive adult bilinguals whose L1 is English and L2 is Spanish. Since Spanish and Portuguese both have the necessary nominal features to license N-drop, while English does not, L2 Representational Deficit/FFFH approaches for the L2 final state predict that only simultaneous bilinguals should display knowledge of this phenomenon at the L3 initial state while additive bilinguals simply have no recourse to do so. Full Accessibility approaches (FAA) to L2 ultimate attainment predict success for both groups in this domain at the initial state. Indeed, the data demonstrate that both groups have knowledge of N-drop, supporting FAA.

Fruit Bell's chapter addresses the syntax-discourse interface by examining the acquisition of focus in L2 EP by L1 English-speaking learners. Following the view that focus is configured prosodically (Zubizarreta 1998; Costa 2004), European Portuguese exploits VOS with object scrambling for subject focus constructions, as it gives focus prosodic prominence in the rightmost position, where sentence-neutral stress is always applied. For multiple-focus, VSO with heavy subject stress is used, since two constituents cannot simultaneously be rightmost. English permits only prosodic operations for the same focus contexts. A grammaticality judgment task, truth-value judgment task, and discourse interpretation task were administered to learners and controls to determine whether the narrow syntax or discourse information processing causes divergence from native-like interpretations. Results indicate that, despite convergence on target syntax, most

L2ers diverged from target focus representations, exhibiting reliance on their L1 prosody instead. In tandem with a discussion of the role of input in acquisition, results are considered to support the claim that despite knowledge of L2 core syntax, L2ers experience persistent difficulty at the syntax-discourse interface.

Grolla's chapter investigates the acquisition of *wh*-questions in child BP. It analyzes the spontaneous productions of two children, Natália and Luiza, acquiring the São Paulo dialect of BP (SPP), and compares them to the spontaneous productions of two other children acquiring the Bahia dialect of BP (BahiaP). The data reveal an interesting pattern in the development of *wh*-questions in these children: for the São Paulo children, the first *wh*-questions have only moved *wh*-elements; *wh*-in-situ questions emerge quite late (at 3;9 years in the case of Natália and 3;11 in the case of Luiza). This pattern of development differs from what is found in BahiaP, where children are reported to start off with *wh*-in-situ. The same is found in child French, where *wh*-in-situ is the first *wh*-question to emerge and the preferred strategy. It is usually assumed that in-situ *wh*-questions are more economical than moved *wh*-questions as they involve no *wh*-movement. If children obey economy principles in the acquisition process, how could we account for the different paths in the development of *wh*-questions (*wh*-in-situ in particular) in these different systems? The answer Grolla provides, although a tentative one, lies in different analyses for *wh*-in-situ in these different systems. While there is reason to believe that *wh*-in-situ in BahiaP involves no *wh*-movement (similarly to French), in SPP there is independent evidence suggesting that it does involve *wh*-movement. If this analysis is correct, then children's late acquisition of *wh*-in-situ in SPP is not surprising.

Finally, two chapters address empirical and theoretical questions involving the acquisition of variation and language change between European and Brazilian Portuguese. Kato, Cyrino and Correa investigate the acquisition of clitics in Brazilian Portuguese by adopting the hypothesis of recovery of a diachronic loss. According to Cyrino's (1997) diachronic study, in 18th and 19th century BP, the third person singular clitics were used to replace definite object NPs. In the 20th century, these clitics were lost and replaced by an empty category (\emptyset), analyzed as a null clitic, and a non-clitic weak pronoun *ele/ela*. Kato, Cyrino and Correa investigate to what extent the educational system contributes to the recovery of third person clitics, possibly replicating some older phase of BP grammar. Their results reveal that (a) written production replicates the quantitative use of clitics of the former centuries, (b) in oral narratives, however, subjects code-switch between the

learned clitics and the contemporary vernacular forms, and (c) though clitics are used profusely by university students, their syntactic position complies with the one licensed in their vernacular. They argue the learned forms do not affect the core grammar of the subjects, but are part of a marked periphery to their grammar, code switching being possible between core and peripheral forms.

The acquisition of Brazilian Portuguese is especially relevant for the investigation of language change, since aspects of the formal/standard grammar have undergone recent change in colloquial dialects (e.g., Galves 2001; Roberts and Kato 1993), differently from European Portuguese. However, adult speakers that are tested for grammaticality judgments show evidence of full knowledge of some or all these properties. Such is the case with inflected infinitives, which are inflected for person/number agreement independently of tense (e.g., Raposo 1987). European Portuguese has these forms, and adult BP speakers also give evidence of knowledge of their grammatical properties (e.g., Quicoli 1996; Rothman and Iverson 2007). Nevertheless, such properties are argued to have been partially or entirely eliminated from colloquial BP (Pires 2006). To address this conflict, Pires and Rothman's chapter investigates whether BP children and teenagers acquire inflected infinitives. They conducted a morphological recognition task (MRT) and a context matching task (CMT). Test sentences targeted three syntactic/semantic properties of inflected infinitives (vs. non-inflected infinitives): (i) non-obligatory control, (ii) strict reading under ellipsis and (iii) the possibility of split antecedents. Their results clearly show that children below age 11 (and from youngest school age) lack grammatical knowledge of the distinctive syntax/semantics of inflected infinitives. Only subjects above age 11 show (incrementally) knowledge of inflected infinitives. The late learning of inflected infinitives confirms proposals of diachronic change in BP. However, it provides evidence that educated BP speakers still learn inflected infinitives as teenagers, explaining the knowledge also shown by adults.

In sum, the studies collected in this volume cover the acquisition of a wide gamut of morphosyntactic properties in native and non-native Portuguese acquisition, providing valuable evidence that transcends the questions pondered by the individual studies themselves. Without attempting to be exhaustive, the chapters focus on a broad range of questions and empirical issues of significant relevance for linguistic theory and for language acquisition.

Notes

1. However, the precise characterization of ‘sufficient’ exposure is still the object of significant debate within language acquisition theory in general (see e.g., papers in Gülzow and Gagarina 2007). Equally debated are the reasons that underlie observable differences (despite salient similarities across instances of language acquisition), possibly resulting from age of exposure, availability and type of input, and role of the environment, for instance as delimited by the (social) context of acquisition (e.g. Rothman and Iverson 2008; White 2003 and refs. therein). These issues will be touched upon only tangentially in this chapter, although they are relevant in several other contributions included in this book (see section 7).
2. We refer to this endowment as Universal Grammar or LAD (language acquisition device) in light of the theoretical base we follow. Other approaches to language cognition envision a similar endowment by other names such as implicit linguistic mechanisms or a universal processor, although there are important conceptual differences that we do not discuss here (e.g. O’Grady 2005; MacWhinney 1999).
3. Circumstances are such that, despite important common patterns that emerge across adult L2 learning/acquisition, instances of adult L2 development differ in idiosyncratic ways and researchers from different approaches disagree regarding how to explain such differences (see e.g., White 2003). Much recent research in generative adult L2 acquisition focuses on the debate of whether UG remains partially or fully accessible in adult L2 acquisition/learning, in what has also been characterized as post-critical period acquisition (see White 2003). Questions also arise regarding two other aspects: the role of interceding previous linguistic knowledge, which may aid or complicate (via transfer) the L2 acquisition process; and, outside the scope of generative SLA, social variables that may come to bear on language acquisition in adulthood.
4. In light of an emerging literature on so-called heritage language acquisition and linguistic loss/maintenance, it has been considered whether or not assumed mature grammars can change over time, possibly regarding interfaces (see e.g. Tsimpli et al. 2004; Sorace 2004; White to appear), but also regarding properties of the core grammar – within narrow syntax.
5. Important developments have focused on how access to the interfaces proceeds in the course of linguistic computation. For alternative versions of the architecture of interfaces see, e.g., Reinhart (2004). Acquisition approaches may differ regarding their choice among these alternatives. The question of what role interfaces play in the explanation of delays of certain properties in L1 acquisition, cross-linguistic influence, L1 attrition and incomplete acquisition in bilingualism as well as apparent non-convergence in adult L2 acquisition is the focus of much current work (see e.g., White to appear, and references therein).