

edited by M. Carme Picallo

Linguistic Variation in the Minimalist Framework

case
hierarchies
parameters
i-language
narrow syntax
externalization
features
language contact
agreement
Universal Grammar
underspecification

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M. CARME PICALLO

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Foreword

With the exception of Chapters 1 and 11, this volume contains a set of essays corresponding to the papers presented by the speakers invited to the workshop *Linguistic Variation in the Minimalist Framework*, held in Barcelona on January 14–15, 2010. At this event, the speakers were asked to present a contribution in response to the following call:

Over the past years, the question of how a hypothesis on optimal design can be harmonized with a theory of parameters has been posed in the generative literature, either implicitly or explicitly. The traditional GB-Principles and Parameters model assumed a highly structured UG architecture, with respect to both principles of grammar as well as the presumable interaction of their parametric setting, with a hypothetical cascade of subsequent effects. The Minimalist Program has changed this perspective, the point at issue being not how much, but how little can be attributed to UG. In fact, our conjecture about the design of what we call narrow syntax naturally leads to the conclusion that UG may have an extraordinarily reduced number of principles. Moreover, one could consider several arguments to the effect that, if design is optimal, then parametric variation in the computational system is practically impossible: it should either belong to the Lexicon (whatever its properties are), or to the (morpho-)phonological component.

The aim of the workshop is to consider the phenomenon of variation under Minimalist premises, both empirically and theoretically. The issue is of paramount importance given the current predicament in the Minimalist framework, which does not offer many conceptual reasons to account for variation, for, although it undoubtedly exists, it does not fit with ‘third factor’-like desiderata. In order to do so, the workshop will pay special attention to discussing: (i) the nature of ‘principles’ and ‘parameters’ (e.g. What is their format? How can we tease them apart? What is the status of the so-called micro-/macro-distinction?), (ii) the connection between variation, morphology, and the Lexicon, (iii) the impact of parameters in a Minimalist architecture, and (iv) the role played by the interfaces and other principles not specific to the faculty of language.

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who attended the workshop have our gratitude for their interest in participating and for so actively contributing to the discussions.

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MICHAL STARKE is the originator of Nanosyntax, a theory of language which seeks to unify the results of modern syntax, semantics, and morphology into one coherent and minimal whole,

deriving many effects from regular syntax and semantics happening *inside* single morphemes. He has developed this approach while at NYU and continued at the University of Tromsø. Starke is also the creator of LingBuzz, the standard archive of linguistic research, and of the EGG summer school which has introduced generations of students to modern linguistics. His publications include, among others, *The Typology of Structural Deficiency: On the Three Grammatical Classes* (with Anna Cardinaletti, 1999), *On the Inexistence of Specifiers and the Nature of Heads* (2004), and 'Nanosyntax: A short primer to a new approach to Language' (2009).

List of abbreviations

1	first person
2	second person
3	third person
a	functional adjective
ABL	ablative
ABS	absolutive
ACC	accusative
Adj	adjective
AFF	affirmative
AGNOML	agentive nominalizer
ALL	allative
AOR	aorist
A-P	articulatory-phonological interface
Appl	applicative
ASP/Asp	aspect
AspP	Aspect Phrase
AUX	auxiliary
AxP	axial part
BN	bounding node
C	complementizer
CDAP	Case Dependence Agreement Parameter
C-I	conceptual-intensional interface
CL	classifier
Cl	clitic
CN	connector
COM	comitative
CP	complementizer phrase
D/Det	determiner
DaD	Doubling and Deletion Hypothesis
DAT	dative
Dem	demonstrative

DITR	ditransitive
DOM	differential object marking
DP	determiner phrase
ECP	Empty Category Principle
EF	edge feature
EPP	Extended Projection Principle
ERG	Ergative
EST	Extended Standard Theory
EXT	aspect extension
F	feature
Fem/FEM	feminine
Fin	finiteness
FL	Faculty of Language
Foc/FOC	focus
FUT	future
FV	final vowel
GB	Government and Binding
GEN	genitive
GER	gerund
HAB	habitual
HPSG	Head-Driven Phrase Structure Grammar
IE	Indo-European
IG	Input Generalization
IMPF	imperfective
INE	inessive
INEL	inellesive
INSTR	instrumental
IO	indirect object
IP	inflectional phrase
K	case
KP	Case Phrase
LF	Logical Form
LFG	Lexical Functional Grammar
LIs	lexical items
LK	linker

LOC	locative
LU	Linguistic Universal
MASC	masculine
Mod	modal
n	functional noun
N	noun
NEG	negation/negative
NIDs	Northern Italian Dialects
NOM	nominative
NOMLZ	nominalized clause
NOMLZ-DAT	dative nominalized clause
NOMLZ-INE	inessive nominalized clause
NP	noun phrase
Num	number
O	object
OBL	oblique
OSV	Object Verb Subject
OV	Object Verb
p	functional preposition
P	preposition
PASS	passive
PAST	past tense
PERF	perfective
PF	Phonological Form
PL/pl	plural
PLD	Primary Linguistic Data
PN	proper noun
Pol/POL	polarity
POSS	possessive
PP	prepositional phrase
P&P/PP	Principles and Parameters
PRES	present
PROG	progressive
PTPL	participle
Q	quantifier

REL	relative
SG/s	singular
SOV	Subject Object Verb
Spec	specifier
Subj	subject
SUBJ	subjunctive
SVO	Subject Verb Object
T	tense
Top	topic
TP	tense phrase
TR	transitive
UG	Universal Grammar
UL	Universal Lexicon
v	functional verb
V	verb
V ₂	verb second
VO	Verb Object
VP	verb phrase
VSO	Verb Subject Object

Introduction: Syntactic variation and Minimalist inquiries

M. CARME PICALLO

1.1 The framework

Among the inquiries that have been at the forefront of the generative research agenda, questions about the limits and possible range of linguistic variation have always been prominent. The Principles and Parameters (PP) theory of the late 1970s proposed a model—known as the Government and Binding (GB) model—to address these issues, making it conceivable that a comprehensive account of such variation might be within reach. The PP (GB) model allowed researchers to set aside earlier accounts of linguistic diversity that took the form of specific rules to characterize syntactic relations between constructions. In the decades that preceded the PP hypothesis, evidence had been accumulating that human languages were subject to a great number of regularities. It also became increasingly clear that the path of language learning had to be directed by general principles of computation, which were identical for all humans. Conditions on rule application were showing slightly different points of variation across languages, a limited diversity that could be expressed by assuming that such conditions could be parameterized (see Rizzi (1978) for one of the earliest attempts). The range and depth of cross-linguistic uniformity that, within the observable variation, had already been unravelled since the 1960s made it finally possible to abandon the idea that sets of ordered grammatical rules, subject to general conditions on their application, could account not only for the intricacy and wealth of linguistic diversity but also for the conditions in which language acquisition could take place. Specific rules on constructions were shown to be decomposable into a structured set of interacting basic operations that obeyed abstract principles. The complexity of former theoretical constructs was sharply diminished while different types of apparently unrelated phenomena could be related—and appeared to be accountable for—under the general scope of this new over-arching theory. The model also allowed researchers

to conceive a plausible theory of language acquisition, because the model allows one to disregard the unlikely assumption that children have to undertake the task of making computational decisions based on the format and structure of entire grammars.

The initial PP framework posited a richly structured Universal Grammar (UG)¹ based on a number of fundamental principles open to limited variability (i.e. parameterized principles). The articulated system of principles took the format of a modular 'language organ' and had the goal of sharply restricting the class of attainable grammars while narrowly constraining their form (Chomsky 1981: 4). Linguistic diversity could be framed within the limited choices of values allowed by the principles. Thus, a particular grammar was conceived of as UG with parameters set in specific values, and language acquisition as an operation of parameter setting on the basis of the child's linguistic experience and environmental stimuli.

The PP (GB) model of the general architecture of the language faculty has had an extraordinary impact on synchronic and diachronic comparative syntax and has been able to increase and sharpen our understanding of cross-linguistic uniformity, while allowing finely grained characterizations of variation and change that have achieved significant levels of descriptive and explanatory power. It is more than fair to say that the application of its postulates has deepened the study of grammar in an unprecedented way by unravelling a considerable variety of relations among grammatical constructs that go far beyond the linguistic generalizations that can be arrived at by inductive observation. As the PP hypothesis has been developed and research has progressed, it has been noted that its implementation, as originally conceived of, revealed a number of new methodological and empirical problems, showing that some assumptions that were being adopted did not appear to provide as neat a level of explanation as initially thought. The set of assumed devices of the early PP (GB) model appeared to be too rich in language-tailored theoretical assumptions, which made difficult the task of reaching a comprehensive understanding of how language is organized, learned, and instantiated in the mind/brain (see Boeckx 2006, this volume; Chomsky 1986b; Rizzi this volume; Starke this volume, among many others).

A shift in the conception of a model for UG was proposed in the early 1990s under the expectation that its descriptive and explanatory force would be enhanced if some of the earlier theoretical apparatus was lightened and some of its assumptions subjected

¹ *Universal Grammar* (UG) is a technical term to refer to the genetically determined, innate state of the language faculty. This nativist stance has always been assumed in the Generative tradition, driven by epistemological inquiries about, for example, what knowledge of language consists of, or the extent to which this human trait can be comprehended in relation to current lines of research in the biological sciences. Non-nativist approaches claim that languages functionally adapt to communication and cognition and do not address the question of which basic property (or properties) human beings may innately have that could result in those kinds of purported adaptations. UG should not be confused with Linguistic Universals (LUs), a term generally used to refer to cross-linguistic generalizations arrived at by examining a number of languages. LUs are based on a range of typological characteristics expressing tendencies, apparently absolute or merely statistical (see Dryer 1998; Greenberg 1963).

to critical scrutiny (Chomsky 1993b, 1995). The Minimalist conjecture, as this conceptual shift is known, constitutes a programmatic attempt to reformulate some of the foundations of the initial Principles and Parameters approach by exploring whether or not the complexity of the earlier model can be reduced to more elementary yet all-encompassing principles. A more underspecified UG system has been posited, devoid of dispensable empirical or conceptual constructs, and unburdened of much of its previous language-specific premises. Included in the equation of the mechanisms that may comprise the I-language of speakers² is the possible role of peripheral devices, general conditions or cognitive functions that, not being specific to the faculty of language, can nevertheless constrain its form and expression (see Berwick et al. 2013; Chomsky 2005; Hauser et al. 2002, among many others).

Clear boundaries between what may correspond to genetic endowment and what corresponds to language-independent general constraints in shaping the properties of language are not easy to come by and, so far, have not been clearly established. A step in this direction has been to consider that the grammatical model itself should only postulate the unavoidable machinery that would allow the language faculty to interact with other systems, the ultimate goal being to better understand the nature of human cognition and how language is integrated in the natural world. Such an approach to language has the consequence that particular grammars can be conceived as variants of one and the same system, while regarding linguistic expressions as grounded on specific and simple computational mechanisms, which are able to provide an infinite array of structured expressions. Each expression is assigned an interpretation at two interfaces: a sensory motor interface connecting the internal syntactic constructs formed by syntactic operations to the physical world, via perception and production—the so-called Phonetic Form/PF—and a conceptual interface—labelled Logical Form/LF—relating such internal constructs to other mental activities (reasoning, presupposing, planning, etc.).³ The format of computations is assumed to be tight, consisting of two basic devices: (i) a process of Merge that takes two syntactic units to form larger complex units, and (ii) a Search operation that may trigger movement (i.e. a ‘re-merge’ process) of complexes already formed by Merge, under certain strict conditions. Search may also create dependencies among linguistic expressions without

² The technical notion of *I-language* (where ‘I-’ stands for individual, internal, and intensional) refers to the state of the language faculty in the mind/brain of any human being, within a theory of UG that proposes a hypothesis of the initial state. This notion is in contraposition to that of *E-language*, the external manifestations of the internal state, studied independently of the properties of the mind/brain (see Chomsky 1986a for discussion on these issues).

³ Chomsky (2008) points to a necessary asymmetry between the two interface levels. While practically no variation appears to be likely at the conceptual (LF) level, variation is ubiquitous at PF. Pushing the asymmetry much further, Hinzen (2006, 2009) has claimed that the syntactic computational system cannot be distinguished from the system that generates abstract thought.

necessarily involving displacement.⁴ Such a lean model for the language faculty dispenses with many grammatical assumptions that were formerly part of the theory.

As noted, the programmatic shift towards assuming an enfeebled UG component contemplates the incidence on the language faculty of constraints of various natures: a very limited number of highly general computational devices (arguably unique to humans and required for syntax) as well as the possible effects of domain-general conditions or mechanisms of a non-linguistic nature that may have a varied origin, some of them shared with other species (Gallistel 2009). This conjecture fits a body of research in language acquisition and development that suggests that at least two complementary sets of mechanisms appear to be at play in the learning process. Some aspects must be acquired through language-specific abilities, while other aspects may result from the incidence of general resources not inherent to the faculty of language but rather recruited or ‘recycled’ for the task, such as the maturation of neural signals to execute memory, sensory-motor skills, categorial perception, or the ability to perform statistical computations.⁵ Questions still to be elucidated in this domain are many, such as what role do developmental constraints play in rendering linguistic calculations efficient and short-timed, or how children are able to ‘filter’ the avalanche of data they are exposed to in order to implement very selective computations, a task that may be further complicated when the language learner is in a multilingual environment, a common situation in many parts of the world.

The interaction of all these factors, both language-specific and language-external, suggests that the grammatical system is highly malleable and offers ample space for variation, a system therefore now more complex and intricate than what was imagined in the early 1980s. Yet the elasticity allowed by the interaction of the many components that may enter the picture is not limitless, and should be neither unpredictable nor impossible to account for—given that abstract general principles are assumed to be at play. Nonetheless, the role of architectural constraints of very different natures appears to be now more difficult to evaluate, characterize, or empirically verify. Alternative points of view on the role of syntactic computation in shaping the limits of variation are explored in the following chapters. Very broadly speaking, one can say that Part I and Part II of the present volume correspond to contributions following two different research strategies that are being pursued within Minimalist premises. They mostly differ on the issue of whether variation should be strongly or weakly determined by syntactic factors, which amounts to taking a stance on whether or not the theoretical notion of *parameter* can be maintained as has generally been understood under the traditional Principles and Parameters approach. Within these general views,

⁴ Actually, whether some types of dependencies, such as anaphora resolution or variable binding, may or may not involve movement is a topic under active discussion. For different views on this subject see Boeckx et al. (2010); Hornstein (1999); Kayne (2002); Landau (2000); Reuland (2011), among others.

⁵ For a general overview of this body of research see Gervain and Mehler (2010). A specific case study in this domain is also discussed in Rizzi (this volume).

researchers adopt different perspectives on the possible nature or origin of constraints, on their incidence in the linguistic system, and on the assumptions that can be—or should be—adopted to include them within a workable and explanatory model.

1.2 An overview of the volume

1.2.1 Part I. *The parametric approach: The PP revisited view*

The rigour and scope of the syntactic analyses that have emerged under the ‘classical’ PP (i.e. GB) model have lead a number of researchers to pursue a reformulated approach to this general hypothesis by retaining its insights while trying to overcome the problems we have noted. Within the limits imposed by universal and presumably invariant grammatical constraints, proponents of a reformulated PP hypothesis maintain the theoretical notion of *parameter*, while switching the earlier perspective on modular principles to consider variation a phenomenon conducted, and licensed, mainly by properties of the features of functional categories. The rationale within this view is that the characterization of syntactic principles will not offer significant results unless the study of parameters is taken to deeper levels. Several contributions in this section of the volume exemplify the various lines that are being pursued under this (reformulated) parametric approach.

In his contribution, Luigi Rizzi suggests a possible typology of parameters, set up around the basic operations of Merge, Move (i.e. re-merge), and Spell-Out.⁶ He claims that the problems observed under the early implementation of the PP hypothesis mainly stemmed from not maintaining a strict conceptual separation between what should be a very restricted *parametric format* and the possible *parameter loci*, which offer ample space for variation. The format of parametric paths is severely limited by binary options instructing whether or not a syntactic head has a feature that directs the system to either apply or not apply any of the basic Merge, Move, or Spell-Out operations. Loci, on the other hand, can be multiple as they manifest specifications of a possibly large functional lexicon such as the one that cartographic models of syntactic structures have proposed.⁷ Rizzi’s proposal suggests that parameters can be predicted to abound, and it is unlikely that a single one can fully control complex sets of properties, given the number of possible interactions between them. Note that the multiplicity of possibilities is reduced if parametric variation is associated with

⁶ As noted, *Merge* is an iterative operation that takes two elements and combines them into a set to create a new expression. *Move* is the operation of re-merging a previously merged element in a structure previously formed by Merge. *Spell-Out* can be defined as a cyclic operation that transfers a substructure already formed by Merge to the PF/LF interfaces (see Chomsky 2000, 2004, 2008).

⁷ Cartographic approaches to syntactic structures, whose aim is to define a map as complete as possible of architectural configurations, have advanced the conjecture that languages may be strongly uniform in this respect. See Cinque (1999); Cinque and Rizzi (2008); Rizzi (2013a), and references cited therein, for an overview of the aims and goals of this research topic.

unvalued features exclusively, as suggested in Kayne (2008). Many clusters of constructions related by the effects of a single parameter choice defined by a high-level property, as assumed in the earlier PP model, may likely dissolve into descriptive artefacts under Rizzi's approach. A reticular view of variation emerges in that setting, leading to the conjecture that every possible parameter is a micro-parameter (Kayne 2005a, 2005b). Apparent macro-parametric differences may turn out to be better accounted for as arrays of interacting binary choices allowed by the feature properties of syntactic units, mainly of the functional types.

The focus on the study of micro-parameters is not the only research strategy being pursued within the general lines of the Principles and Parameters hypothesis. Macro-parametric, or typological, approaches to language variation have also been proposed. A macro-parameter can be defined as a single characteristic affecting a large number of syntactic categories, which result in a clearly salient non-composite property distinguishing clusters of grammars (right/left headedness, topic prominence, or null argument licensing, among other possible ones). Such defining characteristics of groups of languages may then expand in a cascade-like downward fashion into arrays of options that are allowed by, and dependent on, a given high-level property. Baker (1996, 2001, 2008a,b) has defended this strategy, offering methodological reasons to pursue this line of inquiry. In his view, the assessment of properties that appear to define clusters of languages should offer a window for the study of principles of grammar that delimit possible language types. In his contribution to this volume, Mark Baker does not address general macro-parametric concerns but focuses on the formalization of case assignment patterns and on case-licensing variation. He proposes two possible parametric alternatives on case marking, which depend on whether or not the operation *Agree* applies and is related to the assignment of case.⁸ In some language types, case appears to be sensitive to a feature relation between a case-bearing item and a functional head whereas some evidence Baker discusses suggests to him that, in other grammatical systems, case may be dependent on the characteristics of the Noun Phrases involved in a single local domain and, possibly, on the tense-aspect of the clause as well. He notes that mixed procedures to assign case may also be at work in some languages.

Parametric approaches to account for variation have also been argued for by Anders Holmberg and Ian Roberts who, with other researchers, have proposed a 'mixed' model where points of variation may form not unstructured sets, but rather schemata relative to formal and categorial feature sets and their interactions with general principles of data analysis (see Biberauer et al. 2013). They consider that a UG-restricted account for variability, as in the traditional PP (GB) model, can no longer be adopted,

⁸ *Agree* is a syntactic operation that relates two sets of features in an asymmetric configuration. It assigns values to the features in one of the sets while deleting those that are uninterpretable for LF purposes (see, for discussion, Chomsky 1995, 2000, 2001, 2004).

given Minimalist premises. They have suggested, instead, that parametric options or variables, which are made possible by the absence of UG specifications, can form hierarchical clusters of (micro- or macro-)parametric distinctions that define linguistic typologies along a number of dimensions. The proposed schemata give rise to embedded downward expansions (or sub-parameters) guided by markedness considerations (see Biberauer, Roberts, and Sheehan 2013a; Holmberg 2010a; Roberts and Holmberg 2010; Roberts and Roussou 2003). Such a model adapts Chomsky's (1981: 8) suggestion—coached then in terms of parameterized principles—that markedness imposes a preference structure where the value of one parameter is the default one, and—assuming parameters to be binary—the other value is chosen if the evidence leads to that choice. This approach is argued to characterize variation and learning paths by assuming that language learners start at the highest position of the hierarchy and keep testing down if the primary linguistic data is incompatible with a given option. The suggested format is claimed to offer a restricted array of choices, under the claim that the parametric space is reduced if conceived of as organized into descents forming highly structured systems. In their contribution, Anders Holmberg and Ian Roberts pursue that line while arguing against the tenet that all variation is a matter of externalization (Berwick and Chomsky 2011; Boeckx 2010a, 2011, this volume; Sigurðsson 2011b, among others). As variation and parameter hierarchies cannot directly be determined by a minimal UG component, they are claimed to be the result of the combined effects of the language-specific genetic endowment, the nature of the linguistic environment (the triggering experience of the learner), and general cognitive strategies of computation and optimization; that is, a combination of the so-called 'three factors of language design' (Chomsky 2005). Holmberg and Roberts illustrate their claims by offering a case study on yes-no questions in several languages, which shows how the basic operations of Merge and Agree are subject to variation due to the feature content of functional projections.

The considerations discussed raise questions about the extent to which conditions external to the faculty of language could be recycled (or co-opted) by the grammatical system and become part of narrow syntax, as inquired in Kayne (2011).⁹ A related question concerns the degree to which the pressure of external conditions of various kinds that are not part of narrow syntax may trigger variation. Such external conditions may feed or bleed the expression of possible variants, and conduct (or block)

⁹ Kayne (2011) expands the scope of his antisymmetry hypothesis (Kayne 1994) by focusing on restrictions applying to head-initial/head-final order patterns, a readily observable fact of linguistic variation. He entertains a derivational approach to antisymmetry by suggesting that universally left upward derivations may be the result of having incorporated into the syntactic computation the time-sequence factor. Noting that precedence reflects the directionality of the probe-to-goal relation under Search, he suggests that they may interact and that precedence might have been built into the competence system, incorporated into the computation as part of narrow syntax.

possible paths of change in a given grammar. The empirically detailed contributions of Cardinaletti and Etxepare in this volume assess, in part, effects of that sort.

While assuming that parameters are limited by the feature values of the functional lexicon, Anna Cardinaletti discusses two cases of variation involving the syntax of subjects that exemplifies instances of micro-parametric variation between Standard Italian and several Northern Italian dialects. The first case studied by Cardinaletti focuses on verb placement and the relative position of the subject in interrogative sentences. She proposes that verb raising can be associated with different heads in the clausal structure, an operation that, in turn, affects the placement of subjects—of the nominal or pronominal types—in two possible positions. The second case involves subtle differences observed between Standard Italian and Northern Italian dialects with respect to the possibility of licensing a phonologically null subject (i.e. *pro*-drop). Her study shows that the relation between richness of inflection, verbal syncretism in some forms, and the possibility of having null subjects is more complex than initially thought (see also Holmberg 2005, 2010a). The evidence allows Cardinaletti to suggest that the distribution of *pro*-drop in closely related varieties cannot be entirely attributed to syntactic factors or the properties of the Complementizer-Tense field but rather that, in addition to them, syntax-independent principles regulating data processing and computational efficiency appear to interact with the particularities of Italian morphosyntax.

The possible effects of language independent pressures are also addressed in Ricardo Etxepare's contribution. He directs his attention to diachronic changes affecting the distribution and agreement properties of dative arguments in some northern varieties of Basque. He suggests that the changes have been driven by a combination of at least two causes: interface optimization strategies and the reanalysis that some borrowings may trigger for syntactic computation. In the cases he discusses, an environmental condition (language contact between French and North-Eastern Basque) appears to have favoured an adapted reconversion of the properties of some French prepositional elements in the variety of Basque he focuses on. The combination of this external factor and a change involving overt agreement between a dative argument and the verb appears to have triggered the further consequence of having driven the selection of another option: the changes are shown to have word order repercussions, a typical typological parameter.

The characterization and properties of syntactic features, the atoms of computation, is a research line being actively pursued under some of the studies alluded to in this chapter, together with feature bundling, or feature organization, in processes of lexicalization. The nanosyntactic proposal put forward by Michal Starke (2009, this volume) takes a cartographic approach to feature organization (see note 7). He argues that each feature heads a syntactic node that takes a feature-complement, forming a rosary of cross-linguistically invariant binary branching projections of sub-morphemic elements. Starke's goal is to provide a theory of the lexicon able to

account for variation, arguing against proposals suggesting that sources of variation can reside in the instruction-providing properties of individual features. The only possible instruction that features should have in the system he proposes is the edge property, which makes them able to merge. In his account, variation can simply be reduced to the complexity of the cartographic territory (i.e. the tree size) that individual lexical units express. There is no need for a morphological post-syntactic component feeding phonology to be posited under this account, since lexical differences are rooted in the spelling out of different zones (i.e. sub-trees) of the featural hierarchy, their syntax mapping directly to phonology.

1.2.2 Part II. Variation without parameters

The combination of internal and external constraints places the questions about why variation exists, where it is located, and how much of it is possible, in large part on considerations about whether variation is considered to be strongly or weakly determined by syntactic factors. If narrow syntax is strongly feature-driven, variation is mainly a property of the syntactic component, as reformulated PP approaches presented in the last section—in any of their specific implementations—maintain. The approach offered in this section's contributions attribute to syntax a much less determinant role in shaping the range of variation, relegating much of it to external conditions.

In his contribution, Cedric Boeckx offers a perspective that differs in important respects from the one adopted by research paths pursuing a PP reformulated approach. He considers that variation is not unrestricted, but it is not parametric either, and explicitly claims that the notion of parameter should be reserved for use as a descriptive label and not used as a theoretical concept.¹⁰ The quest for a biologically sound model of UG must be disconnected from individual languages, which leads Boeckx to conclude that the core properties of the language faculty should be more abstract and farther away from observable grammatical systems than parametric approaches propose. A more restricted hypothesis on the input to syntactic derivations should be entertained that aims to characterize what the minimal toolkit—the basic blocks of computation—could consist of such that iterated Merge may ultimately result in cross-linguistically different lexicalization processes. In other words, one should aim to provide not a theory of the observed variation but rather a theory of its limits, as the question of why variation exists would be akin to asking, say, why there are so many species of arthropods. Variability is simply inevitable when the relation between combinations of abstract linguistic units and the different realizations of their lexical exponents is underspecified.

Factors like frequency or conventionalization in the use of forms probably have an impact on lexical access during production. The role of frequency and

¹⁰ See also for discussion on this issue Lohndal and Uriagereka (2010).

conventionalization are specifically addressed in the contributions by Adger (this volume) and Barbiers (this volume). Both studies suggest that the effect of optionality at Spell-Out may play a crucial role in some accounts of linguistic diversity.

David Adger focuses on case studies in which these components appear to affect the choice of a morphological variant, suggesting that parameterization may largely be determined by factors that are not necessarily in the syntax itself. The existence of functionally equivalent exponents for given grammatical items together with the rate at which such items are used may affect the probability that one variant will emerge over another. Under this perspective, it is easy to imagine that probability and frequency, together with the favoured use of certain forms in certain registers, can induce the emergence of parameter settings. For a variety of (sociocultural or other) reasons, children may alter the ratio in which they use a particular variable in a particular context, as compared to the ratio in which it is used by their caretakers. Such frequency ratios may be passed on to the next generation until a point is reached where a distinction between variants may emerge, one being attributed a particular nuance or 'flavour', with the result that acquirers may raise this variable difference to a categorial property.

Sjef Barbiers focuses on the observed variability in the manifestation of doubling phenomena. The case studies he discusses involve instances of particle doubling and cases of predication where two formally identical elements are phonologically realized. Cases of doubling could appear to be a redundancy in the grammatical system and could be said to constitute a violation of good language design. On the contrary, Barbiers claims that doubling phenomena constitute a core property of the syntactic component, which may be necessary to achieve full interpretation. In interaction with deletion, this core property is a source of cross- and inter- linguistic variation because features—or bundles of them—may allow various syntactically and semantically equivalent options for doubled elements at Spell-Out. Externalization may generate multiple morphological choices, which compete not for grammaticality but for use. The observation that some apparently equivalent constructions tend to be more subject to variation than others suggests to Barbiers that frequency in the use of some constructions over others may play a role in the range of dialectal variation. He further suggests that perhaps certain frequency thresholds must be reached in order for a particular variant to be exploitable by sociolinguistic effects or geographical distribution.

Part I

The Parametric Approach: The PP Revisited View

On the elements of syntactic variation

LUIGI RIZZI

2.1 Introduction

How to properly characterize syntactic invariance and variation is the core question of theoretical and comparative syntax. The parametric approach introduced a novel technical language to address this issue, which inspired much descriptive and theoretical work in syntax, as well as a new way to study language acquisition. The approach also raised questions and controversy, both within generative grammar and in the larger setting of the study of language as a cognitive capacity. This chapter offers a personal view on the debate raised by the theory of parameters, based on my own research experience and current work, and with no ambition of a systematic coverage of the relevant issues.* In the first part of the chapter, I will briefly describe the origins of the parametric approach, the context in which it was introduced and the impact that the idea had on syntactic and acquisition studies. In the second part, I will discuss the way in which parameters can be integrated in a minimalist grammar, and nourished by the results of cartographic studies. I will address some critical appraisals which question the restrictiveness and deductive richness of the approach, and will try to respond to such critiques. In the third part, I will broaden the picture to the larger debate between ‘language faculty’ and ‘cultural’ approaches to language diversity and language acquisition: I will address the question of how the study of acquisition could bear on this conceptual divide, and review some experimental results which are naturally expected within an approach based on a biologically determined language faculty consisting of principles and parameters.

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