chapter 3

LINGUISTIC TYPOLOGY AND THE STUDY OF LANGUAGE

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1. Introduction

The aim of this chapter is to provide a typological perspective on the study of language; to situate the typological knowledge about human language among other types of linguistic knowledge; and to discuss the assumptions and limitations of the approach, including types of available data.

Section 2 defines the object of linguistic typology as cross-linguistic variation and language diversity. Section 3 contrasts linguistic typology with another influential approach to cross-linguistic variation: generative grammar (see Polinsky, this volume). Section 4 investigates the dual—relational vs. referential—nature of linguistic signs and the problems this creates for cross-linguistic comparison (see

Stassen, this volume, for more focus on practical methodology). Section 5 intro-duces various ways of reducing linguistic diversity to a system: taxonomies, uni-versals, etc. (see various contributions to this volume, especially those by Cristofaro and Moravcsik). Section 6 describes typological approaches to language change, and discusses issues of language evolution. Section 7 introduces typological sam-pling (see Bakker, this volume) and discusses some problems of large-sample typology together with two relatively recent methodological alternatives. Section 8 is an overview of the range of data typologists may choose from (see Epps, this volume, on language documentation); section 9 follows as a conclusion.

2. CROSS-LINGUISTIC VARIATION AS THE PRIMARY OBJECT OF LINGUISTIC TYPOLOGY

Linguistic typology compares languages to learn how different languages are, to see how far these differences may go, and to find out what generalizations can be made regarding cross-linguistic variation. As languages vary at all levels, linguistic typol-ogy deals with all levels of language structure, including phonology, morphology, syntax, and semantics (see Part IV of this volume).

Is this definition specific enough? Most linguistic disciplines have cross-linguistic comparison in the background, if not as their main method or object of inquiry (one probable exception is the radical structuralism mentioned in section 4 below). Even isolated descriptive traditions of individual languages, such as traditional descriptions of English, German, Russian, etc., are not free from cross-linguistic assumptions. Although rarely referring to them directly, they are all based on ideas about the structure of human language (often projected from Latin grammars), implicitly suggesting parallels between different languages. Yet these approaches are not typological, because they focus on one language, even when they borrow metalanguage applied to a different linguistic system.

Typology is sometimes viewed as a member of a triad: historical linguistics vs. contact linguistics vs. linguistic typology. Each of the three does language comparison. But while historical and contact linguistics look for similarities motivated by common origins or geographical proximity, linguistic typology is said to look for similarities motivated by neither, probably reflecting some general properties of human cogni-tion or the common communicative purpose all languages serve. For historical or contact linguistics, comparing languages is also the main source of empirical data; but while these linguistic methods compare languages that are genealogically or areally close, linguistic typology is traditionally based on data from unrelated languages.

But there is more to the difference between them than just ways of selecting the languages the data come from. Historical and contact linguistics are looking for similarities between languages, because it is the similarities that can be inherited and spread by contact. Typologists are keener on differences, because every new difference that is found extends our idea of the limits of cross-linguistic variation. Linguistic typology is interested in cross-linguistic similarities only inasmuch as they foreground limits to variation, while contact and historical linguistics peel differences away to arrive at what the languages have in common.

Thus, when saying that most languages use either ergative or accusative alignments, the main message is that all other structurally possible patterns are infrequent. This is again about differences: some kinds of variation (understood as divergence from the known types) are rare or not attested. When looking at alignment variation in a group of genetically or areally related languages, historical or contact linguistics would be more interested in the dominant pattern of alignment in the group, explaining that by common historical origins; cases of parallel evolution are thoroughly filtered out (whenever possible).

Another example that shows the status of similarities in typology is the approach towards the definition of word. Linguistic typology suggests that this concept is cross-linguistically universal (e.g. Dixon and Aikhenvald 2002). But this is not intended to mean that all languages are similar in that they have a unit with the identical properties. On the contrary, any relevant typological research would study cross-linguistic variation of various parameters of the concept of word. The message is, again, how different the guises are under which the category is manifested in the languages of the world.

Thus, while some other linguistic approaches also deal with diversity, this is not their main objective; most are interested in sifting out the diversity in order to find similarities. Linguistic typology is the study of linguistic diversity as such, an exploration of cross-linguistic variation as well as the rules that govern it and constraints that define its limits. It may be seen as looking for similarities, too—as when assigning languages to different types. But as a matter of fact, it deals with similarities only to sort them out and to form an idea about possible differences. To show this, let us contrast linguistic typology with another approach to cross-linguistic variation: the generative paradigm.

3. LINGUISTIC TYPOLOGY AND GENERATIVE GRAMMAR

Generative grammar is compared to linguistic typology in numerous publications (Bybee 1998a, Newmeyer 2005, Haspelmath 2008a, Evans and Levinson (forthcoming), and some discussion in *Linguistic Typology* 11.1 (2007), to mention just a few

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recent ones). In the following few pages, a summary of the present author's view is provided. See Cristofaro (this volume) on the different stances on language universals adopted by the two approaches, and Polinksy (this volume) for perspectives on convergence between linguistic typology and formal grammar.

The generative approach starts from an observation about language acquisition. According to this observation, linguistic input available for a first language learner is utterly insufficient to build linguistic structures of the language he or she is going to speak. Not only are these structures extremely complex, but the set of possible utterances is unlimited, so that one may wonder how a child's poor linguistic experience may prepare him or her for such a complex and infinite diversity. It is equally stunning how a child learns not to produce ungrammatical utterances, although he is extremely rarely, if ever, explicitly taught what is wrong. These structures and constraints cannot be fully innate, because if there is a mismatch between the languages someone's (biological) parents speak and the linguistic environment someone is brought up in, his or her first language is determined by the latter.

To solve this problem, generative grammar posits a universal grammar which is not acquired through learning but is an innate property of the human mind, common to all humans and transmitted biologically in an invariable form. The objective of the generative study of language is to uncover this universal grammar and to explain how the diversity of actual linguistic structures observed in the languages of the world is derived from it. The existence of such universal grammar is thus a methodological prerequisite which is induced from one observation about language acquisition: the poverty of stimulus.

Although some research on language acquisition calls the latter into question (Tomasello and Barton 1994, Tomasello, Strosberg, and Akhtar 1996, Lacerda 2009), the proponents of generative grammar rarely defend it, most often taking it for granted. For this reason, below we will refer to the thesis about the poverty of stimulus, as well as the concept of an innate universal grammar which follows from it, as theoretical assumptions rather than empirical results.

From the 1980s on, generative grammar has further specified its approach to cross-linguistic variation (Chomsky 1981, Haegeman 1994). Universal grammar is no longer a set of universal rules with additional language-specific rules on top. It has become a set of principles—common to all human languages—with variable parameters accounting for cross-linguistic variation. Language learning is viewed as a tuning process that adjusts the parameters of the built-in universal grammar so as to match optimally the linguistic stimuli perceived by a child. Principles of universal grammar are common to all languages; it is the values of the parameters that vary.

To a typologist, the objective of the generative study of language as formulated above sounds unmistakably typological, for he or she also studies cross-linguistic variation in the observed values of specific parameters. True, that kind of study

would be linguistic typology with peculiar assumptions about human cognition, research methodology, and the field of investigation—but a typology nonetheless. What, then, is the difference between the two views on language, if there is any difference at all?

First, despite its universalistic claim, in practice generative grammar has traditionally gravitated towards data from only a few of the world's major languages. English provided the starting point for all generalizations. Once initial generalizations were produced, inclusion of non-English data led to slow modifications of the rules previously assumed to be universal. One trend in the evolution of generative grammar is its gradual expansion from English to other languages and language groups, so that now 'exotic' languages are also being included in the scope of generative studies; but in terms of coverage, there is a lag as compared to linguistic typology, which from the very beginning was working with as many languages as practicably possible.

This is a bias for which typologists often criticize generativists, but there is a generative answer to it, coming from the methodological side. Once we accept that there is a universal grammar that is biologically inherited by the speakers of all languages, it does not matter whether we attempt to arrive at it by investigating cross-linguistic variation of all languages or the grammatical structure of one single language (Chomsky 1980, discussed in Evans and Levinson (forthcoming); see Cristofaro, this volume). Of course, in the latter case we need some methods to distinguish universal principles from language-specific parameter values. But we only need the data from other languages to the extent that these methods are imprecise. In practice, starting from generalizations about English data, the generative approach has gradually expanded its empirical base to other languages, adjusting where necessary the apparatus of universal grammar to new linguistic evidence. The apparent advantage of this approach is that data from English and other major languages are more readily available, and in many cases the scholar is a native speaker of the language being described. Ideally, this provides a solid empirical basis for generative studies. This is in stark contrast with linguistic typology, where second-hand data are often the main source of linguistic evidence.

However, for someone who does not assume the existence of an innate universal grammar, this is a major problem with the approach. Missing one single language could mean missing a chance to discover a totally different linguistic structure. This possibility is stressed by the typological study of languages, which aims at covering as many languages as possible, even if that makes it necessary to use indirect sources (see section 8), and explains why language sampling is considered to be a major methodological problem in linguistic typology (see section 7), while it is not at issue in generative studies.

There is another data-related difference between the two methods which is not very significant at present but has the potential to grow into a stronger empirical clash in the future. Starting from the first versions of generative grammar, linguistic

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description was understood in quite a specific way as a model generating possible (grammatical) syntactic structures without generating impossible (un-grammatical) ones. This understanding leads to elicitation being the main data source, as not all possible configurations are obtainable from other sources, such as corpora. In linguistic typology too, elicitation was and still is an important source of empirical data. However, the typological method started shifting to corpora and usage-based studies (see section 8), which inevitably leads to admitting the gradi-ent nature of grammaticality judgement.

Second, generative grammar is essentially holistic—at least in principle. It posits an invariant system underlying the structure of every language, and studies this system as a whole, but at the same time it is mindful of the need to make necessary adjustments in the light of new data and to consider how these adjustments affect the various components of the system and its entirety. In linguistic typology, however, the holistic approach is only one among many possible approaches. Linguistic typology, with few exceptions, is a set of case studies (but see Polinsky, this volume, for a discussion of modern challenges), and it is rare that two typologists independently investigate the same phenomenon—the field is so vast, and languages are so many. These case studies are linked to each other much more by methodology than through having a single linguistic model. Only slowly do they come together into larger clusters of ideas, and only rarely do they form coherent models of language as a whole. This reluctance is data-driven, caused by the observed diversity of language structures. As a result, to be a typologist and to cooperate with others, it is not absolutely necessary to share one another's views about the nature of language. Most scholars have specific assumptions about it, but these assumptions are many and diverse, which is so unlike the major primary assumption of an innate universal grammar, common to all generative linguists. This is due in part to methodology.

The generative approach makes one assumption: the poverty of stimulus. This assumption is, however, very strong and immediately leads to positing the exis-tence of universal grammar. Assumptions made by typologists about the nature of language may seem even less empirical, but the way they work in typology is very different. The same assumptions are hardly ever interpreted in exactly the same way by two different people, and there is probably none shared by everybody in the field. Within typology, assumptions do not have immediate consequences for the study of language. The same or similar general concepts of language might easily lead to different research methods and outcomes—as is the case with different understandings of cognitive or functional motivation of the linguistic form—and people with different theoretical views may efficiently cooperate in research projects.

In other words, assumptions in linguistic typology are less binding in terms of methodology. The whole edifice of generative grammar is dependent on its only premise to a much greater degree than various typological approaches are

dependent on their many assumptions. The distance between the philosophy/ phenomenology of language and the methods of linguistic study is far greater in linguistic typology than in the generative paradigm, where they form one single body. The latter is apparently characteristic of all formal approaches to language.

The generative model is highly consistent and may be checked against linguistic data in its smallest detail. This might at first seem to be an advantage of the generative paradigm over the typological method, where falsifiability often does not seem to be that straightforward. However, the abstract nature of the generative categories makes them practically immune to true falsification by empirical data, as universal grammar has an almost unlimited potential of superficially adapting itself to new data without changing any of its deeper elements; all most important changes in generative grammar (the introduction of principles and parameters, and the minimalist programme) were much more theory- than data-driven. In a way, generative models are too flexible to be considered genuinely falsifiable (cf. Evans and Levinson forthcoming). Note again that the fundamental assumption— that of the existence of an innate universal grammar—is not subject to falsification in principle, at least not from within the paradigm itself.

Third, generative ideology does not accept that language-specific facts can be truly diverse, but always derives them from underlying principles of universal grammar. Generative grammar assumes that languages are essentially identical in their structure, while this is not a necessary (although it is a possible) assumption for linguistic typology.

Put simply, generative grammar *knows* that all languages are essentially identical, while linguistic typology *ascertains* whether they are or not—and if they are, to what extent. In a sense, generative grammar is about cross-linguistic invariance, while linguistic typology is about cross-linguistic variation (see section 2). These are in principle two different views of the same data, but in practice they lead to very different methods and results.

The fourth important point is made by Evans and Levinson (forthcoming). They explain that there is a substantial difference in generative grammar vs. linguistic typology's stances on cognitive foundations of human language. In linguistic typology, the focus on observed crosslinguistic variation, with very few universal facts true of all languages, makes it necessary to look for motivations of specific language structures outside the language itself, in various models of cognition—if anywhere at all. The advantages of this approach are that it is adaptive to the environment of the speaker and may in principle be connected to non-linguistic cognitive and/or behavioural functions (Bybee 1998a); in particular, human linguistic abilities may be compared to animal communication. When building a universal innate grammar which is yet supposed to account for cross-linguistic and cross-cultural variation, the generative approach simply has to posit abstract structures and entities that have no visible extralinguistic motivation; its cognitive vision is thus highly abstract, again based on the assumption of universal grammar

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and more deductive than grounded in linguistically diverse empirical data. Its main commitment is not to explain the diversity but to derive it from one representation common to all languages. Human linguistic ability cannot have anything in common with primate communication under this approach, because this ability is nothing else but innate universal grammar, and innate universal grammar is exactly what primates lack. In other words, generative grammar seems to leave much less freedom than linguistic typology for language-based empirical cognitive research than linguistic typology. Ironically, it is generative grammar, not the typological approach, that has received so much attention in the domain of non-linguistic cognitive sciences.

To sum up, generative grammar is a deductive approach, aiming at a formal derivation of the observed data from a general model that precedes any empirical research. The process of generative exploration consists of ongoing modification of the formal model so that it may serve as a better interface between the invariable initial assumption (the existence of an innate universal grammar) and the observed facts. Its general features are as follows:

- Generative grammar is based on one fundamental assumption about language structure—an assumption whose empirical nature may be challenged; it is a linguistic philosophy which is rather uniform in its view of language; its development is a gradual modification of the formal apparatus intended to keep the basic assumption of the existence of universal grammar intact.
- It views grammar in an essentially holistic way, introducing an abstract structure that is to be adapted to the empirical data by adjusting its elements to the new input rather than inferring this structure from the data from the very start.
- In practice, it appeals to data from a small number of languages, and only gradually expands its empirical basis to languages that feature significantly different structures.
- It departs quite far from the empirical data in positing highly abstract levels of formal representation and structural entities whose existence is witnessed only very indirectly.
- It is more interested in the possible analytical reduction of the observed crosslinguistic variation, and more concerned with invariance than with diversity.

Linguistic typology, in contrast, is essentially inductive, attempting to build a view of language as a phenomenon starting from the observed empirical diversity of human languages. Obviously, it is a much longer route to take. In the end, it does not necessarily lead to any single language model at all. The process of typological exploration of language involves constantly changing assumptions about the nature of human language so as to account for the observed facts. Its main features, as compared to the generative approach, are as follows:

- A typological study is a rather pluralistic paradigm, with many philosophies of language coexisting side by side; these philosophies come and go as new interpretations become available.
- It relatively rarely produces generalizations about language structure as a whole; in practice, it concentrates on individual parameters without (necessarily) trying to link them into one single system.
- Formal apparatus plays a secondary role; as a result, typological statements are sometimes less easily amenable to testing.
- It involves data from as many languages as possible, and in practice tends to rely on secondhand data, often coming from non-native speakers.
- It regards formulating taxonomies as one of its main objectives and is generally more 'shallow', i.e., closer to the empirical data.

The generative study of language and linguistic typology are thus two views of linguistic diversity and cross-linguistic variation: two different perspectives to adopt and two different paths to take. The two approaches are so different that it is hard to make a comparative evaluation of their feasibility that goes beyond the general comparison given above. The two paths part at the very start. In a sense, which one to follow is a matter of personal choice.

4. THE INCOMPARABILITY PARADOX

In his *Cours de linguistique générale*, Saussure stressed the relational nature of any sign in general and of the linguistic sign in particular (Saussure 1995[1916]): the linguistic function of the sign is determined by its position in the system. This makes cross-linguistic comparison a difficult issue.

Linguistic categories such as verbs of giving, the nominative case, or the imperative in one language cannot be mapped exactly onto their functional equivalents in other languages. They have different scopes of application, in both semantic and pragmatic terms. To use Saussure's opposition of form vs. substance, every language is unique in how it carves the substance (a speaker's idea of the real world) into a system of forms (lexical and grammatical categories). One way to overcome this problem is to treat lexical and grammatical categories observed in individual languages not as simplex phenomena but as clusters of elementary meanings and functions. The phenomenological status of elementary typological categories must be confirmed by examples from languages where they are naturally separated, that is, assigned to different lexemes or markers. The role of this principle is similar to the role of the 'minimal pair' principle in phonology. In this way, cross-linguistic

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differences in categorization become the object of, rather than an obstacle to, typological research; see Haspelmath (forthcoming) for an extensive methodological discussion of the problem.

From the point of view of a speaker, however, all uses of, say, a plural marker, covering typologically distinct elementary categories (regular plural, abundance plural, associative plural, approximative plural, etc.), may be perceived as one notional category. An analytical approach to linguistic categories of individual languages, naturally arising from cross-linguistic mapping, does not have to correspond to any psycholinguistic reality: it reflects a typological rather than language-internal perspective (see Haspelmath forthcoming). Only rarely is the simplex nature of a category questioned from within a language (see e.g. Gil 2004, Koptjevskaja-Tamm 2008, and Majid, Enfield, and van Staden 2006 on 'vagueness' vs. polysemy in the typology of body part categorization).

For Saussure, the emphasis on *valeur* probably had polemic rather than absolute value, opposing his new theory of language to the Neogrammarian paradigm. In his wake, however, this principle acquired a most radical reading. For many structuralists, the value of the sign had nothing to do with its reference in the 'world of reality' at all. Any reference to extralinguistic material, including properties of referents and situation types, was rejected. In his paper calling into question the Saussurean arbitrariness of the linguistic sign, Benveniste (1939) indicated that, according to Saussure himself, linguistic categories were non-material entities having nothing to do with the real world. This turns every language into a hermetically isolated object and, in fact, seems to close possibilities of comparison.

Although radical structuralism is far from being mainstream in today's linguistics, the balance between the referential (i.e. determined by its reference to the real world) and relational (i.e. determined by its relations to the other elements in the system) components of a linguistic sign shows strong variation from study to study. This is very clear in the recent expansion of cross-cultural studies of categorization from psycholinguistics into lexical typology (Koptjevskaja-Tamm, Vanhove, and Koch 2007, Koptjevskaja-Tamm 2008). Starting from reference-based studies of colour designations in the line of Berlin and Kay (1969), categorization studies have developed through, for example, cross-linguistic investigation of the domain of movement in water (Majsak and Rakhilina 2007) to the ongoing projects on temperature perception categorization (Koptjevskaja-Tamm and Rakhilina 2006) and categorization of pain (Britsyn, Rakhilina, Reznikova, and Javorskaja 2009, Bonch-Osmolovskaja, Rakhilina, and Reznikova forthcoming). The pain project is highly relational research, because for pain, language is the only means of expression and description (unless an informant agrees to provide linguistic comments on his actual pain perception, simultaneously registered by an electronic or another device). Reference-oriented studies where a visual representation of a universal conceptual space is divided into language-specific

conceptual domains have been all but abandoned (see Majid, Enfield, and van Staden 2006 on body parts). Still, in the wake of this reference-to-relation shift in categorization research, new approaches are possible, even in the domain of traditionally reference-oriented colour studies (cf. Rakhilina 2007). An exclusively reference-based approach to language, as represented in conventional colour studies, can teach us too little about the language outside the colour domain (see Koptjevskaja-Tamm 2008 for a more general discussion of 'extralinguistic bias' in categorization studies). Typological research is thus characterized by a certain balance between reference and relation, by taking a position on a scale whose ends are either incompatible with (relational) or useless for (referential) the typological approach to the study of language.

On this scale, modern grammatical typology is probably too reference-oriented. In a natural reaction to the extreme relationality of the structuralism that yielded very abstract schemes and, ultimately, led to cross-linguistic incomparability, typologists needed new benchmarks for their research. New approaches, such as grammaticalization studies propelled by Bybee (Bybee and Dahl 1989, Bybee, Perkins, and Pagliuca 1994, Bybee 1998a), emerged. For the theory of grammaticalization, knowing where a marker comes from means having most of the relevant information about the category. In other domains of functional typology also, researchers were more interested in the variation of the category's functions and scope than in the paradigm it forms a part of. Increasing interest in the sources and functions of individual elements led to decreasing interest in their place within the system of language; the system was, at the least, backgrounded.

It seems that the rejection of structuralism has gone too far along the way of rejecting structures. A grammatical category is not exclusively defined by its reference value; it also relies on its relations to other categories. While the core meaning of a category is best understood by examining its cross-linguistic functional variation, describing its full scope in an individual language may call for structural analysis. The opposite is also true: a more adequate account of the system of relations requires a sound knowledge of the cross-linguistic functional variation of each category involved. Let us consider an example.

Structural relations are inevitably relevant when describing the formal make-up of a language. For instance, only structural context provides proper terms to speak about the language-internal status of forms of address: is it a member of the case paradigm or an independent, stand-alone category? As opposed to the conventional structural analysis, looking at forms of address in a cross-linguistic perspective allows one to place some types of address between these two points (Daniel and Spencer 2009). Other functional clusters—such as spatial forms, possessive categories, and comitatives—may also manifest different degrees of what may be termed paradigmatization of a cross-linguistic category. Another example is the category of irrealis (see Plungian and Urmanchieva 2004 arguing against Bybee 1998b).

From this combined structural/functional point of view, the paradigm ceases to be a homogeneous row of forms and turns into a system of functional clusters differing in the degree of their formal co-integration. That several forms make a cluster is still best seen from a functional and thus cross-linguistic perspective. Obvious typological challenges would be to study which functional categories are either more or less cross-linguistically apt to be included in the same paradigm (or, more generally, co-involved in the same structure) and what consequences this may have for their functional scope.

I would suggest that typology stop looking for a specific well-balanced point on the scale between relational and referential extremes. Just as structuralism failed through discarding any reference to the real world, the typological mainstream suffers from underestimating structural phenomena (even though, at present, the toll might seem less heavy in the latter case). Linguistic typology should profit from both approaches, integrating structural analysis (the study of Saussure's form) with conventional methods of exploring cross-linguistic variation of categories defined in referential terms (Saussure's substance).

5. ORDERING THE DIVERSITY: TAXONOMIES, SCALES, PARAMETERS, AND IMPLICATIONS

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Once the problem of cross-linguistic comparability is resolved in a positive way, one should ask what exactly one wants to know about linguistic diversity. Many linguists and non-linguists alike are fascinated by the very fact of discovering structures drastically different from the way 'their own language does it'. A true study of diversity, however, suggests classifying languages according to the patterns they use and discovering regularities underlying cross-linguistic variation. These regularities deal with relative frequencies (more vs. less frequent patterns) and constraints (logically possible patterns that are not attested).

The first methodological problem that a typologist encounters is that the data do not easily lend themselves to classification. It is more than convenient if every language fits into one of a small number of classes, each with a clear value of the parameter used for classification. When structuralism was at its apex, language-internal parameters nicely broke down into a few values, most often two (cf. Jakobson 1971a[1936] and 1971f[1962] on case and Jakobson, Fant, and Halle 1952 on phonological contrasts). The number of distinct values of typological parameters was in the mean time growing, which ultimately led to the use of scales. With the scales, the variation of a parameter is more or less evenly spread along one dimension from one end of the scale to the other. Most often, scales emerge

where there is a set of strongly correlated but distinct parameters, such as the scale incorporating animacy, individuation, discourse prominence, and some other features of a noun phrase (see Corbett, this volume, on the Animacy Hierarchy).

But even when languages clearly tend to group around certain values of a parameter and seem to constitute classes, there are, more often than not, a number of intermediate cases which are hard to classify. In addition, within the classes, some cases seem to be closer to the prototype than others. To deal with such typologies, Cysouw (2006) suggests considering variation of a parameter not as a choice of one of several possible values but as a numerical function. This approach results in shifting from the original box-style discontinuous typology to placing individual languages in a unidimensional (for a combination of parameters, multidimensional) space. The areas of density in this space correspond to the conventional idea of discontinuous language types. Cysouw (2006) uses the approach for a typology of morphological language types.

Whether a classification will help to understand the variation depends on the right choice of the parameters of comparison. One of the most important typological parameters is case alignment, a parameter obtained by contrasting argument marking in transitive vs. intransitive predication: whether it is A or P that is marked in the same way as S (the only argument in intransitive construction). A and P may be seen as competing for the marking of S, and the typology of case alignment is essentially about which one wins (see Primus, this volume).

For ditransitive constructions, contrasting them with intransitive predicates will not work. Answering the question of who—the Giver, the Recipient, or the Theme (the object being transferred)—uses S-marking will simply not yield any interesting typology. The Giver always chooses the marking of the Agent. Whether it is identical or not to the marking of S depends on the case alignment, ergative vs. accusative.

The basis of variation in ditransitive constructions is discovered by contrasting ditransitive predicates with transitive ones: whether it is the Recipient or the Theme that takes the marking of P (Haspelmath 2009). This change in parameters of comparison when shifting from transitive to ditransitive alignment is quite easily explained. Out of the three roles, the Giver is by far most similar to A, so that the agentive marking is not subject to competition. It is only the patientive marking that is up for grabs, as both the Recipient and the Theme share some properties with the Patient. The typology of ditransitives is about whether the Theme or the Recipient wins the slot of P (see Dryer 1986). This example shows that cross-linguistic variation is similar to a landscape: how you choose your standpoint determines whether you can see it in its full beauty.

Even pure taxonomies put limits on diversity. Some patterns are less frequent than others, and some do not occur in known languages at all. Consider formal typologies exploring how a specific category is expressed in the languages of the

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world. Such typologies list all the observed means of expression and thus implicitly
(or explicitly) exclude other logically possible means. Grammatical number is most
often expressed by suffixes; less often by prefixes, independent word, and clitics;
very rarely by stem alternation, tone or reduplication (Dryer 2005a); in apparently
exceptional cases by truncation (as reported in Nordhoff 2006 for Sinhala, an Indo-
Aryan language of Sri Lanka); and never—to the best of our present typological
knowledge—by reversing the order of the phonemes in the root.

Absence and rarity of a pattern may be interpreted in different ways. A rare
pattern, as opposed to a more frequent one, may be thought to reflect some
properties of human cognition: the fact that plurals are normally derived from
singulars and not vice versa is probably not by chance. However, a pattern may in
principle be rare or even unknown simply because some other languages that
would fit in this type are extinct or undescribed; similarly, a pattern may be
frequent because it is easily spread by contact (see section 7). Finally, that number
is not expressed by 'mirroring' (i.e. the reversing of the order of phonemes) is not a
useful generalization. It follows from a wrong choice of values: no known human
language uses this operation as a morphological device. Logical possibilities and
linguistic possibilities are thus not necessarily the same.

A very influential type of generalization is the implicational universal, linking
several linguistic features that, in principle, would not need to be connected
(Mairal and Gil 2006, Cristofaro, this volume). A clear example is the presence
of a certain phoneme in any language where another phoneme is present: no
language has the labial nasal m without also having the dental nasal n (see
Universal no. 788 in Filimonova, Plank, and Mayer 1996–2001, which is also a
more general statement). This is a very clear case of a combination of two separate
but correlated features. Obviously, this implication can be re-formulated as a
taxonomy (as a matrix of features, such as $\{-m, -n\}$ vs. $\{+m, -n\}$ vs. $\{-m, +n\}$ vs. $\{+m, +n\}$), but to show the constraint, the implicational representation is
more convenient.

In addition to implicational universals of the absolute kind—those that hold in
all known languages—there are also statistical (non-absolute) implications: strong
correlations between values of different parameters that hold in most, though not
all, known languages. How strong a correlation should be to be included in the
inventory of implicational universals is probably not that important. In most
general terms, implicational universals describe co-variation between parameters,
which is a continuum from parameters that are not correlated at all (or not
correlated in a statistically significant way) through statistical universals (tenden-
cies) to absolute universals. For a full compendium of implicational universals, see
Filimonova, Plank, and Mayer (1996–2001). An important type of co-variation is
when several logically independent phenomena are controlled by the same hierar-
chy (see Corbett, this volume).

Apparently, the difference between distributional patterns discussed in the first part of this section and implicational universals is that the former show patterns of variation for one parameter while the latter observe co-variation of two or more distinct parameters. A co-variation of parameters might, however, indicate that what we have considered, from the viewpoint of general logic, to be independent parameters is one parameter from the viewpoint of the logic of human languages. In some types of correlations (especially for implications that work both ways), this allows one to reformulate the classification basis. Thus, a tendency, however loose, towards a complementary distribution between the presence of case marking on noun phrases and rigid word order is indicative of the fact that there is indeed one underlying parameter of cross-linguistic variation: a choice of formal means to mark grammatical relations.

Lahiri and Plank (2008) suggest an important extension of the practice of studying universals. Traditionally, universals deal with crosslinguistic co-variation of parameters and typically generalize over a set of languages. Lahiri and Plank note that when considering constraints on linguistic variation, dialectal, social, pragmatic, and other dimensions of variation in individual languages should also be taken into account.

In a recent paper on implicational universals, Moravcsik (2007) suggests a parallel between cross-linguistic implicational universals and distributional constraints in individual languages. Moravcsik indicates that while contextual constraints are syntagmatic, implicational universals may be viewed as cross-linguistic constraints based on paradigmatic contexts: systemic relations of the elements.

While many scholars note that absolute universals are very few if any (see e.g. Evans and Levinson forthcoming), implicational universals are not that contested. This is important because co-variation between parameters seems to be non-sensitive to the methodological problem of historical biases in the sample and to the more systemic problem of non-stationary distributions of feature values (Nichols 1992, Maslova 2000, Lahiri and Plank 2008; see 7 below for discussion). If truly independent parameters correlate in a number of areally and genetically unrelated languages, this might call for a language-internal (e.g. structural pressures) or extralinguistic (e.g. cognitive) explanation, even for those who argue that evidence from value distributions for individual parameters does not necessarily provide safe grounds for generalizations.

Implicational universals have been thought to produce holistic typologies, where various parameters imply each other, finally arriving at a limited set of consistent language types with no independent parameters left outside this classification (see Ramat 1986). So far, these expectations do not seem to have been met. Although some non-trivial implications are observed between logically independent parameters, no network of implications may be built for the entire structure of human language. In other words, no inductive typological counterpart to the deductively assumed universal grammar of the generativists has ever been created.

6. LANGUAGE CHANGE AND
THE EVOLUTION OF LANGUAGE

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There is a correlation between the data available to linguistic typology and its method. In an attempt to cover linguistic diversity in as extensive a way as possible, linguistic typology necessarily deals with some languages whose history is completely unknown, because such languages form the vast majority of the world's languages. This type of research is based on observed states of languages and is essentially synchronic. However, typology is also interested in language change.

The differences between linguistic typology and historical linguistics lie in the final objectives of their diachronic commitments. Comparative linguistics establishes genealogical relationships between languages and thus sheds light on the history of specific speech communities. This is a study of human history as reflected in linguistic evidence. Unsurprisingly, this branch of linguistic research readily cooperates with other disciplines and methods that focus on ethnic history, including, for example, archaeology and genetic anthropology. Sociolinguistics originated as a new approach to the study of the mechanisms of language change; the focus is on the way innovations spread within a language community, and how several communities may linguistically influence each other. Among other things, this focus provides additional information on the history of ethnic groups, complementing that coming from comparative research; but this is an application, not the true objective of the method.

Typology of language change, being a totally different enterprise, does not rely on the actual timeline. The scope of the typological interest is universal laws of how elements in a linguistic system, or the system itself, develop over time—what kind of shift may or may not happen, independently of the actual mechanisms of change (in the sense of innovation spread in the speech community) or the time it took place. This covers both systemic changes, such as changing from words to adpositions to affixes to fusion, and the dynamics of individual categories, such as changing from perfect to evidential. Two closely related issues are how markers of grammatical categories evolve (where they originate from) and the paths the grammatical markers follow in shifting from one category to another (see e.g. Heine and Kuteva 2002). This type of research is often represented in the form of semantic maps (see e.g. Haspelmath 2003, van der Auwera and Temürcü 2006, van der Auwera and Gast, this volume). One major empirical result of this research is the idea of the unidirectionality of change. Thus, independent words develop into clitics and then into affixes, while the opposite development is exceptional.

But even such diachronic typologies are essentially synchronic by virtue of their method, as they are primarily based on observing various stages of linguistic change in the present-day population of languages. Although this solution is

extremely elegant—doing history without looking into it—one of its drawbacks is that the approach assumes that the laws of language change did not change over time themselves. The typological mainstream seems to be open-minded about the evolution of human language as a communicative system, and to assume that human language has remained basically the same during the period it deals with. These assumptions need to be reassessed; keeping in mind that language was not always in existence, it is obvious that the deeper we go into the history of mankind, the more we should take into account fundamental differences between various properties of modern language and the language of our ancestors. Mainstream typology (as well as generative and even historical linguistics) is anti-evolutionary, and is not yet ready to meet the challenges of glottogenetic perspective. A possible solution would be to limit typological research to a period of time in which language evolution was negligible for its purposes—but then we do not exactly know what period this is, and it is possible that this period varies depending on the specific research domain (e.g. phonetics vs. morphology vs. syntax).

Some insight into how human languages changed over time may be provided by Maslova's (2000) statistical analysis of language change as shifts of language types in a language population. Maslova's paired sampling method combines comparative and typological data and is based on probabilistic modelling of typological shifts. This method brings a new perspective to the field, considering the typological evolution of the totality of human languages as a population, that is, the evolution of the world's linguistic diversity. Still, no model of the development of human language as a communicative system immediately follows from this approach. In typology, only general concepts start to develop (cf. typological contributions in Givón and Malle 2002, concepts presented in Heine and Kuteva 2007, and the idea of increasing linguistic complexity in Dahl 2004a).

Eventually, some help may come from comparing spoken languages to other communicative devices. In the last decade, research on sign languages is becoming a more frequent contribution to typological volumes and conferences (Zeshan 2002, 2004, Cormier 2005, Perniss, Pfau, and Steinbach 2007). Animal communication is still significantly out of the range of typological study (however, see Wierzbicka 2004). This is not surprising, because the former are typologically quite close to spoken languages (although the difference in modality is important—see Evans and Levinson (forthcoming) for a discussion), while the latter is too different from them. Again, we run into the same methodological limitation that we strive to overcome.

Ancient languages are another probable source of data. Obviously, on the scale of the linguistic history of mankind, the distance of 2,000–4,000 years is not very significant. It is also possible that the system of human language developed in jumps rather than gradually, and recorded ancient languages are much closer to modern ones than to languages of the time when writing systems did not exist; indeed, conventional grammatical analysis shows no fundamental differences

between modern and ancient languages. What one could try is more subtle methods, such as statistical corpus-based research. The existing corpora of ancient languages may, however, prove too small for that purpose, and they represent the language within too specific a usage/genre domain. Although this path is worth trying, one cannot be a priori very optimistic about it.

To sum up, an impediment to a way of generalizing on language evolution through the study of cross-linguistic variation is that we have objects either too similar to (sign languages, ancient languages) or too different from (animal communication) the conventional object of linguistic typology. What we miss is some kind of mid-range evidence, and it is unclear whether any kind of evidence would ever qualify. As a result, today we lack generally accepted typological tools to reconstruct linguistic structures that are significantly different from the languages we speak now. Many typologists who suggest their views on the origins of language have to abandon conventional typological methods. In a sense, this objective may amount to a different linguistic sub-discipline, as it means both developing new methods of analysis and extending the notion of linguistic diversity deep in time to significantly different communicative systems.

7. REPRESENTATIVE SAMPLING AND TYPOLOGICAL EXPLANATION: INTRAGENETIC AND AREAL TYPOLOGY

Describing linguistic diversity cannot be achieved by considering just a few unrelated languages. The history of cross-linguistic comparison shows a continuous enlarging of samples researchers worked with, from a couple of languages in ancient times to half-a-dozen languages for the Grammar of Port Royal to larger but still convenient sets of languages in early typological studies of the mid-20th century (for one example, see Forchheimer 1953 on systems of personal pronouns).

No typological study could cover all the languages of the world simply because not all of them have been described. Even if limited to the documented languages only, this study would be impracticable (not to mention the issue of the varying quality of the available descriptions). Modern samples, such as those used in the *WALS* project (Haspelmath, Dryer, Gil, and Comrie 2005), aim at modelling linguistic diversity on a representative basis, with several hundred languages distributed between genetic units and areas (see Rijkhoff, Bakker, Hengeveld, and Kahrel 1993, and Bakker, this volume). Even with representative sampling, one cannot exclude the possibility that a certain rare but existing linguistic type is not represented. However, such samples do help to form an idea of the variation

of the parameter and the relative frequency of its different values, as discussed in section 5.

The aspiration to cover linguistic diversity fully, and an interest in rare types, is not motivated exclusively by curiosity. The observed distribution of feature values in balanced language samples has been considered to indicate which languages are possible or impossible, and probable or improbable. It presented a challenge to look for extralinguistic motivations underlying the frequency of different types, and thereby to provide insights into human cognition and communicative ability. Most typologists have been assuming that the observed distribution of parameter values is stable and thus a characteristic of human language not only now, but at all times, past and future. Working with large and representative samples was anticipated as a major methodological achievement in linguistic typology.

However, objections have appeared from time to time. In various discussions, Plank (public lecture, 2000) suggested that the current language population may be biased due to historical and cultural factors leading to language death; languages that are no longer present could have been examples of now nonexistent language types, thus weakening the status of what we think are impossible languages to only improbable ones (cf. Evans and Levinson forthcoming). In Lahiri and Plank (2008), this argument is extended by suggesting that our notion of improbability may also be historically skewed. Much earlier, in her book on language diversity, Nichols (1992) argued that the observed feature distribution might be due to historical factors, and investigated which linguistic features are more stable and which are less so. A similar conclusion—this time provided with a specific historical scenario—is arrived at in Bickel (2006b), a study with a totally different object/background. A *WALS*-based statistical analysis of relative geographical density of rare typological features in Eurasia shows that rare features are more often reported in the mountains than in the plains. Bickel interprets this result as an indication of active feature sharing in the plains, caused by population shifts. This is a statistical argument for considering feature value distribution as significantly skewed by historical dynamics rather than as evidence for the nature of human language.

Maslova (2000) suggested that the distribution of feature values at any moment in time—including the currently observed distribution—is not (necessarily) stationary but develops over time (towards the stationary one) and thus cannot a priori be taken as direct evidence for more or less 'natural' frequencies of types. Consider a simple typology that divides the whole language population into two groups, *a*-languages and *b*-languages. As the languages change, an *a*-language has a chance to become a *b*-language and vice versa. Maslova considers the assumption that the probability of every shift is the same at any moment in the history of language. What follows is that stationary distribution is achieved only when the number of languages that shift from *a* to *b* becomes equal to the number of languages that shift from *b* to *a*, which is determined by the ratio between the two probabilities.

Motivations sought by conventional sampling typology are based on current feature distributions which are not necessarily stationary. As a matter of fact, these motivations should in general be sought not in frequency patterns, but in the ratio of the shift probabilities. Under some conditions, but not always, this ratio may be approximated (in particular, by showing that the current distribution is sufficiently close to the stationary one—which, according to Maslova, fortunately is the case with some of the received parameters of cross-linguistic variation). Ultimately, it is not the distribution of feature values in the population but its dynamics that may be motivated—if anything is motivated at all.

The problem with this approach is the question of whether these probabilities are indeed constant and determined by cognitive factors. (Note, however, that the assumption of traditional typology that the observed distributions are stationary by definition is already much stronger.) In addition, Maslova explains that her model works on condition that, population-wide, language contacts do not have significant impact on parameter shifts. Last but not least, we have to assume that cognitive motivation itself does not change over time (see section 6). Maslova argues, however, that this dynamic model of feature distribution is the only way of looking for motivations. It works as a last resort: it may fail or work, while the traditional approach fails in any case (however, see the discussion of implicational universals in section 5).

To sum up, Nichols, and Plank and Lahiri qualitatively introduce the historical factor which *might* have biased the observed feature distributions; Bickel quantitatively shows that this *is indeed the case* with some currently improbable language patterns; and Maslova suggests that no evidence from the current feature distribution may *in principle* be used in a way other than calculating the ratio of type shift probabilities. What is common to all these authors is that they call into question the straightforwardness of conclusions like *this feature value is more widespread and thus more closely reflects universal patterns of human cognition.* Some other ways of looking for cognitive motivations through exploring variation are discussed below.

Linguistic typology started as a study of genetically unrelated languages. However, as large-sample typology prospered, the drawbacks of the method became obvious. There is emerging interest in intragenetic typology (see e.g. Kibrik 1998), an approach that solves methodological problems such as representativeness of the sample or cross-linguistic comparability as well as some practical problems of working with large samples, including misinterpretation of unfamiliar phenomena and relying on second-hand data. Indeed, an expert in a language family may efficiently cover the diversity of the whole language group relying either on his own data or on structurally comparable data from the languages closely related to the one he or she works on.

Despite the common object of comparison, intragenetic typology is different from historical linguistics. While historical linguists look for features that are common and, even more specifically, commonly inherited, intragenetic typology

focuses on differences between genetically related languages. In contrast to large-sample typology, when considering minor variations of structures against a largely common background, some details of linguistic mechanisms become more salient and may lend themselves to a more convincing analysis or modelling and to functional or cognitive explanation. Independently, microvariation has become an object of interest for various formal models aiming at modelling dialectal variation (e.g. Hualde 1991). In a certain way, intragenetic typology is similar to considering the distribution of, and usage conditions for, competing constructions in one language or in its varieties (see Lahiri and Plank 2008 on the relevance of language-internal analysis for exploring language universals).

Another relatively new trend is areal typology. To some extent, it overlaps with the intragenetic approach, as areally close languages often include clusters of genetically related languages. Although the structural background may vary, similar patterns observed in languages forming linguistic areas suggest not simply contact-driven proliferation but also some shared functional (cognitive, communicative) motivations, while variation in the language-specific realization of these patterns may stem from the underlying structural differences. For examples of areal typology, see Dahl (1995), Koptjevskaja-Tamm and Wälchli (2001), and more generally Dahl (2001), and Koptjevskaja-Tamm, this volume). Similarly to intragenetic typology, this approach is especially adapted to describe micro-variation in linguistic parameters.

In a sense, areal and intragenetic typology are alternatives to sampling typology. But considering intra-family or areal variation in typological parameters *per se* cannot give us an idea about their world-scale variability; intragenetic and areal typology thus considerably modify the original idea behind the typological method. Linguistic diversity cannot be covered by considering languages from a sample whose linguistic diversity is limited. Are these new methods really a viable alternative to the more traditional approach?

An answer to this question may be as follows. Areal and intragenetic typology aim at establishing robust models of linguistic types that underlie microvariation. These models will be supposedly more robust than in sample-based typology, because they are based on an analysis of microdiversity within an area (or family) rather than on a random choice from among its members. Ideally, they may serve as an intermediate stage for a new world-scale typology, an alternative to the sampling method. It would involve comparing the established areal/family patterns between themselves, and would be in a way similar to the multi-level reconstruction of families and macro-families in historical linguistics (cf. Song 2007: 16-17).

To put it simply, it may make more sense to start with a comparison of structurally close languages than to jump to comparing French to Chinese or Navajo to Amele, especially when structures are compared to structures rather than to functionally similar elements across languages, for example, cross-linguistic

comparison of case paradigms on the whole rather than of the functions of datives (cf. section 4). The obvious problem of this methodological perspective is that not all areas and families are described equally well.

8. SOURCES OF TYPOLOGICAL DATA

What are the methods of data collection in typology? Opponents of 'armchair typology'—typology based purely on secondary data—suggest that typological competence not supported by personal fieldwork may not be satisfactory (Dixon 1997: 136; but see Song 2007). Doubtless, fieldwork provides an important basis for typological intuition. Far from supporting the paradoxical claim by Lévi-Strauss, a controversial fieldworker himself, that fieldwork hinders rather than fosters anthropological investigation, one is compelled to believe that keen typological intuition is not necessarily based on handling primary data. No cross-linguistic research can possibly be based on primary data from a representative sample of languages (with the probable exception of intragenetic typology of small language groups). This is thus a necessary limitation of the method: typology frequently has to deal with languages indirectly. Although not always precise in details, typology is capable of providing a general sketch of variation.

As Song (2007) points out, some of the blame for typologists' mistakes and misinterpretations has to be laid on grammars. The latter vary not only in quality and reliability, but also in grain. Even a reliable and detailed grammar may not provide necessary information simply because an issue of interest might not have been recognized as such at the time when the grammar was written. An example of this is the volumes of the *Handbook of American Indian Languages* (Boas 1911–22). While these are very thorough descriptions, they prove to be of little help in answering many questions typologists may start to ask years later.

The best data for non-first-hand analysis are indisputably texts. These are closest to actual language use and as theory-free a type of data as possible (more so for morphology and syntax than for phonetics and phonology). Much effort has been put recently into improving practices of language documentation, including online representation (graphic, acoustic, and later also visual). Some technical and conceptual issues of these practices are discussed in Gippert, Himmelmann, and Mosel (2006); see also Epps, this volume. An important contribution to building standards of typological corpora is *The Leipzig Glossing Rules* (Comrie, Haspelmath, and Bickel 2008), providing practical steps towards the unification of morphological glossing (cf. earlier suggestions in Lehmann 1983). These standards may be (and are) applied to representing textual data from languages of differing structures

which then become much easier to use for typologists (and for other non-specialists in the language, including experts in sister languages) and ultimately contribute to more robust typological generalizations. Needless to say, electronic corpora of glossed texts are clearly a more convenient tool than printed corpora.

Rich electronic online corpora—such as the British National Corpus (www.natcorp.ox.ac.uk), the Russian National Corpus (www.ruscorpora.ru), the Czech National Corpus (ucnk.ff.cuni.cz), and the Eastern Armenian National Corpus (www.eanc.net)—are extensive sources of linguistic information (cf. *STUF* 2007, Plungian 2009). A longer list of the existing linguistic corpora is available at <www.linguistlist.org>. Some practical examples of the use of parallel corpora in typology are collected in *STUF* (2007), including Cysouw and Wälchli (2007), and Dahl (2007) inter alia. Representative corpora have obvious drawbacks for typological research. Most corpora have tools for creating grammatical queries, but large corpora are never glossed, and most do not have any syntactic mark-up. In other words, to work with a corpus the user must have a robust knowledge of the language, which means a shift from the methodological position of conventional typologists to that of language experts.

Glossed corpora, in which every token is assigned a lexical and morphological analysis and broken into a chain of morphemes, are of relatively small size because they involve a mass of non-automatic analysis. The smaller the corpus is, the higher the chances are that less frequent or peripheral phenomenon will not occur in the data, while direct interview with a speaker provides an immediate and easy way to hit upon it. As a result, elicitation guides and questionnaires remain a powerful tool in typological research.

In an attempt to provide a more robust empirical basis, typology has recently started to implement statistical tools. As compared to, for example, sociolinguistics, where statistics have been an important component of the study from the very beginning, statistics in typology have emerged late—notably, in very different domains. Some of the applications and models have already been mentioned: Maslova's (2000) dynamics of language population and reconstructed typological shifts, Bickel's (2006b) comparative density of rare feature values, or methods applied in language sampling to avoid eventual areal and genetic biases (see Bakker, this volume). Statistics may also be applied in research which focuses on a specific category (see Wälchli 2009, who uses statistical methods for part-of-speech classification).

Although these statistical approaches have very different scopes, all of them seem to have a common underlying motivation: the objectivization of typological analyses. This is very clearly articulated in the corpus-based statistical procedure of parts-of-speech identification proposed by Wälchli as a substitute for traditional approaches, or in the typology suggested by Cysouw as a substitute for 'box-style' classifications (see section 5). This tendency may be considered as part of a more general trend to re-evaluate the methodological foundations of linguistic typology,

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along with the discussion on what a feature distribution in a representative sample may teach us (see section 7, Maslova 2000, Bickel 2006b, and Lahiri and Plank 2008).

9. CONCLUSION

An amazing fact about human language is how diverse individual languages may be while serving basically the same purpose of human communication. And even more than that: apart from reserves that belong to the domain of sociolinguistics (language shift, code-switching, and other cases of language choice), they all serve this purpose equally well. That suggests that all languages spoken in the world have a common nature. Revealing this common nature might be considered as the highest objective of any study of language.

Linguistic typology is an attempt to achieve this objective through a systematic analysis of language diversity. Not only linguistic diversity itself but also the limits and constraints on cross-linguistic variation are of primary interest to typologists. By looking at what is attested in the world's languages, typology sets out to see what alternatives have (so far) never been attested. There might be a link from what is not attested to some underlying properties of human communication and cognition. This inductive approach is opposite to the deductive approach used in generative grammar, where the assumed underlying properties of human language (innate universal grammar) are projected onto the observed diversity of linguistic facts (however, see Polinsky, this volume, on bringing linguistic typology and formal grammar closer together).

Linguistic typology assumes that structures of different languages may be compared. Although this assumption seems to follow from the fact that the cognitive and social functions covered by various languages are roughly the same, answering specific questions about what is to be compared might be problematic. Typological comparison is based on the fact that linguistic signs (words, constructions, etc.) from different languages can be used in similar or identical situations. However, the position of a category in the system of a language, being at least partly independent of the real world, is an important factor which is—or should be— always kept in mind.

If we wish to come up with generalizations on linguistic possibilities and impossibilities, our data should represent the linguistic diversity of the world as fully as possible. This calls for special methods of language sampling. But even with impeccable sampling methods, some problems persist. Most importantly, we have

access almost exclusively to the actual state of the language population that exists today, and have no generally accepted methods of reconstructing the typological past. To date, this problem remains unsolved.

The more diverse the linguistic structures to be compared, the more problematic the very enterprise of cross-linguistic comparison becomes. Together with the problems of language sampling, this gives rise to typological approaches that are alternative to large-sample typology: typologizing phenomena against a largely common background, that is, in areally and/or genetically close languages.

Linguistic typology often becomes a target of strong criticism because comparing data from multiple languages necessarily relies on data not personally acquired by the author of the research. That calls for responsibility of the researcher in the choice of sources, on the one hand, and relates typology to the methodology and practice of language documentation, such as the creation of corpora of texts, on the other.

Linguistic typology is a relatively young science, (re-)emerging as a separate branch of linguistics as late as the second half of the 20 century. This chapter suggests that its fundamental methods and principles are as yet unsettled. However, for the proponents of linguistic typology, who all share an interest in linguistic diversity, this is not a sign of the infertility of the approach but evidence for the potential of its further development. Unsettled problems are challenges rather than failures, which allow us to look forward to new generations of scholars.

FURTHER READING

BYBEE, J. L. (1998). 'A Functionalist Approach to Grammar and Its Evolution', *Evolution of Communication* 2: 249–78.

CYSOUW, M., and WÄLCHLI, B. (eds.) (2007). *Parallel Texts: Using Translational Equivalents in Linguistic Typology*. Special issue of *Sprachtypologie und Universalforschungen* (60.2).

DAHL, Ö. (2001). 'Principles of Areal Typology', in M. Haspelmath, E. König, W. Oesterreicher, and W. Raible (eds.), *Language Typology and Language Universals: An International Handbook*. Berlin: de Gruyter, 1456–70.

HASPELMATH, M. (unpublished). 'Comparative Concepts and Descriptive Categories in Cross-linguistic Studies'. MS.

HEINE, B., and KUTEVA, T. (2007). *The Genesis of Grammar: A Reconstruction*.Oxford: Oxford University Press.

KIBRIK, A. E. (1998). 'Does Intragenetic Typology Make Sense?', in W. Boeder, C. Schroeder and K.-H. Wagner (eds.), *Sprache im Raum und Zeit: In Memoriam Johannes Bechert*, vol. 2: *Beiträge zur empirischen Sprachwissenschaft*. Tübingen: Narr, 61–8.

KOPTJEVSKAJA-TAMM, M. (2008). 'Approaching Lexical Typology', in M. Vanhove (ed.), *From Polysemy to Semantic Change: A Typology of Lexical Semantic Associations*. Amsterdam: Benjamins, 3–52.

MAIRAL, R., and GIL, J. (eds.) (2006). *Linguistic Universals.* Cambridge: Cambridge University Press.

MASLOVA, E. (2000). 'A Dynamic Approach to the Verification of Distributional Universals', *Linguistic Typology* 4: 307–33.

NEWMEYER, F. J. (2005). *Possible and Probable Languages: A Generative Perspective on Linguistic Typology.* Oxford: Oxford University Press.