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Comparative syntax

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1 Goals of comparative syntax

Not only elementary sound-meaning pairs (individual morphs) differ across languages but also the ways in which they are combined into complex units ('words', 'phrases', and 'clauses'). The comparative study of the similarities and differences between the combinatorial systems of languages is called *comparative syntax* or *syntactic typology*. Some initial examples of such differences between languages are given in (1)–(5), where the (a) and (b) examples show different types of languages.

(1) a. English
Isabel shut the door. (SVO)

b. Japanese
Taro ga to o shime-ta. (SOV)
Taro NOM door ACC shut-PST
'Taro shut the door.'

(2) a. Huallaga Quechua (Weber 1989: 15) (accusative alignment)
(i) *Hwan puñu-yka-n.*
Juan(NOM) sleep-IMPFV-3.SBJ
'Juan is sleeping.'
(ii) *Hwan Tumas-ta maqa-n.*
Juan(NOM) Tomás-ACC hit-3.SBJ
'Juan hits Tomás.'

b. Lezgian (Haspelmath 1993) (ergative alignment)
(i) *Ali ata-na.*
Ali(ABS) come-PST
'Ali came.'
(ii) *Ali-di i gaf-ar luhu-zwa.*
Ali-ERG this word-PL(ABS) say-IMPFV
'Ali is saying these words.'

(3) a. Italian (no independent subject pronouns)
Quando viene Diana, Ø mi chiama.
when comes Diana Ø me calls
'When Diana comes, she calls me.'
b. German (independent subject pronouns)
Wenn Diana kommt, ruft sie mich.
when Diana comes calls she me
'When Diana comes, she calls me.'

(4) a. Yoruba (special reflexive pronoun)
Màríà rí araa rè nínú àwòrọ́n.
Mary see body 3.POSS inside picture
'Mary saw herself in the picture.'
b. Loniu (Hamel 1994: 54) (no special reflexive pronoun)
iy itɛkɛni iy ilɛ lɔ tas
3SG 3SG.throw 3SG 3SG.go in sea
'He threw him/himself into the sea.'

(5) a. Turkish (question-word in situ)
Zehra kim-i gör-müş?
Zehra who-ACC see-PST
'Who did Zehra see?'
b. Arabic (question-word fronting)
Maa ta-quulu?
what 2SG-say
'What are you saying?'

A further kind of difference that is often noted by linguists is the difference between morphological and phrasal expression: for example, the difference between case suffixes such as *-di* in Lezgian and postpositions such as *ga* and *o* in Japanese. However, it is probably impossible to make this distinction in a coherent way across languages (Haspelmath 2011a) and often the difference between morphological and phrasal expression is primarily an orthographic one (see, for instance, Spencer and Otoguro (2005) on the difficulty of deciding whether Japanese *ga* and *o* are suffixes or separate words). Thus, morphology is not a separate domain from syntax, and it would perhaps be better to call the entire combinatorial system of languages 'morphosyntax'. For simplicity, I just talk about syntax here, but it should be understood that morphology is included in it.

The syntactic patterns of different languages are often compared with the goal of reconstructing a common ancestral system or changes in a system over time, but this is possible only when we know that the languages are cognate – that is, genealogically related, going back to a common ancestor. This kind of syntactic comparison is more commonly called historical syntax (e.g., Harris and Campbell 1995), diachronic syntax (e.g., Roberts 2007), or historical-comparative syntax. The topic of the present chapter, by contrast, is the comparison of non-cognate languages, where similarities are not interpreted as inherited from a common ancestor.

The comparative study of syntactic patterns can have various goals:

(6) a. Studying languages contrastively, with the goal of facilitating foreign language learning (e.g., König and Gast 2007 on English–German contrasts).

b. Detecting areal patterns, with the goal of discovering ancient language contact influences (e.g., Muysken 2008).
c. Finding invariant patterns among the variation (i.e., syntactic universals, or universal syntactic principles).
d. Explaining why languages are the way they are (i.e., explaining the universals).
e. Explaining how language acquisition is possible despite the poverty of the stimulus.
f. Using universal principles (cf. 6c) to provide more elegant accounts of the systems of particular languages.
g. Using universal principles (cf. 6c) to explain regularities of syntactic change and of language acquisition.

Of these goals, (6a–c) are independent of each other, but (6d–g) all depend on (6c), the goal of finding invariant patterns (or universals), so this is the most prominent aspect of comparative syntax. For this reason, comparative syntax is also sometimes called *syntactic universals research* (cf. Croft 1990; 2003; Alexiadou 2002).[1]

2 Two research orientations in comparative syntax

There are two main research orientations that deal with comparative syntax, what I will call the *nonaprioristic approach* and the *restrictivist approach*. Although both compare the syntactic systems of diverse non-cognate languages, they differ substantially in their assumptions, goals, and research methods. Why they differ in this way is often not fully clear even to practitioners of both approaches, and it is one of the goals of this chapter to explicate the differences. More commonly, the nonaprioristic approach is called 'functional-typological' (or 'Greenbergian'), and the restrictivist approach is called 'generative' or 'formal' (or 'Chomskyan'), but these labels do not help us much to understand the differences, so I will not use them much.[2]

2.1 The nonaprioristic approach to comparative syntax

In the nonaprioristic approach, researchers compare languages with the goal of finding general properties shared by all or most languages, but they make no a priori assumptions about the kinds of categories and constructions that languages might have or about the kinds of explanations that might account for the generalizations.

The nonaprioristic approach is thus fully compatible with the anthropological tradition in linguistics that puts special emphasis on the ways in which languages differ. In particular, in this tradition linguists who analyze a language are urged to do justice to the language by describing it 'in its own terms' (Boas 1911), rather than by means of categories adopted from some other language (i.e., a priori categories). While it is certainly possible to describe all languages with the categories of medieval Latin school grammar (plus some ad hoc extensions), such descriptions are usually seen as lacking insight and as distorting the true picture of the languages. Of course, to the extent that languages truly are similar, these similarities can and should be reflected in the description (e.g., by choosing similar terms for similar categories), but this is a practical matter that does not constrain the description.

Comparison of languages is, then, based on the data provided by descriptivists, but not on the descriptive categories chosen by the language experts. Rather, a special set of universally applicable comparative concepts is developed that makes it possible to compare

languages rigorously even though they have different categories and constructions (Haspelmath 2010a). The comparativist (typologist) need not have studied any language directly herself, as she bases her comparison entirely on the work of others. Thus, language description and language comparison are separate enterprises, often carried out by different groups of people (fieldworkers vs. armchair typologists), and by means of different sets of analytical tools (descriptive categories vs. comparative concepts).

When it comes to the interpretation of the results, nonaprioristic comparativists are open to all kinds of explanations, without an a priori preference for one of them: historical explanations in terms of language contact and geography, inheritance from a common ancestor in the very distant past, cultural influences on grammar, general processing constraints, considerations of efficiency of communication, general trends of diachronic change, cognitive constraints on acquisition, and others (see §5).

2.2 The restrictivist approach to comparative syntax

In the restrictivist approach, linguists also study the structures of non-cognate languages and compare them, but almost everything else is different from the nonaprioristic approach. In particular, they attempt to build a restrictive representational (or 'formal') framework by which all and only the possible languages can be described. Such a representational framework is often called a '(formal) theory',[3] and it is usually equated with what the child knows about language structure before being exposed to any language (the innate 'universal grammar' or 'the initial state of the language faculty'). The restrictivist approach has no interest in anthropological or cultural questions, but tends to situate itself within cognitive science or even biology (e.g., Anderson and Lightfoot 2004).

In the restrictivist approach, comparison of languages is expected to yield invariants which are due to universal grammar. As Baker and McCloskey (2007: 286–287) put it:

> [absolute universals] … must either be built into the design of the theory, or the theory must be developed in such a way that it guarantees their truth.

Comparative syntax is often portrayed as the best way to find out about the initial state of the language faculty. Even though the existence of rich innate structures is usually justified by the argument from the poverty of the stimulus, it is comparative syntax that is said to provide insight into what those innate structures might be (rather than, say, experiments with artificial languages to test the limits of what can be acquired).[4]

Universal grammar is generally thought to consist of universal substantive elements (features and categories) as well as universal formal patterns (architectures), so linguists who adopt this approach normally assume that a newly described language makes use of the same features and categories (and also operations such as movement) as have been used for other languages. They thus approach languages aprioristically, from a categorial universalist perspective (Haspelmath 2010a). This is clearly formulated by the principle in (7).

(7) Uniformity Principle
In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances. (Chomsky 2001: 2)

Explanation of observed invariants is likewise aprioristic: Only explanation by innate structures is of interest to this approach. However, as clearly stated by Hoekstra and Kooij

(1988), explanation of universals (i.e., 6d) is not a primary goal of the Chomskyan approach. The primary explanandum in this research orientation is the possibility of language acquisition despite the poverty of the stimulus (6e), and the fact that languages exhibit certain regularities as a result of the innate structures is of only secondary interest.[5]

A very important aspect of the restrictivist approach is that language-particular analysis is said to be insightful when it can be shown to make use of features and operations that are assumed to be universal on the basis of other languages (6f). Language description and language comparison are thus not two separate enterprises:

> The in-depth, abstract analysis of a certain phenomenon … and the study of what variation there is concerning that phenomenon … are two sides of the same inquiry.
> (Cinque 2007: 93)

Thus, restrictivist linguists are engaged in language-particular analysis and cross-linguistic comparison simultaneously. There is just one set of concepts (universal features and categories) that is used both for description (analysis) and comparison. This also means that it is usually the same scholars who engage in analysis and comparison. Unlike in the nonaprioristic approach, restrictivists cannot easily mine the work of others for their comparative research, so the comparison rarely involves a large number of diverse languages (cf. Roberts (1997), where the discussion is mostly limited to Germanic and Romance languages, plus a bit of Celtic, Slavic, Japanese, and Chinese).

3 Identifying the comparanda

Before comparing languages, we need to identify elements that can be compared across languages. Clearly, what can be readily compared is meanings (or at least extralinguistic counterparts of linguistic forms) on the one hand, and sounds/gestures (acoustic/visual and articulatory patterns) on the other hand. How to compare more abstract patterns across languages is much less obvious. Consider again (1b), compared with its English counterpart *Taro shut the door.*

(1) b. Japanese
Taro ga to o shime-ta.
Taro NOM door ACC shut-PST
'Taro shut the door.'

On the basis of the meanings of the parts of these two sentences, we can equate *Taro ga* with *Taro* ('Taro'), *to o* with *the door* ('door') and *shimeta* with *shut* ('shut'), and we can thus say that Japanese has 'Taro-door-shut' order, while English has 'Taro-shut-door' order in these particular sentences. But saying that Japanese generally has SOV order while English has SVO order is far more problematic, because it seems to presuppose that we can identify subjects, objects, and verbs (i.e. abstract syntactic categories) in both languages. But on what basis?

In the restrictivist approach, comparative syntacticians do not worry much about this issue and generally take comparability for granted, in the spirit of the Uniformity Principle in (7). Thus, it is generally assumed that Japanese has a subject in the same sense as English – that is, a noun phrase that occurs outside and higher than the verb phrase – as well as an object in the same sense as English – that is, a noun phrase that occurs inside the verb phrase as a sister of the verb.

In the nonaprioristic approach, comparability is a serious methodological concern and is typically discussed in textbooks (Croft 2003: 13–19; Dixon 2010–12: Vol. 1 Ch. 6), handbook articles (Stassen 2011), and in specialized articles (e.g., Lehmann 2005; Rijkhoff 2009; Haspelmath 2010a). The basic principle is, as stated above, that languages can be readily compared only with respect to meanings and sounds/gestures, but not with respect to their categories, because only meanings and sounds, but not categories, are universal. Thus, instead of saying that English has SVO order, while Japanese has SOV order, we must say that English has agent–action–patient order, while Japanese has agent–patient–action order. This is not the normal notation; for reasons of tradition, labels such as 'SVO' are widely used (e.g., by Dryer 2011a), but it has always been clear that this is what is meant ('in identifying such phenomena in languages of different structure, one is basically employing semantic criteria': Greenberg 1963: §1).

But in addition to semantic comparative concepts, comparative concepts can also have both formal and semantic components, in particular formal components referring to basic properties such as overt coding vs. zero, identity of coding vs. difference, or precede vs. follow. Thus, the comparative concepts *ergative* and *accusative* are defined with respect to identity of coding: A pattern is ergative if it treats the patient argument of a physical-effect verb (such as 'break', 'kill') in the same way as the single argument of a change-of-state verb such as 'die' or 'fall', and if both are different from the agent of a physical-effect verb (cf. Haspelmath 2011b).

What is crucial in the nonaprioristic approach is that the comparative concepts are universally applicable in the sense that the same criteria can be applied in all languages. This allows for rigorous objective comparison, with no arbitrary selection of criteria. The choice of comparative concepts is often based on the researchers' intuitions (Lazard 2005), but this is a methodological choice, not an assumption about the nature of language. Since the choice of semantic and formal comparative concepts is up to the individual linguist, one might ask in what sense this approach is nonaprioristic. The answer is that it is the claims about the nature of particular languages that make no a priori assumptions. Comparison is necessarily aprioristic, but it is separate from description/analysis.

In the restrictivist approach, by contrast, it is not necessary to apply the same criteria to identify categories across languages. The reason is that the comparison is done by means of categories which are assumed to be universal, despite the fact that they are manifested in diverse ways. For example, in English one normally identifies a VP by the rules of VP Preposing and VP Ellipsis. But since VP is assumed to be universal, the fact that such rules do not exist in other languages is not a problem. While some researchers may have doubts whether Japanese and Hungarian have a VP (cf. Sells 1991; É. Kiss 2002: 30–43), most generative linguists assume that these languages are like English in having a VP, on the basis of the Uniformity Principle in (7), plus perhaps some other kind of evidence for a combination of verb and object.[6] For the VSO language Welsh, for example, linguists often argue that the verb–object combination in non-finite structures shows the underlying order (e.g., Roberts 2005: 8). So even here, where one might think that evidence against a VP consisting of verb and object is compelling, one can claim that there is a VP if one takes movement operations into account. At least underlyingly, Welsh can be said to have a VP, but the verb is moved to pre-subject position to yield the observable VSO order (see also Baker 2010).

One price that the restrictivists thus have to pay is that they must make extensive a priori assumptions about the nature of universal grammar, and there is a serious danger that these assumptions will be coloured by the properties of familiar languages that happened to

serve as the starting point of the investigation.[7] An even more serious problem is that there is quite a bit of subjectiveness in the choice of evidence that is taken as decisive for particular analyses (cf. Croft 2009). The nonaprioristic approach, by contrast, gets by with minimal assumptions about language, and the subjectiveness is limited to the methodological level (the selection of the comparative concepts).

4 Some syntactic universals

In (8), I list a few proposed (morpho)syntactic universals for illustration. These have different properties and different roles in the two research orientations, as will be discussed below.

(8) a. All languages have roots denoting things, roots denoting actions, and roots denoting properties (such as dimension, age, or value).
b. All languages have morphemes denoting negation.
c. No language has a rule that involves counting elements or features.
d. If a language has dominant VSO order, then it has dominant adposition-noun order (Greenberg 1963, Universal 3).
e. If a language has noun-possessor order, it tends to have preposition-NP order, and if it has possessor-noun order, it tends to have NP-postposition order (Dryer 2005; 2011b).
f. If a language has OV order, then it tends to have no question-word fronting (Bach's generalization, Bach 1971; Roberts 2007: §1.5.1).[8]
g. In almost all cases, the ergative case is overtly marked while the absolutive case is not overtly marked (Dixon 1979).[9]
h. If a language with basic SV order has non-overt independent subject pronouns, it allows postverbal position of the overt subject (pro-drop parameter, Rizzi 1986, Holmberg 2010a).[10]
i. Inflectional morphology occurs outside derivational morphology (Greenberg 1963, Universal 28).
j. If a language allows question-word fronting from an adverbial clause, it also allows fronting from a complement clause.
k. If a marker in a language expresses locative and dative roles, then it also expresses the allative role (Blansitt 1988).
l. If the reflexive pronoun is distinct for the anaphoric pronoun for disjoint reference, it is longer than the anaphoric pronoun (often derived from it by an additional marker), or equally long (e.g., English *him-self vs. him-Ø*) (Haspelmath 2008c).[11]
m. Lexicalist Hypothesis: The syntax neither manipulates nor has access to the internal structure of words (Anderson 1992: 84).
n. Principle A of the Binding Theory: An anaphor must be bound in its governing category (Chomsky 1981).

On the one hand, syntactic universals can be divided into absolute universals and universal tendencies or preferences (also called 'statistical universals'). For example, while no exceptions to the general statements in (8a–c) are known, the statements in (8d–i) are generally true only as tendencies, and some of these statements are formulated in weaker terms ('almost all', 'tends to'). It may seem odd to call them 'universals' if they are not true of all languages, but the claim is that they represent general properties of human language, even if they are not manifested everywhere. What matters is that they represent skewed

distributions – that is, deviations from the null hypothesis of random distribution. Dryer (1997), working in the nonaprioristic approach, argues that statistical universals are more valuable for comparative syntax than absolute universals, because if we do not limit ourselves to absolute universals we can characterize the nature of language much more precisely. There are simply far more generalizations that do not hold everywhere than absolute universals of the type (8a–c). Moreover, statistical tendencies can be tested by statistical methods on the basis of a world-wide sample, whereas absolute universals cannot be tested in this way (we can never examine all languages; see Bickel forthcoming).

Comparative syntacticians have again and again experienced the discovery of exceptions to seemingly exceptionless universals. For example, Universal 8d (if VSO, then prepositions) was thought to be exceptionless by Greenberg, but Dryer (2011a; 2011b) has documented six exceptions to this trend. This does not mean that there is no strong trend, because seventy-six VSO languages, the overwhelming majority, do have prepositions. But the trend should probably not make reference to VSO languages, because it is equally strong in SVO languages (303 SVO languages with prepositions, 33 SVO languages with postpositions). The fact that Universal 8d was exceptionless for Greenberg had to do with the relatively small size of his sample. And we need to keep in mind that all our samples are relatively small, when compared with the number of all languages ever spoken (according to Bickel's estimate (forthcoming), at least half a million languages have existed so far on earth). This means that only strong statistical trends can be demonstrated, whereas absolute universals can only be hypothesized. Thus, it is not clear that universals which are so far exceptionless (8a–c, perhaps also 8j–l) should have a special status.

In the restrictivist approach, only exceptionless (i.e., absolute) universals are relevant (Baker and McCloskey 2007: 287), because universal grammar is seen as an absolute limit on what kinds of languages can be acquired. Restrictivists thus have to dismiss universal trends as irrelevant to their enterprise, or alternatively explain away the exceptions by invoking specific interfering factors. This rigid limitation to absolute universals can hardly be justified by the appeal to innateness per se, but since the work in the restrictivist approach is not primarily comparative, but comparative and descriptive at the same time (§2.2), only the absolute interpretation of universal grammar has played a role. In most work on concrete grammatical problems, linguists have appealed to universal grammar to provide an elegant account of particular languages (6f): Language-particular analyses are said to be insightful insofar as they make ample use of universal grammar, keeping language-particular stipulation to a minimum. In this research context, universal preferences are useless – if a generalization amounts to no more than a tendency, speakers still have to learn that their language follows the tendency. But the goal of restrictivist work has been to minimize what is learned. In the nonaprioristic approach, by contrast, description and comparison are two distinct enterprises: Descriptivists are happy to stipulate large numbers of facts that are general across languages (because minimizing the task of acquisition is not seen as important), and comparativists try to find cross-linguistic generalizations with various degrees of strength.

Another subdivision of universals is into unrestricted universals (8a–c, g, i, m–n) and implicational universals (8d–h, j–l). Implicational universals are far more numerous than unrestricted universals, and they are more interesting because they tell us something about relationships between properties. Thus, in practice most cross-linguistic research on universals has centred on implicational universals.

The nonaprioristic approach is interested only in universals that are formulated in terms of universally applicable comparative concepts and can thus be tested. Universals such as (8m) (the Lexicalist Hypothesis) and (8n) (Principle A of the Binding Theory) are not of

interest, because the terms that they make use of ('syntax', 'word', 'anaphor', 'governing category') are not defined in such a way that they can be identified objectively across languages. In the restrictivist approach, they have been very widely discussed because they seem to allow elegant accounts for particular phenomena in particular (prominent) languages. But how such universal claims can be tested is quite unclear. In practice, most linguists have applied these principles across languages on the basis of uniformity assumptions – for example, they simply assumed that elements that are written between spaces are words (for 8m), and that expressions in other languages which are similar to English *himself* are anaphors (and are thus relevant for Principle A, 8n).

5 Explanation of universals in the nonaprioristic approach

As mentioned earlier, nonapriorists appeal to a variety of explanatory factors to account for universals of morphosyntax, without excluding or preferring any factor a priori.

Cognitive constraints on learnability are not prominent in cross-linguistic work of this sort, but of course not any kind of language is learnable, so it is clear that the cognitive makeup of humans and its genetic basis play a role in understanding universals. For example, that grammatical patterns apparently never involve counting elements or features (e.g., 'delete the fourth syllable', 'place the clitic after the third last constituent'; Universal 8c) may well be due to the 'cognitive code' (i.e., constraints on internalizing mental grammars). However, just as most of the explanation of biological phenotypes appeals not to the genetic code (i.e., constraints on forming genotypes) but to evolution and adaptation, most of the explanation of linguistic phenotypes (i.e., languages) comes from diachrony and efficiency of processing and communication (see Haspelmath (2004) for this analogy between biology and linguistics). The remainder of this section gives just a few examples of plausible explanations (see also Moravcsik (2011) for a recent survey, as well as Hawkins (1988)).

5.1. Diachrony

Some important regularities seem to be due to macro-trends of diachronic change, in particular grammaticalization:

(9) Grammaticalization: Roots with concrete meanings develop into supporting elements with more abstract, grammatical meanings (e.g. Lehmann 1995; Narrog and Heine 2011)

This macro-trend is not very well understood (cf. Haspelmath (1999b); Roberts and Roussou (2003) for very divergent accounts), but it explains why preposition-NP order is generally found in languages with noun-possessor order and with verb-object order (universals 8d–e): Adpositions generally arise by grammaticalization from relational nouns with a possessor, or from verbs combined with an object (e.g. Bybee 1988; Aristar 1991). Even though we may not understand well why adpositions hardly ever develop in other ways, we can take this macro-trend as an explanation of the word-order correlation. The same explanation holds for the correlation between verb-object order and auxiliary-verb order (Dryer 1992: 100–101), but it does not extend readily to the link between verb-object and noun-possessor order (see §5.2 below).

Another grammatical regularity with a plausible diachronic explanation is the fact that grammatical meanings are usually expressed by affixes or function words and only rarely by stem changes (e.g., plurals such as *book-s*, which are cross-linguistically far more frequent

than plurals such as *foot/feet*). Bybee and Newman (1995) have found that stem changes are just as easy to learn as affixes, so they propose that stem changes are rarely found in languages not because of learnability constraints but because new affixes arise all the time via grammaticalization. There is thus a rich, inexhaustible source of new affixes, whereas productive stem changes do not arise and spread as easily in diachronic change.

Quite a few generalizations of coexpression ('semantic-map universals', cf. Haspelmath 2003), such as universal (8k) above, are due to general tendencies of semantic change, such as the tendency for abstract meanings to develop from concrete meanings (e.g., Heine *et al.* 1991). Thus, the fact that allative markers which are coexpressed with patient markers are also coexpressed with dative markers has to do with the general tendency that allative markers tend to be extended to mark recipients and recipient markers tend to be extended to mark patients. Allative markers cannot extend to mark patients directly (see Cristofaro (2010) for the general argument that semantic-map universals are due to diachronic tendencies).

5.2. Ease of processing

In language production, it is clear that speakers prefer word orders that make it easier for hearers to recognize constituents quickly. Thus, relative clause extraposition is often used in English when the relative clause is long and when the modified NP is not the last constituent in the clause:

(10) *She put* [*the book*]$_{NP}$ *on the shelf* [*that she borrowed from the university library lastweek*]$_{NP}$.

If the relative clause is not extraposed here, the hearer has to wait for a long time before all constituents are recognized – that is, the constituent recognition domain is very long. According to Hawkins (1990; 2004), the same preference for short constituent recognition domains also accounts for quite a few word order regularities across languages. In particular, heads tend to be adjacent because this leads to shorter constituent recognition domains. Compare the four hypothetical language types in (11a–d).

(11) a. VO & N-Possessor: *found* [*house* [*of* our new teacher]]
b. VO & Possessor-N: *found* [[*of our new teacher*] *house*]
c. OV & N-Possessor: [*house* [*of our new teacher*]] *found*
d. OV & Possessor-N: [[of our new *teacher*] *house*] *found*

In these examples, the words in the constituent recognition domain are printed in italics. We see that in (11a) and (11d), where the heads are adjacent, the constituent recognition domain is just three words long, whereas it is six words long in (11b–c). Thus, the languages of type (11a and d) are easier to parse, and Hawkins proposes that this explains why they are found much more widely across the world's languages than languages with nonharmonic orders. According to Hawkins (1999; 2004: Ch. 7), similar considerations of processing efficiency explain universals such as (8j) about extractions (filler-gap dependencies).

5.3. Communicative efficiency

The simplest way in which syntactic patterns can be user-friendly is by being only as long as needed. Efficient communication systems are expected to have more robust signals for

information that cannot be predicted, whereas information that is predictable is coded by short, inexpensive signals. The syntactic patterns of languages are full of examples of this general regularity. For example, in many languages highly predictable (topical) referents can simply be omitted, and in most other languages they are expressed by anaphoric pronouns, which are much shorter than full noun phrases. Another example is ellipsis, which is often restricted to information that is highly predictable from the context.

But the link between predictability and shortness of coding can be more subtle and less obvious. In particular, coding asymmetries are often correlated with predictability differences due to frequency (cf. Haspelmath 2008a). Thus, the fact that the ergative case is usually overtly marked (universal 8g), in contrast to the absolutive case, and likewise the accusative case is generally overtly marked, in contrast to the nominative, is due to their frequency: Absolutive and nominative are necessarily more frequent, as they occur in both intransitive and transitive clauses (see Greenberg (1966: 37–38) for the original observation). Similarly, anaphoric pronouns with disjoint reference show a strong tendency to be shorter than anaphoric pronouns with coreference (reflexive pronouns, 'anaphors') (universal 8l). There are quite a few further form asymmetries that correlate with frequency asymmetries (this is called 'typological markedness' by Croft (2003: Ch. 4)), such as those in (12).

(12) singular/plural, present/future, 3rd person/2nd person, active/passive, affirmative/negative, declarative/interrogative, masculine/feminine, attributive adjective/predicative adjective (including copula), positive/comparative, predicative verb/nominalized verb, action word/agent noun

Thus, communicative efficiency explains a host of regularities that linguists often discuss in terms of semantic or purely structural generalizations. But once the factor of language use and the possibility of diachronic adaptation (Haspelmath 1999a; Givón 2010) is taken into account, many universal patterns cease to be mysterious.

Communicative efficiency is often discussed under the labels of 'economy' and 'iconicity', and the resulting patterns have occasionally also been modeled within Optimality Theory (see, most notably, Aissen (2003)). Optimality Theory makes use of functional notions but constructs a restrictive framework by turning these notions into constraints, which are technical elements of the framework. It is thus an interesting intermediate approach between the nonaprioristic approach and the restrictivist approach, to which we now turn.

6 Explanation of universals in the restrictivist approach

Even though the explanation of observed cross-linguistic generalizations has not been the primary research goal for generative linguistics as a whole, over the last few decades many comparative linguists have adopted the restrictivist perspective and have attempted to derive cross-linguistic invariants from a restricted formal representational framework. As noted above, the formal framework is not just the metalanguage that is used by linguists to analyze particular languages, but is assumed to be identical to the tools that language learners have available for formulating an internal grammar. The basic idea is thus that, out of the large set of logically possible languages, only a small subset is actually attested because only these language types are acquirable. At the same time, the formal framework is said to allow insightful analysis of particular languages, where 'insightful' often means that it is shown that the language falls within a restricted range of permitted variation. Linguists often say that the observed variation 'falls out' from the proposed formal framework.

Let us consider two examples of this sort of explanation. First, consider Anderson's (1992) explanation of Universal (8i) (derivation occurs outside derivation). Anderson assumes that grammatical generalizations are distributed over two separate components, the Syntax and the Lexicon. Derivational morphology is part of the Lexicon and inflectional morphology is part of the Syntax. While the Lexicon feeds the Syntax, the Syntax cannot be the input to the Lexicon. These restrictive assumptions about innate structures (expressed by the representational framework) explain the observation that languages generally do not show derivational affixes outside inflectional affixes.

Second, Kayne (1994: 54) explains something similar to Universal (8f) (the lack of question-word fronting in OV languages) on the basis of his influential antisymmetry proposal, which (in effect) says that heads always precede complements in underlying structure – that is, that verb-object and initial-complementizer orders are always basic. Other orders, such as object-verb order and final-complementizer order, must be derived from these orders by movement, but movement has to be to the left (on the basis of another widely made uniformity assumption). Thus, a subordinate clause with final complementizer such as (13) from Japanese must be derived from a basic order with initial complementizer (much like English) by a movement rule that moves the clause to the pre-complementizer position.

(13) [*Yooko-wa* *Masa-o* *aisite* *iru*]$_S$ [[*to*]$_{COMP}$ [*t*]$_S$]
Yoko-TOP Masa-ACC loving is COMP
'that Yoko loves Masa'

But the pre-complementizer position ('specifier of complementizer') is usually assumed to be the position to which question-words are fronted. If this position is filled by the clause itself, not only in subordinate clauses with an overt complementizer but in all clauses, then question-word fronting is blocked because no landing site is available for a moving question-word. Thus, the restrictive framework, which only allows head-initial order, manages to explain a gap in attested logically possible language types.[12]

But restrictivists have been even more ambitious. Since the early 1980s, they have often argued that the formal framework should be much more general than is suggested by the language-particular rules and constructions that fill the pages of descriptive grammars. Instead, observable grammatical patterns should be derived from the interaction of a restricted number of highly general principles and a restricted number of parametric choices. This approach thus came to be known as 'Principles and Parameters' (e.g., Chomsky and Lasnik 1993; Fukui 1995). The idea was that a single abstract parameter could be responsible for a whole range of observable properties, and the hope was that the problem of language acquisition would be solved by restricting the child's task to that of setting such parameters on the basis of limited evidence. So suppose that there is an innate principle such as (14a) with an associated parameter such as (14b):

(14) a. phrases consist of lexical heads and phrasal complements
b. the head may (a) precede or (b) follow the complement

This parameter ('the head-directionality parameter', Chomsky and Lasnik 1993: 518; Roberts 2007: 92–108) captures the association between verb-object and adposition-complement order (cf. universal 8d), as well as some of the other Greenbergian word-order correlations. At the same time, it simplifies the child's task of language acquisition: Observing a single head-complement order will allow the child to set this parameter – that is, the child can

correctly produce novel combinations that she has never heard before. Reducing observed variation between languages to highly general parameters would thus 'show that the apparent richness and diversity of linguistic phenomena is illusory and epiphenomenal, the result of interaction of fixed principles under slightly varying conditions' (Chomsky 1995: 8). We could say that the children's acquisition task is manageable because they 'are not acquiring dozens or hundreds of rules; they are just setting a few mental switches' (Pinker 1994: 112). The most accessible and engaging account of this vision of a small set of abstract parameters ('macroparameters') that predict a clustering of observed properties is provided by Baker (2001), and the best recent introduction for readers who are also interested in some technical details is Roberts (2007). The latter is not by accident a work on diachronic syntax: The parametric approach has been particularly influential in diachronic work on typological change, where linguists have sometimes argued that certain changes happened simultaneously with other changes because both are manifestations of a single macroparametric change (cf. 6g).

However, even though the parametric approach was very prominent in generative syntax throughout the 1980s and 1990s, it has not been an unequivocal success. The head-directionality parameter has not been defended widely because it is very clear that it is only a statistical tendency. Much more research has gone into the null-subject parameter, which asserts that if null-subjects are possible, then free subject inversion and subject extraction to a higher clause are also possible (universal 8h, Rizzi 1986; Roberts 2007: 24–40). The reason for the extraordinary attention to this particular phenomenon was that this was easy to investigate for Western linguists: the claim is that French and English have one setting of the parameter, while Spanish and Italian have the other setting. However, even though some linguists still regard it as a valid parameter (Holmberg 2010a), most seem to have concluded that this parameter has failed (Haider 1994; Newmeyer 1998: 357–359; Croft 2003: 80–83). As in quite a few other cases, a clustering of properties that seemed to hold in a few languages has dissolved once more and more languages were taken into account.

More generally, since the late 1990s, parameters have become less and less prominent in generative syntax. Some linguists have emphasized the importance of microparameters over macroparameters (Black and Motapanyane 1996; Kayne 2000), but this is not much more than different terminology for abandoning the search for clustering of properties in the world's languages. A number of influential linguists have been more explicit: Pica (2001: v–vi) found that 'twenty years of intensive descriptive and thoretical research has shown … that such meta-parameters do not exist', Newmeyer (2004; 2005) has argued against the parametric approach, and Boeckx (2014) actually declares the parametric approach incompatible with the biolinguistic program (see also Haspelmath (2008b), where it is argued that the search for macro-types has been unsuccessful not only within generative linguistics but also among nonapriorists, who had succumbed to the same temptation earlier). Some generative syntacticians are still pursuing the parametric program (Cinque 2007; Baker 2010; Biberauer *et al.* 2010), but even Baker (2008) admits that the expectations have not been fulfilled, and the approach has clearly lost some of its earlier attractiveness. And, perhaps tellingly, Holmberg's (2010b) recent defense of the parametric program limits itself to the discussion of two language types within the Scandinavian languages, which can hardly provide evidence for universally relevant innate parameters.

The main difficulty faced by the parametric approach is that it is committed to explaining language invariants and the acquisition of particular systems at the same time. This means that exceptions cannot be tolerated. It is not possible, for example, to retreat to the

position that the head-directionality parameter explains the general tendency for head-complement orders to correlate across categories, because it is claimed that macroparameters help the child to acquire the language. But the child does not know whether her language is well-behaved or belongs to the minority of nonconforming languages, and there is no evidence that children produce incorrect typologically normal orders (Newmeyer 2005: 100). In the case of head directionality, the acquisitional advantage does not seem to be particularly important, because there is ample evidence for the correct order. But where children have little evidence for the right patterns, linguists too tend to have a hard time finding the cross-linguistic evidence. So it is difficult to produce a convincing example of a link between restrictions on cross-linguistic patterns and the poverty of the stimulus in acquisition.

7 Concluding remarks

After some promising starts in the early part of the twentieth century (Schmidt 1926), comparative syntax began to flourish with the Greenbergian program in the 1960s and 1970s (Greenberg 1963; 1978; Comrie 1981; Croft 1990), and in the generative tradition, it began to flourish with the principles-and-parameters program (Chomsky 1981; Baker 1988; Haegeman 1997a; Cinque 1999).

However, over the last decade, as more and more research has shown the enormous difficulties faced by both research programs, it seems that a more sober attitude has come to prevail. The easy generalizations that were formulated on the basis of a few languages often look less neat when further evidence is adduced. But, on the whole, where generalizations have been based on a world-wide sample from the start (as in the work of Schmidt (1926) and Greenberg (1963)), and where they have been formulated as statistical claims, they have stood the test of time better than where they have been based on just two or a few (related or contiguous) languages and have been claimed to be absolute universals. So, as statistical generalizations, we still have quite a few very interesting invariants (e.g., those in 8a–g, i–k above) that seem to reflect something deeper about human language.

Still, the general trend in recent years has been towards the particularist pole of the universalist–particularist spectrum (see Bossong (1992) for an interesting historical account of the pendulum-like movement between both poles in the history of Western linguistics). The documentation of endangered languages has acquired enormous prestige, and fieldworkers tend to emphasize the individual character of 'their' language over the general properties of human cognition and culture. Historical explanations in terms of language contact have become prominent as a result of research on linguistic areas (Muysken 2008) and as a result of the increasing availability of maps that show the geographical distribution of linguistic features (Haspelmath *et al.* 2005; Michaelis *et al.* 2013). Bickel (2007: 239) notes that typology has recently been moving away from the question of what is a possible language to questions about the historical and geographical factors that influence cross-linguistic distributions. And Evans and Levinson (2009) have gone so far as to say that language universals are a 'myth'.

The challenge is thus to find a way of accounting for very widespread properties of languages such as the universals in (8a–g, i–k), while at the same time allowing for unforeseen differences between languages in the kinds of features and categories that they exhibit, as well as the kinds of meanings that they express (Wierzbicka 1998; Levinson and Meira 2003; Davis *et al.* 2014). It seems to me that the answer has to lie in a separation of language-particular analysis and cross-linguistic generalization (Haspelmath 2010a; 2010b). If speakers are relatively free to generalize in different directions and to internalize

grammars with the most diverse categories and features, we can account for the diversity that we observe throughout the world. And if we compare languages on the basis of universally applicable comparative concepts which are not identical to the categories used by individual languages, we can formulate testable statistical universals and propose general explanations for them that are at least in part rooted in cognition (but also in communication). Our explanations may not be as uniform and as all-encompassing as has often been thought, but a universalist perspective on human languages is not incompatible with a particularist attention to the details of individual languages.

Notes

1 The term *syntactic typology* is perhaps used more widely than *comparative syntax* (cf. Lehmann 1978; Croft 1995), but 'typology' is a curious nineteenth-century term (going back to a time when comparative syntacticians wanted to find idealized macro-types of languages) that has no analogy in other fields. Comparative syntax is completely parallel to comparative psychology or comparative zoology, so we need no idiosyncratic term for it.
2 Note that there are some linguists who see themselves in the generative tradition, but do not adopt a restrictivist approach (in particular in sign-based construction grammar, Boas and Sag (2012); but these do not work much on comparative syntax).
3 See Haspelmath (2010b) for problems with the term 'theory', which is used in confusingly different ways. I generally try to avoid the term. (Likewise, I try to avoid the term 'formal', which has no clear definition in current linguistics.)
4 Haegeman (1997b:1) writes: 'The comparative approach in the generative tradition addresses the following questions: (i) what is knowledge of language? (ii) how is this knowledge acquired? … In order to answer these questions we have to identify which linguistic properties can vary across languages and which are constant.'
5 Not accidentally, the issue of acquisition despite the poverty of the stimulus was called 'Plato's Problem' in Chomsky (1986), a label that indicates the depth of the problem. 'Greenberg's problem', as (6d) could be called, has not been remotely as prominent in the philosophical literature of the Chomskyan tradition.
6 Over the last two decades, the question whether a language has a VP has not often been even asked in mainstream generative syntax, probably because it has been widely assumed that all phrasal patterns are binary, and ternary branching (NP – V – NP) is impossible (this is another application of the Uniformity Principle).
7 Three examples: (i) since European languages are written with spaces between words, linguists often assume that all languages distinguish between words and phrases (Haspelmath 2011a); (ii) linguists often assume that all languages have nouns, verbs, and adjectives (Haspelmath 2012); (iii) since English, German, and French have obligatory subject pronouns, linguists often assume that languages where subject pronouns may be absent actually have null subject pronouns (cf. Kibrik 2011: 76–77; Haspelmath 2013).
8 Cf. Turkish in (5a).
9 Cf. Lezgian in (2b).
10 Cf. Italian in (3a).
11 Cf. also Yoruba in ex. (4a).
12 Actually, Kayne explains not Universal (8f), but another, related universal, namely the association between question-word fronting and complementizer order. It is actually quite doubtful whether such an association exists. In Dryer's (2012) sample, 61 out of 169 complementizer-initial languages, but only 4 out of 27 complementizer-final languages have question-word fronting. So question-word fronting seems to be more frequent in complementizer-initial languages, but there are not very many complementizer-final languages to begin with.

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