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1. INTRODUCTION

The term 'grammaticalization' was first used by A. Meillet in an 'article from 1912 entitled 'L'évolution des formes grammaticales,' in the sense of 'attribution du caractère grammatical à un mot jadis autonome' (p. 131). I will use the concept both on the synchronic and the diachronic axes. Under the diachronic aspect, grammaticalization is a process which turns lexemes into grammatical formatives and makes grammatical formatives still more gram—matical (cf. Kuryłowicz 1965:52). From the synchronic point of view, grammaticalization provides a principle according to which subcategories of a given grammatical category may be ordered. We will make this notion more precise later on and first turn to some illustrative examples.

2. MARKING OF CASE RELATIONS ON NOMINAL CONSTITUENTS

Consider the marking of case relations on nominal constituents. Cross-linguistically, there is an array of structural devices available in this domain which may be displayed on the following scale:

fusional case affix		(on N)	-5
∧			
agglutinative case affix		(on NP or N)	-4
∧			
primary adposition		(+ NP ± case affix)	-3
∧			
secondary adposition		(+ NP + adposition or case affix)	-2
∧			
relational noun	+ adposition or case affix	(+ NP + adposition or case affix)	-1

Fl. *Grammaticalization of nominal case role marking*

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This scale is greatly simplified, but will suffice for our purpose. The criteria by which it is established and by which we allocate the examples adduced below to its positions will be discussed in the next section. The five focal positions recognized on the scale correspond to a subdivision made by received terminology and have no special theoretical status, since the scale is a continuum. With this in mind, the five positions may be clarified as follows:

(1) A relational noun is one which requires a possessive attribute. Most relevant here are nouns designating parts of spaces as e.g. *top* or *back*, which enter into constructions such as *on top of* NP, *at the back of* NP etc. Cf. also Italian *canto* 'edge' and *accanto a* 'beside,' *fondo* 'background' and *in fondo a* 'in the back of'.

(2) A secondary adposition (pre- or postposition) is one which expresses not a grammatical, but an objective meaning and which may be morphologically complex and/or transparent, such as *below, during*.

(3) A primary adposition is one which expresses an elementary objective or a grammatical meaning and is morphologically simple, such as *of, in*.

(4) An agglutinative case affix is one which expresses only a case meaning, is morphologically optional (i.e. if sub~tracted from its carrier, it leaves a grammatical form) and attached to the noun with a clear morphological boundary, such as *-s* in *Peter's* or Turk. *-de* in *ev-de* (house-LOC) 'in the house'.

(5) A fusional case affix is one which simultaneously expresses other morphological categories, is morphologically obligatory and partly fused with the stem, e.g. Latin *aedibus*, abl.pl.f. of *aedes* 'house'.

The Latin system of nominal case role marking may now be characterized by allocating the structural devices belonging to this domain to the positions of F1. Latin has a few secondary adpositions such as those in E1a, which are still clearly related to relational nouns of non-finite verb forms and therefore would have to be arranged between positions 1 and 2 of the scale. There is another small subclass of secondary prepositions such as those in E1b, which are intermediate between secondary and primary prepositions, i.e. between positions 2 and 3 of F1. There is a wealth of primary prepositions exemplified in E1c, which occupy position 3 of F1. Finally, a paradigm of five cases exists, some of which appear in E1d; these are clearly at stage 5 of the scale.

El a. adversus 'against', gratiā 'for the sake of', causā 'because of'
    b. trans 'across', intra 'within'
    c. ad 'at, towards', de 'down from', cum 'with'
    d. (exercitu)-s '(army)-NOM.SG', (exercitu)-m '(army)-ACC.SG'

If we compare the French system of nominal case relation marking with the Latin one, we find that it has a host of prepositional locutions involving relational nouns (position 1 of F1), such as those in E2a. It also has an extensive and heterogeneous class of secondary and primary prepositions of varying degrees of grammaticalization. E2b shows some clearly secondary prepositions (position 2) which govern their complement by the intervention of cer—tain other prepositions which we will presently come to. In E2c I have assembled a couple of prepositions which are transitional between secondary and primary status (positions 2 and 3). E2d contains the truly primary prepositions (position 3), and finally there are a few prepositions such as those in E2e, which exhibit certain properties of case prefixes (position 4) and enter into the prepositional locutions of E2a and b.

E2a.   à cause (de) 'because (of)', en face (de) 'in front (of)', autour (de) 'around'
b.   jusqu'à 'until, up (to)', près (de) 'near'
c.   pendant 'during', vers 'against'
d.   par 'by', dans 'in'
e.   à 'to', de 'of'

3. GRAMMATICALIZATION
3.1. We have seen that the devices of case relation marking do not fall into neatly distinct classes, but differ only gradually so that they may be ordered on a scale. Such a scale is a gram—maticalization scale. It is set up according to a set of criteria which concern the autonomy of the language sign. The more freedom with which a sign is used, the more autonomous it is. The grammaticalization of a sign detracts from its autonomy. Consequently, if we want to measure the degree to which a sign is grammaticalized, we will determine its degree of autonomy. This has three principal aspects. First, in order to be autonomous, a sign must have a certain weight, a property which renders it distinct from the members of its class and endows it with prominence in the syntagm. Second, autonomy decreases to the extent that a sign systematically contracts certain relations with other signs; the factor inherent in such relations which detracts from autonomy will be called cohesion. Third, a sign is the more autonomous the more variability it enjoys; this means a momentary mobility or shiftability with respect to other signs.

These rather abstract notions can be made more concrete by re~lating them to the two fundamental aspects of any operation on linguistic signs, viz. their selection and their combination (cf. Jakobson 1956:243), which I will call the paradigmatic and syntag-

matic aspects, respectively. The weight of a sign, viewed paradig-
matically, is its integrity, its substantial size, both on the
semantic and the phonological sides. Viewed syntagmatically, it
is its scope, that is, the extent of the construction which it
enters or helps to form. The cohesion of a sign in a paradigm will
be called its paradigmaticity, that is, the degree to which it
enters a paradigm, is integrated into it and dependent on it. The
cohesion of a sign with other signs in a syntagm will be called
its bondedness; this is the degree to which it depends on, or
attaches to, such other signs. The paradigmatic variability of a
sign is the possibility of using other signs in its stead or of
omitting it altogether. The syntagmatic variability of a sign is
the possibility of shifting it around in its construction.

These six factors are displayed in F2.

	paradigmatic	syntagmatic
weight	integrity	scope
cohesion	paradigmaticity	bondedness
variability	paradigmatic variability	syntagmatic variability

F2. *Parameters of grammaticalization*

Each of these six parameters provides us with a criterion accord-
ing to which two signs may be ordered on a scale. To the degree
that the six parameters correlate, they may be assumed to jointly
identify the degree to which a sign is grammaticalized. Applying
them to the sets of devices of case relation marking exemplified
in E1 and E2, we find that these must be ordered, by increasing
grammaticalization, exactly as they have been ordered in F1. In
this sense, the set of parameters given in F2 provides operational
criteria for the establishment and justification of special gram-
maticalization scales.

3.2. I said at the outset that the concept of grammaticalization
can be used both on the synchronic and the diachronic axes. F2
merely gives us the parameters along which grammatical devices
vary on a synchronic scale. We still want to know how grammati-
calization proceeds as a diachronic process. This requires a
dynamicization_of our parameters, their reformulation in terms of
processes.

The process detracting from the integrity of a sign is called
attrition, the gradual loss of semantic and phonological substance.
Semantic attrition has also been known by the names of desemantici-
zation and demotivation, while phonological attrition has been

called erosion. Attrition also involves morphological degenera-
tion, that is, the loss of the ability to inflect.

In the grammaticalization of Latin *ad* to Romance *a*, erosion has
deleted the final consonant, while desemanticization is responsible
for the loss of the concrete local feature present in *ad* and absent
from *a*.An even clearer example of attrition might be Greek thélō
hína 'I want that', which was grammaticalized to the subjunctive
marker *tha*.

The process promoting the paradigmaticity of a sign may be called
paradigmaticization. This integrates syntactic constructions as
periphrastic forms into morphological paradigms and leads to in—
creasingly small, homogeneous paradigms.

Thus, when Latin *ad* and *de* were grammaticalized to French *à* and
de, they started to form the paradigm of oblique cases, which is
much more tightly integrated than the class of Latin primary prep—
ositions. Again outside the domain of case relations we may adduce
the example of the auxiliary verbs. The primary auxiliary verbs
of French, *avoir* 'have' and *être* 'be', are completely integrated
into the conjugational paradigm, which their Latin predecessors
habere and *esse/stare* were not. The secondary auxiliaries such as
aller 'go' and *venir* 'come' are slightly less paradigmaticized, but
still much more so than the Latin *ambulare* and *venire*, from which
they derive.

The loss of paradigmatic variability may be called obligatorifi-
cation. Within the paradigm, choice among its members becomes
constrained by grammatical rules. The whole category represented
by the paradigm becomes increasingly obligatory in the sentences of
the language. This expansion of its distribution is the conse-
quence of a loosening of the selection restrictions of the gram-
maticalized sign.

We may again refer to the same examples. In many contexts in
which Latin *de* occurs, it is substitutable by *ab* 'from' or *ex* 'out
of', or even omissible; cf. *cadere* (*de/a/e*) *manibus* 'to drop from
the hands'. French *de*, on the other hand, is typically neither
substitutable nor omissible in contexts such as *le début de l'année*
'the beginning of the year'. Again, the selection restrictions of
Latin *venire* allowed it to take a certain class of separative com-
plements, possibly constructed with the preposition *de*, but cer-
tainly excluded gerunds (corresponding to French infinitives) from
this class. French *venir*, however, forms constructions such as
venir de faire quelque chose 'to have just done something', where
it is hardly substitutable by any other verb.

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The shrinking of the scope of a sign will be called condensation. The more a sign is grammaticalized, the less complex become the constituents with which it can combine. It also loses its predi— cativity, its ability to predicate.

Latin *de* takes a cased NP as its complement; French *de* takes a caseless complement. Latin *habere*, even in its 'auxiliary' use as in *habeo epistulam scriptam* 'I have the letter as a written one', takes a full NP, here with a predicative adjunct, as its complement. However, when French *avoir* functions as an auxiliary, as in *j'ai écrit la lettre* 'I have written the letter', its scope is condensed to comprise only the perfect participle with which it combines (cf. Ramat 1982 for details). Finally, Ancient Greek *thélō hína* governs a whole subordinate clause, while Modern Greek *tha* combines just with a finite verb.

The increase in bondedness is traditionally known as coalescence. This leads from juxtaposition via cliticization, agglutination and fusion to symbolic alternation. Autosemantic signs become synsemantic signs; syntactic boundaries become morphological boundaries and finally disappear.

This can again be seen with French *de* and *a*, which fuse with the definite article *le* to render *du* and *au*, whereas nothing comparable happened to Latin *de* and *ad*. Latin *habere* became suffixal when it was used to form the Romance future exemplified by *cantare habet* 'has to sing' > French *chantera* 'will sing'. Another case of coalescence is the Romance adverb exemplified by French *clairement* 'clearly', grammaticalized from Latin *clara mente* 'in a clear spirit'.

The loss of syntagmatic variability will be called fixation. The grammaticalized sign tends to occupy a fixed syntactic, then a morphological position and becomes a slot filler.

Whereas the Latin prepositions, including *de* and *ad*, could occupy various positions within complex NPs, French *de* and *à* must precede them. Similarly, Latin allowed permutations such as *epistulam scriptam habeo*, *habet cantare*, *mente clara*, whereas the order in French *j'ai écrit la lettre*, *chantera* and *clairement* is fixed.

The whole of grammaticalization, its parameters and associated processes with their start and end poles are shown in F3.

parameter	weak grammaticalization	— process →	strong grammaticalization
integrity	bundle of semantic features; possibly polysyllabic	— attrition →	few semantic features; oligo- or monosegmental
paradigma-ticity	item participates loosely in seman-tic field	— paradigma-ticization →	small, tightly inte-grated paradigm
paradigmatic variability	free choice of items according to commu-nicative intentions	— obligato-rification →	choice systematically constrained, use lar-gely obligatory
scope	item relates to con-stituent of arbi-trary complexity	— conden-sation →	item modifies word or stem
bondedness	item is independ-dently juxtaposed	— coalescence →	item is affix or even phonological feature of carrier
syntagmatic variability	item can be shift-ed around freely	— fixation →	item occupies fixed slot

F3. *Parameters and processes of grammaticalization*

3.3 Now that the analytic concepts have been set out, let us look in more detail at another example in order to fill the frame with substance. Consider the array of structural means employed for pronominal reference. They are displayed in F4.

lexically empty noun	>	free personal pronoun	>	clitic personal pronoun	>	agglutinative personal affix	>	fusional personal affix
1		2		3		4		5

F4. *Grammaticalization of pronominal reference*

While structural means weakly grammaticalized, i.e. near the left pole of F4, are used for textual anaphora, means from the middle of the scale tend to serve for syntactic anaphora, and those near the right pole usually function in personal agreement, mainly be-tween the verb and its actants (see Lehmann 1982(U), §6). Latin has the personal pronouns of position 2 (E3a) and personal suf-fixes which may be arranged shortly before position 5 of F4 (E3b).

E3 a. ego, tu; is 'I, you, he'
    b. vide-o/-s/-t 'I/you/he see(s)'
E4. je vois, tu vois. il voit 'I see, you see, he sees'
E5. moi, toi, lui 'I, you, he'

In the evolution of the Romance languages, grammaticalization has affected the unmarked demonstrative pronoun *ille* and transformed it into a third person pronoun of stage 2. The set of personal pronouns has then lost its autonomy, in different languages to different degrees. In French they have become agglutinative personal affixes of the verb, which appear as prefixes in E4. The personal suffixes of Latin, in their turn, have been reduced, again to the greatest degree in French, where they are beyond stage 5 and on the verge of extinction; see again E4. On the other hand, French has created a new set of-free personal pronouns by phonological reinforcement of certain forms of the inherited pronouns (E5). This means that the distribution of devices over scale F4 which obtained in Latin is being restored in French: although the inherited structural means have been grammaticalized, we again have free personal pronouns and personal affixes, as we had in Latin.

4. GRAMMATICALIZATION AND LANGUAGE COMPARISON

The comparison of two formatives or subsystems with respect to their degree of grammaticalization is methodologically safest when they belong to the same language. There are two possibilities here: either the compared elements may be historically identical members of two stages of the same language, as are Latin *ad* and French *à*; or they may be distinct members of one synchronic state of a language, as are the Latin preposition *ad* and the dative. In both cases there is a common basis that is kept constant; in the first case it is the historical identity of the compared signs, in the second case it is the system comprising the compared units. Therefore it is easy to prove that Latin *ad* and French *à* differ according to our six parameters, and equally that *ad* and the dative in Latin differ by them, and consequently that they are grammaticalized to different degrees.

Interesting problems arise when we compare elements or subsystems of different languages, such as the case systems of Latin and Turkish, or unrelated elements/subsystems of two stages of a language, e.g. the Latin dative and French à. Such comparisons have, of course, always been made. W. v. Humboldt compared the possessive affixes of Nahuatl with the German possessive pronouns, observing that (1836:542) "the combinations [of nouns] with the possessive pronoun are in Nahuatl ... much more frequent than its addition appears necessary to our conception," which implies that the Nahuatl possessive affixes are more grammaticalized than the German possessive pronouns. E. Sapir, in comparing the plural in Nootka and English, observes (1921:104) "that the [Nootka]

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plural concept is not as abstractly, as relationally, felt as in English," which implies that it is less grammaticalized. Similarly, the Latin dative is more grammaticalized than French *à*, and the Latin case system is more grammaticalized than the Turkish one.

The basis of comparison of these various subsystems is obviously a purely functional one. Given that the criteria of grammaticaliza—tion are purely formal in nature, they do not tell us which sub-systems of different languages it makes sense to compare. However, once the common functional denominator that remains constant throughout a grammaticalization channel is established, the cri-teria of grammaticalization tell us for any subsystem which stage of the channel it has to be attributed to, and for any two sub-systems, how similar or different they are in regard to grammati-calization.

We all apply concepts such as case suffix and postposition, alla-tive and dative, personal pronoun and personal affix, on a cross-linguistic level. We subsume the German and the Turkish case suf-fixes under a common term, and similarly the Latin and Abkhaz postpositions; we decide that German *zu* is an allative preposition, but English *to* is a dative preposition; the preverbal pronominal elements of English are called personal pronouns, but in Abkhaz they are personal prefixes. For all these pairs of concepts, there is a common functional denominator and a difference in the degree of grammaticalization which we, intuitively or explicitly, use as a criterion in applying the terms to categories of various lan-guages. Given that differences in the degree of grammaticalization can by definition only be gradual, these analytical concepts must be prototypical concepts. We all know certain focal instances of the concepts of case suffix and postposition, personal pronoun and personal affix and so forth, and we apply these terms to new phe—nomena depending on their similarity to our focal instances. Some-times a new phenomenon lies somewhere in the middle between two focal instances, having an intermediate degree of grammaticaliza-tion for which our tradition provides no term. The Japanese case elements are a noteworthy example.

E6. ga NOM, o ACC, no GEN, ni DAT/LOC

Several of them, as shown in E6, are desemanticized to a degree that we would expect them to be case suffixes; but tradition calls them postpositions, which may be more adequate if we have their (low) degree of cohesion in view (cf. Lehmann 1982(T):150). Another notorious example is provided by the French clitic pronouns (cf. E4). According to terminological tradition, which is certainly influenced by historical considerations, morphemes such as *je, tu, il* are pro-

nouns. On the other hand, they possess so little autonomy that modern linguists have come to call them person affixes. Note, however, that this is not simply a case of an ill—conceived inherited vs. a well-conceived modern term. The French clitic pronouns are not yet typical verbal affixes for at least two reasons. First, they are not yet totally obligatory; *il* and *le* etc. may be absent when a pronominal subject or object, resp. is present; cf. E7.

E7 a. Jean (il) vient. 'John comes.'
    b. Tu (le) tiens le couteau. 'You hold the knife.'

E8 a. il vient 'he comes,' tu le tiens 'you hold him'
    b. vient-il 'does he come,' tiens-le 'hold him!'

And they may be either preverbal, as in E8a, or postverbal, as in E8b, whereas the prototypical affix has a fixed position. Therefore the vacillation in terminology is still justified. Given that we are dealing with scalar phenomena, terminological settlements in the space between the focal instances are necessarily somewhat arbitrary. We will have to define our notions of case suffix and postposition, of personal pronoun and personal affix more precisely by fixing the grammaticalization parameters for them, before we will be able to settle for a correct term for the Japanese case elements and the French clitic pronominal elements.

5. GRAMMATICALIZATION AND IMPLICATIONAL GENERALIZATIONS
It has been known for some time that several of Greenberg's cross-linguistic generalizations reflect the workings of grammaticalization. Let me quote the pertinent 'universals' here (from Greenberg 1963:110—112):

2. In languages with prepositions, the genitive almost always follows the governing noun, while in languages with post-positions it almost always precedes.
3. Languages with dominant VSO order are always prepositional.
4. With overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional.
16. In languages with dominant order VSO, an inflected auxiliary always precedes the main verb. In languages with dominant order SOV, an inflected auxiliary always follows the main verb.
27. If a language is exclusively suffixing, it is postpositional; if it is exclusively prefixing, it is prepositional.

Combining the generalizations no. 2 and 27, we find them reflecting our grammaticalization channel Fl, which leads from the relational noun via the adposition to the case affix, where the original position of the relational noun either preceding or following the localized noun remains, of course, unaltered. Greenberg himself (1963: 99) has already given some indications to this effect; cf. also Mallinson/Blake 1981:384-390 and Hagège 1982:57-59.

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Verbs are another possible source of adpositions. The connection
may be exemplified with English *notwithstanding* and *during*, which
involve participial forms. More important, however, is the emer-
gence of adpositions from coverbs in serial verb constructions, as
in E9.

E9. nám útóm ɛ́mì nɔ̀ mi!
EFIK do work this give me
    'Do this work for me!' (Welmers 1973:369)

No matter whether the verbal form is participial or uninflected,
it is evident that its grammaticalization will result in a preposi-
tion_when the order is VO, and in a postposition when the order is
OV. This is the grammaticalizational aspect of Greenberg's numbers
3 and 4.
    Finally, with respect to 'universal 16', we may briefly recall
the fact that auxiliaries such as English *have* are connected by
grammaticalization with full verbs. The infinite main verb is the
complement of the auxiliary. Therefore, if the full verb precedes
its complement, the auxiliary will likewise precede the main verb,
and similarly if it follows.
    I should stress on this occasion that an explanation of cross-
linguistic generalizations which makes use of the concept of gram-
maticalization is not necessarily a diachronic explanation. The
English and Efik examples just given prove that the grammaticaliza-
tional connection of verbs with adpositions shows up not only in
diachronic developments, but also in synchronic variation. More-
over, it should be clear that the recourse to grammaticalization
is not in itself a sufficient explanation of such implicational
generalizations. As I said before, the specific function common
to the syntactic relations of a relational noun to its complement
and of an adposition to its complement, and the specific function
common to the syntactic relations of a verb to its object and of an
adposition to its complement, are concepts not inherent in gram-
maticalization. but are, instead, a presupposition for these con-
structions to be connected by grammaticalization.

6. GRAMMATICALIZATION AND INTRALINGUAL VARIATION
All of the examples adduced so far make it perfectly clear that it
is normal for a language to possess more than one of the devices
available on a specific grammaticalization scale; recall the
characterization of the Latin and French systems of nominal case
role marking and pronominal reference in terms of the stages of
F1 and F4 represented in them. If we may generalize these findings,
two conclusions follow.

The first of these concerns the choice that every language makes from among the grammatical devices available on a given grammaticalization scale. The structural means united on such a scale fulfill a similar function. Thus, nominal case role marking serves to locate a referent in the cognitive space opened up by a sentence. However, the different means do not fulfill this function in exactly the same way or to exactly the same degree. Less grammati—calized means are less subject to the rules of grammar and submit more easily to the discretion of the speaker; with more grammati—calized means, it is just the opposite. Thus, a speaker uses just that relational noun which best fits his communicative intentions, while he is heavily constrained in his use of case affixes. In this sense, the different devices co—present on a grammaticaliza-tion scale complement each other.

If this is true, we should expect that one of the principles governing the choice that a language makes from a grammaticaliza~tion scale is one of complementarity. That is to say, a language will choose various devices from a grammaticalization scale in such a way as to achieve a maximal coverage of the functional domain concerned. In the functional domain of pronominal reference, French with its stressed personal pronouns, clitic personal pro—nouns and flexional personal affixes demonstrates neatly what is meant here. We would not expect to find a language whose devices for pronominal reference all cluster around one position on scale F4, e.g. a language which possesses only agglutinative and fusional personal affixes for pronominal reference; cf. Lehmann 1984, §4.1.

The second conclusion to be drawn from the observed intralingual variety concerns the adequacy of traditional morphological typology for the characterization of entire systems of grammar. The isolat-ing, agglutinative and flexional techniques relate to successively more grammaticalized stages of the general grammaticalization scale F3. They provide convenient terms for certain focal posi-tions on this scale and may also characterize the position that a particular grammatical device or a subsystem of structurally paral-lel devices occupy on a special grammaticalization scale. Given, however, the variety and even complementarity of devices that a language normally chooses from one scale, let alone the partial independence of choices from several scales, it is an oversimplifi-cation to call a whole language isolating, agglutinative or flex-ional. This would be allowable only if all the grammatical devices of the language were parallel in their degree of grammaticalization, which is certainly not true for any language. Latin, which is a classical example of a flexional language, is indeed flexional with respect to many of its grammatical categories; but it does have

pre- and postpositions, conjunctions, personal pronouns, auxiliaries
and so forth, which do not fit into the picture. If grammaticaliza-
tion is to be used in the typological characterization of a language,
we must obviously draw a composite picture, specifying the diverse
degree of grammaticalization displayed by the various grammatical
devices; cf. Lehmann 1985[r].

7. GRAMMATICALIZATION AND TYPOLOGICAL CONTINUITY
Although the.connection of two constructions by grammaticalization
may help to explain their displaying the same sequential order with—
in a language, it is by no means a sufficient condition for their
doing so. Consider the arrangement of two synchronically co—present
constructions on a grammaticalization scale, e.g. the various
secondary and primary prepositions of French. If such a state of
affairs is projected onto the diachronic axis, the more grammatical-
ized constructions would necessarily be introduced into the language
earlier than the less grammaticalized ones; e.g. French *à, de* etc.
are older than *pendant, vers* etc. Plausibly the younger construc-
tion will show the same sequential order properties as the older
one if one or both of the following conditions are fulfilled: First,
the distance to the established older construction is not yet too
great for it to serve as an analogical model for the younger one.
Second, the source which yielded the older construction has mean-
while remained unaltered. Both of these conditions are fulfilled
for the French prepositions since, first, new prepositions have been
coined throughout the Romance and French history, and second, they
have always been recruited among relational nouns or adverbs which
preceded the localized noun.
     If one or both of these presuppositions are absent, continuity may
be interrupted, and the sequential order may change. Consider the
Latin means of marking nominal case relations, which are, details
aside, prepositions and case suffixes. Since prepositions can never
become case suffixes, this means that typological continuity was
interrupted some time in the prehistory of Latin, namely at the
point where the inherited adverbs were used not as post-, but as
prepositions (cf. Lehmann l985[L] §5). Even without knowing the rea-
sons, it suffices to see that whenever such a change in the input
to a grammaticalization channel occurs, the functional domain in
question will contain constructions with different sequential orders,
and any implicational generalization on the similarity of the se-
quential order in the constructions of this domain will necessarily
fail.
     As a first example, consider the first half of Greenberg's (1963:
111) 'universal 22':

22. If in comparisons of superiority the only order or one of
     the alternative orders is standard-marker-adjective, then
     the language is postpositional.

Latin possesses the construction described in the implicans of this
implication, as illustrated in E10.

E10.   Quid est ... in homine ... ratione divinius? (Cic.leg. l,
       22) — 'What is in man more divine than reason?'

The marker of comparison is the ablative suffixed to the standard
of comparison, which precedes the adjective. However, Latin is in
no sense a postpositional language; apart from the few postpositions
mentioned in §2, it only has prepositions. Latin therefore falsi-
fies this generalization. At the same time, it is interesting to
see how this comes about. If the marker of comparison envisaged
in the generalization is an independent morpheme, it has approxi—
mately the same degree of grammaticalization as an adposition. Then,
if it follows its standard of comparison, this is probably because
the language is postpositional. If the marker of comparison, how-
ever, is a case form of the standard of comparison, as it is in the
Latin construction above, its degree of grammaticalization is more
advanced than that of a postposition. Consequently, after intro-
ducing this sort of comparative construction, the language may per-
fectly well have switched to prepositions, as Latin in fact did.
Later on, Latin acquired a new comparative construction, with which
E10 would read as E1O'.

E10'.   Quid est in homine divinius quam ratio? (= E10)

This construction in its turn, is in perfect harmony with Green-
berg's 'universal 22'. - Word order in comparative constructions is
now treated in much more detail in Andersen 1983.
     As a second example, consider Greenberg's following generaliza-
tion (1963:112): '25. If the pronominal object follows the verb,
so does the nominal object.' Again, this generalization is per-
fectly plausible when the pronominal object is represented by a
free personal pronoun, because then it is likely to follow the syn-
tax of noun phrases. However, it is easy to conceive of a situation
where a language at a given historical stage suffixes object pro-
nouns to the verb, but later acquires a main constituent order where
the object precedes the verb. This is exactly what happened in
Accadic and Amharic, which are therefore counterexamples to the
generalization above.
     The hypothesis derivable from this discussion is the following:
Homomorphism between any two grammatical patterns of a language is
ceteris paribus more probable if these are or were productive in
the language at the same time, and less probable if the first pat—

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tern has already become unproductive at the time when the first one becomes productive. The reason for this is simply that grammatical rules are valid in a language only for a certain time. Or, putting it synchronically, the rules of syntax are distinct from those of morphology. Therefore, if two constructions happen to belong, in a certain language, to the syntax and the morphology, resp., then there is little reason why this language should conform to any cross-linguistic generalization mentioning these two constructions.

8. GRAMMATICALIZATION AND THE CENTER OF LINGUISTIC TYPOLOGY

This leads us to the question concerning the grammatical level at which it is most fruitful to typologize languages. Most of the logically possible opinions about this problem are well represented in the literature. Syntax has been pushed into the foreground of typology by a certain trend of basic order typology most vigorously advocated by W. Lehmann some years ago, e.g. in l978:5: 'Typological analysis ... takes syntax as the central component.' Traditional typology as created in the last century, on the contrary, puts mor- phology in the center of the language system. This position is still maintained, among others, by many typologists of Eastern Europe and justified by P. Sgall (1970: 505f) as follows:

> ... morphemics can be considered the proper field of typology, since morphemics is only loosely connected with the outer phe- nomena of denotation and of phonetics, so that on this level the differences among languages are larger than on other levels and it is here that the individual language phenomena combine most freely according to their interrelations, constituting sys— tematic typological patterns.

A further possible position of which no one would think today but which did play a certain role in the first years of structural lin- guistics, was held by N. Trubetzkoy (1931:163), saying that the best basis for a typology of languages was what he called morphonol— ogy, i.e. the phonological structure of the morpheme and of morpho- logically conditioned alternations. Insofar as the latter usually represent the most irregular part of both morphology and phonology, this position had already been contradicted by E. Sapir, who said in a footnote (1921:140f):

> In defining the type to which a language belongs one must be careful not to be misled by structural features which are mere survivals of an older stage, which have no productive life and do not enter into the unconscious patterning of the language. (Cf. Hagège 1982:8f)

I think grammaticalization may help us to pull this issue out of the sphere of sheer opinions and to arrive at a rationally founded position. In order to get there, some premises must be made clear. First, we want-to typologize languages on the basis of properties

most intimately connected with their essence as languages. This is indisputably the symbolization of meaning by sound. From this it follows that language typology will center on the formation of signs and not on either meaning (semantic typology) or expression (phonological typology). Second, we can typologize languages only according to properties which show some regularity, because where there is no lawful pattern, there is no type. This eliminates lexical typology from the center of language typology and leaves us with grammatical typology. So much appears to be hardly controversial among typologists.

The next step is more difficult. We might consider the requirement that Sgall formulates, saying that languages should be typologized according to properties by which they differ most. The argument for this requirement is that without it we would exclude a set of differences from consideration; these would remain outside the explanatory power of the linguistic type, and the typology would thus be insufficient. However, two problems arise here. The first is the question as to the area where differences among languages are greatest. The second lies in the compatibility of this requirement with the first two premises.

As to the first issue, there has been a long-standing claim that 'it is mainly phonological form where the difference among languages is based' (Humboldt 1836: 459). This has been echoed by the claim of generative grammar that languages differ more in their surface structures than in their deep structures, which at a certain time was a way of saying that they differ more on their expression—side than on their content—side. I presume that this is wrong. Given the basic structuralist tenet that differences in expression reflect differences in content, it is a priori impossible that cross—linguistically observable differences in expression do not correspond to differences in content. To give an example: English has a free prenominal morpheme, and Romanian a suffixal postnominal morpheme, which are both called definite articles. However, these will be functionally similar only to the degre that they are structurally similar, and they cannot be isofunctional to the degree that their structural behavior differs.

Thus we are back to the differences in the ways in which languages associate content with expression. One way of representing these alternatives is a grammaticalization scale. There have in fact been voices in the literature claiming that differences among lan—guages are greater at certain stages of grammaticalization scales than at others. R. Jakobson (1959:264) wrote: 'Languages differ essentially in what they must convey and not in what they can convey.' Recalling that obligatorification is one of the parameters

of grammaticalization, we find this implying that languages differ most in the most grammaticalized features. In agreement with this, T. Givón (1979:208-233), F. Plank (1979:622) and N. Vincent (1980: 170—172) suggest that weakly grammaticalized coding is more iconic, more 'functionally' or pragmatically motivated, while the iconicity turns into arbitrariness as the devices become more grammaticalized, and the former motivation gives way to grammatical convention. The pragmatically motivated coding appears to these authors 'more universal', while the arbitrary coding is more language-particular. This reasoning (which might well be analytically true) would imply that differences among languages are smallest when weakly grammaticalized devices are concerned, and greatest when it comes to strong grammaticalization. To give an example: The use of the verb 'to be in a place' for a periphrastic progressive aspect of the kind English possesses is iconic in the sense that the progressive aspect does mean 'to be in a certain situation (expressed by the main verb)', and the localizing 'be' is therefore an obvious expressive possibility for any language to resort to. On the other hand, the expression of the progressive aspect by the insertion of an infix into the tense suffix, as it is done in Hixkaryana (Derbyshire 1979:136), does not appear to have a general motivation readily available for any other language.

If this reasoning is correct, it would imply that differences among languages are greatest at the right pole of a grammaticalization scale, where linguistic signs are destroyed and turned into submorphemic units and members of morphophonemic alternations. If we keep to our tentative assumption that typology should consider those features by which languages differ most, we have to conclude that Trubetzkoy was right and Sapir was wrong: morphonology and the grammar of submorphemic units form that part of the linguistic system in which languages differ most, and therefore have to be the center of typology.

At this point, however, the second of the problems mentioned above comes in, namely the issue of whether the requirement according to which languages should be typologized after those features by which they differ most, is reconcilable with the first two requirements which say that we must typologize languages according to features which are both essential and regular. The essentiality or otherwise of morphophonemics for the language system is difficult to assess; we might feel that submorphemic structure is not as important to the functioning of a language as morphology and syntax are. The second requirement of regularity, however, is clearly underfulfilled by morphophonemics, as this part of the grammar is notoriously less regular than syntax and morphology.

We have thus arrived at a conflict among our methodological pre-
mises. Consequently, if we want to save the first two premises,
which appear indispensable, we will have to attenuate our third
premise. In order to see how this should be done, we will look at
a survey of the relevant notions of the linguistic system and gram-
maticalization that we have so far discussed.

grammatica-lization	citra	weak	— increasing →	strong	ultra
elements processed	lexemes		morphemes	submorphemic units	
component of ling. system	lexicon/ pragmatics	syntax	morphology	morphonology	
rules	universal	cross-linguistically general		language-particular	
differences among languages	small		— increasing →	great	

F5. *Grammaticalization and cross—linguistic differences*

As regards the first requirement of essentiality, the whole of F5
represents the central part of the linguistic system. As for the
second and third requirements of regularity and differentiating
power, it is the last two rows of F5 that we are particularly con-
cerned with. There it becomes clear that we have to modify the
third, tentative requirement to the following effect: we want to
typologize on such linguistic features which display maximal cross-
linguistic differences within the limits set by the second premise.
    If we compare the row showing the components of the linguistic
system, we find that this requires us to put syntax and morphology
into the center of typology, but with the essential corollary that
higher-level syntax will not afford us the strong typological dif-
ferentiation we want and that lower level morphology (morphonology)
will not afford us general typological principles. It is rather at
the borderline between syntax and morphology that we will find pat-
terns which will provide us with a fine-grained and comprehensive
typology. It should be noted that this conclusion comes very close
to the one by Sgall quoted above.
    The consequences of these considerations for basic order typology
are obvious. Since this centers on higher level syntax, it is con-
cerned with patterns which enjoy a relatively high freedom and
variability, being subject more to pragmatic motivation than to
rules of grammar. The occurrence of variant orders within a lan-
guage is the normal situation in basic order typology, and their
subsequent reduction to one 'basic' order is more a requirement of
peculiar methodological assumptions than an organizing factor in-
herent in either the data or general typological theory. Also,
since main constituent order is relatively free, it is only loosely

connected.with the more grammaticalized part of the linguistic sys-
tem, which explains why relatively few generalizations have been
found which connect basic order patterns with lower level syntax
and especially morphology.

The obvious conclusion from this is, of course, that we should
concentrate our cross-linguistic research more on the area along
the borderline between syntax and morphology, that is, on grammati—
cal categories which, in terms of traditional typology, are ex-
pressed by analytical and agglutinative constructions. Relevant
examples are auxiliaries and tense/aspect/mood categories, personal
pronouns and affixes, case marking, numeral classifiers etc. This
is a kind of research that several among us have been doing for
some time and which appears to receive theoretical and methodologi-
cal confirmation by the considerations above.

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