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Towards a typology of clause linkage

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Abstract

The factors cross-linguistically relevant to clause linkage are surveyed in the form of a couple of continua. These pertain to: 1. the integration of one clause into the other (parameters of downgrading of the subordinate clause and of its syntactic level in the main clause), 2. the expansion vs. reduction of the clauses (parameters of desententialization of the subordinate clause and of grammaticalization of the main predicate) and 3. the mutual isolation vs. linkage of the two clauses (parameters of interlacing of the clauses and of explicitness of linking).

The six parameters hang together in various ways and constitute types of clause linkage. They are founded in a functional theory of clause linkage which conceives complex sentence formation as varying between the poles of elaboration and compression. This variation fulfills the double-sided function of either unfolding a proposition into two or more component propositions or combining two or more propositions into a composite one.

1. Basic concepts

The aim of this contribution is to give a **survey** of the most important aspects of complex sentence formation in the languages of the world. They will emerge as generally applicable parameters of clause linkage. I will try to ascertain to what degree they correlate and how clusterings among the possibilities provided by them yield cross-linguistic types of clause linkage. Most of these parameters have been found relevant to this issue by other authors and thus make no claim to originality.

The parameters are based on traditional concepts. Some of these are controversial and therefore have to be defined. Let us start with the most general concepts. A syntagm is **relational** iff it contains a grammatical slot which predetermines a grammatical relation to be contracted by it. For instance, an adverbial phrase is relational because it is by itself capable of modifying something, especially a verb phrase; but a noun phrase is not relational since it does not, by itself, contract any grammatical relation (see Lehmann 1985 for details).

A grammatical relation R connecting syntagms X and Y is a relation of **dependency** iff X occupies a grammatical slot of Y or vice versa. In a dependency relation, Y **depends** on X iff X determines the grammatical category of the complex and thus its external relations. Non-dependency relations among syntagms are relations of **sociation**. Among them are coordination, apposition and others to which we will return. For example, the relation of an

attribute to its head noun is a dependency relation, but the relation of an apposition to its head noun is not a dependency relation.

An **endocentric construction** will be conceived not distributionally, but semant syntactically, as a binary syntagm Z with parts X and Y such that Y belongs to the same category as Z and X is an expansion of Z. The syntactic relation of X to Y may be one of dependency or of sociation.

In the application of the term **clause linkage**, we will assume a broad concept of the clause which comprises any syntagm containing one predication. Syntactically, this means that - apart from nominal clauses - the uppermost controller of dependency in the syntagm is a verbal form. Since a verbal form may be finite or nonfinite, this includes nominalized clauses. Clause linkage, then, is a relation of dependency or sociation obtaining between clauses in this sense. In what follows, I will confine myself to the consideration of binary clause linkage. This should not be understood as excluding the possibility of more than two clauses being linked at the same level.

Subordination¹ may now be conceived as a form of clause linkage.² If syntagms (clauses) X and Y are in a relation of clause linkage, then X is subordinate to Y iff X and Y form an endocentric construction Z with Y as the head. In the course of the paper, subordination will emerge as a prototypical concept.

The term **proposition** will be used (instead of 'state of affairs') for the semantic correlate of a (possibly desententialized) clause.

Hypotaxis will be understood as the subordination of a clause in the narrow sense (which probably includes its finiteness). The definition does not impose any further syntactic or morphological requirements on the subordinate syntagm and thus corresponds fairly well to common usage.³

Embedding is the dependency of a subordinate syntagm.

¹ The term subordination is applied, in different schools of linguistics, to different kinds of things. In the broadest use, which may be found in certain trends of European structuralism, the size and nature of the subordinate element is of no concern. Here subordination practically means the same as dependency. In the most narrow use, characteristic of classical philology, only finite clauses can be said to be subordinate. Here subordination practically means the same as hypotaxis; and consequently the two latter terms are mostly used interchangeably.

There are also differences with respect to the kind of relation presupposed for subordination. Some (e.g. Touratier 1985) require that the subordinate clause have a syntactic function in the matrix clause. Others (e.g. Brøndal 1937) admit of subordinate clauses without matrix clause. In addition, there is a mess of morphological, semantic and logical criteria which have been invoked in order to distinguish subordination from coordination. As has been shown repeatedly (already in Brøndal 1937), none of these is crucial, although they may be used to characterize a type of subordination well represented in certain Indo-European languages.

² This implies that a syntagm will be said to be subordinate only if it contains a predication, and represents, thus, a compromise solution as regards the nature of the subordinate element; cf. fn. 1.

³ Matthiessen & Thompson (this vol.) regard the 'nucleus-satellite relation' as constitutive for subordination. On the one hand, they conceive this as a basically textual relation; on the other hand, the traditional notion of subordination appears to them to be best captured as a grammaticalization of this relation. It thus comes fairly close to the semant syntactic notion of endocentricity used above. - It follows from the above definition that the presence of a subordinate syntagm presupposes the presence of a main clause - which may be or contain Y - to which it is somehow subordinate (against Brøndal 1937).

With these definitions, we get hypotaxis and embedding as two particular types of subordination, the former delimited with respect to the kind of the subordinate syntagm, the latter delimited with respect to the kind of the relation of subordination.

Current linguistic usage⁴ does not treat the term **coordination** as complementary to subordination, since coordination does not imply that the coordinated elements be of a sentential or verbal nature. Coordination is a relation of sociation combining two syntagms of the same type and forming a syntagm which is again of the same type.

Parataxis is the coordination of clauses. No further restrictions are imposed on the kind or structural means of coordination. In particular, parataxis may be syndetic or asyndetic.

We are now ready to enter into the consideration of the various semant syntactic parameters which are relevant for clause linkage across languages. The following will be considered:⁵

1. the hierarchical downgrading of the subordinate clause,
2. the main clause syntactic level of the subordinate clause,
3. the desententialization of the subordinate clause,
4. the grammaticalization of the main verb,
5. the interlacing of the two clauses,
6. the explicitness of the linking.

The reader will notice that the semantic nature of the relation between the two clauses does not figure in this list. While this has always played a prominent role in the classification of subordinate clauses, it does not appear to be constitutive of cross-linguistically valid types of clause linkage. That is, there is no cross-linguistic notion of, say, the concessive clause which would possess any constant structural correlates.⁶ It rather appears that the grammatical types that will emerge on the basis of the above six parameters cut across the semantically different clause linkage relations.⁷

Although these parameteres will be grouped in three pairs, they will be presented separately, as if they were mutually independent. In §5.1 we shall turn to possible correlations among them.

2. **Autonomy vs. integration**

The requirement in our definition that a subordinate construction must be part of a higher construction leaves large room for variation. For one thing, the subordinate syntagm may bear a sociative or a dependent relation to the main clause. For another, it may be subordinate to the main clause as a whole or rather to some constituent of the main clause. Neither of these alternatives is clear-cut; the differences are gradual. The two aspects taken together identify what I will call the **integration** of the subordinate construction into the main clause.

⁴ except perhaps for the European schools of structuralism mentioned in fn.1

⁵ Several of them are reviewed in Haiman & Thompson 1984. For at least some of them, the authors show that they cannot serve as a basis for the concept of subordination. In what follows, I will use them to differentiate types of clause linkage.

⁶ Harris (this vol.) shows that this is even true within one language or a group of closely related languages.

⁷ The Foley & Van Valin (1984, ch.6.3) semantic bondedness hierarchy embodies a claim to the contrary.

2.1. Hierarchical downgrading

2.1.1. Consider the following examples (brackets set off subordinate syntagms):

- E1. I was trimming a boomerang, there you came up.
- E2. Datjulu-lu lpa-na ka.li tjaŋtu-nu,
WAL I-ERG PAST-SBJ.1 boomerang trim-PAST
kutja-Ø-npa ya-nu-nu njuntu.
[SR-AUX-SBJ.2 walk-PAST-hither you]
"I was trimming a boomerang when you came up." (Hale 1976:79)
- E3. nu kwit LUGALu-s tezzi nu apat iyami.
HIT [CONN REL:ACC.SG.INAN king-NOM says] CONN D3:ACC.SG.INAN do:1.SG
"And what the king says, that I do." (KBo XVII 4 II 17f)
- E4. quei ager ex privato in publicum commutatus est], de eo agro siremps lex esto.
LAT "Any land that has been converted from private into public, to such land the law shall apply in the same way." (CIL I², 585)
- E5. tilè tòn ka gòni, ù se-ra bümakò tùma mìn na.
BAM sun:DEF PAST COP hot [they arrive-COMPL Bamako time REL at]
"The sun was hot when they arrived in Bamako." (Bird 1968:45)
- E6. Nipe kaj al-öm (hainö) ribö yaŋ ar-öp.
KOB [3.SG pig shoot-3.SG.SS] after river below go-PRF.3.SG
"He killed a pig and (later) went down to the river." (Davies 1981:36)
- E7. L. Petrosidius aquilifer ... pro castris [fortissime pugnans] occiditur.
LAT "L. Petrosidius, the colour-bearer, is killed in front of the camp, fighting most bravely."
(Caes. B.G. 5,37,5)
- E8. Telebois iubet [sententiam ut dicant suam].
LAT "He orders the Teleboans to give their opinion." (Pl.Am. 205)

These examples differ gradually on a parameter that I shall call **hierarchical downgrading**. At the starting pole of the continuum, there is no hierarchical relation between the two clauses forming the complex sentence. This is the situation which we call parataxis. At the end pole, there is a clear hierarchical relation between them, the subordinate clause being downgraded to a particular, well-defined constituent within the main clause. This is the situation we call embedding. Between the poles, there are various constructions in which the subordinate clause is ever more downgraded.⁸

E1 shows parataxis. In E2 from Walbiri (Australia) we find what has been called an **adjoined clause** (Hale 1976). One of the two clauses constituting the complex sentence contains a subordinative conjunction and may thus be identified as the subordinate clause. It has to either precede or follow the main clause. It cannot be embedded or have a syntactic function within the main clause. This is the faint beginning of hierarchical downgrading and of subordination.

⁸ Paul (1920:145) already speaks of "Herabdrückung eines Satzes zum Satzgliede".

E3 from Hittite and E4 show a **correlative diptych**. As Haudry (1973, §3) puts it, this is halfway between parataxis and hypotaxis. The relative clauses in these examples are subordinate, but not embedded. As they stand, they could not even be embedded. On the other hand, Latin and, to a much lesser extent, Hittite have the alternative possibility of embedding similar clauses within the main clause.

In E5 from Bambara (Mande, West Africa) the situation is but slightly different. The subordinate clause has to have final position; however, it is not outside the main clause, but rather its last constituent. The word order rules of Bambara determine sentence-final position for adverbials, simple or complex. The subordinate clause has the structure of a relative clause which usually, but not exclusively, appears in a correlative diptych.

E6 from Kobon (Papua New Guinea; see Davies 1981) shows **clause chaining**. Here the clauses of a complex sentence come in chains which can grow fairly long. The last verb in the sentence is the main verb. All the preceding clauses are subordinate to the final one. They and their verbs are called **medial**. They lack tense, aspect and mood categories, which are taken to be those of the final verb, and instead have a special set of person agreement suffixes which signal whether the subject of the following clause is the same or different from the subject of this clause. We will return to this point in §4.1.2. Here it suffices to see that although the medial clauses are subordinate, they cannot be said to be embedded in the final clause. Foley & Van Valin (1984, ch.6) call this relation 'cosubordination'.

Again, there is a small difference between this construction and the Latin conjunct participle of E7. This is clearly part of the main clause and insofar embedded in it. However, its syntactic function is not crystal-clear (cf. Pinkster 1984, ch.8). It is a blend, as it were, of an apposition and an adverbial, and thus not subject to government.

E8 finally shows a typical embedded clause, namely an object clause governed by the main verb. We may, of course, find examples of more deeply embedded clauses; but the hierarchical inequality of the two clauses cannot, in principle, become clearer than this.

However, within the constructions in which a verb governs a subordinate clause, differences which appear to relate to the degree of downgrading of the latter are determined by the nature of the governing verb. In particular, so-called implicative verbs such as 'force' appear to downgrade the subordinate clause more strongly than non-implicative verbs such as 'believe'. This issue is much investigated presently under the guiding question: What are the factors determining the form of a subordinate clause, and in particular, how is it determined by the class of the governing verb? (For some recent research, see Givón 1980, Dixon 1984, Bolkestein 1985 and Carvalho 1985.) The issue is hard to divorce from the control properties of the governing verb, which codetermine argument sharing among the two clauses. This topic will be taken up in the latter connection.

2.1.2. An important aspect of the integration of the subordinate syntagm into the matrix clause which has to be accounted for in terms of its hierarchical downgrading is the **sequential position** of the former relative to the latter. Authors have tended to think of **positional variability** as an important property of a subordinate clause (cf. Matthiessen & Thompson, this vol., §5.1.5). It should be emphasized that the position of a subordinate clause as against its main clause is generally more subject to grammatical constraints than the position of one independent clause as against its neighbour. While the two independent clauses in E1 may not seem invertible without damage to the sense, grammar is certainly indifferent as to any order of them. Subordinate

clauses, however, often find their position subject to grammatical constraints (cf. E13 and E14 below and Lehmann 1982[T], ch.IV.3.3).

The subordinate syntagm may be either positionally included in the main clause, or it may precede or follow the latter. Accordingly, we speak of **central** vs. **marginal position** of the subordinate syntagm. Many languages possess the constraint that subordinate clauses of a certain type have to have a marginal position with respect to the main clause. This is not only true of the adjoined and correlative clauses that we saw in E2 through E4, but also of subordinate clauses with a more downgraded status. Thus in Hixkaryana (Carib, Brasil) and Abkhaz (North-West Caucasian), subordinate clauses are lower on the hierarchy, but yet are generally marginal, in Abkhaz mainly preposed, to the main clause.

Quite generally, the marginal position of a subordinate clause is in accordance with the principles of functional sentence perspective. Just as elsewhere, sentence-initial position usually identifies the **topic** (more precisely, the exposition, in the terms of Lehmann 1984, ch.V.5) of the sentence. This is well-known from left-dislocated NPs. It is perhaps not so well known that a whole subordinate clause may also provide a topic for the following main clause.⁹ Thompson (1984) shows that English purpose clauses fulfill different discourse functions as they either precede or follow the main clause. Look at her introductory example, a passage taken from a report on a voyage in a primitive boat named Brendan:

E9. Brendan was rushing farther and farther out to sea. [To slow her down] we streamed a heavy rope in a loop from the stern and let it trail in the water behind us to act as a brake, and, hopefully, to smooth the worst of the wave crests. From the stern also dangled a metal bucket; only twenty-four hours earlier we had been using it [to cook an excellent meal of Irish crabs]. Now it clanked mornfully every time a wave broke against it. (Thompson 1985, §5.1)

The preposed purpose clause formulates a problem which has been expected on the basis of the text preceding it. This problem requires a solution which is provided by the following main clause. An initial purpose clause thus acts like other topics in that it "provides a framework within which the main clause can be interpreted, and that it does this by its role as a link in an expectation chain." (Thompson 1985, §5.1) A final purpose clause, such as the second one in E9, does not do this, but merely appends a purpose locally relevant with respect to some semantic unit in the preceding main clause. Cf. also Chafe 1984.

We have seen one Latin example of this discourse function of left-marginal subordinate clauses in E4. E10 is another one.

E10. [Calcem partiario coquendam qui dant], ita datur:

LAT "If lime is given for burning by shares, it is given thus:" (Cat.agr. 16)

The relative clause ought to identify a referent to be taken up in the main clause. Here it does not do this, but rather depicts a situation which functions as a framework for the main clause. Thus, the topic function here suspends the semantic function of the subordinate clause.

A subordinate construction whose topic-forming potential is not yet fully explored is the absolute construction as exemplified in E11 and E12 (cf. Hoff 1985 for the Latin *ablativus absolutus*).

⁹ Cf. Marchese 1977 for various kinds of subordinate clauses in Godie and Lehmann 1984, ch.V.5.1 for relative clauses.

E11. [Cognito Caesaris adventu] Ariovistus legatos ad eum mittit.
LAT "When he learnt about Caesar's arrival, Ariovistus sent envoys to him." (Caes.B.G.1,42,1)

E12. [(Dopo) chiesto e pagato il conto], l'avventore pensa a andarsene.
ITA Lit.: "(After) asked and paid the bill, the customer thinks to go away."

Here the introductory subordinate construction again formulates a state of affairs coherent with an expectation chain formed on the basis of the preceding text; and this state of affairs provides the background for the action of the main clause.

Another subordinate clause whose topical function has been investigated is the conditional clause (cf. Haiman 1978). We may conclude that quite generally subordinate constructions at the left margin of the higher clause have topical function. This apparently holds irrespective of the order freedom enjoyed by the specific subordinate construction. It is true of the Hittite relative clause, which is almost invariably preposed, and of adjoined and correlative clauses in general, which must have marginal position; but it is as well true of English purpose clauses and the Latin *ablativus absolutus*, whose order is freer.

Certain conjunctions may force a fixed position of the subordinate clause introduced by them.

E13. Das verstehe ich nicht, zumal die Reise noch so billig war.
GER "That I don't understand, especially as the trip was so cheap."

E14. Fliegen ist viel schöner als Autofahren, nur daß man noch mehr aufpassen muß.
GER "Flying is much finer than car driving, except that one has to pay even more attention."

German subordinate clauses introduced by *zumal* "so much more so as" and *nur daß* "except that" have to follow their main clause, as they do in E13 und E14, and cannot precede it.

Another kind of positional constraint can be seen in the medial clause of Kobon (E6). The essential point in all the examples is the following: the fact that rules of grammar may determine the position of the subordinate syntagm in or vis-à-vis the matrix is an aspect of their integration which follows from their hierarchical downgrading.

2.1.3. We finally return to the gradience illustrated by E1 through to E8. The idea of this continuum also underlies the "typology of nexus" put forward in Foley & Van Valin 1984, ch.6, although the details differ. The continuum of hierarchical downgrading is represented in F1.

F1. Hierarchical downgrading

parataxis <-----> embedding					
independent clauses	adjoined clause	correlative diptych	medial clause	part. coni.	governed clause

Hierarchical downgrading is not only an important parameter in the typology of clause linkage, but is also a central criterion for the traditional notion of subordination; a clause not affected by it is not called subordinate.

2.2. Syntactic level

2.2.1. A second aspect of the integration of the subordinate clause into the main clause, closely related to its hierarchical downgrading, is the variation according to the main clause syntactic

level which the subordinate clause belongs to. The first to use this parameter for a typology of complex sentences was T. Milewski (1954). He distinguished three syntactic levels: the sentence level (above the simple clause), the clause level (within the clause), and the verb level. This hierarchy is mirrored in Foley & Van Valin's (1984, ch.6) typology of clause linkage according to their three levels of juncture, viz. periphery, core and nucleus. I will not accept such a threefold division but rather assume a multiplicity of syntactic levels between the morpheme and the paragraph, much as in constituent structure grammar.

The guiding idea is that the lower this level, the tighter the subordinate clause is integrated into the main clause. We may first reconsider the examples already given. In E1 there are only independent clauses; they are thus on the text level. The subordinate clauses in E2 through E4 do not form part of the main clause, but are on the same syntactic level as the latter, namely the sentence level. The subordinate clause in E6 occupies an intermediate position between being outside and inside the main clause (this adds up to the reasons why it is called medial). The adverbial clause in E5 is clearly part of the main clause, but on its highest syntactic level (immediately dominated by S). The conjunct participle of E7 is on some level between clause and VP. Finally, the subordinate clause in E8 is on the VP level.

Apart from the switch in the order of E5 and E6, this looks like a neat correlation between hierarchical downgrading and syntactic level. However, a moment of reflection will show that this need not be so. There can be subordinate predications on very low syntactic levels which are far from being governed by a main clause constituent. Look at E15.

E15. Tarquinio vero quid impudentius, [qui bellum gereret cum iis [qui eius non tulerant superbiam]]?

LAT "Again, what is more impudent than Tarquinius, who made war with those who could not bear his arrogance?" (Cic.Tu.3,27)

Here the first relative clause is appositive, which gives it a place somewhere in the first half of the continuum of hierarchical downgrading. The second relative clause is restrictive, thus dependent on the head noun, but still not governed by anything and therefore not at the rightmost pole of F1. However, the first relative clause is on a fairly low syntactic level, modifying an NP governed by the predicate. The second relative clause is on an even lower level, if we determine levels by counting nodes from the root of a constituent structure diagram. If we don't do this, but just count the distance from the nearest upper S, the second relative clause is still on a lower level than any subordinate clause in the examples through to E16.

Low syntactic level of a not maximally subordinate syntagm can also be seen in E16.

E16. Nipe wañib si ud ar-öp.

KOB 3.SG [string bag illicitly take] go-PRF.3.SG

"He stole the string bag." (Davies 1981:203)

The phenomenon illustrated by this example is called **verb serialization**. This in general involves the combination of verbals to complex verbals without the intervention of any connectives which might make explicit the relation among them.¹⁰ Usually only the last verb in the series carries the finite inflection, whereas the preceding verbs may be uninflected, as in the above example. This

¹⁰ A full treatment would have to investigate the relationship between serial verb constructions and motion purpose clauses (containing expressions such as 'go buy', 'come play' etc.), which seem to be more widespread. Cf. Aissen 1984 for a specimen analysis.

device is operative both in a syntactically regular way, as in E16, and in verb composition, with various intermediate degrees of lexicalization. What is presently of interest to us is the hierarchical relation obtaining in verb series and the syntactic level on which they abide. While detailed investigation is still pending, this much at least appears to be certain: The preceding verbal is not governed by the following one (or vice versa). It is not even clear that the former depends on the latter; they might be coordinate (or cosubordinate, as Foley & Van Valin 1984:261f would have it). On the other hand, the main clause syntactic level on which the preceding verb is adjoined is certainly not above the VP.

From these examples we may conclude that although advanced hierarchical downgrading of the subordinate clause implies a low syntactic level for it, the converse does not hold. Thus the relation between the continua of hierarchical downgrading and of syntactic level is one of unilateral implication.

Serial verb constructions are in a clear grammaticalization relationship with clause chains. The concomitance of the two clause linkage types, here represented by E6 and E16 for Kobon, therefore recurs in totally unrelated languages. See, e.g., Todd 1975 for Choctaw.

2.2.2. Up to now the lowest syntactic level illustrated by our examples has been that of the VP. E17 to E20 are meant to show that the various processes of subordination are also operative at still lower levels.

E17. Cato [hoc dicere] solebat.
LAT "Cato used to say this."

E18. I will [go] to bed now.

E19. Ho fatto prendere a mio figlio un'altra professione.
ITA have:1.SG made [take:INF to my son an other profession]
"I had my son choose another profession."

E20. Juzi-ka Juan-ta ruwana-ta awa-chi-rka.
QUE José-TOP Juan-ACC poncho-ACC [weave]-CAUS-PAST(3.SG)
"José had Juan weave a poncho." (Cole 1982:135)

The verbs on which the subordinate constructions depend here are operators forming complex predicates. Lat. *solere* as in E17 may be regarded as forming a periphrastic habitual aspect by governing an infinitival. Engl. *will* as in E18 is an auxiliary which takes an uninflected verb (an infinitive without *to*) as its complement. So here we are down to the level of the verbal or even the (analytic) verb form.

A causative construction may have the appearance of a complex sentence, with the verb of causation functioning as the main clause verb and the caused event being expressed by a subordinate clause governed by the verb of causation. The Italian causative construction illustrated in E19 comes close to this characterization, except that the subordinate clause is reduced to an infinitival. It also shows that the subordinate predicate has a tendency to attach directly to the verb of causation. This process is further advanced in E20 from Imbabura Quechua. The verb of causation here is reduced to a verbal suffix. The syntactic level we are dealing with is thus that of the verb.

2.2.3. We are now in a position to formulate the continuum of the syntactic level:

F2. *Syntactic level*

sentence <-----> word						
subordinate clause is			complex predicate formation			
outside	at margin	inside	inside	verb	auxiliary	verbal
main	of main	main	VP	serial-	peri-	deriva-
clause	clause	clause		ization	phrasis	tion

Although this parameter constitutes important differences among types of clause linkage, it does not seem to be crucial for the traditional notion of subordination.

2.3. Before we conclude the chapter on integration, we should at least mention **intonation** as an important factor in it (cf. Bolinger 1984). A clause may be downgraded by low pitch and may be integrated with another clause by the absence of an intonation break between them.

3. Expansion vs. reduction

3.1. Desententialization of subordinate clause

3.1.1. The third of the parameters that structure a typology of clause linkage is the degree to which the subordinate clause is expanded or reduced (cf. Lehmann 1982[N] for the following). In the reduction process, it loses the properties of a clause, it is **desententialized** to varying degrees. Components of the clause which allow reference to a specific state of affairs are dropped; the state of affairs is 'typified'.¹¹ At the same time, the subordinate clause increasingly acquires nominal properties, both internally and in its distribution. At the end of this process of **nominalization**, the clause becomes a nominal or adverbial constituent of a matrix clause. In §§3.1.2 and 3.1.3, we will deal with the internal and external aspects of desententialization, respectively.

3.1.2. There is a variety of semantic components and categories with their grammatical correlates which make up a full-fledged sentence. Let me enumerate here illocutionary force, mood, tense, aspect, actants and circumstants with their various syntactic functions. We observe, first of all, that a subordinate clause may not normally have its own **illocutionary force**. Certain particles bound up with illocutionary force are not admitted in subordinate clauses. We may mention the Quechua validator *-mi* and the Latin assertive particle *ne*. This is a consequence of the fact that "illocutionary force is the outermost peripheral operator", as Foley & Van Valin (1984:239) put it, which means that one sentence, however complex, may have only one illocutionary force. Look at the following examples:

E21. He believed [(that) I wrote a letter].

E22. Non temere est [quod corvos cantat mihi nunc ab laeva manu].

LAT "It is not by chance that the raven now croaks at me from the left side." (Pl.Au.624)

¹¹ Cf. Mackenzie 1984. Dik (1985:11) says: "any form of argument reduction easily leads to 'deactualization' of the meaning of the output predicate-frame, where deactualization means that the output predicate-frame tends to get a generic, habitual or potential reading rather than a reading which directly designates some actual state of affairs."

The structure of the noun clauses in both of these sentences differs minimally from that of a corresponding independent clause. (The same goes, incidentally, for E2 - E4.) The introductory subordinating conjunction is even optional in E21. However, even with such a low degree of desententialization, one thing is missing, viz. the illocutionary force that the corresponding independent sentences would have. The same can be seen in all the examples so far given except for E1.

Often the assertive force of the subordinate clause depends on the sentence type and the polarity of the main clause. Observe E23.

- E23. a. You stole the caviar [because you were hungry].
 b. Did you steal the caviar [because you were hungry]?
 c. You didn't steal the caviar [because you were hungry].

In E23.a the causal clause is understood to be asserted, while in b and c it is not. One way of putting this would be to say that certain bits of meaning are not expressed in the subordinate clause because they are determined for the whole sentence by the main clause.

A few classes of subordinate clauses are, however, allowed to have their own illocutionary force (cf. Green 1976, Lakoff 1984). Among them is the non-restrictive relative clause:

- E24. ad Italiam accedet, [in qua nos sedentes quid erimus]?
 LAT "He will approach Italy, where we will be sitting and doing what?" (Cic.Att.10,8,4)

- E25. Perutiles Xenophontis libri sunt, [quos legite, quaeso, studiose]!
 LAT "Highly useful are Xenophon's books; please read them thoroughly!" (Cic.Cat.M.59)

The semant syntax of the clauses represented in E24 and E25 is similar to that of parentheses. The relation linking them to a main clause constituent is not one of dependency, but of sociation, which means they are close to the left pole of the continuum of hierarchical downgrading. I predict that subordinate clauses with an illocutionary force of their own will become rarer as we approach the right pole of this continuum.

A further consequence of the desententialization of the subordinate clause are constraints on its **mood**. It suffices to mention some relevant facts. In Latin the choice of mood is constrained by syntactic rules in most kinds of subordinate clauses. The subordinate clauses of E10 and E22 show an obligatory indicative, the one of E8 an obligatory subjunctive. In several languages, among them Accadic and Abkhaz, all finite subordinate clauses are in the subjunctive. We understand that such restrictions are intimately connected with the lack of illocutionary force in subordinate clauses. As soon as it comes to nonfinite subordinate constructions, there is no longer any mood. Relevant examples are E7 and E17 - E20.

Another phenomenon closely associated with the lack of illocutionary force is the reduction of **word order freedom** inside the subordinate clause. This mirrors a gradual loss of freedom in theme-rheme assignment and in the applicability of syntactic processes in general. For example, word order in the subordinate clauses of E2 - E4 is essentially determined by functional sentence perspective, while in those of E6 and E7, as well as E26 below, there is virtually no functional sentence perspective, and consequently word order essentially obeys rules of syntax.¹²

¹² Again, this is a scalar phenomenon. As Green 1976 shows, the speaker may choose to couch his main point in a subordinate clause and then use, in this, functional sentence perspective and word order as

The next verbal categories that get reduced and finally lost in desententialization are **tense** and **aspect**. We saw that in Kobon medial clauses and non-final serial verbs tense and aspect are missing and are understood to be those of the final clause or verb, respectively.

- E26. Evvel-â çık-an güçlük-ler-in
 TUR [start-LOC emerge-ACT.PART trouble-PL-GEN
 kendi-liğ-in-den orta-dan kalk-tığ-ı gör-ül-ür.
 self-Ø-POSS.3-ABL middle-ABL disappear-NR-POSS.3] see-PASS-HABIT
 "It turns out that the problems occurring at first disappear completely by themselves."
 (Wendt 1972:187)

In the Turkish noun clause illustrated in E26, the tense-aspect system is reduced to a binary opposition between non-future (suffix *-dig-*) and future (*-ecek*). This opposition is bound up with voice in that the *-dig-* form cannot function as an active participle, as can the *-ecek-* form. Similarly, the Latin conjunct participle shown in E7 allows only of a tense opposition between simultaneous (present) and subsequent (future) action, apart from previous (perfect) action, which is bound up with passive voice. The same goes for the ablativus absolutus (E11). In the Italian absolute construction of E12, there is no choice of tense, aspect or voice whatsoever. Similar observation apply to the dependent verbs in E17 - E20.

Finally, desententialization affects the **relationality** of the predicate verb (cf. Dik 1985, §2 and Mackenzie 1985). The predication expressed in an independent clause, and also in such relatively weakly desententialized subordinate clauses as those in E2 - E6 as well as several of the other (finite) examples, gets lost, and simultaneously the subject slot of the subordinate verb is either converted into an oblique slot or is entirely lost. The verb becomes nonfinite. For verbs which conjugate for person when finite, this involves loss of personal inflection. A relevant example is E26. When there is an NP that would be the subject of the corresponding finite verb, this cannot be in the nominative, but has to be in various oblique cases. Very often this is the genitive. This can again be seen clearly in E26. The possessive suffix on the subordinate verb here agrees with the syntactic possessor (corresponding to the subject). Compare the situation in English:

E27. I heard [the man's/his singing].

E28 illustrates a verb that does not in principle inflect for person.

- E28. Ano hito-ga/no hon-o kai-ta koto-ga yoku sirarete iru.
 JAP [D3 person-NOM/GEN book-ACC write-PAST SR-NOM] well known COP
 "It is well known that that person wrote a book."

The subject of the subordinate clause can be either in the nominative or in the genitive, this being the only reflex of the verb's finiteness and nonfiniteness, respectively. Somehow converse to this is the case of the non-final serial verb in Kobon (E16), since this loses its personal inflection without, apparently, losing its ability to take a subject.

In Latin, the genitive of the semantic subject is known as the *genitivus subjectivus* accompanying verbal nouns. E29 illustrates this (*animi vel corporis*) as well as the *genitivus objectivus* (*gravioris operis et muneris*) to be treated below.

characteristic of main clauses. König & Van der Auwera (this vol.) show that main-clause word order in German subordinate clauses signals non-integration of the latter in the main clause.

E29. labor est [functio quaedam vel animi vel corporis gravioris operis et muneris].

LAT "Labor is the performance of a relatively hard compulsory work by the mind or the body." (Cic.Tu.2,35)

What was the subject of the finite verb may also appear in the accusative when the verb becomes nonfinite. This may happen to the causee in a causative construction, as in E20. It also happens in the accusativus cum infinitivo, as illustrated in E30 - E32.

E30. alku-ta kri-ni aycha-ta shuwa-ju-j-ta.

QUE dog-ACC believe-1.SG [meat-ACC steal-PROG-ACT.PART-ACC]

"I believe the dog to be stealing the meat." (Cole 1982:35)

E31. I heard [the man/him singing].

E32. [Liberos suos ... beatos esse] cupiat.

LAT "He may wish his children to be happy." (Cic.inv.1,48)

Finally, the possibility of the semantic subject going into the dative may be mentioned; this is illustrated in the causative construction of E19.

The subject is the first of the verbal actants to be affected by desententialization. On stronger nominalization, the whole verbal government is destroyed, so that NPs corresponding to the actants of the finite verb appear in the genitive or in adpositional phrases. We have seen the Latin genitivus objectivus in E29. E33 shows clearly that the loss of object government goes hand in hand with other symptoms of nominalization.

E33. a. She objected to [his constantly reading magazines].

b. She objected to [his constant reading of magazines].

The less strongly nominalized verb of E33.a takes a direct object and an adverb; the more strongly nominalized one of E33.b does not take a direct object and is modified by an adjective, just like any noun.

Complete loss of the subject slot of the subordinate verb can be seen in E17 and E18. Similarly, while every finite verb in English needs to have a subject, the nominalization illustrated in E33 can do without the possessor phrase corresponding to the subject. Milewski (1954) observes that where the clause is constructed according to the concentric strategy, the NPs which function as appositive extensions of the pronominal verbal affixes are impossible in subordinate clauses. On the whole, the more a verb gets nominalized, the more it starts behaving like an ordinary noun. It is in this sense that we may speak of the increasing **nominality** (or 'nouniness') of subordinate clauses, when they are reduced by desententialization.

In the present connection, we should note that such a strongly nominalized construction as the ablativus absolutus is usually reduced to two main constituents corresponding to the subject and the predicate of a full clause. It is only in the literary style of Classical Latin that the absolute construction may be expanded by adjuncts and even subordinate clauses (s. Coleman 1985). This is typologically highly marked. (Cf. Thompson 1984, §1 on certain peculiarities of written language.)

At some stage of strong desententialization, the **polarity** of the subordinate clause is also affected. This usually means that it can no longer be independently negated. Thus, we cannot negate the participle depending on the English auxiliaries, nor the infinitive depending on most of

the modals such as *must* and *may*. In Jacaltec, nonfinite subordinate predications cannot be negated (cf. Craig 1977:242f and Foley & Van Valin 1984:287f).

- E34. a. ζ -w-acoj yiŋ hin c'ul chubil ch-in to-yi.
 JAC PRS-ERG.1.SG-carry in POSS.1.SG stomach [that PRS-1.SG go-AUG]
 "I am thinking of going."
- b. ζ -w-acoj yiŋ hin c'ul chubil mach ch-in to-yi.
 PRS-ERG.1.SG-carry in POSS.1.SG stomach [that NEG PRS-1.SG go-AUG]
 "I am thinking of not going."
- c. ζ -w-acoj yiŋ hin c'ul hin to-yi.
 PRS-ERG.1.SG-carry in POSS.1.SG stomach [POSS.1.SG go-AUG]
 "I am thinking of going." (Craig 1977:242)

E34.a shows a finite subordinate clause, introduced by a subordinator, whose negative counterpart is E34.b. In E34.c we see a nonfinite version of E34.a. There is no way of negating this subordinate construction.

3.1.3. In the preceding, I have confined myself to those processes of desententialization which are operative inside the subordinate clause. We should note that increasing nominality of a subordinate construction also endows it with the **distributional properties** of a noun or NP. One such property that deserves special mention is the combinability with adpositions and case affixes. The rule is that the more a subordinate clause is nominalized, the more easily it combines with adpositions and case affixes. There is but one preposition which can govern the *that*-clause as shown in E21, namely *in*. In addition, there are some prepositions such as *before*, *after*, *since*, *till* and *because*, which may govern a finite subordinate clause lacking the introductory subordinator. We then usually say that the preposition functions as a conjunction. When it comes to more strongly desententialized subordinate constructions such as the gerundive, many more prepositions such as *by*, *upon*, *towards* etc. become possible.

The Japanese subject clause in E28 takes the appropriate nominative case suffix. Similarly, the Quechua object clause in E30 takes the accusative suffix.

No finite subordinate clause in Latin may be governed by a preposition, let alone take a case suffix. The preposed relative clause in E4 cannot directly be governed by the preposition *de*. Instead, it must be reinstated as an anaphoric pronoun, and in this form it can combine with the preposition. It is only nonfinite constructions such as the gerundive in E35 which may be governed by a preposition.

- E35. palus ... Romanos [ad insequendum] tardabat.
 LAT "A swamp detained the Romans in the pursuit." (Caes. B.G.7,26,2)

In E8 the subordinate clause is the object of the main verb; but it is not in the accusative, nor is there any way it could be. Even the nonfinite object clause of E32, directly comparable to the Quechua construction of E30, is not in the accusative. I will return in a moment to the accusatives in E32. Similarly, the relative clauses in E15, E24 and E25 are attributes to nouns in different cases; but they do not agree in case with their head nouns, as adjective attributes do (see Lehmann 1984:187f for the general possibility of such agreement).

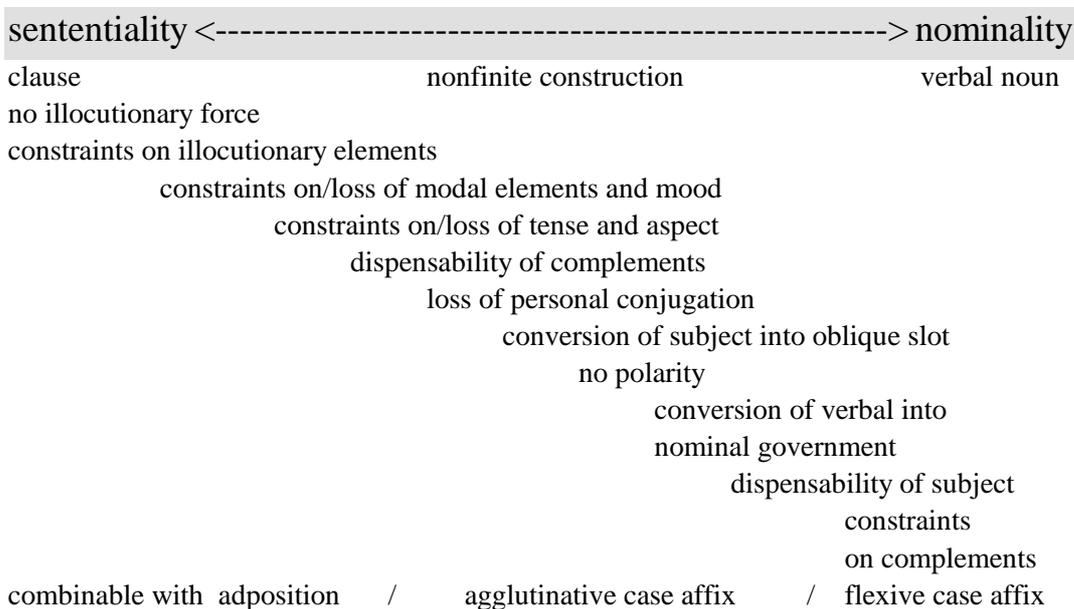
Instead of combining a whole subordinate construction with a case suffix (or a whole subordinate clause with a preposition), Latin chooses an appropriate constituent of the subordinate construction as a representative of the whole and has this carry the case suffix (cf. Lehmann

1979). In E11 it is not the subordinate clause as a whole which shows the ablative (assuming that this is the appropriate adverbial case), but rather its two main constituents, the NP and the participle which correspond to the subject and predicate of a finite construction. Similarly in E32, the nouns corresponding to the subject and the predicate nominal are in the accusative, vicariously for the subordinate clause as a whole.

In finite subordinate clauses, the solution is to show case on the subordinator. Many of the subordinative conjunctions, such as *quod*, *cum*, *qua*, *ut* etc. are old case forms of the relative pronoun which functioned as a general subordinator. All these are consequences of the fact that a language of the type Latin belongs to must show syntactic relations on the word.

3.1.4. We are now ready to sum up our observations on the inner and outer processes resulting from desententialization in a continuum which appears in F3 (cf. Lehmann 1982[N]:76).

F3. *Desententialization*



Strictly speaking, constructions such as the *ablativus absolutus* or the Romance *gerundives* in *-ndo* are adverbial rather than nominal in nature. I will not here consider the problem of whether all adverbials can be analyzed as nominals in a certain semantic case and merely note that the term 'nominality' used above should be understood as including adverbiality.

Much of the typological importance of the parameter of desententialization lies in the following fact: To the degree that the subordinate construction is desententialized, the whole sentence ceases to be genuinely complex. Looking at things from the point of view of expansion, we may say that the mere insertion of a verbal noun as a constituent of a sentence does not yet make this sentence syntactically complex. Cf. Carvalho 1985, Helander 1985 and E36.

- E36. a. Vicinus assum furatus est [quia pauper est].
LAT "The neighbour stole the roast because he is poor."
- b. Vicinus assum furatus est [propter paupertatem].
"The neighbour stole the roast because of his poverty."

E36.a is a complex sentence, while E36.b is not. This is a syntactic statement. It is quite a different question, which we will not address here, whether the latter sentence is easier to process

than the former. Experience with languages such as Turkish and Japanese, whose subordinate clauses are more desententialized than standard Indo-European ones, would not appear to invite the conclusion that sentences containing less desententialized subordinate clauses are *ceteris paribus* psychologically less complex.

3.2. Grammaticalization of main verb

3.2.1. In the preceding section we saw that a subordinate clause may be reduced to its core, the predicate. In the following we will see that there is a reduction process in the main clause, too. However, the kind of desententialization which leads to nominalization does not occur in main clauses, since it presupposes subordination. What we find, instead, is the grammaticalization of the word governing the subordinate clause.

Grammaticalization is a diachronic process and a synchronic continuum which lead from lexical to grammatical items (see Lehmann 1982[T] for details). Among other things, it turns full verbs into modals and auxiliaries. Since what is grammaticalized are essentially words, the approach of the present section presupposes that the subordinate clause have a grammatical relation to just one word in the matrix clause. There is a variety of subordinate constructions we might look at under this premiss (cf., e.g., Rosén 1985 for cleft sentences). However, the grammaticalization of the superordinate word leads to special construction types only when that word is a verb. The other interesting case is when the subordinate clause is governed by an adposition. Adpositions grammaticalize to case affixes. The combinability of subordinate clauses with adpositions and case affixes has been dealt with briefly in §3.1.3.

3.2.2. We can start the illustration of the grammaticalization of the superordinate predicate with **causative constructions**.

E37. sol efficit [ut omnia floreat]
LAT "the sun makes everything blossom" (Cic.n.d.2,41)

E19. Ho fatto prendere a mio figlio un'altra professione.
ITA have:1.SG made[take:INF to my son an other profession]
"I had my son choose another profession."

E20. Juzi-ka Juan-ta ruwana-ta awa-chi-rka.
QUE Jose-TOP Juan-ACC poncho-ACC [weave]-CAUS-PAST(3.SG)
"Jose had Juan weave a poncho." (Cole 1982:135)

E19 and E20, which are repeated here for convenience, belong into a series with E37. In this example, the verb of causation is a full lexical verb which governs a finite subordinate clause. There is little special about this verb, except that the class of verbs which govern an *ut*-clause is a closed one. The causative verb of E19 is much more grammaticalized. It combines directly with the subordinate verb to yield an analytic causative verb. The valency of the latter derives in a regular way from the valency of the dependent verb plus an additional causator-subject introduced by the verb of causation. In E20 the verb of causation is grammaticalized to a suffix on the semantically subordinate verb. The latter thus becomes a **causative verb**. The valency of the underlying simple verb is again increased by the causator-subject, the former subject being downgraded to a causee-object.

an affix. Gradually the main verb gets interpreted as a functive operating on the subordinate clause, specifically its verb, turning this into a derived verb.

3.2.4. Although the degree of grammaticalization of the superordinate verb constitutes important differences among types of clause linkage, it appears to play a largely negative role in traditional accounts of subordination. Namely, constructions with a highly grammaticalized superordinate verb generally have been neglected altogether in this connection. The continuum is schematized in F4.

F4. *Grammaticalization of main verb*

independent predicate		<----->			grammatical operator
lexical verb	evidential verb	modal verb	auxiliary	derivational/ grammatical affix	

3.3. The conclusion is, of course, that there are two ways of reducing a complex sentence to a simple one (and conversely, two ways of expanding a clause to a complex sentence). First, we may desententialize the subordinate clause, turning it into a simple constituent of the main clause. Second, we may grammaticalize the governing verb, turning it into an affix which modifies the meaning of the semantically subordinate verb. In both cases, the subordinate verb becomes a constituent of the main clause: in the first case, a dependent one, in the second case, its main verb.

4. Isolation vs. linkage

4.1. Interlacing

4.1.1. Another parameter structuring subordination is the degree to which the linked propositions are **interlaced**.¹⁴ The semantic aspect of interlacing is that the two propositions share some elements of their meanings. Its syntactic correlate are the non-specification of the common elements in one of the propositions and/or the syntagmatic interweaving of the two propositions. Cf. Davison 1979, §4.1 and Foley & Van Valin 1984, ch.6.3.

In principle, the linked propositions may share any bit of meaning one may please to imagine. I will not systematically cover the possibilities here, but mention just three: the sharing of predicates, of tense and aspect, and of actants.

The two propositions may share their predicate. When this is expressed only once, we get a kind of **brachylogy** known as **gapping**. Here are two examples:

- E42. [ut ager ... sine cultura fructuosus esse non potest], sic sine doctrina animus.
LAT "As a field cannot be fertile without cultivation, so the mind (cannot be fruitful) without instruction." (Cic.Tu.2,13)

¹⁴ Szantyr (1972:526) seems to be using the term **synsemy** for this phenomenon. The older term 'synsemanticity' has had too many applications to be recommendable.

E43. magis ea percipimus ..., quae nobis ipsis ... eveniunt, quam illa, [quae ceteris].

LAT "We perceive more strongly those things which happen to ourselves than those which (happen) to others." (Cic.off. 1,30)

In E42 the whole predicate of the main clause except for the privative adjunct is gapped on identity with the preceding subordinate clause. Conversely in E43, the predicate of the subordinate clause, except for the benefactive adjunct, is gapped on identity with the preceding main clause. Gapping works essentially the same way in parataxis and in hypotaxis. However, there are no subordinate constructions specialized for the case that a certain predicate, or a predicate of a certain kind, is shared among the two clauses. This is why shared predicates are not central to this section.

The second kind of interlacing that I will mention only briefly concerns tense and aspect. Their interlacing means that the tense and aspect of the subordinate clause are partly or wholly determined by those of the main clause (cf. Van Valin 1984 on 'grammatical category dependence').¹⁵ Partial dependence of the tense of the subordinate clause on that of the main clause occurs already at a level of weak desententialization in the form of **consecutio temporum**. The subordinate constructions of E7, E30 and E31, on the one hand, and of E11 and E12, on the other, signal only simultaneousness with and temporal priority to the main clause, respectively, the tense itself being determined by the main clause. Similarly, the subordinate verbs of E26 and E34.a only show that their time is not posterior and not prior, respectively, to main clause time. Complete dependence of subordinate tense and aspect can be seen in the Kobon examples E6 and E16, as well as in the infinitives of E17 - E19.

4.1.2. We now turn to the central issue of the present section, which is the interlacing of **actants** of the main and subordinate clauses. I will skip here the whole issue of relative clauses and just observe that the correlative diptych, as in E3 and E4, is essentially held together by anaphora, i.e. by the fact that the two correlative clauses share an actant (or another nominal or adverbial concept). The fact that backwards anaphora is allowed in subordinate clauses but heavily constrained¹⁶ in main clauses is another instance of the interlacing of actants that I will just mention.¹⁷

Many languages make a distinction in the inflection of a non-final (medial) verb depending on whether the verb of the following clause has the same or a distinct subject. Kobon does this in finite medial verbs, which have two opposite paradigms of personal endings, one signalling 'same subject', the other 'different subject'; cf. E6. Quechua signals sameness vs. difference of subject at the end of most of its subordinate clauses, e.g. the temporal clauses in E44.¹⁸

E44. a. Kitu-man chaya-shpa-mi rijisi-ta riku-rka-ni.
 QUE [Quito-ALL arrive-ADVLR.SS]-VAL acquaintance-ACC see-PAST-1.SG
 "When I arrived in Quito, I saw a friend."

¹⁵ The interlacing of tense can also be regarded as a special case of **relativized deixis** known from indirect (as opposed to direct) speech.

¹⁶ The three examples of backwards pronominalization in main clauses offered in Matthiessen & Thompson, this vol., §5.4.2 show merely that after pronominalizing a referent, we can again make full lexical reference to him - for emphasis' sake, presumably.

¹⁷ Cf. also Tao 1985 for the role of zero anaphora in clause linkage.

¹⁸ Cf. the similar situation described for Malayalam in Jayaseelan 1984.

- b. ñuka Kitu-man chaya-jpi-mi rijsi riku-wa-rka.
 [I Quito-ALL arrive-ADVLR.DS]-VAL acquaintance see-OBJ.1-PAST(SBJ.3)
 "When I arrived in Quito, a friend saw me." (Cole 1982: 61)

The examples illustrate a fairly general phenomenon, namely **switch-reference** (see Haiman & Munro (eds.) 1983). In standard Indo-European languages such as Latin, the distinction between 'same subject' and 'different subject' is not grammaticalized in such a general way. Nevertheless, something close to it is operative in several areas of clause linkage. The distribution of the conjunct participle and the ablativus absolutus is mainly governed by the identity or distinctness of the subjects of the matrix clause and the nonfinite construction: if they are identical, the conjunct participle is in order, while if they are distinct, the ablativus absolutus is needed (details in Haiman 1983 and Hoff 1985). The conjunct participle is, more generally, possible as a predicative adjunct to just any NP in the matrix clause (see Pinkster 1984, ch.8.2).

Another place in Latin where the subordinate construction is found to be sensitive to subject identity vs. distinctness is in object clauses. This issue has to be put into the broader framework of complementation and control (cf. Givón 1980). The verbs which govern complement clauses fall into the following classes, as regards their **valency** (cf. Pinkster 1984, ch.7.1; Foley & Van Valin 1984, ch.6.5):

1. monovalent verbs, taking a complement clause as actant;
2. bivalent verbs, taking an oblique complement clause;
3. trivalent verbs, taking a human object and an oblique complement clause.

With monovalent verbs (such as Lat. *accidere* "to happen", *constare* "to be a fact"), there is no question of subject identity. The subject of the complement clause of a bivalent verb (such as *cupere* "to desire") may be identical to the subject of that verb. The subject of the complement clause of a trivalent verb (such as *poscere* "to demand") may be identical to the subject or the human object of that verb.

From the point of view of **control**, these verbs fall into three classes, cross-classifying with the first three:

- A. verbs which exclude subject identity, e.g. *sinere* "to yield";
- B. verbs which allow subject identity, e.g. *sperare* "to hope", *docere* "to teach";
- C. verbs which force subject identity, e.g. *incipere* "to begin", *coercere* "to force".

Verbs of type B and C will be called optional and obligatory **control verbs**, respectively. Subordinate clauses with subject control differ systematically in their structure from subordinate clauses without subject control. Let us briefly look at some examples of two subtypes of optional control verbs.

On the one hand, we have verbs such as *cupere* in E45, which signify some kind of emotional relation of the subject towards the subordinate proposition.

- E45. a. [ut ... nuntium accipias] ... cupio (Cic.Tu.1,17)
 LAT "I wish for you to receive the message"
 b. Misere cupis ... [abire]. (Hor.Sat.1,9,14)
 "You are struggling pitifully to get away."

As in many other languages (cf. Thompson & Longacre 1985, §I.3.2.1.2 for same vs. different subject in purpose clauses), the object clause of such a verb may (or even must) be finite if it has

its own subject (E45.a), whereas it must reduce to an infinitive if the subordinate action is one of the higher subject (b).

On the other hand, an object clause occurs after verbs of cognition, as in E46, and even occasionally as a headless relative clause after a plain bivalent verb, as in E47.

E46. nescit [quo flectere puppem]

LAT "He does not know where to steer the ship" (Coripp.Joh.1,273)

E47. non habent unde reddere tibi

LAT NEG have:(PRS)3.PL [from.where refund:INF thou:DAT]

"They have nothing to give you back." (Itala Luc.14,14)

Such subordinate clauses are usually finite. Only if they have the same subject as the main clause is the infinitive possible, as in these examples.

In both of the cases we have observed, the optional control construction is just the same as the one appearing with obligatory control verbs. Cf. E45.b, E46 and E47 with E48.

E48. brevior iam in scribendo] incipio [fieri

LAT "I already start getting briefer in writing." (Cic.Att.5,6,2)

Incipere cannot but govern an infinitive complement. We thus see that the language provides different kinds of complement clauses for obligatory control verbs and for non-control verbs and that it makes these available for variation with optional control verbs. The important observation here is just like above for tense and aspect: If main and subordinate clause are interlaced by sharing an element of their structure, this will be left unspecified in the subordinate clause, the specification being supplied by the main clause.

4.1.3. The last example also displays **syntagmatic interweaving**. There is another type of interlacing in which this structural aspect is much more pronounced. I am referring to the constructions that used to be called **prolepsis** and that are nowadays called **raising** (several Latin examples in Szantyr 1972:471; see also Christol 1985). Observe the following examples:

E49. non fuit Iuppiter metuendus, [ne iratus noceret]

LAT "It was not to be feared that Jove might be pernicious in his anger." (Cic.off.3,104)

E50. Viden me [ut rapior]?

LAT "Don't you see how I am being kidnapped?" (Pl.Rud.869)

Here the subjects have been taken out of the noun clauses and have been made directly dependent on the superordinate verb. This bisects the subordinate clause and, in E49, renders it even discontinuous. This kind of interweaving presupposes the complement status of the subordinate clause.¹⁹ It is particularly common when the subordinate subject has some direct relation to the superordinate verb, as it clearly has in the two examples. I recall the functional explanation of prolepsis given by Löfstedt (1911:272): according to him a particularly salient notion, dominating in the relation between the main verb and the subordinate construction, is anticipated.

There are various other kinds of interweaving, many of them currently described by raising processes. I will just give two more examples:

¹⁹ Prolepsis is to be clearly distinguished from second position of the conjunction within the subordinate clause. This is, as Marouzeau 1946 shows quite conclusively, an instance of Wackernagel's enclitic position and does not lend any special relief to the word preceding the conjunction.

E51. Mi feci [radere la barba].
 ITA me made:1.SG shave:INF the beard
 "I had my beard shaved."

E52. Ich habe mich [rasiert].
 GER I have me shaved
 "I shaved myself."

In E51 the personal object has been extracted from the dependent infinitival and made directly dependent on the main verb ("object-to-object raising"). In E52 the participle which depends on the auxiliary has been distantiated from it by the intercalation of another phrase depending on the verb. In all these cases, the subordinate construction is tightly interwoven with the matrix clause. Here as above, the subordinate syntagms are complements of the superordinate verb. In the clearly syntactic constructions (i.e. above the level of analytic morphology exemplified in E52), they function either as subject or as direct object.

4.1.4. I will renounce at this point to setting up a continuum of interlacing. We may abide by accepting as plausible the idea that two clauses may be more or less interlaced, variation being between a pole of complete disjunctness of the two clauses and a pole of maximal identity. The tightness of the linking does not so much depend on the semantic nature of the linking relation as rather on the amount of material that the two propositions have in common.²⁰ The principle that we have found to be operative at the level of the (complex) sentence has a close analog at the text level. Recent research in discourse analysis has led to the following thesis regarding the mechanism of text cohesion at the paragraph level (Thompson & Longacre 1985:211): "Lexical overlap is the primary mode of intersentential connection".

4.2. Explicitness of linking

4.2.1. We are now coming to a traditional issue, the problem of **syndesis** and **asyndesis**.²¹ I had already remarked in the introduction that there is much terminological confusion in this area. Therefore I should like to stress again that the presence or absence of a connective device between two clauses has nothing to do with parataxis vs. hypotaxis, but is exclusively a question of syndesis. In particular, it is not the case that either the concept of hypotaxis or the concept of subordination require the use of a conjunction, as has been claimed variously. Let us therefore look first at paratactic, then at hypotactic constructions with regard to syndesis (cf. Brettschneider 1984:14f as to indicative vs. predicative representation of the interclausal relation).

E53. [Several chapters on a repelled assault of the enemy. First sentence of new section:]
His rebus gestis cum omnibus de causis Caesar pacatam Galliam existimaret atque ita hieme in Illyricum profectus esset, quod eas quoque nationes adire et regiones cognoscere volebat, subitum bellum in Gallia coortum est.
 LAT "These things being done, Caesar had every reason to assume that Gaule was now pacified. Thus in the winter he set off for Illyria, because he wanted to visit those peoples,

²⁰ Cf. Davison 1979:122. Foley & Van Valin 1984, ch.6.3.2 claim the first factor to be relevant, too, but do not present convincing evidence for it.

²¹ In traditional grammar, these terms have normative-stylistical connotations. In particular, asyndesis is often understood as the absence of a linking device where one would be expected.

too, and to learn about the area. There a sudden war broke out in Gaule."
(Caes.B.G.3,7,1)

E54. Todas essas ações do departamento evidentemente não tinham outro motivo do que não dificultar ou ainda impossibilizar o meu trabalho. *Assim sendo*, eu prefiro pôr o meu posto á disposição.

POR "All those actions of the department obviously had no other motive than to render my work difficult or even impossible. This being so, I prefer to vacate my post."

E55. Il lavoro in questo istituto mi soddisfa completamente, ed anche i colleghi sono molto gentili. *Ciononostante* devo dichiarare che esiste un problema insuperabile.

ITA "Work in this institute satisfies me completely, and also the colleagues are very friendly. This not withstanding, I have to admit that there is an unsurmountable problem."

E56. Ihr Angebot befriedigt meine Ansprüche vollkommen; *deswegen* nehme ich es dankend an.

GER "Your offer serves my wants completely; therefore I accept it gratefully."

E57. You are very kind, *but* I must contradict you.

E58. This is right *and* that is wrong.

E59. Veni, vidi, vici.

LAT "I came, I saw, I conquered."

The logic inherent in this series of examples is self-explanatory. We start with over-explicit syndesis, pass through a continuum of decreasing explicitness and end up with asyndesis. Three things need to be noted here. First, the explicit linking devices have a clear anaphoric internal structure. *His rebus gestis* in E53 starts with the proximal deictic pronoun which conventionally refers back to preceding text. The following examples feature *assim* "thus" (E54), *cio* "that" (E55) and *des* "of that" (E56). Each of these anaphoric pronouns takes up preceding propositions, thus representing them in the sentence so introduced. The sentences are hooked to one another, as it were.²² The verbs contained in the connective locutions of E53 and E54 are also anaphoric. Recall what was said in §4.1.4 on the function of semantic overlap in text and sentence cohesion.

Second, the connective phrases themselves in E53 - E55 are clearly reduced adverbial clauses. It is intriguing to observe that in order to connect two paratactic sentences explicitly, we use a subordinate clause (cf. Longacre & Thompson 1985, §II.4.5.). The linking element in E56 is still an adverb. In the following examples we find connective particles (see Pinkster 1984, ch.12.2.5 for adverbs, connectors and coordinators).

Third, in natural text the explicitness of the linking device is adjusted to the size of the entities linked. This is not a question of grammar, but of unpretentious style. E59 would not become ungrammatical if it contained the connective phrase of E53; but it would be stylistically marked. The relationship between small chunks of text immediately following each other is sufficiently clear from the mere adjacency. Large passages need explicit linking in order to form a cohesive text.

4.2.2. Here is the corresponding series of examples for subordination:

²² For early insights in this matter, see Paul 1920:148f.

- E60. O estudante comprou um monte de livros especializados, [*a fim de que* o professor o tivesse por inteligente].
 POR "The student bought a heap of specialized books in order that the professor should consider him intelligent."
- E61. [*Nonostante* l'òpera fosse molto rumorosa], mi addormentai nel secondo atto.
 ITA "Although the opera was very noisy, I fell asleep in the second act."
- E62. [*Postquam* aurum abstulimus], in navem conscendimus.
 LAT "After we had taken away the gold, we boarded a ship." (Pl.Ba.277)
- E63. [*Haec cum* Crassus dixisset], silentium est consecutum.
 LAT "When Crassus had said this, silence followed." (Cic. de or.1,160)
- E64. A verdade é [*que* todos saíram].
 POR "The truth is that they all left."
- E65. Si vis [*amari*], ama.
 LAT "If you want to be loved, love." (Sen.ep.9,6)

The principle underlying this series is the same as above: The connective and subordinating device is maximally explicit at the start and then is gradually reduced to zero. The linking phrases are again adverbial in nature. The phrase *a fim de que* in E60, lit. "to [the] end of that", is structured like a prepositional phrase introduced by *a*, with the governed noun *fim* in turn governing a dependent noun phrase, which is represented by the subordinate clause. It is noteworthy that such conjunctive phrases quite commonly incorporate a universal, unmarked subordinator, here *que*. The complex conjunction of E61 contains a verbal participle taking the subordinate clause as a (subject!) complement. Since the participle functions like a gerund, the whole complex functions as an adverbial. The conjunction in E62 consists of a preposition and a subordinator introducing the clause governed by the preposition. The conjunction in E63 can be recognized, with small etymological effort, as a case form of a relative pronoun (cf. above §3.1.3). Only in the last two examples do the subordinating devices not have any adverbial character. In E64 we have the unmarked subordinator. In E65, the interclausal relation is not expressed at all and the subordination is hidden in the inflectional category of the infinitive.

Thus, the first half of this series neatly confirms Delbrück's (1871:99f) thesis that a conjunction is a subordinator plus a certain case; cf. also Biraud 1985, §2f. However, the same cannot be said of the last stages of the continuum. It should come as no surprise that conjunctions of adverbial nature may be found in adverbial clauses, while mere subordinators are found in complement clauses.

This time the correlation between the explicitness of the interclausal relation and the heaviness of the linked clauses is not so pronounced, one of the reasons being that a desententialized clause has to be assigned a function in the main clause in order not to hang about functionless. Another factor which adds up to complicating the picture is the possibility of expressing the semantic relation of a subordinate syntagm to the main clause not in the subordinate, but in the main clause.

E66. Atque ibi [vehementissime perturbatus] Lentulus *tamen* et signum et manum suam cognovit.

LAT "And there Lentulus, being extremely embarrassed, yet recognized his signature and hand." (Cic.Cat.3, 12)

The subordinate construction in E66 is strongly desententialized, but its semantic relation to the matrix clause is made explicit in the main clause conjunction *tamen* "nevertheless".²³

4.2.3. Thus, there does not appear to be a strong relationship between desententialization and explicitness of linking. I delay the discussion of the correlations which do hold to the next section and conclude this section with the continuum of explicitness of linking.

F5. *Explicitness of linking*

syndesis <-----> asyndesis

anaphoric subordinate clause

gerundial verb

prepositional phrase

connective adverb

specific conjunction

universal subordinator

nonfinite verb

form

5. Towards a typology of clause linkage

5.1. Correlations among the parameters

The following six parameters have been found relevant to the understanding of clause linkage and subordination:

1. the hierarchical downgrading of the subordinate clause (F1),
2. the main clause syntactic level of the subordinate clause (F2),
3. the desententialization of the subordinate clause (F3),
4. the grammaticalization of the main verb (F4),
5. the interlacing of the two clauses,
6. the explicitness of the linking (F5).

Each of these parameters is construed as a continuum extending between two opposite poles. The question now arises as to the independence of the parameters. Note that our six continua are directed in a parallel way. Always looking from left to right, we find the first two continua extending from parataxis to embedding and from sentence to word level, respectively. The continuum of desententialization is between the poles of maximal sententiality and nominality. The continuum of the grammaticalization of the main verb starts from an independent predicate and ends with a grammatical operator. Interlacing of the two clauses varies between their total disjunctness and their maximal identity. Finally, the continuum of explicitness of the linking has explicit syndesis at its left and asyndesis at its right pole. Rather than trying to make the intuitive

²³ E66 thus shows that Matthiessen & Thompson's (this vol., §5.1) claim that markers of subordination mark satellites is not valid for Latin.

parallelism among the continua explicit, I will pass to commenting on individual correlations between pairs of them.

As regards the relationship between the first two continua, we had seen in §2.2 that advanced hierarchical downgrading of the subordinate clause implies a low syntactic level for it. We will thus be justified if in the following we take advanced downgrading as a sufficient condition for high integration.

High integration of the subordinate into the main clause correlates positively with its desententialization.²⁴ More precisely, nominalized subordinate constructions can easily be downgraded, since they acquire the distributional properties of a nominal expression (cf. Meillet 1921). We may also say that nominalization necessitates at least some downgrading, since a reduced construction cannot remain totally independent. However, maximal nominalization does not presuppose maximal downgrading, since a nominalized verbal may be relatively independent (say, as an adjunct, or even left-dislocated) just to the degree that any NP may be. The Latin participial constructions, e.g. in E7, illustrate this.

Strong grammaticalization of the governing predicate presupposes either advanced desententialization or strong interlacing. This is because the grammaticalization turns the governing predicate into a grammatical operator on the subordinate construction, but at the same time cuts down its syntactic scope (see Lehmann 1982[T], ch.IV.3.1). Thus the grammaticalized predicate must be an operator on a construction of relatively low complexity (cf. Foley & Van Valin 1984, ch.6.4.5 on the correlative reduction of both the choice of the governing verb and the syntactic level of the linkage). This is possible either through desententialization of the subordinate construction or by having the operator apply, through interlacing, only to one constituent of the subordinate construction, normally the predicate. Desententialization of the complement is evidenced by the grammatical causatives and desideratives in E19 and E40, respectively, while interlacing can be seen in the derivational counterparts, E38 and E41.b. Both desententialization and interlacing occur in E51 and E52. The latter point would also be illustrated by E48, except that here the main verb is not strongly grammaticalized.

Interlacing of clauses as brought about by raising operations presupposes downgrading, thus, integration of the subordinate clause. This is because raising is controlled by the main predicate, which means that the subordinate clause is governed by it. There are, indeed, no instances of prolepsis except out of subject and object clauses. As far as switch-reference is concerned, Haiman (1983:120) shows "that DS clauses are less dependent than are SS clauses".

Interlacing of clauses as brought about by dependent subject control leads to desententialization of the subordinate clause. This follows necessarily, insofar as dependent subject control means non-finiteness of the dependent verb and this means strong desententialization. Cf. Givón 1980, §3 and Cooreman 1984 on the correlation between the "binding scale" and desententialization. As for switch-reference, SS clauses exhibit stronger grammatical category dependence than DS clauses (Haiman 1983:121).

Explicitness of linking correlates with syntactic level, because the semantic relation linking clause A to clause B is rather constrained if the linkage pertains to a low syntactic level of B,

²⁴ Cf. Foley & Van Valin 1984, ch.6.4.1 on the correlation between their "syntactic bondedness" and nominalization, and also Givón 1980, Dixon 1984, Bolkestein 1985 and Carvalho 1985 on the correlation between the type of the governing verb and the desententialization of the governed clause.

whereas more diverse semantic relations may obtain on higher levels of B; cf. Foley & Van Valin 1984:196.

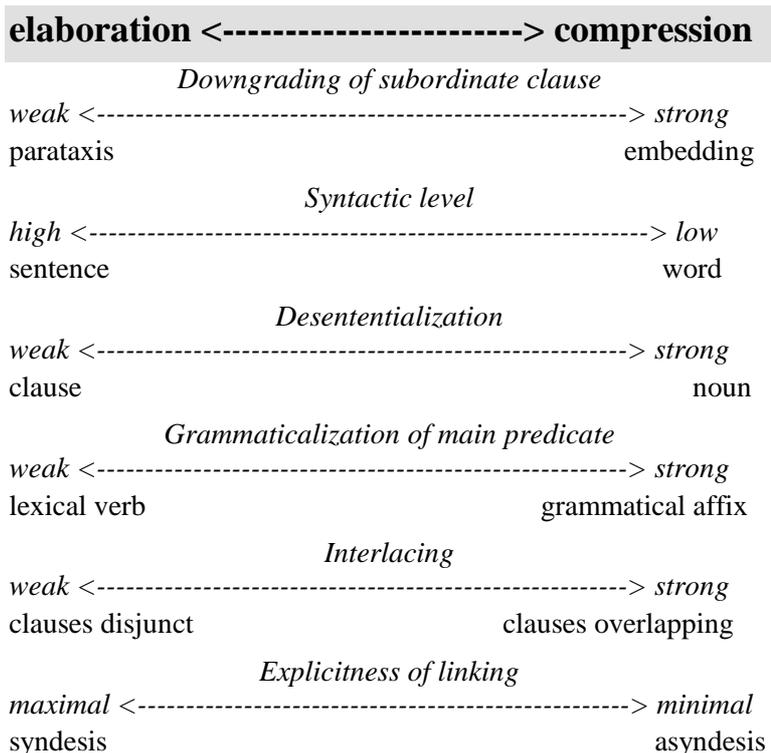
Explicitness of linking has some relationship to desententialization. We saw that explicit conjunctions, either coordinative or subordinative, may have the function of an adverbial in the linked clause, whereas pure subordinators do not have such a dependent status within the subordinate clause, but are just operators applied to it. From this it follows that those explicit conjunctions find their place within the linked clause without necessarily changing its status very much, whereas the pure subordinators do downgrade the clause they are applied to (cf. Carvalho 1985). However, this consideration only applies to explicit linkers which do function as adverbials within the linked clause; they do not apply, e.g., to E60.

Finally, asyndesis (lack of explicitness of linking) correlates with dependent subject control and thus with interlacing. This is because the syntactic relation of the subordinate construction to the matrix clause may be determined either by some property of the former or by some property of the latter. If the subordinate clause is linked to the main clause by some explicit connective, this determines its syntactic relation to the main clause and makes the subordinate clause seek its own place in the complex sentence. However, this is unnecessary and even impossible when the subordinate clause is controlled by the main verb.

5.2. A functional account of clause linkage

It should be clear that the correlations and implicative relationships formulated above represent tendencies, not laws. If any of them were perfect and exceptionless, it would be no use to establish distinct parameters. Nevertheless, to the degree that they do obtain, it makes sense to combine our six continua to the synopsis in F6.

F6. *Parallelism of clause linkage continua*



F6 makes us see the common functional denominator underlying the various continua: all of them extend from a pole of maximal **elaboration** to a pole of maximal **compression** (or condensation) of lexical and grammatical information.²⁵ This means that two opposing forces are at work in clause linkage. The first acts towards the elaboration of a phrase into a more fully developed construction which contains its own predication with all the accessories. Methodologically, this implies starting from the simple independent clause and gradually elaborating it into a complex sentence by expanding its constituents into clauses. To this corresponds the definition of the subordinate clause as "a member of a sentence having a form similar to that of a sentence" (Jespersen 1937:166). This point of view has been predominant in the traditional analysis of the subordinate clause. It has also been useful in the analysis of serial verb constructions as a technique of valence increasing (cf. Foley & Van Valin 1984, ch.5.2) and of cleft sentences as a technique in functional sentence perspective (cf. Lambrecht, this vol.).

The opposing force acts towards the compression of a full-fledged clause to a nominal or adverbial constituent of a matrix clause. Methodologically, this implies a derivation of complex sentences which starts from a set of complete clauses, reduces one of them through desententialization and combines them into one complex sentence by embedding them into each other. This point of view has been prevalent both in traditional diachronic approaches to complex sentence formation and in the transformational analysis of the subordinate clause.

Once we realize that the opposing forces are complementary, we will combine the two methodological viewpoints.²⁶ In a functional framework, clause linkage may be viewed as either representing two states of affairs as so tightly interconnected that they form one complex state of affairs (compression), or on the contrary analyzing one state of affairs as composed of two (elaboration; cf. Sloty 1936). In either case the cognitive relatedness of the two states of affairs is mirrored in the way they are linked in language.

5.3. Types of clause linkage

The complex continuum of F6 also provides a framework for a **typology** of clause linkage. Types may be found on this continuum to the degree that the properties and processes assembled on the six parameters tend to cluster. F6 tells us that there are two extreme types of clause linkage, at either of the two poles of the continuum. On the one hand, we have a combination in which both the two clauses and the linkage are maximally elaborated. They are both independent and syntactically equal, each of them is a full clause. They are linked by an explicit connective device; and this contains all that is semantically common to the two clauses. This type may be represented by E53.

On the other hand, we have one clause containing, apart from the main predicate, a reduced predication. This may be the subordinate clause. It is then embedded into the main clause on a

²⁵ It should be noted that this is the common denominator worked out by the Cologne research group UNITYP for their universal functional dimensions. The opposite principles are there called **predication** and **indication**, respectively. Cf., in general, Seiler 1983, and on clause linkage in particular, Brettschneider 1980 and 1984.

²⁶ Looking back, it should be noted that the unilinear order in which each of the continua has been presented was due to expository simplicity.

low syntactic level, strongly nominalized and interlaced with the main predication and lacks any specification of the relation linking it to the latter. This type is represented by E45.b. Or again the matrix predication may be the reduced one. Then this is grammaticalized, but the other characteristics of the reduced type hold as well. E20 embodies this type.

Between these extreme types, there is a great variety of intermediate and concomitant types. The intermediate types differ from the extreme types merely in that all the parameters are developed to a non-extreme, but parallel degree. The concomitant types result from the fact that correlation among the parameters is not perfect. For example, we quite freely get completely asyndetic clauses which otherwise show no signs of reduction. (Note that there was no claim that absence of downgrading correlated with explicitness of linking.) Some of these intermediate and concomitant types are well represented in the languages of the world. Among them are, from left to right in F6:

- the correlative diptych illustrated by E3 and E4;
- the weakly desententialized noun clause introduced by a universal subordinator, as in E21 and E64;
- the more strongly nominalized noun clause with a subordinating verb suffix illustrated in E26;
- the strongly nominalized adverbial clause represented by such absolute constructions as in E11;
- the infinitival depending on a modal verb, as in E40 and E65;
- verb serialization as exemplified in E16.

Comparative linguists have always felt that the prevalence of such a construction type may characterize - together with other features - a given language. For instance, the prevalence of the correlative diptych is characteristic of Hittite; the strongly nominalized adverbial clause is typical for Quechua and Tamil. Future research will ascertain which features tend to cluster, what are the principles intrinsic to the model of F6 that account for such clustering, and how the different construction types go together with other properties of each language, thus constituting more complex and richer linguistic types.²⁷

Abbreviations

Language names

BAMbara KOBon
 FREnch LATin
 GERman PORtuguese
 HITtite QUEchua
 ITAlian SANskrit
 JACaltec TURkish
 JAPANese WALbiri

Grammatical category labels

ACC accusative NEG negation

²⁷ Comrie 1984 on the typological connections of control properties, and Mithun 1984 on subordination in polysynthetic languages, are contributions to this goal.

ACT	active	NOM	nominative
ADVLR	adverbializer	OBJ	object
ALL	allative	PART	participle
AUG	augment	PAST	past
AUX	auxiliary	PL	plural
CAUS	causative	POSS	possessive
COMPL	completive aspect	PRF	perfect
CONN	connective	PRS	present
COP	copula	PROG	progressive
DAT	dative	REL	relative (particle, affix or pronoun)
DEF	definite		
DS	different subject	SBJ	subject
D3	demonstrative of 3 rd person deixis	SG	singular
		SR	subordinator
ERG	ergative	SS	same subject
GEN	genitive	TOP	topic
INAN	inanimate	VAL	validator
INF	infinitive	1	first person
LOC	locative	2	second person
M	masculine	3	third person

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