

Adverbial Subordination



Empirical Approaches to Language Typology

18

Editors

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Adverbial Subordination

A Typology and History of Adverbial Subordinators
Based on European Languages

by

Bernd Kortmann

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For Leonie

Preface

This book is the result of a unique collaborative research effort. The outcome of this collaborative effort were two volumes, the first of which turned into the current monograph. The second volume includes the data which form the basis for this book, organized into two dictionaries (one language-based, the other semantics-based). It is hoped that this second volume will independently be published in the near future. In the meantime all readers interested in getting access to the data are welcome to contact the author via the publisher.

It would have been impossible even to conceive of this book outside the international research programme “Typology of European Languages” of the European Science Foundation (1990–1994). This programme and the theme group on “Adverbial relations, operators and connectives”, in particular, provided an ideal and extremely fertile climate in which I could develop and carry through my project on adverbial subordinators. Not only did the members of this theme group serve as informants for most of the languages covered in this book, they also gave me invaluable feedback at different stages of the project. Thanks Oda, Donall, Hartmut, Igor, Johan, Juan Carlos, Leonid, Kees, Martin, Paolo, Thomas, Walter – thanks to all of you! Many thanks also to all other native speaker informants and professional linguists who agreed to collect data for my project or to check my material for reliability and consistency, despite the fact that in most cases I could offer little more than symbolic remuneration. For whatever mistakes in the material may have remained it is the author alone who is to blame and takes full responsibility.

But EUROTYP is only one pillar on which this book rests. The other pillar is the computerized database without which it would have been impossible for a single person to cope with the organization and analysis of such an enormous amount of data in less than two years. It was my friend and former colleague Paul Georg Meyer who created the perfect computer environment for this purpose. It was shaped to the requirements of the project and at the same time to the needs of someone who is not much into computing. Besides, Paul let me profit from his expertise in Classical Greek and spent many hours reading and commenting on draft versions of individual chapters.

The current version of the book profited from the discussions with many colleagues. I would like to mention, in particular, Ekkehard König, Johan van der Auwera, Ewald Lang and Bernard Comrie. I would also like to thank all those

who invited me for guest lectures or workshops, thus giving me the opportunity to talk about work in progress, and all those who contributed to clarifying my ideas on individual points by asking challenging questions or making useful suggestions. Special thanks deserve the organizers of the Amsterdam Summer School on Language Typology in 1993, Ans van Kemenade and Kees Hengeveld, for having trusted me with a whole morning session. The structure of this book is essentially the structure of the presentation I gave on that occasion.

Finally I would like to thank all those (Dorothee, Friederike, Iman, Verena and, above all, Melitta Cocan) who helped me prepare the final manuscript, check the galley-proofs, and compile the indexes.

The prefinal version of this book was completed in May 1994, two weeks before our daughter was born. Although she has not used a single adverbial subordinator so far, it is to her that this book is dedicated.

Freiburg im Breisgau, August 1996

Jene Kategorien der Gedankenverbindung, die wir durch Wenn, Weil, Obgleich, Und, Aber, Oder u.s.w. ausdrücken, gehören freilich zu den unerlässlichsten Werkzeugen jeden überlegenden Geistes; kein Menschevolk kann ohne sie auskommen, jedes hantiert in seinem Denken mit Bedingungen, Ursachen, Einschränkungen, Alternativen. Allein wir wissen es: ein Anderes ist die logische Kategorie, ein Anderes die sprachliche Form, in der sie Ausdruck findet, die Kraft, der Reichthum, die sinnige Feinheit des Denkens, die sich in diesem Ausdruck bekundet, die Mannigfaltigkeit in den Ausdrucksmitteln und die Vorliebe für das eine oder andere derselben.

(Georg von der Gabelentz. 1901². *Die Sprachwissenschaft, ihre Aufgaben, Methoden und bisherigen Ergebnisse*. Leipzig. p. 464)

[Those categories of thought connection which we express by means of *if, because, although, and, but, or*, etc. do of course belong to the most indispensable tools of any reasoning mind; no people can do without them, every people operates in its thinking with conditions, causes, restrictions, alternatives. Yet we do know this: the logical category is one thing; the linguistic form expressing it is another; the force, the richness, the subtlety of thinking reflected in this expression, the great range of expressive devices and the predilection for one or another of these.] [translation by B.K.]

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Abbreviations

Abx	Abkhaz	DAT	dative
ABS	absolute	DEF	definite
ACC	accusative	DEGREE	Degree/Extent 'insofar as'
ADESS	adessive	DEM	demonstrative
ADDI	Addition 'in addition to'	Dut	Dutch
ADP	adposition	D1	deictic of first person
ADV	adverb	D2	second person
Alb	Albanian	D3	third person
ALL	allative		
ANTE	Anteriority 'after'	ELAT	elative
Arm	Armenian	EModE	Early Modern English
ART	article	Eng	English (<i>see also</i> PrDE)
AS	adverbial subordinator	ERG	ergative
Azb	Azerbaijani	EXCEPT	Exception/Restriction/ 'except/only that'
Blg	Bulgarian	Far	Faroeese
Brn	Breton	FEM	feminine
Bsq	Basque	Fer	Fering
		Fin	Finnish
CAUS	causative	FOC	focus
CAUSE	Cause/Reason 'because'	FOC__PTL	focus particle
CCC	causal, conditional, concessive and related interclausal rela- tions	Fr	French
Che	Chechen	GEN	genitive
Chu	Chuvash	GER	gerund
ClGr	Classical Greek	Goth	Gothic
CMPar__PTL	comparative particle	Grg	Georgian
COCOND	Concessive Condition 'even if'	Grk	Modern Greek
		Grm	German
COMACC	Comment/Accord 'as'	Hng	Hungarian
COMP	complementizer		
COMPAR	Comparison 'as if'	Ice	Icelandic
CONC	Concession 'although'	IE	Indo-European
CONCOM	Concomitance	IMANTE	Immediate Anteriority 'as soon as'
COND	Condition 'if'		
CONT	continuative	IMPF	imperfective
CONTIN	Contingency 'whenever'	IMT	interlinear morphemic translation
CONTRA	Contrast 'whereas'		
CONV	converb	IND	indicative
COORD	coordinator	INESS	inessive
Ctl	Catalan	INF	infinitive
		INSTR	instrumental
Dan	Danish	INSTRU	Instrument/Mean 'by'

INT	interrogative	PL	plural
Ir	Irish	PLACE	Place 'where'
IR	interclausal (or: adverbial, circumstantial) relation	PM	polymorphemic
IRH	Inverse Relation Hypothesis	Po	postposition
It	Italian	Pol	Polish
		POST	Posteriority 'before'
Klm	Kalmyk	POT	potential
Krch	Karachay-Balkar	PrDE	Present-Day English (<i>see also</i> Eng)
		PREFER	Preference 'rather than'
Lith	Lithuanian	PRF	perfective
LOC	locative	PROPOR	Proportion 'the ... the'
Ltn	Latin	PRS	present
Ltv	Latvian	Prt	Portuguese
Lzg	Lezgian	PS	person
		PURPOS	Purpose 'in order that'
M	masculine	PW	'polyword' (i. e. phrasal or discontinuous) adverbial subordinator
Mcd	Macedonian		
MDL	modal	QUANT	quantifier
MDL_PTL	modal particle	QUOT	quotative
ME	Middle English		
MF	monofunctional	REL	relativizer
Mlt	Maltese	RESULT	Result 'so that'
MM	monomorphemic	Rmni	Romani
Mnx	Manx	Rum	Rumanian
MW	one-word adverbial subordinator	Rus	Russian
		S	subject
N	noun	SBJV	subjunctive
N_COM	Negative Concomitance 'with-out'	ScGl	Scottish Gaelic
N_COND	Negative Condition 'unless'	SCr	Serbian/Croatian
N_PURP	Negative Purpose 'lest'	SG	singular
NAmc	Neo-Aramaic	SICOEX	Simultaneity Co-Extensiveness 'as long as'
NEG	negation marker	SIDUR	Simultaneity Duration 'while'
NEUT	neuter	SIMIL	Similarity 'as, like'
Nnts	Nenets	SIOVER	Simultaneity Overlap 'when'
NOM	nominative	Spn	Spanish
		SR	subordinator
O	object	SUBSTI	Substitution 'instead of'
OE	Old English		
OPT	optative	TAQUEM	Terminus ad quem 'until'
Oss	Ossetic	TAQUO	Terminus a quo 'since'
		Tls	Talysh
P	preposition	Trk	Turkish
PART	participle	Tsz	Tsez
PAST	past	Tr	Tatar
PF	polyfunctional (adverbial subordinator can signal more than one adverbial relation)		

Udm	Udmurt	Conventions in interlinear morphemic translations:
UNIV__	universal/free choice quantifier	
QUANT		
V	verb	- indicates morpheme boundary
Wls	Welsh	: indicates morpheme boundary which is irrelevant or cannot be clearly drawn
Yid	Yiddish	.
1	first person	separates two or more elements rendering a single morpheme in the language analyzed
2	second person	/ separates different meanings of the same morpheme
3	third person	

Part One

Background: Scope, Aims, Theory, Methodology, Data

Part One describes the scope, the methodology and the general goals of the present study. Chapter 1 sketches what the reader can and cannot expect from this study, outlining its major aims and claims, but also its potential limitations. Chapter 2 is primarily designed to familiarize the reader with the tightly interwoven network of theories of language and language change that has provided many sources of inspiration as regards the crosslinguistic and historical study of the form and meaning of grammatical morphemes, indeed so many that it may justly be said to have crucially shaped this study. To many readers the fact that this study is restricted to the languages of Europe may at first seem rather unusual, arbitrary and ultimately, at least for the purposes of arriving at typological results of potentially universal validity, not very helpful. Chapter 3 will explain the motivation behind this choice by pointing to the advantages and challenges such an areal study offers, especially when investigating the morphosemantics of adverbial subordinators; in addition, it will specify the genetic and areal distribution of the subset of languages analyzed in the present study. Chapter 4, finally, gives details as to how and on what basis the data have been collected and evaluated, addressing in particular such central questions as how to define adverbial subordinators and the individual relations constituting the semantic space of interclausal (adverbial or circumstantial) relations, and how to classify the morphology and semantics of adverbial subordinators in such a way that it allows large-scale statistical statements.

1. Scope and aims

1.1. Guiding questions

This is a morphosemantic study of adverbial subordinators like English *when*, *while*, *if*, *because*, *although* or German *nachdem*, *bevor*, *wenn*, *weil*, *obwohl* in the languages of Europe. Its central parts are based upon the analysis of some 2,000 items with about 3,400 readings from 49 languages as well as from Old English, Middle English and Early Modern English. The study reports on the most important results of a three-year project under the sole responsibility of the author which began in January 1991 as part of the international research programme "Typology of European Languages (EUROTYP)", more exactly of the EUROTYP theme group on "Adverbial Relations, Operators, and Connectives" (cf. van der Auwera (to appear)). The general direction of this study can be sketched by means of a set of questions which were formulated in the planning stage of the project.

Starting out from the question which lexical or morphological markers European languages employ for the specification of the way in which some adverbial clause semantically modifies a matrix clause, this study aims, first of all, at generalizations concerning adverbial subordinators as a syntactic category, more exactly at generalizations concerning their form, their function, and the relationships between their form and function. With regard to THE FORM OF ADVERBIAL SUBORDINATORS what will be of interest is, among other things, their morphological complexity. What, for example, can we say about the proportions and the distribution of one-word and phrasal subordinators in the European languages in general, and for individual (groups of) languages or semantic interclausal relations (e.g. Cause, Condition, Concession) in particular? Other relevant questions concern the categorial sources of adverbial subordinators: Which syntactic categories (prepositions, adverbs, interrogative markers, complementizers, nouns, etc.) do the European languages most frequently draw upon in the formation of adverbial subordinators, and which types of formation patterns can be identified?

The interest in THE FUNCTION AND MEANING OF ADVERBIAL SUBORDINATORS can be illustrated by questions like the following: Do adverbial subordinators principally serve this syntactic function only (like *although*), or is it more common that they are syntactically polyfunctional (like *after* or *before*), and which other categories are particularly prominent in this respect? Are adverbial subordinators overwhelmingly monosemic (like *because*) or polysemic (like *as*)? The analysis of

the semantics of adverbial subordinators will also crucially involve the attempt to illuminate the internal organization of the conceptual domain (or: SEMANTIC SPACE) they cover. In other words, the idea is to learn more about the nature of individual circumstantial relations, about networks of such relations (e.g. the temporal relations), and indeed about the entire semantic space of adverbial relations via the study of their formal markers. Is it thus possible to find (additional) empirical evidence for particularly close affiliations between certain adverbial relations, for instance by analyzing polysemous items, or for the intuition that certain relations (e.g. 'when', 'if', 'because') seem to be cognitively more basic than others (like 'as if' or 'except that')? For the latter purpose, one important piece of evidence will be the degree to which the various circumstantial relations are coded by means of adverbial subordinators (in terms of the number of languages which provide at least one item for any given relation).

Another field of interest in this study is THE RELATIONSHIP BETWEEN THE FORM AND FUNCTION OR MEANING OF ADVERBIAL SUBORDINATORS. What, for instance, are the preferred syntactic and semantic sources of adverbial subordinators signalling temporal relations like 'when' or 'while'? Which interclausal semantic relations are typically signalled by subordinating connectives incorporating a focus particle like *even* or *only*, or an interrogative complementizer (like German *ob* 'whether' in such concessive subordinators as *obwohl*, *obgleich*, or *obschon*)? In general, it will be interesting to see whether it is possible to identify patterns and regularities concerning the impact different types of incorporated morphological material have on the meaning of adverbial subordinators. At an even higher level of generalization, the relation will be explored between the morphological complexity of an adverbial subordinator and the number of meanings it can express. Adverbial subordinators will serve as a test case for semiotic principles according to which the range of meanings a lexical item can express inversely correlates with its formal complexity (measured in terms of morphological and phonological substance).

Apart from such generalizations concerning adverbial subordinators as a form class, the semantic space they cover, and patterns in form–function relationships, it is a fifth major aim of this project to contribute to a better understanding of EUROPE AS A LINGUISTIC AREA. Are there, for instance, distinctive genetic or, even more importantly, areal patterns and clusters which can be identified on analyzing the morphological make-up and semantic composition of a wide range of inventories of adverbial subordinators? If yes, to what extent can these be shown to correlate with other syntactic and morphological properties of the languages investigated? The two ultimate questions are, of course, the following: Is it possible to come up with generalizations that cover all of the European languages in the project sample concerning characteristics in the domains of

adverbial subordinators and (adverbial) subordination? And, secondly, which of these general characteristics can be expected to represent specifically, if not exclusively, European traits, which are likely to be found outside of Europe too, and which may even claim the status of universals?

Besides the above set of questions relating to language synchrony there is also a diachronic perspective to this study. This perspective can be captured by means of the following questions: In what way can the observable synchronic variation across languages as well as the findings concerning preferred categorial sources and nonconjunctional functions contribute to our knowledge of the historical development of adverbial subordinators? The next two questions are more intricate: What can be said about changes in the internal structure, i. e. the semantic composition, of inventories of adverbial subordinators over time? What, for example, can we say about the proportions of temporal, causal, or concessive subordinators if we compare Latin with the modern Romance languages, or Old English with later periods of English? Considering the last two questions, the present study may thus be viewed as paving the way towards in-depth comparative investigations of the historical development of lexical fields in the domain of adverbial subordination.

1.2. Scope

The original working definition of adverbial subordinators was the following: “free forms or bound morphemes which specify some semantic interclausal (or: circumstantial, adverbial) relation between the subordinate clause over which they operate and the modified matrix clause” (Kortmann 1991b: 4). This scope has been narrowed down to an investigation of lexical markers, i. e. free forms, thus leaving aside bound conjunctional particles, as for example in Abkhaz, or verbal suffixes forming so-called “specialized converbs” (cf. Nedjalkov 1995: 106–108). Thus defined, the term *adverbial subordinator* largely corresponds to what is familiar as *adverbial conjunction* from traditional grammar.

Concerning the choice of the subtitle some qualifying remarks are necessary. Under a definition of typology as “the study of linguistic patterns ... that can be discovered solely by crosslinguistic comparison” (Croft 1990: 1), its two central tasks are to provide, first of all, descriptive generalizations and, secondly, explanations for them (cf. also Abraham 1989b). At the present stage of this typological study, the focus clearly is on the first task, i. e. on the presentation of properties of adverbial subordinators as a word class (i. e. across languages), properties (e.g. structural types) of adverbial subordinators and subordinator

inventories in individual (groups of) languages and, where possible, correlations with other properties of the languages or language groups concerned. The question why (inventories of) adverbial subordinators have these properties, whether there are, for example, underlying principles which account for them, is only of secondary importance; even less important is the question how they developed the properties they have. Moreover, what will be offered in terms of explanation concerning the distribution of properties of adverbial subordinators across the languages investigated will in part be most untypical of the explanations favoured by typologists. Joint areal and historical explanations are exactly those types of explanations which typologists try to avoid by constructing their language samples such that the languages in the sample are neither genetically nor geographically nor historically related. But then, given its restriction to the languages of Europe, the current study is nothing but a large-scale areal investigation with, consequently, rather different aims than linguistic typology. Its ultimate aim can neither be the uncovering of universals of language nor the provision of a definitive crosslinguistic survey, but at most the identification of features common to a large number, possibly all of the European languages which cannot be explained by genetic relatedness. Such generalizations over the European languages, in turn, may help define Europe as a linguistic area, may yield candidates for universals (to be checked against data from a representative sample of non-European languages), and can be used for testing the validity of universals formulated in previous studies (cf. similarly Haarmann 1976: 107). What is more, returning to the significance of explanations in language typology, in accounting for areal features within Europe and of Europe as a whole, especially in the domain of adverbial subordination, the linguistic evolution of Europe can neither be ignored nor can it be viewed independently of the cultural and political evolution of Europe.

It is easy to see the almost natural link between a crosslinguistic and a historical account of adverbial subordinators, and the fascinating perspectives such a combined approach offers. Focussing on just one particular aspect of this study, this is aptly captured in the following quotation from Harris (1990: 311): "..., the deeper meanings underlying our familiar connectives often appear in the etymology of unitary forms or, transparently, in the structure of incoming conjunctive syntagms, and a simple compositional analysis of these deeper meanings will tell us the likely source(s) for new connectives." Nevertheless, this project was never intended as a systematic investigation of the historical sources and paths of development of adverbial subordinators from a European perspective. As a consequence, for almost none of the languages investigated was etymological information systematically collected. And yet, especially because of the inclusion of Latin, Classical Greek, and Gothic in the sample and the system-

atic analysis of the development of the English inventory of adverbial subordinators from Old English times onwards, this study is after all capable of identifying several significant tendencies, and of making new claims or providing empirical evidence for previous claims concerning the historical development of adverbial subordinators and, more importantly, whole conjunctive systems over time. Similarly to what has been said concerning the typological part of this study, the emphasis of the historical account will be on the presentation and interpretation of the “facts” as they emerge from the project data, and not so much on the whys and hows.

Given the above restrictions on its scope, what the present study can offer the reader are a host of descriptions and descriptive generalizations, but considerably less in terms of explanation or responsible processes. More exactly, what this study tries to do is to develop a framework which may be put to use in analyses of other European and, more importantly, non-European languages, and to formulate some first hypotheses and generalizations which may inspire and be tested in similar studies. Its minimal aims are to contribute to a better characterization and understanding of adverbial subordinators as a word class and of conjunctive systems as a whole, both from a synchronic and a diachronic point of view, and of the semantics of individual (groups of) interclausal relations and the connections among them.

Although the study will overwhelmingly be concerned with the morphology and semantics of adverbial subordinators, it should finally be noted that syntactic issues will come in at various places. These concern, for example, the categorial status of adverbial subordinators, their position relative to the clause over which they operate, the distinction between independent senses of an adverbial subordinator, the interplay of adverbial subordinators signalling individual interclausal relations with negation and/or mood, the close relations between certain types of adverbial clauses and relative clauses or interrogative sentences, and the correlation between the dominant word order of languages and their exclusive or predominant subordination strategy (finite vs. nonfinite).

1.3. Major claims and limitations

All major empirical claims of this study will be made in Part Two and Part Three. A global characterization of the formal and semantic properties of adverbial subordinators in the languages of Europe and of the syntactic categories from which adverbial subordinators most frequently develop in these languages will be given in Chapter 5. The major points that will be argued in Chapters 6 to

10 include the following. A crosslinguistic study of adverbial subordinators in a wide range of languages confirms predictions from iconicity and other semiotic principles concerning a form–function equilibrium, more exactly concerning an inverse relation between formal complexity and semantic versatility such that the latter will decrease with an increase of the former, and vice versa (Chapter 6). Second, such a study provides the basis for identifying the internal structure of the conceptual domain of interclausal relations as one which consists of layers of decreasing cognitive basicness, semantic networks with clearly identifiable semantic foci and partial orders, and polysemy chains within and between these networks (Chapter 7). Third, areal patterns can be identified which, above all, seem to justify an organization of the European languages into a core and a periphery from the viewpoint of adverbial subordination; moreover, it will be suggested that the hypothesized core area falls into two hemispheres which possibly represent two domains of influence, one bearing the distinctive mark of Latin and the other one that of Classical Greek (Chapter 8). Fourth, a number of generalizations (absolute as well as relative, implicational as well as nonimplicational) will be formulated for the European languages, including correlations between morphological and syntactic properties of different language types. Some of these “Euroversals”, as they will be tentatively called, may indeed claim universal validity (Chapter 9). From a diachronic point of view, this study confirms and reveals additional general tendencies in the development of adverbial subordinators and entire subordinator inventories as regards their morphology, semantics and form–function relationships. Furthermore, it documents changes in the semantic composition of inventories of adverbial subordinators over time. This will primarily be done as part of a macro-analysis of the historical development of the conjunctive system of English, which will also provide ample evidence for the multifarious ways in which the inventory of adverbial subordinators in Present-Day English has been shaped in the Middle English period (Chapter 10).

It should also be spelt out very clearly what the reader cannot expect from this study. There is, first of all, the problem of categorization, a problem notorious in crosslinguistic research especially once it comes to definitions of such fundamental grammatical categories as word classes (cf. Croft 1990: 13 or Lyons 1977: 426–429). Having worked right from the beginning with a prototype definition of adverbial subordinators and having been solely interested in the morphosemantic properties of the members of this class, no data were systematically collected on types of adverbial connectives which are not covered by this prototype definition. Moreover, the informants were not given a set of syntactic tests which might provide criteria for categorial delimitations, such as the distinction of adverbial subordinators from coordinators, conjunctive adverbs,

relativizers, or complementizers. In order to find crosslinguistically valid criteria of this sort no less than a separate typological project is necessary, and a more demanding one than the current project at that (for some preliminary thoughts cf. Brettschneider 1980). Therefore, this study can make only a modest contribution to the theory of grammatical categories. This will be done, on the one hand, when discussing the delimitation of adverbial subordinators from related categories with the help of category continua and sketching the criteria which have been made the basis for including a given item as an “ideal” adverbial subordinator in the corpus (section 4.2). On the other hand, questions of categorization come in, if only marginally, when considering the syntactic polyfunctionality of adverbial subordinators, i. e. subordinators which also function as adpositions, adverbs, relativizers, interrogative markers, etc. (section 5.2). The results make it possible to say more about the most important categories that feed in to the development of adverbial subordinators across languages. That way they may help formulating conditions on what kinds of properties a modular theory of grammatical categories should meet, namely properties that allow dynamism, i. e. that can account for category changes.

From a more general point of view, this first limitation of the approach adopted in this project shows that it is hard to remedy the looseness of prototype definitions in functional-typological studies. It is almost inevitable that what may be the most useful crosslinguistic definition (cf. the following quotation from Croft) will almost certainly not meet the degree of precision a formal theory of grammar requires definitions of categories to have (cf. also Lehmann 1984: 9): “The interplay between our pretheoretic notion of the nature of the category and the actual crosslinguistic variation found in that category determines what is the “best” or most useful crosslinguistic definition for typological analysis” (Croft 1990: 17–18).

Second, the exclusion of adverbial connectives other than adverbial subordinators may be felt to cast doubt on the validity of what will be proposed concerning the internal structure of the semantic space of interclausal relations, the different degrees of conceptual complexity that can be assigned to them, and possible conceptual universals in this semantic domain. It is, however, a basic assumption of this study that the relative communicative and cognitive importance of concepts can be seen from the degree to which they find expression in grammatical structures. Thus it is undeniably a common feature of Standard Average European and the languages influenced by it that they make frequent use of complex sentences, at least in the written language, and that they possess a restricted inventory of adverbial subordinators representing an important, if not the most important, lexical means of marking the circumstantial relation(s)

between two or more propositions. Especially in the European languages, therefore, the analysis of inventories of adverbial subordinators offers ideal access to the semantic domain of circumstantial relations and allows us to formulate hypotheses which will have to be tested against the results of future studies (in a format identical to or at least comparable with the present one) for other types of adverbial connectives, with conjunctive adverbs like English *therefore*, *however*, *all the same*, etc. representing the most promising category to start out with.

2. Theoretical foundations

There exists of course an abundance of literature pertinent to many issues addressed in this study; special mention in this respect goes to the typology of adverbial clauses by Thompson–Longacre (1985) and the various articles on concessive, conditional and concessive-conditional connectives and adverbial clauses by Martin Harris, Ekkehard König and Elizabeth Closs Traugott published in the course of the last ten to twelve years. However, there do not exist any studies on adverbial subordinators or interclausal relations which could rival this project for its aims, its language coverage or its method of data collection, classification and evaluation. In retrospect the design of the project may be likened to that of the GRAMCATS project by Joan Bybee and collaborators (1985, 1987, 1991, 1994), a typological project on the verb morphology in 75 languages. This is especially due to the idea of coding forms and meanings in a way that makes them quantifiable. However, although its results are not without concern to this project (cf. section 2.4), the GRAMCATS project did not serve as a model in the planning stage. Likewise, the present study has not been modelled on any particular theory. Rather, it has been inspired by a larger, multifaceted theoretical (and methodological) framework which in all its aspects has been thriving only for the last twenty years or so, and which is gaining ever wider recognition as an increasingly integrated alternative or, at least, complementary approach to the search for language universals in the generative paradigm. The central task of this chapter is to give a broad outline of the major theories, concepts and assumptions within this framework which have shaped this study, both with respect to its overall aims and its heuristics. In sections 2.1 to 2.4, therefore, the essentials of the four central, tightly interwoven theoretical aspects of this framework will be presented. These are the following: functional typology as the overarching approach to linguistic analysis and theorizing (section 2.1); iconicity, markedness and related semiotic principles as providing external motivation for the typological findings concerning language structure (section 2.2); cognitive semantics as a theory which is independent of functional typology and, as yet, not typologically oriented, but which nevertheless entertains assumptions and propagates methods which fruitfully interact with the functional-typological approach (section 2.3); and, finally, grammaticalization as a theory of language which, as one of its central aspects, offers a diachronic or, more generally, dynamic perspective on typology (section 2.4). The general spirit of these sections, I should like to stress, is not to provide an exhaustive survey or an in-depth discussion of the relevant writings, but simply to identify—often

with the help of some key quotations—the major sources of inspiration of the present study.

In sketching the theoretical foundations of this study, I have deliberately refrained from attributing a special section to grammatical tradition despite the fact that this tradition has inevitably played a crucial role. Think only of the organization of chapters on adverbial clauses in traditional or descriptive grammars to the present day: essentially, they are all shaped to the same pattern. Grammatical tradition thus provided the indispensable basis of much of the data collection. Furthermore, it is traditional terminology which still plays an important part in language comparison in general, as pointed out by Lehmann (1984):

Bei dem niedrigen Grad an Präzision oder objektiver Nachprüfbarkeit, der beim jetzigen Stand der Sprachvergleichung erreichbar ist, reicht die Verwendung traditioneller grammatischer Begrifflichkeit im allgemeinen aus. (Lehmann 1984: 9)

[Given the low degree of precision or objective verification in the current state of language comparison it will generally suffice to employ traditional grammatical terminology.] [translation by B. K.]

One reason why this is particularly true in the domain of adverbial subordination is that that theoretical paradigm which over the last three decades has been so immensely successful in replacing traditional terminology in many areas of morphology and syntax has so little to say on adverbial clauses, and even less on adverbial subordinators. Given their largely (though not entirely) nonsyntactic orientation, both fields of inquiry are of virtually no interest to generative linguistics. Nevertheless, the scarce generative literature that does exist on adverbial subordination will briefly be reviewed in section 2.5. The primary aim of this discussion will be to contrast the generative approach to the study of adverbial subordinators with the functional-typological one adopted here. However, it will also address the question to what extent modern syntactic theory has been successful in advancing the theory of grammatical categories compared with traditional accounts.

2.1. Functional typology

The functional-typological approach to the study of language is of course inextricably linked to the name of Joseph H. Greenberg and his 1960 article on implicational universals in morphology and word order (Greenberg 1966). Younger scholars and landmarks in publication associated with this approach include Joan Bybee (1985), Bernard Comrie (1989²), William Foley and Robert Van

Valin (1984), Talmy Givón (1979, 1984/90), Greenberg (1978b), John Haiman (1980, 1985b), Paul J. Hopper (1987 or, with Sandra A. Thompson, 1980), Timothy Shopen (1985), Sandra A. Thompson (for this study especially in Thompson–Longacre 1985) or, in Germany, Christian Lehmann (1984). Recently, the major tenets, concepts and methods in functional typology have been presented by Croft (1990) as part of his excellent introduction to language typology and universals. Of these, the following three had a particularly strong coining influence on the conception of the present study.

There is, first of all, the tenet according to which it is a necessary precondition for formulating so-called generalizing typologies and, possibly, universals for individual subsystems of language that data from a wide range of genetically and areally unrelated languages are collected and analyzed.

Secondly, the semantic and pragmatic function of language structures must assume a prominent role (a) in defining universally valid categories, and (b) in generalizing and explaining the observable crosslinguistic patterns and limits of variation. For the first goal, that is in order to achieve a high degree of cross-language comparability, category definitions “must be based on function, or more precisely, the relationship between function and form (structure)” (Croft 1990: 247). The prototype definitions (Croft 1990: 17) this approach yields may lack the formal precision demanded by modern syntactic theories, but are much better suited to make the most of the often low degree of precision and reliability of the data typologists have to work with (cf. also the quotation from Lehmann (1984) above). Thus it was a prototype definition of adverbial subordinators that was assumed at the outset of this project, which has then increasingly been refined in the process of screening the data before “ideal” adverbial subordinators as defined in section 4.2.2 were made the basis of all statistical analyses presented in this study.

As to (b), the functional explanations this approach strives to give are meant to hold on a larger scale as well. More exactly, functional typology does not stop at accounting for (limits of) variation across languages, but tries to give a unified account of intralinguistic variation, crosslinguistic variation, and variation over time as essentially the same external factors are held to underlie all three types of variation. Central to this framework of dynamic typology which has evolved since the late 1970s (Greenberg 1978a: 76–85) is the concept of functional adaptation (Croft 1990: 252–256), which views the evolution of language and languages as a constant attempt at adapting language structure to functional needs (such as efficiency in the production and processing of language in communication, or language as a crucial means for establishing and negotiating social relations, etc.). This concept also underlies Hopper’s notion of emergent grammar, which “is meant to suggest that structure, or regularity, comes out of

discourse and is shaped by discourse as much as it shapes discourse in an on-going process ..." (1987: 142).

Thirdly, the identification of patterns of morphological and syntactic variation across a wide range of languages offers new perspectives to historical linguistics. Crosslinguistic variation in language synchrony may provide important clues (e.g. missing links) concerning variation over time in a particular (genetic group of) language(s), and may thus give rise to richer diachronic hypotheses as to the options and limits of language change. In addition to this diachronic typology (Croft 1990: 203–245), independent evidence of historical developments may be gained by "internal reconstruction and a comparison with closely related languages" (Greenberg 1978a: 79). This way of proceeding suggests itself particularly for a comparative study of the European languages. One of the major aims of this study will therefore be the following: to determine on the basis of the analysis of adverbial subordinators from modern European languages, on the one hand, and from extinct (Classical and Germanic) languages, on the other hand, to what extent the results concerning form–function relationships (cf. section 2.2), polysemy structures (cf. section 2.3) and grammaticalization paths (cf. section 2.4) are mutually supportive, and thus further substantiate the central idea behind typological historical-linguistic research.

Ultimately, the larger framework of functional typology as it represents itself in the early 1990s has helped emancipate linguistics from more or less deeply entrenched (post-) Saussurean tenets such as "linguistics must be synchronic", "linguistics must be internal", "the relation between *signifié* and *signifiant* is arbitrary", and "for each linguistic form there is only one function or meaning". This would not have been possible without the extensive crossfertilization among comparative research and the three closely related theories of language that will be sketched in the following and which, with the exception of cognitive semantics, are not only instrumental in functional typology but may, to a greater or lesser extent, be viewed as offspring of the latter.

2.2. Iconicity, markedness and related semiotic principles

A crucial aspect of this study, as should have emerged from the introductory questions in section 1.1, concerns form–function relations. This is exactly what the present section is all about. Thus the assumption of iconicity in language, as explored and illustrated in various publications by John Haiman (1980, 1985a, 1985b) and Talmy Givón (1985, 1990), provides fruitful ideas on what can be learnt about conceptual structure via the analysis of linguistic structure, espe-

cially, of course, when comparing data from a wide range of languages. For instance, the degree of coding (involving especially a decrease in formal complexity, morphological and semantic reconstructability, and an increase in semantic and functional variability and, possibly, frequency of use) may serve as an indicator of what kinds of concepts can be said to be central or peripheral to the language user, or (maybe: and thus) cognitively primitive or complex. Witness the following quotations from Haiman (1985b) and Croft (1990):

To the functionalist, anomalies and inconsistencies [in grammar, B. K.] are to be expected because he recognizes the existence of competing motivations, in particular, iconic and economic motivations. At any stage of any natural language, there will be areas in the grammar where originally iconically motivated structures have become grammaticalized, and there will be others where they have not. Given that 'grammars code best what speakers do most' we should expect to find maximal coding (that is, economy and opacity) in well-trodden areas of semantic space, and minimal coding (that is, iconicity and transparency) at the peripheries. (Haiman 1985b: 259)

One can study what concepts are expressed crosslinguistically by simple grammatical structures – single morphemes, single words, single clauses – as opposed to what concepts are expressed by complex structures – multiple morphemes, compound words, complex sentences. ... This already represents a prototype structure: prototypically simple concepts are universally expressed as single morphemes, prototypically complex concepts are universally expressed as complex linguistic structures, and intermediate concepts vary crosslinguistically. ... The iconicity hypothesis would propose that the concepts which are always, or frequently, expressed by simple grammatical structures are cognitively primitive and those expressed by complex structures are cognitively complex. (Croft 1990: 173)

From the cognitive point of view, the question which ultimately remains to be answered is of course to what extent the distinction of central and peripheral concepts correlates with the one of primitive and complex ones.¹ In Chapter 7 a modest contribution to this question will be made concerning the semantic space of interclausal relations on the basis of the frequency of coding and degree of grammaticalization of different semantic classes of adverbial subordinators. It is in the same chapter that, based on the analysis of formal and semantic similarities of adverbial subordinators signalling different interclausal relations, arguments will be provided for semantic networks in the domain of interclausal relations as well as partial orders within these networks. This line of thinking, too, i. e. the assumption that language structure also reflects affinities between concepts, has been inspired by an axiom in studies on iconicity according to which "recurrent similarity in form must reflect similarity in meaning" (Haiman 1985: 26) and, vice versa, "different form tends to correlate with different meaning" (Traugott – Romaine 1985: 11).

Another basic assumption in iconicity shows up in Haiman's contrast between minimal and maximal coding and will be explored for adverbial subordinators in Chapter 6 on the Inverse Relation Hypothesis. This is the assumption of a form–meaning or form–function equilibrium, which is also entertained in other theories of language and the linguistic sign. Thus in markedness theory, which also plays a crucial role in functional typology (cf. Croft 1990: 64–94, 156–164), "... it is assumed that the morphonologically simple forms, which are qualified as 'unmarked', have a heavier functional load and higher frequency of occurrence and are learnt and interpreted relatively easier." (Tomič 1989: 2) Alternatively, as in Moravcsik–Wirth (1986), this may be described as the syntagmatic, i. e. structural, complexity of a linguistic item inversely correlating with its paradigmatic variability (as indicated by its semantic and/or functional range). Finally, using statistical means, such a balance between form and meaning has also been claimed by Zipf (1949) in his well-known Principle of Economical Abbreviation and the Principles constituting the Law of Diminishing Returns, which "are all constantly operating simultaneously for the preservation of a dynamic equilibrium with a maximum of economy" (1949: 121). As these four principles show, the frequency of use of a given item was a particularly important diagnostic to Zipf (1949: 66–133):

- the Principle of Economical Abbreviation: formal complexity correlates inversely with frequency of use;
- the Principle of Economical Permutation: the different combinations into which a word enters and the frequency with which these are used correlate with the frequency of use of the word;
- the Principle of Economical Versatility: semantic versatility correlates with frequency of use;
- the Principle of Economical Specialization: the age of a lexical item in the language correlates inversely with its size and directly with its frequency

Zipf thus concludes that "... *there is a tendency for old age, small size, versatility of meaning, and a multiplicity of permutational associations—all to be directly correlated with high frequency of usage [sic]*" (1949: 121). Of course this tendency is impossible to verify in a typological study as it is hard enough to come up with reliable usage frequencies for only one language. It has, however, been done for the four major languages of West Europe (English, French, German, Spanish): in Chapter 6.2 it will thus be shown that, indeed, Zipf's conclusion is convincingly supported not only by the synchronic facts for adverbial subordinators from these languages, but also by the diachronic facts for the adverbial subordinators in English.

2.3. Cognitive semantics

Another rich source of inspiration for this study has been cognitive semantics, especially of the brand associated with the writings by Elizabeth Closs Traugott (beginning with Traugott 1982) and Eve Sweetser (culminating in Sweetser 1990). This type of cognitive semantics also draws on (Neo-)Gricean hypotheses and principles like Levinson's Principle of Informativeness (1983: 146–147, 1987). Central to their studies in the semantics and pragmatics of, among other things, adverbial connectives is the concept of semantic relatedness: what they are ultimately striving for is a unified, motivated account of polysemy, observable semantic changes, and pragmatic ambiguities in terms of fundamental cognitive processes at work in communication and human perception of the world (cf. Sweetser 1990: 1–5). Crosslinguistic studies play an important role in gathering the evidence for semantic relatedness, if relatedness is not to be defined intuitively. The first major piece of evidence will be provided by means of crosslinguistic examinations of polysemy structures (i. e. of what groupings of meanings are regularly found; cf. also the previous section on semantic networks). Secondly, the analysis of meaning changes in a number of languages, ideally languages neither genetically nor areally related to each other, will show which earlier senses most frequently give rise to which later senses over time. The idea which stands behind this is that these two pieces of evidence will typically coincide. This may be called the Principle of Generativity and the corresponding method “internal semantic reconstruction” (Traugott 1986: 97): synchronically adjacent senses are also diachronically adjacent, such that senses which are the source of derivation in language synchrony will also be the historically prior ones in language diachrony. This principle is meant to hold for lexical and grammatical meanings alike (cf. Bybee 1985 or Bybee–Pagliuca 1987). In the domain of adverbial connectives this might be illustrated by such semantic developments as “Simultaneity (or: concomitance) > Concession”, “Anteriority > Cause” or “Posteriority > Preference”, which are observable in a wide range of languages, especially languages from Europe. Relevant examples from English include *while*, *since*, and *before* or *rather than* respectively (cf. Traugott–König 1991 as well as several other publications by Traugott and/or König). Moreover, many of these semantic changes can justly be viewed as the outcome of pragmatic inferencing, which in these cases has become conventionalized, but which for many connectives still is no more than a richer (or more informative), nonetheless highly context-bound and optional reading in language synchrony.

Although it is entailed in what has been said so far, it should also be made very explicit that this study does admit polysemy in semantic theory. In other

words, no approach guided by the axiom of isomorphism, be it the invariance hypothesis (Columbia school; e.g. Tobin 1990), the monosemy hypothesis (e.g. Ruhl 1989) or the “single-function-in-discourse” hypothesis (Relevance theory; e.g. Blakemore 1987 or Caron 1987), can by its very nature offer a fruitful theoretical paradigm for the present study or any study within the functional typological or cognitive semantic frameworks discussed so far. The reasons are obvious; from a historical perspective, this has been put in plain words by Bybee (1986: 5): “If each morpheme has only one fixed, abstract meaning that forms a system with other morphemes, then there is neither motivation nor mechanism for the system to change.” Apart from this fundamental methodological drawback, there is little advantage in eliminating polysemy other than cleansing the sterile ideal of semantic theory from the messy reality of natural language. All that is achieved thereby is a far more complicated, because very abstract, monosemic lexical entry (cf. also Cruse 1992: 598), and secondly a shifting of the problem of identifying the appropriate meaning (or for that matter: function, reading, use) away from semantics to the context, that is to pragmatics. A compromise view, as simple as it is familiar, may be to allow for both an abstract underlying *Gesamtbedeutung* and a set of actual meanings which differ by the degree to which they are contextually constrained. The meaning(s) with no or the least contextual constraints would then qualify as the primary meaning(s), and those with strong contextual restrictions as secondary meanings. This might look as in Figure 2.1.

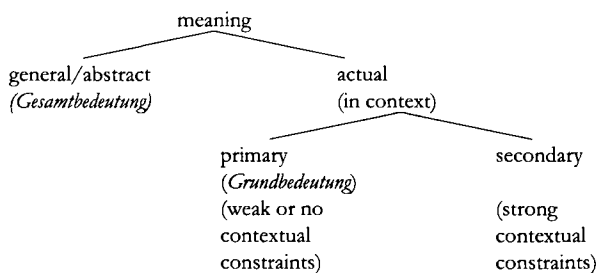


Figure 2.1. The relationship between general, primary and secondary meanings

The meanings of interest to cognitive semanticists and functional typologists will obviously be the actual meanings.

There is one final point which needs to be made concerning polysemy. It is one of the major insights of cognitive linguistics, notably of Lakoff (1987), that for a much greater number of multiple-meaning lexical items than traditionally

acknowledged motivated links between the individual meanings can be identified. In other words, many items previously classified as homonyms are now rather viewed as polysemes. Crosslinguistic research on items with more than one meaning may of course also furnish important evidence in this respect: “if many diverse languages independently have the same pattern of ‘homonymy’, then the meanings are closely related” (Croft 1990: 166). This method, which has been successfully employed by Haiman in a whole range of studies (e.g. 1978, 1985b), is sometimes referred to as “typological polysemy”.

2.4. Grammaticalization

Grammaticalization has received an enormous amount of attention since the late 1970s (Givón 1979) and especially early 1980s (Lehmann 1982), which culminated in the early 1990s with the publication of Heine et al. (1991b), Traugott–Heine (1991) and, most recently, Hopper–Traugott (1993), all of which will serve as reference books on the subject for many years to come. The fact that it was the 1980s in which there arose a revived interest in grammaticalization is no coincidence. It was this decade which saw functional typology flourishing, a renewed interest in iconicity, and, independently, cognitive linguistics, particularly cognitive semantics, developing as a new nongenerative paradigm. As pointed out earlier, there was and is not only considerable overlap in the kind of questions worked on in these theories of language; this overlap more often than not is a natural consequence of the fact that the protagonists of these frameworks work in more than one of them. More exactly, for most of the figure-heads functional typology served as the starting-point out of which a renewed interest in iconicity and grammaticalization arose (cf., for instance, Lehmann, Haiman, or Givón).

As a conceptual framework, grammaticalization can be defined as “... that part of the study of language that focuses on how grammatical forms and constructions arise, how they are used, and how they shape the language. The framework of grammaticalization is concerned with the question of whether boundaries between categories are discrete, and with the interdependence of structure and use, of the fixed and the less fixed in language” (Hopper–Traugott 1993: 1). From this characterization some important tenets of grammaticalization can be extracted. Several further ones can be added to these, so that one arrives at the following catalogue, which will immediately make clear the strong, partly inextricable links with the major assumptions, claims and hypotheses

sketched in the three preceding sections. The order in which these tenets will be listed does not reflect their relative importance:

(i) Categories are nondiscrete and have a heterogeneous internal (layered core–periphery) structure. A crucial concept of grammaticalization is the notion of a continuum or cline (cf. also section 4.2). “Both metaphors, ‘cline’ and ‘continuum’, are to be understood as having certain focal points where phenomena may cluster” (Hopper–Traugott 1993: 7) and along which transitional processes in grammaticalization take place, both synchronically and diachronically. This links up especially with basic assumptions in cognitive linguistics.

(ii) A panchronic view is adopted, i. e. as in functional typology and cognitive semantics the synchrony–diachrony dichotomy is transcended. Witness the following quotation from Lehmann (1985: 303): “Under the diachronic aspect, grammaticalization is a process which turns lexemes into grammatical formatives and makes grammatical formatives still more grammatical (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.”

(iii) Ultimately, grammatical formatives evolve out of discourse; the actual process of grammaticalization as it is traditionally defined (see Kuryłowicz above) can be viewed to proceed along a path as first hypothesized by Givón (1979: 209):

discourse > syntax > morphology > morphophonemics > zero

Compare similarly Hopper’s notion of emergent grammar in section 2.1 or the idea of pragmatic strengthening in section 2.3, i. e. the idea of semantic changes as having resulted from the conventionalization of conversational implicatures.

(iv) Functional explanations are sought for: “The relevant question is not: why is there this variation or that change? but rather: what are this variation and that change for?” (Lehmann 1985: 317). Compare similarly the concept of functional adaptation in functional typology.

(v) In looking for functional explanations of grammaticalization phenomena, functional typology and crosslinguistic work, in general, may provide important pieces of evidence. Thus with the help of “sufficient evidence from crosslinguistic studies, the researcher can extrapolate pragmatic functions from the forms recruited for grammatical purposes” (Hopper–Traugott 1993: 180). Or, as Bybee et al. (1991: 47) argue, typology must not be neglected “as a significant factor in the grammaticization process” in the sense that, for example, typological information about a given language may put in perspective results concerning form–meaning relationships which do not seem to fit the overall (hypothesized) picture.

(vi) Another crucial theoretical assumption concerns polysemy, which naturally links up with what has been said in sections 2.2 and 2.3 about typological polysemy and semantic relatedness respectively. Polysemy, being viewed as “a natural outcome of grammaticalization” (Heine et al. 1991b: 260), is an important diagnostic for determining the degree of grammaticalization of a given item: “..., from the perspective of grammaticalization it is methodologically essential to assume polysemy if there is a plausible semantic relationship, whether or not the forms belong to the same syntactic category, because otherwise relationships between more and less grammaticalized variants of the same form cannot be established, either diachronically or synchronically” (Hopper–Traugott 1993: 71).

(vii) Finally, linking up above all with cognitive semantics, metaphor and metonymy are recognized as two major cognitive and pragmatic processes triggering the semantic changes observable in grammaticalization (e.g. in Traugott–König 1991).

This catalogue may suffice as a brief characterization of the framework of grammaticalization and its overlaps with the theories of language discussed earlier. We shall now take a brief look at the actual processes involved in grammaticalization and at some grammaticalization phenomena from the domain of adverbial subordinators. Grammaticalization is a gradual, unidirectional process² essentially involving the following changes. These changes are largely correlated, yet not necessarily synchronized (cf. Croft 1990: 240–242 or Kortmann 1992: 434):

- loss of formal and semantic transparency (cf. Haiman (1985b) in section 2.2 on the grammaticalization of originally iconically motivated structures)
- loss of morphological complexity and phonetic substance
- loss in syntactic freedom
- loss or bleaching of lexical content
- increase in more general, grammatical meanings and functions, and thus
- increase in the range of contexts in which a (more strongly) grammaticalized form can (or indeed must) be used (cf. Lehmann 1985, who describes grammaticalization as a development from signs that may be used to signs that must be used)
- increase in form–meaning asymmetry (cf. section 2.2)

The significance of this process for the development of adverbial subordinators, i. e. members of a classic grammatical (or: functional, empty) word class, should be obvious: if it is a characteristic trait of many adverbial subordinators that they are polysemic and/or syntactically polyfunctional, then it is typical of even more adverbial subordinators that they developed—directly or indirectly (particularly via adpositions)—from members of almost any of the traditional lexical

(or: content, full) word classes. This has already been stressed by Meillet (1915) and is further explicated in Hopper–Traugott (1993: 177–178):

Les origines des conjonctions sont d'une diversité infinie, on le sait. Il n'y a pas d'espèce de mot qui ne puisse livrer des conjonctions. (Meillet 1915)

[There is an infinite diversity of sources of conjunctions, it is said. There is no part of speech which cannot deliver conjunctions.] [translation by B. K.]

Clause linkage markers have their sources in nouns, verbs, adverbs, pronouns, case morphemes (including prepositions and postpositions), derivational prefixes, and in phrasal combinations of these.

Typical of hypotactic developments ... is the recruitment to connective function of deictics and other demonstratives.

Even if the word class of the source of adverbial subordinators qualifies as a grammatical one already (e.g. demonstratives, pronouns), the development of adverbial subordinators always makes it “more grammatical”. Moreover, this development is practically irreversible in the sense that adverbial subordinators practically never develop a use as a less grammaticalized form, be it as a coordinator-like connective (cf. Hopper–Traugott's (1993: 184–185) not wholly convincing case for “paratactic” *although* in English) or as an adposition,⁴ thus underpinning the assumption of unidirectionality of grammaticalization.

Meanwhile, there has accumulated a sizable number of publications on the development of adverbial subordinators written within the framework of grammaticalization, notably on the development of (i) causal, conditional, concessive and concessive-conditional connectives (especially in various articles by Haiman, Harris, Traugott and/or König), (ii) participles or, in non-European languages, serial verbs to adverbial subordinators (e.g. Givón 1975, Kortmann 1992 or Kortmann–König 1992), and (iii) complementizers, purposive and/or causal subordinators from verbs meaning ‘say’ (e.g. Saxena 1988a,b or Ebert 1991; cf. also the examples in section 4.5 from European languages). It has also been claimed that interclausal relations as expressed by case markers (e.g. adpositions) or adverbial subordinators may be arranged on a grammaticalization chain, parallel to their arrangement as partial sets on a gradient with different degrees of “informativeness” or “semantic richness” which may at the same time be viewed as an inferencing chain (cf. Traugott–König 1991, Heine et al. 1991b: 156–157). Thus, Concession would count as more grammaticalized than Cause or Condition, the latter two as more grammaticalized than Time, and Time as more grammaticalized than Space; a similar chain would be “Manner > Instrument > Comitative”. Evidence for such chains includes historical information on the first occurrence of adverbial subordinators for individual interclausal relations as well as on semantic changes, and information on pragmatic inferenc-