

CARL BACHE

The Study of Aspect, Tense and Action

*Towards a Theory
of the Semantics
of Grammatical
Categories*



PETER LANG

Europäischer Verlag der Wissenschaften

The Study of Aspect, Tense and Action

This page intentionally left blank

CARL BACHE

The Study of Aspect, Tense and Action

*Towards a Theory
of the Semantics
of Grammatical
Categories*

2., revised edition



PETER LANG

Frankfurt am Main · Berlin · Bern · New York · Paris · Wien

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Bache, Carl:

The study of aspect, tense, and action : towards a theory of the semantics of grammatical categories / Carl Bache. - 2., rev. ed. - Frankfurt am Main ; Berlin ; Bern ; New York ; Paris ; Wien : Lang, 1997

ISBN 3-631-32245-3

ISBN 978-3-653-01924-7 (eBook)

ISBN 3-631-32245-3

US-ISBN 0-8204-3509-0

© Peter Lang GmbH

Europäischer Verlag der Wissenschaften

Frankfurt am Main 1995

2., revised edition 1997

All rights reserved.

All parts of this publication are protected by copyright. Any utilisation outside the strict limits of the copyright law, without the permission of the publisher, is forbidden and liable to prosecution. This applies in particular to reproductions, translations, microfilming, and storage and processing in electronic retrieval systems.

Printed in Germany 1 2 4 5 6 7

Acknowledgements

I am grateful to Niels Davidsen-Nielsen, John Dienhart, Peter Harder, Fritz Larsen, John Lyons and Christian Heyde Petersen for helpful suggestions and comments on early drafts of the first edition of this book. Thanks are also due to Hans Arndt and Per Durst-Andersen for critical reactions to the book when it first appeared in 1995 and to Leo Høye for his help during the preparation of the second edition. Needless to say, none of all these friends and colleagues can be held responsible for the views expressed in the book. I am much indebted to Penny Rosier and Phil Staines, as well as to colleagues at Macquarie University and University of New South Wales, Sydney, for making my two research visits to Australia in 1991 and 1994 during the preparation of the first edition of this book both beneficial and pleasurable. Finally I wish to thank the Carlsberg Foundation and Odense University for supporting the project so generously.

Carl Bache

This page intentionally left blank

Contents

1.	Introduction	9
2.	Some Methodological Problems	21
2.1.	Some Preliminary Reflections on Universal Grammar	21
2.2.	The Problem of Analytic Directionality	26
2.3.	The Problem of Constructing a Universal Grammar	32
2.4.	A Typological Study of Tense, Mood and Aspect	36
2.5.	The Role of Meaning Reconsidered	41
3.	A Possible Framework for a New Approach	49
3.1.	The Conceptual Reality of Grammatical Categories	49
3.2.	Object-Language, Metalanguage and Source-Language	56
3.3.	Source-Language: Primary and Secondary data	66
4.	Source-Language versus General Metalanguage	71
4.1.	Linguistic Etiquette: Presentation and Evaluation Criteria	72
4.2.	Terminological Identity	77
4.3.	Organizational Isomorphism	79
4.4.	Universal Grammar as an Ideal Construct	82
4.5.	Form in the General Metalanguage	89
4.6.	The Type-Token Distinction: a Useful Analogy	95
4.7.	Principles of Extraction: an Overview	99
5.	On the Nature of Choice in Language	103
5.1.	Delimiting the Notion of Choice	103
5.2.	Choice, Distribution and the Substitution Test	108
5.3.	A Typology of Sentences	119

6.	Categories and Form-Meaning Relationships	133
6.1.	Formal and Semantic Complexity	133
6.2.	The Structure of a Metacategory	136
6.3.	The Structure of Language-Specific Categories	141
6.4.	Defining Category Concepts and Members	149
6.4.1.	How to Establish Formal Pairs or Systems	151
6.4.2.	How to Use Test Results for Definitions	156
6.4.3.	The Potentially Non-Monadic Nature of Forms	159
6.4.4.	Categorial Interplay and Minimal Semantic Pairs	166
6.4.5.	The Definition and Function Levels of Description	173
6.4.6.	Descriptive Representations	182
6.5.	Summary	196
7.	The Metacategories of Action, Tense and Aspect	199
7.1.	Preliminary Identification of Category Concepts	199
7.2.	Categorial Rank and Order of Description	209
7.3.	The Metacategory of Action	217
7.4.	The Metacategory of Tense	244
7.5.	The Metacategory of Aspect	257
7.6.	Categorial Interplay at the Function Level	271
8.	Towards a Theory of Action, Tense and Aspect	299
8.1.	Overview of the Model	301
8.2.	The Model Used for Notational Purposes	307
8.3.	Markedness Relations	310
8.4.	Concord Relations and Context	313
8.5.	Conclusion	322
	References	331
	Index	339

1. Introduction

This book addresses some challenging methodological problems in the analysis of tense, aspect and action in natural language. Over the last two decades an increasing number of linguists have been concerned with these verbal categories from a universal (or cross-linguistic) point of view. At the same time, and often as an immediate result of general-linguistic contributions to the subject (such as e.g. Comrie 1976, 1985 and Dahl 1985), there has been a proliferation of language-specific studies (for a recent publication on aspect and tense in a broad range of languages, see Bache, Basbøll & Lindberg 1994). In itself, this is highly desirable. Major advances have been made, both at the general-linguistic level and at the language-specific level. However, there is in this productive development of the field often a worrying lack of concern for certain fundamental methodological and terminological issues. The present study is an attempt to highlight notoriously problematic areas in the analysis of tense, aspect and action and to offer tentative solutions. At the same time it presents an alternative, or at least a supplement, to existing introductions to the field. In this study, an emphasis is placed on such basic questions as: How should we go about describing these categories and with what terminology? What are our working conditions? How does our work relate to descriptions of natural languages in general? What issues are we interested in and how should they be presented? What research strategies should be explored?

In my attempt to deal with these questions I shall not adhere strictly to any one theory of language. My sources of inspiration are diverse and manifold. At a very practical level, I have much in common with Halliday's systemic grammar (cf. e.g. Halliday 1967, 1970, 1973, 1994; Halliday & Martin 1981) and for functional grammar (as advocated in different ways by e.g. Dik 1978, 1989, 1994 and Givón 1984, 1990) and the attempts in such work to bring functional aspects of language to the fore. But at the same

time I accept – in a general way – certain fundamental generativist beliefs. Thus, for example, I recognize the importance of the notion of creativity in language and some sort of distinction between competence and performance (or between I-language and E-language, cf. Chomsky 1986:19ff). I also believe the construction of a universal grammar to be the ultimate goal of linguistics and that some kind of mentalist approach is called for. Furthermore, in my argumentation and analyses I often find it useful to relate my findings to the three classical levels of adequacy: observational, descriptive and explanatory (cf. e.g. Allerton 1979; Chomsky 1965, 1986; Radford 1981:25ff) – though these evaluation criteria need to be reinterpreted to cover also paradigmatic relations, or, as I shall call them, *substitutional* relations, involving more specifically morphosyntactic categories.

On the other hand, in my conception of universal grammar I differ from most generativists, as will become abundantly clear below. Most importantly perhaps, I do not subscribe to the view that universal grammar is simply and exclusively the theory of S_0 (Chomsky's label for the initial state of the innate, species-specific language faculty whose development into the steady state S_S – the adult native speaker's knowledge of language – is governed by a genetically determined maturation process, cf. Chomsky 1986), though such a theory may well be an important part of universal grammar. In my view, the typological kind of universals à la Greenberg (cf. Greenberg 1962) must have a place somewhere in universal grammar, too, since they obviously contribute to our understanding of human languages.

Nor do I accept to the strict autonomy of syntax from semantics, or of semantics from cognition. For the purposes of the present book I have in fact found much inspiration in cognitive semantics (cf. Jackendoff 1983, 1987, 1988; Lakoff 1987, Lakoff & Johnson 1980; Langacker 1991; Taylor 1989). More particularly, I concur with Lakoff and Johnson in their rejection of objectivism and the classical view of categories, and especially with Taylor in his application of prototype theory to linguistic categorization.

Jackendoff's contribution to the present book is mainly his notions of 'projected world' and 'conceptual structures' as well as his reinterpretation of 'reference', which I find extremely useful in the analysis of tense, aspect and action.

My indebtedness to Prague School linguistics (cf. e.g. Jakobson 1932 and Trubetzkoy 1939), American structuralist phonology and Hjelmslev's glossematics (cf. Hjelmslev 1943) will show in the use of markedness (more specifically in terms of privative and equipollent oppositions) in the general metalanguage that I propose as well as in the use of the substitution test for establishing the nature of choice relations and for defining the distributional patterns for morphosyntactic category members.

The most important single reason for not adhering to any one school of linguistic thought is that much of what I shall have to say about grammatical categories in general, and tense, aspect and action in particular, is really at a *pretheoretical* level and concerns issues which *any* theory will have to deal with at some point, but which few theories so far have. In this way, the title of the present study should be taken seriously: what I want is to make a contribution *towards* a theory – actually, *any* theory – of the semantics of grammatical categories. In the last two chapters I shall indeed propose a universal model of tense, aspect and action, but this model is not part of a coherent large-scale theory of language. It rather serves to present in a consistent manner important generalizations that should be accommodated in any theory. At the same time, it is hoped that it may serve as an example of how to cope with category description more generally.

Readers who are familiar with my own 1985a book on aspect will recognize some of the stands that I take on specific issues in what follows. But whilst my last book was aimed at providing a principled answer to the traditional question of whether or not verbal aspect is in fact a category of English, I now want to look in somewhat more detail at the fundamental problems relating to category description as such. The focus will be on tense, aspect and action, but many of the problems encountered in the attempt to describe these

categories adequately are of a more general nature. The whole enterprise is partly a response to two detailed reviews of my 1985a book (Salkie 1987 and Verkuyl 1987), partly a critical reaction to Östen Dahl's very important 1985 contribution to the cross-linguistic analysis of tense and aspect systems. The time is now ripe for linguists interested in tense, aspect and action to pause and reconsider certain existential issues. This book is meant as a contribution to this stocktaking.

I now believe that action – traditionally known as "Aktionsart" – is not simply a category alongside other verbal categories such as tense, aspect, mood, etc. Action is in fact a central category of major linguistic information units (such as e.g. the sentence), comprising as its constituent members all the major cognitively significant situation types conveyed in natural language expressions. The view adopted in the present book is thus that action is one of the primary semantic categories to be investigated in a theory of language – not just a secondary, or peripheral, factor in the description of verbal aspect. I have argued elsewhere (cf. Bache 1982, 1985a, 1992) that aspect and action should be kept distinct as separate categories. In the present book, this argument will be sharpened by placing the two categories on different levels of description.

In any attempt to describe tense, aspect and action, it is mandatory to sort out the form-meaning relationships germane to these categories and to determine the universality of the systems involved. The position adopted in this book is that a wholly adequate account of these categories can only be reached if we aim at constructing a framework which will accommodate all the relevant semantic distinctions made in natural languages – whether or not they are expressed lexically, morphologically or syntactically in individual languages. The claims that I will be making are thus intended as hypotheses about the fragment or fragments of universal grammar dealing with tense, aspect and action. One of the important tasks of universal grammar is to describe phenomena or properties potentially present in natural languages. I shall argue that

such universal semantic properties as are identified in our description of the categories and their members in our universal grammar are psychologically real and probably dependent on an innate, genetic predisposition to conceive of the world in certain characteristic ways. In this view, universal semantic properties are part and parcel of conceptual structures in the human mind, regardless of the mode of expression by which they are realised in specific languages.

At a more practical level, a major objective of universal grammar is to devise the appropriate terminology – a common descriptive apparatus – for the analysis of any individual language. Following the convention employed in my earlier work on aspect, I shall refer throughout to this descriptive apparatus as the 'general metalanguage' (or the 'metalanguage of our universal grammar'). One striking feature of the work being carried out in aspectology and related areas at the moment is the embarrassing lack of a rigid, generally accepted nomenclature. Unlike many other fields of scientific thought, the study of verbal categories suffers from extensive terminological imprecision: many definitions are vague or inconsistent, or simply left implicit; as a result, many people use different terms for the same phenomena and the same terms for different phenomena with negative effects on interscholarly communication. This undesirable state of affairs, which it ought to be possible to avoid, holds true not only for the finer points in connection with tense, aspect and action but in fact for the very definitions of these central categories and their category members (the reader might like to compare the terminological practices in the many interesting contributions to the study of tense, aspect and action in Bache, Basbøll & Lindberg 1994). One of the principal aims of the present book is to provide a more precise general metalanguage for the description of tense, aspect and action. Such a general metalanguage should be an integrated part of universal grammar irrespective of our conception of universal grammar and our theory of language. Terminology is far from a trivial matter: if we could all agree to use terms like 'imperfective', 'stative', 'action',

'aspect', 'telic', 'past', etc. in the same way, interscholarly communication would be far more efficient and we would be able to make some real advances in the field.

In short, the task that I have set myself in this book can be defined more narrowly as an exploration of the problems of establishing tense, aspect and action as universal categories and of devising an adequate general metalanguage for their description in individual languages.

It is perhaps not fashionable in a general-linguistic study to include under the heading of semantics proper the distinctions and choice-relations of substitutionally related forms – especially since these distinctions often elude truth-conditional analysis. In this book, truth-conditions in the normal sense (i.e. as employed within the objectivist paradigm) will receive little attention. Interpreted rather as applying to mental projections of the real world, truth-conditions will, however, occasionally be used as an instrument to characterize certain important distinctions. But even in this way they will not be of major concern to me. And yet I claim that this book is about the semantics of natural languages. A theory of semantics must be able to account for all the distinctions of meaning made in natural languages – whether or not they are generated syntactically or substitutionally and irrespective of their susceptibility to truth-conditional analysis.

In lexical semantics, it is generally considered a legitimate and important objective to sort out the relationship between members of open classes to determine exactly what the entry of a particular lexical item looks like (pinpointing, for example, the subtle differences between the verbs HIT and STRIKE or BUY and OBTAIN, cf. e.g. Jackendoff 1988:381f, 400ff). A comparison with 'neighbouring' or 'near-synonymous' items of a set often helps clarify the precise meaning of the item under scrutiny. In a similar vein, substitutional choice-relations between closed-class members of grammatical categories must be considered thoroughly in order to determine not only the exact contribution of the chosen member to the meaning of the lexeme to which it is attached but also its

impact on the clause or sentence as a whole. Thus the meaning of a verb in the simple past form in a particular English sentence should not be viewed purely horizontally, in its linear relation to the other constituents of the sentence (e.g. subject, predicative complement, objects and adverbials) but also in relation to substitutional alternatives such as, for instance, the present perfect or the past perfect. For example, if one considers the following sentence in isolation, one might easily jump to the conclusion that the past form simply expresses past meaning:

- (1) They *stayed* with friends in Sydney.

In this example, it might be argued, the simple past form of the verb STAY, *stayed*, adds the meaning of pastness to the (tenseless) proposition 'They STAY with friends in Sydney', thus in this case significantly contributing to the truth-conditional content of the sentence. However, that this characterization of the meaning of the simple past form is far too crude – and in principle too restricted – becomes obvious when we consider some of its substitutional alternatives in examples (2) to (4), which also – in one sense or another – express past meaning:

- (2) They *have stayed* with friends in Sydney.
(3) They *had stayed* with friends in Sydney.
(4) They *were staying* with friends in Sydney.

As in the case of lexical semantics, we may arrive at a much more fine-grained semantic description by considering vertical relations in language. In examples (1) to (4), such a description will assign different nuances or realizations of pastness to the simple past, the present perfect, the past perfect and the past progressive, respectively.

The decision to include a substitutional dimension in a study of the semantics of natural languages is a sensible one even if one adopts a strong version of compositional semantics, i.e. the kind of objectivist semantics that takes the meaning of the whole sentence to consist in a principled way of the meaning of the parts which make up the sentence. The exact contribution of tense and aspect

to the meaning of a sentence will always depend on both the intension and the extension of the chosen category member, i.e. factors which can be determined only by considering its substitutional relationships and overall distribution. Whether this contribution is made directly at sentence level or to a lower-level constituent of the sentence which in turn contributes to the meaning of the sentence is not crucial for the validity of the substitutional principle. What is important, however, is the recognition of the contribution to the meaning of the sentence of elements below word-level, i.e. of inflectional or derivational morphology, and of certain regular periphrastic constructions which serve as members of substitutional sets.

My emphasis on the substitutional nature of morphosyntactic categories should not obscure the fact that aspect and tense meanings are syntactically integrated in the sentence in the sense that they interact horizontally with meanings expressed by other constituents. One particularly clear example of this kind of linear integration is predicator-adverbial constellations, as in:

- (5) They *stayed* with friends in Sydney *last spring*.

Here the adverbial *last spring* specifies – relative to the moment of speech – when in the past the stay in Sydney took place. It is a commonplace in studies on the English verb system that there are certain constraints on linear integration:

- (6) *They *have stayed* with friends in Sydney *last spring*.

- (7) They *had stayed* with friends in Sydney *last spring*.

As we see here, one of the substitutional alternatives, example (6), is blocked – at least in the standard language – because of the integration with *last spring*, and this indicates that the choice of a member of a substitutional set is not simply a question of substitutional relations but also involves syntactic considerations. I shall refer to the linear integration of meanings expressed by different constituents as 'semantic concord relations'. A semantic concord relation between two constituents is their combined effort, as building blocks of a referring expression, to communicate the

content of elements of conceptual structure. The meaning of lexical items, phrases and members of grammatical categories is – within certain limits – variable, or simply vague. Concord is in effect an exploitation of the semantic variability, or vagueness, of constituents: by allowing a great number of combinations, it enables the speaker to match more precisely the desired conceptual content with a linguistic expression. A theory of tense, aspect and action must specify the nature and the extent of the semantic concord relations involving these categories.

A special kind of concord relation – one which received extensive treatment in Bache 1985a (see also Bache 1985b and 1992) – involves the relationship between members of different grammatical categories. As with other kinds of concord, this relationship can be characterized in terms of compatibility (felicity conditions) and incompatibility (constraints). Thus, for example, it is a well-known fact in studies on tense, aspect and action that past tense meaning is compatible with both perfectivity and imperfectivity, whereas present tense meaning is fully compatible only with imperfectivity. A case in point is the Russian verb system. It is only in the past tense that perfective and imperfective forms are directly opposed both formally and semantically. The perfective present form is almost invariably used for the expression of future meaning in aspectual opposition to the periphrastic imperfective future construction (consisting of a form of *BUDET'* plus the imperfective infinitive) rather than as an aspectual alternative to the imperfective present form (for an introduction to the Russian verb system, see Forsyth 1970; Bache 1985a:33ff). Similarly, imperfective meaning – in Russian as well as in other aspect languages – is fully compatible with actional meanings such as 'iteration' and 'direction' (activity or process moving towards a point without necessarily reaching it) but incompatible with punctuality and telicity (cf. Bache 1985a:131ff). Thus, for example, if in English a verb with a strong potential for expressing punctual situations (such as *STOP* or *HIT*) occurs in the progressive form, which has a strong imperfective force, the result is not an imperfective representation of

punctuality – these two meanings are incompatible – but expression of a non-punctual situation (either 'directed' as in *The truck was stopping for a red light* (i.e. the truck was coming to a halt) or 'iterative' as in *She was hitting him on the nose* (i.e. she hit him several times)).

The special kind of semantic concord relation which obtains between members of two or more different categories will be referred to as 'categorical interplay', in accordance with the terminology proposed in my earlier work on aspect. It is just conceivable that a theory of tense, aspect and action which does not provide any account of semantic concord relations and categorical interplay could reach the level of observational adequacy, in principle even if not in practice. But by failing to capture the regular nature of the relation between members of different categories, it simply would not be either descriptively or explanatorily adequate.

An important issue already hinted at is the actual structure of the categories under analysis. The question of category architecture is very complex, ranging from the identification of category concepts (such as 'temporality', 'aspectuality', etc.), as well as the individual members of each category (such as 'pastness', 'perfectivity', etc.), to the determination of possible markedness and form-meaning relations – in general as well as in specific languages. One problem which has stirred a lively debate over the years is whether each member of a verbal category can actually be characterized exhaustively in terms of a 'basic' (or 'central' or 'common') meaning or whether it is definable only with reference to a set of features or characteristic uses. The position adopted in this book, as in my earlier work on aspect, is that a description of category members as bearers of a single meaning is superior to other theories with respect to at least descriptive adequacy. The one-to-one correspondence between category member and concept will in fact be shown to be superior also with respect to explanatory adequacy. As long as this view is maintained strictly for the metalanguage – i.e. as a way of speaking of categories and their members, and as part of a research

strategy – it is in no way incompatible with the application of prototype theory to language-specific category description: for us to be able to work with prototypes even they must be defined rigidly and unambiguously.

Before we look in somewhat more detail at the individual issues mentioned above, let me briefly summarize what I take to be some of the fundamental problems in the description of tense, aspect and action. Despite the progress made in many individual areas of the field, much research seems to ignore, or gloss over, basic and often elementary problems, requirements and conditions. To my knowledge, there is at the moment no entirely satisfactory principled account of the universality of the categories under scrutiny; there has been little reflection on the methodological problems related to the construction of a universal grammar, let alone language-specific grammars, of these categories; there is no entirely appropriate generally accepted comprehensive metalanguage for the description of individual languages, no pervasive description of concord relations and categorial interplay, nor of basic types of form-meaning relationships, and, sadly, no satisfactory integration of substitutional relations in a semantic theory. Few people seem to worry about basic methodological problems, such as how to identify the concepts of the categories involved, or how to construct an appropriate general metalanguage. All this is of course a tall order and it would be overly ambitious to set out to solve all the problems in this book. But I do hope to be able to provoke an intensification of efforts to improve the state of the art.

This page intentionally left blank

2. Some Methodological Problems

2.1. Some Preliminary Reflections on Universal Grammar

Many linguists nowadays consider it perfectly legitimate to try to formulate a universal grammar in one sense or another. One of the important traditional insights that generative transformational grammar brought to the fore again was that natural languages must share certain properties and that these properties can be made the subject of principled investigation and description as a basis for language-specific grammars. In this respect, as in many others, generativists reacted strongly against the relativist attitude of American Structuralism, according to which linguistic efforts should be made to discover the individual structure and unique character of every language. Since languages clearly are very different and, for all practical purposes (such as, for example, learning a foreign language) immediately appear as such to most people, it is a major intellectual challenge to take a universalist stand. To this we can add that it probably would not be an impossible task to come up with two languages which differ in almost all the specific phonological, morphological and syntactic properties we can think of. However, it takes only a brief moment of reflection on the matter to realize that it would be an even greater challenge to try to demonstrate that natural languages do *not* share certain properties of linguistic interest: we cannot, in principle, prove that such shared properties do not exist. Moreover, even in folk myth we tend to think of language as a highly specialized species-specific faculty distinct from other communication systems. Thus, any human language is more closely related to any other human language than to the informative dance of the bees or the calls of the vervet monkey. So there is every reason to expect human languages to share certain fundamental characteristics. The question is, of course, how specific – and objectively definable – are these shared characteristics?

With hindsight, it is easy enough to criticize American structuralists and denounce their positivist stands (for a recent, very thorough and finely balanced account of the development of American linguistics in the 20th century, see Matthews 1994). In all fairness, structuralist relativism should probably be interpreted as a dismissal of the existence, not so much of any general shared property, but of any property *linguistically* important enough – and sufficiently specific and explicit – to warrant a place in a common, shared framework for the analysis of individual languages. In the absence of an objectively definable universal language or immediately accessible inventories of a universal linguistic system, the onus would seem to be on grammarians in favour of universal grammar to demonstrate that such non-trivial properties exist, or at least that language-specific grammars can benefit from the assumption that such properties exist. But, again in all fairness, such universal grammarians should be granted a certain leeway with respect to the levels of abstraction permitted in the construction of a universal grammar and the degree of 'conformity' to the universal grammar required of each and every individual language – provided they carefully justify their means and ends. A certain amount of creative thinking, intuition and metaphysical speculation may sometimes lead to results sufficiently verifiable on concrete evidence to convince even uncompromising positivists.

One of the quite intriguing ways of approaching the problem of individual language conformity is to operate with sets of properties which *potentially* occur in natural languages rather than strictly with 'absolute' universals. Such properties may be statistically or implicationally significant and thus allow the linguist to state important cross-linguistic, typological generalizations (for discussion, see Greenberg (ed.) 1962, especially the "Memorandum Concerning Language Universals" by Greenberg, Osgood & Jenkins and the contributions by Jakobson and Greenberg himself). On this view of universal grammar, each language may make use of different subsets of properties; in fact some languages may not make use of any of the properties of a particular set in a formal way at all. It is enough

that there be sufficient cross-linguistic evidence for the set of properties to appear to be non-arbitrary, despite the occasional non-occurrence in some languages. Now, the important thing to notice about this somewhat 'weaker' form of universalism is that it allows us to state generalizations across languages and at the same time to define an upper limit to variation.

Dahl (1985:31-33) argues that even this weaker form of universalism makes too strong a hypothesis about what is possible and what is impossible in human language. Languages are known to have developed and cultivated arcane properties (such as the click systems of the Khoisan languages and the politeness system of Japanese, cf. Dahl 1985:32). According to Dahl, in universal grammar we should not rule out the possibility of such drift-like changes in languages taking place in the future. Instead Dahl wants a cross-linguistic (rather than a strictly 'universal') grammar which determines what is "expected" in a language (rather than what is 'possible' in a language). Dahl's point is a reminder of the diachronic implications of a universal grammar: we should not put too narrow a limit on the way in which languages may develop over time. A universal grammar based strictly on what languages are like today will tend to do just that. Such a restriction is unfortunate. However, even if we do open up a bit for the possibility of languages developing arcane properties over time, as suggested by Dahl, there surely must be a limit to what a language can develop into and still be a natural human language, as opposed to, on the one hand, animal languages of various sorts and, on the other, artificial communication systems (including computer languages). And that limit must, whether we like it or not, be defined by universal grammar, if it is to represent the properties of natural human languages adequately.

In this connection, it also seems that the notion of "expectation" is too vague and indirect to be of any great use in universal grammar. What exactly is an expectation? Somehow, in everyday life, human expectations are not just a rational product of our exact, recordable past experience but also of irrational predictions,

beliefs and hopes that we will have certain future experiences. Quite often we rely on somebody else's experiences or promises when we form our expectations. In universal grammar, we do not want to include such irrational predictions, beliefs and hopes. Rather, we should spend considerable time questioning the validity of fellow grammarians' experiences and promises. If we want to keep our expectations at a rational level, it seems to me not unreasonable to speak precisely of *hypotheses* about what is possible in language and what is not. After all, this is more or less what a hypothesis is: a conscious, deliberate, rational formulation of an expectation. Hypotheses may of course be falsified by drift phenomena, or simply by quite common properties not hitherto recognized as important, but that should not discourage us: the falsification of a hypothesis is a prerequisite to the formulation of a more adequate – and hence more interesting – hypothesis. And in the process we are forced to focus precisely on drift phenomena and other variations from the expected standard. To operate with rigidly formulated hypotheses is thus an important part of a more general research strategy aimed at sharpening our knowledge of human language.

However, as Dahl indicates, it is not possible, or even particularly desirable, to avoid certain diachronic implications in a universal grammar – though most generative grammarians tend to think of universal grammar in strictly synchronic terms. It is absolutely crucial that universal grammar should have a dimension which allows projection from 'given' to 'new' (data, languages, stages of a language, etc.). Without such a dimension, it does not make sense in principle to talk about what is possible or not possible, only about what *is* or *is not*. Nor does it really make sense to formulate *hypotheses*, except perhaps if we want to provide alternative accounts of already given data. To decide what is or is not, linguistically speaking, is of course by itself an almost impossible task: we have embarrassingly little knowledge of the languages of the world as they are today (and even if we allow a generous amount of idealization in our interpretation of split-second synchrony it would be difficult to obtain sufficient knowledge of a reasonably

operational kind). In classical generative transformational grammar, the focus of interest was on the generation of 'new' data by 'given' rules: universal grammar must specify exactly the linguistic competence which allows this phenomenon. But interestingly enough, testing a hypothesis in our universal grammar on transformationally generated new data must be very similar to testing a hypothesis on a 'new' (i.e. hitherto linguistically neglected) language or, for that matter, on new (diachronic) stages of a thoroughly described traditional object-language. In all these cases, hypotheses are tested against new data, and we are likely to get a better knowledge of the nature of human language in the process.

What is important is not really whether we speak of 'expectations' or 'hypotheses about what is possible': the one is simply a more relaxed – too relaxed – way of looking at cross-linguistic phenomena than the other. And in either case, what we need, and what we should be concerned about formulating, is a *standard* against which individual language variation and idiosyncrasies can be specified and evaluated, and which provides the formal apparatus – including a rigid general metalanguage – that makes a comparison possible. Interestingly enough, American Structuralism provided a wealth of general metalinguistic terminology and procedures, thus contributing significantly, if indirectly, to any endeavour to formulate a universal grammar in the broad sense proposed here. Universal grammar is not only a model describing what properties natural languages 'typically have', or 'can be expected to have', or 'possibly can have' in common, but also a terminological and methodological prerequisite for defining variation and, of course, 'exceptional' variation. Ironically, only some sort of universalist stand, however strong or weak, allows the linguist to appreciate the differences between the languages of the world in a principled way, whereas a strictly relativist stand – if this ever existed in a pure form – effectively prevents the linguist from formulating obvious generalizations across language boundaries. This means that, in a sense, the best working hypothesis, even for the linguist with a relativist orientation, is some sort of universal

grammar: only by working with a standard in the form of a rigid metalanguage can differences be shown to exist and their extent be determined with any degree of confidence. It is tempting to view language as a phenomenon which is either (partially or wholly) 'chaotic' or *seemingly* 'chaotic'. To register or determine the extent of 'chaos' in language, and among languages, it must be approached in terms of order, i.e. with a rigid standard in our universal grammar. In this view, 'chaos' can thus be regarded as unprincipled deviation from order. Neither is interesting without the other: the confrontation of the two creates a challenging complexity for linguistic research, no matter what its theoretical stand.

The position adopted here, then, is that universal grammar is a grammar which, among other things, specifies or describes language potentials in the form of strong hypotheses. Universal grammar must provide a standard against which variation (whether rule-based within a language or cross-linguistic, synchronic as well as diachronic) can be registered and subjected to further examination so as to make it possible to determine the degree of conformity in individual languages, or stages of languages, as well as the nature of the non-conformity encountered. To this end, universal grammar must also provide the formal apparatus (namely, the metalinguistic terminology and categories) needed for minute comparisons to be made between languages, and between any one language and universal grammar. It is not unreasonable to assume that the more ambitious task of determining the nature of a Chomskyan species-specific language faculty, i.e. the task of developing a theory strictly of S_0 (cf. Chomsky 1986), presupposes the kind of linguistic research accommodated and facilitated by a much broader framework and scope for universal grammar.

2.2. The Problem of Analytic Directionality

Before looking in closer detail at the fragment(s) of universal grammar that deals with grammatical categories such as e.g. tense, I propose to reflect a little on what a grammarian interested in such categories could do *without* a universal grammar. In the analysis of a

language-specific grammatical category, we naturally have to account for certain form-meaning relationships: the category is manifested in certain forms which express certain meanings. For example, one might say that in English the category of tense is manifested in inflections (such as *-ed* and *-s/Ø*: e.g. *greeted* vs. *greet(s)*) and possibly in periphrastic (syntactic) forms (such as '*will* + *V*' and '*HAVE* + *V-en*': e.g. *will greet* and *has/have greeted*). Each of the tense markers in the English tense system is associated with one or more meanings or uses. There are essentially two very different ways of handling the description of a system like the English tense system. One is the 'form-to-meaning' approach, which is aimed at a characterization of each tense marker in terms of the meaning or meanings it conveys. And the other is the 'meaning-to-form' approach, which is aimed at determining the ways in which tense meanings (such as e.g. 'pastness') are expressed in English. In actual practice, many linguists of course combine the two approaches or let one supplement the other. But to determine some of the methodological problems encountered in a language-specific description of a grammatical category, it is important to keep them distinct and to evaluate their appropriateness separately. (It is interesting to examine and compare the analytic directionality of the descriptions of tense, aspect, etc. in e.g. Schibbye 1965, Leech 1971, Palmer 1974, Huddleston 1984, Vestergaard 1985, van Ek and Robat 1989, Jackson 1990 and Greenbaum and Quirk 1990.)

At first blush, it would seem that the 'form-to-meaning' approach is empirically much sounder than the 'meaning-to-form' approach: after all, verb forms are 'given', observable entities with a reasonably well-defined existence (in terms of phonetic, morphological and syntactic properties), whereas meanings seem to be airy, elusive notions with no obvious, fixed existence of their own. If one wants to use meaning as one's point of departure, where exactly does one get the relevant meanings from? Can meanings be the 'given entities', or 'constants' of a description? Ignoring for a moment the role played by universal grammar, which might just specify the very properties to be used as constants in a language-specific description,

it would seem that the meaning-to-form approach is on much thinner ice than the form-to-meaning approach, simply because it presupposes the prior identification of form-independent meanings as the constants of one's analysis.

However, a little reflection on the matter soon reveals that there are problems also for the form-to-meaning approach. How exactly does one decide which verb forms are tense forms in the first place? Though verb forms as such may have a fairly well-defined existence, there is no a priori way of determining formal membership of the tense category without drawing – in one way or another – on tense meanings. And one cannot simply take it for granted that all verb forms are tense forms. It does not really help that there is a tradition for treating certain verb forms as tense forms, or that certain verb forms correspond to Latin tense forms: such an argument only begs the question of how tradition defined tense forms in the first place, or how tense forms were originally identified in Latin. Needless to say, the analysis becomes viciously circular if one resorts to meaning in one's identification procedure (e.g. by saying that tense forms are forms which express tense meanings). Nor does it really help to devise a battery of 'formal' tests for deciding membership of the tense system (for example, a test eliciting concord relations with temporal adverbs such as e.g. 'yesterday', 'right now', 'tomorrow', etc.): such an approach is likely to be based on preconceived semantic criteria, or else to be completely arbitrary.

In strictly language-specific investigations of grammatical categories like tense, both the form-to-meaning approach and the meaning-to-form approach have a serious problem defining the constants – the point of departure – of the analysis. Neither approach seems in principle to be empirically sounder than the other.

One immediate reaction to this rather depressing state of affairs would be to dismiss the whole idea of grammatical categories like tense, aspect, etc. in a strictly language-specific study, in which case the term 'category' could be used simply for 'form' (i.e. for accident

categories) rather than for 'collection of forms sharing some property' (as in the discussion above). However, to dismiss the notion of category in the latter sense would be to miss an important intuition: that some forms are more closely related than others and that they are related in terms of the kind of notions they express. For example, at a strictly semantic level of analysis, the English verb form *lives* seems more closely related to *lived* than to *was living* because, like *lived*, it expresses a simple temporal meaning. At the same time, however, *lives* seems obviously related to *is living* as a marker of present time meaning, just as *lived* seems closely related to *was living* as a marker of past time meaning. To make things even more complicated, *is living* is obviously related to *was living* because they both express something more than just a simple temporal concept. Sharing some sort of association of past time meaning, *lived*, *was living*, *has lived*, *had lived*, *has been living* and *had been living* may be seen to form a group opposed to *lives*, *is living*, *will live* and *will be living*. By sharing some sort of semantic complexity, all the progressive forms may be seen to form a group opposed to all the simple, non-progressive forms. And so forth. Though these remarks about English verb forms are obviously very superficial, they go some way toward showing that the verb system in English is a network of relations just waiting to be accounted for in terms of grammatical categories in the sense of 'collection of forms sharing some property'. To abandon grammatical categories in this sense on strictly methodological grounds would be to miss an opportunity to sort out semantic network relations in human language.

Our intuition that the verb forms of a language enter complex interrelations and that this phenomenon invites a description in which we operate with grammatical categories could conceivably be captured in a strict, language-specific form-to-meaning analysis of verb forms (not just tense forms) with no preconceived ideas about their membership of specific grammatical categories. As one's analysis proceeds, one might discover regularities in the meanings of verb forms that may warrant a higher-level description in terms of

certain specific grammatical categories. To qualify as members of a semantically specifiable grammatical category (such as, for example, tense), the meanings expressed by the forms considered for membership must at the same time share some general notional property (e.g. 'temporality' in the case of tense) and differ with respect to the specific value expressed (e.g. 'past meaning' as opposed to 'present meaning'). In other words, a certain amount of 'sameness' and 'differentness' must be detected before a semantically based grouping of forms into grammatical categories can take place.

Alternatively, we may find that certain forms of the language, be they verb forms or other forms, appear to belong together in a grammatical category without there being any pervasive, regular, semantically specifiable distribution involved. This seems to a large extent to be the case with gender in languages such as German and Danish, as anyone trying to learn these languages as foreign languages is well aware. In German there are indeed some cases of 'the masculine', 'the feminine' and 'the neuter' being used in expressions of the respective semantic distinctions indicated by the terms for the members of the category (e.g. *der Mann*, *die Frau*, *das Buch*) – and certain semantically relevant regularities occasionally do seem to be in operation such as in *der Lehrer* vs. *die Lehrerin*, *der Sänger* vs. *die Sängerin*, etc. Furthermore, in some data there seems to be an interesting, conceptually significant, correlation between the level at which a noun categorizes an object in the world and its gender (cf. Zubin & Köpcke 1986, Lakoff 1987:200, Taylor 1989:50). Thus 'basic level' terms (such as *die Gitarre*, *der Wagen* and *der Spinat*) are often in the masculine or the feminine, while 'superordinate level' terms (such as *das Instrument*, *das Fahrzeug* and *das Gemüse*) are in the neuter. However, in the vast majority of data displaying the gender distinction there simply is no obvious rationale for the relation between form and meaning or for the distribution of forms.

The upshot of the discussion above is that it seems perfectly feasible to perform a language-specific form-to-meaning analysis – not of the category of tense or of any other category which

presupposes a prior identification of a relevant subset of forms to be analysed – but of a major, independently identifiable set of forms – provided, of course, that such a set exists. An analysis along these lines may reveal relationships most appropriately accounted for by setting up grammatical categories. Some relationships may be of a formal kind with little semantic correlation (e.g. the German gender category). Others may be largely or fully semantically specifiable. However, to set out initially to describe a particular grammatical category in a language is methodologically a highly problematic enterprise – whether one adopts a form-to-meaning or a meaning-to-form approach – simply because it is impossible to specify a relevant set of independently defined constants or 'given phenomena' in a methodologically sound, non-circular way.

Instead of performing a more general initial analysis with a view to subsequently constructing the grammatical categories needed for one's analysis of a language, as outlined above as an option, it is tempting to say that it is the task of universal grammar to provide the constants needed to perform a language-specific analysis of particular categories without the linguist each time having to 'start from scratch' with major sets. In the case of tense, for example, it would be extremely convenient for the language-specific grammarian to be able to consult a universal grammar for an account of the distinctions and properties potentially involved in any language-specific tense system. The universal grammar would ideally offer a definition of tense and a specification of individual tenses and their intercategory relations. This apparatus would provide the grammarian with the constants and the general metalanguage necessary for him or her to perform a legitimate analysis of tense in the language to be analysed. The analysis would essentially be a matching task aimed at determining the degree of conformity of the specific language category to the universal category. In principle, this matching task would be a meaning-to-form analysis, though in practice the two approaches could easily be combined. However, for this approach to be methodologically sound, universal grammar itself must be constructed in a methodologically sound manner. Let

us therefore take a closer look at the problem of how to specify the properties of universal grammar, metalinguistic and otherwise.

2.3. The Problem of Constructing a Universal Grammar

The most immediately obvious problem for the design of a universal grammar, as distinct from that of a language-specific grammar, is that there is no single language in the ordinary sense to account for, no 'universal language', as it were. In a language-specific grammar, there is a directly observable, empirically testable relationship between the components of the grammar and phenomena in the language. But in the components of universal grammar, the relationship between grammar and language is far more indirect. The relationship is not between a grammar and a language in the ordinary sense but rather between a grammar and 'language as such', 'language in general', and between a general grammar and the grammars of specific languages. In this sense, a universal grammar is a *metagrammar*, and devising one is a *metadiscipline*.

One consequence of the status of universal grammar as a meta-grammar is that it is only possible to speak of form-meaning relationships at a fairly abstract level of discussion. The problem of form-meaning directionality (form-to-meaning or meaning-to-form) that we encountered in our attempt to characterize the methodological hassles of strictly language-specific studies is necessarily absent from universal grammar, or rather, it appears in a somewhat different shape. Let us assume, for the sake of argument, that it was possible in a methodologically sound way to define the set of, say, all the past tense forms in the languages of the world. Even if we surmounted the enormous difficulties such an enterprise would entail, we would in principle end up with little more than a set of very disparate language-specific ways of expressing past tense meaning. We would not want to say that this set comprised the possible ways of expressing past tense meaning in natural language, the very stock out of which each language has selected its own form. For one thing, such a formulation smacks of circularity. And though in terms of the different levels of adequacy required of a

grammar, such a description would have observational adequacy, at least from a strictly synchronic point of view, it certainly would not have either descriptive or explanatory adequacy.

Similarly, in lexical semantics we do not want to establish sets of cross-linguistic lexemes with identical, or near-identical, meaning (such as, for example, {BOY, JUNGE, GARÇON, RAGAZZO, DRENG ...}) and make any claims as to the possible ways of expressing the notion of 'boy' in natural languages. Cross-linguistic sets of specific items may be relevant in phonetics and phonology, where the possible formal properties are largely definable within certain restricted, largely physical dimensions (and even here, the dimensions are far more important than the sets of actualized sounds and phonemes). But in morphology and syntax, as in lexicology, there seems to be a certain open-endedness or absence of restricted dimensions. The apparent arbitrariness of actualized syntactic and morphological form and of lexical items in individual languages means that in a universal grammar we can at best only discuss *types* (syntactic and morphological form types, lexical types and types of form-meaning relationships).

The lack of anything we can justifiably call actualized form in universal grammar makes it by definition impossible to go directly from form to meaning in the construction of the fragment(s) of universal grammar dealing with tense, aspect and action. The alternative analytic direction (meaning to form) is blocked for exactly the same reason. For analytic directionality to make sense at all at the level of universal grammar, we must operate with *form types* rather than actualized forms. We should therefore consider the possibility of going, not from form to meaning, but from form type to meaning. The problem with this option is that form types cannot be identified independently of actualized forms in particular languages. Since the whole exercise is performed in order to be able to identify these actualized forms in particular languages, going from form type to meaning in our search for an analytic constant at the level of universal grammar would be a blatantly circular move. Is it possible, then, to go from meaning to form type at this

level? Here we have exactly the same ontological and epistemological problems as in the language-specific grammar: What are the relevant notional properties? Where do they come from and how do we know that they exist? Again we are left in a state of deep frustration.

Obviously, we cannot rely on tradition as a way out. And yet it is as if this is exactly what many people seem to do. There seems to be a tradition for 'knowing' that the category of tense somehow involves time meanings. However, when it comes to actually describing the properties of the category and its members more precisely, scholars often disagree. As pointed out in Bache 1985a: 2ff, many traditional grammarians (such as, for example, Jespersen 1909-49, 1924, 1931; Kruisinga 1925) appeared to operate with a very broad conception of the tense category, where 'tense' was recognized as the formal expression by verbs of any time property, and where the number of finite verb forms in a language is indicative of the number of tenses. On this principle, it is quite easy to identify 16, or even 32, tenses in English (cf. Bache 1985a:3). Reichenbach's theory of tense, which has been extremely influential since its publication in 1947, also rests on a fairly broad concept of tense as the expression of time values, quite comfortably accommodating eight natural tenses defined in terms of 'speech time', 'event time' and 'reference time' (for a recent analysis of tense in English and Danish in this vein, see Davidsen-Nielsen 1990; for an interesting discussion of Reichenbach's tense theory, see Harder 1994). For the last couple of decades, a very narrow conception of tense as a category of deictic time has received considerable attention. Scholars adhering to this theory sometimes operate with only two members of tense, the past and the non-past, and spend a lot of time discussing the status of future meaning as either temporal or modal. These few examples show that although most people agree that tense somehow concerns time (for interesting exceptions, see e.g. Weinrich 1964, 1970; Herslund 1988), when it comes to specifics there is very considerable disagreement. Tradition – here interpreted tentatively as a set of

generally shared beliefs held over a considerable period of time – can only give us very vague, non-operational ideas about linguistic universals.

Many linguists working with tense, aspect and action seem quite unconcerned with basic methodological problems. They work explicitly or implicitly within a certain paradigm, taking a lot of fundamental issues for granted, or are simply quite happy to rely on standard works (such as Comrie's introductions to aspect and tense (Comrie 1976, 1985)) for their definitions and concepts, not worrying too much about how these definitions and concepts were arrived at in the first place. More often than not they nevertheless manage to enrich the field with invaluable contributions. This is even true of some of the classics themselves: unsurpassable as they are as standard reference works in the field, Comrie's books do not excel in methodological inquisitiveness or concern.

Maybe we have all worried too little about the fundamentals of the trade. One question in particular needs attention: how do we know about categories like tense and aspect and their members? In our universal grammar, forms cannot be the given point of departure, the constants, of our analysis. Meaning seems just as elusive as in the methodology I tried to establish for the language-specific level in section 2.2. And tradition is too vague to be of operational value, and to rely uncritically on it is in any case methodologically quite unacceptable.

It seems that the only option left in our efforts to construct a universal grammar is to accept some sort of inter-level approach where a kind of dialectic interaction between the language-specific level and universal grammar is possible. Typological studies provide us with an example of just this approach. Below I shall offer a critical assessment of what may well be one of the most influential typological contributions to the study of tense, mood and aspect: the investigation of the verb systems of 64 languages carried out by Östen Dahl and his associates (Dahl 1985).

2.4. A Typological Study of Tense, Mood and Aspect

In his seminal 1985 study on aspect and tense systems, Dahl clearly adopts an inter-level approach in the sense discussed in section 2.3. He also proves to be an exception from the mainstream of linguists and grammarians by worrying a good deal about methodology. He is admirably modest about the results of his efforts to establish the cross-linguistic TMA categories (*Tense, Mood and Aspect*) on the basis of a questionnaire investigation of 64 languages carried out by himself and his colleagues at the Universities of Göteborg and Stockholm. His main objective is to make cross-linguistic generalizations about TMA categories on the basis of comparisons of the manifestation of these categories in the questionnaire data. He is in most places very explicit in his research strategy and in the description of the questionnaire and the data obtained. He even offers a thorough account of the weaknesses and the limitations of his approach and the possible sources of error in the analysis of the questionnaire material. As Salkie (1987a:79) comments, after Dahl's impressive typological work "things will never be the same again" either on the language-specific or the general-linguistic, typological level.

At the same time, however, Dahl's contribution reveals some of the problems we are likely to encounter in typological linguistics. If we consider Dahl's approach in the methodological terms discussed above, it looks as if he is adopting an inter-level form-to-meaning approach, trying to establish some sort of universal grammar (though he explicitly prefers the term 'cross-linguistic' to 'universal', cf. Dahl 1985:32) for tense, mood and aspect on the basis of the language-specific forms elicited in his questionnaire. More specifically, Dahl attempts to set up cross-linguistic form types ("categories" in his terminology) such as PERFECT, PAST, HABITUAL, IMPERFECTIVE, PERFECTIVE, etc. He is very strict about the formal basis for the classification of his language-specific data – to the extent that different forms which are semantically identical in a particular language (such as the lexically conditioned alternative auxiliaries HABEN and SEIN in the German

perfect) are initially kept apart (for this 'superficiality criterion', see Dahl 1985:46-47, 52). At first glance, this inter-level form-to-meaning approach seems not unreasonable. In fact, what else can one do: only language-specific material can provide forms eligible as constants in our attempt to characterize form-meaning relationships. Dahl has obviously provided a possible solution to the methodological problem noted above of how to construct a universal grammar.

As Dahl himself repeatedly points out, there are serious limitations to the questionnaire approach. Although 64 languages is an impressive number by any standards in typological linguistics, it is a very small subset of the more than 2,000 recorded languages of the world. The questionnaire itself is restricted to a bare minimum: there is a limit to how much you can impose on informants and field investigators and still rely on their willing cooperation and the quality of the data they produce. The questionnaire thus consists of a total of 193 English sentences (I counted 156 single sentences and 9 connected texts comprising a total of 37 sentences, all to be translated into the language under investigation) plus a section for the field investigator to provide a list of all relevant TMA categories in the language and sample paradigms of lexical items (cf. Dahl 1985:44ff). If one takes the trouble to count the verbs used in the questionnaire sentences, one will identify 63 different verbs or verb expressions, many of which are used in several different contexts to elicit different grammatical forms. Thus, the verb *WRITE* occurs in 28 sentences. Here are ten of them as an illustration of the technique employed in the questionnaire to obtain relevant data (contexts – abbreviated as 'C' – are indicated in square brackets; words in parentheses are meant to clarify the meaning of the sentence but should not be translated; the numbers used for the examples below are those assigned to them in Dahl's corpus; 'Q' stands for 'question', 'A' for 'answer', 'A' and 'B' for different interlocutors in a conversation):

- (5) [Q: What your brother *DO* right now? (= What activity is he engaged in?) A by someone who can see him] He *WRITE* letters

- (6) [C=6 [sic., probably meant to be C=5]] He WRITE a letter
- (9) [A: I went to see my brother yesterday. B: What he DO? (= What activity was he engaged in?)] He WRITE letters
- (10) [C=10 [sic., probably meant to be C=9]] He WRITE a letter
- (18) [What your brother usually DO after breakfast last summer? A:] He WRITE letters
- (25) [A: My brother works at an office. B: What kind of work he DO?] He WRITE letters
- (26) [A: Last year, my brother worked at an office. B: What kind of work he DO there?] He WRITE letters
- (27) [A: My brother has got a new job. He'll start tomorrow. B: What kind of work he DO there?] He WRITE letters
- (28) [Talking of what happened yesterday] While my brother WRITE the letter, I WAIT in the garden
- (29) [Q: Did your brother finish the letter quickly? A:] (No,) he WRITE the letter slowly

Dahl nowhere discusses how he and his research team selected the sentences to be included in the questionnaire, or on what basis they defined the contexts of the sentences and under what conditions they decided to add information in parentheses to clarify the intended meaning of the sentences. But it seems clear that the sentences and the contexts are not just randomly selected. And with good reason: a random selection would be vastly uneconomical, especially if we consider the many practical limitations of the venture. Looking at the sentences quoted above, one gets the impression that a good deal of conscious effort has been put into selecting the sentences and the contexts most likely to elicit certain important distinctions in the languages under analysis. The questionnaire seems in fact to be very ingeniously designed for this very purpose.

In the examples given above, it seems quite obvious that at least four major distinctions are being systematically tried out on the informants and field investigators. The first distinction is that between 'bounded' and 'unbounded' (cf. sentences (5) and (9) with an indefinite plural object as opposed to sentences (6) and (10) with an indefinite singular object). The second distinction is a related one,

namely that between 'process' and 'completion' (cf. sentences (5), (9) and (28), which elicit an explicit process interpretation of the situation expressed, as distinct from sentence (29), where the completion of the situation is emphasized by the word "finish"). The third distinction relates to the choice between expressing a situation in terms of a 'specific occurrence' or in terms of a 'habit' (or 'recurring occurrence') (cf. sentences (5), (6), (9), (10) and (28), which are clearly supposed to express specific situations, as opposed to sentences (18), (25), (26) and (27), which are just as clearly supposed to express habitual or recurring situations). The fourth major distinction discernible in the sample sentences provided above is the time distinction between past, present and future (cf. sentences (5), (6) and (25), which express present time, (9), (10), (18), (26), (28) and (29), which express past time, and sentence (27), which expresses future time). As we can see, the four distinctions obviously intersect in the ten sample sentences. Other distinctions also seem to be of interest to Dahl and his research team in these examples: whether the speaker actually witnesses, or has witnessed, the situation expressed (cf. sentence (5)) and the manner in which the situation expressed is performed (cf. sentence (29)). Now, going through the other examples in the questionnaire, it appears that all the distinctions mentioned here and several others are elicited in an equally systematic and explicit manner. The questionnaire is thus an extremely effective tool with which to obtain comparable data from different languages for the illustration of the ways in which major tense, mood and aspect distinctions are expressed in these languages.

And the results of Dahl's investigation *are* interesting. There is no doubt that Dahl breaks new ground with his work. But at the same time there is good reason to question the methodological soundness of Dahl's approach in terms of the *directionality* of his description and the *constants* he purports to use as the point of departure of his analysis. Earlier we reached the preliminary conclusion that Dahl offered a possible solution to our problem of establishing a universal grammar by going strictly from language-specific form to universal

(or cross-linguistic) meaning. But now it seems that a set of distinctions is systematically tried out in the questionnaire, distinctions such as the ones identified above: 'bounded' versus 'unbounded', 'process' versus 'completion', 'specific' versus 'habitual', and 'past' versus 'present' versus 'future'. Where did Dahl and his colleagues get these meanings from? And how exactly did they define them in the first place? Dahl himself does not offer an explanation.

Interestingly enough, the question can be turned around: how is it that I so quickly recovered the distinctions being tried out in the questionnaire. And why did I stumble over exactly the distinctions that I did. Looking through the sample sentences offered above, one might equally well wonder whether 'my brother' is important (as opposed to the other members of the cast in the questionnaire: the king, the thief, a cat, a boy and his father, a traveller, a snake and a coughing child), or whether one ought to consider distinctions such as 'occupational letter writing' versus 'non-occupational letter writing' (sentences (25), (26) and (27) as opposed to the others), or 'explicitly seasonal letter writing' versus 'implicitly seasonal letter writing' (sentence (18) as opposed to the others), or even 'letter writing after breakfast' versus 'letter writing at other times' (again sentence (18) as opposed to the others)!

I think I know why I recognize certain distinctions as more important than others, and I suspect I know why Dahl and his colleagues chose to try to elicit some distinctions rather than others in their questionnaire. As privileged linguists, having had the opportunity to work with tense, mood and aspect before, we simply know that somehow distinctions such as 'bounded' versus 'unbounded', 'process' versus 'completion', 'specific' versus 'habitual' and 'past' versus 'present' versus 'future' are crucially involved in these categories and that they should therefore be tested out carefully and systematically. We may initially have acquired this knowledge indirectly by reading books like Comrie's introductions to aspect and tense (cf. Comrie 1976, 1985) or the hard way by trying to sort out language-specific data in a description of these categories. In either case, the knowledge must – in the last resort –

somehow derive from the analysis of language-specific forms revealing certain regularities and relations. However, the influence of tradition, text-books, fellow linguists' articles, etc. should not be underestimated: most of us probably had fairly strong, if general, preconceived ideas about tense, mood and aspect before embarking on our first attempt to describe these categories in real, language-specific data.

So where does all this leave us? One safe conclusion is that constructing a universal grammar in a methodologically sound way is even more difficult than devising a wholly adequate, strictly language-specific approach to the analysis of a category – there are inherent methodological problems at the universal level and, at the same time, by somehow presupposing analyses at the language-specific level, it inherits all the problems of description at this level, too.

2.5. The Role of Meaning Reconsidered

So far we have treated meaning fairly dismissively as something too elusive or too airy to be of any use to us as an analytic constant in a linguistic description at either of the two levels considered: language-specific grammar and universal grammar. In this section, I shall reconsider the problem of analytic directionality and in the process question the viability of the notion of 'broad form' invoked earlier and, as an alternative, reconsider the role played by meaning.

As we have seen, there are obvious problems with both analytic directions (form to meaning, meaning to form) at the language-specific level if we set out to describe specific grammatical categories. Unless one decides to draw on universal grammar for the constants of one's analysis, in which case – as we have seen – one only moves the problems one stage further ahead, the only possible way to avoid circularity seems to be to adopt a 'broad form'-to-meaning approach in one's analysis of a particular language, taking as one's point of departure an independently definable, major set of forms such as, for example, verb forms (not just tense forms or aspect forms), working out from scratch the relationships and

meanings which lend themselves to a description in terms of grammatical categories. This approach will be examined more closely in a moment.

At the level of universal grammar, neither form nor meaning seems immediately available to the analyst. Given the absence of concrete forms (indeed, of a language) at this level and the consequent status of a universal grammar as a metaconstruct, we have to rely on the input of language-specific analyses for the construction of our universal grammar. One such inter-level, and as it happened, would-be, form-to-meaning approach – the one proposed by Dahl – has been shown to rely, in fact, ultimately on meaning. Somehow meaning seems very hard to circumvent: it keeps getting in our way when we try to establish form as a constant. However, before deciding how to deal with meaning, let us look once again, but this time more critically, at the one approach at the language-specific level which has shown some sort of promise: a 'broad form'-to-meaning approach which may clear the stage for a more 'specific form'-to-meaning description. If, on closer inspection, this approach proves methodologically sound, it will solve our problems not only at the language-specific level but also indirectly at the level of universal grammar.

The soundness of the broad-form approach rests strictly on whether in fact we can come up with a broad, independently definable set of forms, an assumption so far simply taken for granted. However, I rather suspect that, on closer examination, we are bound to run into exactly the same problems with the extended set of forms, if this were our primary object of analysis. We might, of course, extend the extended set even further and finally end up with the forms constituting a 'whole language' (whatever that means). But even this would be problematical: along the way we would start wondering about how to define the terms 'form' and 'set of forms' satisfactorily. And just suppose we succeeded in defining the total set of forms 'constituting a language': we would face major taxonomic problems before getting even near the point where grammatical categories (in the sense 'forms sharing some property

but differing with respect to the specific realization of this property') could be brought appropriately into the analysis. Unless we accept a certain amount of arbitrariness in the setting up of a constant in a grammatical description, we could easily end up being forced to conclude that linguistics is – in principle – an impossible discipline.

One way out would be to take a few shortcuts: we could simply assume that it is indeed possible to operate with the broad, independently definable set of verbs in any natural language and, indeed, that it is possible to divide this set into subsets according to form (syntactic or morphological). We could also assume that verbs may turn out to be the locus of operation for several grammatical categories but as yet we would not want to recognize the existence of any particular categories. In English we would include such substitutionally related items (simple or phrasal) as *know*, *stays*, *delivered*, *has broken* and *would have been seeing* as members of the broad set and *the*, *some*, *extremely happy*, *fine constructions* and *appropriately* as non-members. And within our major set of verbs, we would recognize *know*, *stays*, *imagines*, *criticise* and *writes* as belonging to a subset distinct from, for example, *knew*, *stayed*, *imagined*, *criticised* and *wrote*, which in turn would be distinct from *has known*, *have stayed*, *have imagined*, *has criticised*, *have written*, and so forth.

Strictly on these assumptions, it would now be possible to perform a language-specific analysis in a reasonably methodologically sound way, going from form to meaning, starting with a broad set of items and sorting out the various forms and meanings expressed, finally arriving at a description of the form-meaning relationships involved in terms of semantically specifiable grammatical categories. This language-specific description might, together with similar descriptions of other languages, form the basis for the construction of a universal grammar. As language-specific grammars will no doubt demonstrate that certain distinctions show up in many different languages in the form of language-specific categories, one way of trying to establish a universal grammar would be to test these

distinctions more systematically across a large range of languages. This is exactly what Dahl did very successfully in his 1985 typological study.

Is there any alternative to this approach? One interesting possibility is, in fact, precisely the opposite: an inter-level 'broad meaning'-to-form approach. We here start out with an independently definable broad 'set of distinctions and meanings', potentially universal properties at large, not just a set of preconceived tense, mood and aspect distinctions. We then move on to an analysis of language-specific forms to see how these distinctions and meanings are expressed formally, if at all, in a particular language, or more ambitiously, in a number of particular languages. Regularities identified in this process will have to be accounted for in universal grammar and thus provide an input to the construction of a universal grammar. Some of the meanings and distinctions found may turn out to be just those which somehow place a situation in time or which represent a situation as a complete event or as something unfolding in a process, and we may decide to describe such meanings in terms of grammatical categories and to call these grammatical categories tense and aspect.

Sceptics may well ask: Where do we get our independently definable broad 'set of distinctions and meanings' from? Can such a 'set' exist independently of language at all? By what criteria do we determine membership of the 'set'? And so forth. As with the other approach, there are overwhelming difficulties with this one. And yet, in principle, both approaches are possible if we are willing to tolerate a certain amount of ad hocness in what we simply have to take for granted as a prerequisite for our analysis. Just as one can decide to take, say, the existence of verb forms in a language for granted, one can decide to take the existence of notions such as 'possession', 'kinship', 'movement', 'growth', 'direction', 'time', etc. for granted and include them in the set of meanings and distinctions to be tried out in our analysis of a language. In fact, any humanly conceivable notion could be included in the initial broad set: there is

no a priori way of restricting this set to just the relevant distinctions.

Both approaches have unfortunate limitations. Going from broad form to meaning, defining, for instance, verb forms as our initial set, we are likely to miss generalizations across this formal boundary. Such generalizations might include, for example, a specification of the relationship between the singular/plural number distinction in nouns and the semelfactive/iterative actionality distinction in verbs, or an account of deictic time distinctions expressed by past tense verb forms and temporal adverbs, respectively. Selecting the other option, i.e. going from broad meaning to form, we may not be able to come up with coherent sets of forms: notional distinctions may cut across sets of forms that we recognize as belonging to different components of the grammar, and worse, even if we weed out 'undesirable' forms, our distinctions may not even exhaust the sets that we do recognize as belonging to the same component. In other words, we may not be able to identify a rationale for all the forms on which we try out our set of distinctions, even if we define our initial 'set' as comprising 'all humanly conceivable notions'. As already pointed out, certain formal distinctions resist any semantic characterization.

Even more interestingly, in practice the two approaches are not as different as they may seem at first. If we adopt the 'broad meaning'-to-form approach, the only practical way of testing out the initial set of notions is to greatly limit the data included in one's investigation: it is patently impossible to test a 'whole language' at once. Conversely, if we adopt the 'broad form'-to-meaning approach, with no preconceived ideas as to what meanings and distinctions we are looking for in our initial set of forms, we will in fact be testing forms for *any* humanly conceivable notion. Some of the notions found may not be generalizable over a whole subset of forms, others may. But in principle, the analyst cannot help having at his disposal precisely his 'set of conceivable notions' even when he purports to be going strictly from form to meaning, trying to sort out the possible meanings and distinctions expressed by the

forms under analysis. To associate a meaning with a form is necessarily to select a meaning from the 'set of humanly conceivable notions', a procedure which crucially involves *recognition*. And in cases where a formal distinction does not seem to involve any regular semantics, this is precisely because there seems to be no humanly conceivable notion and hence no immediate recognition possible.

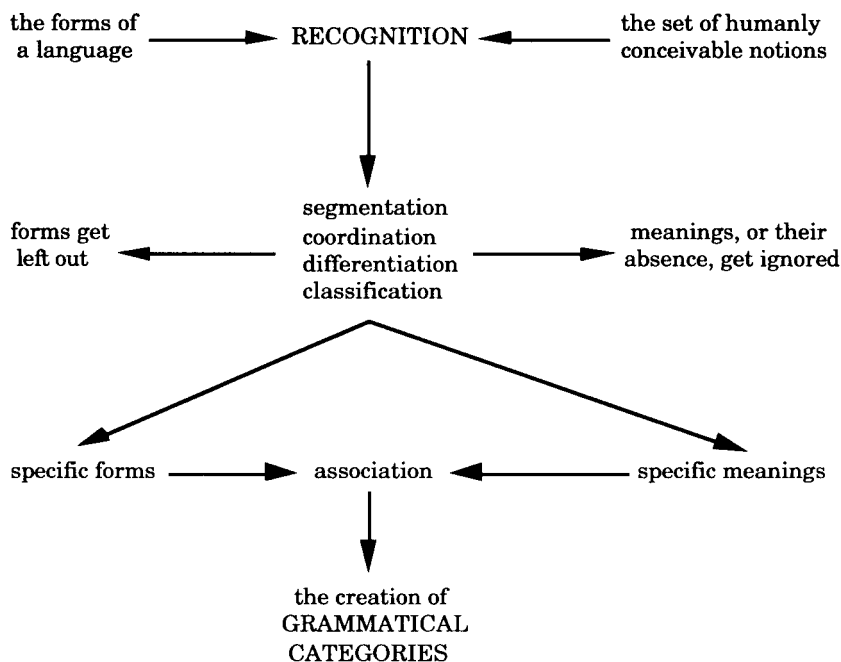
As we have seen, if we insist on analytic directionality in the initial stage of our analysis, it is difficult, if not in principle impossible, to devise a completely satisfactory method of describing grammatical categories in a specific language. Nor is it a simple matter to construct a fragment of universal grammar for the description of such categories. Whether we go from form to meaning or from meaning to form, and whether we try to restrict our analysis to only one of the two levels of grammar (language-specific and universal) or adopt an inter-level approach, we must leave certain assumptions unquestioned or else get completely lost in philosophical deliberations about the very nature of existence. It would seem, then, that only by operating with one or more fixed points of departure, however arbitrary and ad hoc they may appear to be, can we hope to get anywhere in the study of grammatical categories.

However, if we abandon the notion of analytic directionality altogether in the initial stage of our analysis, it is possible to offer a plausible account of how grammatical categories come into metalinguistic existence, i.e. how they become part of the linguistic apparatus for describing languages. Basically, as we have seen, we can say that both as linguists and as native speakers we are equipped with the 'set of humanly conceivable notions' – whether we like it methodologically or not. For a grammarian who looks at a language afresh and who refuses to rely on tradition, this set of notions exists at a very general, and to some extent unconscious level: the inventory of the set is largely unclassified, in fact probably not at all divided into discrete units, and clearly not yet restricted in terms of linguistic relevance. The language to be analysed, on the other

hand, exists at a very concrete specific level, though as with the set of notions, its forms are, at this initial stage, unclassified and not yet related in terms of grammatical categories. With these two extremes as the chosen constants of an analysis, it does not really make sense to distinguish rigidly between a form-to-meaning approach and a meaning-to-form approach, though the distinction may be vastly useful at a later stage (e.g. for pedagogical purposes). Rather it is the clash between form and meaning – the recognition of a relation between them – that sparks off the process of segmentation, coordination, differentiation and classification which, in the last resort, leads to the linguist's categorization of specific forms in terms of specific meanings. As already indicated, this process is a tough and merciless one of discrimination: with every step which the linguist performs towards establishing specific grammatical categories, potentially relevant forms of the language are left out, meanings (or the lack of meanings) are ignored, possible relations are sacrificed for the sake of greater formal or notional regularity, etc.

Chart (1) below is a crude model showing the processes underlying the linguists' creation of grammatical categories for their descriptions of languages without simply inheriting analytic constants from tradition. Using this model, it is easy to understand why people come up with different, often mutually exclusive, categorizations of the forms of a language (i.e. why some people operate with eight tenses, others with only two, or why some people accept a distinction between action and aspect whilst others conflate these two categories into one): not only do people have slightly different 'sets of humanly conceivable notions' at their disposal (as there will be cultural differences and differences relating to individual educational background, mental capacity, personal interests, beliefs, tradition, etc.), they will often carry out the process of co-ordination, differentiation, etc. in slightly different ways. Accordingly, the end result – the final categorization – will be different for different linguists.

(1)



The model proposed here of how linguists create grammatical categories independently of tradition shows two other interesting things. First, there is an obvious conceptual basis for linguistic description and thus also for the categories which are part of linguistic descriptions. Not only is the process of relating form and meaning sparked off by a psychological, mental phenomenon, viz. recognition, the process itself involves operations which crucially depend on perception and mental computations (e.g. identification of complex networks of differences and similarities). Secondly, this state of affairs invites an evaluation of categorizations in terms of explanatory adequacy. If grammatical categories are defined in conceptual terms they can, in principle, be directly examined for psychological plausibility and for universal grammar potentiality.

3. A Possible Framework for a New Approach

3.1. The Conceptual Reality of Grammatical Categories

In the preceding chapter I discussed the problem of analytic direction at length and reached the conclusion that there is a point at which the distinction between the two approaches (form-to-meaning, meaning-to-form) becomes more or less neutralized, viz. when I bring the notion of 'the set of humanly conceivable notions' into the discussion. It is now time to have a closer look at the role of conceptual structures in the study of grammatical categories in natural language.

As we have seen, for it to make sense at all to work with form-meaning relationships we must assume as a bare minimum that it is possible to assign one or more meanings to specific forms in a language, and that the rationale of these forms is the expression of certain meanings. In other words, a basic interpretative capacity on the part of the linguist is required if he or she wants to work with form-meaning relationships. Similarly, for a native speaker of the language to encode and decode the specific forms of a grammatical category in a language requires some sort of knowledge, if only intuitive, of the meanings conveyed (provided of course that the category conveys any meaning at all; for this problem see section 4.4 below). When encoding, the native speaker wants to convey certain meanings, and when decoding he or she interprets meanings conveyed in the message. Interpretation, whether by the linguist or by the native speaker, crucially involves *recognition*, and the native speaker's encoding of forms conveying meaning crucially involves *intended recognition*.

It is, of course, extremely difficult to say anything about what really goes on in the human brain without sounding brash and pretentious. But it seems not unreasonable to assume that any kind of recognition involves the matching of information conveyed by a sensory input with similar or identical information stored some-

where in the brain. Furthermore, it would seem fairly safe to assume that for this matching of information to take place at least two conditions must be met: first, there must be a 'level of conceptual structure' – to use Jackendoff's term – providing the locus where the confrontation of new and stored information sparks off recognition; and, secondly, the form of representation of new information must be roughly the same as the form of stored information. I can think of two reasons for assuming identity, or at least strong similarity, of formal representation: access to the same level of conceptual structure for mental processing in terms of notional similarity or identity is likely to be conditional on formal similarity or identity (in fact, a difference in representational form would simply be so much harder to explain); and 'new information' conveyed by a sensory input is presumably immediately stored and may serve as 'old information' against which the information provided by new sensory input may lead to a new instance of recognition.

It also seems reasonable to assume the existence of rules for interpreting new information which is not matched, or not fully matched, by old information (i.e. where no recognition is sparked off, or where recognition is only partial). Otherwise we would not be able to explain the native speaker's creative ability to understand new sentences and produce new sentences for others to understand. Furthermore, there must be rules for interpreting and processing hierarchies of meanings corresponding to various syntactic hierarchies (from word to sentence, and possibly even beyond). Otherwise we could not explain the native speaker's ability to recognize and understand phrases below sentence level: recognition in language must be structured. Note in passing that this assumption is compatible with, but strictly independent of, the compositionality hypothesis in semantics, i.e. the view that the meaning of a sentence is simply a product of the meaning of the constituents making up the sentence. Finally, there must be rules for the selection of elements from substitutional sets: systemic meaning is also in the domain of things which are recognized. Here preposi-

tions spring to mind as obvious examples of a system of conceptually recognizable meanings (cf. Jackendoff's interesting discussion of the semantics of spatial expressions (1983:161ff)). But also grammatical categories are clearly relevant in this connection. Thus the simple past tense form in English will often be recognized as a conveyor of past meaning as distinct from present or future meaning. As in the other cases, this recognition presupposes the confrontation at some conceptual level of a stored notion of pastness and the past meaning conveyed.

The fact that both encoding and decoding seem crucially to involve some sort of conceptual operation or manipulation of meanings (such as the matching of meanings to spark off recognition) raises the whole question of the status of semantics in our description: is semantics an autonomous component distinct from conceptual structure? We have just noted evidence that the rule sets central to semantics all operate on linguistic entities which are subject to recognition and hence to conceptual computation. One plausible implication of this is that all components and elements in semantics are not only present at conceptual structure but the effects of all major rule applications are immediately accessible at this level and available to mental processes, such as recognition. By itself this is of course not proof that semantic and conceptual structures are in fact the same (cf. Jackendoff's attractive hypothesis of the structural identity between semantics and cognition in e.g. his 1983 book on semantics and cognition; see also Lakoff & Johnson 1980, Lakoff 1987, Taylor 1989, Langacker 1991) but it is strong evidence that they are similar enough to be treated as if they are the same for all practical purposes. So this is in fact what I will do in this book: meanings assigned to grammatical categories and to the forms serving as members of these categories are to be understood as conceptual units or elements. Moreover, the rules involving these units and their interaction will be claimed to have a conceptual rationale.

One important consequence of this approach to semantics is that it is the 'conceptual reality' rather than the 'real reality' which

matters in our definitions of categories and members of categories (cf. especially Taylor 1989:142-157, 173-221 for discussion of the conceptual nature of linguistic categorization). Form-meaning relationships are not to be understood as relationships between language and the world but rather as relationships between language and the world as conceived by human beings, i.e. the 'projected world' in Jackendoff's terminology (cf. Jackendoff 1983:23ff). Reference is accordingly redefined as a relation between language expressions and projected entities (projected things, events, etc.), i.e. entities in the world as conceived by us. Consider, for example, the category of action. Traditionally, this category is used to describe situation types expressed by verbs (in conjunction with their arguments and optional adverbials), such as *durative* situations as opposed to *punctual* situations, *iterative* situations as opposed to *semelfactive* situations, etc. The following sentences exemplify these situation types:

- (1) Penny *waited* several hours for Phil.
- (2) Laurence suddenly *switched* on the light.
- (3) Sophia *was coughing* all morning.
- (4) We *visited* Ross and Glenda once only.

In example (1) the situation of 'waiting' expressed is clearly *durative*, stretching continuously over several hours. By contrast, example (2) expresses a split-second *punctual* situation of 'switching on'. In example (3), the situation expressed is *iterative* (in this instance repeated *punctual* situations of 'coughing' taking place over a whole morning) as opposed to the *semelfactive* situation of 'visiting once' expressed by example (4). In a non-conceptual semantic theory, these situations would be regarded as situations *such as they take place in the real or possible world, independent of our understanding of them*. By contrast, in a conceptual semantic theory, the situations expressed are projected situations, i.e. still real- or possible-world situations but *real- or possible-world situations as conceived by the locutionary agent and his addressees*.

At first blush, the distinction between 'real situations' and 'real situations as conceived' may appear fairly trivial. However, on reflection, it becomes clear that distinctions like punctual/durative and iterative/semelfactive become almost impossible to maintain as distinctions pertaining to 'real situations'. As several writers have pointed out (Dowty 1972:54, Comrie 1976:42ff, Bache 1982:65, 1985:116-7, Sinclair 1990), these distinctions make sense only if interpreted within a psychological framework. Thus, in an interesting section on 'punctuality' (as opposed to 'duration'), Comrie (1976:42ff) convincingly argues that most so-called punctual situations are, strictly speaking, not punctual at all, but rather situations of relatively short duration which are normally conceived as punctual, but which would be conceived as durative under special circumstances involving, for instance, modern technology such as slow-motion films. Comrie argues that this should not prevent us from accepting punctuality as a useful descriptive term in our grammar since many verbs in aspect languages express only situations which are usually considered to be punctual. In effect, this sentiment is fully compatible with Jackendoff's notion of 'projected world': to view situations as punctual often involves a psychological abstraction from reality on the part of the locutionary agent and his addressees.

Also other actional distinctions, such as 'telic' versus 'atelic' and 'directed' versus 'self-contained', seem to be psychologically conditioned rather than objective in a 'real-world' sense. Thus in a sentence like:

(5) Yesterday he read for a long time.

the situation expressed is conceived not just as semelfactive and durative but also as atelic and self-contained, i.e. as a situationally harmonious, unbounded activity, the phases of which are weighted according to extension on the time axis rather than according to their change-producing effect (as in the case of punctual and telic situations) or their relation to an external point (as in the case of directed situations) (for definitions and exemplification of these actional values, see Bache 1985a:109ff). In a real-world inter-

pretation, the situation of reading expressed in (5) is likely to be directed (i.e. moving towards the point where the reader actually finishes the book, the newspaper or whatever he is reading), if not telic or iterative. That example (5) is psychologically self-contained, expressing simply the fact that the process of reading took place, is linguistically conveyed through the lack of a direct object defining a bound or a limit to the process, e.g. a book (as in *Yesterday he read a book*), and the presence of the adverbial *for a long time*.

Even though there may well be cases where psychologically conditioned actional values are in fact identical to what may well be real-world situations, there is thus strong evidence for the conceptual basis for the action category (for further discussion, see e.g. Langacker 1991, especially pp. 149-163; 209-235). Accordingly, I shall regard the situations expressed by sentences as image-based 'referents'. The notion of 'reference' is thus understood as a relation between language and projected world, and it applies equally to 'entities' and 'situations'.

There will be those who are greatly disturbed by the proposed treatment of semantics in terms of conceptual structures. One problem, it may be felt, is that if semantic primitives and rules are shown to have a purely conceptual reality, semantics is turned into a highly 'subjective' discipline. Many semanticists have in fact appealed to truth conditions as an attractive 'objective' basis in semantics. To them the 'relegation' of semantics to conceptual structure may make the discipline less rigid, less scientific, and may render the descriptive tools provided by formal logic largely inappropriate. To others there may also be fears of a quantitative problem: could there not be cases where observational, or even descriptive, adequacy can only be reached by relying on rules or principles outside the sphere of conceptual structure? It seems to me that if such cases exist, i.e. if there really are meanings and rule applications which are not available, and which cannot be made available, to conceptualization, they are not only uninteresting and irrelevant to semantics, we cannot even know that they exist. As

far as the lack of objectivity is concerned, it should not bother us unduly: it places far too strong limitations on the type of data and issues we can legitimately deal with within semantics (for further discussion see e.g. Bache 1985b).

One possible concern with the proposed cognitive approach to the semantics of grammatical categories might be that we would seem to lose permanence in our descriptive systems if the meanings represent values of the entities of the world as subjectively conceived by the locutionary agent and his or her addressees. As Jackendoff (1983:30) puts it:

There is a natural objection to the claim that linguistic information most directly concerns the projected world. This claim implies that people could differ in the interpretations they put on the environmental input, and hence it should in principle be impossible to be sure that any two people are talking about the same things. How can language be that subjective and yet still apparently intelligible?

Jackendoff points out (quoting Katz 1972:286-7) that it is not unreasonable to assume that, as human beings, we are genetically endowed with the same basic ability to project and organize the world, i.e. we share a set of principles for conceiving the world and for categorizing the entities belonging to it. At the same time, however, there are important areas of interpersonal and intercultural variation, owing to differences of interests, skills, beliefs, religion, cultural background, tradition, etc. While our innate ability to construct the projected world may account for a substantial degree of general mutual intelligibility, the areas of variation across individuals and cultures indicate the presence of differences in conceptual sophistication (in both degree and range) and hence limitations to the information which we can in fact convey and expect our fellow human beings to understand, or understand in the same manner (cf. Jackendoff 1983:30f).

Most people will grant the use of the term subjective in the cases of variation mentioned above. However, what must be emphasized here, is that also the areas of 'universal intelligibility' are subjective in the sense that they pertain to the 'world as conceived' (in

Jackendoff's terminology: the projected world) rather than the 'real world'. As will be argued in section 4.4 below, there are methodological reasons for starting out with a strong hypothesis about universal grammar. Without at all disclaiming the possibility that interpersonal and intercultural variation may exist even in the grammatical categories of human languages, our search will be for meanings relating to our shared conceptual structures, i.e. meanings that are subjective in the sense that they belong to the projected world rather than to the real world. The position taken in this book is close to what Lakoff calls 'experiential realism' rather than pure subjectivism. According to Lakoff, experiential realism and objectivism share a number of characteristics despite the fact that they represent fundamentally different approaches and beliefs:

(a) a commitment to the existence of the real world, (b) a recognition that reality places constraints on concepts, (c) a conception of truth that goes beyond mere internal coherence, and (d) a commitment to the existence of stable knowledge of the world. (1987:xv)

(for Lakoff's thorough discussion of objectivism, experiential realism and relativism, see 1987:157-373).

The great advantage of operating with semantics in terms of conceptual structure is that we make it possible to bring an element of explanatory adequacy into our description. Conceptual structure comprises much more than just language. By bringing language in direct contact with cognition in general, we provide a context in which our semantic descriptions relate directly to human nature and in which we can evaluate them, find supporting evidence and falsify them in a meaningful way.

3.2. Object-Language, Metalanguage and Source-Language

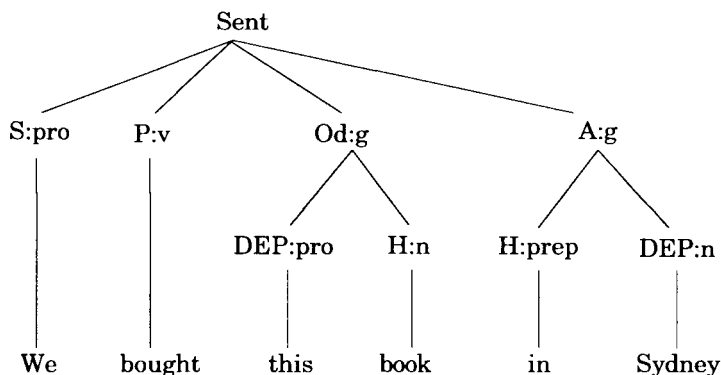
Traditionally a distinction is drawn between the particular language a grammarian sets out to describe (such as English, Russian, Italian, Finnish, etc.) and the 'language' he or she uses for the description (i.e. the terminology, conventions, etc). The former is referred to as the 'object-language', the latter as the 'metalanguage'. In the discussion of universal grammar in the preceding chapters, this

distinction between object-language and metalanguage was taken more or less implicitly for granted. Let us now have a more critical look at the notions of object-language and metalanguage and try to determine their relationship to the two levels of description established: language-specific grammar and universal grammar. Let us begin by considering the following example:

(1) We bought this book in Sydney.

One way of describing this sample of language would be to say that it is a well-formed single-clause English sentence which consists of a pronoun functioning as subject, a main verb in the past tense functioning as predicator, a noun group functioning as direct object and a prepositional group with adverbial function. Adopting a 'FUNCTION:form' convention (like the one proposed in e.g. Bache, Davenport, Dienhart & Larsen 1993), we may represent this sentence in the following tree-diagram (Sent = sentence, S = subject, pro = pronoun, P = predicator, v = verb, Od = direct object, g = group, A = adverbial, DEP = dependent, H = head, n = noun, prep = preposition):

(2)



The issue here is not whether this is an appropriate description of the syntactic relations in the sentence 'We bought this book in Sydney' but the principles at work in any attempt to describe a

sentence (some people may well object to the analysis because it skips the predicate level and because, in important ways, the form/function distinction differs from classical phrase structure analysis; but that is really beside the point, for further discussion see Bache 1996). In terms of the distinction between object-language and metalanguage, we have just described a sentence of the object-language English, and in doing so, resorted to terms such as 'sentence', 'pronoun', 'subject', 'past tense', 'predicator', etc. We have also used conventions such as the 'FUNCTION:form' convention and the tree-diagram, and expressions such as 'well-formed' (which describes a relation between the sentence and the grammar) and 'consists of' (which describes a relation between entities in the object-language). All this is part of our metalanguage.

In the preceding chapters, it was said of universal grammar that it must provide the formal apparatus – the terminology, the rules, the definitions, etc. – needed to make minute comparisons between languages, and between any one language and universal grammar. In other words, universal grammar must specify a metalanguage for the description of any particular object-language. But, as we shall see below, a metalanguage may also be devised simply with a view to the analysis of just one language and thus intended to be more or less independent of universal grammar.

What exactly is the difference between a general metalanguage and universal grammar? First of all, as pointed out in chapter 1, the metalanguage is included as an important part of universal grammar. More specifically, it is the form in which rules or hypotheses about the nature of natural language are stated. For example, terms such as 'language', 'verb', 'stative', 'dynamic', etc. are all metalinguistic. The definitions of these terms and the hypotheses they allow us to make about natural language (such as 'all languages have verbs' or 'verbs are either stative or dynamic', or rules, claims, etc. to that effect) are matters of universal grammar. So a universal grammar always has a general metalanguage as its form of expression. This metalanguage I refer to specifically as our 'general metalanguage' or the 'metalanguage of universal grammar'. As we shall see, a

metalanguage is not necessarily a part of universal grammar by virtue of being a metalanguage, though it can always be considered a possible candidate – in one or more parts or in its entirety – for our general metalanguage. At the level of universal grammar, which is our primary concern in this book, the general metalanguage and the universal properties which it allows us to express are integrated, inseparable entities, or rather, simply different aspects of the same entities, much like the form and meaning of language units. Similarly, at a strictly language-specific level, a narrowly devised metalanguage for a particular phenomenon is part and parcel of a (language-specific) grammar of that phenomenon.

It is interesting to note the analytic directionality implied in the metalanguage/object-language distinction: the linguist uses a metalanguage for the description of an object-language, thus in a sense going from something pre-established – an analytic standard – to something unestablished – linguistic data to be described. Thus in the metalinguistic description of the object-linguistic example (1) above, we apply pre-established notions such as 'pronoun' and 'subject' in order to establish the status of *We* as a pronominal subject in the sentence. Similarly, to describe *bought* as a past-tense predicator involves the ascription of a given standard of 'predicatorhood' and 'past-tensehood' to new data. The implication is clear: the linguist applies the metalanguage as a standard to a language with the intention of describing it. In effect, the language is thus not only the object of attention, it is the object to be described. Hence the appropriateness of the term 'object-language'.

One cannot help wondering, of course, where metalanguages – such as the metalanguage used above or any other current metalanguage – come from in the first place. This is in fact a very similar question to the one we have already asked about form-meaning relationships. For a metalanguage to develop, the directionality must at some point have been from specific data to descriptive standard, from object-language to metalanguage: after all, terms such as 'head', 'tree', 'subject', 'consist of', etc. were not invented independently of language. In many cases they belong to

the natural, everyday inventory of the object-language. Moreover, whenever linguists encounter or perceive new phenomena in the object-language (whether a traditional object-language or an exotic 'new' object-language), they will modify the metalanguage accordingly (invent new terminology, use old terminology in a new fashion, state new rules, etc.). Even if such modifications are proposed for very narrow, language-specific reasons, they may have repercussions for universal grammar and the general metalanguage provided there. Also, for some linguists, the direction from specific object-language(s) to specific or general metalanguage is predominant, and in fact quite deliberate. Thus, universal grammar with its general metalanguage is often the main object of study with language-specific data as the main source of inspiration. The important thing to notice at this stage is that the relationship between metalanguage and object-language is in actual fact bi-directional, not only initially in the phase where the metalanguage is first established but constantly as linguistic scholarship proceeds and develops.

We have seen that a universal grammar must have a metalanguage for the expression of its rules and hypotheses. However, as already indicated above, this does not mean that a metalanguage always belongs to a universal grammar. In principle, it is quite possible for a metalanguage to have an existence relative only to a particular object-language and thus quite independent of universal grammar. Such a metalanguage is the result of the grammarian's setting up of a terminological apparatus for the description of just one language – or just a phenomenon in that language – with no cross-linguistic applications or universal principles in mind. But when establishing such a metalanguage from scratch, one is easily tempted to resort to vacuous terminology (e.g. 'class-1 words' instead of 'nouns', for this approach see e.g. Fries 1952) – a policy which in many cases would make one's analysis more immediately vulnerable to the charge of circularity (an illustrative example of this is the attempt to explain the order of premodifying adjectives in terms of 'order classes'; for comments on order-class analysis, see Bache 1978:12f).

A more interesting, and really quite common, approach to setting up a narrow metalanguage for the description of a phenomenon in a language is to be eclectic, using in part new terminology, in part traditional terminology, or even the metalanguage of some current universal grammar, but without having any intention whatsoever of contributing in turn to universal grammar. One example of this is the description in Bache 1978 of the order of premodifying adjectives in English. Even if such studies are not aimed at universal grammar, and even if the terminology invented and used is sometimes fairly idiosyncratic, it is still possible to use them as an input to universal grammar. For example, in Bache 1978 a distinction is drawn between 'distributive' and 'non-distributive' sequences of adjectives in English. This distinction is borne out by the following examples, where (3) and (4) are distributive (the adjectives expressing properties relating to different entities expressed by the head noun), (5) and (6) are non-distributive (the adjectives expressing different properties of the same entity or entities expressed by the head noun), and (7) is ambiguous between the two readings:

- (3) several *French* and *Italian* supporters
- (4) both conventional and unconventional methods
- (5) several young and attractive women
- (6) a both delicious and nutritious breakfast
- (7) red and white flags

This and several other distinctions serve to provide an exhaustive analysis of a large-scale corpus of object-language constructions involving sequences of premodifying adjectives. The case illustrates two things: 1) how an object-language may serve in a very concrete manner as an input to a metalanguage; and 2) how a metalanguage established solely for the description of a language-specific phenomenon may have a more general potential, with possible repercussions for our universal grammar. Despite the narrow, language-specific scope of the analysis in Bache 1978, it is just conceivable that it would be possible to use the distinction between

distributive and non-distributive sequences in the fragment of universal grammar dealing with adjective order and the relationship between modifier and head in noun phrases – if only in the form of a hypothesis.

In this way any language-specific description may come to serve – intentionally or non-intentionally – as an input to universal grammar, highlighting phenomena which must be dealt with, or even providing useful terminology, conventions and rules. However, this does not mean that any terminological issue as such is relevant for a universal grammar. The metalanguage provided by universal grammar, as required by us, must be closely integrated with the overall view of natural language inherent in our universal grammar, our theory of language, and it must be ideally suited for the expression of the rules and hypotheses contained in that grammar. Possible additions, changes, refinements of the metalanguage of our universal grammar must be considered in this light.

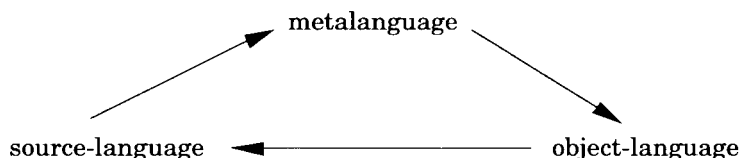
The continually bidirectional relationship between metalanguage and object-language, and the possible repercussions of this relationship in universal grammar, must be formalized in our terminology.

Basically, as we have seen, one can either study a language (or a part of it), using some metalanguage, or study a metalanguage (for example, as an integrated part of universal grammar), using language-specific data (or an analysis of language-specific data) as one's point of departure. Examples of the former activity are McCoard's 1978 study of the English perfect, Forsyth's 1970 grammar of aspect in Russian, and my own 1978 analysis of adjective order in English. Dahl's 1985 book on tense and aspect systems is one of the most explicit examples of the latter activity. Though, of course, the two activities are often combined or integrated, they are here kept apart in order to examine the principles involved. The role played by language is obviously different in the two types of description: in one it is the very object under scrutiny, in the other it is the source, or one of several sources, of knowledge and experience from which we derive some descriptive standard. To reflect this difference in status of, in

principle, any language, I propose that we use different terms for the different roles a particular language may play. The term 'object-language' is appropriate for a language when it is actually the object of a linguistic description and will therefore be retained for languages in that role. In McCoard 1978 and Forsyth 1970, English and Russian, respectively, are object-languages in exactly this sense. By contrast, a language will be referred to as a 'source-language' when it has the role of 'source of knowledge or experience' in an attempt to establish a descriptive standard and thus serves as an input to a metalanguage. In Dahl 1985, the 64 languages included in the questionnaire investigation are source-languages in exactly this sense.

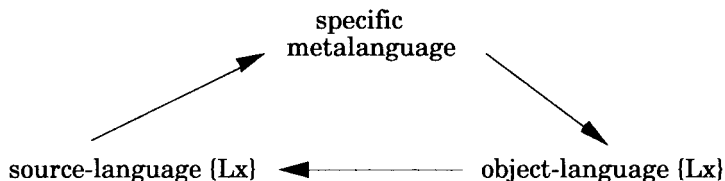
The following chart may serve as a crude illustration of the three different types of language discussed above and their interaction:

(8)

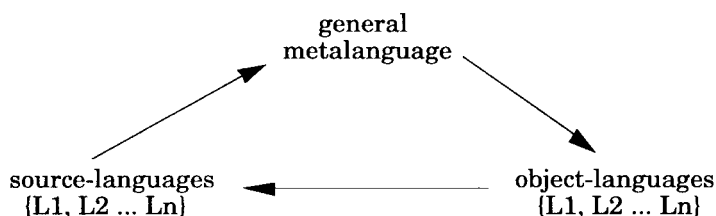


The trichotomy of source-language, metalanguage, and object-language, which I propose as a model for the interaction between language and linguistic description, relates to the distinction between language-specific and universal grammar in two different ways. As we have seen, the interaction between language and description may take place at a strictly language-specific level with no intended link to universal grammar. This situation is shown in chart (9) below, where Lx stands for any given specific language. Alternatively, the interaction may crucially involve the general metalanguage of universal grammar and thus constitute an inter-level analysis, as shown in chart (10).

(9)



(10)



Several comments need to be made about these simple illustrations. The first is that, obviously, one and the same language may be a source-language and an object-language in an analysis, though perhaps not strictly at the same time. This is necessarily the case when the analysis is kept at a strictly language-specific level (as shown in chart 9). In an interlevel analysis (as shown in chart 10) there may or may not be identity between source-language and object-language. An example of both these possibilities is Bache 1985a, where a general metalanguage was constructed largely on the basis of Russian aspect, i.e. with Russian as a source-language, and then applied to English as the object-language in an analysis of progressive and perfect forms. Initially, English clearly served the role of object-language. But in the course of the investigation it soon turned out that it was necessary to formulate additional rules and terms to account for the data in English. These findings led to additions to, and refinements of, the general metalanguage, thus changing the role of English from object-language to source-language. However, as with Russian and English in this analysis, different languages commonly assume the different roles of source-

language and object-language: there is a natural inclination among linguists to apply terms, conventions and rules which have proved appropriate and useful in one language to other languages.

The second observation that must be made specifically in connection with chart (10) is that for a metalanguage to serve as an adequate metalanguage in universal grammar, it must receive an input from as many source-languages as possible, ideally from all the languages of the world. What often happens, of course, is that a metalanguage is constructed for a universal grammar on the basis of just one language or a very limited number of languages. As a first approximation, and for the formulation of initial tentative hypotheses about the nature of natural language, this is quite acceptable, as long as we recognize the obvious limitations of the proposals.

The role of tradition should not be underestimated in this connection: the fact that linguists and philosophers have operated with terms such as 'noun', 'verb' and 'tense' for centuries make these terms attractive candidates for our general, universal metalanguage. Obviously, one should not rely uncritically on tradition. However, a distinction must be drawn between, on the one hand, simplistic, uncritical acceptance of tradition (cf. the influence of Latin grammar in many traditional grammars of European vernaculars) and principled utilization of earlier scholarship, on the other. After all, as a general research strategy, it is sensible to credit other linguists' past and present efforts and to try to promote a rich, continuing scholarly dialogue.

The upshot of the discussion in this chapter is that the different roles that languages assume in linguistic descriptions can be captured by refining the traditional distinction between object-language and metalanguage. By introducing the term source-language, it is possible to describe more precisely the interaction between language and description both at the strictly language-specific level and in inter-level approaches involving universal grammar (with its general metalanguage) and particular languages serving as either the source of generalizations about the nature of human language (thus assuming the role of source-language) or as the languages under scrutiny

on the basis of our universal grammar (thus assuming the role of object-language).

3.3. Source-Language: Primary and Secondary data

Related to the question of the contribution of tradition to our universal grammar and our general metalanguage is the question of exactly how a language can function as a source-language in an interlevel approach, i.e. how a language can provide an input to the general metalanguage, and to universal grammar. The way Dahl (1985) went about it was to sample data in a fairly direct way and to test it for patterns of distribution and frequency. However, he also included for each language (as part C in his questionnaire) room for the field investigator to list "all relevant TMA categories [Tense, Mood, Aspect] in the language and [...] sample paradigms of lexical items" (cf. Dahl 1985:44). He had also originally wanted to include not only 'primary data' (i.e. data obtained from informants or from directly observing language use) but also 'secondary data' in the form of "extant descriptions of languages" (Dahl 1985:36). However, he gave up his intention to use secondary data for the following reason:

It turned out, however, that [using secondary data] was less rewarding and more time-consuming than we had thought. It is often extremely difficult to draw any definite conclusions from such descriptions, due to the vagueness of the terminology and, in many cases, difficulties in interpreting the examples given. Also, it is not uncommon to find discrepancies between a grammar and actual use, in that forms and constructions are either completely neglected or mislabelled. (1985:37)

The first part of his explanation is not really surprising: it is difficult enough just to get a wholly satisfactory account of the progressive in English, one of the most extensively studied categories in one of the most extensively studied languages. To get reliable, reasonably adequate descriptions of all relevant verbal categories in 64 languages is completely unrealistic.

However, Dahl's remark about the difficulty of drawing any definite conclusions from language-specific descriptions, as well as his somewhat harsh comments on the efforts put into providing

such descriptions, is curious. It seems as if Dahl is quite prepared to dismiss the work carried out by most of his colleagues in the field. This is the more surprising as the alternative seems to involve having to draw definite conclusions from the translation from English of 193 sentences, comprising only 63 different verbs. In fact, the whole idea of being able to draw any definite conclusions at this stage about the universal grammar (in Dahl's terminology: the major cross-linguistic categories) of tense, mood and aspect is overly optimistic.

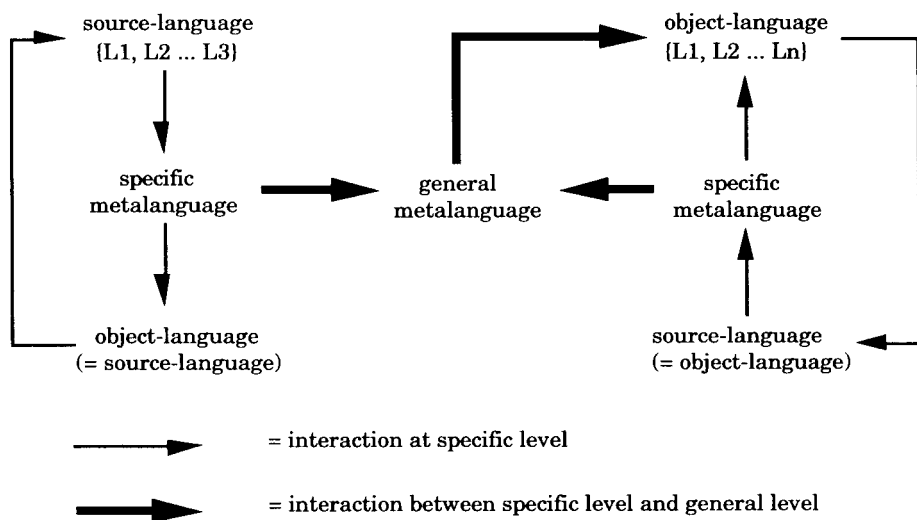
Is it in fact possible simply to collect and process primary data in a cross-linguistic investigation the way Dahl proposed to do – or any other way, for that matter – without somehow 'contaminating' it by secondary data? If the investigator does not use somebody else's description, he himself will inevitably form some sort of impression or idea about, or attitude to, the data, even if unconsciously. This may lead to one categorization, or classification, of the data rather than another, or an awareness of a certain distribution of forms or certain rules at play. It is a commonplace in science that an investigator cannot observe data or phenomena in the world in a completely objective and non-interfering manner. Not only do we as human beings conceive the world in some ways rather than others, we are also influenced by experience, training, expectations, etc.

A much better strategy is to make a virtue of necessity. We need all the help we can get from grammarians who have made a real and conscious effort to tackle the kind of data that we are interested in. The best source-language, therefore, is a thoroughly established object-language. Primary data is, of course, extremely important, to the extent that it exists in a pure, uncontaminated form, but so is secondary data. Not only do we get an awareness of the depth of the problems involved from language-specific studies, we also get an idea of the kind of descriptive tools which must be established in the metalanguage of our universal grammar.

The picture that emerges of the source-languages is that they should include not just primary data but also, to the largest possible

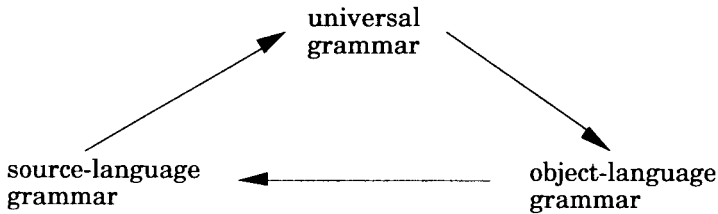
extent, secondary data obtained from the languages themselves having been object-languages. In other words, it is not simply specific source-language material which serves as an input to the general metalanguage but rather the product of the interaction between language and description at a specific level and the continual interaction between the specific level and the general level of description. This situation is illustrated in the following chart, in which the thin-arrow circuits to the left and to the right of the general metalanguage describe interaction at a specific level and the thick-arrow circuit which connects the general metalanguage to the specific level interaction to the right describes interaction between the two levels:

(1)



This chart can be greatly simplified if we let the circuits represent what we mean by 'grammatical analysis', or simply 'grammar', at the specific level and relate them directly to universal grammar rather than simply the general metalanguage:

(2)



This chart shows that grammar at the specific level ('grammar' in the sense of interaction between data and description) may be undertaken with a view to providing an input to universal grammar (source-language grammar), and that universal grammar in turn may serve as a basis for grammar at the specific level (object-language grammar).

In the next chapter we shall look more closely at the relationship between source-language grammar and universal grammar, i.e. the processes of extraction and transference involved in constructing a universal grammar on the basis of language-specific grammar(s).

This page intentionally left blank

4. Source-language versus General Metalanguage

In the preceding chapters we have examined in detail the bidirectional relationship between the two levels of description: the specific and the universal. We have proposed to reflect this bidirectional relation in our terminology by distinguishing at the specific level between source-language and object-language, and between source-language grammar and object-language grammar. As this latter distinction indicates, we have furthermore recognized the importance, indeed the inevitability, of operating with secondary data. In this chapter, we shall turn our attention to the nature of the relationship between source-languages (or specific, source-language grammars) and universal grammar with its general metalanguage and to the problem of defining the exact interaction between these two levels. The question that we must attempt to answer is, specifically, how we are to extract and transfer properties from source-languages and specific grammars to the general metalanguage and universal grammar.

I shall first look at the issues of 'linguistic etiquette', i.e. the set of general descriptive standards, objectives and guide-lines that linguists seem to follow in their work. These (implicit or explicit) 'rules of conduct', as it were, will be discussed in section 4.1, with special attention paid to considerations of presentation and evaluation criteria, i.e. the questions of how to present linguistic insights in an appropriate form and how to evaluate the results of one's investigation. Then, in sections 4.2 to 4.5, I shall attempt to identify the actual principles and processes of extraction and transference from the specific level to the general level of description. Section 4.6 provides an analogy to the distinction between the two levels: the type-token distinction. Finally, in section 4.7, the findings of the chapter are briefly summarized. Let us begin by considering the questions of presentation and evaluation criteria as part of our linguistic etiquette.

4.1. Linguistic Etiquette: Presentation and Evaluation Criteria

The very first, and really quite trivial, point to settle is what language to formulate one's general metalanguage in. In the example offered in section 3.2 as an illustration of what is meant by metalanguage, the choice was English, though a fairly technical variety of English. Could any other language have been used just as appropriately and adequately? In principle there seems to be no restriction: from the point of view of science, one might equally successfully use languages like Kammu, Atkan Aleut or Tokelau. In practice we often see that the object-language in a strictly language-specific analysis is the language also used for the metalanguage. Thus, for example, most grammars of Danish are written in Danish. But even at the level of universal grammar, there is no inherent reason for choosing one language over the other for our general metalanguage. However, we may find that some languages happen to have a less developed linguistic tradition and therefore a somewhat sparse linguistic vocabulary. More importantly, for reasons of interscholarly communication, the language selected for our general metalanguage must not only be easily accessible but also a recognized standard in the international scientific community. On those terms, English is today the most obvious candidate and will therefore with no further ado be used as the language of our metalanguage. However, it is important to remember that translation equivalents of the metalanguage are theoretically as valid as the English version, in some contexts perhaps even more useful. The problem is simply that they are less likely to be generally understood.

Another, really very trivial, issue is that we expect our universal grammar and its metalanguage to conform to certain standards of linguistic description: in formulating our rules and descriptions we must, of course, try to satisfy the usual conditions of simplicity, explicitness, exhaustiveness, internal consistency and non-circularity (cf. Hjelmslev 1943:11ff). Also we must continually evaluate our findings with a view to establishing observational, descriptive and explanatory adequacy for our grammar at this level

(Allerton 1979; Chomsky 1965, 1986; Radford 1981:25ff). These are all familiar ideal requirements in studies of syntax, probably as a result of the strong generativist dominance. Functional grammar, which is in general stronger on substitutional relations than generative grammars, tends to take linguistic etiquette for granted rather than to insist on it. There has thus been little discussion of evaluation criteria in descriptions of substitutional relations. In order that we may adhere to the principles of etiquette in a reasonably transparent and explicit manner also in a substitutional, morphosyntactic context, I shall now offer a reinterpretation of the notions of observational, descriptive and explanatory adequacy.

In classic generativist terms, a grammar is said to be observationally adequate if it correctly identifies the 'possible sentences of a language', i.e. if it discriminates between the possible and impossible strings of words, between sentences and non-sentences. The notion of observational adequacy thus rests on the convenient objectivist fiction that language is a discrete set of sentences to be characterized by the grammar. For a grammar to obtain observational adequacy, the means by which it identifies the possible sentences are, strictly speaking, irrelevant. Obviously, if this definition is to be taken seriously, observational adequacy must include considerations, not only of syntactic relations, but also of substitutional relations: the wrong choice of a substitutionally related form normally results in an impossible string of words, a non-sentence. Thus, for example, in many sentences containing an adverbial which locates the situation expressed specifically in the past, the choice of the present perfect instead of the simple past is infelicitous:

- (1) I *visited* my uncle yesterday.
- (2) *I *have visited* my uncle yesterday.

Similarly, some verbs resist the choice of progressive form irrespective of the context in which the sentence occurs:

- (3) This bottle *contains* half a pint.
- (4) *This bottle *is containing* half a pint.

Despite the fact that the grammaticality of a sentence obviously depends just as much on the correct choice of substitutionally related form as on considerations of syntax, the focus in modern linguistics has been almost exclusively on syntax and on lexical relations.

The key word in our reinterpretation of the notion of observational adequacy in a substitutional context is *distribution*. For a grammar to be observationally adequate with respect to substitutional relations, it must correctly identify the distribution of substitutionally related forms in the sentences of the language under scrutiny, i.e. it must specify when the forms can be used and when they cannot. The exact nature of the rules of distribution is, strictly speaking, irrelevant at the level of observational adequacy as long as the result is as required, i.e. as long as the rules discriminate precisely between strings with a possible choice of substitutionally related forms and strings with an impossible choice. According to this interpretation, the notion of observational adequacy thus remains a fiction, but a useful one: if the requirement is a precise delimitation of the distribution of substitutional forms we are led to approach the data with strongly formulated hypotheses. To the extent that these hypotheses fail to account for all the data, we are forced to take note of recalcitrant data – and thus gain a better understanding of the categories involved. It is important to note that although observational adequacy is the lowest level of adequacy, and thus in a sense is the most modest requirement, no grammar has ever obtained it. It is probably an unattainable ideal, if only because intuitions about data always vary from native speaker to native speaker. Nevertheless, observational adequacy is an important fiction in that it serves as a standard of evaluation and as such may serve as the framework for an interesting discussion about what is possible in natural language and how different theories deal with relevant data.

In classic generativist terms, a grammar is said to be descriptively adequate if it is observationally adequate and at the same time assigns a structural description to the phonological, syntactic and

semantic properties of sentences which accounts for the ideal native speaker's intuitions about the structure of sentences in these three areas. This, too, is clearly a convenient fiction because it assumes the existence of an ideal native speaker, whose intuitions are relevant in our evaluation of grammars. Hitherto, the requirement of descriptive adequacy has been interpreted to include also the relationships between phonemes, between sentences and between lexemes. In early generative transformational grammars such relationships were typically described in terms of structures underlying the immediately accessible manifestations of language. One example of this was the attempt to describe the voice distinction between active and passive sentences in terms of different surface derivations from the same deep structure. Similarly, lexemes were described in terms of features (such as, for example, *±living*, *±human*, *±female*, etc.) which could be generalized across whole sets to indicate shared properties. Given this acceptance of the necessity to describe relationships beyond the individual case (phoneme, sentence, lexeme), it is surprising that substitutionally related forms have been neglected from the point of view of descriptive adequacy.

The key word in our reinterpretation of the notion of descriptive adequacy in a substitutional context is *choice relation*. For a grammar to be descriptively adequate with respect to substitutional relations, it must correctly identify the nature of the relationship between forms so as to provide a principled account of the native speaker's grammatical choice of form in any given case. In other words, it must specify not only *when* related forms are used but also *why* they are used. Such a description is structural in the same way that phonological, syntactic and lexical relations are structural: it aims at a segmentation, classification and organization of the object material in terms of similarities and differences. At the same time it integrates the question of native speaker intuitions of structure by attributing the distribution of forms to the native speaker's grammatically conditioned choice of form. As with observational adequacy it is important to note that descriptive adequacy has the character of an unobtainable ideal, because it presupposes observa-

tional adequacy and because it appeals to 'the native speaker's intuitions'. But again it is important to accept these evaluation criteria for what they are: elements of a convenient fiction which allows us to operate with certain standards as a framework for interesting and productive discussion of data and theories.

Finally, a grammar is said to be explanatorily adequate if it is observationally and descriptively adequate and at the same time both psychologically real and maximally in accordance with universal grammar. Actually this requirement needs no reinterpretation in a substitutional context. But it is important to note that universal grammar must accommodate rules for describing the distribution and choice relations involved in substitutionally related forms. Otherwise we cannot evaluate observationally and descriptively adequate grammars of such forms in terms of explanatory adequacy. Also, our grammar must have a cognitive foundation or, as a bare minimum, specify a relation between its definitions, rules, etc. and cognitive structures if it is to meet the requirement of psychological reality at the level of explanatory adequacy. Like observational and descriptive adequacy, explanatory adequacy is primarily a standard of evaluation for fruitful discussion rather than a quality we actually expect our theory to obtain fully and without controversy.

Having decided on English as the language in which to formulate our general metalanguage and universal grammar, and having reinterpreted the levels of adequacy in a strictly substitutional context, we can now move on to the second, and possibly more controversial, part of the task: that of determining the actual principles and processes involved in the transference of terms, rules and conventions from source-language to metalanguage. As a prerequisite to this discussion we need to characterize the main similarities and differences between the two levels. Four points of comparison – two similarities and two differences – immediately present themselves: (1) the terminology used at the two levels is potentially very similar, if in fact not completely identical; (2) the organization of grammar (the components and their relations) is

also similar, if not identical, at the two levels; (3) universal grammar has the status of a general, ideal construct, whereas specific languages are 'real' in a very concrete sense; (4) specific languages have actual forms whereas the general metalanguage at best only has form types. Below I shall deal with these four points in separate sections. The aim of this detailed discussion is to reach a better understanding of the interaction between the two levels of linguistic description and, as a result, to establish a set of principles for going from source-language to metalanguage, from language-specific grammar to universal grammar, which can serve as a basis for formulating useful research strategies.

4.2. Terminological Identity

It goes without saying that if a term has proved useful in the analysis of some language-specific data, it may be useful also at the level of universal grammar. If there is not already a term for the phenomenon in universal grammar, any term found useful in a language-specific context should be considered for transference into universal grammar. There is no a priori reason for changing the term when it is transferred into universal grammar. Quite on the contrary: it is important constantly to ensure that the metalanguage of our universal grammar is an efficient and directly applicable descriptive tool supporting language-specific grammars. So unless for one reason or another a different term fits more nicely into the overall framework already established, the term can in principle be immediately integrated in the general metalanguage. However, the final decision to do so must await evidence that the term is really useful in universal grammar: does it lend itself to the formulation of an interesting hypothesis about the nature of natural language? And if so, does this hypothesis find reasonable cross-linguistic support? To answer questions of this sort is a major objective in linguistic research.

An example of a term which has been found useful at the language-specific level and which might be transferred into the metalanguage is 'distributive'. As was pointed out in section 3.2

above, this term can be used to distinguish sequences of premodifying adjectives which modify different referents of the head noun (distributive, as in *several French and Italian supporters*) from sequences of premodifying adjectives which modify the same referent(s) of the head noun (non-distributive, as in *several young and attractive women*). In Bache 1978, this distinction was found useful because different ordering rules seem to apply to distributive and non-distributive sequences. The term 'distributive' could be transferred into universal grammar if the phenomenon referred to is not already appropriately accommodated at this level.

A decision to use the term 'distributive' for sequences of adjectives also involves a consideration of other segments of universal grammar and its overall organization. Do we want a term which is used for different purposes in different segments of our universal grammar? Do we want to indicate some sort of relationship between these areas by using the same term? For example, the term 'distributive' is also sometimes used of plural nouns where the referents are singled out in relation to some other referents (as e.g. in *Bob and John brought their wives along*, where, presumably, Bob and John brought only one wife along each), and it is used of verbs that express an event or a process that is performed independently by more than one subject and/or which involves more than one object (as e.g. in *Mozart and Beethoven composed several great piano concertos* (i.e. each their own) as opposed to e.g. *Lennon and McCartney wrote many hits for The Beatles in the sixties*, which has a strong non-distributive potential). Intuitively there is some sort of relationship between the three areas mentioned where the term 'distributive' has been applied: do we want to emphasize this relationship? Is there a strong underlying connection or principle which should be brought out? Or is there an alternative term for sequences of adjectives, provided we want to make this distinction in universal grammar at all? These are some of the questions to be answered when we consider the possibility of elevating the term 'distributive' to the segment of universal grammar dealing with sequences of adjectives.

Whatever is finally decided for the term 'distributive' in universal grammar has repercussions for the language-specific analysis of the phenomenon. If the term is actually transferred into the general metalanguage in an unchanged form, the language-specific phenomenon it used to refer specifically to can now be considered in a new light. Cross-linguistic generalizations may bring a new perspective into the language-specific description. And the universal grammar may bear out certain relationships across categories or in the derivation of the phenomenon which may add descriptive or explanatory adequacy to the language-specific description. In this way, by examining the possibility of transferring a term from narrow, language-specific studies into our general metalanguage, we may generate a productive bidirectional interaction between the levels of analysis.

Transference of terminology is thus not simply a tedious, vacuous enterprise but involves important linguistic work at both levels of analysis. Terminology can be transferred unchanged from source-language to general metalanguage but the decision to do so involves important considerations of adequacy (observational, descriptive and explanatory).

4.3. Organizational Isomorphism

Just as similarity or identity of terminology is a prerequisite for interaction between universal grammar and particular languages, i.e. between the general metalanguage and source- or object-languages, the general organization of the grammar at the two levels must be largely isomorphic (in terms of the entities which make up the grammar and their relation, and the kind of principles and rules contained in the grammar). If the descriptive framework in our universal grammar was radically different from the framework of specific descriptions, we would not be able to extract properties from source-languages, transfer them to universal grammar and apply them as standards to object-languages. For assimilation and productive interaction to take place between the levels there must

be compatible, parallel structures. Let us consider some implications of this organizational isomorphism.

One very obvious example of the necessity of operating with organizational isomorphism is the division of grammar into major rule sets and components. It is inexpedient to make a distinction between syntax and phonology at a language-specific level but not at the general metalinguistic level, or vice versa. Nor is it useful to distinguish between semantics and pragmatics at one level but not at the other. For interlevel interaction to be at all possible, it is obvious that the organization of the grammar into major components must be identical at the two levels.

However, it is important to note that the principle of organizational isomorphism extends to subcomponents and categories, as well. For example, to be able to discuss verbal categories, such as tense and aspect, in particular languages, these categories must be accommodated also in universal grammar and the general metalanguage. What is more, it is not enough that the general metalanguage provides the necessary terminology and that universal grammar provides definitions and rules for the analysis of, for example, the past tense in any specific language. The *descriptive context* of the analysis, the particulars of our terminological apparatus, must be the same at both levels. Thus the notion of, for example, 'category' and the status of categories must be identical. If Dahl's concept of 'category' as a form type (e.g. the past tense, or PAST) is used at one level it must be used also at the other. If, however, the past tense is seen, not as a 'category', but as a 'member of a category' (the category of tense), then this piece of organizational context pertaining to the past tense must apply to both levels of description. Also the number of categories and their logical scope of application should ideally be the same in the metalanguages at both levels. If we operate with, say, a distinction between aspect and action at one level then these categories should be recognized as separate in principle also at the other level. This does not mean that we should not accept the absence or conflation of categories in individual languages, or the proliferation of

members of categories (e.g. tenses) relative to the inventory of the corresponding universal categories. On the contrary, by operating with the same terminological and organizational apparatus at both levels, we ensure a consistent and precise description of such individual characteristics. When Comrie (1976) curiously accepts aspect as a broad universal category comprising both aspect and action and at the same time recognizes aspect and aktionsart as potentially separate categories in individual specific languages, he fails to observe the principle of organizational isomorphism (for criticism of Comrie 1976 on this point, see Bache 1982).

Another requirement under the heading of organizational isomorphism is that rules must be of the same kind at the two levels. If there are to be phrase-structure rules at all, we must operate with phrase-structure rules at both levels. If we want to formulate rules for categorial interplay, i.e. for the interaction of members of different categories (such as tense and aspect), we must do so at both levels. This does not mean that the actual content of the rules or their actual scope of application must be identical. Variation here is inevitable: for example, the past tense in English may have uses completely idiosyncratic to English and yet be identified as a past tense in the sense specified by our universal grammar. The rules for the distribution of the English past tense, as indeed those for the distribution of the past tense in any other language, will always differ somewhat from the rules of our universal grammar. They will be more fine-grained and specific, and they will relate to specific forms and a specific lexicon. But rules at the two levels will share a core of content and they will be of the same kind and of the same form.

In an earlier chapter we saw that it was possible to restrict oneself to an isolated analysis of a language-specific phenomenon and that the findings of such an analysis were of potential value for universal grammar and the general metalanguage. The principle of organizational isomorphism should not in any way invalidate that point. However, if in linguistics at large we do not ensure tight organizational isomorphism between the two levels, we may miss important

generalizations when we go from source-language to general metalanguage, or seriously impair the usefulness of the descriptive apparatus and the absolute standard provided by universal grammar and the general metalanguage. Our descriptions and analyses would be weakened at all three levels of adequacy: observational, descriptive and explanatory. And the linguist's task would be even more difficult than it already is.

Having considered areas of similarity between the two levels of analysis, it is now time to examine some of the differences.

4.4. Universal Grammar as an Ideal Construct

The next point of comparison between the levels of analysis to be considered is the status of universal grammar with its general metalanguage as an idealized construct as opposed to the concreteness of source-languages. Let me begin this discussion by considering the question: what exactly do we mean by 'ideal' or 'idealized' as epithets applying to universal grammar? One immediate answer is that universal grammar is a generalized, abstract reflection of the phenomena encountered in source-languages and described in specific grammars. For example, we could say that the categories of tense and aspect in universal grammar are generalized, abstract reflections of tense and aspect in source-languages. 'Idealized' is thus interpreted as 'generalized' and 'abstract', meaning roughly that the principles are no longer tied down to specific forms or specific distributional patterns. In this view, a universal category is a *prototype* in the sense that it is "a schematic representation of the conceptual core of a category" (Taylor 1989:57) and language-specific categories associated with the universal category are viewed as *instantiations* of the prototype. To establish universal categories we must somehow derive from language-specific categories principles which are both revealing of the nature of human language (i.e. which in one way or another apply cross-linguistically) and useful as an absolute standard against which we can measure and evaluate language-specific data to determine variation (cross-linguistically) and degree of conformity in a particular language (i.e.

variation between universal grammar and a particular language). As we saw in our discussion of inter-level form-meaning relationships, to engage in such ventures is not without problems: it is impossible to initiate the process without preconceived ideas about what we want, and where and how to get it. And, in any case, we are inevitably equipped with the 'set of humanly conceivable notions' to match, by way of recognition, any particular meaning expressed by the data.

However, as we saw in section 3.1, an even more important feature of universal grammar (including the segment dealing with tense, aspect, etc.), defining it as an ideal construct, is that the principles specified in it must be psychologically real – given our definition of universal grammar as related to the conceptual structures of the human mind. To demand psychological reality of our universal grammar is to demand a high degree of explanatory adequacy, i.e. a close relationship between language-specific phenomena and general human cognitive capabilities.

One objection to this feature of universal grammar could be that the psychological reality of a grammatical category is dependent on there being a semantic rationale for the distribution of the members of that category. As we have seen (notably in the case of the German and Danish gender systems), some categories just do not seem to be pervasively and systematically governed by a semantic rationale. The psychological reality of such categories, it might be claimed, is non-existent, or at least too thin to satisfy our conditions for universal grammar. Therefore, it might further be argued, we place a far too heavy burden on universal grammar by demanding psychological reality for its principles and rules.

Central to this objection are instances of what appear to be a partial or complete lack of a semantic rationale for the distribution of the forms of a category. In any discussion of such data, a distinction must be made between, on the one hand, cases where the actual choice of form in a particular construction seems *random* in the sense that one or more alternative forms are possible with little or no difference of meaning and, on the other hand, cases where

only one form is possible and where the selection of that form seems *arbitrary*, i.e. *not rule-governed* in any obvious way. Examples of apparent randomness are clauses in English where both the progressive and the non-progressive form are possible (e.g. *I feel fine* versus *I am feeling fine*) and noun phrases with a reversible sequence of adjectives (e.g. *a new, strange way* versus *a strange, new way*). As we noted in section 2.2, many examples of the gender distinction in German or Danish may serve as *arbitrary*, rather than random, data, i.e. data which is not obviously rule-governed: Danish *kop* ('cup') is always common gender (*en kop*) whereas Danish *glas* ('glass') is always neuter (*et glas*), and to my knowledge there is no rule accounting for this distribution of gender markers. As we shall see later, randomness, or apparent randomness, as defined above, does not in principle preclude the possibility of a semantic rationale and is therefore not strictly relevant in our present discussion of the presence or absence of a psychologically real semantic rationale for the distribution of forms. However, potential arbitrariness, defined as the possible lack of a *rule-governed* distribution of forms, is clearly relevant here. It might be argued that if the selection of a form cannot be explained in terms of some rule, little psychological reality can be claimed to underlie the category to which the form belongs.

To counter this objection we must look more closely at the descriptive options the analyst has when encountering cases where the distribution of forms is not clearly rule-governed. There are two possibilities when we have to deal with a grammatical category with apparently no or little semantic rationale: either there simply is no rationale (formal or semantic), in which case the distribution of forms is completely arbitrary, or there is in fact a rationale but we have not succeeded in identifying it yet. In the former case, universal grammar should do little but provide the necessary terminology for recording the existence of the category in particular languages: the implication of having such terminology without being able to present the distribution as rule-governed is that the psychological reality of the category is restricted to an

awareness, at some level of consciousness, of the formal existence of the category, and the native speaker's ability to select the appropriate form in any given context must be attributed to learning by rote. In the latter case, we have to keep trying to uncover the distributional principles of the category: the implication of a rationale being in force but not yet identified is that the psychological reality is at an unconscious level not just for the native speaker (which is normally the case even when a rationale has been found) but also for the linguist. In principle the distribution may have either a semantic or a formal rationale, or possibly a combination. If purely formal (e.g. 'form x is selected when lexeme is in sentence-initial position, form y elsewhere' or 'form x is selected when lexeme begins with a vowel, form y elsewhere', etc.), the distribution may be psychologically as void of a rationale as in the cases of completely random distribution.

Now, the problem is that we do not know in advance which of the two possibilities noted above is actually the case. If, for the sake of argument, we suppose that for a given language-specific grammatical category there simply is no semantic rationale ever to be found, there is, no way we can ever know this to be the case. In other words, we will forever go on wasting our time by looking for a rationale. The same applies to a formally conditioned distribution for which there is no obvious semantic rationale: the fact that a formal rationale can be identified does not necessarily preclude the possibility of a semantic rationale.

The problem of knowing whether something does not exist or simply has not been shown to exist yet applies also to grammatical categories whose distribution seems by and large accounted for by some semantic rationale but where a residue of data still seems unaccountable for. Anyone who has tried to provide an in-depth analysis of a grammatical category knows that even when major distributional principles have been shown to be in operation, there are still exceptions, counter-examples and instances of apparently irrational distribution in one's data. Here, too, there are two possibilities: either the distribution is simply occasionally freakish

or else the true rationale governing it has not yet been uncovered. Again we are caught by the nature of human knowledge: we will never be able to know for certain that the former is actually the case. So no matter what the linguistic reality is, we will forever go on looking for a rationale for the distribution.

The best research strategy in universal grammar is to operate with the general *hypothesis* that there is always a rationale for the distribution of the members of every language-specific category supplemented with more specific hypotheses about the actual distribution of the members of such categories. For all we know, the assumptions on which these hypotheses rest may well represent an idealization of the nature of human language – a convenient fiction. But only by making such an idealization will it be possible to continually unravel important properties of natural language. If for a given category there is a certain amount of arbitrariness, we will get closer to delimiting the truly arbitrary data if we press hard with strong hypotheses of pervasive principles of distribution than if we accept arbitrariness as an important feature of the category to start with. A good example of research carried out in this spirit is Zubin & Köpcke's 1986 paper on German gender.

It is important to emphasize that I am *not* arguing that pervasive regularity in the distribution of the forms of a category is a necessary, 'true' or even desirable property of natural languages and that if we have not yet identified this regularity we must try to do so at any cost. What I *am* arguing is that idealization in terms of pervasive regularity is desirable as a property in universal grammar and our general metalanguage, because without it we have no fixed, clearly defined standard against which deviation from this fictional ideal can be determined, delimited or appreciated, as the case may be. In other words, pervasive regularity is a property of universal grammar which represents a *research strategy* rather than necessarily a real property in natural languages. It is important to note the implication of this. The view expressed here is that universal grammar is not simply a static general description or representation of linguistic reality (or 'truth') or an abstraction of a common core

of factual linguistic knowledge from specific languages. It is rather a dynamic theoretical construct which facilitates linguistic research and thus must provide general strategies which will help us gain insights into the nature of human language. What is proposed here is that one such strategy is to operate with a rigid *standard*, or a set of rigid *standards*, which may prove instrumental in our long-term search for linguistic knowledge. The price we pay for such a useful instrument is that universal grammar is not a completely accurate representation of human language. As indicated in section 2.1, language can be characterized in terms of (partial or complete) chaos, or apparent chaos, and, in turn, linguistics can be characterized as our attempt to impose order on this chaos or to reveal what order there may be. An absolute standard – for all its grossness – represents a tentative first approximation to order, an attempt to define some sort of regularity in the face of chaos (or apparent chaos), something on the basis of which we may reach further depths in our understanding of language. Just as human beings tend to perceive and understand the world by imposing some sort of order on its chaos, or by focusing on its elements of order, so the linguist can only gain insights into the nature of human language by approaching it with a view to establish, or reveal, order. In other words, he must operate with a model of order, a strictly regular standard. Even if the conclusion at any given point in time turns out to be that, on the evidence available, pervasive order does not seem to be a feature of human language, this conclusion can only be reached after the application of a strictly regular standard in our universal grammar. The application of a vague or not completely regular universal system does not allow us to conclude anything.

Another attractive aspect of operating with a model of order in our universal grammar is that it allows us to distinguish precisely between those elements of language with which we *think* we can cope (i.e. those which conform to the model) and those with which we cannot cope (i.e. those which do not conform to the model). The model thus helps define the areas on which the linguist must focus his attention (i.e. all the problem areas). A vague, or fuzzy,

universal grammar is only too soon verified when confronted with language-specific data: the existence of problem areas tend to confirm rather than to challenge such a model.

It is important to notice that what is proposed here does not in any way preclude the possibility of operating with prototypes (cf. Rosch 1973, 1977; Lakoff 1987; Taylor 1989). In fact, as I have already indicated earlier in this chapter, one way of looking at the categories in the general metalanguage of universal grammar is in terms of prototypes with language-specific instantiations. The important question is *when* and *how* more specifically to operate with prototypes. Prototype theory attempts to impose general order on chaos by allowing *variation within certain limits*. Thus, for example, to belong to the same class, or member of category, two items do not have to exhibit completely identical features: some items are more central members of the class than others. But it is important that prototype theory does not treat all (intralinguistic or crosslinguistic) variation indiscriminately as 'natural', something to be expected – and hence not in serious need of explanation. What I am suggesting is that we should go as far as possible in our search for an explanation for variation even *within* the bounds of prototypes. If handled too casually, prototypes may cover a multitude of interesting sins. Besides, even strong supporters of prototype theory need precise terminology to be able to communicate effectively. In order to describe a prototype, let alone variation within the bounds of a prototype, they need the convenient fiction of an absolute standard. For example, if we let 'imperfectivity' (or 'imperfective aspect') be a prototypical member of the prototypical category of aspect (and I see no reason why not), it is important to define this notion precisely – if only to be able to describe the nature and extent of variation displayed by imperfective forms in real aspect languages. The main difference between the view advocated by strong supporters of prototype theory and the view expressed here lies in the basic approach to disorder, whether to start out by expecting, and accepting, a certain amount of variation or to start out by trying to find a rationale for

some of the variation. With the former strategy we are more likely to overlook important phenomena and to miss significant generalizations, simply because once a prototype is established to account for certain data there is no real incentive to try to find a rationale for the variation displayed by the data. By contrast, a 'strong hypothesis' approach forces us to consider all variation very seriously and to try to establish some sort of rationale (in the form of hypothesis revision) and thus to delimit the amount of variation to be accommodated by prototypes.

To sum up: the kind of universal grammar proposed here is an ideal grammar in the sense that it is a generalized, abstract construct describing language in terms of psychologically real, prototypical categories. For strategic reasons it provides strong, for all we know probably too strong, hypotheses about the structure of language and the distribution of the members of categories by assuming complete pervasiveness and regularity.

The next section deals with the fourth point of comparison between the two levels of language: the lack of specific form in our general metalanguage as opposed to the natural richness of specific form in source-languages. In this connection, more characteristics of universal grammar as an idealized construct will emerge.

4.5. Form in the General Metalanguage

As noted in section 2.3, there is no language in the ordinary sense to account for in a universal grammar. While in a language-specific grammar there is a directly observable, empirically testable relationship between the grammar and the language, there is a very indirect relationship between universal grammar and actual language data. Universal grammar is metagrammar.

Furthermore, even if it were possible to specify the set of all the forms used in the languages of the world for the expression of a given category member (e.g. all imperfective forms), such a set would be fairly uninteresting at the level of universal grammar despite the appeal of language-specific form. In our universal grammar we want to be able to describe similarities between

languages in terms of principles rather than simply in terms of the accidental manifestation of form. It is not of direct relevance for universal grammar to accommodate, say, the fact that very different suffixes are used in Indo-European languages to mark the past tense, though the fact that inflection as such is so commonly used for that purpose just might be important. In universal grammar we are interested in *types* of form rather than forms – at least as far as grammatical categories such as tense and aspect are concerned.

There are in fact two senses in which it is relevant to speak of form types in universal grammar. In the first sense, 'form type' simply refers to 'grammaticalization', or the mode of expression of a particular category, i.e. to the actual way in which a category is expressed in source-languages. The major distinctions of form type in this sense are *morphological form* versus *syntactic* (or *periphrastic*) form, and within morphological form, *inflectional form* versus *derivational form*. The default value of this taxonomy of form types is expression through purely *lexical* means (for interesting discussion of form types in this sense, that the relationship between them, see Bybee 1985 and Hopper & Traugott 1993). This taxonomy allows cross-linguistic generalizations to be made in terms of correlations between (members of) universal categories and mode of expression. For example, to note that the past tense is commonly (i.e. in many languages) formed inflectionally by a suffix is to state a correlation between a fairly abstract item of our general metalanguage (the past tense) and a particular form type in the sense discussed here (suffixal inflection). Dahl (1985) found a high correlation between his major TMA categories and such form types (note that in Dahl's terminology, the term 'category' corresponds roughly to what I refer to as 'member of category', see below). In the 64 languages investigated by Dahl, the past (PAST), the future (FUT) and the perfective/imperfective distinction (PVF:IPFV) are most often expressed morphologically, whereas the progressive (PROG), the perfect (PFCT) and the pluperfect (PLPFCT) are most often (in fact almost exclusively) expressed syntactically by periphrastic forms. Furthermore, Dahl

found strong evidence that morphological TMA categories are more common than periphrastic TMA categories. This means that, for example, languages which do not have inflections are less likely to have PAST as a 'major TMA category' than inflectional languages (Dahl 1985:187). Thus Dahl's findings can lead to strong hypotheses about tense and aspect systems in natural languages – hypotheses which crucially involve form types representing modes of expression.

The second way in which it is relevant to operate with form types in our general metalanguage is as abstract markers of the categories in our universal grammar. In this sense, form is a highly abstract entity completely independent of language-specific form or mode of expression: it represents in a general way any mode of expression in any particular language. In our metalinguistic categories, we need an ideal collective representation of forms as bearers of the distinct meanings comprised by the category. Such ideal forms and the meanings attached to them constitute the 'members of the category'. For example, in the general metalinguistic category of tense, we might operate with distinct temporal meanings such as 'present', 'past', 'future' and possibly others. For each meaning our general metalanguage must provide a matching form term, e.g. the present, the past, the future, etc. Thus, to say that 'the past tense is often expressed inflectionally', as we did in our discussion of mode of expression above, is really to offer a statement about how a member of a general metalinguistic category is realized in individual languages. And to claim that the English progressive is 'an imperfective form' is to claim that it matches the description of the imperfective member of our general metalinguistic category of aspect. In both instances, we relate language-specific form to metalinguistic 'form'. Also, Dahl's major cross-linguistic TMA categories (such as PAST, FUT, PFCT, PLPFCT, PVF, IPVF, PROG, etc.) are forms in the sense discussed here: abstract, generalized forms, each carrying a certain meaning and thus functioning as a member of a universal category (the term used by Bybee and Dahl

for this kind of abstract form is 'gram', cf. e.g. Bergman & Dahl 1994).

Why operate with such abstract forms? Because we need a formal constant if we want to formulate cross-linguistic generalizations and if we want to describe the structure of general metalinguistic categories and their categorial interplay. In other words, we need such forms for 'external' reasons of application as well as for 'internal' reasons of category architecture. Is the term 'abstract form' not itself a contradiction and hence a complication for our universal grammar? Indeed not: form in our general metalanguage is 'metaform', a theoretical construct which allows the linguist to state principles (rules and relationships) applying to particular languages, where form has a concrete existence which must be described. Needless to say, we cannot describe language-specific form-meaning relationships if our general terminology does not allow us to operate with form and form-meaning relationships in principle, i.e. independently of language-specific data.

Is the whole discussion of abstract form and the metalanguage not just a vacuous exercise performed to make the system look more impressive? Certainly not: I am simply trying to provide a means of describing, in as consistent terms as possible, a kind of entity which is often taken implicitly for granted by linguists. To discuss, for example, whether a language has the aspect category or whether it has the perfect form (or to say that the English progressive is an imperfective form) simply presupposes that form has some kind of abstract existence, if only in our conception of things. There is never complete formal and semantic identity between two different languages. By establishing a strict metalanguage to support interesting crosslinguistic questions, we not only become more conscious of what we are doing, and as a result may be better at doing it, we make our methodology more vulnerable, open to constructive criticism and hence to improvement.

Having established the inevitability of form terms and forms as types in our general metalanguage, an interesting feature of universal grammar and its status as an idealization emerges: in the

metalanguage there is a necessary, ad hoc one-to-one correspondence between form (type) and meaning. As is well-known, there has been an intensive debate over the question of whether or not language-specific forms, such as e.g. the progressive in English, have basic meanings, i.e. meanings pertaining to all and only the occurrences of the forms on a strict, distinct one-to-one basis. The 'problem' with most language-specific forms is that it is often possible to identify several characteristic uses of each form. Many language-specific categories immediately appear to invite an analysis in terms of a one-to-many correspondence between form and meaning. Since, obviously, we would like to be able to describe each form in as simple and coherent a manner as possible, and since somehow there must be an explanation for the fact that different meanings inhabit one and the same form, there is a natural incentive for the grammarian to try to relate the different uses of the form to one basic meaning.

The question is obviously related to the question of the distribution of the members of a category: a characterization of the members of a category in terms of basic meanings provides a stronger rationale for their distribution than a list of unrelated meanings or uses. Often, the uses of a form are referred to as 'secondary meanings'. To identify the conditions under which such secondary meanings are derived from the basic, 'primary' meaning is thus a major objective in the analysis of language-specific form-meaning relationships. Many grammarians have experienced the frustration of trying to identify a reasonably plausible basic meaning of a particular form (e.g. a tense form or an aspect form) from the many secondary meanings they encounter in their data. The frequent lack of salience in such enterprises makes us suspect that maybe there is no basic meaning. On the other hand, the task that we are faced with is to explain how native speakers agree to use a particular form in the same way and in the same contexts. How is this possible if there is no semantic permanence of some sort?

In our general metalanguage, things are much easier: a form means exactly what it is supposed to mean. Thus, for example, as far as

the universal category of aspect is concerned, a perfective form is a form which expresses perfectivity and an imperfective form is a form which expresses imperfectivity. And what is more, a perfective form does not mix perfectivity with values from other universal categories such as e.g. tense or mood. This is not surprising since this is the way we define these forms in the first place. It may sound to some readers as if we here engage in vacuous terminological pedantry, whereas, in fact, this is all part of the necessary idealization of our universal grammar: a perfective member of the universal aspect category whose form expresses sometimes perfectivity, sometimes imperfectivity or even futurity, possibility, possession, agency, etc. cannot serve as a useful descriptive tool in language-specific analyses or as a standard against which we can possibly evaluate real data. Nor will it be useful in the formulation of hypotheses about natural language properties, or as a prime in the functional interaction with members from other categories in our general metalanguage. Therefore, a fundamental principle for our universal grammar is that there is a one-to-one correspondence between form type and meaning in categories. According to this principle, the members of a category are basic invariant form-meaning units which cannot be further decomposed. They are the prime units of category architecture.

Why operate with such highly idealized units when, as was pointed out above, the facts in particular languages seem far more complicated? Again the answer is: for reasons of explanatory adequacy and research strategy. Only by working with some sort of conceptually stable units as members of categories can we hope to demonstrate or delimit, as the case may be, the psychological reality of categories. Moreover, a hypothesis involving a one-to-one correspondence between form and meaning is more likely to lead to the identification of some sort of rationale for the distribution of language-specific forms than a hypothesis involving chaos to start with. Only by assuming pervasive order can we hope to delimit chaos and get a picture of where order of some sort prevails and where chaos still appears to prevail.

4.6. The Type-Token Distinction: a Useful Analogy

Let me sum up the discussion of the similarities and differences between source-languages (source-language grammar) and the general metalanguage (universal grammar) and offer an illustrative analogy. In the preceding sections we have characterized the main similarities and differences between source-languages and the general metalanguage. We have settled for English as an appropriate language in which to construct the general metalanguage and expressed a willingness to extend traditional generativist linguistic etiquette to descriptions of substitutional relations. We have argued for the transference of terminology from the specific level to the general level under certain well-defined conditions. Moreover, we have claimed that the overall organization of the two levels (in terms of the components of grammar and their relation, principles and rules) ideally should be isomorphic.

Although the principles of terminological transference and isomorphic organization were seen to legitimately generate a certain similarity, or even identity, between the general metalanguage and specific descriptions of source-languages, the two levels were overall defined as vastly different in purpose and status. Universal grammar with its general metalanguage was characterized as an ideal construct, an abstract, generalized, prototypical meta-grammar, which makes strong hypotheses about the nature of human language, assuming pervasiveness of distributional patterns and a one-to-one correspondence between form and meaning. Moreover it makes strong claims as to the psychological reality of categories and their members. This strong tuning of universal grammar is not only necessary for it to function as a useful descriptive apparatus for analyses of particular languages and as an absolute standard against which real data can be evaluated but it is also a result of a conscious research strategy to unravel regularity in natural language and to imbue the description with explanatory adequacy.

The difference between the universal level and the language-specific level can be usefully described in terms of the classic type-

token distinction, which is in fact similar to the distinction mentioned earlier between a prototype as a schematic representation and its instantiations. This distinction is generally used to account for our ability to categorize and interpret *new experience* on the basis of previous experience. Basically, tokens are entities of the world as we perceive them ('things', 'events', etc.), whereas types are the abstract units in the patterns of organization which we impose on the entities of the world on the basis of their similarity and difference. The tokens of a particular type are thus those entities in the world which we judge to be instances of that type by virtue of some shared property or properties. Our ability to categorize tokens in this way rests on the information or knowledge we have created and stored about types (cf. Jackendoff 1983:78). For example, to identify some object as a car is to recognize it as an instance of the category of cars, or simply as a token of a type. Presumably, as Jackendoff (1983:78) points out, such identification involves the juxtaposition of two conceptual structures: one for the token and one for the type.

In language studies the type-token distinction has been used for a variety of purposes. For example, it can be used to distinguish referential properties of noun phrases. Not surprisingly, as the following examples show, language allows us to express both tokens and types:

- (1) Alison went out with *the rich Norwegian*.
- (2) Alison married *a rich Norwegian*.
- (3) Knut is *a rich Norwegian*.
- (4) Alison wants to meet *rich Norwegians*.
- (5) Alison wants to marry *a rich Norwegian*.

In example (1) the object noun phrase is obviously referential, identifying a specific member of the class of rich Norwegians: the phrase is definite and specific. In example (2), the object noun phrase is also referential, specifying a certain member of the class: the phrase is indefinite but specific. The objects in examples (1) and (2) have a token reading. In example (3), however, the complement

noun phrase is not referential in any obvious sense but simply describes membership of a class: here *a rich Norwegian* has a type reading. The same applies to the indefinite, non-specific plural object in example (4). Finally, in example (5), the object noun phrase is ambiguous between a referential token reading (a particular rich Norwegian, e.g. Knut) and a non-referential type reading (anyone who fits the description 'rich Norwegian', i.e. is a member of the class of rich Norwegians, will presumably be considered a potential husband).

The type-token distinction, however, is not just useful in linguistic descriptions but applies generally to cognition, as my initial characterization indicated. An important characteristic of the distinction is that a type does not merely consist of the tokens known to instantiate it. In the examples discussed so far, the type of which the car was a token is not simply the set of pre-existing cars. Nor is the type of which Knut is a token simply the 'jet set' of Norwegian high society. For us to be able to categorize arbitrary new tokens as instances of a particular type and, conversely, to be able to derive new types on the basis of tokens which 'look like', or 'are like' other tokens, there must be creative principles, rules and conditions at work (Jackendoff 1983:82-83). Moreover, for such processes to take place the internal structure and organization of information must be very similar if not identical in tokens and types. One important difference between them, however, is that tokens can be directly observed and analysed whereas types unfortunately cannot.

How do we learn or acquire the types we need for categorization purposes when the rules and principles pertaining to types are not readily available to consciousness? One possible answer is that we create types by 'ostensive definition', i.e. by extracting information from entities stipulated to be tokens and non-tokens respectively. As Jackendoff (1983:87) puts it: "we must presuppose an active, unconscious mental process that can construct [TYPES] from the information in the [TOKENS] given as examples and non-examples." I presume that the circularity lurking behind formula-

tions of this kind can be avoided by postulating in addition to the implied environmental force an innate, genetically determined fundamental mental capability for computing (analysing, discriminating and grouping) sensory input. Independent evidence to this effect would provide an explanation for the evolution of types in the first place.

One reason for introducing the type-token distinction in our discussion of levels of language and linguistic description is that it very aptly illustrates the distinction between, on the one hand, universal grammar with its general metalanguage (type) and, on the other, (descriptions of) particular languages as either source-languages or object-languages (tokens). In the terminology provided by the type-token distinction, properties of source-languages serve as tokens, which by way of ostensive definition serve to provide the properties of our universal grammar and its metalanguage as types. Object-languages are languages on whose properties categorization judgements are passed on the basis of the types of properties in our universal grammar. For example, the general metalinguistic category of tense is a type category, comprising type forms and type meanings, derived from token categories of tense, comprising token forms and token meanings, in source-languages. The language-specific description of a category like tense in an object-language involves categorization judgements on the basis of the type category of tense in our general metalanguage with the type rules and type principles specified in the universal grammar of tense.

Not only can our universal grammar with its general metalanguage be said to be a type grammar, or rather a collection of types (of components, principles and rules), and source-languages and object-languages (as described in specific grammars) be said to be tokens or collections of tokens, the linguist working with these levels of description must undergo conscious processes very similar to the unconscious processes of categorization judgements and token derivations in organisms seeking to understand the world. Like organisms (such as e.g. human beings) learning or acquiring types from ostensive definition, through exposure to entities presented as

instances or non-instances of the types in question, the linguist must derive type categories, type principles, type rules, etc. from source-language data showing token categories, token principles, token rules, etc. In both processes, information must be extracted from a token level since the type level is not directly accessible to us for inspection. Like organisms deriving new types by juxtaposing a given token with other tokens which look like it, a linguist can add to the inventory of universal grammar and the general metalanguage by identifying new token similarities in source-language data. And like organisms creatively categorizing new arbitrary entities as tokens of a type, the linguist can identify a category in new data as a token category of a given type category.

For all these creative processes to take place there must be some similarity or identity between type and token. As we have seen, there is a strong terminological and organizational parallellism between general metalanguage and source-language/object-language descriptions. Furthermore, just as there must be certain rules, principles and conditions applying to types to facilitate creative categorization and derivation, rather than simply a look-up function in the set of all known tokens, certain rules, principles and conditions apply to universal grammar. We have already got a sense of this in our discussion of the status of universal grammar as an ideal construct. Just as only tokens can be part of our experience, only source-languages and object-languages are directly available to scrutiny. The question of how we construct a universal grammar and a general metalanguage corresponds to the question of how organisms extract information from tokens to types.

4.7. Principles of Extraction: an Overview

Having compared the two levels of description in detail, we are now in a position to state a number of principles of transference and extraction, i.e. principles for going from source-language to general metalanguage, from language-specific grammar to universal grammar:

1. According to what may be termed *the principle of optimal interscholarly communication*, rules, principles, descriptions, etc. in the general metalanguage should be stated in English. Formalism and new terms must be kept compatible with English. As stated in section 4.1, the choice of English as the language of our general metalanguage is not a matter of strict linguistic principle or a reflection of the superiority of this language but simply the most convenient choice from the point of view of the international scientific community.
2. According to *the principle of terminological transference*, terms can be transferred from one level to the other as long as: a) there is a need for it; b) it meets the general requirements of etiquette for our description; and c) it does not violate the principle of organizational isomorphism.
3. According to *the principle of organizational isomorphism*, the organization of the grammar, i.e. the components and their relation, and the kinds of rules, principles, etc. contained in it must be kept transferable in form. In other words, we should not operate with a kind of rule, a principle or a (sub)component at one level which does not exist, or could not exist, at the other.
4. According to *the principle of one-to-one correspondence between form and meaning*, language-specific complexity in form-meaning relationships must be resolved at the level of universal grammar and in the general metalanguage. This process may involve ranking of a variety of attested meanings or uses of language-specific forms (e.g. attributing some of the variety to local, non-generalizable factors) or abstracting into more general meanings binding such meanings or uses together. A result of working with the principle of a one-to-one correspondence between form and meaning is that we may well end up with 'too strong' hypotheses in our universal grammar about the nature of human languages. However, when continually subjected to attempts at falsification, such hypotheses are instrumental in our search for regularity.

5. According to *the principle of pervasive distributional patterns* (which is related to the principle of a one-to-one correspondence between form and meaning), complexity and irregularities of distributional patterns in language-specific data must be resolved at the level of universal grammar and the general metalanguage. This process may involve ranking patterns in language-specific data or abstracting from certain patterns or from freakish data. Again the result may be the formulation of 'too strong' hypotheses in our universal grammar. This, however, is seen as a necessary prerequisite to our attempt to define the extent of regularity. A continual falsification procedure will ensure that the hypotheses formulated are kept in tune with the empirical evidence despite the element of idealization.

6. According to *the principle of semantic determination*, we must always assume that there is a semantic rationale for the distribution of the forms of a category. This principle will suppress instances where the distribution is determined by language-specific lexical or formal factors and will thus contribute to the formulation of 'too strong' hypotheses mentioned in connection with the principles of pervasive distributional patterns and one-to-one correspondence between form and meaning. As we saw in section 3.1, the semantic rationale which we posit for the distribution of the forms of a category, indeed the entire semantic component of our description, is closely related if in fact not identical to conceptual structures.

This list of principles concludes our discussion of the two levels of description and their interaction. It is now time to put theory to practice. In what follows I shall look more closely at the categories of tense, aspect and action and in doing so I shall pay special attention to the notion of choice relation, which, as we have argued, is absolutely essential to the analysis of substitutional relations. A fragment of universal grammar and a general metalanguage will be constructed for tense, aspect and action on the basis of the many principles proposed. The exemplary source-language data will be restricted mainly to English, and is thus obviously of limited representative value. But, as indicated above, even limited

source-language data is sufficient to make a first step in the construction of a universal grammar and its general metalanguage. What is different in this case is that the limitation is explicitly acknowledged. The description offered with its categories, rules and principles is to be regarded as a set of hypotheses for others to falsify and refine on the basis of other languages or more revealing insights of the same languages.

5. On the Nature of Choice in Language

In the introduction in chapter 1, I argued that one of the things that a theory of tense, aspect and action must specify is the substitutional relationships involved. In this chapter, we shall examine the concept of 'choice' associated with these relationships and attempt to determine the general principles governing the choice of one verb form rather than another.

5.1. Delimiting the Notion of Choice

Let us begin our discussion of the nature of choice in language by looking at a couple of examples from a pretheoretical point of view:

- (1) "You're crying."
"No, not really."
"I know why you're crying. You're crying because of your wife."
"No, I don't think that's true."
"I'm sure it's true."
"It's not, really."
"Then it's because you can't fly."
"No."
"Then what is it?"
"It's nothing, I wasn't crying." (Carey, *The Fat Man in History*)
- (2) He sits, once more, on the vinyl bench, next to the weeping woman who continues to drop fat tears onto an old copy of *Time*. He can see the rabbit-eyed clerk saying something to a nurse about him. The nurse has a big arse and a small nose. She wrinkles her nose and Eddie sends her his most sinister sexual look. He is a master of this particular look and the nurse averts her eyes and whispers some cowardly message to the clerk who waits a few seconds before looking up again. (Carey, *The Fat Man in History*)

In what sense is it relevant to speak of 'choice' in relation to such examples? One issue which must be settled straight away is that the question of choice in grammar presupposes the existence of substitutional relations (i.e. alternative options at the relevant slot in the

clause and/or alternative ways of arranging the constituents of the expression). Without the presence of a number of possible expressions at a given point of communication, it is not reasonable – in the context of a grammar – to talk about there being a choice of expression underlying the actual manifestation of language. In other words, 'choice', as I propose to use the term, is not relevant to the distinction between 'expression' and 'no expression'.

The justification for this initial limitation of the notion of choice in language will become clear when we consider examples (1) and (2). As grammarians we are not particularly concerned with the author Peter Carey's decision to write these passages in the first place. Even if we ignore the strictly literary status of the dialogue in example (1) and let it represent a real-life conversation, the participants' decision to engage in the conversation is not terribly interesting in a grammatical context. Obviously anyone can choose 'to speak' (or write) or 'to hold his tongue' (or his pen) but this is not a consideration of grammar but of social interaction in a much broader sense. If, for one reason or another, Peter Carey had left out the passage in example (2), or parts of it, this would clearly have changed his short story. And a decision to that effect is strictly irrelevant to any specific linguistic investigation such as our analysis of tense, aspect and action. Authors may have all sorts of reasons for leaving out linguistic material (e.g. they may want a tightening up of the plot or a fine-tuning of the rhythm or balance of the story, or they are simply complying with a request from their publisher to cut down the number of pages) but these would hardly include considerations of syntax or grammatical categories directly.

Similarly, in example (1) one of the interlocutors might decide to remain silent instead of saying "No, I don't think that is true." That decision would be a decision to interact socially in a very different manner with the other participant in the conversation. Interestingly enough, silence may in fact be a powerful communicative means and hence relevant from a broad linguistic point of view (in the case in point, responding with silence could be a way of conveying the message 'Yes, but I do not want to admit it'). But surely,

considerations of syntax or grammatical categories play no part in this.

Thus, as a first approximation, we can say that the kind of choice that we are interested in as grammarians is *not* the choice to communicate something in the first place but strictly the choice of one expression rather than another in a given speech situation or at a certain point in a piece of writing. This characterization of what we mean by choice is, however, still clearly in need of refinement.

To see why we cannot simply say that grammatical choice concerns the selection of one expression rather than another at a given point, we only have to look again at examples (1) and (2). If, for example, instead of saying "No, I don't think that is true", the interlocutor who is crying, or believed to be crying, in example (1) chose to say "Yes, I'm sorry, but I can't help it.", we would not want to say that that choice is grammatically relevant (though, of course, once this expression is selected there are internal grammatical considerations pertaining to its constituents and their relationship). Or if in example (2), the author chose to write "He sits, once more, on the cold, wet floor, next to an old beggar pretending to read a newspaper" instead of "He sits, once more, on the vinyl bench, next to the weeping woman who continues to drop fat tears onto an old copy of *Time*", surely that choice is a question of the fictional universe that the author wants to depict rather than a question of syntax or grammatical categories. So, although the alternative expressions potentially occur in the same place in the text or at the same point of communication, they do not represent grammatically significant options. For alternative expressions to be grammatically significant options they must be somehow related by a grammatical principle.

The kind of relationship required of two or more expressions to qualify as choice options is of course entirely dependent on the grammatical issue with which the linguist is concerned. If, for example, a linguist is interested in tense, the choice of present tense forms in example (2) is not just interesting in a general sense but interesting in a specific grammatical sense because it invites

comparison with a relevant alternative option involving the same lexical items, e.g. the past tense, as in the following passage, which is identical with example (2) except for the choice of tense form:

- (3) He *sat*, once more, on the vinyl bench, next to the weeping woman who *continued* to drop fat tears onto an old copy of *Time*. He *could* see the rabbit-eyed clerk saying something to a nurse about him. The nurse *had* a big arse and a small nose. She *wrinkled* her nose and Eddie *sent* her his most sinister sexual look. He *was* a master of this particular look and the nurse *averted* her eyes and *whispered* some cowardly message to the clerk who *waited* a few seconds before looking up again.

If one is interested in the order of premodifying adjectives, the options to be considered must relate to 'variability of sequence', as in the following constructions, where the order of the adjectives in the a-examples has been reversed in the b-examples and where, once again, the same lexical items are involved:

- (4a) a normal, healthy baby
 (4b) a healthy, normal baby
 (5a) classical Chinese theatre
 (5b) Chinese classical theatre

If one is interested in the distinction between restrictive and non-restrictive relative clauses, then naturally the options to be considered are precisely these two types of clause, as in the following cases, where the a-examples contain restrictive relative clauses and the b-examples lexically identical non-restrictive relative clauses:

- (6a) The soldiers who were brave ran forward. (Sørensen 1958)
 (6b) The soldiers, who were brave, ran forward.
 (7a) Professors who enjoy poetry are idealistic. (Lyttle 1974, q. Jacobs & Rosenbaum 1968)
 (7b) Professors, who enjoy poetry, are idealistic.

And, of course, if one is interested in the distinction between simple and progressive forms in English, the choice which must be considered in a grammatical context is the choice of one of these forms of the lexical verb rather than the other:

- (8a) Walter moved to the door, still talking.
- (8b) Walter was moving to the door, still talking.
- (9a) Somebody hit him on the nose.
- (9b) Somebody was hitting him on the nose.

Note that the kind of relationship required of expressions to qualify as options of a grammatical choice is not merely of a lexical kind, as the examples above would seem to indicate. Lexical identity or similarity seems here to be a necessary but not sufficient condition. Thus we would not be particularly interested in treating the following instances as directly relevant options although they involve roughly the same lexical items:

- (10a) Somebody is hitting him on the nose.
- (10b) He had been hit on the nose by somebody.

The reason why we do not want to regard *is hitting* and *had been hit* as directly opposed choice options is that they differ in too many respects: voice, tense, aspect and possibly other categories. Of these, voice clearly involves both substitutional and syntactic variation. The motivation for choosing one of these forms rather than the other is simply too complex and, besides, there seems little justification for restricting the options to just those two. If it were relevant to treat (10a) and (10b) in terms of a choice relation, then there would be at least a dozen other substitutionally related forms of HIT which it would be equally relevant to consider as options at the same time.

The kind of choice that is of most relevance in a description of substitutional relations is that which exists within the framework of a morphosyntactic category or larger construction type. Within such a framework substitutional forms or construction types are minimally distinct, differing in only one formal feature. Restricting the notion of 'choice relation' to just such cases, we can posit a choice relation between, for example, the present tense and the past tense as members of the category of tense relative to any given lexical verb. Thus, in the case of HIT (as a lexical constant), we can treat the present tense form *hits* and the past tense form *hit* as

choice options within the category of tense. Similarly, we can – again with HIT as our lexical constant – treat the progressive past *was hitting* and the simple past *hit* as choice options within the category of aspect. With construction types, there are choice options relating to, for example, the order of adjectives, relative clause restrictiveness, and voice. In this way, the notion of 'choice' is intimately related to the conception of categories as collections of forms/constructions sharing some general property (such as, for example, temporality in the case of the category of tense) but differing with respect to their specific realization of this general property (e.g. past temporality, present temporality, or future temporality). Choice thus means choice of specific realization of general category concept or principle relating to construction type.

To sum up: the kind of choice that we are interested in in our context is not simply the choice of one expression rather than another at a certain point but rather the choice of one expression rather than another within the framework of a grammatical category or type of syntactic construction, and relative to a (set of) lexical constant(s).

5.2. Choice, Distribution and the Substitution Test

Why are we as grammarians interested in this kind of choice relation between expressions? Could we not simply focus our attention on whatever expressions are selected, irrespective of their relations to other options? The answer must be a firm no. We must investigate choice relations because they provide the key to an understanding of the distribution of the expressions under scrutiny: if we can define the choice relation between the members of a grammatical category (or between constructions of the same type), we have in actual fact gone beyond the level of mere observational adequacy for our grammar and moved into the realm of descriptive and explanatory adequacy. Most linguists would agree that a grammar should not simply specify which constructions are grammatical and which are not (though, of course, this is a difficult enough task): a grammar which does only that is observationally adequate but

clearly not descriptively or explanatorily adequate. To reach these higher levels of adequacy, the grammar must also provide an account of the principles (syntactic, semantic and other) which make a construction grammatical or ungrammatical (descriptive adequacy) and show these principles to be psychologically real and maximally constrained within the framework of a universal grammar (explanatory adequacy). In other words, we want to be able to offer an account of both *when* and *why* each member of a grammatical category is used (cf. section 4.1).

Up to this point we have simply assumed that the notion of 'choice' is a fairly stable, homogeneous notion – at least in the restricted sense in which I have proposed to use it. However, as we shall see, it covers a variety of motivation factors on the part of the locutionary agent.

First of all, it is important to note that by saying that a native speaker has a choice of expression we do not want to imply either that the native speaker is 'free to choose' or, conversely, that he is 'forced to choose' in any general sense of these phrases. In particular, it is important to avoid confusion with the non-technical, everyday term 'choice', which often implies 'free choice', and which is closely related to the concept of 'free will'. In many instances, the selection of a particular member of a grammatical category may at the same time be both optional and obligatory – optional in the sense that the native speaker usually has a good deal of freedom to choose what to say and how to say it, obligatory in the sense that in a particular context, and relative to a particular conceptual unit, there may be only one well-formed expression. We shall not be concerned with the extent to which the native speaker has freedom of choice in the general sense hinted at here but restrict ourselves to an analysis of the grammatically relevant implications of the choice of form in any given case. We shall later venture to speak of choices being 'obligatory' or 'free' (or 'optional'), but we shall do so only in a strictly linguistic context, referring to formal or conceptual conditions with grammatical consequences as to well-formedness and acceptability.

As already mentioned, to study the choice relation between, say, the members of a grammatical category is to study the distribution of the forms. Many rules in traditional grammar which specify when a particular form is used are thus rules which, technically speaking, state choice relations – though most often implicitly so. Consider, for example, a (simplistic) rule like the following:

- (1) In English, the progressive form is used to express situations in progress whereas the simple, non-progressive form is used to express completed situations or habits.

This rule clearly hypothesizes a certain distribution of simple and progressive forms. At the same time, however, it implies a certain choice relation between the two forms: the locutionary agent chooses the progressive form if he wants to express a situation in progress. Conversely, if he wants to express a completed situation or a habit, he chooses a simple form. In this way, the distribution of the members of a category is the product of the choice relation between these members.

Just as it would be methodologically inappropriate to limit the scope of one's analysis and of one's rules to a limited, finite set of data, it would be a mistake simply to study, and attempt to describe, the *actual* choice of substitutionally related forms in the analysis of tense, aspect and action. What is really of interest is the *potential* of language, the bounds of linguistic creativity, as it were, rather than just actualized language. So what we are interested in is the *potential choice* of construction type or of the members of a grammatical category relative to a lexical constant. To examine the potential choice of the members of a category, I suggest that we revive a traditional grammatical test: the 'substitution test' (or 'replacement procedure') (for discussion see e.g. Allerton 1979:98 and Hjelmslev 1943:60ff, who uses the term 'commutation test'). In a substitution test, one formal expression is replaced by another, choice-related formal expression. This procedure is likely to reveal something important about the locutionary agent's motivation for choosing the original expression and will make it possible for us to specify the nature of the choice relation with greater precision.

A substitution test can be carried out whenever there is a choice relation in language. Whether this choice relation involves morpho-syntactic, grammatical categories or larger construction types is immaterial. Before we narrow our description down to the categories of tense, aspect and action, let us look at the general applicability of this method of eliciting the nature of linguistic choice and the potential distribution of grammatically related expressions.

In the case of adjective order, the question that grammarians have tried to answer is what exactly is the *preferred* order and what are the ordering principles at work (for detailed discussion, see Bache 1978). The reason why this particular grammatical problem is often formulated in terms of 'preferred order' is that, within certain limits, there seems to be great vacillation. To examine the order of premodifying adjectives in terms of the notion of 'preference' more systematically, let us look at some examples:

- (2) innocent naval officers
- (3) Pretoria's traumatic military intervention
- (4) Scottish popular ballads
- (5) the brilliant first chapter
- (6) a strong active rabbit
- (7) the big tough guy
- (8) well-fed well-washed bodies
- (9) her dry and light stage kisses

By submitting these examples to a substitution test whereby a new sequence is substituted for the original sequence (an operation sometimes referred to more specifically as 'permutation' because the substitution involves a reversal of superficial constituent order, cf. Allerton 1979:102; Hjelmslev 1943:66), we find that the result varies significantly from case to case. We also find, however, that there are certain interesting regularities in this variation. In some instances, the order is simply irreversible:

- (2a) innocent naval officers
- (2b) *naval innocent officers

- (3a) Pretoria's traumatic military intervention
- (3b) *Pretoria's military traumatic intervention

In some of the other examples, the order is reversible but clearly associated with a distinct conceptual interpretation:

- (4a) Scottish popular ballads
- (4b) !popular Scottish ballads
- (5a) the brilliant first chapter
- (5b) !the first brilliant chapter

In example (4a), *popular* is non-gradable and has a classifying function in relation to the head noun *ballads*, specifying a genre rather than indicating 'popularity', whereas in example (4b), *popular* is gradable and has a relative, descriptive function, implying that the referent of the head noun has 'popularity'. Similarly, in example (5), the adjectives assume different functions in relation to the head noun. In the a-construction, *first* functions as a classifier in relation to *chapter*, assuming the meaning of 'introductory' or, at least, 'first in kind' (note that the construction is possible with the indefinite article: *a brilliant first chapter*). By contrast, in the b-construction, *first* serves as a determiner in conjunction with the definite article, defining a specific chapter, not necessarily the first chapter but the first brilliant chapter, which might in fact be any chapter of the book, even the last (note that here the indefinite article is impossible: **a first brilliant chapter*).

In yet other noun phrases, the order is reversible but not clearly distinctive as in (4) and (5). Some of these phrases allow of a change of order but the reversal is slightly marked unless the first adjective receives emphatic stress or the adjectives are separated intonationally (in writing by comma):

- (6a) a strong active rabbit
- (6b) an active strong rabbit
- (6c) an ACTIVE strong rabbit
- (6d) an active, strong rabbit
- (7a) the big tough guy

- (7b) the tough big guy
- (7c) the TOUGH big guy
- (7d) the tough, big guy

Here the most natural, or unmarked, sequences are those in the a-constructions.

In other non-distinctive phrases, the order seems completely arbitrary:

- (8a) well-fed well-washed bodies
- (8b) well-washed well-fed bodies
- (9a) her dry and light stage kisses
- (9b) her light and dry stage kisses

As we look at all these examples and see how they behave when subjected to a substitution test, it becomes obvious that the order of premodifying adjectives is not a simple, straightforward phenomenon. Several factors seem to be at work. To uncover the principles governing the order of adjectives, i.e. to determine the nature of the locutionary agent's choice of sequence, we must distinguish between several types of construction according to the effect of the substitution test on the data. Thus, with irreversible constructions (such as (2) and (3)), the choice of sequence seems to be an obligatory formal choice. With reversible but distinctive constructions, the choice of sequence seems to be obligatory, not in a formal sense but in relation to the concept that the locutionary agent wishes to express: a change of order is associated with a change of meaning. This semantic change, however, is not random as in some of the examples of choice in a general, everyday sense discussed in section 5.1 but seems to be governed by regular grammatical principles. With sequences where the alternative order is simply a more marked way of conveying the same, or roughly the same, information, the locutionary agent's choice of unmarked sequence is truly one of 'collective preference' in the language community: in such constructions certain tendencies and regularities can be discerned but no absolute rules can be stated. Finally, in examples where the two sequences are completely interchangeable with no

difference in either meaning or markedness, the locutionary agent seems to have a completely free choice: here the order can be regarded as a more or less random performance phenomenon, a result of 'individual preference' in a speech situation. Each of these types of construction can be further analysed in terms of what adjectives enter which type of construction, in terms of their relationship to each other and to the head noun, and in terms of the specific rules, tendencies and conditions that govern the order in which they occur. Thus, by eliciting the complex choice relations involved, the substitution test provides an appropriate and revealing framework for a detailed analysis of the phenomenon.

We will not carry our description of adjective order any further at this point but move on to an entirely different grammatical problem to which the substitution test can also be usefully applied, the distinction between restrictive and non-restrictive relative clauses.

That it is at all relevant to submit restrictive and non-restrictive relative clauses to a substitution test is clear when we consider the formal similarity and the vacillation which sometimes exist between the two types of construction. In the following brief account of the effects of the substitution test on relative clauses, I shall disregard the problem of pronoun choice and simply focus on the overall function and meaning of the clauses (for a more detailed analysis, cf. Bache & Jakobsen 1980 and Bache 1985b). As with adjective order, the substitution test provides us with a typology of constructions which may serve as a framework for a more detailed analysis of the choice relation involved. Thus there are constructions where a replacement results in an unacceptable or very odd construction, as in the following examples:

- (11a) In the end, the only girl who volunteered was the one with previous climbing experience.
- (11b) *In the end, the only girl, who volunteered, was the one with previous climbing experience.

In other sentences, the choice options are associated with very different conceptual interpretations. In such cases, the restrictive

relative clause seems intimately related to the determiner of the antecedent whereas the non-restrictive clause seems to be independent of the determiner:

- (12a) The boys who were scared returned to the camp.
- (12b) !The boys, who were scared, returned to the camp.
- (13a) The man who broke the bank at Monte Carlo is a mathematician.
(Lyons 1977)
- (13b) !The man, who broke the bank at Monte Carlo, is a mathematician.
- (14a) Teachers who work overtime are poorly rewarded for their efforts.
- (14b) !Teachers, who work overtime, are poorly rewarded for their efforts.
- (15a) A young mother who is always busy needs a loving husband.
- (15b) !A young mother, who is always busy, needs a loving husband.

As pointed out in Bache & Jakobsen 1980, in examples like (12a) and (12b), in which the antecedent noun is determined by the definite article, the choice between the restrictive and the non-restrictive relative clause is 'identification-oriented' in the sense that the restrictive relative clause assumes a special identifying function in the context of the definite article, thus helping establish the referent of the noun phrase, whereas in the non-restrictive counterparts in the b-examples, the referent of the noun phrase is established independently of the relative clause. In examples with indefinite noun phrases like (14) and (15), the choice between the two options seems to be 'code-oriented' rather than 'identification-oriented': the choice of relative clause depends on the locutionary agent's understanding of the code, especially his or her conception of what constitutes, on the one hand, inherent characteristics of the class of potential referents of the antecedent and, on the other hand, non-inherent, sub-class specifying characteristics. Thus in (14a) and (15a), the restrictive relative clauses serve to specify a subclass of the potential referents of the antecedent noun alone, whereas in the b-examples the non-restrictive clauses present information ('working overtime' and 'being always busy') conceived of as inherent characteristics of the potential referents of the antecedent ('teachers' and 'young mothers', respectively).

Finally, there are cases where, in conceptual terms, there is very little difference between the restrictive and the non-restrictive choice options:

- (16a) She is fooling around with a Norwegian who is rich.
- (16b) She is fooling around with a Norwegian, who is rich.
- (17a) He bought some coal which had a low burning temperature.
- (17b) He bought some coal, which had a low burning temperature.

In these indefinite, but specific, noun phrases the choice of restrictive or non-restrictive relative clause is mainly 'presentation-oriented' rather than 'identification-oriented' or 'code-oriented'. The difference between the two choice options is simply one of contrast formation. Thus in the a-examples, the locutionary agent actualizes the referent of the construction by establishing at once an explicit primary contrast between the potential and non-potential referents of the antecedent plus relative clause as one information unit, i.e. between 'rich Norwegians' and 'other Norwegians' in (16a) and between 'coal with a low burning temperature' and 'coal without this quality' in (17a). In the b-examples, the locutionary agent actualizes exactly the same referents, but stepwise: first by establishing a primary contrast between potential and non-potential referents of the antecedent alone and then providing the predication contained in the relative clause as a separate information unit in contrast to other possible predications of the referent of the antecedent.

As with adjective order, we see a variety of motivating factors underlying the choice of restrictive and non-restrictive relative clauses. In many cases the type of clause selected is formally the only possibility and thus the result of a grammatically obligatory choice. In other cases, the choice is semantically obligatory in the sense that the options are tied to specific, very different concepts. In yet other cases, the choice seems to be grammatically optional in the sense that the locutionary agent has a relatively free grammatical choice between presenting the same, or roughly the same, information in two different ways. This may of course give way to various stylistic or contextual determinants.

Let us now turn to substitutional relations within the framework of a *verbal category* – i.e. the kind of choice relation that is relevant to consider in a study of tense, aspect and action. The category that I shall use for illustration is the aspect category in English as it is manifested in the distinction between simple and progressive forms. As with the other areas already considered, this distinction invites us to perform a substitution test because of a certain vacillation between the forms, a certain overlap in their potential distribution.

An examination of the data soon reveals that a substitution test provides a typology of constructions similar to the ones arrived at in our discussion of adjective order and relative clause restrictiveness. Thus, there are cases where, for one reason or another, a replacement of form is quite unacceptable:

- (18a) This bottle *contains* two pints of milk.
- (18b) *This bottle *is containing* two pints of milk.
- (19a) Malcolm is a guitar player, of the most elevated, classical nature: he also *sings*.
- (19b) *Malcolm is a guitar player, of the most elevated, classical nature: he *is also singing*.
- (20a) She *snatched* up a sharp knife and advanced upon him.
- (20b) *She *was snatching* up a sharp knife and advanced upon him.

In other examples, the choice of verb form is associated with a definite conceptual interpretation, i.e. the options are very clearly semantically and referentially distinct (in the sense defined in section 3.1):

- (21a) Sally *sleeps* in the room next door.
- (21b) !Sally *is sleeping* in the room next door.
- (22a) The truck *stopped* for a red light.
- (22b) !The truck *was stopping* for a red light.
- (23a) I couldn't imagine why Louise *married* him.
- (23b) !I couldn't imagine why Louise *was marrying* him.

In (21), the a-example expresses a state or a habit (i.e. the room next door is Sally's bedroom) whereas the b-example expresses either an on-going situation (i.e. 'Sally is asleep at this very

moment') or a temporally restricted arrangement (e.g. 'This week Sally is sleeping in the room next door, next week you can have it'). In (22a), *stopped* actually means 'came to a complete halt', whereas in (22b), *was stopping* – in one of the interpretations of this construction – means something like 'slowed down in order to stop without necessarily coming to a complete halt'. And, finally, in (23), the two options are associated with a different temporal location of the marriage ('past-in-the-past' by the simple form versus 'future-in-the-past' by the progressive form).

In yet other cases, there is much less difference between the simple form and the progressive form:

- (24a) I *had* a chat with him the other day.
- (24b) I *was having* a chat with him the other day.
- (25a) We *celebrated* Stephanie's birthday at my uncle's place.
- (25b) We *were celebrating* Stephanie's birthday at my uncle's place.
- (26a) Jack's mouth *moved* along her cheek towards her mouth, dissolving her whole self in delight.
- (26b) Jack's mouth *was moving* along her cheek towards her mouth, dissolving her whole self in delight.

In these examples, we find that the difference between the choice options is primarily one of presentational focus. The a-examples express the same, or roughly the same, situation as the b-example. But whilst the simple forms present the situation expressed as a complete whole, with an external focus, the progressive forms present the same situation as something unfolding or in progress, with an internal focus.

As with adjective order and relative clause restrictiveness, there are a number of motivating factors underlying the locutionary agent's choice of option from the aspect category in English as manifested in the distinction between simple and progressive forms. In many cases, only one of the options is grammatically possible: in such examples there is a formally obligatory choice of form. In other cases, the choice options are associated with very different conceptual interpretations: the locutionary agent's choice of form is here restricted by the very different semantic and referential

properties of the two forms. And finally there are instances where formal and referential pressures on the locutionary agent are minimal, thus leaving the locutionary agent with a much freer choice to present the situation he wants to express in different ways.

A theory of tense, aspect and action must provide an account of when, how and why the members of the formal categories involved are used. To be observationally adequate the theory must specify the (potential) distribution of the members of the categories, i.e. it must specify when the members can and cannot be used. To be descriptively and explanatorily adequate the theory must also account for the principles that lead to this distribution. In other words, the theory must describe the choice relation between the members. It seems to me that the classic substitution test is ideally suited to elicit information about the potential distribution of forms and the nature of choice underlying their selection. It provides a typology of constructions on the basis of potential occurrence and thus an appropriate framework for a more detailed analysis of the formal and semantic factors involved.

5.3. A Typology of Sentences

In the preceding sections we have examined the nature of choice in language with particular emphasis on options of expression within the framework of grammatical categories or larger construction types. In doing so, we have implicitly accepted the sentence as the primary unit of analysis in our description.

My reason for choosing the sentence as the central unit of interest in the description of verbal categories is that it can be viewed as the minimal textual unit capable of independently expressing a situation located in time. As we shall see later, 'situation' is here used as a cover term for all sorts of states, events, actions, processes, activities, etc. In other words, a situation is expressed by a finite predicator plus the sentence functions associated with it (subject, objects, complements and adverbials). It is important to stress the fact that sentences may express situations in time

independently of linguistic or extralinguistic context. Thus while subordinate clauses – like sentences – may express situations located in time, whether they contain a finite predicator or not, only sentences – and, of course, main clauses – can do so without the support of some sort of context. Compare for example:

- (1) John met Vera at the station shortly after ten.
- (2) *If John met Vera at the station shortly after ten.
- (3) If John met Vera at the station shortly after ten, they ...
- (4) *Having met Vera at the station shortly after ten.
- (5) Having met Vera at the station shortly after ten, John ...

Another, equally important reason for choosing the sentence as the primary unit of analysis is that it offers an ideal point of departure in any search for broader textual and contextual functions. Only by delimiting intrasentential factors in the choice of verbal categories can we hope to map extrasentential forces working on the native speaker's choice of form with any degree of precision. Thus, to choose the sentence as the primary unit of analysis is to set up a standard, a convenient fiction, not under the pretence that it necessarily reveals the linguistic reality of the data but because it may prove instrumental in our search for linguistic knowledge, and in this instance also insights into co-textual and contextual factors in the choice of grammatical form.

In the substitution test performed in the preceding sections, we noticed a certain regularity in what happened to an expression (a form or construction type) when it was replaced by an alternative expression within the framework of a grammatical phenomenon. We can now rephrase the procedure by saying that, strictly speaking, what is replaced is a *sentence* by a *variant sentence* (not simply a constituent part by an alternative constituent part), whether the grammatical phenomenon providing the axis for the substitution is 'adjective order', 'relative clause restrictiveness' or 'aspect'. Given this formulation, the substitution test may be viewed as an operation which yields a *typology* of sentences – a typology explicating regular patterns in what happens to sentences when they

are replaced by variant sentences. As we saw in section 5.2, there were three types of construction: a) those where a replacement resulted in ungrammaticality; b) those where a replacement resulted in a distinct change of meaning; and c) those where a replacement resulted in only a slight change of meaning. To these types, a fourth can be added: constructions which have no choice option, i.e. where there is a *systemic gap*. Thus, for example, in Russian there are a few *aspectually unpaired verbs*, i.e. verbs which differ from the vast majority of verbs in not having a morphologically related (prefixal or suffixal) aspectual counterpart. Examples of this are imperfective BOROT'SJA (= to struggle), VYGLJADET' (= to look), LEŽAT' (= to lie) and NAXODIT'SJA (= to be located), which all lack a perfective counterpart, and perfective OPOMIT'SJA (= to come to one's senses); POSKOL'ZNUT'SJA (= to slip); RUZNUT' (= to collapse) and ZAPLAKAT' (= to start to weep), which all lack an imperfective counterpart.

The difference between constructions lacking replacement variants altogether and constructions with ungrammatical replacement variants is that in the former case there either is no possible replacement form or, in case a replacement form can be constructed on the basis of systemic regularity, it has no distribution (i.e. it never occurs). In the latter case, the replacement form has a regular distribution outside the particular sentential context. For example, in *She snatched up a sharp knife and advanced upon him* the verb *snatched* cannot be replaced by *was snatching*. This, however, is not due to a systemic gap: the form *was snatching* is a possible form in English (cf. *Just as she was snatching up the sharp fruit knife, the light went out*) but its distribution does not include the sentence subjected to the substitution test. By contrast, the unpaired imperfective and perfective verbs in Russian are *globally* unpaired because no counterpart exists in any context.

The following chart sums up the typology of sentences arrived at on the basis of the patterns of behaviour in sentences subjected to the substitution test:

(6)

TYPE	REPLACEMENT	RESULT
I	cannot be carried out owing to systemic gap	Ø
II	sentence X -> sentence X'	*Sentence X' (sentence X' is ungrammatical)
III	sentence X -> sentence X'	!Sentence X' (distinct change of meaning)
IV	sentence X -> sentence X'	(!)Sentence X' (slight /no change of meaning)

It might be objected that these four types of sentence merely represent all the logical possibilities involved in substitution rather than any truly significant linguistic phenomena and thus should not be part of a theory for which we wish to claim descriptive or even explanatory adequacy. It is true that the typology includes all the possible results of a substitution test. But to the extent that linguistic data actually invites a classification according to such criteria, the typology also reveals important distributional facts which must be explained by any theory for which we wish simply to claim observational adequacy and may thus serve as a convenient framework for the discussion of individual rules underlying the actual and potential choice of form.

However, there is a different sense in which the proposed typology is somewhat artificial: the system suggests the presence of fairly sharp distinctions in the data whilst the data itself is often more complex or simply indeterminable. What the system does is

present certain hallmarks – typical cases – in what is actually a cline or a continuum of rather complex linguistic potentiality. For example, in English, the data displaying verbal aspect distinctions sometimes resists classification into the four clear-cut types. As is well-known, there are verbs which almost always occur in the simple form, e.g. CONTAIN, POSSESS, BELONG, BELIEVE, KNOW:

- (7a) This bottle *contains* two pints of milk.
- (8a) He *possessed* the wildness to which she wished to chain herself forever.
- (9a) Very stiffly Joan said: "The missing letters *belong* on the missing files."
- (10a) The government *believes* that an awareness of war must be instilled in the people.
- (11a) In those days I *knew* him well, of course.

We know exactly what the progressive counterparts to these simple verbs would look like, the progressive form being completely regular in English. But do they actually exist? The following variants are certainly unacceptable:

- (7b) *This bottle *is containing* ...
- (8b) *He *was possessing* the wildness ...
- (9b) *...The missing letters *are belonging* ...
- (10b) *The government *is believing* that ...
- (11b) *... I *was knowing* him well, of course.

Obviously, if the verbs involved in these examples *never* occur in the progressive, examples (7a) to (11a) belong to Type I (where a substitution cannot be carried out because of a systemic gap) despite the fact that we know precisely what their progressive counterparts would look like. If, on the other hand, progressive forms of the verbs can be shown to have any distribution at all, examples (7a) to (11a) belong rather to Type II, where a substitution leads to ungrammaticality. Now, the fact that the simple/progressive distinction – unlike the Russian aspect system – is formally a completely regular one makes it easy for native speakers to use it creatively with verbs which normally resist it. Not only are there marked

dialectal differences – in some dialects the use of the progressive form is far more unrestricted than in the standard language – but both syntactic and semantic forces may occasionally trigger the use of the progressive of such verbs even in Standard English. In fact, over the last decades it seems that the system has gradually changed in favour of filling the systemic gaps of the simple/progressive distinction. Consider, for example, the following cases:

- (12) He said it with that smug look that *had been possessing* him lately.
- (13) But perhaps she *was* secretly wishing, and even *knowing* that she did, that the wildness and the beauty could be his.
- (14) The jug inexplicably seemed *to be containing* less water as the experiment progressed (Lauridsen 1986:21, see also Jensen 1987)

In (12), the verb POSSESS is not used in its normal meaning of 'static ownership' but seems to have assumed a related meaning of 'dynamic exertion of the rights of ownership, i.e. influence and dominance'. In other words, the past perfect progressive form has brought about a reinterpretation of the meaning of the lexeme. In (13), KNOW is used with the meaning normally associated with this lexeme and yet it appears in the past progressive form. The reason for this is mainly a syntactic one: the 'knowing' is presented as coinciding with, and closely related to, the 'wishing', which is appropriately expressed by the expanded form *was wishing*. The notional co-ordination of the two situations makes the formal co-ordination of the two verb forms with a shared auxiliary very attractive. In (14), CONTAIN is part of a non-finite verb phrase governed by SEEM, which indicates that the predication may well express an unreal situation. Furthermore, by using the progressive form, the locutionary agent superimposes the meaning of 'gradual change' on CONTAIN, which normally is a completely stative verb.

As the discussion above indicates, there are examples of the English simple/progressive distinction that are difficult to classify as clearly Type I or Type II: the data seems to be somewhere in between these two major types. If we move on to the distinction between Type II and Type III, we see that the data here, too, is

often more complex than the typology may lead one to believe. If we consider examples like the following:

- (15a) Marina *cejčas ubiraet* [impf] komnatu.
(= 'Marina is now tidying her room')
- (15b) *Marina *cejčas uberet* [pf] komnatu.
- (16a) Každyj den' Saša *delaet* [impf] upražnenija.
(= 'Sasha does her exercises every day')
- (16b) *Každyj den' Saša *sdelaet* [pf] upražnenija.
- (17a) Norman visited his cousin yesterday.
- (17b) *Norman has visited his cousin yesterday.
- (18a) When Roger was a young man, he spoke like a real professional.
- (18b) *When Roger was a young man, he was speaking like a real professional.

These examples clearly belong to Type II. In (15) and (16) Russian perfective forms are substituted for corresponding imperfective forms. In (17) and (18) the simple past form is replaced by the present perfect and the past progressive, respectively. All four substitutions lead to ungrammaticality. Notice that in all four cases, the ungrammaticality is caused by – or rather: related to – the presence of an adverbial: *cejčas* in (15), *Každyj den'* in (16), *yesterday* in (17), and *When Roger was a young man* in (18). Without these adverbials both the a-examples and the b-examples are grammatical and belong to Type III:

- (15c) Marina *uberet* [pf] komnatu.
(= 'Marina is going to tidy her room')
- (16c) Saša *sdelaet* [pf] upražnenija.
(= 'Sasha is going to do her exercises')
- (17c) Norman *has visited* his cousin.
- (18c) He *was speaking* like a real professional.

In such data it seems that the principles governing the selection of verb forms are essentially the same in Type II and Type III sentences. This immediately makes the distinction appear rather superficial or, worse still, irrelevant. However, there are good

reasons for maintaining it in our typology. The two sentence types represent spontaneous intuition judgements: a replacement of form either strikes one as ungrammatical or else as grammatical but resulting in a change of meaning. Furthermore, there is a practical analytic advantage of having both types: Type II sentences provide the necessary data for formulating formal restrictions on the choice of verb form (e.g. in terms of concord relations) whereas Type III sentences provide the necessary data for formulating the semantic rules involved in the choice.

We must also consider the distinction between Type III and Type IV sentences more closely. Up to this point, we have been fairly vague about the difference between sentences where the substitution results in a clear change of meaning (Type III) and sentences where the substitution results only in a slight change of meaning, if any. In section 5.2 we concluded that in the former case, there are concrete semantic and referential factors governing the choice of form, whereas in the latter case, formal and referential pressures are minimal, leaving the locutionary agent with a much freer choice to present in different ways the situation he or she wants to express. If we consider examples of both types of sentence in the light of truth-conditional implications, it is possible to establish a clearer distinction between them. Let us look once again at some of the Type III constructions discussed in section 5.2 (sentential context is supplied where missing):

(19a) James gave a talk on *Scottish popular ballads*.

(19b) James gave a talk on *popular Scottish ballads*.

(20a) The boys *who were scared* returned to the camp.

(20b) The boys, *who were scared*, returned to the camp.

(21a) The truck *stopped* for a red light.

(21b) The truck *was stopping* for a red light.

The variant sentences here are all construed as truth-conditionally distinct: they are intended to express different situations. This can be verified by looking at the relations of implication involved. Thus, in (19), that James gave a talk on Scottish popular ballads (as

in (19a)) does not imply that he gave a talk on popular Scottish ballads (as in (19b)), or vice versa. Or, in other words, if it is true that James gave a talk on Scottish popular ballads it is not *therefore* true that he gave a talk on popular Scottish ballads. Though the two sentences are in fact potentially co-referential (the Scottish popular ballads of (19a) just might be exactly the same as the popular Scottish ballads of (19b), they are truth-conditionally distinct both in the real world and in the projected world of conception. Similarly in example (20): the a-variant implies that only some of the boys returned to the camp, i.e. *the boys who were scared* refers to a subclass of the potential referent of *the boys* alone in the context in which the utterance is made. By contrast, in the b-variant, *the boys, who were scared*, refers to all the boys present in the context, i.e. it has the same referent as *the boys* would have on its own. The different quantification of the subject expression makes the two sentences truth-conditionally and conceptually distinct. Finally in example (21), although it is true that the truck must at some point have been in the process of stopping for a red light (as in one of the readings of 21b), if it is true that the truck stopped for a red light, the converse is by no means the case: that a truck was stopping for a red light does not imply that it actually came to a complete halt (as in 21a). Although in one sense the two variant sentences may be about the same incident in real life – a truck slowing down and finally standing still – a vital part of this incident – the end point – is outside the referential scope of the b-example with the progressive form. And, what is more, the part of the incident that it does express does not necessarily lead to the end point which is the defining part of the situation expressed by the a-example. The referential scope is here broader and includes its own natural limitation in the form of a natural end point.

If we move on to Type IV sentences we find that the substitution test does not affect the propositional content but seems to involve other semantic factors. Consider once again some of the examples discussed in section 5.2 (an explicit sentential context is supplied where missing):

- (22a) Jack rather resented her dry and light stage kisses.
- (22b) Jack rather resented her light and dry stage kisses.
- (23a) She is fooling around with a Norwegian who is rich.
- (23b) She is fooling around with a Norwegian, who is rich.
- (24a) We celebrated Stephanie's birthday at my uncle's place.
- (24b) We were celebrating Stephanie's birthday at my uncle's place.

The conditions which make it true that Jack resented her dry and light stage kisses in (22a) are identical to those which make it true that Jack resented her light and dry stage kisses: if the former is true then by necessity so is the latter, and vice versa. Similarly, if 'she' is fooling around with a Norwegian who is rich, as in example (23a), this situation can be expressed equally well and precisely by saying that she is fooling around with a Norwegian, who is rich, as in example (23b): the one sentence implies the other. Finally, in (24), if it is true that we celebrated Stephanie's birthday at my uncle's place (as in the a-example) then, by implication, it is also true that there was a point in time at which we were celebrating Stephanie's birthday at my uncle's place (as in the b-example). And, conversely, if it is true that at some point we were celebrating Stephanie's birthday at my uncle's place, then it is also true that we celebrated Stephanie's birthday at my uncle's place. As with example (21) (*The truck stopped/was stopping for a red light*), there is a difference of referential scope in example (24): the a-variant expresses a total situation with no concern for its internal structure or parts whereas the b-example expresses the internal progression of the situation, i.e. it dwells on the middle part of it. But there is an important difference between the situation of 'stopping' and the situation of 'celebrating'. With the former there is a criterial end point towards which one may progress, but beyond which one cannot progress any further, and without which the situation is not fully realized. With the latter, one may of course progress towards some endpoint but this endpoint is not criterial like the endpoint of 'stopping': it does not prevent us from further involvement in the situation, and any part of the progression itself is enough to realize the situation as a complete situation. Thus there is a clear qualitative difference

between the sentence variants involving the situation of stopping, whereas there is only – at best – a quantitative difference between the sentence variants involving the situation of celebrating. The semantic variation caused by the substitution test in Type IV sentences has to do with the way the information is presented: focus, weight, balance and other stylistic factors seem to be crucially involved.

Before trying to offer a more precise differentiation between Type III and Type IV sentences, let us briefly reconsider a few more examples from our discussion in section 5.2:

- (25a) Teachers *who work overtime* are poorly rewarded for their efforts.
- (25b) Teachers, *who work overtime*, are poorly rewarded for their efforts.
- (26a) A young mother *who is always busy* needs a loving husband.
- (26b) A young mother, *who is always busy*, needs a loving husband.

As we have seen, the difference between the variants in these Type III examples is one of 'code-orientation' (cf. section 5.2 above). Described in this way, the distinction does not exactly invite a characterization in terms of reference. For the sake of the argument we will ignore the difference between (25a) and (25b) relating to the question of coreference between *work overtime* and *their efforts*, and the difference between (26a) and (26b) relating to the reason why a young mother needs a loving husband. In our comments we will simply focus narrowly on the distinction between restrictive and non-restrictive relative clauses. Although it might be argued that the a-examples imply a class/subclass distinction which is absent from the b-examples, the difference is rather one that relates specifically to the locutionary agent's projected world, his or her mental segmentation of reality. In the a-examples, the world is segmented in such a way that there are both teachers who work overtime and teachers who do not, and there are both young mothers who are busy and young mothers who are otherwise. In the b-examples, the world is construed as one in which teachers notoriously and inherently work overtime and young mothers are notoriously and inherently always busy. This world is happily without negligent

teachers and sadly without young mothers with time to relax. Thus it is difficult to envisage a locutionary agent who, in a stable frame of mind, would utter the a-examples and the b-examples interchangeably – except perhaps to deliberately confuse or provoke his or her addressees. To the individual locutionary agent one of the options is thus *inappropriate* (because it violates relations recognized as part of his or her projected world), or it is simply an expression of a different opinion (or rather, an alternative projected world). If truth-conditions are at all applicable to such code-orientation in language, we can say that the conditions which apply so as to make it possible for the individual locutionary agent to utter one of the variants appropriately are different from those relating in this way to the other variant.

We have shown that Type III and Type IV sentences may be distinct in several respects. The difference between them is not simply one of reference, though reference is clearly involved (in the projected-world sense proposed). As we saw, the sentences with *popular Scottish ballads* and *Scottish popular ballads* are semantically, even truth-conditionally, distinct but may, of course, *incidentally* be coreferential (just as e.g. otherwise unrelated noun phrases like *James* and *the gentleman you talked to yesterday* may be coreferential). Some Type III sentences seem to involve *partial* coreference, like the sentences with STOP, where the variants express different phases of (potentially) the same situation. But this hardly counts as genuine coreference. By comparison, many Type IV sentences (e.g. those involving the rich Norwegian and the stage kisses) seem *inherently* coreferential. And yet there are difficult cases here, too. Thus, strictly speaking, the 'celebration' example is similar to the example with STOP in that the variants express different phases of (potentially) the same situation, hence being partially rather than fully coreferential. The difference between these Type III and Type IV sentences seems, as I have argued, to be one of qualitative reference: both the 'celebration' example (Type IV) and the example with STOP (Type III) display variation in quantitative reference but only the latter displays variation in

qualitative reference in that the variants differ with respect to what kind of situation they express. A further complication is provided by those Type III sentences which, when subjected to the substitution test, display variation in code-orientation and thus, in essence, variation in the very structure of the projected world. By contrast, Type IV sentences freely allow variation within a given, stable projected world.

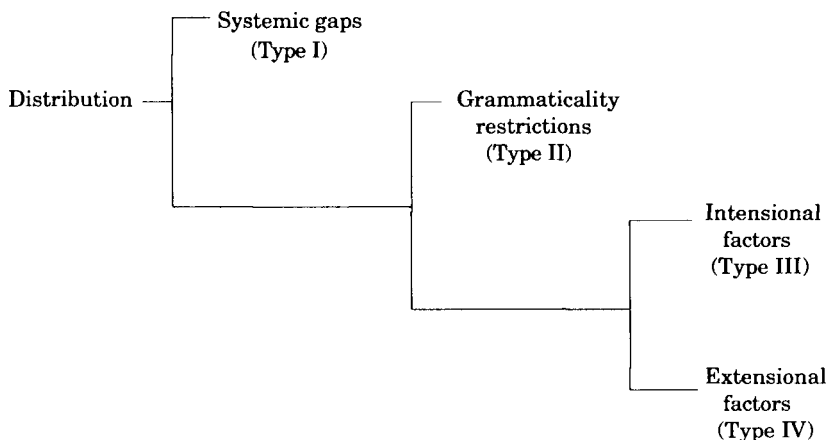
In sum, it can be said that substitution in Type III sentences typically results in a change of truth-conditions, of qualitative reference, and/or of projected-world structure. Type IV sentences are immune to such variation: typically, changes are here of a stylistic, presentational kind, the occasional referential changes observed being merely of a quantitative kind.

It is not easy to find appropriate terms for the four types of sentence, especially not for Type III and Type IV sentences. To capture the nature of at least some of the distinctions involved I shall refer to Type III sentences as *intensionally distinct* (thus implying variation in truth-conditional implication, in qualitative reference or in projected-world structure) and to Type IV sentences as *extensionally distinct* (thus implying variation in quantitative reference and/or presentation as well as other factors that extend beyond narrow sentence structure).

To avoid giving the impression that the data lends itself to rigid, unambiguous classification, I shall suggest a system displaying the types of distributional factors involved in substitution rather than a system of typical sentences found in the substitution test (cf. the model proposed in Bache 1985b:42), cf. (28) below. The diagram in (28) shows the range of phenomena elicited by the substitution test, and as such it defines the *scope* required of an observationally adequate description of choice relations. Thus, to be observationally adequate, a description of choice relations must accommodate all the major types of restriction on the native speaker's choice of form: systemic restrictions or gaps (Type I sentences), grammatical well-formedness restrictions (Type II sentences), intensional, 'what-to-say' semantic restrictions (Type III sentences) and, finally,

extensional, 'how-to-say-it' semantic restrictions (Type IV sentences).

(28)



This typology of sentences and of distributional factors makes it possible to state a requirement concerning descriptive adequacy and explanatory adequacy. For a description of choice relations to be not only observationally but also descriptively adequate, it must specify the relationship between the four main types of sentence and between the distributional factors from which these sentence types derive. To reach the level of explanatory adequacy, the description must show the relations across types of sentence and distributional factors to be conceptually significant and maximally constrained in terms of our universal grammar.

6. Categories and Form-Meaning Relationships

We have already discussed the nature of form-meaning relationships at length (especially in chapter 2), but that discussion was primarily about analytic directionality. We have also (especially in section 2.4) hinted at the problem of defining what is meant by the term 'category', which is crucial for the description of form-meaning relationships. I shall now take a closer look at categories as such and the complex form-meaning relationships involved.

6.1. Formal and Semantic Complexity

It is a commonplace in grammar that the relationship between form and meaning is complex. Thus in all languages there are cases where one grammatical form seems to require a description in terms of several meanings, and, conversely, cases where there are several competing expressions for a given meaning (though variation of form tends always to lead to some variation of meaning, cf. e.g. Bolinger 1977). One example is the simple present tense in English, which – among other things – may be used to express a strictly present situation (*I know her very well*), a future situation (*He leaves for Rome tomorrow*), a past situation (*In 1939 Hitler invades Poland*), an occupation (*Jack teaches linguistics*), a habit (*Jill smokes fat cigars*), an eternal truth (*The sun rises in the east*), or serve as a performative (*I promise to help her*). Conversely, there are in English a number of possible ways of expressing a future situation, each with a subtle additional shade of meaning: e.g. the simple present (*He leaves for Rome tomorrow*), the present progressive (*I am seeing her next week*), WILL + infinitive (*I'll do it again if I get the chance*), BE going to + infinitive (*She is going to visit her parents*), etc. How to deal with such complexity is one of the major challenges in any study of aspect, tense and action. But before we examine the nature of the relationship between form and meaning, it is important to stress the fact that both form and meaning may be complex entities themselves.

If, for the sake of argument, we define form more specifically as morphosyntactic, grammatical form, we find, in natural language, forms ranging from completely and pervasively regular ones to completely irregular ones, regularity being defined as 'predictable on the basis of general criteria'. Thus, for example, the English progressive form is completely regular because it always consists of a form of BE and the selected lexical verb ending in *-ing* (e.g. *was walking, has been reading, am sleeping*, etc.) – the only variation in form being the occasional dropping of a final *-e* of the infinitive form before the *-ing* suffix (as in TAKE versus BE *taking*), the doubling of final consonant (in cases like HIT versus BE *hitting*) or (in very rare cases) a change of orthography in the stem (as in DIE versus BE *dying*). In contrast to the progressive form in English, the Russian perfective form is almost completely irregular in its formal relationship to the imperfective form, so irregular that it often seems more reasonable to speak of lexical derivation than of inflection. The Russian aspect system is in fact so irregular that it is difficult to speak of a *system* from a strictly formal point of view. The perfective 'form' and the imperfective 'form' are in fact (extensive) sets of forms rather than strictly just one form (for discussion, see Galton 1964:133f; Forsyth 1970:17; Bache 1985a:7f).

Sometimes a 'form' in a language is *basically* regular in the sense that it is strictly a set of different forms one of which is more frequent than the others. In such cases, the prevalent form is considered *regular*, the others *irregular*. An example of this is the simple past tense in English, which is mostly formed by attaching the *-(e)d* ending to the lexical verb (e.g. *book/booked, register/registered, love/loved, greet/greeted*, etc.). A few hundred English verbs have irregular past tense forms (e.g. *swear/swore, cut/cut, say/said, think/thought*, etc.). That these past tense forms are indeed past tense forms on a par with the regular past tense forms can only be established on the basis of distributional and semantic criteria:

- (1) Sally *booked* a few tickets, and so *did* Stephanie.
- (2) I *loved* her, and so *did* James.
- (3) He *cut* himself, and so *did* she.

- (4) We *thought* about it a lot, and so *did* they.

It is customary to let the regular inflection symbolize the form collectively. Thus in the case of the English past tense, we can simply use 'V-*ed*' as the form marker – whether or not the individual lexical verbs under analysis follow the regular pattern. But it is important to remember that the form marker is an idealization of a formally heterogeneous class of items and one which is justified only on the basis of criteria such as distribution, function and meaning.

There are two ways in which it is relevant to speak also of semantic complexity. Normally, when we discuss semantic complexity we do so in relation to a form which embodies more than one meaning. But it is possible to speak of semantic complexity more independently of form. First it is important to note the *variability* of any semantic notion we want to operate with in our description of grammatical categories. For example, the temporal meaning of 'pastness' may be associated with situations located very differently in the past: a minute ago, this morning, yesterday, last week, in May, last year, in the 15th century, etc. Even in languages where a formal distinction is drawn between 'remote past' and 'recent past' (cf. Comrie 1985:83ff), such variability of tense meanings is inevitable. This does not mean that language expressions as such are necessarily indeterminable or vague with respect to the temporal location of their referents: concord relations (e.g. between predicator and adverbial) may provide exactly the temporal precision required (e.g. *He has already arrived/He arrived fairly early this morning/He arrived before breakfast/He arrived at about nine o'clock/He arrived at exactly eight minutes and sixteen seconds to nine*, etc.). The lack of a unique, exclusive relation between the building blocks of language (whether formal or semantic) and the phenomena that we use language to express is a very fundamental feature of language. A categorial meaning is always potentially subcategorizable in the sense that it covers a range or hierarchy of potential submeanings.

There is a different sense in which meaning is complex: individual meanings involved in grammatical categories are not independent

but enter complex networks. Thus, for example, it does not make much sense to talk about pastness without, at the same time, talking about the particular entity or situation located in the past. Pastness is not an autonomous quality but always conceived of as relating to something located in the past. And that something may be conceived of as having other related qualities, such as, for example, certain actional properties: duration, punctuality, iteration, habituality, etc., each with a slightly different implication for the way in which the situation is located in time. It is perfectly feasible and legitimate to operate with temporal and actional meanings as systemically discrete notions, i.e. as separate in terms of category membership, as long as we acknowledge the fact that they often describe inseparable and interrelated qualities. Categorical meanings are always mental abstractions from something notionally more complex. As we shall see in our discussion of 'categorical interplay' in section 6.4.5, certain regularities in this notional complexity, a rule-governed interrelationship of concepts, may influence the choice of grammatical form.

6.2. The Structure of a Metacategory

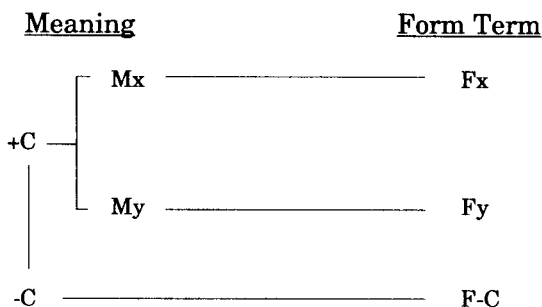
In our discussion of the general metalanguage so far (particularly in section 4.5), I have argued that it is useful to operate with *metalinguistic form* as something highly abstract and completely independent of language-specific form, something which in a general way represents any mode of expression in any particular language. In other words, metalinguistic forms are ideal collective representations of forms as bearers, or markers, of distinct meanings comprised by a category. Given the conceptual nature of grammatical categories (cf. section 3.1), the metalinguistic categories that we want to use for their description are a kind of 'idealized cognitive models' (for this term, see Lakoff 1987:68ff; 291), to which language-specific categories may relate as a more or less close fit. According to this view, metacategories and their members are abstract prototypes (abstract because they are not actual categories or members of categories) against which language-specific categories

and their members are rated in terms of 'goodness-of-example'. For instance, when we say that the English progressive is an imperfective form, we mean that it is a close-enough fit to satisfy our conception of the particular form-meaning relationship defined for imperfectivity in the general metalanguage. As already pointed out, an important implication of this approach to form in the general metalanguage is that there is a convenient ad hoc one-to-one relationship between form and meaning in the metalanguage: an imperfective form is a form which expresses imperfective meaning as defined, a past-tense form is a form which expresses pastness as defined, etc., even if there is no such purity and simplicity in language-specific form-meaning relationships.

I have further argued that it is important to view a category as a 'collection of forms sharing some property' rather than simply a form or form type itself. One reason for this terminological convention is that a description operating with forms as independent categories (such as, for example, Dahl 1985) cannot capture the network of relations between language-specific forms in an entirely natural way. This means that the description may, in principle, be observationally adequate but not descriptively and explanatorily adequate: it does not provide an account of choice relations. A description operating with categories as collections of forms provides an appropriate framework for an account of both similarities and differences between language-specific forms, and thus invites considerations of choice relations.

Using for short the term 'metacategory' for 'category in the general metalanguage', I can offer the following definition: a metacategory is a generally applicable, cross-linguistic supercategory of an abstract, idealized nature which comprises an index of specific meanings of a potentially universal, linguistically relevant concept and corresponding form terms (cf. Bache 1985:96f.; 1985b:52; 1994c). The simplest possible metacategory, which comprises two members only, may be represented as in (1):

(1)

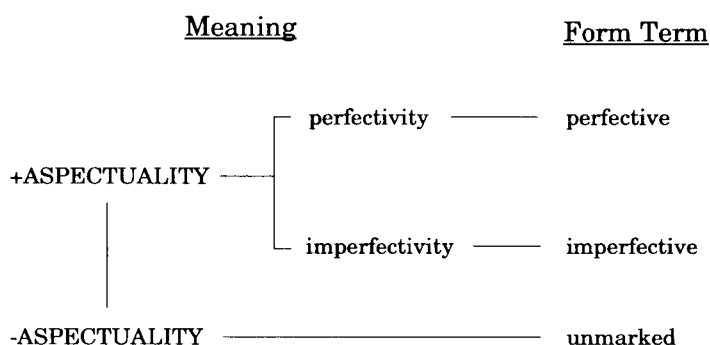


In this illustration, C stands for the general prototypical concept governing the category (such as, for example, 'ASPECTUALITY'), and Mx and My stand for the specific prototypical meanings attached to C (such as, for example, 'perfectivity' and 'imperfectivity'). Being a common denominator of, and thus an abstraction from, Mx and My, C concerns the very nature of the category. The meanings Mx and My share the abstract property C but differ with respect to less abstract notional properties. The concept of C is privatively marked to indicate the possibility of marking the category represented by C negatively (e.g. as non-aspectual) in the description of data to which the category potentially applies but which does not clearly express a meaning represented by +C. For every terminal meaning in the semantic structure (Mx, My and -C), a form term is normally attached: Fx, Fy and F-C. Typically, but not inevitably, one of the language-specific forms realizing a specific meaning also represents -C and is thus semantically more extensive. The form terms constitute the set of 'members' of the category. The metacategory with all its members and the meanings they represent provides a descriptive tool, the terminology needed, for the analysis of a (fully or partially) matching language-specific category. Unlike Lakoff's idealized conceptual models (cf. Lakoff 1987:284), metacategories presuppose a necessary relationship between the overall meaning of the category (the category concept) and the meanings of its parts (the category members) and their

relation. With metacategories, the function of the category concept as a common denominator of the individual members, or conversely, their function as specific realization of the category concept is part of the idealization, the convenient fiction.

As we shall argue in the following chapter, the metacategory of aspect may look like this:

(2)



Following this exemplary tentative first representation of the aspect category in our general metalanguage, ASPECTUALITY is the general concept involved, shared by two category members (i.e. two more specific realizations of ASPECTUALITY): perfectivity (i.e. perfective ASPECTUALITY) and imperfectivity (i.e. imperfective ASPECTUALITY). In strict accordance with the convention of a one-to-one correspondence between form and meaning in the metalanguage of our universal grammar (i.e. our ideal conception of a form-meaning relationship), a form term is supplied for each specific meaning: the perfective for perfectivity and the imperfective for imperfectivity. Among other things, the metacategory of aspect in (2) enables us to ask questions like: Is the English progressive an *imperfective* form? Is the English perfect an *aspect*? etc. Without a rigid metalanguage it does not make sense to discuss such questions.

It is important to note that a metacategory is not intended to be a description of a segment of 'reality' in language: there is probably no category in any language which looks exactly like the representation of the metacategory of aspect in (2), or which simply has the category structure outlined in (1). Metacategories are theoretical constructs created for a specific purpose: that of describing real categories in real languages. In other words, metacategories are tools and as such they may be more or less well suited for the individual tasks that we intend to perform. Unless we have a very simple, solid and regular tool with which we are thoroughly familiar (i.e. unless we have a clearly and rigidly defined, absolute standard), we will not get very far when we try to put it to use, in our application of it to language-specific data. There is little use for vague definitions, rules, etc. in our general metalanguage. The high price we pay for this blunt, no-nonsense policy is that there may at times be a tenuous relation between universal grammar (including its metalanguage) and specific languages. But it is a price that we must pay in order to obtain precision in interscholarly communication and to get a useful instrument which enables us to approach in a precise manner the question of regularity or lack of regularity in any specific language and cross-linguistically. By representing an ideal of order in language, a metacategory allows us to tackle disorder in language. It is still legitimate to regard a metacategory as a prototype, or even 'common denominator', of language-specific categories, and hence as a construct which may reveal something about the nature of language, as long as we remember that such common denominators may exist only in the mind of the linguist.

Before attempting to establish the metacategories needed for the description in universal grammar of the phenomena usually referred to as temporal, actional and aspectual, let us turn to language-specific data of the kind that such metacategories must eventually cope with.

6.3. The Structure of Language-Specific Categories

If in a language, such as e.g. English, all verbs always looked the same from the point of view of grammatical form, there would be little motivation for establishing verbal categories for their description. Presumably, a precise description of the meaning of verbs, apart from lexical meaning, would depend entirely on (linguistic and extra-linguistic) context. Here are some examples of this hypothetical variety of English:

- (1) He *know* what she *mean*.
- (2) Yesterday I *meet* her at your uncle's.
- (3) Alex *read* the newspaper when the phone *ring*.
- (4) They *build* a small shed in the garden.
- (5) Sophia *live* in Sydney since 1987.
- (6) John already *leave* when Sally finally *arrive*.

It would be easy for foreign learners of this language to become proficient in the use of verbs; and linguists describing the language would probably spend very little time thinking about verbal categories and concord relations although, of course, they might be interested in contextual influences on the interpretation of verbal meaning. In isolation, it would be impossible to assign a temporal meaning to *know* and *mean* in example (1) and *build* in example (4). In example (2), the presence of the adverbial *yesterday* secures a past reading of the sentence. In the other examples, adverbials (clausal or phrasal) put certain restrictions on our interpretation but do not limit the number of readings to just one. Sentence (3) might, for example, mean:

- (3a) 'John had read the newspaper when the telephone rang'
- (3b) 'John was reading the newspaper when the telephone rang'
- (3c) 'John will be reading the newspaper when the telephone rings'

but it probably does not mean:

- (3d) *'John has read the newspaper when the telephone rang'
- (3e) *'John read the newspaper when the telephone was ringing'
- (3f) *'John reads the newspaper when the telephone will be ringing'

Example (3) obviously involves not only temporality but also (like example (4)) aspectuality and (like example (6)) a certain relationship between situations. Despite the presence of a temporal adverbial in example (5), *since 1987*, this example is not temporally unambiguous: it might mean 'Sophia has lived in Sydney since 1987' or 'Sophia had lived in Sydney since 1987'.

The hypothetical variety of English which I have just described, where verbs always have the same form, provides an example of a completely non-isomorphic relationship between grammatical form and reality as we conceive of it. Within the bounds defined by the meaning of each lexeme there are no distinctions, no differentiation, expressed by the one verb form of the language, no attempt to capture characteristic features of the individual situation expressed. This does not mean that speakers of such a language are not capable of perceiving differences in the many situations expressed, or potentially expressed, by any particular verb, only that such differences are not reflected as categorizations in a verb *system* but merely remain co- or contextually specifiable.

In many languages verbs display formal distinctions of one kind or another, marking a system of relationships across lexemes. For the description of such systems, it is necessary to establish verbal categories of the kind defined at the metalinguistic level in section 6.2. The problem is how to identify the relevant categories. As we have seen, both formal and semantic complexity may complicate things for the linguist. Disregarding this for a moment, it seems not unreasonable in principle to begin one's search for categories by contrasting the formal distinctions identified in the language. In case there are only two verb forms in a language the task is relatively easy: for each lexeme, examples of both forms are analysed with a view to defining the semantic distinction involved. A distinction which is generalizable to all lexemes is a likely candidate for a category concept. Thus, for example, if in English there were only base forms of verbs and *V-ed* forms, and if the semantic contrast always turned out to be one of 'expression of present situation' versus 'expression of past situation', irrespective of the choice of

lexical verb, then obviously we could establish a simple tense category for the description of English verbs:

- (7a) He *watch* the fire.
(present situation of someone watching the fire)
- (7b) He *watched* the fire.
(past situation of someone watching the fire)
- (8a) They *row* the boat across the lake.
(present situation of someone rowing the boat across the lake)
- (8b) They *rowed* the boat across the lake.
(past situation of someone rowing the boat across the lake)

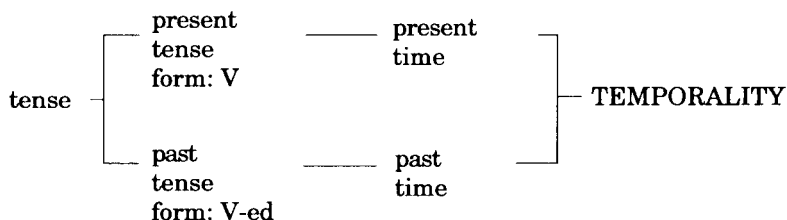
By contrasting the variants of examples like (7) and (8) in this peculiar, non-existing variety of English, we can identify the formal distinction between V and V-*ed* as one which involves present and past time meanings. The language-specific category which we could establish for the description of the verb system in this language would have the following form (F = Form; M = Meaning; S = System/formal distinction; X, Y = variables):

(9)



More specifically the category would look like this:

(10)



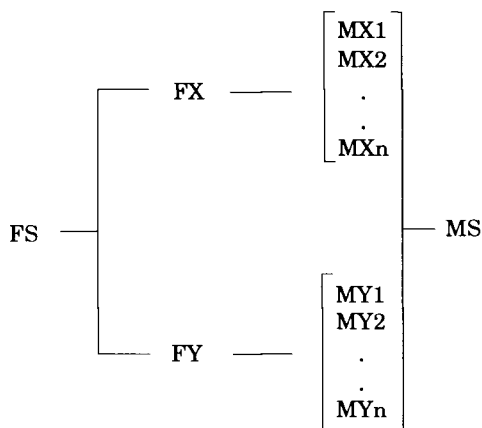
This language-specific category consists of a formal left-hand side with the category name and the two grammatical form types and a semantic right-hand side with the meaning associated with each form and the category concept which they share, the common denominator. Notice that there is a one-to-one correspondence between meaning and form and that the category therefore – despite its status as a language-specific category – complies with the ideal standard described for the general metalanguage of our universal grammar (cf. sections 4.5 and 4.7).

Possibly, the identification of the meaning of each grammatical form in this hypothetical language is not dependent on the actual confrontation of the variants of any given lexical verb: both speakers and linguists may simply note that whenever a base form is used, the verb expresses a present situation and whenever a *V-ed* form is used, the verb expresses a past situation. But it is important to notice that the temporal meanings exist only because there is a substitutional contrast for each lexeme, and therefore to identify the distinction in a principled manner the most appropriate approach for the linguist is to confront the variants of lexemes directly and try to detect a regular pattern across the whole range of lexemes.

When analysing real languages, languages with a great deal of complexity, it is important not to waver from the approach outlined above for our hypothetical variety of English. In real languages, the immediate intuitions of native speakers and linguists are likely to be muddled by whole networks of contrasts and by formal and semantic complexity, or irregularity, or even lack of a semantic rationale. In real English, it is not easy to derive a precise meaning of a particular verb form, such as, for example, the simple present or the simple past, either by introspection or by looking at a large corpus of examples. Our immediate intuitions will be blurred if only because these forms seem to enter a complex network of relations with at least the present progressive, the past progressive, the present perfect and the past perfect, and therefore function semantically in more than one dimension, in a set of contrasts. If in

a specific language like the hypothetical variety of English discussed above, each of the forms entering a grammatical distinction is associated with more than one meaning, the language-specific category established will no longer be immediately compatible with our metalinguistic ideal. A language-specific description which allows a one-to-many relationship between form and meaning would have the following form:

(11)

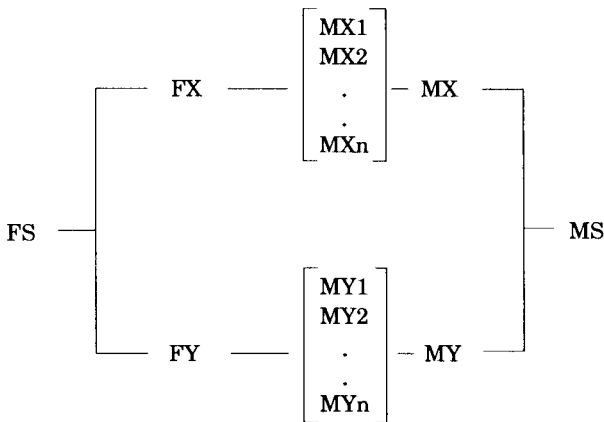


For example, the base form of verbs might be associated not only with present time but also with future time, habitual meaning, timeless propositional meaning, historical present meaning, performative meaning, etc., and the *V-ed* form might be associated not only with past time but also with hypothetical meaning, polite requests, fictional time and sometimes even future time. In other words, the data seems no longer to invite a description in terms of a basic meaning for each form. This presents a problem: without a common denominator or a principle somehow connecting the meanings of a form or defining them as 'natural' members of a set, our description cannot claim descriptive or explanatory adequacy. By simply listing individual specific unrelated meanings of each

form, our description offers no approximation to universal grammar but simply registers or compiles evidence of language-specific disorder or chaos. And what is more, if the sets of meanings are not discrete (in the sense that no specific meaning is a member of more than one set), our description may not even be observationally adequate.

One possible approach to such complexity is to attempt to abstract a more general meaning for each form (a *Gesamtbedeutung*) somehow comprising all the more specific meanings attached to that form. This variant is shown schematically in this way:

(12)

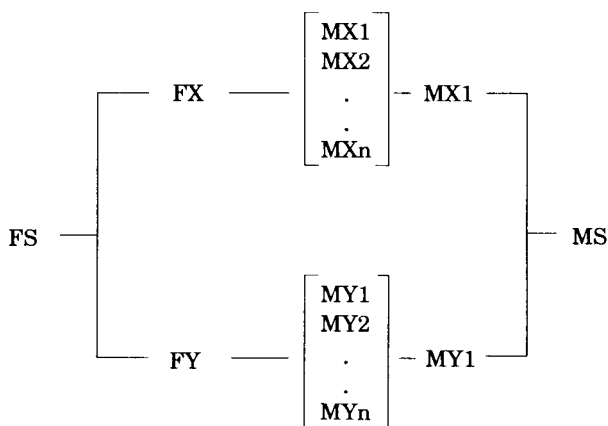


This diagram represents a structured, hierarchical approach to meaning involving a semantic characterization at two levels of each of the forms of the system: a more general and a more specific. In such a description, one possibility is to interpret the general level as a truly semantic level at which the inherent meaning of each form is defined and the specific level as a pragmatic level at which specific realizations, or communicative functions, of the inherent general meaning of each form are defined. One such approach to the

English verb system is presented by King (1983) (for comments, see Bache 1985b:53f).

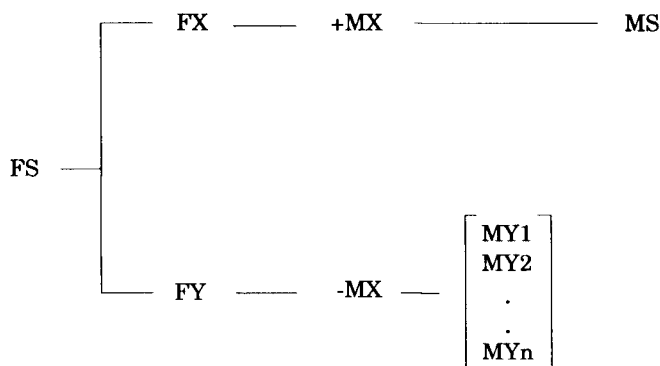
An interesting alternative, or supplement, to the models reviewed so far is to assign prototype status to one characteristic meaning of each form and arrange, and account for, the other meanings relative to the prototype. In such a model, shown in (13) below, each form FX and FY are associated with a number of more or less related meanings of which MX1 and MY1 are viewed as prototype meanings on the basis of which the meaning of the system MS is determined (alternatively, a more abstract prototype is provided for each of the two sets of specific meanings). To employ prototype theory in linguistic categorization is attractive for a number of reasons. Most important is the possibility of relating linguistic categorization directly to human categorization of experience in general. However, it is important not to resort uncritically to prototype theory whenever one encounters variation within a category. Any systematic relation between prototype and non-prototypical members of a category must be specified.

(13)



Yet another possibility which is sometimes found in the literature is to operate with markedness relations in a combination of the one-to-one approach and the one-to-many approach:

(14)



In this model, which is not incompatible with a prototype approach, +MX may be more or less specific. In principle it could be viewed as a general or prototypical meaning comprising the specific meanings {MX1, MX2 ... MXn} listed in figures (12) and (13). Whether or not this is the case, the forms of the system are described in terms of a privative opposition, i.e. an opposition where one of the members is positively marked with respect to a given feature and the other member is negatively marked with respect to the same feature. In phonology, where Trubetzkoy first employed the notion of privative opposition (cf. Trubetzkoy 1939), the negative marking of a form is normally interpreted as indicating *absence* of the feature in question (e.g. voice, aspiration, lip rounding, etc.), whereas in morphology the minus member of the privative opposition is no longer strictly negative but rather neutral with respect to the feature positively present in the plus member (cf. Jakobson's 1932 description of Russian gender and aspect and Forsyth's 1970 *A Grammar of Aspect*). This means that the minus member has greater semantic extension (and is thus correspondingly vaguer in its intension) than the plus member, conveying all sorts of

meanings, even the meaning associated with the plus member as long as this meaning is not emphasized in any way.

Unlike the model in (11), the models in (12) to (14) attempt to mediate between the ideal one-to-one standard of universal grammar and the actual complexity of specific natural language systems. And they are all attractive in so far as they account satisfactorily for the relationship between the two levels of meaning and/or for the markedness relations involved. They may all in principle reach the levels of descriptive and explanatory adequacy. Furthermore, there is in all three models, if only implicitly, a recognition of the importance of deriving categorial meanings in a principled way from substitutional contrasts. In none of the models complexity is accepted as a legitimate reason for giving up a principled approach to the identification of categories. Quite on the contrary, there is the assumption that without a substitutional confrontation of the formal distinctions of the verb system we will very likely lose sight of important clues to regular, pervasive patterns underlying the immediate semantic complexity of the forms of the system.

Of the models reviewed above, the simple one in figure (9), which is closest in form to a metacategory, is easily shown to be an unrealistic language-specific description because it presupposes unwavering regularity and simplicity in the data. The model in (11) seems in principle incapable of reaching the levels of descriptive and explanatory adequacy. Only the models in (12) to (14) show any promise with respect to handling language-specific complexity without losing sight of the ideals and research strategies of universal grammar.

6.4. Defining Category Concepts and Members

Having reviewed some of the possible language-specific category structures, we must now consider how in practice to identify the basic building blocks of a category (the category members and the category concept) and how to establish the link between these building blocks and the semantic complexity encountered at a language-specific level.

As will be recalled, in our discussion of the substitution test in section 5.3, four main types of sentence were identified and characterized in terms of factors in the native speaker's motivation of choice of grammatical form:

- Type I: Systemic gaps
- Type II: Grammaticality restrictions
- Type III: Intensive factors
- Type IV: Extensive factors

As this classification of sentence types covers the whole range of choice relations from systemic gaps at the one extreme and near-synonymy at the other, it was argued that it might serve as a useful framework for the description of the distribution of verb forms entering a category relation. To extract the relevant categorial information about any given formal distinction, it is important to work within this framework because, in effect, our category description aims at providing an account of the substitutional potential of sentences and a specification of the characteristics of constructions within each type.

There are, not unexpectedly, several problems to consider in this connection. First of all, a substitution test can only be carried out for a particular well-established formal distinction, but how do formal distinctions get established in substitutional pairs or systems in the first place? A substitution test is performed in order to provide more exact information about a category, not only a sentence typology but also a number of semantic distinctions and nuances relating to a particular formal distinction. But how do we go about handling such test results in our attempt to define the building blocks of the category in our metalanguage? What distinctions should be given priority when we formulate these definitions? In the following, I shall deal, in separate sections, with some of the problems that occur when we attempt to establish metalinguistic categories.

6.4.1. How to Establish Formal Pairs or Systems

This problem may appear fairly trivial. After all, if we are interested in tense or aspect in, say English, what could be more straightforward than to let present and past tense forms constitute one substitutional pair and simple and progressive forms another? However, we have to keep in mind constantly that we can take very little for granted and that we should not rely uncritically on tradition. Thus, strictly speaking, at this preliminary stage of the present exercise, terms like 'tense', 'aspect', 'present tense form', 'progressive form', etc. have not been granted metalinguistic status yet; nor has their meaning been determined with any precision. In fact, the whole exercise is performed in order to be able to create an appropriate metalanguage for the linguistic phenomena under scrutiny. But let us, for the sake of presentation, allow ourselves the convenience of taking the verb forms in English for granted and of referring to them by their traditional names (progressive, perfect, simple, etc.).

In Russian linguistics, the problem of determining the validity of aspectual pairs is an extremely controversial issue. As already noted, the Russian aspect category is both formally and semantically very complex (for an introduction to Russian aspect, see Bache 1985a:33ff). Perfective forms are typically, but not inevitably, formed from imperfective base forms by way of prefixation. Thus, for example, *PISAT'* (= 'to write') is an imperfective base form, *NAPISAT'* (= 'to write') a prefixed perfective form. There are more than twenty different prefixes available for perfectivization (such as e.g. *s-*, *na-*, *vy-*, *po-*, *pro-*, *pere-*, *do-*, *ot-*, etc.) but often they are felt to add more than just aspectual meaning to the base form. As a consequence not all aspectologists accept formal pairs consisting of a base form and a prefixed form as *valid* aspectual pairs. Some scholars point instead to the derivation of suffixed imperfective forms from prefixed perfective forms, a process which is sometimes referred to as reimperfectivization. Thus, for example, *VYPISAT'* (= 'to copy out') is perfective (formed by prefixation of the imperfective base form *PISAT'*) and *VYPISYVAT'* (= 'to copy out') is its reim-

perfectivized counterpart. Suffixed imperfective forms are typically felt to differ from their perfective counterparts only with respect to aspectual value and, therefore, such pairs are generally accepted as valid aspectual pairs. Some scholars do accept 'prefixal pairs' (i.e. pairs consisting of an imperfective base form and a prefixed perfective form) fairly uncritically as valid pairs. Others accept prefixal pairs only if the prefix is felt to be 'empty' with respect to types of meaning other than those strictly inherent in the aspect category (such as actional and lexical meaning). And yet others accept only 'suffixal pairs' (i.e. pairs consisting of prefixed perfective forms and reimpfektivized, suffixed imperfectives). The important point here is that there is no consensus about what exactly constitutes a valid aspectual pair in Russian.

Returning now to the English verb system, it is interesting to note that even if we take the traditional verb forms (simple, progressive, perfect, etc.) for granted, there remains a problem of pairing these forms for substitutional purposes. On a very crude understanding of the substitutional principle, every single verb form is potentially in some sort of substitutional relationship with all the other verb forms (with the reservation, of course, that some forms involve changes in the overall syntactic organization of the sentence, i.e. the voice distinction, mood distinctions (imperatives and subjunctive forms), subject-predicator concord, etc.). Even if we insist on strictly substitutional relationships, and even if we exclude modal and catenative constructions, we still retain a fairly extensive set of forms:

Jack *cries*

Jack *cried*

Jack *has cried*

Jack *had cried*

Jack *is crying*

Jack *was crying*

Jack *has been crying*

Jack *had been crying*

To this list we can add eight more forms if we accept combinations with WILL as primarily temporal expressions:

Jack will cry
Jack will have cried
Jack will be crying
Jack will have been crying
Jack would cry
Jack would have cried
Jack would be crying
Jack would have been crying

Obviously we cannot let such an extensive set of forms serve as simultaneous input to one and the same substitution test. An effective way of cutting the number of substitutional options in a test is to insist on the 'minimal factor criterion', according to which substitutional options may differ in only *one* formal respect (cf. section 5.1). Thus we may pair the simple present (as in e.g. *Jack cries*) with the simple past (as in *Jack cried*) or with the present progressive (as in *Jack is crying*), where the difference rests on one formal axis only but we should not pair it with the past progressive (as in *Jack was crying*) because here the difference involves two formal axes, or with the future perfect progressive (as in *Jack will have been crying*) because this relationship involves three formal axes.

The minimal factor criterion helps reduce the input to our substitution test to a manageable size. But while it is thus clearly a necessary criterion it is not quite unproblematic. For one thing, it forces us to consider *pairs* of forms rather than trios or more extensive sets of related forms. For instance, the simple present must be paired with the simple past and the WILL future in two separate tests because the two latter are not allowed in the same substitution, differing as they do in more than one formal respect. Actually the three forms just might belong together in a simple tense system of forms expressing past, present and future meaning, respectively.

Another problem is that in certain individual cases it is sometimes more appropriate, semantically speaking, to juxtapose widely different forms than simply to follow the minimal factor criterion. One example of this is the simple past form *walked* in a sentence like *John walked on the cliffs*, which has a clear potential for expressing a particular situation taking place at a definite point in the past. As such, it is in a sense more closely related to the present progressive form in *John is walking on the cliffs* than to the simple present form in *John walks on the cliffs*, which cannot express a particular situation taking place at a definite point in time unless communicated in a historic or fictional mode of expression or used as a headline in a newspaper. Often, as in the example cited here, the simple present has a strong habitual or timeless implication.

With the perfect forms this kind of ambivalent semantic relations to different 'sister forms' has been institutionalized to the extent that many linguists actually consider it more natural to pair the present perfect with the simple past (thus leaving the past perfect somewhat unaccounted for) rather than with the simple present as the minimal factor criterion would seem to dictate. Interestingly enough, both pairs ('simple present/present perfect' and 'simple past/present perfect') yield significant results when subjected to a substitution test. Neither pair has any gaps, but the other three sentence types (those showing grammaticality restrictions (Type II), intensional factors (Type III) and extensional factors (Type IV), respectively) can be identified for both pairs:

(simple present versus present perfect)

- (1a) In English, which *is* usually such a rich language, we've only got this word 'drug'.
- (1b) *... which *has* usually *been* such a rich language ...
- (2a) A strong pound *makes* imports cheaper.
- (2b) !A Strong pound *has made* imports cheaper.
- (3a) Mr Forsythe *informs* me that you *retain* an attachment to this foreign person.
- (3b) Mr Forsythe *has informed* me that you *have retained* an attachment to this foreign person.

(simple past versus present perfect)

- (4a) I am not seeing him till I *have read* the papers.
- (4b) *I am not seeing him till I *read* the papers.
- (5a) For weeks, the signs *were* visible, though scarcely credible.
- (5b) !For weeks, the signs *have been* visible, though ...
- (6a) I always *said* he would end up in jail. (Leech 1971:38)
- (6b) I've always *said* he would end up in jail. (Leech 1971:38)

These examples illustrate for each pair the three main types of sentence which we expect to be able to identify for formal pairs in a substitution test (for further examples and discussion, see Bache 1985a:193ff, 1994c). The implication of this is that it might be relevant to determine the meaning(s) expressed by the perfect in relation not only to the simple present, with which it is paired formally on the minimal factor criterion, but also to the simple past, with which it is often felt to be in competition in actual usage. There seems to be no reason why one cannot be flexible about this point. Basically it makes sense to apply the minimal factor criterion but wherever usage dictates other combinations we may simply subject them, too, to a substitution test. This policy is, incidentally, in perfect accordance with our account in section 2.5 of how categories come into metalinguistic existence, i.e. how they become part of the linguistic apparatus for describing language. There I argued against a directionality interpretation with either form or meaning as the constant of our analysis and instead attached importance to the linguist's recognition of a relationship between the forms of a language and the set of humanly conceivable notions. To allow a certain flexibility when establishing the pairs of forms to be subjected to our substitution test is to follow intuitions of this sort in a formal way and hence not only methodologically quite legitimate but in fact a natural consequence of our view of how categories are created in the metalanguage.

6.4.2. How to Use Test Results for Definitions

In this section I shall touch on some of the problems that arise once a well-established pair or system of forms has been subjected to our substitution test. As we have seen, especially in chapter 5 on choice relations, considerable semantic complexity can be expected to emerge as part of the test results. One may therefore well ask where exactly one should look for the relevant data for the definitions which must be formulated for the category involved. Obviously we cannot draw on all the data simultaneously. If one wants to unravel the semantic complexity of a formal pair or system, it seems reasonable to look first at Type III and Type IV constructions, i.e. sentences which are semantically distinct – intensionally or extensionally – from their variant sentences in the substitution. Unlike Type I and Type II constructions (i.e. sentences where the choice of form is determined by formal gaps or by grammaticality restrictions, respectively), Type III and Type IV constructions display the overlapping distribution of the formal variants and hence bear out the semantic differences directly: there is in fact in these types a more direct substitutional confrontation of data, and this gives the linguist good access to the distinctions involved. The semantics of a formal system may of course be at play in Type I and Type II constructions in the sense that meaning may well be a source of formal gaps and constraints but what is most conspicuous in such constructions is the formal limitations of the system. The approach that I am proposing is thus very similar to that employed in classical phonology, where phoneme inventories are established on the basis of *minimal pairs*, i.e. formal, fixed contexts where test elements with an overlapping distribution are contrasted directly.

Data from Types III and IV will exhibit considerable semantic complexity (not only because two types are involved but also because of type-internal heterogeneity, especially in Type III material) and this fact raises the question of exactly what data should be given priority in the definition of the basic category concept and of the category members. Ignoring for a moment the type-internal semantic heterogeneity of a formal distinction, we can

in principle choose either Type III or Type IV material as our point of departure. Again we are faced with a directionality problem. There are two different approaches possible, with opposite points of departure and opposite methodological directions.

If we choose Type IV sentences as the basis for our definitions we will get a relatively 'weak' metalinguistic description of our category, one which accounts for the subtle semantic nuances characterizing Type IV sentences. Such a description may well allow generalizations to be made to Type III sentences but, by itself, it offers no specific exposition of the more distinct meanings involved in Type III material. This approach therefore provides definitions of categories and category members in terms of *minimal common denominators* and therefore leaves a lot of work to be done to explain the principles at work in Type III sentences if our theory is to be observationally, descriptively and explanatorily adequate. The methodological direction involved if this approach is adopted is thus *from Type IV to Type III*.

Let me illustrate this first approach to the problem of defining the units of a category by referring to some of the data provided in chapter 5 on the notion of 'choice'. A definition of the difference between restrictive and non-restrictive relative clauses based on Type IV sentences will crucially refer to 'presentation-orientation' (as in *She is fooling around with a Norwegian(,) who is rich*). This is essentially a description of the formal distinction in terms of the smallest possible semantic distinction. And although Type III cases of identification-orientation (as in *The boys(,) who were scared(,) returned to the camp*) and code-orientation (as in *Teachers(,) who work overtime(,) are poorly rewarded for their efforts*), which both involve fairly concrete semantic distinctions, can be described in a very general way in terms of presentation-orientation, surely such a description is by itself not precise enough to satisfy any of our evaluation requirements. Consequently supplementary rules are necessary, rules specifically explaining the specific, more distinct semantic realizations of the formal distinction in Type III material. The same obviously applies to the distinction between simple and

progressive forms. A definition of the aspect category in English in terms of 'presentational focus' based on Type IV examples like *We celebrated/were celebrating Stephanie's birthday at my uncle's place* does not by itself provide an adequate description of the more drastic differences in Type III examples like *Sally sleeps/is sleeping in the room next door*, although a difference of presentational focus is present in such examples, too.

The alternative is no less problematic. If we choose Type III sentences as the basis for our definitions, we will get relatively 'strong' definitions of both category concept and category members, definitions in terms of *maximal semantic difference*. Not only will such definitions be incapable of accounting for the subtle nuances in Type IV material – and in fact result in a characterization of such data as exceptions or in terms of 'neutralization' – they may not even cope with Type III sentences adequately, given the internal semantic heterogeneity. For example, a definition of the restrictive/non-restrictive dichotomy in terms of identification-orientation (based on examples like *The boys(,) who were scared(,) returned to the camp*) is not only inappropriate in relation to Type IV examples (like *She is fooling around with a Norwegian(,) who is rich*) but also in relation to other Type III examples (like *Teachers(,) who work overtime(,) are poorly rewarded for their efforts*, where the distinction is one of code-orientation). Similarly, a definition of the simple/progressive distinction in terms of 'ongoing situation of limited duration' versus 'habituality' based on Type III examples like *Sally sleeps/is sleeping in the room next door* is clearly inappropriate not only in an analysis of Type IV examples like *I had/was having a chat with him the other day* but also when applied to other Type III examples (like, for instance, *I couldn't imagine why Louise married/was marrying him*). There are thus two problems with such an approach: a) Type IV examples are in principle left unaccounted for, which means that supplementary rules are required if the theory is to meet our adequacy requirements; and b) it is by no means obvious what Type III data should be given priority and why. If this approach is nevertheless chosen, the

methodological direction involved is *from* Type III *to* Type IV, as well as *from* some Type III cases *to* other Type III cases.

Simply by reviewing the possible approaches in principle, we cannot hope to be able to determine exactly the right way of defining the building blocks of categories. In fact, as we shall see later, it may be necessary to adopt different approaches for different categories. What is important for the linguist is first of all to get a sense of the semantic distinctions involved in a formal category by contrasting substitutional variants in as much Type III and Type IV material as possible.

6.4.3. The Potentially Non-Monadic Nature of Forms

In section 6.4.1 we discussed the problem of how to select relevant formal substitutional partners. Among other things it appeared that one form may have more than one counterpart, either because it is felt to be in close competition with more than one other form (as in the case of the present perfect in English) or because the minimal factor criterion shows it to be closely related in form to more than one other form. An example of the latter is the simple present in English, which is minimally distinct in form not only from the simple past but also from the present progressive and the present perfect. Similarly, the simple past is minimally distinct in form from the simple present, the past progressive and the past perfect; in addition it is pragmatically related to the present perfect. This section examines some of the implications of such networks of forms for form-meaning relationships and for category architecture.

If we were to define our categories on a purely formal basis, we would have a problem determining the category membership of forms like the simple present and the simple past in English. Traditionally they are treated as *tense* forms, as the terms 'the simple present (tense)' and 'the simple past (tense)', respectively, clearly indicate – terms which, for reasons of presentation, I have reluctantly adopted in my nomenclature. However, from a semantic or conceptual point of view, matters are far more complex.

Consider, for example, the simple past forms *talked*, *sang*, *knew* and *meant*. In sentences like:

- (1) When Roger was a young man, he *talked* like a politician.
- (2) In the 1960's Mary *sang* in the College Choir.
- (3) I *knew* what she *meant*.

there is an immediate sense of pastness about the four predicators. This is not surprising since there is an immediate contrast to present time as expressed by the corresponding simple present forms:

- (4) He still *talks* like a politician.
- (5) Nowadays Mary *sings* in the College Choir.
- (6) I *know* what she *means*.

The reason for this immediate temporal contrast is that the actional specification of sentences (1) to (3) is such that it allows present time expression by the simple present form. Notice that in (1) and (2) the sentences express characteristic habits as facts rather than specific situations. This habitual reading can be transferred unchanged to the present time, as in (4) and (5). In example (3), *knew* and *meant* allow an interpretation in terms of specific situations taking place at a particular time in the past (e.g. 'Sally called me yesterday morning; as soon as she mentioned the silver ring *I knew what she meant*'). Verbs like *knew* and *meant*, which are stative in meaning, are freely transferred into the present tense, as in (6), just like verbs with a habitual reading.

If we look at sentences where *talked* and *sang* invite an interpretation in terms of more specific occurrences of 'talking' and 'singing', we get a slightly different picture:

- (7) We *talked* about his ideas the other day.
- (8) Mary *sang* a song in front of a large audience.

In these examples, there is of course still an association of pastness as in the other examples discussed. But at the same time there is a clearer sense of presentational focus on the situations expressed: both the 'talking' in (7) and the 'singing' in (8) are expressed not only as past situations but also with an external focus as complete

units looked at from the outside. As such there is a clear contrast with sentences containing the corresponding past progressive forms:

- (9) We *were talking* about his ideas the other day.
- (10) Mary *was singing* a song in front of a large audience.

In these sentences, the past situations of 'talking' and 'singing' are expressed with an internal focus as something unfolding or in progress at a particular time. In other words, the actional specification of examples (7) and (8) is such that transference into the past progressive counterparts in (9) and (10) is permitted in appropriate contexts (by using the progressive forms in (9) and (10), the speaker signals that in each case he has more to say about the matter expressed).

It is interesting to note the principles at work in all these examples. For example, the past progressive is normally blocked in habitual and stative examples like (1) – (3):

- (1a) *When Roger was a young man he *was talking* like a politician.
- (2a) ?In the 1960's Mary *was singing* in the College Choir.
- (3a) *I *was knowing* what she *was meaning*.

Conversely, transference to the simple present is blocked in the non-habitual, non-stative examples (or, rather, it is conditional on a change of actional reading):

- (7a) */We *talk* about his ideas.
- (8a) */Mary *sings* a song in front of a large audience.

Example (7a) is possible with a reading like 'We talk a lot about his ideas, but we do not act' or 'All we do is talk about his ideas', where the implication is 'habitual talking'. Example (8a) is also possible in habitual contexts (e.g. 'Mary regularly sings a song in front of a large audience', 'Mary will sing a song only in front of a large audience') or in a timeless newspaper headline. As expressions of specific situations taking place at particular points in time, (7) and (8) in fact contrast more directly with the corresponding present progressive forms than with the simple present forms, though of course other changes of meaning are involved:

(7b) *We are talking* about his ideas.

(8b) *Mary is singing* a song in front of a large audience.

We can confidently draw at least two conclusions from our discussion of examples (1) to (8): a) there is an intricate network relationship between time, focus and action distinctions, and this relationship clearly affects the choice of verb form; and b) there is no one-to-one relationship between forms like the simple present or the simple past and the three types of semantic distinction entering the network. Thus, in a description of, say, the simple past, it is not enough to specify the time distinction(s) conveyed by this form. Focus and action meanings are embodied in the simple past, too. As regards the first of these conclusions, the intricate relationship between the different types of meaning will be dealt with in a separate section on what I refer to as 'categorical interplay' (cf. section 6.4.4). The second conclusion, which concerns the very status of grammatical forms as markers of categories, is of central importance in the present section.

In our discussion so far, we have seen that forms like the simple present and the simple past in English may be paired with different forms in different substitution tests and that they accommodate a variety of different types of meaning. Typically, different types of semantic contrast are elicited in different substitutions of the same form (e.g. <the simple past versus the simple present> and <the simple past versus the past progressive>). Now, one possible, and indeed very attractive, way of capturing this phenomenon is to abandon the idea that grammatical forms are necessarily *monadic* category markers, i.e. forms which represent only one category meaning each. What I propose is that we make a distinction between *grammatical form* and *marker of grammatical category* and that we accept grammatical forms as potentially *non-monadic* in terms of their categorial membership. This means that members of different metacategories may merge into one language-specific grammatical form. As a consequence, such a language-specific grammatical form is used to express at the same time meanings from different metacategories. Elsewhere (see Bache 1994a, 1994c) I

have used the term 'manifestation form' for language-specific grammatical form. I propose to keep this term as it indicates the concrete nature of actual forms in contrast to the ideal, hypothetical forms of our metacategories. The distinction between these two types of form can thus be reformulated as follows: the forms of metacategories are monadic (i.e. there is a necessary one-to-one relationship between form and meaning) whereas language-specific manifestation forms (like the simple present and the simple past in English) are potentially non-monadic with respect to their grammatical subspecification (in the sense that there may be a one-to-many relationship between form and meaning) and hence require an analysis in terms of more than one metacategory.

If, as I suggest, manifestation forms are potentially non-monadic, the following is a possible structure of the description of any given manifestation form

(11)

Form α

Meaning 1	∈	Category X
Meaning 2	∈	Category Y
.		.
.		.
Meaning n	∈	Category N

As the structure of this description indicates, any given manifestation form has a grammatical subspecification where meanings from a number of different metacategories are listed. Thus, the temporal, aspectual and actional properties of the predicators in sentences (7) to (10) could be described as follows:

(7) We *talked* about his ideas the other day.

talked

past
perfective
homogeneous

- (8') Mary *sang* a song in front of a large audience.

sang
past
perfective
telic

- (9') We *were talking* about his ideas the other day.

were talking
past
imperfective
homogeneous

- (10') Mary *was singing* a song in front of a large audience.

was singing
past
imperfective
directed

All four examples have past temporal meaning, hence they are assigned the feature *past* from the tense category. The two simple past predicates are perfective in meaning, providing an external situational focus, and are hence assigned the feature *perfective* from the aspect category. The two past progressive forms are both imperfective in meaning, providing an internal situational focus, and are hence assigned the feature *imperfective* from the aspect category. As regards the assignment of actional value in these examples, *telic* is used to express a situation of some duration which has a built-in ending point beyond which the situation cannot continue; *directed* is used for durative situations directed towards but not necessarily reaching an external point beyond which the situation cannot continue; *homogeneous* is used for durative situations the phases of which are weighted according to extension on the time axis rather than according to their change-producing effect (as in the case of telic situations) or their relation to an external point (as in the case of directed situations). (For further

discussion and exemplification of these actional values, see Bache 1985a:109ff)

The approach to form-meaning relationships proposed here is in full accordance with the view of categories as loci for forms sharing some general conceptual feature but differing with respect to the specific realization of this feature. Let me elaborate this point by repeating in this and the following paragraph some of the arguments provided in Bache 1994c:50. Grammatical categories such as tense and aspect are seen to describe *oppositions* or *relations* between verb forms rather than verb forms as isolated, self-contained entities. Thus to say of an expression like example (7) *We talked about his ideas the other day* that the verb is 'in the past tense' (or that it is a 'past tense form' of TALK) is really to indicate its relationship to the present form *talk* or *are talking*. To say of *talked* that it is 'in the perfective aspect' (or that it is a 'perfective form' of TALK) is to indicate its relationship to the imperfective form *were talking*. As a manifestation form, viewed in isolation, *talked* clearly defies a description in terms of a one-to-one correspondence between form and meaning. But as a member of the category of tense, i.e. as a tense form, it may have a characteristic meaning – that of pastness. And as a member of the category of aspect, i.e. as an aspect form, *talked* may have yet another characteristic meaning – that of perfectivity. In addition, there are always considerations of actionality, i.e. type of situation expressed. Clearly, a comprehensive description of forms like *talked* is possible only if we recognize them as non-monadic with respect to category membership.

It might be objected that in my presentation of categorial relationships, I ignore the important issue of markedness. Could we not simply say that simple past tense forms such as *talked* are positively marked for tense but negatively marked for aspect? If yes, is *talked* not then monadic, or at least potentially monadic, even as a manifestation form? The answer has to be 'no', because no matter how we decide to mark the simple past formally, the fact remains that it enters a very direct substitutional choice relation with the past progressive. In relation to the simple present, the

simple past seems to be largely a tense form. But in relation to the past progressive, it seems to be largely an aspect form. Markedness is a question of the relative distribution of the forms serving as members of a category, and any discussion of it thus presupposes the very classification of the forms under scrutiny as members of the same category. Moreover, the natural place for markedness relations to be described is in the grammatical subspecification of forms. The effects of markedness relations should be mapped directly in terms of features like -TEMPORAL, -ASPECTUAL and -ACTIONAL.

Note finally that to treat manifestation forms as potentially non-monadic with respect to their grammatical subspecification, i.e. to accept that they may have multiple metacategorical affiliations, entering networks of relations rather than simple binary contrasts, is a natural consequence of the non-directionality view of how categories are established in the metalanguage (cf. section 2.5). What is important is the linguist's recognition of a relationship between form and meaning, rather than an isolated account of the possible meanings of each manifestation form. By thus abandoning manifestation forms as constants in our analysis in favour of a conceptual basis for the creation of categories in the metalanguage, we may throw new light on the semantic complexity of manifestation forms and facilitate a more precise account of the choice relations involved.

6.4.4. Categorical Interplay and Minimal Semantic Pairs

It is a well-known fact in aspectology that certain restrictions on the choice of aspect are caused by considerations of other categories. Thus, for example, in Russian only imperfective present tense forms are used regularly for the expression of present situations (e.g. *On pišet* (= 'He is writing')). There are perfective present forms, but they are normally used for the expression of future situations and enter a pragmatic choice relation with periphrastic imperfective future forms consisting of a form of *BYT'* plus an imperfective infinitive (e.g. *On napišet* versus *On budet pisat'*,

both corresponding to 'He is going to write' or 'He will write'). This means that if the locutionary agent wants to express a present-time situation he is normally forced to choose an imperfective form. The traditional explanation for this is that the meaning of present time is generally incongruous with the meaning of perfectivity (how can one view a situation obtaining in the present from the outside, as a complete whole?). By contrast, there are no temporal restrictions on the choice of aspect form in the past tense: here the aspects are directly opposed, formally as well as semantically – at least from the point of view of tense.

Another example is from the English verb system, where progressive forms cannot be used for the expression of punctual situations (**I was hitting him once on the nose*, **When I was finally arriving, I was knocking only once on the door*), except perhaps to present a situation as strictly simultaneous with another situation in certain well-defined syntactic contexts (e.g. AS-constructions: *She entered the room just as the clock was striking the half-hour*; *The clock was striking the half-hour as she entered the room*). Again the locutionary agent is restricted in his choice of form by considerations of how well meanings from different categories go together: if he wishes to express a punctual situation he normally has to use a simple, non-progressive form. The explanation sometimes offered for this constraint on the use of the progressive in English is that the aspectual meaning of 'internal situational focus' (and hence 'on-going situation') expressed by the progressive form is incongruous with the actional notion of punctuality. By contrast, homogeneous situations like 'celebrating a birthday' or 'talking about ideas' can be expressed by both the simple and the progressive form (e.g. *We celebrated/were celebrating Stephanie's birthday at my uncle's place*; *We talked/were talking about his ideas the other day*): here considerations of actionality do not interfere with the locutionary agent's choice of aspectual form.

This relationship between categories in terms of notional *compatibility* and *incompatibility* between the individual members I refer to as 'categorical interplay'. To study the principles of categorical

interplay is important because, as we have already seen, they may explain certain constraints on the locutionary agent's choice of language-specific formal constructions and they may add to the descriptive and explanatory adequacy of our theory by further unravelling the semantic complexity of manifestation forms. In fact, categorial interplay seems to be crucially involved in several of the main types of sentence identified in our substitution test. Thus, looking back at some of the Type II and Type III sentences already discussed (displaying grammaticality constraints and intensional semantic factors, respectively), they seem very much to be governed by categorial interplay:

- (1a) When Roger was a young man he *talked* like a politician.
- (1b) *When Roger was a young man he *was talking* like a politician.
- (2a) Jack *built* his own house.
- (2b) !Jack *was building* his own house.

In these examples, the actional properties of the examples with the simple past form are such that transference into the progressive form leads to ungrammaticality or a change in intensional meaning. Thus, *talked* in (1a) is habitual – an actional value which is generally incompatible with the imperfective aspectual force of the progressive form in (1b). Similarly, in (2a) *built* is telic, and with this meaning the verb is incompatible with the aspectual force of the progressive form in (2b). The difference between the two pairs of examples is that the use of the progressive form can superimpose a change of actional meaning and still preserve grammaticality only in the second pair. The presence of the adverbial *When Roger was a young man* in the first pair blocks a non-habitual reading of the predicator. Without this adverbial, the examples become indeterminable between Type III and Type IV:

- (3a) He *talked* like a politician.
- (3b) He *was talking* like a politician.

If, in context, (3a) is meant to express a habitual situation, the pair belongs to Type III (with an actional contrast between habituality and non-habituality); if not, they belong to type IV with no actional

contrast, both expressing a particular homogeneous situation in the past.

In Russian there is evidence that categorial interplay is involved in Type I examples (which display gaps). Thus, as pointed out in section 5.3 above, unpaired perfective verbs (such as e.g. OPOMNIT'SJA (= 'to come to one's senses'), RUXNUT' (= 'to collapse'), ZAPLAKAT' (= 'to start to weep')) usually express sudden punctual situations or the punctual inception of a state. Conversely, unpaired imperfective verbs (such as e.g. VYGLJADET' (= 'to look'), NAXODIT'SJA (= 'to be located'), SOSTOJAT' (= 'to consist')) are typically stative (or non-actional) in meaning, thus requiring unmarked imperfective forms. Again actional properties seem to interfere with the aspectual organization of forms. (An interesting parallel is found in English, where stative verbs like CONTAIN, BELONG, POSSESS, etc. strongly resist the progressive form, whose aspectual meaning is such that it typically requires a positive actional meaning.) By including categorial interplay in our description of categories, we may arrive at structural and conceptual patterns characterizing the distribution of forms and thus add descriptive and explanatory adequacy to our description.

Apart from such considerations of adequacy, there are significant methodological advantages of working with the notion of categorial interplay. As we have already seen, it makes good sense to look first at Type III and Type IV data if one is interested in the semantic principles underlying a formal pair or system simply because in such examples there is an overlapping distribution of the variant constructions and hence a direct substitutional confrontation bearing out the semantic differences. By keeping a constant test frame, allowing the formal variants as a kind of 'minimal pair', we isolate the relevant phenomenon under scrutiny and are likely to get a clearer picture of the principles involved than in constructions with gaps or grammaticality constraints (Type I and Type II, respectively). But as we saw, any comprehensive study of Type III and Type IV material is likely to reveal considerable semantic complexity, and for that reason there is a directionality problem in

our search for suitable data for our definitions of the metacategories involved: should the linguist deal first with Type III or Type IV data? Categorical interplay may provide just the solution to this problem. By making a distinction between compatibility and incompatibility relations between members of different categories, we may refine the notion of 'minimal pair' in our substitution test to include considerations not only of form but also of meaning. As it stands, it refers to cases where there is a direct confrontation of forms in grammatical variant constructions and thus applies to all Type III and Type IV material to the exclusion of all Type I and Type II material. By introducing a compatibility criterion for our minimal pairs, we get pairs of forms that are minimally distinct not only in the sense that both variants are formally possible in a constant test frame but also in the sense that they are semantically distinct with respect to the meanings of *one* category only.

Let me illustrate this with some of the examples that we have already looked at. If we subject simple forms in English to a substitution test with a view to defining the possible tense distinctions involved, we might get a pair of examples like the following, where the simple past form is substituted by the simple present form, or vice versa:

(4a) I *knew* what she *meant*.

(4b) I *know* what she *means*.

As already pointed out in section 6.4.3, the actional and aspectual properties of the predicators in these examples are potentially held constant in the substitution. The only difference between the two variant sentences is one of temporality: example (4a) expresses past situations whereas example (4b) expresses present situations. In other words, (4a) and (4b) are a minimal pair not only from a formal point of view (having an overlapping distribution and being directly opposed substitutional variants in the test frame) but also from a semantic point of view (being semantically distinct with respect to the meanings of one category only). The same goes for sentences tested for the distinction between simple and progressive forms:

- (5a) We *talked* about his ideas.
 (5b) We *were talking* about his ideas.

Again we have a minimal pair from a formal point of view: *talked* and *were talking* are both formally possible and therefore directly opposed in the test frame. At the same time, in the context of a particular situation, the two sentences constitute a minimal pair from a semantic point of view: actionally and temporally they are (potentially) identical, the only difference being one of aspectuality. In (5a) *talked* expresses a past homogeneous situation with a perfective focus; in (5b) *were talking* expresses a situation with the same temporal and actional characteristics, i.e. a past homogeneous situation, but with an imperfective focus.

If, however, we let *talked* enter a substitution test with the simple present form *talk*, we get a very different type of result:

- (5a) We *talked* about his ideas.
 (5c) !We *talk* about his ideas.

If possible in context at all, (5c) expresses a habitual, or repeated, situation rather than a particular present occasion. Example (5a), however, may express a particular instance of 'talking' in the past, i.e. a semelfactive homogeneous situation. So although it could be argued that (5a) and (5c) constitute a minimal pair from a formal point of view (because of their being directly opposed in the test frame), they are too distinct to count as a minimal pair from a semantic point of view: they differ with respect to both temporality and actionality, and possibly even with respect to aspectuality (*talked* having a clearer perfective value than *talk*, which seems rather non-aspectual in meaning). This means that it is highly problematic to use examples like (5a) and (5c) in one's search for basic tense meanings. The two examples are not directly comparable with regard to tense because there are other semantic differences. If we want to get a clear picture of tense distinctions in English, we should instead look first at examples like (4a) and (4b) (*I knew/know what she meant/means*), where the only difference between the substitutional variants seems to be one of tense. Similarly, if we

want a clear picture of aspect in English, we should look first at data such as (5a) and (5b) (*We talked/were talking about his ideas*), where it is possible to keep temporality and actionality constant in the substitution test. Examples like (2a) and (2b) (*Jack built/was building his own house*) are semantically too complex for immediate identification of basic aspectual values, differing as they do also with respect to actionality: *built* is not just perfective but also telic; *was building* is both imperfective and directed.

We are now in a position to provide a solution to the directionality problem involved in using the results from a substitution test for identifying the basic building blocks of categories. We have already decided that it is sensible to look first at cases where both the substitutional variants are grammatically acceptable and therefore directly opposed in the test frame (i.e. Type III and Type IV sentences, displaying intensional and extensional semantic factors, respectively). Cases of grammaticality constraints (Type II) or gaps (Type I) are not likely to be as immediately revealing of the semantic differences between the substitutional variants as cases where variant sentences form minimal formal pairs. The problem discussed in section 6.4.3 was what data to give priority to within Type III and Type IV: should we define our categorial values on the basis of the relatively weak extensional semantics of Type IV material and then provide additional rules or principles for the more marked, intensional differences in Type III material? Or should we take Type III material as our point of departure and then try to explain the 'neutralization' of meaning in Type IV material? Both approaches seem problematic, but the latter probably more so than the former because of the semantic heterogeneity of Type III data. But now the concept of *minimal semantic pairs* may provide just the solution to this directionality problem: to define the basic building blocks of metacategories, the linguist should look first at language-specific data where a single meaning can be found to constitute the only distinction between the substitutional variants. Thus, for example, when dealing with a language where the linguist recognizes certain form-meaning relationships involving temporal

distinctions, he should focus on data from the substitution test displaying a pure temporal difference, i.e. variant sentences in which other kinds of meaning (e.g. actionality and aspectuality) remain unchanged. Only by first establishing categorial values pure and simple can one hope to describe complex categorial interplay adequately.

It is important to emphasize that what I am suggesting here is not that we disregard data revealing semantic complexity, or that we focus on minimal semantic pairs to the exclusion of cases of complex categorial interplay. But what I do want to suggest is that in order to define general category concepts and values of category members, we look first at minimal semantic pairs, and then, when appropriate metacategories have been established, we proceed to a description of complex categorial interplay and other conditions underlying other Type III and Type IV cases, and finally Type I and Type II cases, as well. In other words, this time we cannot dispose of directionality as a descriptive factor (as we did in our discussion in section 2.5 of the initial stages of the analysis of form-meaning relationships). Instead we provide a principled choice of directionality. Notice in this connection that there is no *a priori* reason to believe that the direction chosen is necessarily from Type IV data to Type III data (as the term 'minimal semantic pair' would seem to indicate). A minimal semantic pair is a pair where the members are differentiated by only one kind of meaning, extensional or intensional. Thus the notion of minimal semantic pair may well cut across the boundary between Type III and Type IV material. Different categories may have minimal semantic pairs in different places in our sentence typology: it really depends on the nature of the meanings inherent in the category.

6.4.5. The Definition and Function Levels of Description

Having decided on a solution to the directionality problem in connection with the question of how to use the results from a substitution test for the purposes of category architecture, I am now going to propose some useful terminology for the descriptive

approach adopted. As we have seen, there are at least two (related) reasons for the complexity of language-specific categories (in the weak sense of the word 'reason', relating to descriptive adequacy rather than explanatory adequacy). One is the potentially non-monadic character of language-specific forms, which allows members of different metacategories to merge into one manifestation form. The other is categorial interplay, where specific meanings from different metacategories enter a complex relationship of notional compatibility and incompatibility. To deal with this semantic complexity, I am proposing a *structured*, or *hierarchical*, approach with initial analytic focus on minimal semantic pairs and with subsequent treatment of semantically more complex minimal formal pairs, grammaticality constraints and gaps (in that order). There are two descriptive tasks involved in this approach: a) to specify the basic categorial meanings and their role as 'Gesamtbedeutungen' or prototypes in the semantic complexity of language-specific form-meaning relationships; and b) to offer a description which uniquely captures the nature of semantic complexity in terms of categorial interplay and the potential non-monadicness of manifestation forms, as well as distributional factors underlying grammaticality constraints and gaps.

The structured approach to form-meaning relationships that I envisage consists of two levels: a *definition level* and a *function level* (for these terms see also Bache 1985a, 1985b, 1994a).

At the definition level, we define the general category concept and the values of the individual members of the category on the basis of minimal semantic pairs of language-specific forms (i.e. the subset of Type III and/or Type IV material from the substitution test in which the semantic contrast involves only one kind of meaning and therefore emerges at its purest).

At the function level, we define the semantic complexity of the forms under scrutiny in relation to the meanings identified at the definition level, deriving a more complex index of meanings attached – or attachable – to each member of the category. In effect, we determine the interaction of the basic meanings of a

metacategory with meanings from other categories, i.e. the semantic complexity relating specifically to categorial interplay. Notice that this structured approach to the semantics of language-specific forms combines the one-to-one relationship between form and meaning (which is required of metacategories) with the one-to-many relationship (which is a common source of semantic complexity in language-specific forms): the former exists at the definition level, the latter primarily at the function level.

The task with which the linguist is faced can now be reformulated in this way: first, at the definition level, a metacategory and its members must be defined on the basis of a certain subset of language-specific data from a substitution test (viz. minimal semantic pairs); then, at the function level, the metacategory (with its one-to-one relationship between form and meaning) must be applied to other data from the substitution test (such as minimal formal pairs displaying semantic complexity, as well as data displaying grammaticality constraints and gaps) with a view to determining regular patterns. Finally, other factors determining the distribution of the forms under scrutiny must be brought to the fore. For a description to obtain observational adequacy it must provide a bare description of the definition level and the function level, as well as other distributional facts. To the extent that the linguist succeeds in establishing a *link* between the definition level and the function level, his description gains descriptive adequacy; to the extent that the link can be shown to have a psychological, or cognitive, foundation, his description gains explanatory adequacy.

Let me illustrate the two levels of meaning with some of the examples already discussed. In our treatment in section 5.2 of the restrictive/non-restrictive dichotomy in relative clauses, we found that several types of semantic contrast involved in the formal distinction were elicited in the substitution test. These contrasts turned out to be related to different 'orientations': presentation-orientation (as in *She is fooling around with a Norwegian(.) who is rich*), identification-orientation (as in *The man(.) who broke the bank at Monte Carlo(.) is a mathematician*), and code-orientation

(as in *A young mother(,) who is always busy(,) needs a loving husband*), cf. sections 5.2 and 5.3. Further complexity relating to the number of the antecedent noun or nominal expression (singular or plural) was noted in connection with examples like *The boys(,) who were scared(,) returned to the camp* and *Professors(,) who enjoy poetry(,) are idealistic*, which apparently convey a class/subclass distinction. It was also noted that whilst examples like *She is fooling around with a Norwegian(,) who is rich* display only presentation-orientation (more specifically variation in the locutionary agent's organization of the message in information units in order to achieve a certain referential contrast formation), other examples display presentation-orientation as well as some other orientation. In other words, presentation-orientation seems to be a pervasive factor but often not the only factor in the locutionary agent's choice of relative clause.

Within the framework suggested we can say that examples of pure presentation-orientation represent (or rather, give us immediate access to) the definition level of meaning. The other types of example reveal the function level of meaning: here presentation-orientation functions in a categorial interplay with meanings inherent in the determiner system and the category of number (definiteness, the function of naming things, class/subclass relations, etc.). Thus, for example, in cases of identification-orientation, the restrictive relative clause enters a close functional relationship with the definite article in that it warrants the use of the definite article by providing the information necessary for the addressee to identify the referent of the whole expression. By contrast, the non-restrictive relative clause is functionally independent of the definite article, simply providing additional information about the referent already established by other means. In this way, although 'identification' is often a meaning associated with restrictiveness in contrast to non-restrictiveness, it is not a basic meaning of restrictive relative clauses but a functional meaning derived by the basic, definition-level meaning of simple referential contrast

formation in conjunction with the meaning of definiteness provided by the definite article.

Another example of the difference between the definition level and the function level of meaning is provided by the simple/progressive distinction. As we have seen, examples like *We talked/were talking about his ideas the other day* and *We celebrated/were celebrating Stephanie's birthday at my uncle's place* are minimal semantic pairs in the sense that the substitutional variants differ with respect to one type of meaning only. Again presentation-orientation seems crucial, but this time in terms of variation in the focus with which the locutionary agent presents situational referents. Other examples of the simple/progressive distinction seem semantically more complex in that there are additional types of meaning involved. Thus, examples like *Jack built/was building his own house* and *Sally sleeps/is sleeping in the room next door* have been shown to differ not only in situational focus but also in type of situation expressed (i.e. in actionality). In other words, in such examples, the substitutional variants differ in both presentation-orientation and 'actionality-orientation'. Again the minimal semantic pairs identified in the former examples provide the definition level of meaning whilst the more complex minimal formal pairs identified in the latter examples provide the functional level of meaning. In, for example, *Jack built/was building a house*, the telicness of the simple form is compatible only with an external situational focus, where the situation expressed is seen as a complete whole. By contrast, the internal situational focus of the progressive form is compatible with a situation directed towards, but not including, the terminal point of a telic situation. Thus, although 'result' and 'completion' are often associated with the simple form in contrast to 'direction', which is often associated with the progressive form, none of these are central, or basic, meanings of the distinction but rather functionally derived by the combination of situational focus (as identified at the definition level of meaning) and actionality. Similarly, the opposed meanings of 'present habituality' and 'particular present situation' expressed by *Sally*

sleeps/is sleeping in the room next door are the result of a functional interaction between situational focus and actionality.

I have chosen the terms 'definition level' and 'function level' to reflect certain important facts about the semantics of grammatical categories and their description. First of all, the two terms are meant to show that it is in fact possible in a principled way to give priority to a certain type of data for the purpose of defining the basic building blocks of metacategories. The definition level of meaning is not an arbitrary systemic concept but is crucially related to the actual and potential distribution of forms, and to the locutionary agent's choice of form in any particular instance. By letting minimal semantic pairs provide the definition level, we give methodological priority to data in which the locutionary agent's choice of form has *category-internal motivation*. In minimal semantic pairs, the formal variants are not only in direct semantic opposition as a result of their overlapping distribution but, being semantically identical except for one kind of meaning, they compete on 'equal ground', as it were, thus providing the category-internal semantic contrast at its purest. From the point of view of choice, the definition level represents data where the locutionary agent has chosen to express a particular categorial meaning simply in order to express that meaning in contrast to other meanings from the same category. For example, in a sentence like *She is fooling around with a Norwegian who is rich*, the restrictive relative clause is chosen simply to establish at once, in one information unit, the referent of the expression, in a unified contrast to other possible referents. The locutionary agent has chosen this expression instead of the alternative expression with the non-restrictive relative clause, in which the same referent is actualized stepwise, in two separate information units with a more fragmented referential contrast formation. His choice is not motivated by a wish to 'identify' or to 'express the locutionary agent's understanding of the code', or to 'define a subclass of a class', etc. but simply by a preference, on that particular occasion, for the kind of contrast formation provided by the restrictive relative clause. Similarly, in

We were celebrating Stephanie's birthday at my uncle's place the progressive form is not chosen in order to express a particular actional or temporal meaning but simply to represent the situational referent with an imperfective aspectual focus in contrast to the perfective focus provided by the formal counterpart *We celebrated Stephanie's birthday at my uncle's place*. In other words, in such minimal semantic pairs, the locutionary agent's choice of form has category-internal motivation and is thus obviously of very special importance to our understanding of the category and its members.

Turning now to the term 'function level', it is necessary to elaborate a little on the notion of 'categorical interplay' – our term for certain regular patterns underlying some, ideally all, of the semantic complexity making up the function level of meaning. Up to this point, we have simply defined 'categorical interplay' in terms of compatibility or incompatibility relations between members of different metacategories. But a strong case can be made out for seeing categorical interplay in a functional perspective, where the individual members of a category become functions in the locutionary agent's expression of meanings from other categories. Thus, there are cases where, rather than simply saying that meaning x^1 from category X is *compatible* with meaning y^1 from category Y, we can say that meaning x^1 is *a function of* meaning y^1 relative to some formal entity or distinction. This was in fact the way we just described the function level meaning of 'identification-orientation' in the restrictive relative clause in *The man who broke the bank at Monte Carlo is a mathematician*: the restrictive relative clause was said to enter a close functional relationship with the definite article. A more precise way of putting this would be to say that the identification meaning of the expression is a function of the contrast formation meaning of the restrictive relative clause (as defined at the definition level) in the context of the definite article. In other words: one of the semantic functions of restrictive relative clauses is to help identify referents of noun phrases.

The functional perspective of categorical interplay is also evident in the simple/progressive distinction. Thus in relation to the

predication *BUILD a house*, which is potentially telic because of the presence of the bounded direct object, the simple past tense form in *Jack built a house* is indeed telic as a result of the perfective meaning associated with this form: the external situational focus allows referential inclusion of the terminal point defining the situation as telic. Conversely, the past progressive form in *Jack was building a house* imposes a non-telic, directed meaning on the predication as a result of the imperfective meaning associated with this form: the internal situational focus excludes the terminal point from its referential scope, thereby representing the situation as an activity directed towards, but not necessarily reaching, its natural conclusion. Relative to the predication *BUILD a house*, telicness is a function of perfectivity and direction is a function of imperfectivity. Or, put in a slightly different way, the actional meanings of telicness and direction are semantic functions of the perfective simple form and the imperfective progressive form, respectively.

In the predication *HIT me in the face* we have another example of a formal entity which is sensitive to functional variation in actional meaning caused by the aspectual meanings inherent in the simple/progressive distinction. In this predication, there is a strong association of semelfactive punctuality, but though this meaning is clearly a potential actional meaning of the construction, it is by no means a necessary one. To realise the actional meaning of semelfactive punctuality the locutionary agent must use e.g. the simple past form, as in *She hit me in the face*: the external situational focus of the perfective form ensures this interpretation. By contrast, the imperfective progressive form, as in *She was hitting me in the face*, imposes a non-punctual interpretation on the predication: an internal situational focus is incompatible with punctuality and thus forces us to interpret the sentence in terms of a different actional value, either iteration (in this particular instance: a repeated series of punctual situations) or, less likely, semelfactive direction. In this particular example, semelfactive direction is a possible interpretation, if at all, only under very special circumstances with, for example, a slow-motion representation of a single hit as the

situational referent of the sentence: 'at this point we are in the middle of the event: she is about to hit me, her fist slowly but inevitably moving towards its target'. In other examples (such as *She died* versus *She was dying* and *He finally caught up* versus *He was finally catching up*), semelfactive direction, not iteration, is the more likely interpretation of the imperfective (progressive) counterpart to perfective (simple) punctuality. In other words, the actional point expressed by a punctual simple form either gets down-ranked to one out of a number of identical subsituations (iteration) or gets externalized from the referential scope of the expression (direction) when the locutionary agent uses the progressive form instead. In functional terms, we can say that punctuality is a semantic function of perfectivity (defined as external situational focus) relative to predications like *HIT me in the face*, *DIE* and *finally CATCH up* while iteration and semelfactive direction are semantic functions of imperfectivity (defined as internal situational focus).

The terms 'definition level' and 'function level' are important descriptive tools because they allow us to extract certain distributional facts and semantic patterns in data which at first blush appears to be very complex, or chaotic. At the same time, they show the interaction between source-language, metalanguage and object-language in a rather concrete way: both the definition level and the function level are established in the metalanguage on the basis of language-specific data from substitution tests for the purposes of defining metalinguistic categories and their interplay. Conversely, the regular patterns emerging from this descriptive process can be applied to object-languages in order to delimit the complexity, or chaos, of language-specific data. In this way, the two terms and the linguistic reality that they represent become standards against which we can evaluate and describe new data. At the same time, by relating directly to the results of the substitution test, and hence, by definition, to the question of the locutionary agent's choice of form, they become a convenient framework for determining the observational, descriptive and explanatory adequacy

In such representations, category concepts and category members can be stated freely in either nominal form (e.g. $\pm$ ASPECTUALITY) or adjectival form (e.g. $\pm$ ASPECTUAL).

There is probably no *a priori* limit to the number of ways in which the metalinguistic facts can be represented. The important thing is not how we represent the facts but the facts themselves. The representation can be adjusted or changed to suit different purposes or different audiences: after all, a descriptive representation is 'just' an elaborate piece of communication about language, or about a segment of language, from a linguist to whoever is interested in knowing about language. But the substance should remain largely the same in different representations.

There are, however, certain minimal requirements that we must meet in our descriptive representations. If we look first at the definition level of meaning, our descriptive representation of metacategories must contain the following types of information: *category structure*, *conventions*, *inventory*, and *definitions*. The first two are general information about the metalanguage: category structure concerns the linguist's concept of what a metacategory looks like; and the conventions are a kind of linguistic short-hand that the linguist employs in his descriptive representation to ensure precision and to avoid ambiguity. Both types of information must be specified once and for all before more specific information is offered about any particular metacategory. The two other types of information, inventory and definitions, are derived from the substitution test along the lines specified in the previous chapters, or rather, they are derived from the intuitions that the linguist gets when working with the substitution test. The inventory of a particular metacategory is specified in terms of units that fit into the general structure devised for metacategories (e.g. 'ASPECTUALITY' for general category concept, and 'perfectivity' and 'imperfectivity' for category members). In the definitions, the linguist provides information about each unit to other linguists, or interested lay persons, in order that they may enhance their knowledge of that particular metacategory and apply it as a standard to other data.

Let me exemplify the four types of information which are required in a description of the definition level of meaning. In the kind of structure adopted for metacategories, a distinction is drawn between general category concept and specific individual members, or values, pertaining to that category concept. The category concept is a common denominator of the category members, which, then, being different realizations of the category concept, differ only at a more specific semantic level. All this concerns the first type of information that we have an obligation to provide: the general structure of metacategories.

The capitalization of all the letters of the term chosen for the general category concept is a convention which makes it easier for the reader to distinguish between category concept and category members, not only in the representation of the inventory of metacategories but also in any rule we may wish to formulate with reference to these units. The negation of the category concept in a privative opposition is a device to capture the fact that there may be data to which the category potentially applies but which does not express a positive meaning comprised by the category concept. And the lines connecting the units of the category in graphic representations like that in (1) above simply represent the relations defined in our category structure. All these details help the linguist make his description more economic, unambiguous and precise.

The inventory of metacategories is established on the basis of the results of substitution tests but is inevitably dependent on the linguist's subjective intuitions about the form-meaning relationships involved in language-specific formal distinctions. The number of category members is usually small – possibly because the minimal factor criterion favours pairs rather than systems of forms. The terms used for the general category concept and the category members are often reminiscent of the semantic distinctions involved (e.g. TEMPORALITY for temporal distinctions, 'past' for something that is past, etc.). I see no reason to change this tradition, although great care should be taken in formulating appropriate definitions to ensure that the category values are properly

distinguished from the normal, everyday meanings of the terms. For example, when establishing the category of tense, it may be important, depending of course on one's definition of TEMPORALITY, to define the values of the metacategory ('past', 'present', 'future') as explicitly *deictic* values, thus specializing the terms somewhat from their non-technical use.

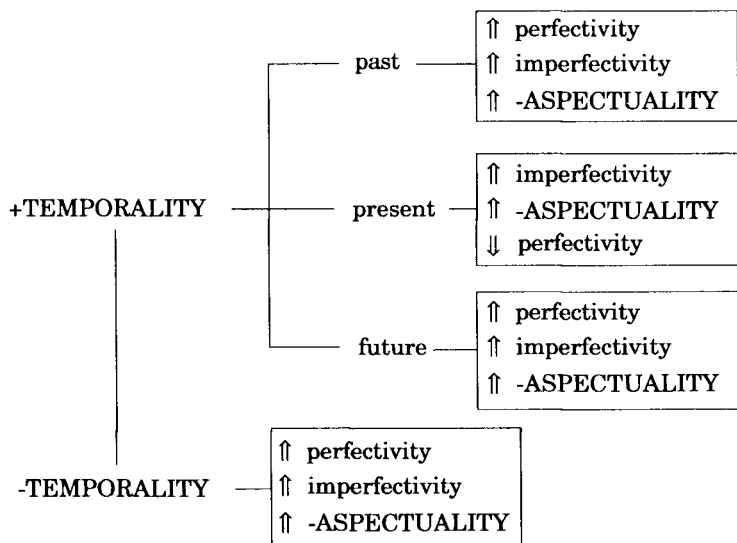
Definitions are always a problem. We expect objectivity, precision, non-circularity, easy applicability, etc. but can usually give only a subjective approximation to what we mean by a given term and therefore generally have to rely heavily on our fellow linguists' goodwill. The classical problem with definitions is that in them we resort to other terms strictly in need of definition. A definition is therefore open to infinite recourse and circularity. Consider, for example, the following definitions (taken from Bache 1985a:146):

- (3) A verb form is +*ASPECTUAL* if it represents its referent with a positive situational focus.
- (4) A verb form is *perfective* if it represents its referent as a complete unit, i.e. with an external situational focus.

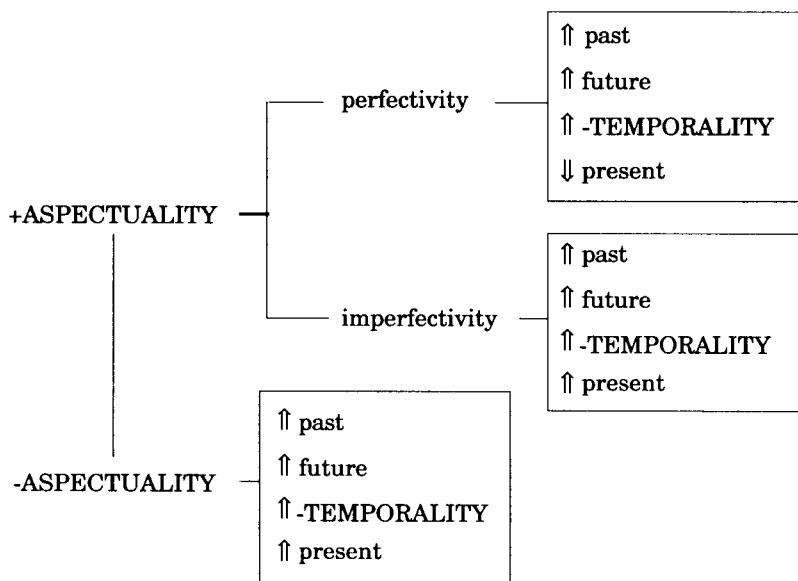
Obviously, the definitions in (3) and (4) make sense only to the extent that the individual words used in them make sense. Thus, strictly speaking, they presuppose definitions of what is meant by 'verb form', 'represent', 'referent', 'positive', 'complete', 'external' and, last but not least, 'situational focus'. Rigid definitions of these terms will involve new terms in need of definition, and so forth. A definition thus seems to presuppose an infinite number of other definitions: there is in principle no end to the number of new definitions a definition requires to be strictly valid. An alternative, more relaxed view of definitions is to accept the impossibility of objective, or valid, definitions and instead regard a definition as a subjective but careful reformulation intended to give the recipient a clue to the intuition that the linguist is trying to verbalize. In this light, a good definition in linguistics is a definition which leads the recipient on to an insight, or enables him to share some intuition about language – and this obviously requires some goodwill on the part of the recipient.

Turning now to the function level of meaning, we are faced with new requirements in our descriptive representations. At the function level, the basic building blocks of categories – as identified at the definition level – enter a categorial interplay. This interplay must be described in such a way that compatibility/incompatibility relations are specified as well as the functional variation that these relations give rise to. Again there are several ways of doing this. As we shall see, the relationship between the members from different categories in terms of compatibility or incompatibility can either be mapped directly into the graphic representation of metacategories or they can simply be shown in a separate list. Thus, for example, if we let an arrow pointing upwards ('↑') stand for 'compatibility' and an arrow pointing downwards ('↓') stand for 'incompatibility', we might describe the relationship between the members of tense and aspect in the graphic representation of either metacategory:

(5) A tentative representation of the metacategory of tense:



(6) A tentative representation of the metacategory of aspect:



Alternatively all this information can be given in a separate list, in which case we keep the descriptions of the definition level and the function level of meaning strictly apart:

- (7)
- past ↑↑ perfectivity
 - past ↑↑ imperfectivity
 - past ↑↑ -ASPECTUALITY
 - present ↑↑ imperfectivity
 - present ↑↑ -ASPECTUALITY
 - present ↓↓ perfectivity
 - future ↑↑ perfectivity
 - future ↑↑ imperfectivity
 - future ↑↑ -ASPECTUALITY
 - TEMPORALITY ↑↑ perfectivity
 - TEMPORALITY ↑↑ imperfectivity
 - TEMPORALITY ↑↑ ASPECTUALITY

- (8) perfectivity $\uparrow\uparrow$ past
 perfectivity $\uparrow\uparrow$ future
 perfectivity $\uparrow\uparrow$ -TEMPORALITY
 perfectivity $\downarrow\downarrow$ present
 imperfectivity $\uparrow\uparrow$ past
 imperfectivity $\uparrow\uparrow$ present
 imperfectivity $\uparrow\uparrow$ future
 imperfectivity $\uparrow\uparrow$ -TEMPORALITY
 -ASPECTUALITY $\uparrow\uparrow$ past
 -ASPECTUALITY $\uparrow\uparrow$ present
 -ASPECTUALITY $\uparrow\uparrow$ future
 -ASPECTUALITY $\uparrow\uparrow$ -TEMPORALITY

Notice that the tentative representations in (5) to (8) may be extended to include compatibility relations with other categories, in which case they may give a truer picture of the categorial interplay involved but at the same time become far more complex. Whether or not we want to provide such comprehensive descriptions of compatibility relations at the cost of increased complexity of representation, it is important to decide exactly what information we need to provide in our representations – and how.

There are in fact several ways to reduce the complexity of the representations in (5) to (8). Somehow it is redundant to take one's point of departure in both categories and show relations for both sets of category members. Thus, the relations shown in (5) and (7) imply the relations shown in (6) and (8), and vice versa. Unless there is a natural order in the description of categories (see section 7.2), we can simply select the category which we consider central for a particular linguistic project as our point of departure (i.e. (5) and (7) are perhaps more appropriate in a discussion of the tense category than (6) and (8), which, conversely, seem rather more appropriate in a discussion of the aspect category).

It is also redundant to show both compatibility and incompatibility relations: one of these types of relation can be left out as an implication ('unless compatibility is specified, assume incompat-

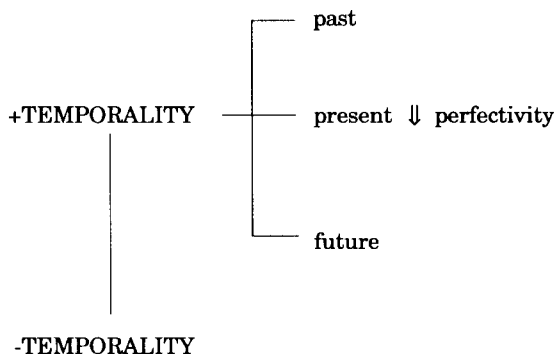
ibility' or 'unless incompatibility is specified, assume compatibility'). The obvious choice is to specify *incompatibility*, which is generally far more interesting than compatibility: it is incompatibility, not compatibility, that gives rise to functional variation of meaning, and thus indirectly also to grammaticality constraints and possibly even gaps.

There is, in addition, the question of markedness: language-specific forms that constitute a pair tend to assume different degrees of semantic markedness. Thus, typically, one of the forms will comprise both the meaning associated with one of the positive members of a metacategory and the privative negation of the category concept (e.g. both imperfectivity and -ASPECTUALITY). Such an unmarked language-specific form will have a higher degree of compatibility with meanings from other categories than a marked form. By specifying incompatibility relations in our metalinguistic representations we get an instrument for determining language-specific markedness directly: the more a language-specific form violates the incompatibility specifications in the metalanguage, the more unmarked it is. An example of this is the Russian aspect category, where many linguists consider the imperfective aspect to be the unmarked member of the category because, among other things, it may be used – contrary to expectation – to sum up a situation as a complete unit in examples like *Ivan uže čital knigu* (= 'Ivan has already read the book'), thus assuming a perfective-like meaning though in a fairly neutral way (cf. Forsyth, 1970:82ff). Normally, to preserve the telic character of the situation of 'reading a book to its completion' one would expect the locutionary agent to use a perfective expression, given the compatibility relation between telicness and perfectivity and the incompatibility relation between telicness and imperfectivity. The violation of this incompatibility specification gives credence to the view that the Russian imperfective aspect is the unmarked member of the opposition.

Having decided to include only incompatibility relations in our representations (because they facilitate a description of both functional variation and markedness relations) and to state the

relations between two categories once only (selecting one of them as the point of departure), we can greatly reduce the complexity of the representations in (5) to (8). Taking e.g. tense as our central category, we get the following graphic representation in (9) and the simple specification in (10):

(9) A tentative representation of the metacategory of tense:



(10) present ↓ perfectivity

To understand (9) and (10) as equivalent to (5) to (8), we simply have to assume compatibility unless incompatibility is stated and acknowledge the fact that incompatibility is bidirectional (i.e. if 'present ↓ perfectivity' then 'perfectivity ↓ present').

It is important to fully understand the significance of representations of incompatibility relations like (9) or (10). As part of the description of the function level of meaning they belong to universal grammar and its general metalanguage. In this capacity they state strong hypotheses about the semantic complexity of language-specific data. Thus, for example, the specification in (10) predicts that in any specific natural language we will not find forms positively marked for present temporality expressing perfectivity, or, conversely, forms positively marked for perfectivity expressing present temporality. But we may find a so-called perfective form expressing present meaning, or a so-called present form expressing perfective meaning, if it is the unmarked member of the language-

specific opposition (given the following compatibility relations in the categorial interplay between tense and aspect: '-ASPECTUALITY $\Uparrow$ present', '-TEMPORALITY $\Uparrow$ perfectivity'). Thus, in Russian, the use of the present perfective form for future rather than present temporality supports the status of the perfective as the marked member of the Russian aspect opposition. In English, the occasional use of the simple (perfective) present for the expression of present temporality (e.g. present stative or habitual meaning) indicates that the simple form is the unmarked member of the English aspect opposition, the imperfective progressive form being the marked member. In universal grammar, there is no fixed relationship between markedness and the specific positive values of a category (i.e. it makes no sense to discuss whether e.g. the imperfective is universally the unmarked member of the aspect opposition). Rather, markedness is a universal potential which may be realised differently in different languages. Our representations capture this fact in a simple but precise manner.

Before moving on to a discussion of how to represent the functional variation that incompatibility gives rise to, let us briefly look at some of the incompatibility relations already noted in connection with the categorial interplay between aspect and action. As we have seen (cf. our discussion of examples in section 6.4.5 on the definition and function levels of description), punctuality, telicness, direction are associated with certain specific aspectual values, whereas situational homogeneity is not, being in fact compatible with any aspectual value (perfectivity, imperfectivity, -ASPECTUALITY). Using a simple list of specifications, we offer the following first approximation to the representation of the relations involved in the categorial interplay between aspect and action:

- (11) punctuality $\Downarrow$ imperfectivity
 telicness $\Downarrow$ imperfectivity
 habituality $\Downarrow$ imperfectivity
 habituality $\Downarrow$ perfectivity
 direction $\Downarrow$ perfectivity

These general metalinguistic specifications give rise to a number of hypotheses, or predictions, about the distribution of language-specific forms. Thus, for example, the first specification (punctuality $\Downarrow$ imperfectivity) leads us to expect a punctual situation to be expressed either by a form positively marked for perfectivity or by a -ASPECTUAL form. Even a so-called imperfective form may express a punctual situation if it is the unmarked member of the opposition. Or perhaps the right formulation of such a case is that if a so-called imperfective form expresses a punctual situation then this is evidence of it being the unmarked member of the language-specific opposition. A similar prediction can be formulated on the basis of the next specification (telicness $\Downarrow$ imperfectivity): we expect either the perfective or the unmarked member of a language-specific opposition to express a telic situation. The third and fourth specifications (habituality $\Downarrow$ imperfectivity and habituality $\Downarrow$ perfectivity) are different: here the actional value resists any positive situational focus (because how can one view a habit as either something unfolding, from within, or as a unit, from without?). The specifications can therefore be rewritten simply as: habituality $\Downarrow$ +ASPECTUALITY. The hypothesis here is that habituality is expressed by aspectually unmarked language-specific forms (or rather, that a language-specific form which expresses habituality serves as the unmarked member of that particular aspect opposition). Interestingly enough, in Russian, habituality is typically expressed by the imperfective form (which is generally considered to be the unmarked member of the Russian aspect category), whereas in English it is typically expressed by the perfective simple form (which is very clearly the unmarked member of the simple/progressive English aspect opposition). The last specification (direction $\Downarrow$ perfectivity) leads us to expect situational direction (i.e. a situation moving towards, but not necessarily reaching, a natural terminal point outside its referential scope) to be expressed in any given language by an imperfective form, or by an aspectually unmarked form (e.g. the unmarked member of an aspect opposition, be it the so-called perfective or imperfective form).

Having introduced the conventions for representing compatibility relations at the function level of meaning, I shall now go on to the question of how to represent *the functional variation* that these relations give rise to. In effect, this part of our description, which also belongs to the function level of meaning, aims at accounting for certain changes of meaning elicited in the substitution test. Any change of meaning identified in a substitution test can be described in formulae, or rules, like the following:

$$(12) \quad \text{category X: form } \alpha \text{ [value } x^1] \approx \text{form } \beta \text{ [value } x^2]$$

This rule states that if for a given metacategory X represented by the language-specific forms α and β in a substitution test, an expression with form α expresses value x^1 , then the same expression with form β will express value x^2 , and vice versa (" $\approx$ " = "alternates with"). For example, the following rules describe some of the possible changes of aspectual value in a language-specific category subjected to the substitution test:

$$(13) \quad \text{Aspect: perfective [perfectivity]} \approx \text{imperfective [-ASPECTUALITY]}$$

$$(14) \quad \text{Aspect: perfective [perfectivity]} \approx \text{imperfective [imperfectivity]}$$

These rules describe the language-specific aspect opposition as consisting of a marked perfective form and an unmarked imperfective one. Being clearly category-internal, these changes of meaning take place at the definition level of meaning. Similar rules can be formulated for changes of meaning at the function level:

$$(15) \quad \text{Aspect: perfective [telicness]} \approx \text{imperfective [direction]}$$

$$(16) \quad \text{Aspect: perfective [future]} \approx \text{imperfective [present]}$$

The problem with the rules in (15) and (16) is that they are partial descriptions in the sense that they leave out the concordant change of definition level meaning. To remedy this shortcoming we might simply add the relevant definition level meaning to the function meaning in the square brackets, but this would be at the expense of descriptive elegance. The problem is that function-level meanings are *external* to a particular category. Thus, in a substitution test devised to give us information about the aspect category, functional

variation typically involves category-external changes of actional and/or temporal meaning (as in the rules in (15) and (16)). This means that whatever rules we formulate to account for such changes of meaning at the function level of aspect, or any other category, for that matter, it is not enough simply to specify the actual change of meaning, we must also relate this change of meaning explicitly to elements within the framework provided by the category under scrutiny. Since these elements remain the same in all the rules describing the function level variation of meaning of a category, it is more convenient to represent the information in tables like the following which comprises (13) to (16):

(17)	Aspect	<u>Perfective</u>	$\approx$	<u>Imperfective</u>
	definition level:	perfectivity	$\approx$	-ASPECTUALITY
		perfectivity	$\approx$	imperfectivity
	function level:	telicness	$\approx$	direction
		future	$\approx$	present
		etc.		

For such tables we stipulate – as a standard convention – that a change of meaning may take place at the definition level only or at both the definition and the function level, but not at the function level alone.

The input to the rules describing functional variation is provided by the specifications of incompatibility: whenever a value from one category is incompatible with a value from another category we need a rule to describe what happens when they clash in a formal expression. Thus, for example, the change of meaning specified by the formula 'telicness $\approx$ direction' is brought about by the incompatibility of telicness with imperfectivity; and the change of meaning specified by the formula 'future $\approx$ present' is brought about by the incompatibility of present meaning with perfectivity. The connection between incompatibility and functional variation in meaning can be expressed formally in this way:

$$(18) \quad \text{telicness} \Downarrow \text{imperfectivity} \rightarrow \text{telicness} \approx \text{direction}$$

(19) present $\Downarrow$ perfectivity $\rightarrow$ present $\approx$ future

The symbol ' $\rightarrow$ ' means here 'causes'. For these rules to be precise they require first of all a convention that stipulates that the variation of meaning on the right hand side of the arrow is caused by formal variation in the category to which the non-repeated value on the left hand side of the arrow belongs at the definition level (i.e. the variation of meaning between telicness and direction in (18) is caused by formal variation in the category to which imperfectivity belongs at the definition level, viz. aspect). We also need a 'form association' convention for linking the non-repeated value on the right hand side of the arrow (in (18): direction) with the language-specific form associated with the non-repeated value of the left hand side (in (18): imperfective form for imperfectivity), and the other right hand side value (telicness) with the formal counterpart (perfective form). In (19) this convention allows the association of future meaning with perfective form and present meaning with imperfective form. With these two conventions, rules like (18) and (19) offer elegant (i.e. simple but comprehensive) representations of categorial interplay, combining both compatibility relations and the functional variation that they give rise to. The rule in (18) should simply be read in this way: since telicness (from the action category) is incompatible with imperfectivity (from the aspect category), a perfective expression of a telic situation will alternate with an imperfective expression of a directed situation in a substitution test on the aspect category in language-specific data. And the rule in (19) states that since present time reference (from the tense category) is incompatible with perfectivity (from the aspect category), an imperfective expression of a present situation will alternate with a perfective expression of a future situation in a substitution test on the aspect category in language-specific data.

Compatibility relations can also give rise to the formulation of selection rules and constraints. Thus, for example, a compatibility relation such as:

(20) -ACTIONALITY $\Downarrow$ +ASPECTUALITY

can be restated as a selection rule or constraint:

(21) -ACTIONALITY >> -ASPECTUALITY

The symbol '>>' means 'co-select'. The formula in (21) should thus be read in this way: -ACTIONALITY *co-selects* -ASPECTUALITY (i.e. the selection of -ACTIONALITY triggers (or causes) the selection also of -ASPECTUALITY). In effect, the formula thus states a constraint on aspectual meaning: the feature -ACTIONALITY blocks the selection of a positive aspectual meaning.

In cases where the selection of a value from one category leads to the selection of a value from a limited set of values from another category, this can be stated as in the following example

(22) telicness >> perfectivity, -ASPECTUALITY

This formula states that telicness (from the action category) co-selects perfectivity *or* -ASPECTUALITY (from the aspect category). Finally, if the values of such a set are *ranked*, this is expressed by '>' (= 'ranked higher than'), as in the following example:

(23) x = punctuality > telicness

According to this ranking, punctuality is a more likely value for x than telicness.

6.5. Summary

In this chapter I have dealt with the notion of '(meta)category', with the problems involved in the description of form-meaning relationships, and with the question of how to present the results of one's analyses. The fundamental difficulty facing the linguist in any description of form-meaning relationships is the apparent complexity of language-specific data. Both form and meaning often seem very heterogeneous in character and thus resist our quest for a simple rationale for the relation between the two. Linguists often settle for either semantic minimalism (arguing for the simplest possible relation between form and meaning: one form – one meaning) or semantic multiplicity (arguing for the existence of a number of related or unrelated meanings for each form). In my

approach to the problem, I actually embrace both semantic minimalism and semantic multiplicity but place them on different levels of analysis. In this way, my approach is a structured one involving different levels and dimensions of analysis.

First of all I posit a distinction between 'grammatical marker' (i.e. the language-specific representative of a metalinguistic form) and 'manifestation form' (i.e. the actual physical manifestation form in a particular language): metalinguistic form is *monadic* (in the sense that there is a necessary, ad hoc one-to-one relationship between form and meaning) whereas language-specific manifestation forms are potentially, in fact characteristically, *non-monadic* (in the sense that there is typically a one-to-many relationship). In other words, at the general metalinguistic level of analysis I subscribe to semantic minimalism, basically as a research strategy, in my attempt to cope with language-specific semantic multiplicity (cf. chapter 4).

But there is also a different sense in which my approach is structured. Strictly at a language-specific level of analysis I distinguish between data which yields minimal formal and semantic pairs in the substitution test and data which yields variants with a more complex relationship. The former type of data reveals, or gives direct access to, the one-to-one relations of our metacategories and thus represents the *definition level* of our approach. The latter type of data reveals a complex relationship of meanings from different categories, a categorial interplay in which meanings are derived functionally, and thus represents the *function level* of our approach.

The supposition underlying this approach is that by operating with an absolute standard in terms of a minimalistic, conceptually simple (and thus manageable) universal level, it becomes possible to delimit language-specific complexity: not only does such an approach allow a principled distinction between simple, definition-level data and other data, by defining a function level it also posits that some or all complexity is the result of a principled functional interaction of the units in the minimalistic framework.

The chapter thus introduces a new approach to form-meaning relationships, and this inevitably calls for new terminology (such as

'definition level' and 'function level') and descriptive conventions (such as the formulae showing (in)compatibility relations and semantic changes at the definition and function levels of analysis). Such innovations are of course always tedious but I have tried to keep them as simple and relevant as possible. At the same time I have attempted to stay clear of formalism which implies allegiance to a particular pre-established linguistic theory, in the hope that this will give the approach wider appeal.

In the next chapter the task is to offer a more precise grammar of tense, aspect and action on the basis of the observations and guidelines laid out in this and the previous chapters.

7. The Metacategories of Action, Tense and Aspect

This chapter examines the categories of tense, aspect and action on the basis of English as the primary source-language. The methodological framework for the proposals and the formal representations are those introduced and argued for in the previous chapters.

7.1. Preliminary Identification of Category Concepts

We have already looked at some relevant data in our discussion of the locutionary agent's choice of verb form and, indeed, its significance for metacategories. We have also seen (especially in section 2.5) that basic to any description of verbal categories is the linguist's recognition of some sort of relationship between form and meaning in actual, language-specific data. That recognition may spark off a process of segmentation, co-ordination, differentiation and classification. The substitution test described in chapters 5 and 6 is an important instrument at the linguist's disposal when he is trying to cope with that process. In other words, looking at a broad range of data and substitutional variants in a language such as English may sharpen the linguist's sense of form-meaning relationships and lead to the setting up of grammatical categories in universal grammar and its general metalanguage.

This section puts theory into practice and tries to identify some of the important general category concepts in the analysis of verbal categories as a first step towards formulating a grammar of tense, aspect and action. The initial task in the process of establishing general metalinguistic categories is to consider some language-specific data in order to get some immediate impressions of what types of meaning are conveyed by predicators, alone or in conjunction with other clause functions. Here are some English sentences (marked as a-examples because we intend to let them serve as input variants in a number of substitutions):

(1a) James *lives* in Brisbane.

- (2a) I *believed* in her, foolish as I *was*.
- (3a) She *got up* at seven.
- (4a) The pianist *was finishing* the curious little piece.
- (5a) His wife *reads* the *Financial Times*, believe it or not!
- (6a) She *left* the party, still confused about his anger.
- (7a) They *walked* along the beach, arm in arm.
- (8a) She *was coming* towards me, as if in slow-motion.
- (9a) We *discussed* their predicament at the last meeting.

There is, of course, a very conscious selection of examples in (1a) to (9a): they all have the form of a positive statement, there are a very limited number of different verb forms (simple and progressive forms, present and past forms), and the subject matter expressed is fairly straightforward and matter-of-fact. But that does not really affect the analytic principles involved in what I have to say about them.

When examining the sentences in (1a) to (9a), one gets a clear sense of communicative function: they can all be used to express situations in a broad sense (including facts, conditions, events, actions, etc.) – this property is obviously related to the fact that they are statements. As argued in section 3.1, situations expressed by language are not necessarily 'real' in an objective sense but belong rather to the locutionary agent's 'projected world', i.e. the world *as conceived* by the locutionary agent. There may be strong or weak links, identity, or possibly even no links at all, between the 'real world' and the 'projected world'. But being restricted by the nature of human cognition and experience, we simply cannot determine these things in an objective manner. Even if we could, mappings of the 'real reality' would probably be irrelevant to our linguistic analyses.

There are, of course, other possible worlds than the 'projected world' of reality in which situations may be said to 'exist'. An important example of this is the fictional universe, which we find in most literature (for discussion, see Bache 1986b), and significantly, in lies. But these 'modes of communication' we will disregard – despite the fact that examples (1a) to (9a) actually could be instances of language in the fictional mode or non-truths.

When we consider some of the possible projected-world situations expressed by examples (1a) to (9a), we immediately note a number of similarities and differences. At one level of analysis, the nine situations are completely different, being expressed by sentences with nine different lexical verbs. However, as already pointed out, certain formal similarities give us a sense of unity across subsets: simple versus progressive forms, present forms versus past forms. More importantly in the present context, however, it is possible to classify the nine examples according to major situation types. Some of the situations expressed are fairly concrete 'goings on' or events in the projected world: e.g. the 'leaving of the party' in (6a), the 'walking along the beach' in (7a) and her 'coming towards me' in (8a): such situations are fairly easy to conceptualize (in the sense that it is easy for us to get a mental image of the situation taking place). Others seem far less concrete: the 'living in Brisbane' in (1a), the 'believing' and 'being foolish' in (2a), and the 'reading of the *Financial Times*' in (5a) – such situations are much harder to visualize. Although 'reading' can be construed as a fairly concrete activity, in (5a) the predicator seems to express not such an activity but rather the (implied) agent's *inclination* to read a certain paper, or her reading *habits*, and as such the situation expressed is hard to visualize. The ambiguity of certain predicators between a concrete and less concrete situation is present in other examples, too, such as (3a), where the 'getting up at seven' could be a single specific event or, in fact, a regularly occurring event, a habit, and hence could be interpreted as just as stative as 'living in Brisbane'.

Further classification is tempting within the two major groups of examples established. Among those interpreted as referring to fairly concrete situations, some express situations of short, point-like, condensed impact: the 'getting up at seven' in (3a) (in the non-habitual reading) and her 'leaving the party' in (6a). Others seem to stretch out over time: obviously so in their 'walking along the beach' in (7a), her 'coming towards me' in (8a) and even our 'discussion' in (9a), but also in the pianist's 'finishing of the curious little piece' in (4a), although the duration here seems to be fairly limited. The

durative element of these examples gives them some sort of affinity with the examples that exhibit less concrete situational reference: 'living', 'believing', 'being foolish' and the '(habit of) reading' in examples (1a), (2a) and (5a) all extend over time. This last group also invites subclassification: 'living' is a physical state, 'believing' is a mental state, 'being foolish' is a personal characteristic, and 'reading' (as well as the 'getting up at seven' in one of the readings of this example) is a habit characterizing a particular human being.

Our sense of the situation-referring property of some of the examples in (1a) to (9a), as well as our sense of the contours of a *taxonomy* of situations, is immensely sharpened if we perform various formal substitutions on the data (e.g. along the simple/progressive axis):

- (3b) She *was getting* up at seven.
- (4b) The pianist *finished* the curious little piece.
- (5b) His wife *is reading* the *Financial Times*, believe it or not.
- (6b) She *was leaving* the party, still confused about his anger.

Here it emerges that by *changing the verb form of the a-examples, we may change the type of situation expressed*. In (3b), the 'getting up at seven' is no longer represented as punctual or condensed but is now stretched out over time and viewed as a process or activity directed towards a certain goal – in this respect it is now similar to (4a) (*The pianist was finishing the curious little piece*). The same characterization essentially applies to (6b): the actual 'leaving' is no longer part of the referential scope of this example but rather a point towards which the extended situation is directed. The converse seems to hold for example (4b). Here the extended, though temporary, business of 'getting finished' in the original a-example is condensed and summed up in the terminal point of 'finishing'. A different kind of change is involved in (5a) and (5b). Whilst the a-example is habitual in meaning and thus situationally abstract, the b-example is fairly concrete, expressing a specific on-going activity (in one of the more obvious readings of this example).

The situation-referring property of language exemplified in (1a) to (9a), as well as the substitutional variants in (3b) to (6b), is part of what is often referred to as the *propositional semantics* of sentences in that it pertains to the specific information conveyed about "who did what to whom, when, where, why, how, etc." (Givón 1984:31). Propositional semantics comprises at least two important inter-related types of meaning: a) type of situation expressed ('what'); and b) participants (or arguments, or valency roles) ('who', 'to whom', 'when', 'where', 'why', 'how', etc). The situation-referring property of language manifests itself primarily in the former type of propositional semantics and thus has the predicator (verb group) as the kernel unit of analysis although the relationship between the predicator and participants in actualized clause functions is often of decisive importance to our interpretation of the type of situation expressed by the predicator.

Situational referents – defined as image-based constructs, cf. section 3.1 – must be accounted for in the description of predicators: not only is the situation-referring property an essential communicative function of sentences but data invites an analysis in terms of certain types of situational referent and variation within such a taxonomy of situation types seems somehow related to grammatical form. In other words, there are grounds for establishing – if only tentatively – a universal category in our general metalanguage. Not surprisingly, in view of our extensive discussion of data in previous chapters, the category which I suggest must be established in universal grammar and its general metalanguage for the description of situation types is the category of action with the general category concept of ACTIONALITY.

While it is imperative to capture the situation-referring property in our general metalanguage, there are clearly other meanings pertaining to the predicator which must be accounted for in the analysis of examples like (1a) to (9a). Just reading through these sentences, even without manipulating them in a substitution test, we get a clear sense of certain time properties coinciding with the form of the predicator. Examples (1a) (*James lives in Brisbane*) and (5a)

(*His wife reads the Financial Times, believe it or not*) express a *present* state and a *present* habit, respectively. The other seven examples, e.g. (2a) (*I believed in her, foolish as I was*) and (3a) (*She got up at seven*) express *past* situations: in (2a) a *past* mental state and a *past* personal characteristic; in (3a) a *past* punctual event or *past* general habit.

Again our sense of what the important distinctions are is sharpened when we subject the data to our substitution test (e.g. along the formal present/past axis). Consider the following variants:

- (1c) James *lived* in Brisbane.
 - (2c) I *believe* in her, foolish as I *am*.
 - (3c) She *gets up* at seven.
 - (4c) The pianist *is finishing* the curious little piece.
 - (5c) His wife *read* the *Financial Times*, believe it or not.
- etc.

In example (1c) the state of 'living in Brisbane' is now located in the past, the implication being that James no longer lives in Brisbane. In (2c) and (4c), the mental state of 'believing in her', the personal characteristic of 'being foolish', and the activity of 'finishing the curious little piece', respectively, are now represented as present situations. Note that in example (3c), matters are slightly more complicated: while (3a) (*She got up at seven*) is ambiguous between a specific past event reading and a general past habit, example (3c) is ambiguous between a present general habitual reading and a *future* specific event reading. It is impossible, or very difficult, to construe the situation expressed by (3c) as a specific present event. Finally, in example (5c), it is interesting to note that, again, the change in time reference is not the only possible change: (5a) expresses a present situation whereas (5c) expresses a past situation, but on top of this there is a potential actional change from general habit to specific event, (5c) being ambiguous between these two readings.

It seems reasonable to conclude that 'time' is another important meaning which must be accounted for in our description of predicates. Not only are there clear temporal meanings attached to

sentences like (1a) to (9a), viz. present or past, but *variation of time value seems very much concomitant with change of verb form in our substitution test*. There are grounds for establishing – again on a very tentative basis – a general metacategory of tense with the general category concept TEMPORALITY.

Having tentatively identified the general category concepts of ACTIONALITY and TEMPORALITY and decided to posit action and tense as possible metacategories in universal grammar, let us now turn to a third, subtler type of meaning pertaining to the predicator. Going through examples (1a) to (9a) once again, we get the impression that the locutionary agent employs different ways of expressing situations apart from the fact that situations may be represented as belonging to different types (action) or different times (tense). Sometimes, as in examples (1a) (*James lives in Brisbane*), (2a) (*I believed in her, foolish as I was*) and (5a) (*His wife reads the Financial Times, believe it or not!*), the situation is represented in a neutral, detached, factual way: the locutionary agent is simply offering a piece of information about some state or habit, without conjuring up intense mental images of how these situations manifest themselves or are realized in the locutionary agent's projected world of reality.

Not so in e.g. (4a) (*The pianist was finishing the curious little piece*) and (6a) (*She left the party, still confused about his anger*). In the first of these examples, the locutionary agent invites the addressee to envisage the situation at close range, from within, as it unfolds, by representing it as a process. In example (6a), the locutionary agent again offers a definite focus on the situation: 'her leaving the party' is represented as a complete event, to be viewed from without, with no concern for its internal structure. The difference between the two examples, apart from distinctions relating to ACTIONALITY and TEMPORALITY, is thus one of representational focus and concerns the way in which the locutionary agent chooses to represent the situation.

The first impression one gets when looking at examples (1a) to (9a) from the point of view of presentational focus is that gram-

matical form is crucially involved. Sentences with the simple form seem to be either fairly *neutral* (as in (1a), (2a) and (5a)) or *holistic* (as in (3a) (*She got up at seven*) in the non-habitual reading), (6a) (*She left the party, still confused about his anger*), and possibly (7a) (*They walked along the beach, arm in arm*) and (9a) (*We discussed their predicament at the last meeting*). Conversely, sentences with the progressive form seem to offer an internal situational focus (as in (4a) reviewed above and (8a) (*She was coming towards me, as if in slow-motion*)).

Our sense of these focus distinctions is greatly enhanced if we subject the data to a substitution test where simple forms are replaced by progressive forms, and vice versa:

- (1b) James *is living* in Brisbane.
- (2b) *I *was believing* in her, foolish as I *was being*.
- (3b) She *was getting* up at seven.
- (4b) The pianist *finished* the curious little piece.
- (5b) His wife *is reading* the *Financial Times*, believe it or not.
- (6b) She *was leaving* the party, still confused about his anger.
- (7b) They *were walking* along the beach, arm in arm.
- (8b) She *came* towards me, as if in slow-motion.
- (9b) We *were discussing* their predicament at the last meeting.

Apart from (2b), which is not acceptable under normal circumstances, there is a clear change of presentational focus in these substitutional variants. Often, as already pointed out above in connection with (3b) to (6b), there is at the same time a change of ACTIONALITY. In (1b), the change of form from simple to progressive present results in a change from 'unlimited state' to 'temporary state': this semantic change comes about when internal presentational focus is added to the stative concept of 'place of residence' associated with the simple form *lives*. Most remarkable, however, are examples (7b) to (9b), where in fact the only semantic change between the substitutional variants seems to be one of situational focus. In these examples, the situations of their 'walking along the beach', her 'coming towards me' and our 'discussing their

predicament' remain the same whether they are expressed by a simple form or a progressive form: in each case, both formal variants express extended human activity where the individual phases making up the situation are weighted equally (i.e. no importance is attached specifically to e.g. the terminal point, as in *She left/was leaving the party, still confused about his anger*). Nor is there a difference between these variants from a temporal point of view, all the situations being placed in the past irrespective of substitutional form. The difference between (7a) to (9a) and (7b) to (9b) is that the examples with the simple past form offer a holistic, or neutral, situational focus whereas the examples with the progressive past form convey a close-up, internal situational focus.

There are some additional interesting points in connection with the question of presentational focus in examples (1a) to (9a) and their substitutional variants. Thus, strikingly enough, it is the least concrete situations (my 'believing in her' and my 'being foolish' in example (2a-c)) that resist variation in situational focus the most. There could well be a conceptual explanation for that: the harder a situation is to visualize or conceptualize as a situation going on or taking place, the harder it is for the locutionary agent to vary the focus with which he represents this situation. Note also that substitutions other than the one involving the simple/progressive axis may elicit changes in situational focus, though typically only in connection with other changes. For example, in a substitution involving the simple present/simple past axis, we get cases like (3a,c) (*She gets/got up at seven*) and (5a,c) (*His wife reads/read the Financial Times, believe it or not*). In such examples, the present form invites an interpretation in terms of a habitual situation with a neutral situational focus (neutral because how can one represent a habit in any other way?). The past form, however, is ambiguous between a habitual reading and a specific-event reading: if the situation is interpreted as a habit, the situational focus is neutral as in the present tense variant; if the situation is interpreted as a specific event, the expression allows of a holistic situational focus.

Although in some cases, as we have seen, there seems to be a close relationship between the type of situation (ACTIONALITY) and the presentational focus on the situation expressed, it is important to distinguish between the two types of meaning. One way of describing the difference is to say that while ACTIONALITY concerns the (image-based) *referent* of the predicator (plus relevant participants), i.e. *what* the locutionary agent talks about, situational focus concerns the *reference* of the expression, i.e. the *way* in which the locutionary agent talks about whatever he is talking about. ACTIONALITY is an important part of propositional semantics whereas, basically, situational focus has nothing to do with propositional semantics.

Having noted the presence of meanings relating to situational focus as part of our 'first impressions' of examples (1a) to (9a), and having established a certain relationship between these meanings and grammatical form, as well as their basic autonomy from the other types of meaning discussed, we may conclude our discussion of situational focus by positing a third metacategory, the category of aspect with the general category concept ASPECTUALITY to cover the more specific meanings pertaining to the focus with which the locutionary agent presents situations.

Obviously, there are other relevant meanings to discuss in connection with the sentences in (1a) to (9a), such as those relating to modality, i.e. the locutionary agent's attitude towards the propositional content of the expression. My selection of examples and substitutions ensured that such considerations probably did not enter most readers' first impressions of the data. But we need only compare examples like *James lives in Brisbane* versus *James may live in Brisbane* and *She got up at seven* versus *She might get up at seven* to see that speaker attitude is obviously relevant in an exhaustive analysis of the data. However, I have deliberately chosen to restrict myself to the three categories and category concepts tentatively identified above: action, tense and aspect with the general category concepts ACTIONALITY, TEMPORALITY, and ASPECTUALITY, respectively. The three categories and category

concepts are rather traditional and completely different terms might have been used. However, what is important is not what terms are used but the meaning and function assigned to them within the descriptive framework proposed. The next section deals with the domains occupied by these categories in language and their subsequent place and relative order in our universal model.

7.2. Categorial Rank and Order of Description

In our discussion of descriptive representations in section 6.4.6, we noted that there is a certain amount of redundancy in a description which deals separately with each individual category in the general metalanguage and its functional interplay with other categories. Thus, for example, if we describe the interplay between aspect and tense twice (once in our description of the aspect category – from the point of view of how aspect values relate to tense values in terms of (in)compatibility – and once again in our description of the tense category – from the point of view of how tense values relate to aspect values in this respect), we fail to observe the usual requirement of descriptive simplicity and economy. We do not need both (1) and (2):

- (1) present $\Downarrow$ perfective
- (2) perfective $\Downarrow$ present

Though in a separate study of a particular category it may be practical to treat the category in question as primary, in a comprehensive description of a system of categories, like the one I am trying to offer, it is desirable to determine, if at all possible, the domain of each category and its subsequent rank in the universal model. This is the task that I want to undertake in this section.

It is important to emphasize the fact that what we are primarily concerned with is the rank of tense, aspect and action in our *universal* grammar, rather than in any particular language, although certain correlations with particular languages will be indicated. Needless to say, the three categories are coded in many different ways in different languages and each of them may gain some sort of

formal supremacy over the others: in some languages, tense seems formally dominant in the verb system, in others aspect is the dominant category – depending, of course, on one's definitions of these categories. In this sense, Russian is – traditionally, at least – regarded as an aspect language which also has tense, whereas English is often regarded as a tense language which also has aspect. Such differences are inevitable but should not prevent us from trying to determine some sort of 'natural order' of categories.

As we cannot rely wholly on language-specific data in these matters, we have to resort, once again, to perhaps rather subjective speculations about the nature of the general concepts of the categories under scrutiny, i.e. the category concepts tentatively identified in section 7.1: TEMPORALITY, ASPECTUALITY and ACTIONALITY. As we have seen, TEMPORALITY concerns the location in time assigned to situations, ASPECTUALITY the focus with which the locutionary agent represents situations, and ACTIONALITY the type of situation expressed. Though at the present stage in my exposition, these definitions are fairly tentative, based on 'first impressions' of a very limited set of data, they clearly characterize tense, aspect and action in terms of different, rather distinct *types* of meaning and thus allow us to ponder the question of the status and rank of these categories already at this point.

If, as a preliminary step, we assume that each of the three categories has a different rank in terms of relative centrality in language and, consequently, in our universal model, then there are six possible ways of ranking the three categories:

- (3a) action > tense > aspect
- (3b) action > aspect > tense
- (3c) tense > action > aspect
- (3d) tense > aspect > action
- (3e) aspect > action > tense
- (3f) aspect > tense > action

On the basis of certain conceptual properties of tense, aspect and action, as defined above, as well as certain general observations on the manifestations of these categories in actual languages, I shall opt for the ranking in (3a). In other words, I shall argue that action is more central than tense, which, in turn, is more central than aspect. When considering the question of rank it is always important to remember that any ranking is dependent on how the categories are defined and on what exactly we mean by 'centrality'. Different definitions of categories and different methodological priorities or approaches to the communicative functions of language may well lead to different rankings.

Any relative ranking of items in a system is based on the presence or absence of certain properties or different degrees of a certain shared property and thus presupposes a comparison of the items involved in terms of similarities and differences. There is no obvious limit to the ways in which the items of a system can be ranked. It seems to me, however, that if the items share a basic functional property characterizing the system as a whole, that property can be legitimately regarded as the most relevant standard of 'centrality'. Different as they are, action, tense and aspect share one such property, namely what might be termed 'situation-bound': they are all three somehow concerned with the locutionary agent's expression of situations in some projected world, though in very different ways. The common denominator of the three categories is thus basically a referential one concerning the relation obtaining between language and the projected world. This indicates that the standard of 'centrality' in our ranking of categories can be appropriately defined as *propositional*, pertaining to the basic communicative function of conveying information about the projected world, as distinct from other communicative functions or 'modes'. This does not mean that the categories of action, tense and aspect are irrelevant in the analysis of, say, the socio-cultural, psycho-emotive and aesthetic functions of language, but simply that the basic ranking of these categories should be determined on the basis of considerations of their role or contribution to language

within a propositional framework. In other words, we should ask 'what is the importance of these categories to situation-referring expressions?' and seek to determine their relative ranking in accordance with the answer.

Against this background, action is indeed more central than tense, which, in turn, is indeed more central than aspect. Note first that we cannot conceptualize or visualize a situation without at the same time recognizing it, consciously or subconsciously, as an instance of a certain type. This means that the locutionary agent cannot express a situation which is *not* subject to a characterization in terms of type of situation, whether or not action is in fact marked formally in the language used by the locutionary agent. Thus any situation expressed by a natural language construction is susceptible to a semantic characterization in terms of action (even if only by the feature -ACTIONAL). In other words, from a conceptual point of view, there is a close, probably inevitable relationship between 'situation' and 'type of situation'. The same does not seem to hold true of either the relationship between 'situation' and temporal meanings, on the one hand, or the relationship between 'situation' and aspectual meanings, on the other. It is quite possible to conceive of, or think about, situations without necessarily locating them in time or assigning any representational focus to them. In many, possibly all languages, the locutionary agent even has regular, institutionalized ways of coding such situations; in English this is chiefly through the use of non-finite verbal expressions and nominalizations, as in the following set of examples:

- (4a) Jack *arrived* safely in Rome last night.
- (4b) *To arrive* safely in Rome requires careful planning.
- (4c) A safe *arrival* in Rome is always given first priority.

In example (4a) the punctual situation of 'Jack arriving in Rome' is located in the past and represented with an external holistic situational focus by the locutionary agent. Technically the situation is conceived of and expressed by the locutionary agent as +ACTIONAL (more specifically punctual), +TEMPORAL (more specifically past), and +ASPECTUAL (more specifically perfect-

ive). In example (4b) with the non-finite, infinitive subject clause, we have exactly the same type of situation as in (4a) but this time the situation of 'arriving in Rome' is not located in time. Nor is it represented with any particular situational focus: any sense of completion is derived purely from our conception of an arrival as a punctual situation. Technically speaking, the expression in (4b) is +ACTIONAL but -TEMPORAL and -ASPECTUAL. The same applies to example (4c), where the situation of 'arriving' is expressed in a deverbal, nominalized head of a subject noun phrase.

Even -ACTIONAL situations can be thought of independently of time and focus, as shown by the following sets of examples:

- (5a) Marge *believed* in Jack.
- (5b) *To believe* in Jack must be difficult.
- (5c) Marge's *belief* in Jack may surprise everyone.
- (6a) Phil and Penny *live* in North Epping.
- (6b) *To live* in North Epping must be really nice.
- (6c) Their *living* so far away may be a bit of a nuisance.

These examples are similar to (4a) to (4c) above with respect to TEMPORALITY: the locutionary agent codes a temporal value (past) in the a-examples but a non-temporal one in the non-finite and nominalized expressions in the b- and c-examples. There is a small difference in ASPECTUALITY between the examples in (4) and those in (5) and (6), in that (5a) and (6a), unlike (4a), have a neutral situational focus like the b- and c-examples but this does not affect my argument. Despite the negative actional marking of the situations of 'believing' and 'living' expressed in these sentences, they, too, represent a type of situation (i.e. mental state and physical state, respectively).

In short, as a general category concept, ACTIONALITY, whether positively or negatively marked, is independent of TEMPORALITY and ASPECTUALITY, and there are regular, institutionalized means of coding which reflect this in natural language. Conceptually, TEMPORALITY and ASPECTUALITY are far less independent: we cannot conceive of, or visualize, the location in

time of a situational referent or the focus with which the locutionary agent represents it without at the same time thinking about the situation itself and once we think of a situation it is immediately associated with a certain type. In a more general way, it is of course always possible to conceive of time and situational focus in terms of abstract properties – in fact this is what we do when we try to define the general category concepts of tense and aspect – but that hardly invalidates my point, namely that a particular situation may be recognized conceptually in terms of type independently of time and focus, but not vice versa.

Having argued in favour of treating action as a more central category than both tense and aspect, the next question to consider is the relative centrality of these two other categories. Again we may begin by pondering over the conceptual nature of the categories in question. As already noted, like action both tense and aspect allow of independent abstract conceptualization. This is in fact what makes it possible for us to define the general category concepts in the first place. If we think of a particular situation, say, 'Jack kissing Sally goodbye', it is quite easy to conceptualize it as located at a particular point in time without any particular representational focus. It is much harder to visualize a particular situation in terms of representational focus without any particular location in time. True, some people may have a mental picture of a prolonged tender kiss, others of a perfunctory, rather superficial and strictly punctual kiss, and without necessarily relating the image to a particular time. But such different conceptualizations have little to do with the aspectual values of imperfectivity and perfectivity, respectively. In either case, the visualization is of the situation itself, not the way it is represented by a locutionary agent, and is thus a question of action, not aspect. Both tense and aspect involve *assigned* properties rather than *inherent* properties but while temporality is assigned to the situation and thus felt to be a property of the situation within the framework of some projected world, aspectuality is assigned to the situation-referring *expression*. Like action, tense seems to concern the potential *referent* of an

expression. By contrast, aspect concerns situational *reference* rather than situational referent.

Although this account is somewhat simplified, as will become clear in the individual sections on these categories below, it may serve to throw light on the way we conceptualize the meanings that we attach to tense and aspect. And here I would argue that from a propositional point of view, tense is more central than aspect. Variation in action and tense always affects *what* is conveyed by the locutionary agent through a linguistic expression, the proposition as such. But variation in aspect is conceivable without this necessarily affecting the proposition. It is quite possible to think of a situation at a particular point in time represented by the locutionary agent in two, or even three, different ways: with a holistic, an internal or a neutral focus, without changing the informational content of the expression. But we cannot visualize variation in type of situation or its (relative) location in time without this resulting in a change of informational content.

The ranking of tense and aspect proposed here is supported by certain observations based on language-specific data. Typically, -ACTIONAL expressions, whether stative or habitual in meaning, are compatible with an assignment of positive temporal value but, as already noted in section 7.1, seem to block a positive representation of situational focus, let alone variation in situational focus. Thus stative examples like *I believe in her, foolish as I am* and habitual examples like *She gets up at seven* and *His wife reads the Financial Times, believe it or not* allow a change of temporal value without this necessarily affecting the stative or habitual meaning of the examples (*I believed in her, foolish as I was, She got up at seven* and *His wife read the Financial Times, believe it or not*), though it may open for alternative actional readings (as in the last two examples, which may also be interpreted as expressions of specific situational occurrences). But, significantly, no formal substitution will preserve the reading of such examples as stative or habitual (i.e. as -ACTIONAL) and at the same time change their -ASPECTUAL meaning to a positive aspectual meaning (perfect-

ivity or imperfectivity): **I am/was believing in her, foolish as I am/was being* is no good; *She is/was getting up at seven* displays a definite change of ACTIONALITY from habitual to specific occurrence, and so does *His wife is/was reading the Financial Times, believe it or not*. In Russian, a very similar pattern can be identified, although there it is the imperfective form rather than the perfective form that is used to express -ACTIONALITY (stativeness or habituality) (the difference between English and Russian in this respect seems to be one of markedness relations).

The phenomena observed in the data reviewed above may be described in co-selection rules like the following:

(7) -ACTIONAL >> -ASPECTUAL

(8) -ACTIONAL >> ±TEMPORAL

These co-selection rules should be understood in this way: an expression marked as -ACTIONAL is always to be marked also as -ASPECTUAL; an expression marked as -ACTIONAL allows of a free interpretation of temporal value: it may be -TEMPORAL or it may have a specific +TEMPORAL value. In other words, -ACTIONALITY constitutes an 'institutionalized constraint' on ASPECTUALITY but not on TEMPORALITY. These relations not only make sense from a conceptual point of view, they offer some sort of support for the view that tense is more central than aspect: the more independent a category is in relation to the other categories in the system in which it is to be ranked, the more central it is. As we have seen, action is the most independent of the three categories, allowing expression without consideration of tense and aspect (chiefly in non-finite and nominalized expressions): there are no conceptual or institutionalized constraints on ACTIONALITY. Then follows tense, which is conceptually dependent on action but which may operate on both -ACTIONAL and +ACTIONAL expressions. And, finally, we have aspect, which is conceptually dependent on an actional reading of the situational referent.

Note finally that more support in English data for this ranking of tense and aspect is found in examples (7) to (9) in section 7.1: *They*

walked/were walking along the beach, arm in arm, She came/was coming towards me, as if in slow-motion and We discussed/were discussing their predicament at the last meeting. These examples show that it is possible to change the focus with which the locutionary agent represents situations without this affecting the information conveyed, namely the proposition itself.

The following sections deal with the categories of action, tense and aspect separately and in the order of centrality identified above.

7.3. The Metacategory of Action

Category concept

The traditional term for the category of action is the German 'Aktionsart'. There is in Germanic and Slavonic philology a long tradition of research dealing with this category and its relationship with tense and aspect (cf. Streitberg 1891, Brugmann 1904, Leskien 1909, Agrell 1908, Jacobsohn 1926 and 1933, Hermann 1927 and 1933, Porzig 1927, Koschmieder 1928/29, Goedsche 1940, Sørensen 1943, Rundgren 1959, Pollak 1970, Forsyth 1970 and many others). Aktionsart is often confused with aspect, and the autonomy of these two categories is, regrettably, still a point of contention in modern linguistics (cf. Bache 1982 and 1985a). Brugmann's definition of action from 1904 as "Die Art und Weise, wie die Handlung des Verbums vor sich geht" (Brugmann 1904:493), i.e. the manner in which a situation "develops or proceeds in particular circumstances", as Forsyth (1970:19) formulates it, is excellent in that it unambiguously identifies action as a category pertaining to the potential situational *referent* of linguistic expressions rather than to the locutionary agent's representation of situations. My own initial characterization of action, offered in section 7.1 above, differs only slightly from Brugmann's: it focuses more directly on the notion of 'typology of situations', arising from procedural characteristics of situations, and it is formulated within a conceptual framework, where situations are defined as belonging to a projected world rather than the real world. Like Brugmann, I define action as

pertaining specifically to the situational referent of linguistic expressions as distinct from the situational focus, thus providing the basis for the categorial autonomy of action and aspect.

The following formulation of the general category concept will serve as our definition of action:

- (1) ACTIONALITY concerns the classification of situations into types according to the procedural characteristics assigned to them in the projected world.

As we saw in section 7.2 above, there is a close conceptual relationship between 'situation' and 'type of situation' in the projected world. This has certain repercussions for the category of action as a grammatical category. While there is no doubt that action must be established as a category in our universal grammar and the general metalanguage, it is in many respects a rather extraordinary category. Before specifying the metalinguistic inventory of the action category, I shall discuss a number of these extraordinary features.

The role of lexicalization

Let us look first at the relationship between the action category and lexicalization in natural language. Though action is the most central of the three categories under analysis from a propositional semantic point of view (cf. section 7.2 above), it is at the same time closely related to lexicalization in many, if not all, of the languages of the world, with or without additional language-specific grammaticalization. Type of situation is very much a question also of *what lexical verb* the locutionary agent selects for the expression of a particular situational referent. Thus verbs in English like WALK, RUN, READ, BUILD, TALK, WRITE, WORK, THINK, RAIN, SMOKE, WATCH, REMAIN, CONTINUE, PERSIST, RETAIN, LIKE, LOVE, etc. are typically used to express durative situations, i.e. situations conceived of as taking time, as in:

- (2a) This morning we *walked* for hours without talking.
- (3a) He *was reading* when Sasha entered.
- (4a) The student *wrote* a paper on the split infinitive.

(5a) My dad *worked* seven hours last night.

(6a) They *watched* her climb the hill.

etc.

Conversely, verbs like SWITCH, DROP, CLOSE, DISAPPEAR, HIT, POP UP, COLLAPSE, FALL, DIE, CATCH UP, REACH, CRASH, TURN ON, BEGIN, START, FINISH, STOP, etc. are typically used to express punctual situations, i.e. situations conceived of as taking up an absolute minimum of time, as in:

(7a) He *switched* from Danish to English.

(8a) Nicolai *dropped* another glass on the floor.

(9a) Stefan *fell* on the bridge.

(10a) The two cars *crashed* in the second round.

(11a) Sasha *started* crying again.

etc.

This propensity of verbs to appear in expressions with certain types of situational referent has led many scholars to operate with terms like 'durative verbs', 'punctual verbs', etc. However, such terms are misleading on several counts. First of all, it is clear that the actionality of examples can be changed, in some instances drastically, without changing the choice of lexical verb:

(2b) We often *walked* for hours without talking.

(3b) He *was reading* the novel when Sasha entered.

(4b) The students always *wrote* a paper on the split infinitive within the first couple of weeks of the grammar course.

(5b) My dad *worked* seven hours every day.

(6b) They *watched* her weekly performance for many years.

In example (3b), the situation expressed is no longer conceived of as simply durative but also directed towards a natural completion: this interpretation is the result of adding the direct object *a novel*. In the other b-examples the situations have become habitual as a result of the combination with appropriate adverbials (*often, always, every day, for many years*). Similarly manipulated, examples (7a) to

(11a) also change meaning from 'particular occurrence' to 'habitual occurrence':

- (7b) He usually *switched* from Danish to English when he wanted to tell his wife a secret.
- (8b) Nicolai always *dropped* a glass on the floor to annoy his parents.
- (9b) Stefan often *fell* on the bridge in winter.
- (10b) The computer program was designed in such a way that the two cars always *crashed* in the second round.
- (11b) Sasha *started* crying whenever we discussed her parents.

Other changes occur if we change the form and/or the context of the verbs in these examples:

- (7c) He *was* imperceptibly *switching* from one dialect to another.
- (8c) Nicolai *is* clearly *dropping* the project.
- (11c) Sasha *was starting* to cry again.

Examples (7c), (8c) and (11c) express distinctly durative situations despite the fact that the locutionary agent employs so-called 'punctual verbs'.

In descriptions of landscapes, so-called punctual verbs, as well as durative activity verbs, are often used to express invariable physical states as in the following examples (from Fowles, *The French Lieutenant's Woman*):

- (12) When he turned he saw the blue sea, now washing far below; and the whole extent of Lyme Bay reaching round, diminishing cliffs that *dropped* into the endless yellow sable of the Chesil Bank.
- (13) The path *climbed* and *curved* slightly inward beside an ivy-grown stone wall.
- (14) But it was not a sun-trap many would have chosen. Its outer edge *gave on* to a sheer drop of some thirty or forty feet into an ugly tangle of brambles. A little beyond them the real cliff *plunged* down to the beach.
- (15) To the west sombre grey cliffs, known locally as Ware Cleeves, *rose* steeply from the shingled beach where Monmouth entered upon his idiocy. Above them and beyond, stepped massively inland, *climbed* further cliffs masked by dense woods.

- (16) A few seconds later he was himself on the cart-track back to Lyme. Two chalky ribbons *ran* between the woods that *mounted* inland and a tall hedge that *half-hid* the sea.

Could it be that the effect of using such verbs for the vivid expression of states is to indicate human involvement and perception? Though still states even in the projected world, 'dropping', 'plunging', 'climbing' or 'rising', when used about a cliff, may represent our dynamic perception of the contours of the cliff, the way we draw the mental picture of the cliff, or, alternatively, they may represent what direct human experience with the cliff might entail: dropping or plunging down from it or climbing it and rising over it. For an interesting interpretation of such examples, see Langacker 1991:157ff.

Even if we stick to strictly referential properties of expressions within the propositional function of language, it is clear that there is no simple one-to-one relationship between lexical verb and actional value. Despite the fact that many verbs seem more intimately related to some actional values than to others, such propensity is difficult, if not impossible, to define in isolation, at a purely lexical level, and is easily overridden by morphological, syntactic and/or contextual factors in actual discourse. This means that such terms as 'punctual verbs', 'durative verbs', etc. have little theoretical foundation and are of no practical use, and should hence be avoided. We shall instead talk about verbs having a certain *actional potential*. Thus, for example, verbs like HIT, DROP, START, etc. have a clear punctual potential whereas verbs like RUN, WRITE, DISCUSS, etc. have a clear durative potential.

As we have seen, in English there is often actional variation in relation to a lexeme as a result of *variation in grammatical form* (cf. examples (7c), (8c) and (11c)), *variation in (intra- or extra-sentential) context* (cf. the a- and b-examples in (2) to (11)), or *variation in communicative function* (cf. examples (12) to (16)). Nevertheless, choice of lexical verb is important to our conception of actional value. Strictly speaking, the choice of a particular lexical verb is the result of the locutionary agent's judgement of what

general type of situation is involved, e.g. 'running' as distinct from 'walking', 'reading', 'smiling', etc. but not how the particular situation expressed comes about in the projected world. In other words, lexicalization provides the basic building blocks for a situation-referring expression and hence the very basis for the category of action. It thus gives the linguist, and the addressee, a first approximation to what type of situation the locutionary agent wants to express. Actionality is what we get when a lexical verb is placed in a propositional framework, assuming a referential property (i.e. establishing an image-based link between language and projected world). Only then can the category of action be brought fully into the linguistic analysis. Lexicalization provides a typology of situations independent of reference, a detailed standard catalogue of items, each representing an abstract type of situation with a diverse referential potential. Action represents a first step away from lexicalization toward grammaticalization of situational referents. It provides regular, cross-lexical patterns in the realization of the referential potential of lexical items

The close ties between lexicalization and the category of action may account for some of the other extraordinary features of the action category that I shall now address: a) the lack of minimal pairs and b) the multidimensionality of actionality.

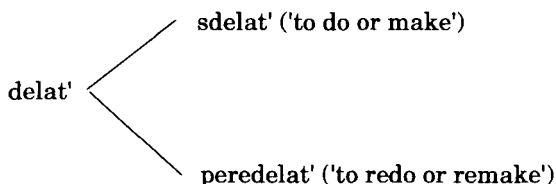
The lack of minimal actional pairs

The action category differs from tense and aspect in that it is not immediately accessible to the linguist in terms of the distinction between the definition level (as provided by minimal formal and semantic pairs) and the function level (as provided by categorial interplay). This is in part the result of the referential centrality of action relative to tense and aspect (cf. section 7.2 above on the ranking of these categories): tense and aspect operate on action rather than the other way round; and this means that tense and aspect are appropriately defined in relation to action and each other with a definition level (when the relation is neutral) and a function level (when the relation is non-neutral). Variation of actional value is seldom completely neutral from the point of view of tense and

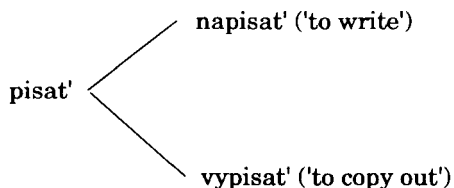
aspect. The expression of particular actional values is a communicative goal regularly and typically achieved at the function level of tense and aspect. In other words, the function level of tense and aspect can in fact be regarded as the definition level of action.

But matters are somewhat more complex. At first blush it seems that minimal actional pairs can in fact be identified in many languages, even in English. Thus in Russian, perfectivizing prefixes (such as e.g. *s-*, *na-*, *vy-*, *po-*, *pro-*, *pere-*, *do-*, *ot-*, *za-*, *voz-*, *raz-*, *pod-*, and others) may provide minimal pairs to the extent that two or more may be used in connection with the same imperfective base form:

(17)



(18)



Thus it could be argued that in (17) and (18) the two prefixed pairs (SDELAT'/PEREDELAT' and NAPISAT'/VYPISAT') constitute minimal actional pairs in the sense that formal variation within a sentential frame is at least conceivable. A similar case could be made for reimperfectivization in Russian which is sometimes used for the expression of iteration. In German JAGEN/ERJAGEN ('hunt/hunt down or catch') though often quoted as an aspectual pair is in fact a minimal actional pair. In English we find sentences with verbs like

EAT/EAT UP and DRINK/DRINK UP as minimal actional pairs as well as more elaborate lexicalized expressions with 'to read'/'to begin reading'/'to finish reading', etc. In Tokelau (see Vonen 1994), the particle *pea* is used about durative situations and *hō* about habitual situations; and the prefix *faka-* is used to derive punctual causative verbs (ITA = 'be angry'; FAKAITA = 'make angry'). Reduplication is used to express iterativity (KEMO = 'to blink once'; KEMOKEMO = 'to blink repeatedly and successively'). In Modern Standard Chinese, according to Egerod 1994:288ff, the marker *le* is generally used to give verbs an association of punctuality while the marker *zhe* is used to give verbs an association of duration. In Kammu (see Svantesson 1994), KÙ (= 'to like') and HÓOC (= 'to finish') are full verbs which in catenative constructions serve as actional markers of habituality and completion, respectively. In Ainu (see Refsing 1994), the auxiliaries *a* and *wa ek* are used to express durative and inchoative situations, respectively, while the suffixes *-kosanpa* and *-ekatta* are used for momentary action.

All these different ways of expressing actionality make it possible in principle to establish minimal actional sentential pairs in the languages briefly mentioned above but, characteristically, there is a certain openedness and non-pervasiveness about the formal means of forming such pairs. The action category is seldom realized as a regular major morphosyntactic grammatical category in particular verb systems. Derivational morphology, lexical periphrasis, and grammatical subsystems with restricted scope of application seem to be typical ways of expressing actionality, and this state of affairs clearly reflects the close ties between lexicalization proper and action. On the other hand, the propositional, referential role of action in relation to tense and aspect, i.e. its place in the regular dynamic categorial interplay with these categories, reflects its more traditional categorial nature and necessitates the setting up of a metalinguistic category in our universal model.

The multidimensionality of action

The metalinguistic category of action is special in yet another respect. The values comprised as members of the category are *not*

mutually exclusive and discrete like the members of tense and aspect. In all three categories, the members share the general category concept and are, in principle, distinct realizations of this concept. But while e.g. pastness logically excludes present and future meaning (relative to a particular situational referent), and an external holistic situational focus excludes an internal situational focus (again relative to a given situation), actional meanings enter a multidimensional network of interdependencies and shared features. Thus, for example, *duration* is a feature shared by a number of more specific different values:

- (19) The village *lies* in a valley.
- (20) Sally *was building* a small garden shed.
- (21) He *wrote* a second letter to her that night.
- (22) James and George *were sailing* along the coast.

These four sentences express different specific actional values. In example (19), the situation of 'lying' is stative. In (20), the situation of 'building a shed' is an activity directed towards a point of completion outside the referential scope of the predicator. In (21), the 'writing of a second letter' is very similar to the situation expressed by (20) in that it is an activity which has a point of completion, but in (21), unlike (20), this point is included in the referential scope of the predicator. Finally, in (22), the situation of 'sailing' is an activity which has no inbuilt terminal point like 'building a shed' or 'writing a letter'. Despite these taxonomic differences of actional meaning, all four situations share the feature of duration, which, as should be remembered, is not the general category concept which we expect the members of the action category to share. Duration is 'just' a more general actional meaning than the meanings attested in (19) to (22) but is in fact in direct contrast to a very specific actional meaning, namely that of punctuality, as exemplified in the following examples:

- (23) I'm sure he *blinked* once only.
- (24) To everybody's surprise, the arrow *burst* the balloon.

Note that in terms of manifestation in the projected world the punctual meanings of these examples are not entirely unlike the terminal points of durative activities like 'building a shed' and 'writing a letter', whether outside or inside the referential scope of the predicator. Though obviously more autonomous as situations, 'blinking' and 'bursting' share their point-like, non-durative nature with terminal, as well as initial, points of durative situations.

A more drastic example of network relations among the members of the action category involves the distinction between a *specific single occurrence* of a situation and its *multiple occurrence*. There are in fact two relevant and possibly closely related distinctions involved here: that between semelfactive and iterative situations, and that between the particular occurrence of a situation and its habitual occurrence. Consider the following examples:

- (25) As a young girl, Sally *collected* stamps.
- (26) Roger *sang* in the local church choir for many years.
- (27) He *was blinking* to her in a funny exaggerated way that you could not help noticing.
- (28) They *were bursting* balloons all over the place.

These sentences show that there are several levels of actional meaning: a situation may become a part of another, higher-level situation. In examples (25) and (26), the particular situations of 'collecting' and 'singing' are presented as having occurred so often and so regularly that they have formed a 'habit of collecting' and a 'habit of singing', respectively: Sally was a stamp collector and Roger was a singer in the local church choir. In examples (27) and (28), the individual, singular punctual situations of 'blinking' and 'bursting' that we saw expressed in (23) and (24) have here become parts of more complex higher-level situations, just like 'collecting' and 'singing' in (25) and (26), but this time the higher-level situations are not habits but instances of particular-occurrence iteration, i.e. where a particular situation is composed of a number of repeated, identical subsituations each of which is a potential situational referent of the lexical verb. There is, in addition, an interesting difference between (27) and (28): in the former

example, one agent alone engages in the repetition of a punctual situation whereas in the latter, several agents are separately and individually involved in the iteration of a punctual situation. Thus (28) has an even more complex situational referent than (27): it is not just punctual and iterative, it is also 'distributive'. What examples (25) to (28) show is that there are varying degrees of complexity in situational referents and that it is sometimes necessary to describe a situational referent in terms of more than one member of the action category.

Situational complexity may affect tense and aspect, too, as we shall see in chapter 8, below. Thus the distinction between 'situation' and 'subsituation' opens for the assignment not only of different actional values but also of different aspectual and/or temporal values at different levels of the same situational referent. What is special about action in contrast to tense and aspect is that interdependencies (like those identified in examples (19) to (24)) and multidimensionality (as identified in examples (25) to (28)) seem so basic that it affects the inventory and structure of the meta-category. Below the category of action is appropriately described in terms of a hierarchy of interrelated oppositions rather than a simple list of discrete meanings.

The $\pm$ ACTIONAL distinction

The basic concept of ACTIONALITY, as defined in (1) above, is based on the notion of 'procedural characteristics of situations', sometimes also referred to as the 'phases' or 'phasal constituency' of a situation (where 'phase' is to be thought of as neutral with respect to the punctual/durative distinction). The basic procedural characteristics, or phases, are:

- (29) a) the *beginning* of a situation
 b) the *middle* of a situation
 c) the *end* of a situation
 d) *subsituations* of a higher-level situation

When discussing procedural characteristics, or phases, of situations, it is important to realize that they may enter all sorts of combinations and relations in the projected world. Thus, for example, though we know for a fact that a temporary durative situation always has a beginning, a middle and an end, the situational referent of a linguistic expression matching such a situation may be conceived of in terms of its beginning and middle only, or its middle and end, or just one of these phases. Conversely, punctual situations may be construed as situations where the beginning, middle and end are rolled into one point.

It is also important to remember that 'situation' is here used as a convenient cover term for whatever a predicator (plus related arguments) expresses and thus assumes a broader meaning than in our normal everyday language. Thus a personal characteristic (as in *Jack is a silly actor*), a permanent state (as in *The village lies in the dark valley*), and a personal habit (as in *Sally smokes fat cigars*) are all strictly situations in our specialized sense of the word though we would not normally refer to them, or even think of them, as such in everyday conversations because, as situations, they are very vague and intangible, resisting visualization. This means that some situations (in the technical sense) simply lack procedural characteristics altogether. Conceptually, for a phenomenon to be accepted as something which 'takes place' (in the projected world) it must be dynamic (in Comrie's sense, see Comrie 1976:49), requiring a continual input of energy, and it must be characterizable in terms of one or more procedural characteristics, such as beginning, middle, end – as distinct phases or rolled into one – taking place once or iterated, enacted by one or more agents or forces, etc. Situational referents conceived of as 'taking place' in this sense are +ACTIONAL. Situational referents which do not fit this description are -ACTIONAL. Thus, roughly speaking, the basic distinction between +ACTIONAL and -ACTIONAL parallels the traditional distinction between *dynamic* and *stative*. At the same time, however, it embodies a reinterpretation of stativeness in terms of *unmarked actionality* rather than as an actional value in its own

right on a par with dynamic situation types. We may thus suggest the following definitions of ACTIONALITY and +ACTIONAL/-ACTIONAL situations as the basic axis of the action category:

- (30) A +*ACTIONAL* situation is conceived of as taking place, or happening, at a particular time and place in the projected world.
- (31) A -*ACTIONAL* situation is not such a particular-occurrence situation.

On this characterization of the basic category concept of the action category, the situations that we normally refer to as states, habits and characterizations (such as 'lying', 'collecting' and 'singing' in examples (19), (25) and (26) above, respectively, and the scenic descriptions in (12) to (16), as well as 'being a silly actor' and the habit of 'smoking fat cigars') are all -*ACTIONAL*, whereas particular occurrence events, actions, activities, etc. (such as 'building', 'writing', 'sailing', 'blinking' and 'bursting' in examples (20) to (24), (27) and (28) above) are +*ACTIONAL*. 'A village lying in a valley' is not something which happens or takes place and we do not think of such a state as the middle part of a situation though it is obviously durative like the middle part of an +*ACTIONAL* situation. Nor is it possible to describe a habit simply in terms of procedural characteristics: a habit is something one *has*, not something one *does* (although the individual components or subsituations making up a habit may well be +*ACTIONAL* – as in the case of 'collecting', 'singing' and 'smoking'). But 'writing a second letter to her the other night' and 'people bursting balloons all over the place at a particular party' *are* situations which may take place or happen in the projected world.

As argued above, the lack of pervasive regular formal expression of the category of action, as well as its centrality relative to tense and aspect in terms of propositional semantics, makes it difficult to define the category members of action at a definition level of meaning: tense and aspect operate on action to exploit the propositional potential of this category in relation to lexical items, rather than vice versa, and this means that in the categorial interplay between these three categories, actional meanings cannot be isolated pure and simple from tense and aspect meanings. We

therefore have to resort to the function level of tense and aspect for the identification of relevant category members of the general metalinguistic category.

Examples like the following show variation in the general category concept of action ($\pm$ ACTIONALITY) and thus warrant the setting up of this primary actional distinction:

- (32a) My dad *worked* hard.
- (32b) My dad *worked* hard last night.
- (32c) My dad *worked* hard all his life.
- (32d) My dad *was working* hard.
- (32e) My dad *works* hard.
- (32f) My dad *is working* hard.
- (33a) Ann *read* the Financial Times.
- (33b) Ann *read* the Financial Times this morning.
- (33c) Ann *read* the Financial Times when she worked as a business executive.
- (33d) Ann *was reading* the Financial Times.
- (33e) Ann *reads* the Financial Times.
- (33f) Ann *is reading* the Financial Times.

In these two sets of sentences, the simple past form in the a-examples is ambiguous when considered in isolation: either it expresses a +ACTIONAL, particular-occurrence situation, as in the b-examples, or it expresses a -ACTIONAL, habitual situation, as in the c-examples. When subjected to a substitution test where the simple past form is replaced by the progressive past form, or vice versa, this ambiguity disappears: the d-examples are clearly +ACTIONAL. In other words, in such a substitution test, there is a potential change in actional meaning. In a substitution test where the simple past form is replaced by the simple present form, or vice versa, there is also a potential change in actional meaning but with a different result: the simple present form in the e-examples are clearly -ACTIONAL, describing a characteristic habit of the subject rather than a particular action. Finally, in a substitution test where the simple present form is replaced by the progressive present form,

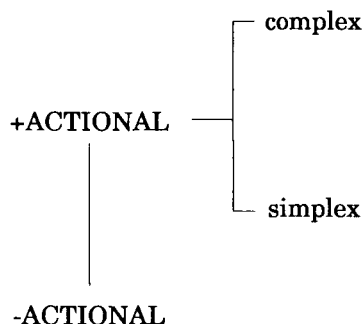
or vice versa, there is a definite change of actional meaning: the simple present form in the e-examples are -ACTIONAL whereas the progressive present form in the f-examples are +ACTIONAL. For more examples of this type, as well as discussion of changes of meaning relating to the general category concept of action, see Bache 1985a:259ff and 286ff. The general metalinguistic significance of the variation noted in examples (32a-f) and (33a-f) is that it seems to relate to varying degrees of 'ease of conceptualization': the more vivid a mental picture one gets of a situation as something which 'takes place' or 'happens', the more clearly it is +ACTIONAL. The $\pm$ ACTIONAL axis thus seems to correlate with the basic human cognitive ability to conceptualize situations.

In the general metacategory of action presented here, there are no subdistinctions between the various types of -ACTIONAL situation (i.e. -ACTIONALITY is not subdivided into, for example, habits, states and characterizations), though this is obviously a possibility. But from the point of view of a description of the categorial interplay between action, tense and aspect, it is more important to explore the various subdistinctions of +ACTIONAL situations.

The simplex/complex distinction

The first opposition of +ACTIONAL values is that between *simplex* and *complex*:

(34)



Of the sentences already discussed in this section, the following are examples of the distinction between complex and simplex situations:

- (20) Sally *was building* a small garden shed.
- (21) He *wrote* a second letter to her that night.
- (23) I'm sure he *blinked* once only.
- (24) To everybody's surprise, the arrow *burst* the balloon.
- (27) He *was blinking* to her in a funny exaggerated way that you could not help noticing.
- (28) They *were bursting* balloons all over the place.

Here the sentences in (20) to (24) are simplex, expressing particular-occurrence unitary situations which take place only once (i.e. situations which do not consist of subsituations), whereas the sentences in (27) and (28) are complex, expressing particular-occurrence iteration (and in (28) also 'distribution', involving different agents) (i.e. in both cases situations which do consist of subsituations). Note that in a different context the subsituations of the situations expressed by (27) and (28) may be appropriately expressed individually by using the same lexical verb, as is the case in (23) and (24): this is a typical but not necessarily a defining feature of situational complexity. Complex and simplex situations may be defined as follows:

- (35) A *complex* situation is a +ACTIONAL situation conceived of as consisting of a number of identical, or related, consecutively realized subsituations with an independent secondary actional specification, thus inviting description in terms of two situational levels, a super-ordinate and a subordinate.
- (36) A *simplex* situation is a +ACTIONAL situation conceived of as singular and unitary, thus inviting description in terms of a single situational level, at which one or more of the procedural characteristics (beginning, middle and end) are manifested.

Like the distinction between +ACTIONAL and -ACTIONAL, the distinction between *complex* and *simplex* is relevant from the point of view of categorial interplay – and typically in a substitution test

where simple past forms are replaced by progressive past forms, or vice versa, as in the following examples:

- (37a) The telephone *rang*.
- (37b) The telephone *was ringing*.
- (38a) Somebody *tapped* him on the shoulder.
- (38b) Somebody *was tapping* him on the shoulder.
- (39a) A door *was slamming* behind him, a loud door.
- (39b) A door *slammed* behind him, a loud door.
- (40a) Leiser *was knocking* on the door.
- (40b) Leiser *knocked* on the door.

In these sentences, the simple past is *simplex* in actional meaning, taking up a minimum of time, whereas the progressive past is *complex*, and more specifically iterative. Depending on the nature of the situational referent, as reflected in the choice of lexical item, the simple past form in such examples does not totally exclude a *complex* interpretation. Thus, especially in (38a) and (40b), the 'tapping' and the 'knocking' could easily include a few taps and knocks, respectively, rather than simply one 'tap' and one 'knock'. But even then, the situations are conceived of as unitary in clear contrast to the corresponding progressive forms, which are unambiguously *complex*. The general metalinguistic significance of the variation noted in examples (37a-b) to (40a-b) is that it seems to relate to a certain conceptual restriction on the direct combination of situational characteristics: the meaning conveyed by the progressive form is conceptually incompatible with the punctual meaning of the simple form in these examples. The result is in each instance that the tight boundaries of the punctual situation are burst wide open, thus requiring a reinterpretation of the situational referent. In the examples offered above, the two conceptually incompatible meanings are relegated to different situational levels: progression to the higher-level situation, punctuality to the subsituations making up the higher-level situation.

Situational complexity may be realized more specifically as iteration or distribution, or as a combination of these meanings.

When discussing subtypes of complexity, it is important to note that the defining feature of complexity, the feature shared by all subtypes, is the integration of subsituations within one particular-occurrence superordinate situation. Complexity is thus most appropriately kept distinct from various explicitly *quantified* expressions, such as repetition and enumeration (*He wrote four letters to her last week, She interrupted him several times*), and from 'two-way action' (as in Russian *K vam prixodil Ivanov* (= 'Ivanov called to see you – but has gone away again')). In a non-technical sense, such situational referents are complex. But, typically, with quantified expressions, what is quantified is not only the individual situation as such but also the occasion on which it takes place or happens. Thus an example like *He wrote four letters to her last week* really means that he wrote a letter to her on four occasions (completely separate or one following the other); and *She interrupted him several times* really means that she interrupted him on several occasions (e.g. during the evening, the meeting, their conversation, or his speech). In other words there is a greater sense of independence about each 'subsituation', and the 'superordinate situation' is not felt to be as coherent and homogeneous as with truly complex situations. But, as we shall see in section 7.6, there are borderline cases in English where it is difficult to distinguish rigidly between complex situations and quantified situations. I consider situational quantification to be a largely independent *operation* performed on any of the individual members of the basic metacategory of action, even -ACTIONALITY, rather than a member of the category in its own right. I shall therefore have no more to say about situational quantification in this section.

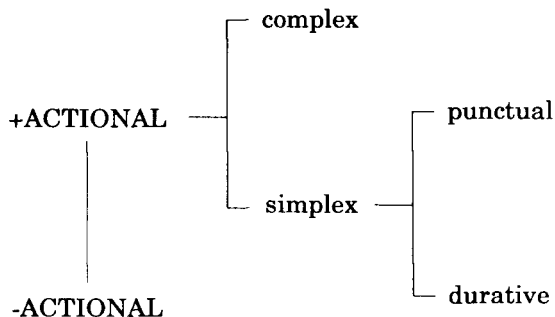
Despite the exclusion of quantified situations, a taxonomy of complex situations may well be appropriate for many languages – not only in terms of the superordinate situation but also in terms of the actionality of the subsituations. But in this presentation of the general metacategory of action, I shall not be concerned with the various subtypes of complex situation but simply note the possibility of operating with them in language-specific studies.

Instead I shall turn to the various kinds of simplex situations, which are generally far more interesting and important in the discussion of the categorial interplay between action, tense and aspect.

The punctual/durative distinction

Simplex situations can be subdivided into *punctual* and *durative*:

(41)



We have already discussed a fair number of examples of the distinction between punctual and durative situations in this section. But let us, for the sake of presentation, repeat some of them here:

- (7a) He *switched* from Danish to English.
- (8a) Nicolai *dropped* another glass on the floor.
- (23) I'm sure he *blinked* once only.
- (24) The arrow *burst* the balloon.
- (2a) We *walked* for hours without talking.
- (3a) He *was reading* when Sasha entered.
- (4a) The student *wrote* a paper on the split infinitive.
- (5a) They *watched* her climb the hill.

The first four of these sentences express situations conceived of as punctual in the sense that they take up little if any time in the projected world, whereas the last four sentences express situations conceived of as stretching out over time. *Punctual* and *durative* situations can be defined more precisely as follows:

- (42) A *punctual* situation is a *simplex* situation conceived of as having little or no extension in time and hence no internal structure, the procedural characteristics beginning, middle and end being rolled into one.
- (43) A *durative* situation is a *simplex* situation conceived of as having extension over time, thus inviting a description in terms of the procedural characteristics, beginning, middle and end.

Like the other actional distinctions discussed so far, the distinction between *punctual* and *durative* is relevant from the point of view of categorial interplay. This becomes evident in a substitution test where the simple form is replaced by the progressive form, or vice versa, in examples like the following:

- (44a) Jack *caught up* with the others.
- (44b) Jack *was catching up* with the others.
- (45a) Sally *opened* her packsack.
- (45b) Sally *was opening* her packsack.
- (46a) He paused, she *was begining* to cry.
- (46b) He paused, she *began* to cry.
- (47a) She *was slipping* into a dark fructifying dream.
- (47b) She *slipped* into a dark fructifying dream.

In these sentences, the simple form is *punctual* whereas the corresponding progressive form is *durative* in the sense defined. The distinction between the two types of situation is conceptually significant and the variation of meaning identified in the substitution test can be accounted for in very much the same way as the variation involving the *simplex/complex* distinction discussed above. The meaning associated with the progressive form is conceptually incompatible with the *punctual* meaning conveyed by the simple form. When the two meanings clash, i.e. when we substitute the progressive form for the simple form in such examples, the boundaries of the *punctual* situation, as expressed by the simple form, simply disintegrate, and this requires us to reinterpret the situation. Unlike the reinterpretation provoked by this same clash noted in connection with the variation between *simplex* and *complex* meaning, there is no relegation of actional

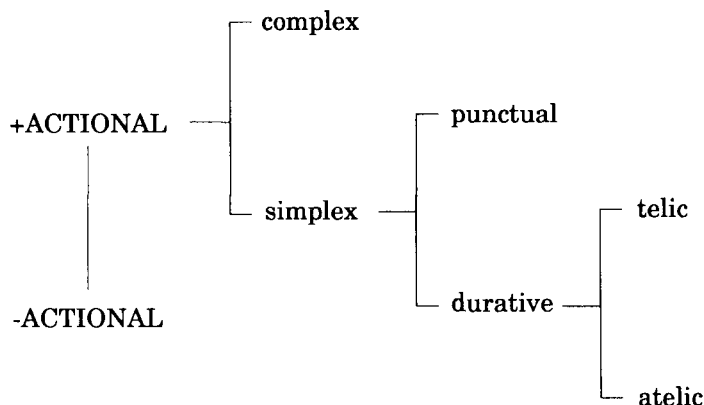
meanings to different situational levels in the examples with the progressive form in (44b), (45b), (46a) and (47a). Instead, the punctual point is strictly excluded from the actual referential scope of the predicator and becomes a possible, but not necessary, terminal point of the durative situation. In other words, in the clash of meanings in such examples, the meaning of the progressive form gains the upper hand in the sense that the situations become durative. But the punctual meaning leaves its mark in that the durative situation must relate to the point expressed by the simple form as a possible terminal point of the durative situation expressed by the progressive form. The durative situation is seen as *leading up to* but not necessarily reaching the terminal point.

Both punctual and durative situations can be subjected to further analysis and characterization in terms of subtypes. Thus, punctual situations can be divided into those which initiate durative situations (as in (46b)), those which terminate durative situations (as in *The pianist finished the curious little piece, She soon stopped crying*, etc.), and those which are more independent of durative situations (as in *She hit him hard on the nose*). But this taxonomy is not unproblematic: there is a general tendency for punctual situations to imply the initiation or termination of states or durative situations. For example, the 'catching up' in (44a) marks the end of a durative process or attempt leading up to the point of reference; and the 'slipping' in (47b) marks the beginning of a dream. In the version of the general metacategory of action that I am proposing for the description of the categorial interplay between action, tense and aspect, a subclassification of *durative* is far more important than a subclassification of *punctual*.

The telic/atelic distinction

Durative situations can be subdivided into *telic* (or 'bounded') and *atelic* (or 'unbounded') situations, as reflected in the following elaboration of the actional hierarchy:

(48)



Of the sentences already discussed in this section, the following exemplify *telic* and *atelic* situations:

- (4a) The student *wrote* a paper on the split infinitive.
- (5a) My dad *worked* seven hours last night.
- (21) He *wrote* a second letter to her that night.
- (2a) This morning we *walked* for hours without talking.
- (3a) He *was reading* when Sasha entered.
- (20) Sally *was building* a small garden shed.
- (22) James and George *were sailing* along the coast.

Examples (4a), (5a) and (21) are *telic*, expressing situations leading up to and including a terminal point (a 'telos') without which the situation is not conceived of as fully realized. Thus unless the student *finished* writing the paper in (4a) or the letter in (21), it is not true to say that he *wrote* a paper or a letter, respectively. And, obviously, unless 'my dad' really worked right up to the limit defined by the adverbial *seven hours*, the proposition is false. The other examples are *atelic*, expressing situations where no special importance is attached to the terminal point. Thus, the realization in the projected world of the situations of 'walking', 'reading', 'building' and 'sailing' expressed by these examples is not dependent

on reaching a specific, terminal point: the propositions involved are true even if the situations expressed are broken off at an arbitrary point. *Telic* and *atelic* situations can be defined more precisely as follows:

- (49) A *telic* situation is a durative situation leading up to and including a terminal point beyond which the situation cannot progress unless redefined.
- (50) An *atelic* situation is a durative situation realized in the projected world in terms of its extension in time rather than a criterial terminal point.

Usually the terminal point of a *telic* situation is a natural or logical completion of the situation, or it is a quantified expression with a defined limit, and thus often represents a transition or leap into a new situation. In English, the terminal point is often specified by the direct object or by adverbials manifested by definite or bounded phrases. By contrast, *atelic* situations either completely lack a terminal point or, if there is one, it is arbitrary or accidental and given no special emphasis. With *atelic* situations, the emphasis is thus on the activity or process itself. Often the predicator in such sentences takes indefinite plural or unbounded objects and adverbials, if any.

Like the three other actional distinctions discussed so far, the distinction between *telic* and *atelic* is relevant from the point of view of categorial interplay. Consider the following examples, where the simple form is replaced by the progressive form, or vice versa:

- (51a) Jack *drove* back to the library.
- (51b) Jack *was driving* back to the library.
- (52a) George *climbed* the steep dune before him.
- (52b) George *was climbing* the steep dune before him.
- (53a) Walter *was moving* to the door, still talking.
- (53b) Walter *moved* to the door, still talking.
- (20a) Sally *was building* a small garden shed.
- (20b) Sally *built* a small garden shed.

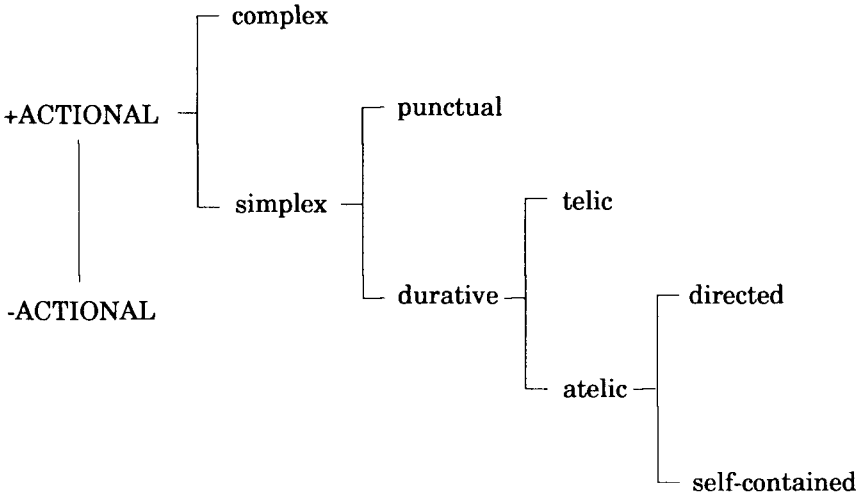
In these sentences, the simple form is telic whereas the progressive form is atelic. It might be objected that in the progressive variants in this substitution, the situations expressed have an in-built terminal point like the simple variants. However, while the terminal point of 'driving back to the library', 'climbing the steep dune', 'moving to the door' and 'building a garden shed' are clearly included in the referential scope of the simple forms in these examples, they are just as clearly outside the referential scope of the progressive forms: the terminal point may or may not be realized at a later stage. Thus, the simple variants *imply* the progressive variants *but not vice versa*: e.g. if it is true in (51a) that Jack drove back to the library, it is also true that at a particular point he was driving back to the library; if, however, it is true that at a particular point Jack was driving back to the library, it is not necessarily true that Jack drove (all the way) back to the library. In other words, in each case the progressive variant expresses a part of the referent of the simple variant. The activities expressed by the progressive variants can be broken off at any time without this affecting the truth-condition of the sentences. This is not so with the simple variants because in each case a non-arbitrary terminal point is included in the situation.

The distinction between telic and atelic is conceptually significant, reflecting our ability to conceptualize durative situations in terms of processes or activities or in terms of goal or purpose achieved, or quantified limit reached. The variation of meaning identified in examples like (20) and (51) to (53) in the substitution test also invites description in terms of a conceptual rationale. By replacing the simple form in a telic expression with the progressive form, the meaning of progression often associated with the progressive form secures a focus on the middle part of the telic situation expressed by the simple form, thus excluding the terminal point from the referential scope of the expression. What exactly happens in such cases is accounted for in the next, and final, actional distinction in my general metalinguistic hierarchy, namely the distinction between *directed* and *self-contained* situations.

The directed/self-contained distinction

This distinction branches out from *atelic* situations:

(54)



The nature of the distinction between directed and self-contained situations is borne out in examples like:

- (20) Sally *was building* a small garden shed.
- (51b) Jack *was driving* back to the library.
- (52b) George *was climbing* the steep dune before him.
- (53b) Walter *was moving* to the door, still talking.
- (3a) He *was reading*, when Sasha entered.
- (22) James and George *were sailing* along the coast.
- (55) They *walked* along the beach, arm in arm.
- (56) We *discussed* their predicament at the last meeting.

Of these, (20), (51b), (52b) and (53b) are *directed* in the sense that the atelic situation is related to a subsequent terminal point outside the referential scope of the expression (i.e. the situations expressed are conceived of as directed towards but not necessarily reaching a

natural terminal point beyond which the situation cannot continue). The last four examples ((3a), (22), (55) and (56)) are *self-contained* in that they express atelic situations which are unrelated to a natural terminal point: as presented, the situations of 'reading', 'sailing', 'walking' and 'discussing' could, in principle, have gone on indefinitely. I define *directed* and *self-contained* situations more precisely in this way:

- (57) A *directed* situation is an atelic situation progressing towards but not including a terminal point beyond which the situation cannot progress, unless redefined.
- (58) A *self-contained* situation is an atelic situation conceived of as not having, or not being related to, a natural terminal point.

The distinction between *directed* and *self-contained* is obviously relevant from the point of view of categorial interplay. As some of the examples cited above showed in our discussion of the telic/atelic distinction, *directed* is often a substitutional variant of *telic* in the English simple/progressive forms (*Sally built/was building a small garden shed, Jack drove/was driving back to the library, etc.*). But directive meaning can also be lexically determined:

- (59) They *approached* the building.
- (60) My dad *tried* to solve the problem.
- (61) He slowly moved *towards* the door.

In such cases, the point towards which the action is directed (i.e. 'reaching the building', 'solving the problem' and 'reaching the door') is inherently externalized from the referential scope, even of a perfective construction. Such examples thus assume the characteristics of self-contained expressions. By contrast to the other types of situation identified in our universal action category, self-contained situations are special in that they often allow variation in the formal expression without this affecting the actionality: *James and George sailed/were sailing along the coast, They walked/were walking along the beach, arm in arm, We discussed/were discussing their predicament at the last meeting*. Such examples constitute the definition level of the aspect category, i.e. the level at which choice

of form is exclusively a question of aspect, not a question of how aspect operates on action in a functional interplay. In other words, we have reached the point in our account of the action category where it no longer makes much sense to make further sub-distinctions. The diagram in (54) has the descriptive delicacy required for the purposes of our general model.

Like the other distinctions, the distinction between *directed* and *self-contained* is conceptually significant in that it reflects our ability to conceptualize atelic situations as either processes/activities leading towards a certain natural terminal point or as processes/activities which simply take place irrespective of how and when they are terminated. In our discussion of the telic/atelic distinction we have already mentioned the conceptual rationale of the variation in simple/progressive forms of telic and directed meaning. As regards the lack of actional variation in constructions expressing self-contained situations, this is hardly surprising from a conceptual point of view: self-contained situations are phasally homogeneous and independent and as such are freer to allow variation in representational focus than the other actional values identified in the model.

Summary

Before moving on to a discussion of the tense category let us briefly summarize the findings of this section. The action category was first shown to be rather special in that it is closely related to lexicalization. Both concern 'type of situation'. But while verbs as lexical items define types of situations pre-referentially (e.g. 'walking' as distinct from 'smiling', 'hitting', etc.), actional values define types of situation in terms of general cross-lexical characteristics applying to situational referents (e.g. 'punctual' versus 'durative', 'telic' versus 'atelic', etc). Though there is never a necessary, one-to-one relationship between a lexical item and a specific actional meaning, verbs often have a definite propensity towards certain actional values and thus often give the linguist a first approximation to what type of situation is involved. Actionality, however, is the product of verbs being used in specific

linguistic and extralinguistic contexts and therefore cannot be determined satisfactorily on the basis of lexical items (verbs) considered in isolation.

The action category is special in other respects. Though it is in many languages possible to establish actional pairs, including minimal actional pairs, action is not typically realized as a regular morphosyntactic grammatical category in particular verb systems but is rather expressed by means of derivational morphology, lexical periphrasis and grammatical subsystems with restricted scope of application. The justification for setting action up as a grammatical category in our general metalanguage is thus mainly its functional relationship with tense and especially aspect. This means that in a sense the definition level of the action category is identical to the function level of tense and aspect: regular variation in actional meaning is often a result of tense and aspect operating on action.

Finally, the action category is shown to comprise a multi-dimensional network of interdependencies and shared features. Thus the metacategory is represented as a set of hierarchically related oppositions rather than simply a set of discrete meanings. Variation of actional meaning within this categorial framework seems often reasonably amenable to a conceptual rationale. Thus, for example, since punctual situations cannot be viewed from within, in terms of progression, to impose imperfectivity on a construction with a strong punctual potential, i.e. to use a positively marked imperfective form of, say, a verb with a strong propensity towards punctual meaning, leads to a reinterpretation of actional value, typically as iteration or direction.

7.4. The Metacategory of Tense

Category concept and inventory

There is in linguistics and grammar a long tradition for linking tense to time (for important exceptions, see Weinrich 1964, 1970, and Herslund 1988). But apart from a general association of tense with time there is little consensus about the actual inventory of the tense

category, either in particular languages or in the general meta-language. As noted in Bache 1985:3 and section 2.3 above, some grammarians treat any verb form in English which somehow expresses a time value as a tense and thus easily end up with 16 or even 32 different tenses. Others operate with 8 tenses defined in terms of notions like 'speech time', 'event time' and 'reference time'. Yet others accept only two tenses in English, the past and the non-past.

In the present study I shall operate with three primary members of the universal tense category: present, past and future. The meanings of these category members may be exemplified in examples like the following:

- (1) Cindy *knows* only too well what this *means*.
- (2) Phil actually *talked* to Penny about it already yesterday.
- (3) I *will tell* her as soon as she *gets* here.

Obviously the predicators in (1) express present situations, the predicator in (2) expresses a past situation, and the predicators in (3) express future situations. As category members, the concepts of present, past and future share the general category concept of TEMPORALITY, which can be defined thus:

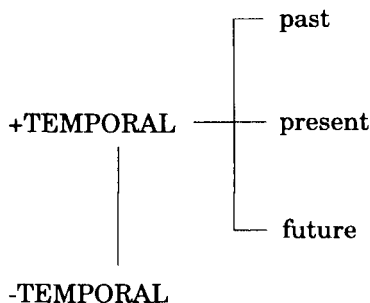
- (4) *TEMPORALITY* concerns the assignment of temporal location to situations relative to the time conceived of as present by the locutionary agent at the moment of communication.

Accordingly, +TEMPORAL and -TEMPORAL expressions are defined in terms of the presence or absence of assigned temporal location as specified in (4):

- (4a) A +*TEMPORAL* expression assigns a temporal location to a situation relative to the time conceived of as present by the locutionary agent at the moment of communication.
- (4b) A -*TEMPORAL* expression does not assign a temporal location relative to the time conceived of as present by the locutionary agent at the moment of communication.

The general metalinguistic category of tense being proposed here looks like this:

(5)



It may well be necessary to establish a set of 'secondary' or derived tenses in our metacategory of tense (including members like *past-in-the past*, *future-in-the past*, etc); and in language-specific studies it may be relevant to establish other, more specific tenses (such as e.g. the '*remote past*' and the '*imminent future*'), but for our purposes three tenses suffice in our account of the metalinguistic category of tense and its functional interplay with action and aspect. As it stands, the structure in diagram (5) reflects our intuitive division of time into 'now', 'before now' and 'after now' and is thus amenable to a conceptual rationale. The psychological character of the values in metacategory of tense is emphasized in the definition in (4) of the general category concept: TEMPORALITY is an *assigned* property rather than an inherent quality, and what is more, it is assigned to situational referents, i.e. projected-world situations, rather than to real-world situations. Furthermore, the assignment takes place on the basis of the locutionary agent's conception of what constitutes present time at the moment of communication.

I define the members of the tense category more precisely as follows:

- (6) A *past* situation is conceived of as being temporally located *before* the present.
- (7) A *present* situation is conceived of as being temporally located *in* the present.
- (8) A *future* situation is conceived of as being temporally located *after* the present.

The claim underlying these definitions, as well as the definition of the general category concept in (4), is that as human beings we have a relatively simple set of basic, conceptually significant time values, which may serve as a relevant absolute standard against which we can evaluate and describe language specific systems for the expression of time. I do not want to claim that our metacategory of tense represents the typical tense system in natural language, or that the individual members of the metacategory are typically realized as semantically simple tense forms.

Definition-level variation of temporal meaning

The temporal values of our metacategory of tense can be established on the basis of examples like:

- (9a) James *lives* in Brisbane.
- (10a) I *believed* in her, foolish as I *was*.
- (11a) Jenny *walks* to work in order to get regular exercise.
- (12a) She *got up* at seven.
- (13a) Nicolai *dropped* a glass on the floor.
- (14a) My wife *was reading* the Financial Times, believe it or not.
- (15a) She *was leaving* the party shortly after eight.

When subjected to a substitution test in which we change the tense form, we get variation of temporality without this necessarily affecting the actionality or aspectuality of the examples, i.e. we get variation at the definition level of the metacategory of tense:

- (9b) James *lived* in Brisbane.
- (10b) I *believe* in her, foolish as I *am*.
- (11b) Jenny *walked* to work in order to get regular exercise.
- (12b) She *gets* up at seven.
- (13b) Nicolai *drops* a glass on the floor.
- (14b) My wife *is reading* the Financial Times, believe it or not.
- (15b) She *is leaving* the party shortly after eight.

In examples where the predicator is interpreted as [-ACTIONAL], the substitution of a simple present tense form for a simple past

tense form, or vice versa, results in a change of TEMPORALITY from present to past, or vice versa. Thus in (9a,b) the present tense form *lives* expresses a present state, the past tense form *lived* a past state. Similarly in (10a,b): *believe* and *am* express present states whereas *believed* and *was* express past states. And the habitual situation of 'walking to work' (made explicit as a habit by the adverbial *in order to get regular exercise*) is present in the present tense example in (11a) but past in the past tense example in (11b). In examples (12a,b) there is, as noted in an earlier section, an ambiguity: if both variants are interpreted as habitual (e.g. 'she *normally* got/gets up at seven'), then the time values are identical to those in examples (9a,b) to (11a,b), i.e. the past tense form has past time meaning and the present tense form has present time meaning. But if we interpret the sentences in (12a,b) as having particular-occurrence situation, then although the past tense form is still past in meaning, the present tense form assumes future meaning rather than present meaning (and is thus near-synonymous with *She will get up at seven*). A similar problem presents itself in examples (13a,b), where a habitual, or otherwise quantified, reading is compatible with both past and present time meaning (e.g. 'Nicolai drops/dropped a glass on the floor every now and again'), but the particular-occurrence meaning is not immediately compatible with present time: while the past tense may express a specific past event, the present tense expresses a future event (e.g. as part of a future plan: 'As soon as Stefan leaves the room, Nicolai drops a glass on the floor to attract attention') or it becomes [-TEMPORAL], e.g. as a stage direction or simply as a more dramatic narrative expression than the past tense (see Bache 1986b).

In examples (14a,b) (*My wife was/is reading the Financial Times ...*), the progressive past tense form is past in meaning and the progressive present tense form is present, whether or not we interpret them as referring to a particular-occurrence situation (which is the more likely interpretation) or to a situation happening several times within a fairly restricted period of time (e.g. 'Last week/This week my wife was/is reading the Financial Times'). In the

last pair of examples, (15a,b), the progressive past tense expresses a specific past time situation whereas the progressive present tense expresses a future situation, though one which is closely related to a present plan or intention on behalf of the agent expressed by the subject.

Future meaning is often derived in a substitution test where the simple or progressive present or past tense is replaced by the present form of WILL + the infinitive. But, especially with the simple infinitive, various modal meanings, such as 'intention' and 'prediction', tend to interfere with pure temporality:

- (9c) James *will live* in Brisbane.
- (10c) I *will believe* in her, foolish as I am.
- (11c) Jenny *will walk* to work every day.
- (12c) She *will get up* at seven.
- (13c) Nicolai *will drop* a glass on the floor.
- (14c) My wife *will be reading* the Financial Times, believe it or not.
- (15c) She *will be leaving* the party shortly after eight.

The variation of temporal meaning identified in examples like (9a,b) to (15a,b) and the c-variants (to the extent that they express future meaning in a neutral manner) is clearly category-internal variation, i.e. variation at the definition level of the metacategory of tense, involving only a difference of TEMPORALITY.

In English the definition level of tense can be specified in terms of the tense form and the actional meaning of the predicator. Thus it seems that with simple tense forms used in a propositional, referring mode (i.e. the language function which we consider basic for our purposes), category-internal variation between present and past meaning is possible *only if the predicator is -ACTIONAL* (e.g. stative or habitual). With progressive forms, such variation between present and past meaning is typical of +ACTIONAL predicators. Future meaning seems sometimes the result of the incompatibility of the simple present tense form with +ACTIONAL present meaning but can also be regularly expressed by the WILL +

infinitive construction, though often with certain modal values attached.

Our review of examples shows that it requires only a minimum of generalization, abstraction or idealization from English to set up a general metalinguistic category of tense comprising the values present, past and future as primary members. Simple substitution tests reveal regular, apparently rule-governed variation of TEMPORALITY at a category-internal, definition level of meaning.

Tense as a deictic category

There are several important points to make in connection with the metacategory of tense as defined above. First of all, to fully understand the nature of the category it is necessary to recognize it as a *deictic* category, i.e. a category comprising meanings which can only be identified in relation to the temporal and spatial location of the locutionary agent at the point of communication, i.e. the 'here and now' – the deictic zero point – of the utterance. In other words, what is referred to as a present situation today may be referred to as a past situation tomorrow and might have been referred to as a future situation yesterday. But it is also important to realize that the deictic nature of tense is closely related to the specific language function with which we are here concerned, viz. the propositional function, i.e. language as a vehicle for referring to, and conveying information about, the projected world which we conceive of as the real world. In other language functions, e.g. in narration, tense may serve entirely different purposes that seem unrelated to the notion of deixis (cf. Bache 1986b).

Even in the propositional, referring function of language there are cases where tense forms seem unrelated to the notion of deixis. Consider, for example, the following examples in English:

- (16) Cows *eat* grass.
- (17) Two plus two *makes* four.
- (18) I *forget* the exact address. Near the park somewheres.
- (19) They *tell* me he has ambitions of his own.
- (20) He just *walks* right up to her and *starts* yelling at her.

- (21) Johnson *passes* to Roberts, Roberts to Watkins, Watkins *takes* it forward, oh he *slips* past the centre half beautifully, he *shoots*, he *scores*! What a goal! ... (cf. Close 1962:75)
- (22) I *place* the rabbit in the box and *close* the lid. (Palmer 1974:60)
- (23) I *sift* the flour, salt and baking powder into a bowl. I *mix* them well. Then I *break* the eggs into a cup ... (Hornby 1954:88)

All these sentences seem to be instances of the propositional function of language in the sense that they express entities and situations in the projected world and state relations between them. But within that general framework they serve a number of rather more specific discourse functions. Examples (16) and (17) express 'eternal truths' or state permanent conditions in our projected world. In (18) and (19) the predicator strictly expresses a past event (of 'forgetting' and 'telling', respectively) but its location in the past is greatly subdued. It is perhaps debatable whether example (20) is in the propositional mode: the past projected-world situations of 'walking' and 'starting' are ripped out of their natural temporal context and represented in a dramatic, narrative-like manner (the so-called 'historic present'). Finally, examples (21) to (23) serve as commentaries, i.e. they express situations that the locutionary agent, and often also the addressee(s), witness (and which the locutionary agent himself sometimes even perform). Though completely different in terms of communicative setting (sports commentary, a conjurer's performance, and a TV special for housewives), all three examples are functionally non-autonomous, serving as an auditory supplement to, or substitute for, a mainly visual experience and are thus, in fact, governed by their referents with respect to subject-matter and structure of presentation (e.g. sequence of events).

In none of examples (16) to (23) is it at all obvious that the situation is assigned a temporal location in relation to the locutionary agent's conception of what constitutes the present at the moment of communication. In other words, the predicators in these sentences seem to be -TEMPORAL despite the use of the present tense form. In this interpretation, the simple present tense

form in English is often unmarked with respect to the tense category – at least from the point of view of the propositional function of language. As we saw in our discussion of (9a,b) to (15a,b) above, there are severe actional restrictions on the simple present tense for the expression of situations as positively present.

I have already touched upon the conceptual nature of the tense category as reflected in my definition of the general category concept and the individual category members. Having defined TEMPORALITY in terms of deixis, it is now possible to elaborate on this topic. Since the category members (present, past and future) are defined in relation to the locutionary agent's conception of what constitutes the present at the moment of communication ('now', 'before now', 'after now'), it follows that the notion of 'present time' is of crucial importance to the status of the tense category as a conceptual category. If the present can be shown to be conceptually significant, then the metacategory of tense, as defined above, is as a whole a conceptually relevant category.

There is ample justification for treating the present as conceptually significant. First of all, it is important to recognize the *variability* of what constitutes the present for the locutionary agent. The present may be a split-second point in time, coinciding with, or contained in, the time taken up by the utterance or it may stretch over minutes, hours, days, weeks, months, years, even decades and centuries, as the following examples seem to show by defining a certain temporal setting through choice of verb form, use of adverbials and other sentence functions:

- (24) Now I *see* it, now it *is* gone, here it *is* again!
- (25) I *am* happy to inform you that the President *is signing* the contract right at this moment.
- (26) Last year we sold more records than compact discs, this year people *seem* to buy more compact discs than records.
- (27) During World War II there was a shortage of virtually everything here. Nowadays we *have* butter mountains, a real milk-and-honey situation, if you ask me, and yet we feel that we cannot afford to help the starving in Africa.

- (28) In this century people *travel* far more than they did in the 19th century.
- (28) Most people believe that while in prehistoric times dogs had much larger teeth and lived in the wild, the dog *is* now a domesticated animal.

In English there is even an institutionalized way of referring to situations which are strictly past but which we conceive of as taking place, or having taken place, within an extended present period, viz. the present perfect (for a discussion of the present perfect, see Bache 1994c):

- (29) I *have* just *talked* to her on the phone.
- (30) James *has known* her for about a year.
- (31) The French *have produced* wine for centuries.

There are of course limits to the variability of the present. Thus example (28) is perhaps not entirely natural, and if it is, the 'now' in the last clause may not cover all of 'historic times' as a contrast to 'prehistoric times'. Generally, the longer the 'present' is felt to be, the more likely it is to lose its deictic property and become -TEMPORAL with an 'all-time', generic value, especially if there is no explicit contrast to an earlier, past situation. Thus, without the contrast included in (28), an utterance like *The dog is a domesticated animal* is likely to be interpreted as -TEMPORAL. Despite this limitation it is safe to conclude that the present is indeed variable and depends in each case entirely on the locutionary agent's conception of the relations involved.

There is a different sense in which the present is clearly significant from a conceptual point of view. Once the present is defined – individually and separately – for a situation referred to as present by an utterance, it turns out that the moment of communication (i.e. the deictic zero point so central to our understanding of the present) may not even coincide with any phase of the 'present' situation. Consider the following examples:

- (25) I *am* happy to inform you that the President *is signing* the contract right at this moment.

- (32) I *know* her very well indeed.
- (33) Sally *sleeps* in the room just down the corridor to the left.
- (34) James *is writing* another spy novel.

In example (25), the two situations ('being happy' and 'signing the contract') are obviously presented as coinciding with the moment of communication. The same is true of the state of 'knowing' in example (32): the moment of communication is clearly included in the period of time during which the situation prevails ('If it is true that I know her very well indeed, then it is also true that I know her very well indeed at this moment of speaking'). The sentence in (33) is slightly more problematic in that Sally may not actually be asleep at the moment of communication. However, since the situational referent of (33) is clearly a habit (the habit of sleeping regularly in a particular room), the question is really whether this habit coincides with the moment of communication. Viewed in this light, example (33) is like (25) and (32): the situational referent clearly obtains as a present habit at the moment of communication (even if none of the individual subsituations of 'sleeping' is taking place at the moment of communication). Turning finally to example (34), we discover that we have an altogether different case. Thus if it is true that James is writing another spy novel, as asserted in (34), it is not therefore necessarily true that he is engaged in writing at this very moment of communication. Writing a novel is usually a time-consuming, on-and-off activity. So even if we conceive of this activity as present, the actual moment of communication may well coincide with an off-period. In this respect, the particular-occurrence situation of 'writing' in (34) is similar to the habit of 'sleeping' in (33) in that there is a kind of abstraction from the specific activity involved. What is present, strictly speaking, in example (34) is the *period* within which the specific instances of writing take place – most likely between many breaks – and yet it is the situation that we conceive of as present. Cases like example (34) force us to accept that although present TEMPORALITY is assigned as a deictic value to a situation, this does not necessarily mean that the situation obtains at the moment of communication

in any objective sense. In other words, an analysis of examples like (34) in terms of present TEMPORALITY is adequate only if we accept this value as dependent of the locutionary agent's conceptualization in each case of the temporal properties of the situation.

The conceptual nature of the metacategory of tense is evident when we consider the variability of present TEMPORALITY with respect to both length of time and relationship with the fairly objective moment of communication. This psychologically conditioned variability of present TEMPORALITY makes the values of past and future TEMPORALITY variable, too, since these values are defined specifically in relation to present TEMPORALITY. This in turn makes the general category concept (whether positively or negatively marked) – and hence the category as a whole – conceptual in nature.

The future as a tense

A final point in connection with the structure and inventory of the metacategory of tense is that future TEMPORALITY is – quite deliberately – treated as a member on an equal footing with the past and the present. As many linguists have pointed out, there is often a *modal* element in expressions of future situations. Even in positive declarative sentences, future meaning seems closely related to modal meanings such as prediction, volition or planning and thus indicates a certain attitude on the part of the locutionary agent towards the predication. In English grammar, this problem is sometimes solved by letting the tense category contain simply a privative opposition between a marked *past* tense and an unmarked *non-past* tense with the latter typically covering present, future and all-time (i.e. -TEMPORAL) expressions by the simple present tense, leaving all periphrastic expressions of futurity (e.g. WILL + infinitive, the present progressive, BE *going to*, etc.) aside for separate treatment in terms of other categories.

However, in our universal model such an approach is untenable: we want an absolute standard reflecting some sort of conceptual reality with which to approach language-specific material, however complex this may be. And in this light it seems not only appro-

priate but also legitimate to accept future TEMPORALITY as a genuine member of the metacategory of tense. Note first that it reflects our intuition that just as situations may be represented as having taken place in the past or as taking place in the present, they may be represented as taking place in the future – despite the fact that we cannot be absolutely sure that they will in fact take place. Intuitively we think of time in terms of the present of immediate sensation, or reflection, separating the past of our experience from the future of our anticipation. Without a sense of experience and anticipation relating to immediate sensation and reflection, and indeed, without the ability to communicate such major themes, we cannot lead normal, conscious human lives, primitive or civilized. Being inextricably linked to the present and the past in this way, the future has conceptual reality just like the present and the past, and this should naturally be reflected in our metacategory of tense. For human beings there is always a discriminatory time factor leading to a conception of past, present and future (though we may have very different, culturally conditioned attitudes to these concepts), and this factor is always somehow present in language.

Secondly, that modal meanings like 'prediction', 'volition', etc. seem so closely related to future meaning should not prevent us from treating future meaning as a pure time concept just like past meaning. Arguably, pastness is just as closely related to modal meanings like 'certainty' and 'inevitability' as future meaning is to 'prediction' and 'volition'. And yet we have no qualms about pastness as a genuine member of the tense category. In any case, we are allowed a certain amount of idealization or abstraction from language-specific observations when constructing the general meta-language of our universal grammar. It seems reasonable therefore to accept the full inventory of the metacategory of tense as proposed above.

Summary

Before moving on to the third and final metacategory in our model, let us briefly recapitulate the findings of this section. The

metacategory of tense, unlike that of action, can be established on the basis of examples providing a true definition level of meaning, i.e. examples which in the substitution test show category-internal variation only and thus constitute minimal semantic pairs. A fairly simple metacategory of tense can be defined in terms of deictic time relations, i.e. time properties assigned to situations. The general category concept, TEMPORALITY, when positively marked, is accordingly divided into present, past and future. These meanings are shown to be psychologically conditioned in that the present, which separates the past from the future, is variable in length and not necessarily coincident with the objective now, the moment of communication, which serves as the deictic zero point of the category. Finally, arguments are provided for the status of future meaning as a genuine member of the metacategory of tense.

7.5. The Metacategory of Aspect

Category concept and inventory

There is within aspectology a long tradition for defining the aspect category in terms of 'viewpoint' or 'focus'. The term 'aspect' is a translation equivalent of Russian 'vid', which is etymologically related to Latin *videre* (= 'to see') and Greek *eidos* (= 'that which is seen', 'shape', 'form'). In a famous definition offered by Porzig (1927:152), aspect is said to be concerned with the "Gesichtspunkt, unter dem ein Vorgang betrachtet wird" (i.e. the locutionary agent's view of the situation expressed). In a similar vein, Comrie (1976:3) defines the members of the aspect category, the aspects, as "different ways of viewing the internal temporal constituency of a situation" – a very popular definition among modern aspectologists based on Holt 1943:6. Many scholars who distinguish between aspect and action accept only two aspects: the perfective and the imperfective. Others (e.g. Lyons and Comrie) operate with such additional aspects as habitual, stative, iterative, etc. Most people seem undecided as to the status of the perfect form (e.g. the English present perfect) as a tense or as an aspect – for a discussion of this

problem within the descriptive framework proposed in the present book, see Bache 1994c.

Despite Comrie's failure to recognize the autonomy of aspect and action (for criticism of Comrie's and Lyons's conflation of aspect and action into one category, see Bache 1982), his formulation of the difference between perfectivity and imperfectivity is one of the very best in that it invokes the extremely useful notion of 'looking at situations from the outside or inside':

... the perfective looks at the situation from outside, without necessarily distinguishing any of the internal structure of the situation, whereas the imperfective looks at the situation from inside, and as such is crucially concerned with the internal structure of the situation ... (Comrie 1976:4)

One reason for not adopting this formulation uncritically is that it is not quite precise enough. Thus, strictly speaking, it is not the perfective or the imperfective that looks at the situation from outside or from inside but the locutionary agent who offers such a focus by representing situations perfectly or imperfectly. In other words, it is important to emphasize the fact that the aspects are linguistic means of expressing the situational focus with which the locutionary agent wants to convey a particular situation. But, on the basis of the preliminary identification of category concepts in section 7.1, one can only agree that the crux of the matter is indeed 'looking at situations from outside or inside'. This is, in fact, how situational focus should be defined. Having thus adopted a part of Comrie's formulation as the definition of 'situational focus', we can now define ASPECTUALITY, the general category concept of the metacategory of aspect, in this way:

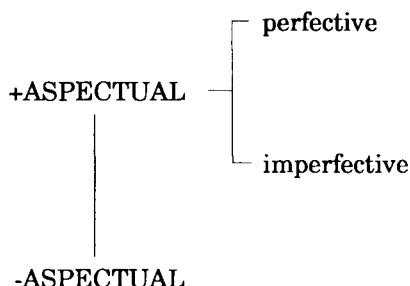
- (1) *ASPECTUALITY* concerns the situational focus with which the locutionary agent represents situations.

Accordingly, +ASPECTUAL and -ASPECTUAL can be defined more precisely as follows:

- (1a) A +ASPECTUAL representation conveys a definite situational focus.
- (1b) A -ASPECTUAL representation conveys a neutral situational focus.

The aspect category is thus basically concerned with *how* the locutionary agent refers to situations, i.e. situational *reference* rather than situational *referent* (which is dealt with by the action category). In the specification of the inventory of the general metacategory of aspect I suggest that we follow the tradition of operating with two specific category members only, *perfective* and *imperfective*. The general metacategory of aspect accordingly looks like this:

(2)



The individual aspects in this general metacategory are defined more precisely as follows:

- (3) A *perfective* representation conveys an external situational focus, i.e. the locutionary agent invites the addressee to look at the situation from the outside, as a whole situation.
- (4) An *imperfective* representation conveys an internal situational focus, i.e. the locutionary agent invites the addressee to look at the situation from the inside, as something in progression.

Basic to these definitions is the notion of 'situational focus' based on Comrie's formulations; but at the same time they offer an explication of external and internal situational focus, respectively. Perfectivity is thus defined in holistic terms whereas imperfectivity is defined in terms of progression. Looking at a situation from outside, i.e. with an external situational focus, means to look at it in its entirety, with all its constituent phases viewed as a whole. Conversely, looking at a situation from inside, i.e. with an internal

situational focus, means to look at it as it unfolds, with special attention paid to the middle part. With the perfective aspect one thus gets a sense of situational *completeness* whereas with the imperfective aspect one gets a sense of situational *progression*.

Definition level variation of aspectual meaning

The positive specific aspectual values of our metacategory of aspect, perfectivity and imperfectivity, can be established on the basis of examples like:

- (5a) I *had* a chat the other day with an old friend of mine from South Wales.
- (6a) We *celebrated* Stephanie's birthday at my uncle's place.
- (7a) James simply *tried* too hard to finish the job.
- (8a) We *stayed* at a small hotel near Penny Lane.

When subjected to a substitution test in which the simple present or past form is changed to the progressive present or past form, these examples display variation of positive ASPECTUALITY without this necessarily affecting the ACTIONALITY or TEMPORALITY of the examples, i.e. they display variation at the definition level of the metacategory of aspect:

- (5b) I *was having* a chat the other day with an old friend of mine from South Wales.
- (6b) We *were celebrating* Stephanie's birthday at my uncle's place.
- (7b) James *was simply trying* too hard to finish the job.
- (8b) We *were staying* at a small hotel near Penny Lane.

In these pairs of examples, the simple past form is replaced by the progressive past form. This results in a change of ASPECTUALITY from perfectivity to imperfectivity: in the a-examples with the simple form, the situation is represented with an external situational focus, as a complete whole, whereas in the b-examples with the progressive form, the situation is represented with an internal situational focus, as something in progression. In the former, the locutionary agent passes on to his addressee(s) the information that the situation took place in its entirety, as a complete event, some

time in the past. In the latter, the locutionary agent not only passes on the information that the situation took place but dwells on it and thus creates an acute impression that it relates to something else, serving some sort of contextual purpose, either as a comment to something communicated immediately before the utterance or as an introduction to further information.

It is interesting to note that the a-examples are felt to be all right in isolation whereas the b-examples seem odd, almost unacceptable without some sort of context specified. There is no doubt that both substitutional variants in cases like (5a,b) to (8a,b) are possible sentences in English and, indeed, that both variants are very much dependent on a suitable context. When we get the impression that the imperfective variants are somehow more dependent on some sort of context than the perfective variants, this is probably a result of the different discourse functions of the two aspects in past-time expressions. As noted in Bache 1985:247f, the simple, perfective past form in English often signals imminent transitions or shifts in the themes or topics of the conversation and is thus felt to be more natural in isolation. By contrast, the progressive, imperfective past form often signals a slowing down of the conversational drift: not only does it mention the occurrence of a situation but it also places the addressee mentally right in the middle of the situation. Therefore, when we look at such imperfective sentences in isolation we get a sense of being in *medias res*. This association is absent from the corresponding perfective counterparts. Somehow the informational load is greater with the imperfective than with the perfective. It is fairly natural to refer to a past situation as a complete situation. If you take the trouble to dwell on its progression it must be for a specific reason, and this makes it seem more immediately dependent on the context. In the case of (5a,b) (*I had/was having a chat the other day with an old friend of mine from South Wales*), the simple past form would be appropriate in a piece of dialogue like the following:

- (5c) - Have you heard from your friend from South Wales lately?
 - Oh yes, I *had* a chat with him the other day.

- Well, you see, I met one of his colleagues at the conference in London last week. It seems they are having

Here, the locutionary agent's reference to the situation of 'having a chat' is simply meant as an answer to a question which does not specifically concern that particular situation but any situation of that kind. Hence the locutionary agent expresses it as a complete past event. There is no need for elaboration or a close-up look. The progressive, imperfective past form would be appropriate in an utterance, or rather set of utterances, like the following:

- (5d) *I was having* a chat the other day with an old friend of mine from South Wales. The Professor at the University College of Abertawe, he is now. Athro Haines; I expect you know his book on medieval Cwmrhydyceirw ... He was telling me ... It seems that in the first year everybody ... (from Kingsley Amis, *Lucky Jim*)

Here the locutionary agent dwells mentally on the situation, and invites his addressee(s) to do likewise. The initial sentence serves to introduce some subject-matter related to the situation of 'having a chat': the information which follows is about the old friend with whom he had the chat and the topic of their conversation. The choice of verb form in (5c) and (5d) is not a necessary one (in both examples the form chosen could be replaced by the other variant). But, given the different contexts of appearance, examples (5c) and (5d) are more natural and, in fact, predictable.

Returning for a moment to the whole set of sentences in (5a,b) to (8a,b) as examples of the definitions of perfectivity and imperfectivity in (3) and (4), it is important to note that the characterization of the difference between the substitutional variants offered presupposes that the simple variants are interpreted as having particular-occurrence situational referents. This is clearly the case in (5a) (*I had a chat the other day with an old friend of mine from South Wales*) because of the adverbial *the other day* and in (7a) (*James simply tried too hard to finish the job*) because of the singular definite specific object noun phrase *the job*. The sentences in (6a) (*We celebrated Stephanie's birthday at my uncle's place*) and (8a) (*We stayed at a small hotel near Penny Lane*) could be

interpreted equally well as habitual, in which case the substitution test also involves a change of ACTIONALITY, the progressive form in (6b) and (8b) clearly expressing particular occurrences of 'celebrating' and 'staying', respectively.

It is difficult to get really convincing examples in English of pure definition level variation of aspect meanings involving -ASPECTUALITY – at least in the propositional, referring function of language (for relevant examples in fiction, see Bache 1986b). Consider the following examples:

- (9a) I am so tired and my feet *hurt*. (cf. Hatcher 1951)
- (9b) I am so tired and my feet *are hurting*.
- (10a) Good morning, Jane. You *look* fine, in your element.
- (10b) Good morning, Jane. You *are looking* fine, in your element.
- (11a) Don't be silly. I'm O.K. The light is right and I *feel* undepressed.
- (11b) Don't be silly. I'm O.K. The light is right and I'm *feeling* undepressed.

In examples (9a,b) to (11a,b) the simple present form is replaced by the corresponding progressive present form. This *seems* to result in a change of ASPECTUALITY alone, more specifically a change from -ASPECTUAL to imperfective. Like the a-examples in the past tense discussed above, (9a) to (11a) offer factual information, but unlike the other examples they do not express the situations as complete in any obvious sense. They have a neutral situational focus. This is not really surprising: (9a) to (11a) express present situations, and how can the locutionary agent and/or the addressee(s) look at such situations from the outside, with an external focus, when they, themselves, are located in the present defined on the basis of the moment of communication? Obviously they cannot place themselves at a distance from which to look at the situations in their entirety. The interlocutors are very much part of the present themselves and thus, in a sense, right in the middle of the present situations, or at a very close range. The sentences in (9b) to (11b) are obviously imperfective like those in

(5b) to (8b): the situations expressed are clearly represented with the intensity and vividness of an internal situational focus.

It is, however, debatable whether examples (9a,b) to (11a,b) are really minimal semantic pairs revealing meanings at the definition level of the general metacategory of aspect. It might be argued that when subjected to the substitution test there is not only a change of ASPECTUALITY but also one of ACTIONALITY in these examples. After all, there is something stative about *hurt*, *look* and *feel*. Note also that although they are non-progressive, they clearly express positively present situations even when interpreted as particular-occurrence situations: this is not typical of +ACTIONAL expressions (see our discussion of this actional restriction on TEMPORALITY in section 7.4). However, the inherent temporariness of the particular-occurrence situations often expressed by these verbs of sensation and appearance is an argument in favour of treating them on a par with +ACTIONAL expressions. But no matter how we decide to interpret such examples from the point of view of ACTIONALITY they clearly illustrate -ASPECTUALITY. What is difficult to decide is whether they do so at the definition level of the aspect category. We cannot resolve the actional ambiguity here but simply conclude that this may well be an area where we have to idealize and abstract somewhat from our language-specific data in order to arrive at a satisfactory general metacategory.

In this process of idealizing and abstracting we may get help from examples of this type:

- (12a) He *examined* the box carefully to see if anything was missing. Joan had warned him about the new maid.
- (12b) He *was examining* the box carefully to see if anything was missing. Joan had warned him about the new maid.
- (13a) He *moved* slowly along the stone fence leading to the small barn at the far end of the field.
- (13b) He *was moving* slowly along the stone fence leading to the small barn at the far end of the field.
- (14a) David went into the bedroom, still talking. Joan *held* a paperback in front of her, pretending to read.

- (14b) David went into the bedroom, still talking. Joan *was holding* a paperback in front of her, pretending to read.

Think of these examples as examples in the narrative mode (e.g. as passages from a novel). As pointed out in Bache 1986b, tense forms are used in a very different way in fiction from what we see in the propositional mode. Despite the use of the past tense form, the author builds his fictional universe of events in a kind of 'fictional present setting': the situation described by a predicator comes into existence in the fictional universe as soon as it is mentioned. The reader is thus 'mentally present' when the situation 'takes place', i.e. he or she becomes a close-range witness to the plot as it unfolds. There is in examples (12a,b) to (14a,b) definition-level variation of aspect meaning, but as a result of the fictional element, the variation is between -ASPECTUALITY (in the a-examples with the simple form) and imperfectivity (in the b-examples with the progressive form). We get a sense of the difference between the -ASPECTUAL simple past form and the perfective simple past form when we compare (12a) through (14a) to the following examples showing the propositional, referring mode of communication:

- (12c) "Joan wiped the kitchen table, Jack *examined* the box to see if anything was missing, and I called the police." Alex explained.
- (13c) Sally said: "Oh yes, I distinctly remember the incident. He *moved* slowly along the stone fence, then crossed the air strip and disappeared into the bush."
- (14c) David said: "She *held* a paperback in front of her while I was there. I do not remember her face. But I think her hair was black."

In these examples, the predicator is past, thus creating a temporal distance from the now of the locutionary agent and the addressee(s) and thereby inviting an interpretation in terms of an external, perfective focus.

As a preliminary to a discussion of the restrictions on definition-level variation of aspect meaning, it is useful to recapitulate our metalinguistic specifications of perfectivity and imperfectivity by

offering two formulae which show the distinction explicitly in terms of situational focus:

(15) Perfectivity: SF $[Ti \dots Tt]$ on Sx

(16) Imperfectivity: SF $[\dots Tm_p + Tm_q + Tm_r \dots]$ on Sx

SF, which stands for 'situational focus', is specified by means of Ti (= initial phase of a situation), Tt (= terminal phase of a situation) and Tm_p , Tm_q and Tm_r (= randomly selected consecutive medial phases of a situation). Sx stands for any given situation sufficiently concrete to allow variation of situational focus, i.e. it must be conceived of as something that takes place or happens at a particular place and time. In other words, Sx must be +ACTIONAL. With a perfective expression the situation is represented as a complete situation without explicit interest in its progression. This means that there is focus on the boundaries of the situation (Ti and Tt). With an imperfective expression the situation is represented as something in progression. This means that there is focus on the medial phases of the situation (Tm_p , Tm_q and Tm_r) rather than on its boundaries.

It is important to emphasize the fact that variation at the definition level of aspect meaning is possible only if the situation remains stable in the projected world when the substitution test is performed. In other words, no matter whether a situation is expressed perfectly or imperfectly, it must have the following structure:

(17) $Sx [Ti + Tm_1 + Tm_2 + Tm_3 \dots Tm_n + Tt]$

With a perfective expression the medial phases are subdued and the boundaries highlighted; with an imperfective expression the boundaries are subdued and the medial phases highlighted. But in either case, the situation is conceived of as the same.

With this specification of definition-level variation of positive aspect meaning it is possible to provide a kind of rationale for the restrictions on minimal semantic pairs within the framework of the general aspect category. As noted in our discussion of English data above, there seems first of all to be a temporal restriction. For

variation between perfectivity and imperfectivity to be possible at the definition level, the situation must be at a distance. If a situation is present, i.e. if it is in the process of unfolding in the present, there cannot be focus on its boundaries. Strictly present situations, whether +ACTIONAL or -ACTIONAL, can therefore only be represented with an imperfective or aspectually neutral, i.e. -ASPECTUAL, situational focus. In specific languages, markedness relations may of course interfere with this conceptually based constraint: a perfective *form* may be used to express strictly present situations if it is sufficiently unmarked with respect to aspectual meaning. To some extent this is what we see in English, where the simple, perfective present form is regularly used to express present -ACTIONAL situations (e.g. habits and states, i.e. situations which do not conform to the formula in (17) above) and to expressions of present appearance or sensation (cf. our discussion of examples (9a,b) to (11a,b) above in this section).

But there are also actional restrictions on definition-level variation of aspect meaning. Using the formulae in (15) to (17) it is fairly easy to exclude a number of situation types of from consideration: unless a situation conforms to the formula in (17) it cannot be subjected to variation of situational focus as specified in (15) and (16). As we have seen, -ACTIONAL situations (such as e.g. habits and states) are excluded because they are not poignant enough as situations to allow variation in terms of focus on situational boundaries or situational progression: they may have boundaries but no progression.

Expressions of *complex* situations are also excluded because the structure of such situations is fundamentally different from the one in (17), as illustrated in the following formula:

$$(18) \quad Sx [s_1 + s_2 + s_3 \dots s_n]$$

Typically, complex situations are structured in terms of different situational levels involving situation (S) and subsituation (s), where each subsituation may be described in terms of its internal structure (such as, for example, the one in (17)).

Expressions of *punctual* situations are excluded because, by definition, the structure of punctual situations is fundamentally different from the one in (17) in that there is no distinction between T_i , T_m and T_t . The different phases are neutralized or 'rolled into one' in the case of punctual situations. As a consequence, whilst perfective representation with its focus on the boundaries of the situation is possible, imperfective representation with its focus on the internal progression of the situation is blocked. Again markedness relations in specific languages may interfere with this conceptually based constraint: formally imperfective expressions may convey punctual situations if they are sufficiently unmarked with respect to aspect meaning (one way of analysing such constructions is to say that expression of punctual situations is a -ASPECTUAL use of the imperfective form).

Expressions of *telic* situations are also excluded from definition-level variation of positive aspect meaning. Although telic situations may at first seem to conform to the formula in (17), one phase, the terminal point T_t , is given special weight. In fact, T_t is criterial for telic situations: without it a situation cannot be telic. This means that while perfective representation with its focus on the boundaries of the situation is compatible with telicness, imperfective representation with its focus on the internal progression of the situation is incompatible. The result of imposing an imperfective focus on a telic situation is therefore that we conceive of the situation as a different type of situation. In other words, the variation of aspectual meaning that we see in such examples when we subject them to our substitution test obtains at the function level of aspect meaning (with variation of actional meaning as well as aspectual meaning) rather than at the definition level (with variation of aspectual meaning alone). As with the other types of expression already discussed, markedness relations may interfere with this conceptually based constraint on definition-level variation of meaning: in specific languages, formally imperfective constructions may express telic situations if they are sufficiently unmarked (the point being that when such expressions refer to telic situations,

imperfective meaning is subdued, or disappears completely, and this makes us interpret the imperfective form in terms of unmarked aspectual meaning, -ASPECTUALITY). An apposite (and famous) example of this is the Russian imperfective in:

- (19) Ja uže čital ètu knigu. (FGA 13)
(‘I have already read that book’)

The ‘reading of that book’ is in this example clearly a past, telic situation, and yet it is possible to refer to it by the imperfective past form *čital*. In connection with such Russian examples, Forsyth (1970:14) notes that “the imperfective is in a sense ‘non-aspectual’”.

Finally, expressions of *directed* situations are, like telic expressions, excluded from definition-level variation of positive aspect meaning unless the terminal point is *lexially* externalized, cf. our remarks on the directed/self-contained distinction in section 7.3. The problem with directed situations is that they are defined in terms of progression towards a terminal point strictly outside the referential scope of the expression. This means that if directed situations are interpreted as conforming to the formula in (17), it is crucial that Tt is different from the terminal point towards which the situation is directed, i.e. that Tt is an arbitrary point of termination beyond which the situation could in principle continue towards the terminal point outside the referential scope of the expression. This is the case with lexically expressed direction (as in *They approached the building*, *My dad tried to solve the problem*, *He moved towards the door*, etc.). Morphosyntactically expressed imperfective direction, however, does not have such an internal, arbitrary point of termination and thus does not conform to the formula in (17). Perfective counterparts tend to include the final, non-arbitrary terminal point in its referential scope. In other words, the variation of meaning elicited in a substitution test involving such examples is at the function level of meaning (with variation of actional meaning as well as aspectual meaning) rather than at the definition level (with variation of aspectual meaning only).

Having excluded a fair number of expression types from the definition level of our general aspect category, we are in fact left with expressions of *self-contained* situations (as well as lexically conditioned direction), which not only conform exactly to the formula in (17) but also contain equally weighted phases, none of which is criterial for our conception of the situation as belonging to that particular type. In other words, self-contained situations may begin and end as they like – we still conceive of them as self-contained. This means that it makes no difference to our conception of the situation whether there is imperfective focus on its progression or perfective focus on its boundaries. In either case, we feel that it is the same situation but that it gets represented in two different ways. Looking back at the examples reviewed in this section which display definition-level variation of aspect meaning, we find that, indeed, all the situations expressed are self-contained (or lexically directed).

Summary

Before we move on to a more detailed discussion of the categorial interplay that we have noted at the function level of meaning, let me briefly recapitulate the findings of this section on definition-level variation of aspect meaning. The general metacategory of aspect can be established on the basis of examples providing a true definition level of meaning, i.e. examples which in our substitution test display category-internal variation only and thus constitute minimal semantic pairs. I propose a fairly simple, and fairly traditional, metacategory of aspect defined in terms of 'situational focus' as reflected in the way the locutionary agent represents situations. The general category concept, ASPECTUALITY, when positively marked, is divided into perfective and imperfective. These meanings, as well as the many constraints on expressions showing definition-level variation between them, are clearly conceptually based, depending entirely on how the locutionary agent views a situation, or wants his addressee(s) to view it, either as a totality, a complete situation, at a conceptual distance from which the situational boundaries rather than the middle phases present

themselves, or, alternatively, in progression at a close-up range from which the unfolding of the middle phases rather than the boundaries of the situation are prominent. Constraints on definition-level, category-internal variation of aspect meaning in examples subjected to the substitution test are identified in relation to both the metacategory of tense and the metacategory of action, as defined in the previous sections.

7.6. Categorial Interplay at the Function Level

In the last sections we saw that there are many constraints on category-internal, definition-level variation of aspect and tense meaning in examples subjected to a substitution test. In noting the types of construction that are excluded from the definition level of these categories, we have already embarked on the description of their categorial interplay at the function level of meaning. The descriptive representations offered in this section are based on the principles outlined in section 6.4.6. More specifically a list of rules is provided stating the relevant incompatibility relations between the category members identified in section 7.5 above as well as the constraints and the function-level variation of meaning caused by these incompatibility relations.

Incompatibility relations between action and aspect

Let us begin by looking at the relationship between action and aspect. The first incompatibility relation is of a very general nature:

- (1) -ACTIONAL $\Downarrow$ +ASPECTUAL

This rule states that -ACTIONALITY is incompatible with +ASPECTUALITY, which of course comprises both perfectivity and imperfectivity. The conceptual rationale for this incompatibility relation is that a situational referent marked as -ACTIONAL is too vague to allow a positive aspectual focus. A -ACTIONAL situation cannot be visualized as something which takes place or happens and therefore eludes aspectual representation with focus on either situational boundaries or situational

progression. It is important to note that in specific languages, perfective or imperfective *forms* may express -ACTIONAL situations. Thus in English, as we have seen in previous sections, it is perfectly all right to use the simple, perfective form to express, say, habits and states (e.g. *Jack smokes fat cigars*, *The village lies in the valley*, etc.). However, such forms are clearly -ASPECTUAL, i.e. unmarked with respect to aspectual meaning, when used in this way. Examples of this kind are not counter-evidence to the rule in (1). All it means is that the markedness relations in English are such that the perfective form has both perfective and -ASPECTUAL uses. As will be recalled, in Russian it is the imperfective form that is used for -ACTIONAL situations and hence seems to be the unmarked member of the formal aspect opposition, at least in relation to that particular function. In other words, the specification in (1), like many of the specifications to come, can be used to determine markedness relations in specific languages. Note finally that the incompatibility relation in (1) can be formulated as a co-selection rule, as in:

(1a) -ACTIONAL >> -ASPECTUAL

As we saw in section 7.2, this constraint on aspectual meaning offers some evidence for the ranking of categories in our universal model.

At a more specific actional level we find a number of incompatibility relations with the aspect category, as indicated in our discussion of constraints on definition-level variation of aspect meanings in section 7.5. Moving from left to right down the branching category structure of action, the first non-branching member that we encounter is *complexity*, which seems incompatible with perfectivity:

(2) complex $\Downarrow$ perfective

The conceptual rationale for this incompatibility relation is somewhat weaker than in the case of (1) above. Complex situations are conceived of as having a specific internal structure, consisting of a series of consecutively realized identical, or related, subsituations.

It is therefore only natural to represent complex situations with an internal, imperfective focus. An external, perfective focus on the boundaries of such a situation will tend to ignore the defining feature of complexity, the existence of subsituations making up the higher-level situation, and will thus tend to redefine it as a *simplex* situation. Although simple perfective expressions in English like *The telephone rang*, *Somebody tapped him on the shoulder*, *A door slammed behind him* and *Leiser knocked on the door* may refer to several instances of ringing, tapping, slamming and knocking like their progressive, imperfective counterparts, we do not really conceive of them as complex. It is of course possible to quantify a particular 'subsituation' (enumeration or repetition), as in the following:

- (3) The telephone *rang* several times.
- (4) Somebody *tapped* him repeatedly on the shoulder.
- (5) A door *slammed* again and again behind him.
- (6) Leiser *knocked* incessantly on the door.

The adverbials used here secure a kind of complexity in the sense that the situation expressed takes place a number of times. But notice that with some of these examples, there are two interpretations: either the situation takes place on different occasions within a certain limited period of time, or it takes place consecutively on the same occasion (e.g. either the telephone in (3) rang several times during, say, the morning, or it gave several rings when it finally rang). However, no matter how we interpret these examples, there is a sense of individuality about each occurrence of the situation rather than a sense of it being a series of subsituations integrated in a higher-level situation, as in *The telephone was ringing*, *Somebody was tapping him on the shoulder*, *A door was slamming behind him* and *Leiser was knocking on the door*. The important question is perhaps not so much how we interpret all these examples as whether situational complexity is *in principle* incompatible with perfectivity – a difficult question. All we can say is that complexity and imperfectivity make a natural semantic and

conceptual combination, whereas the meanings attached to complexity and perfectivity seem to work in opposite directions conceptually. So here we have an area where it may be necessary to idealize somewhat in order to arrive at a useful absolute standard. If for this reason the incompatibility relation in (2) is accepted in our grammar, as I propose, we can derive the following constraint on definition-level variation of aspect meaning:

(2a) complex >> imperfective, -ASPECTUAL

This co-selection rule predicts that in specific languages complex situations, in the sense defined, are conveyed by imperfective *or* non-aspectual expressions, i.e. by expressions which involve imperfective forms positively marked for imperfectivity, or by either perfective or imperfective forms with unmarked aspectual meaning.

The next incompatibility relation we encounter as we work our way down the hierarchy of meanings in the action category is much more straightforward:

(7) punctual $\Downarrow$ imperfective

According to (7), punctuality is incompatible with imperfectivity. The conceptual rationale for this incompatibility relation is obvious: punctual situations are conceived of as having no internal structure and therefore cannot be represented with a positively imperfective situational focus. A punctual situation cannot be looked at from inside or as something in progression (unless, of course, it is redefined as a durative situation, in which case (7) no longer applies). The incompatibility relation in (7) can be reformulated as a constraint on definition-level variation of meaning within the aspect category:

(7a) punctual >> perfective, -ASPECTUAL

This co-selection rule predicts that in specific languages punctual situations, as defined in our metacategory of action, are conveyed by perfective or non-aspectual expressions, i.e. by expressions

involving perfective forms positively marked for perfectivity or by perfective or imperfective forms with unmarked aspectual meaning.

The next category member in the hierarchy of actional oppositions which enters an incompatibility relation with the aspect category is *telicness*:

(8) telic $\Downarrow$ imperfective

According to (8), telicness is incompatible with imperfectivity. Again there is a fairly obvious conceptual rationale for this incompatibility relation, as we saw in section 7.5. A telic situation is a process or an activity which reaches a terminal point beyond which the situation cannot proceed and without which the situation is not realized as a telic situation. With its internal focus on the middle phases of situations, imperfectivity excludes this criterial terminal point from the referential scope of the expression. If positive imperfectivity is imposed on a telic expression, the result is inevitably that we conceive of the situation as belonging to a different type of situation. Like the other incompatibility relations discussed so far, the one in (8) can be reformulated as a constraint on definition-level variation of meaning within the aspect category:

(8a) telic $\gg$ perfective, -ASPECTUAL

This co-selection rule predicts that in specific languages telic situations, as defined in our discussion of the action category, are conveyed by perfective or non-aspectual expressions, i.e. constructions involving either perfective forms positively marked for perfectivity or perfective or imperfective forms with unmarked aspectual meaning.

The final incompatibility relation between action and aspect involves (non-lexical) *direction*

(9) directed $\Downarrow$ perfective

According to (9), directedness is incompatible with perfectivity. The conceptual rationale for this incompatibility relation is almost the opposite of the one invoked for telicness in relation to imperfectivity. With its external focus on the boundaries of a

situation, with little or no heed paid to middle phases, perfectivity includes that terminal point in the referential scope of the expression which is defined as not included in directed situations. The result of imposing perfectivity on directed expressions is that we change the situation from directed to a different type, often telic. This final incompatibility relation can also be reformulated as a constraint on definition-level variation of meaning within the aspect category:

(9a) directed >> imperfective, -ASPECTUAL

This co-selection rule predicts that in specific languages, situations that are interpreted as directed according to the specifications of our metacategory of action, are conveyed by imperfective or non-aspectual expressions, i.e. constructions involving either imperfective forms positively marked for imperfectivity or perfective or imperfective forms marked as -ASPECTUAL.

The incompatibility relation between tense and aspect

Turning now to the categorial interplay between tense and aspect, we find only one incompatibility relation:

(10) present $\Downarrow$ perfective

According to this very important specification of the categorial interplay between tense and aspect, a truly present situation cannot be expressed by a truly perfective predicator. As with the categorial interplay between action and aspect, there is a conceptual rationale for the incompatibility relation in (10). In the referring, propositional mode of language, on which our universal model of verbal categories is based, the present is defined deictically in relation to the moment of communication. At the moment of communication, neither the locutionary agent nor the addressee(s) can view a present situation from the outside, in terms of its boundaries. A perfective view requires a certain *temporal distance* to the situation. By imposing perfectivity on a potentially present expression, the situation gets located either in the past or the future, or is redefined as a -TEMPORAL situation, i.e. a situation

altogether abstracted from deictic time relations. The incompatibility relation stated in (10) can thus be reformulated as a constraint on definition-level variation of meaning within the aspect category:

(10a) present >> imperfective, -ASPECTUAL

With this co-selection rule we predict that in specific languages, present situations (i.e. situations interpreted as deictically present to the moment of communication) are expressed by imperfective or non-aspectual expressions, i.e. constructions involving either imperfective forms positively marked for imperfectivity or perfective or imperfective forms marked as -ASPECTUAL.

Incompatibility relations between action and tense

The categorial interplay between action and tense is similar to the categorial interplay between tense and aspect in that deictic present time poses certain conceptual limits. All the types of situation identified in our metacategory of action, i.e. all the category members as well as -ACTIONALITY, are conceivable in the past or in the future. But in the present, there is a problem with situation types which include a criterial phasal point, i.e. punctual situations and telic situations. Such situations normally elude present time in the referring, propositional mode of language. One explanation could be that, by hinging on a point, telic and punctual situations force us to conceive of the present as a point. As the utterance of the proposition itself takes time, i.e. is durative, strict co-occurrence between a punctual situation or the terminal point of a telic situation and the present point is difficult to obtain: typically the actional point is 'pushed' into the immediate past or the imminent future. And in the case of telic situations, there is a further complication: the durative middle part preceding the attainment of the terminal point is normally far more extensive than the moment of communication. The difficulty of obtaining strict co-occurrence between punctual or telic situations and the present can be expressed in the following two incompatibility relations:

(11) punctual $\Downarrow$ present

(12) telic $\Downarrow$ present

It is important to note that these relations are regularly violated in other modes or functions of language, and, arguably in certain peripheral uses of the referring, propositional mode. Thus, as we saw in section 7.4, in commentaries (e.g. sports commentaries) punctual and telic situations are in fact compatible with strictly present reference. But since in such cases the referent governs the expression in a regular, institutionalized way (or conversely, the expression is directly stimulus-conditioned), they hardly count: the function of the expression is not simply referential or propositional but rather is to serve as a medium supporting or replacing a visual experience. Similarly, in the narrative mode of communication, we find many examples like the following (cf. Bache 1986b:93):

(13) Paul *takes* off his shoes and stockings.

(14) She *opens* her packsack.

In the literary context in which these examples are found, the telic situation expressed in (13) and the punctual situation expressed in (14) 'take place' in the story at exactly the time the reader reads (13) and (14) and are thus, in a sense, 'present'. They are not, however, deictically present, i.e. present in relation to the moment of communication, and therefore do not violate the rules in (11) and (12) (for discussion of tense and aspect in fiction, see Bache 1986a, 1986b). Consider also performative examples like the following:

(15) I *promise* to help her get a divorce.

(16) I *pronounce* you man and wife.

In such examples of 'doing by saying' there is, by definition, co-occurrence between actionality and the present moment of communication. However, like the literary examples in (13) and (14), they belong to a different language function and are therefore strictly irrelevant for our metalinguistic specifications at this point.

Bearing these points in mind, we may now reformulate the incompatibility relations in (11) and (12) as constraints on

definition-level variation of meaning within the metacategory of tense:

(11a) punctual >> future, past, -TEMPORAL

(12a) telic >> future, past, -TEMPORAL

With these co-selection rules, which apply to the referring, propositional mode of language like all the other constraints that we have proposed, we predict that in specific languages punctual and telic expressions are expressed by non-present tense forms (past, future or -TEMPORAL) or by present tense forms that are unmarked for deictic present time (i.e. -TEMPORAL). These constraints are not surprising, given the incompatibility relation in (10) (present $\Downarrow$ perfectivity): if the present is incompatible with perfectivity, we can also expect it to be incompatible with actional values like punctual and telic, which invite perfectivity rather than imperfectivity (according to the specifications in (7) and (8): 'punctual $\Downarrow$ imperfectivity' and 'telic $\Downarrow$ imperfectivity').

Function-level meaning

Having discussed the incompatibility relations involved in the categorial interplay between action, tense and aspect, as well as the constraints on definition-level variation of meaning within tense and aspect derived from these compatibility relations, we must now examine the potential changes of meaning incurred when there is a clash in a language expression of incompatible meanings from the three categories. The kind of question that must be addressed here is more specifically what happens when, for example, imperfectivity is imposed on an expression that is otherwise punctual, given the incompatibility relation offered in (7) above (punctual $\Downarrow$ imperfectivity). In English a case in point would be a sentence like the a-example in the following pair:

(17a) Jack *caught* up with me.

(17b) Jack *was catching* up with me.

In (17a) the choice of lexical item, tense form and aspect form in that particular syntactic context ensures a perfective punctual

reading of the situation. In (17b) imperfectivity is 'imposed on this otherwise punctual expression' by changing the aspect form to imperfective in a substitution test. This change results in a change of both aspectual and actional meaning. The aspectual change is clearly predictable as a result of the change of aspect form. But what about the change of actional meaning: can that be predicted with any degree of precision? Questions like this concern the essence, the very dynamics, of the functional interplay between the categories involved, as identified typically in Type III material in our substitution test, i.e. examples showing variation of intensional meaning.

It is difficult, if not impossible, to make absolute predictions of such function-level variation of meaning, if by 'absolute' we mean that a prediction should specify one, and only one, possible change for every one incompatibility relation. There are simply too many possible combinations of the members of the three categories under scrutiny. These allow much too much room for different markedness relations in different languages to interfere with rules of function-level variation of meaning which have been too narrowly formulated. But it is possible to define certain limits of variation and, in some cases, probability of occurrence among several possibilities, and in this sense we can offer an absolute description of the function-level variation of meaning incurred by each incompatibility relation.

Functional interplay between action and aspect

The first incompatibility relation between action and aspect in (1) above (-ACTIONAL $\Downarrow$ +ASPECTUAL) gives rise to the following general function-level change of meaning:

$$(1b) \quad \begin{array}{l} \text{-ACTIONAL } \Downarrow \text{ +ASPECTUAL} \\ \rightarrow \text{-ACTIONAL } \approx \text{ +ACTIONAL} \end{array}$$

According to this specification, the incompatibility relation between -ACTIONAL and +ASPECTUAL results in function-level variation of meaning between -ACTIONAL and +ACTIONAL in a substitution test involving substitution of -ASPECTUAL forms for

+ASPECTUAL forms, or vice versa. At the same time there is a change of definition-level aspect meaning. The rule in (1b) describes in a general way a number of more specific changes from -ACTIONALITY to particular members of the action category. In our general metacategory, there is no principled way to reduce the number of possible specific realizations of +ACTIONALITY. All the specific members of the category may appear at the right-hand side of the '≈' sign:

- (1ba) -ACTIONAL ≈ complex
- (1bb) -ACTIONAL ≈ punctual
- (1bc) -ACTIONAL ≈ telic
- (1bd) -ACTIONAL ≈ directed
- (1be) -ACTIONAL ≈ self-contained

However, since all these actional changes are conditioned by a change of aspectual meaning, in specific languages markedness relations in the aspect category may determine which of the changes of meaning in (1ba) – (1be) are in fact relevant in that language. On the basis of the compatibility relations between aspect and action, we predict that if a language-specific aspect category consists of two forms, a perfective and an imperfective, one of which is unmarked in the sense that it covers not only a positive aspectual value (perfectivity or imperfectivity) but also -ASPECTUALITY, then the changes relevant in the language are those which involve the actional members that are compatible with the *marked* member. Thus if the *perfective* is the marked member of an aspect opposition, covering only perfectivity, and the imperfective is the unmarked member, covering both imperfectivity and -ASPECTUALITY, then it can be predicted that the following changes of meaning are relevant:

- (1bb) -ACTIONAL ≈ punctual
- (1bc) -ACTIONAL ≈ telic
- (1be) -ACTIONAL ≈ self-contained

The imperfective form in that language is potentially ambiguous between a -ACTIONAL reading on the one hand and a complex,

directed or self-contained reading on the other. For example, in Russian, the past imperfective form in *on čital* is typically [-ACTIONAL (habitual), -ASPECTUAL] ('he was in the habit of reading'), or [directed, imperfective] (e.g. 'he was reading (a book, a letter or a newspaper)'), or [self-contained, imperfective] (e.g. 'he was reading'). Only very occasionally, and only with explicit adverbial support, is it [telic, -ASPECTUAL] (see my discussion of example (19) in section 7.5, above). The past perfective *pročital*, on the other hand, is typically [telic, perfective].

If, however, the *imperfective* is the marked member of a language-specific aspect opposition, covering only imperfectivity, and the perfective is the unmarked member, covering both perfectivity and -ASPECTUALITY, then, predictably, the following changes of meaning are relevant:

- (1ba) -ACTIONAL ≈ complex
- (1bd) -ACTIONAL ≈ directed
- (1be) -ACTIONAL ≈ self-contained

The perfective form in such a language is potentially ambiguous between a -ACTIONAL reading on the one hand and a punctual, telic or self-contained reading on the other. A case in point is English, where we find examples like the following:

- (18a) James *knocked* at her door.
- (18b) James *was knocking* at her door.
- (19a) My wife *read* the Financial Times.
- (19b) My wife *was reading* the Financial Times.
- (20a) We *celebrated* Stephanie's birthday at my uncle's place.
- (20b) We *were celebrating* Stephanie's birthday at my uncle's place.

In these pairs of examples, the simple perfective form is potentially ambiguous. In (18a) *knocked* is either punctual (e.g. 'James knocked at her door as soon as he got there, a few minutes later') or -ACTIONAL (e.g. 'James habitually knocked at her door'). In (19a) *read* is either telic (e.g. 'My wife read the Financial Times last night') or -ACTIONAL (e.g. 'My wife read the Financial Times

when she was a business executive'). In (20a) *celebrated* is either self-contained (e.g. 'Last year we celebrated Stephanie's birthday at my uncle's place') or -ACTIONAL (e.g. 'We usually celebrated Stephanie's birthday at my uncle's place'). With the -ACTIONAL reading, examples (18a) to (20a) undergo the changes specified in (1ba) to (1be) when subjected to the substitution test. Thus (18b) to (20b) are all clearly +ACTIONAL: *James was knocking on her door* is complex (according to (1ba): -ACTIONAL $\approx$ complex); *My wife was reading the Financial times* is directed (according to (1bd): -ACTIONAL $\approx$ directed); and *We were celebrating Stephanie's birthday at my uncle's place* is self-contained (according to (1be): -ACTIONAL $\approx$ self-contained). We do not find examples in English of the progressive, imperfective form with -ACTIONAL reference. Nor do we normally find examples of the simple, perfective form with complex or directed situational reference.

Disregarding language-specific markedness relations, we can reformulate the original rule in (1b), repeated here:

- (1b) -ACTIONAL $\Downarrow$ +ASPECTUAL
 $\rightarrow$ -ACTIONAL $\approx$ +ACTIONAL

Note first the implicit general assumption behind any variation of meaning at the function level of a category occasioned by an incompatibility relation: there is potential function-level variation of meaning between the value on the left-hand side of a rule stating an incompatibility relation and any value from the same category compatible with the right-hand side of the rule, disregarding unmarkedness. Put more simply, if a value from one category (say -ACTIONAL from action) is incompatible with a particular value from another category (say +ASPECTUAL from aspect), there is potential variation between the first value (-ACTIONAL) and other actional values which *are* compatible with the second value (i.e. all other actional values – because all other actional values are compatible with at least one of the specific realizations of +ASPECTUALITY: perfectivity and imperfectivity). In the case of (1b) we can express this general prediction as follows:

- (1c) $-ACTIONAL \Downarrow +ASPECTUAL$
 $\rightarrow -ACTIONAL \approx x [x \Uparrow +ASPECTUAL]$
 $x = \text{complex, punctual, telic, directed, self-contained}$

This rule states that the incompatibility relation between $-ACTIONALITY$ and $+ASPECTUALITY$ results in *function-level* variation of meaning within the aspect category between $-ACTIONALITY$ and any actional value (x) compatible with $+ASPECTUALITY$ ($'x \Uparrow +ASPECTUAL'$) in a substitution of forms with $+ASPECTUAL$ meaning for forms with $-ASPECTUAL$ meaning. At the same time there is a change of definition-level aspect meaning. The advantage of the formulation in (1c) is that it allows us to state conditions, probability of occurrence, etc. in a simpler and more elegant way. For example, the markedness relations discussed above could be stated in this way:

- (1ca) $x = \text{complex, directed, self-contained} > \text{punctual, telic}$ if imperfective form is marked
 (1cb) $x = \text{punctual, telic, self-contained} > \text{complex, directed}$ if perfective form is marked

The prediction expressed in (1ca) is that in any particular language complexity, directedness and self-containment are more likely values of x than punctuality and telicness if the imperfective form is marked. Conversely, the prediction expressed in (1cb) is that in any particular language, punctuality, telicness and self-containment are more likely values of x than complexity and directedness if the perfective form is marked.

Turning now to changes involving two specific, positive members of the action category in the categorial interplay with aspect, I propose that we go on to use the descriptive device employed above to state general predictions with possible qualifications or modifications on the values of x . Thus the incompatibility relation in (2) ($\text{complex} \Downarrow \text{perfective}$) may prompt changes which fit the following description:

- (2b) $\text{complex} \Downarrow \text{perfective}$
 $\rightarrow \text{complex} \approx x [x \Uparrow \text{perfective}]$

This rule states that the incompatibility relation between complexity and perfectivity results in function-level variation of meaning within the aspect category between complexity and any actional value (x) compatible with perfectivity ('x $\uparrow$ perfective') in a substitution test involving the substitution of forms with perfective meaning for forms with imperfective meaning. At the same time there is a change of aspect meaning at the definition level of the category.

More specifically, given the structure and definitions proposed for the metacategory of action, the rule in (2b) includes the following three potential changes:

- (2ba) complex $\approx$ punctual
- (2bb) complex $\approx$ telic
- (2bc) complex $\approx$ self-contained

According to these specifications, the incompatibility relation between complex and perfective results in function-level variation of actional meaning within the aspect category between complexity (the left-hand side of the incompatibility relation) and punctuality, telicness or self-containment (the three members of the action category that are compatible with perfectivity – the right-hand side of the incompatibility relation) in a substitution test involving substitution of forms with perfective meaning for forms with imperfective meaning.

Of the three potential changes specified above, the one involving punctual meaning is by far the most likely, as in e.g. *The telephone rang/was ringing, Somebody tapped/was tapping him on the shoulder, Leiser knocked/was knocking at the door*, etc. The reason for this is to be found in the compatibility relations of the three possible values specified: punctuality and telicness are incompatible with imperfectivity (see the relations stated in (7), (8), above), self-containment is compatible with both perfectivity and imperfectivity (see section 7.5). Variation involving self-containment is thus more likely to be at the definition level of aspectual meaning than at the function level. In other words, when a formally imperfective expression with imperfective, self-contained meaning is replaced by

a formally perfective expression with perfective meaning, the situation typically remains the same, i.e. self-contained. Of the two values incompatible with imperfectivity, telicness tends to change into directed meaning rather than complex meaning when exposed to an imperfective focus. The reason for this could well be that telicness shares more features with directedness than with complexity: they are both durative and simplex and both relate to a situational *point*, the only difference being the location of this point outside or inside the referential scope of the expression. This means that a change from telic to directed is *less drastic* than a change from telic to complex. By contrast, punctuality has an almost even chance of changing into either complexity or directedness. Both changes are fairly drastic: when exposed to an imperfective focus, a punctual situation is burst wide open and gets completely redefined, either as a durative situation directed towards a point outside the referential scope of the expression (directed) or as a durative, superordinate situation consisting of punctual subsituations (complex). A change into complexity is perhaps slightly more likely than a change into directedness because the notion of punctuality is preserved within the referential scope of the expression in the former, if only at a subordinate situational level.

On the basis of the observations made above in connection with the individual potential changes arising as a result of the incompatibility relation between complexity and perfectivity, it seems reasonable to rank the possible values of 'x' for the general rule in (2b) according to likelihood of occurrence:

- (2b) complex $\Downarrow$ perfective
 $\rightarrow \text{complex} \approx x [x \Uparrow \text{perfective}]$
 $x = \text{punctual} > \text{telic} > \text{self-contained}$

According to this ranking, punctual is a more likely value for x than telic, which in turn is a more likely value than self-contained. Interestingly enough, this ranking reflects the distance of the values in our hierarchy of actional meanings from complexity: punctuality is closer to complexity than telicness, which, in turn, is closer to complexity than self-containment.

Very closely related to this specification of function-level variation of actional meaning within the aspect category, is the following specification relating to punctuality:

- (7b) punctual $\Downarrow$ imperfective
 $\rightarrow$ punctual $\approx x$ [$x \Uparrow$ imperfective]

This rule states the fairly obvious prediction that the incompatibility relation between punctuality and imperfectivity results in function-level variation of actional meaning between punctuality and any other actional value compatible with imperfectivity in a substitution of forms with imperfective meaning for forms with perfective meaning. At the same time there is a change of definition-level aspect meaning from perfective to imperfective. More specifically, given the structure and definitions proposed for the metacategory of action, the rule in (7b) includes the following three potential changes:

- (7ba) punctual $\approx$ complex
 (7bb) punctual $\approx$ directed
 (7bc) punctual $\approx$ self-contained

Complexity being one of the three meanings in the metacategory of action compatible with imperfectivity, the rule in (7b) (when realised as (7ba)) may function as a natural counterpart to the rule in (2b). But as noted in our discussion of rule (2b), directedness (the second actional meaning compatible with imperfectivity, see rule (7bb)) is almost as likely a change as complexity when imperfectivity is imposed on punctuality. Typical examples in English are:

- (21a) Jack *caught* up with me.
 (21b) Jack *was catching* up with me.
 (22a) Nadime *left* the room.
 (22b) Nadime *was leaving* the room.
 (23a) After several weeks in intensive care James *died*.
 (23b) After several weeks in intensive care James *was dying*.

For these examples to illustrate the change from punctuality to directedness, the a-variants must be interpreted as having particular-occurrence situational reference. If the a-variants are interpreted as habitual (hardly a possible interpretation in the case of (23a)!), the change is from -ACTIONAL to directed according to the rule in (1bd) above (-ACTIONAL $\approx$ directed) rather than from punctual to directed. The particular-occurrence interpretation is dependent on a positively perfective rather than a -ASPECTUAL interpretation of the simple forms in these examples.

Self-containment, which is the third actional meaning compatible with imperfectivity (and hence a potential value of *x* in (7b), see (7bc)) is not likely to enter function-level variation with punctuality. Not only are the two values very different in terms of their phasal constituency – a change from one to the other would be very drastic, indeed – but self-containment typically enters definition-level variation rather than function-level variation, as already noted in our discussion of rule (2b). This means that, again, we can rank the potential values of *x* in our specification of the functional interplay between action and aspect:

- (7b) punctual $\Downarrow$ imperfective
 $\rightarrow$ punctual $\approx$ *x* [*x* $\Uparrow$ imperfective]
x = *complex* > *directed* > *self-contained*

According to this ranking, complexity is a more likely value for *x* than directedness (if only marginally so), which in turn is a more likely value than self-containment. Interestingly enough, this ranking, too, reflects the distance of the three values from the value under analysis (in this case punctuality) in our hierarchy of actional meanings: complexity is closer to punctuality than directedness, which again is closer to punctuality than self-containment.

The next specification of function-level variation relates to the incompatibility relation between telicness and imperfectivity (as stated in rule (8) (telic $\Downarrow$ imperfective)):

- (8b) telic $\Downarrow$ imperfective
 $\rightarrow$ telic $\approx$ *x* [*x* $\Uparrow$ imperfective]

This rule states that the incompatibility relation between telicness and imperfectivity results in function-level variation of actional meaning within the aspect category between telicness and any other actional value compatible with imperfectivity in a substitution of forms with imperfective meaning for forms with perfective meaning. At the same time there is a change of definition-level aspect meaning from perfective to imperfective. Again there are three possible values for x: complexity, directedness and self-containment, as specified in:

(8ba) telic $\approx$ complex

(8bb) telic $\approx$ directed

(8bc) telic $\approx$ self-contained

As already argued above in connection with the function-level variation of meaning involving complexity, telicness is far more likely to change to directedness (rule (8bb)) than to complexity (rule (8ba)) when exposed to an imperfective focus: in terms of phasal constituency telicness is more closely related to directedness than to complexity. A change from telicness to directedness is thus far less drastic than a change from telicness to complexity. Obvious examples in English are:

(24a) Sally *built* a new garden shed.

(24b) Sally *was building* a new garden shed.

(25a) Jack *walked* to the police station.

(25b) Jack *was walking* to the police station.

(26a) Stephanie *wrote* a letter to him last night.

(26b) Stephanie *was writing* a letter to him last night.

Note that for these examples to illustrate the change from telicness to directedness, the a-variants must be interpreted as having particular-occurrence situational reference (see also our discussion of examples (21a,b) to (23a,b)). If the a-variants are interpreted as habitual (hardly a possible interpretation in the case of (26a) because of the adverbial *last night*), the change is from -ACTIONAL to directed (according to the rule in (1bd) above (-

ACTIONAL $\approx$ directed)) rather than from telic to directed. The particular-occurrence interpretation is dependent on a positively perfective rather than a -ASPECTUAL interpretation of the simple forms also in these examples.

As far as self-containment is concerned, the same argument applies to the rule in (8bc) as in the other cases discussed so far. Self-containment is the one value in our metacategory of action which permits definition-level variation of aspectual meaning. An imperfective form with positively imperfective, self-contained meaning is unlikely to have a perfective form with positively perfective, telic meaning as its counterpart in a substitution test.

We are thus again in a position to rank the potential changes incurred by an incompatibility relation. For the function-level variation of meaning within the aspect category specified in relation to telicness, it seems reasonable to propose the following:

- (8b) telic $\Downarrow$ imperfective
 $\rightarrow \text{telic} \approx x [x \Uparrow \text{imperfective}]$
 $x = \text{directed} > \text{complex} > \text{self-contained}$

According to this ranking, directedness is a more likely value for x than complexity (in fact very much so). In turn, complexity is a more likely value than self-containment (but only slightly so). Our ranking once again reflects the distance of the values in our hierarchy of actional meanings as far as directedness is concerned: telicness is closer to directedness than to the other two values (and in terms of phasal constituency, telicness is also more similar to directedness than to complexity and self-containment). But it is equally distant from complexity and self-containment. This perhaps indicates that both complexity and self-containment are fairly unlikely to enter that particular interplay.

The final general specification of function-level variation of actional meaning within the aspect category involves directedness:

- (9b) directed $\Downarrow$ perfective $\rightarrow \text{directed} \approx x [x \Uparrow \text{perfective}]$

According to this rule, the incompatibility relation between telicness and imperfectivity results in function-level variation of

actional meaning within the aspect category between directedness and any other actional value compatible with perfectivity in a substitution of forms with perfective meaning for forms with imperfective meaning. At the same time there is a change of definition-level aspect meaning from perfective to imperfective. There are again three possible values for *x*: telic, punctual and self-contained, as specified in (9ba) to (9bc):

(9ba) directed $\approx$ telic

(9bb) directed $\approx$ punctual

(9bc) directed $\approx$ self-contained

The specifications in (9ba) and (9bb) are the natural counterparts to (8bb) and (7bb) discussed above, respectively:

(8bb) telic $\Downarrow$ imperfective

→ telic $\approx$ directed

(7bb) punctual $\Downarrow$ imperfective

→ punctual $\approx$ directed

In fact the same examples can be used to illustrate both sets of specifications: *Sally was building/built a new garden shed* (9ba), *Jack was catching/caught up with me* (9bb), etc. As noted in our discussion of these rules, there is a closer substitutional relationship between directed and telic than between directed and punctual, they are more similar in terms of phasal constituency and the change relation is therefore less drastic. As always, self-containment more or less drops out of consideration because of its special role in connection with definition-level variation of meaning within the aspect category. This means that we can add the following ranking of values for *x* to the general specification in (9b):

(9b) directed $\Downarrow$ perfective

→ directed $\approx$ *x* [*x* $\Uparrow$ perfective]

x = telic > punctual > self-contained

The relative order of telic and punctual in this ranking reflects their distance to directedness in the hierarchy of values in the metacategory of action. But the position of self-containment as the

least likely substitutional value disturbs the neat picture that has emerged: directedness is closer to self-containment than to punctuality. It is no doubt the role of self-containment in definition-level variation that causes it to override the distance principle.

Functional interplay between tense and aspect

Turning now to function-level variation of meaning in the categorial interplay between tense and aspect, we find only one general rule, that caused by the incompatibility relation between present time and perfectivity:

$$(10b) \quad \text{present} \Downarrow \text{perfective} \\ \rightarrow \text{present} \approx x [x \Uparrow \text{perfective}]$$

According to this rule, the incompatibility relation between present time and perfectivity results in function-level variation of temporal meaning within the aspect category between present time and any other temporal value compatible with perfectivity in a substitution test involving substitution of forms with perfective meaning for forms with imperfective or -ASPECTUAL meaning. At the same time there is a change of definition-level aspect meaning from imperfective or -ASPECTUAL to perfective. Note that in this specification we have to include markedness relations since there is no general incompatibility relation between -TEMPORAL and +ASPECTUAL (on a par with the incompatibility relation between -ACTIONAL and +ASPECTUAL, which gave rise to a rule dealing specifically with markedness relations). Since there is only one comprehensive rule describing the categorial interplay between tense and aspect, another way of reading (10b) is to say that definition-level variation of temporal meaning, as well as function level variation of temporal meaning in relation to aspect, is possible only in *non-perfective* (i.e. imperfective or -ASPECTUAL) data in so far as present meaning is involved.

There are three potential values for x : past, future and -TEMPORAL, as shown more specifically in:

$$(10ba) \quad \text{present} \approx \text{past}$$

(10bb) present $\approx$ future

(10bc) present $\approx$ -TEMPORAL

There is little conceptual or systemic evidence for any particular ranking of the first two of these potential changes according to likelihood of occurrence. In different languages we find different patterns of categorial interplay between tense and aspect, often as a result of different markedness relations in the two categories. In, for example, written Arabic there seems to be a basic formal opposition between a perfect (or perfective) form and an imperfect (or imperfective) form. The former usually has perfective past meaning whereas the latter usually has imperfective present or future meaning (for a more detailed description, see e.g. Comrie 1976: 78ff). In languages with such an aspect-tense system, the rule in (10ba) is particularly relevant. In other languages, such as e.g. Russian, there is variation between forms with imperfective present meaning and forms with perfective future meaning (Russian imperfective present form versus Russian perfective present form). In such languages, it is the rule in (10bb) that is relevant rather than the rule in (10ba).

As stated in rule (10bc), there is in principle also the possibility of variation between forms with imperfective present meaning and forms with perfective -TEMPORAL meaning, either as a basic opposition in a verb system or as a more sporadic subsystem. However in the finite part of a verb system there is, at least in the referential, propositional mode of language, a tendency for -TEMPORALITY to block positive aspectual representation, possibly as a result of the interference of actional meanings and markedness relations. As we noted in section 7.2 on categorial rank, it is much harder to visualize a particular situation in terms of situational focus without any particular location in time than vice versa. Thus in Russian, the perfective present form, which typically has perfective future meaning, is sometimes used in generic, proverbial expressions with -TEMPORAL meaning like *Sila vsegdá svoë voz'mët* (= 'Strength always wins'), cf. Forsyth 1970:176. But the perfective form seems in such cases to assume -ACTIONAL

meaning and, as a consequence, it seems to lose its perfective meaning. Similarly in English we find examples like:

(27a) The hawk *is preying* on small birds.

(27b) The hawk *preys* on small birds.

(28a) The sun *is rising* in the east.

(28b) The sun *rises* in the east.

Here the progressive, imperfective present forms in the a-examples have imperfective present meaning. Both (27a) and (28a) express particular-occurrence situations taking place in the present (note that *The hawk* in (27a) has definite specific reference). When replaced by the corresponding simple, perfective present forms in a substitution test, as in the b-examples, the expressions become -TEMPORAL (generic, 'all-time' statements; note that *The hawk* now has generic reference). But at the same time, the situation becomes -ACTIONAL and the simple form loses its perfective focus (i.e. becomes -ASPECTUAL) in accordance with the incompatibility relation between -ACTIONALITY and +ASPECTUALITY.

On the basis of these observations it seems appropriate to add the following ranking of values for *x* in rule (10b):

(10b) present $\Downarrow$ perfective

$\rightarrow$ present $\approx x$ [$x \Uparrow$ perfective]

$x = \text{future, past} > \text{-TEMPORAL}$

According to this final version of the categorial interplay between tense and aspect, future and past are equally likely values for *x*, and both are more likely than -TEMPORALITY. Like the rankings of values in the categorial interplay between action and aspect, this ranking also reflects the distance of the values in our metacategory of tense: as positive category members, past and future are closer to present than to -TEMPORAL.

Note that the categorial interplay between tense and aspect, as specified in (10b) above, has repercussions for the interplay between action and aspect. The incompatibility relation between present meaning and perfectivity naturally blocks all other variation of

Functional interplay between action and tense?

(11b) **punctual** $\Downarrow$ **present**
 $\rightarrow$ **punctual** $\approx$ **x** [**x** $\Uparrow$ **present**]

(12b) telic $\Downarrow$ present
 $\rightarrow$ telic $\approx$ x [x $\Uparrow$ present]

However, categorial interplay with the aspect category, as well as markedness relations in particular languages, interferes with the variation of meaning described in (11b) and (12b), just as the categorial interplay between tense and aspect interferes with the categorial interplay between action and aspect (see our discussion of rule (10b) above). The problem with rules (11b) and (12b) is that

punctuality and telicness are not aspectually neutral values of the action category. Thus, if for a moment we disregard aspectually unmarked (i.e. -ASPECTUAL) data, there is in fact not a single possible value for *x* in (11b) and (12b) if we wish to keep the aspectual meaning of the examples constant in the substitution test. The only positive aspectual value compatible with punctuality and telicness is perfectivity. If perfectivity is to remain unchanged in the functional variation of meaning described in (11b) and (12b), then from the point of view of the categorial interplay between action and aspect, *x* can only be *self-contained* – the only other actional value compatible with perfectivity, according to our definitions. But even perfective self-containment is not a possible value for *x* in (11b) when we consider the incompatibility relation between present time and perfectivity described in rule (10a,b). In other words, from a purely systemic point of view, the function-level variation of meaning described in (11b) and (12b) is impossible.

What happens instead depends on language-specific markedness relations. If in a particular language the perfective form is positively marked for perfectivity, or not sufficiently unmarked to be compatible with present meaning, then the rule in (10b) describing the categorial interplay between tense and aspect takes over. In other words, an attempt to impose present meaning on a construction which is perfective and either telic or punctual (e.g. by selecting the present tense) results in a change from one non-present temporal value to another non-present temporal value (e.g. past to future or past to -TEMPORAL). If in a particular language the perfective form is sufficiently unmarked (i.e. -ASPECTUAL) to be compatible with present meaning, then the potential ambiguity between positive actional meaning and -ACTIONALITY described for aspectually unmarked forms in connection with the interplay between action and aspect (rules (1bb) (-ACTIONAL $\approx$ punctual) and (1bc) (-ACTIONAL $\approx$ telic) above) may allow us to impose present meaning on a non-present telic or punctual construction in

a substitution test. But in either case, we can do without (11b) and (12b). In English both possibilities are present in an example like:

(29a) Sally *got* up at seven.

(29b) Sally *gets* up at seven.

In example (29a), the simple, perfective form *got* is ambiguous between a [punctual, past, perfective] reading and a [-ACTIONAL, past, -ASPECTUAL] reading. If we want to impose present meaning on the example by changing the past tense form into the present tense form, as in (29b) and at the same time preserve the meanings of punctuality and perfectivity, then we do not in fact get present meaning but rather future meaning (e.g. 'Sally gets up at seven tomorrow morning'). If we do not want to preserve the positively perfective punctual reading of the construction, then the change into the present tense form may result in a present habitual reading. Example (29b) is ambiguous between a [punctual, future, perfective] reading and a [-ACTIONAL, present, -ASPECTUAL] reading.

The variation of meaning identified in connection with data like (29a,b) can be fully accounted for in terms of language-specific markedness relations and the metalinguistic rules describing the categorial interplay between action and aspect, on the one hand, and between tense and aspect, on the other. There is no need to burden our metalanguage with (11b) and (12b), either at the general, universal level or at a language-specific level.

This page intentionally left blank

8. Towards a Theory of Action, Tense and Aspect

This chapter offers an overview of the description proposed in chapter 7 and briefly describes some of its applications. Let us begin by recapitulating one of the central tenets of this book: one of the tasks of universal grammar is to provide a general metalanguage and an *absolute* standard if we want it to serve as a useful framework for the analysis of any particular language. This approach to universal grammar is prompted by the need to improve interscholarly communication and to have instrumental research strategies in our continual quest for insights into the nature of human language. The assumption here is that only by having such a 'too strong' and 'too regular' model to relate to, can one hope to be able to determine, with any degree of precision, the nature of a language-specific system, including its irregularities and peculiarities. The description of action, tense and aspect and the general metalanguage proposed in chapter 7 is an absolute, image-based prototype model. It embodies, in a coherent and regular way, what sense we can make out of the meanings and relations that we recognize as important in language-specific data. Any deviation from this model in a specific language may falsify it or show it to be incomplete at one level. That is the rule of the game for any model. But at the same time, at another level, by being capable of identifying language-specific deviation with great precision, the model confirms its usefulness: it readily highlights areas in need of special attention.

Consider a very simplistic, crude example: a relativistic, cautiously formulated rule saying that 'a past tense *often* (or *normally*, *usually*, or *typically*) locates a situation in the past' is not nearly as appropriate in our universal grammar as a rule which simply says that 'a past tense locates a situation in the past'. For all we know, the first rule is closer to the *truth* than the second. But the second is, strictly speaking, far more useful than the first. Examples of past tense forms which do *not* locate the situation expressed in the past may actually be understood as conforming to the first rule, which merely

states what is often the case and thus, by implication, predicts the existence of past tense forms with other, unspecified functions. By contrast, examples with other functions than past-time reference clearly falsify the second rule and force the linguist to revise it so that it accounts for more, preferably all the recalcitrant data. In other words, whilst the first rule is likely to promote scholarly inertia (despite the fact that it may well depict the 'unassailable truth'), the second rule, though 'obviously false', will spur the linguist on by confronting him with non-conforming data. The first rule may represent, in a general way, what we know to be true, but in a resigned, unengaging and self-sufficing way. The second rule represents the same knowledge – the sum of human understanding and expectation – but in a provoking absolute form. By being blunt, it brings the limitation of our knowledge right to the fore and thus challenges us to enhance or improve our knowledge. The virtue of a strongly tuned universal grammar is that it forces us to focus our attention on deviation rather than conformity.

The example with the past tense may strike the reader as fairly trivial because, as linguists, we would always be interested in uses of past tense forms other than past time reference, irrespective of the actual formulation of the original rule. But it helps illustrate what is likely to happen – even to experienced linguists – in more complex cases: a vague, inconclusive theory which anticipates all the problems and irregularities in language-specific data in advance, hedging for all eventualities, is not as likely to trigger our curiosity of what is actually going on in the data as a theory which states its predictions in absolute, falsifiable terms. Our motivation to improve a system or model, to look further into the principles at work, is only sharpened by a precise sense of its shortcomings.

This final chapter provides an overview of such an absolute model of action, tense and aspect (section 8.1) and points to some of its possible applications and advantages. In section 8.2, the general metalanguage of the model is shown to provide a *notational system* for the description of language-specific data. In section 8.3, there is a brief discussion of the question of *markedness* relations. And

finally, section 8.4 offers a number of suggestions as to how considerations of *discourse* and *concord relations* fit into the model proposed. The formal conclusion of the book is drawn in section 8.5.

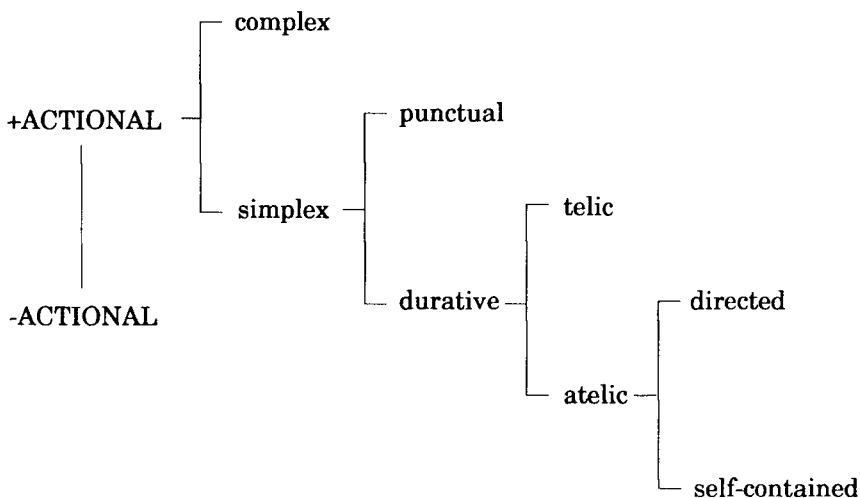
8.1. Overview of the Model

Here is first an overview of the model arrived at in chapter 7:

I. Categories & inventories:

A. The general metacategory of action:

(1) Category structure:



- (2) Category concept: *ACTIONALITY* concerns the classification of situations into types according to the procedural characteristics assigned to them in the projected world.

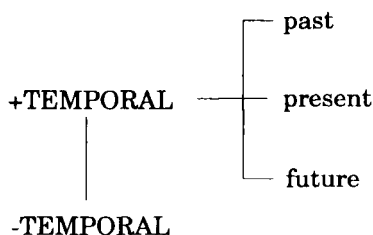
(3) Inventory:

- (3.1) A +*ACTIONAL* situation is conceived of as taking place, or happening, at a particular time and place in the projected world.
- (3.2) A -*ACTIONAL* situation is not such a particular-occurrence situation.
- (3.3) A *complex* situation is a +*ACTIONAL* situation conceived of as consisting of a number of identical, or related, consecutively realized subsituations with an independent secondary actional specification, thus inviting description in terms of two situational levels, a superordinate and a subordinate.
- (3.4) A *simplex* situation is a +*ACTIONAL* situation conceived of as singular and unitary, thus inviting description in terms of a single situational level, at which one or more of the procedural characteristics (beginning, middle and end) are manifested.
- (3.5) A *punctual* situation is a *simplex* situation conceived of as having little or no extension in time and hence no internal structure, the procedural characteristics beginning, middle and end being rolled into one.
- (3.6) A *durative* situation is a *simplex* situation conceived of as having extension over time, thus inviting a description in terms of the procedural characteristics, beginning, middle and end.
- (3.7) A *telic* situation is a durative situation leading up to and including a terminal point beyond which the situation cannot progress unless redefined.
- (3.8) An *atelic* situation is a durative situation realized in the projected world in terms of its extension in time rather than a criterial terminal point.
- (3.9) A *directed* situation is an atelic situation progressing towards but not including a terminal point beyond which the situation cannot progress, unless redefined.

- (3.10) A *self-contained* situation is an atelic situation conceived of as not having, or not being related to, a natural terminal point.

B. The general metacategory of tense:

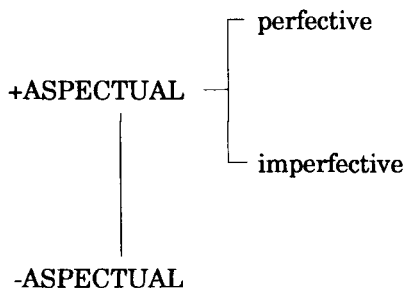
- (4) Category structure:



- (5) Category concept: *TEMPORALITY* concerns the assignment of temporal location to situations relative to the time conceived of as present by the locutionary agent at the moment of communication.
- (6) Inventory:
- (6.1) A *+TEMPORAL* expression assigns a temporal location to a situation relative to the time conceived of as present by the locutionary agent at the moment of communication.
- (6.2) A *-TEMPORAL* expression does not assign a temporal location relative to the time conceived of as present by the locutionary agent at the moment of communication.
- (6.3) A *past* situation is conceived of as being temporally located *before* the present.
- (6.4) A *present* situation is conceived of as being temporally located *in* the present.
- (6.5) A *future* situation is conceived of as being temporally located *after* the present.

C. The general metacategory of aspect:

(7) Category structure:



- (4) Category concept: *ASPECTUALITY* concerns the situational focus with which the locutionary agent represents situations.
- (5) Inventory:
 - (5.1) A *+ASPECTUAL* representation conveys a definite situational focus.
 - (5.2) A *-ASPECTUAL* representation conveys a neutral situational focus.
 - (5.3) A *perfective* representation conveys an external situational focus, i.e. the locutionary agent invites the addressee to look at the situation from the outside, as a whole situation.
 - (5.4) An *imperfective* representation conveys an internal situational focus, i.e. the locutionary agent invites the addressee to look at the situation from the inside, as something in progression.

II. Compatibility relations & constraints:

A. Action & aspect:

- (6.1a) -ACTIONAL $\Downarrow$ +ASPECTUAL
- (6.1b) -ACTIONAL $\gg$ -ASPECTUAL

- (6.2a) complex $\Downarrow$ perfective
- (6.2b) complex $\gg$ imperfective, -ASPECTUAL
- (6.3a) punctual $\Downarrow$ imperfective
- (6.3b) punctual $\gg$ perfective, -ASPECTUAL
- (6.4a) telic $\Downarrow$ imperfective
- (6.4b) telic $\gg$ perfective, -ASPECTUAL
- (6.5a) directed $\Downarrow$ perfective
- (6.2b) directed $\gg$ imperfective, -ASPECTUAL

B. Tense & aspect:

- (7.1a) present $\Downarrow$ perfective
- (7.1b) present $\gg$ imperfective, -ASPECTUAL

C. Action & tense:

- (8.1a) punctual $\Downarrow$ present
- (8.1b) punctual $\gg$ future, past, -TEMPORAL
- (8.2a) telic $\Downarrow$ present
- (8.2b) telic $\gg$ future, past, -TEMPORAL

III. Definition-level variation of meaning:

A. Action:

- (9) definition level = function level of aspect and tense (see below)

B. Tense:

- (10) definition level restricted by (7) and (8) above to examples which are *non-perfective* and *non-telic/non-punctual* (i.e. -ACTIONAL, complex, directed or self-contained).

C. Aspect:

- (11) definition level restricted by (6) and (7) above to examples which are *non-present* (i.e. past, future or -TEMPORAL) and *self-contained*.

IV. Funtion-level variation of meaning:

A. Action & aspect:

- (12.1) -ACTIONAL $\Downarrow$ +ASPECTUAL
 $\rightarrow$ -ACTIONAL $\approx$ x [x $\Uparrow$ +ASPECTUAL]

More specifically realized as one of the following:

- (12.1a) -ACTIONAL $\approx$ complex
 (12.1b) -ACTIONAL $\approx$ punctual
 (12.1c) -ACTIONAL $\approx$ telic
 (12.1d) -ACTIONAL $\approx$ directed
 (12.1e) -ACTIONAL $\approx$ self-contained
- (12.2) complex $\Downarrow$ perfective
 $\rightarrow$ complex $\approx$ x [x $\Uparrow$ perfective]
 x = *punctual* > *telic* > *self-contained*
- (12.3) punctual $\Downarrow$ imperfective
 $\rightarrow$ punctual $\approx$ x [x $\Uparrow$ imperfective]
 x = *complex* > *directed* > *self-contained*
- (12.4) telic $\Downarrow$ imperfective
 $\rightarrow$ telic $\approx$ x [x $\Uparrow$ imperfective]
 x = *directed* > *complex* > *self-contained*
- (12.5) directed $\Downarrow$ perfective
 $\rightarrow$ directed $\approx$ x [x $\Uparrow$ perfective]
 x = *telic* > *punctual* > *self-contained*

B. Tense & aspect:

- (13.1) present $\Downarrow$ perfective
 $\rightarrow$ present $\approx$ x [x $\Uparrow$ perfective]
 x = *future, past* > -TEMPORAL

C. Action & tense:

redundant/systemically void

8.2. The Model Used for Notational Purposes

In the previous chapters we have already used our categories for notational purposes on a number of occasions. Thus for the description of individual examples and their differences we may assign members of categories as *features* to the predicator, as in the following sets:

- (1a) Jack *waited* for Penny just round the corner.

waited
 [self-contained
 past
 perfective]

- (1b) Jack *was waiting* for Penny just round the corner.

was waiting
 [self-contained
 past
 imperfective]

- (1c) Jack *waits* for Penny just round the corner.

waits
 [-ACTIONAL
 present
 -ASPECTUAL]

- (1d) Jack *is waiting* for Penny just round the corner.

is waiting
 [self-contained
 present
 imperfective]

- (2a) Ted *played* the serenade for Sally.

played
 [telic
 past
 perfective]

- (2b) Ted *was playing* the serenade for Sally.

was playing
 [directed
 past
 imperfective]

- (2c) Ted *plays* the serenade for Sally.

plays
 [-ACTIONAL
 present
 -ASPECTUAL]

- (2d) Ted *is playing* the serenade for Sally.

is playing
 [directed
 present
 imperfective]

Notice that these are in most cases *possible* readings rather than *necessary* ones. Thus there is an alternative interpretation of both

a-examples in terms of habituality (e.g. 'Jack often waited for Penny just round the corner' and 'Ted usually played the serenade for Sally only'). The notation for this reading is as follows:

(1aa)

waited
[
-ACTIONAL
past
-ASPECTUAL
]

(2aa)

played
[
-ACTIONAL
past
-ASPECTUAL
]

In this way we can describe not only the possible interpretations of an example but also the difference between substitutional variants and between different examples. Thus, for instance, the difference between (1b) and (1d) (and (2b) and (2d)) is one of temporality ([past] versus [present]) whereas the difference between (1a) and (1b) (and between (2a) and (2b)) is one of aspectuality ([perfective] versus [imperfective]) and possibly of actionality as well ([-ACTIONAL, -ASPECTUAL] versus [directed, imperfective]) (depending on the interpretation of the a-examples). The difference between (1b) and (2b) is one of actionality only ([self-contained] versus [directed]).

Descriptions of individual examples may eventually lead to comprehensive descriptions of the verb forms of a particular language, including rules that relate the possible readings to the distribution of forms. In such descriptions, deviation from the definitions, category structures and the principles of categorial interplay in our universal model may lead to one or more of the following conclusions: a) the universal model must be extended with additional rules to account appropriately for a wider range of data;

b) the universal model must be reformulated to cope with the task; and/or c) the language-specific description must incorporate *privative* markedness relations on the basis of the basically *equipollent* specifications of the universal categories. I shall not pursue the first two of these possibilities but merely note that such revisions always depend on a consideration of the nature of clearly non-conforming language-specific data and how well it lends itself to generalization, idealization and abstraction according to the principles laid out in chapter 4. The third option of redefining equipollent specifications as privative specifications, which involves a more flexible extension of the capacity of the universal grammar, is the topic of the next section.

8.3. Markedness Relations

The general metacategories of our universal grammar are geared to the analysis of language-specific markedness relations. All general category concepts (ACTIONALITY, TEMPORALITY and ASPECTUALITY) are privatively marked to indicate the possibility of marking the categories negatively in the description of data to which the categories potentially apply but which does not express a meaning represented by any of the specific positive values of the category concepts. For example, in a language (like e.g. English) with a formal distinction which regularly accommodates aspectual meanings at both the definition level and the function level (such as the distinction between simple and progressive forms), one of the forms may have -ASPECTUAL uses alongside its perfective or imperfective uses. Thus, in English the simple form is used sometimes with perfective meaning, sometimes with -ASPECTUAL meaning:

- (1) Bill *showered*, *dressed* and *had* breakfast before eight this morning.
- (2) He *left* without saying goodbye, then *walked* all the way to his office.
- (3) Bill always *lunches* with his secretary, which *bothers* his wife no end.
- (4) Bill *is* a jerk. He *thinks* that he *loves* his secretary and *hates* his wife.

In (1) and (2), the simple form is perfective (at least in the referring, propositional mode of communication), expressing past punctual, telic or self-contained situations. By contrast, the simple form is -ASPECTUAL in (3) and (4), expressing present -ACTIONAL situations (habits, states or personal characteristics). Language-specific forms, which like the simple form in English represent a *merger* of a positive member of a general metacategory and the negation of the general category concept, are semantically and conceptually *unmarked* forms.

By having the general category concept privatively marked in our universal model, we anticipate the possibility of language-specific privative markedness relations without committing ourselves to any definite universal assignment of markedness to the individual members of the category. Thus within the general metacategory of aspect, perfectivity and imperfectivity are both defined in positive terms and hence constitute an equipollent opposition. Unmarked aspectual meaning is handled by the negatively marked category concept, i.e. by -ASPECTUALITY. In other words, the question whether it is the perfective or the imperfective aspect which is the universally marked aspect – a question which is sometimes debated (cf. e.g. Friedrich 1974 and Galton 1964) – simply does not arise in connection with the model proposed here. As an absolute formulation of our knowledge of the categories and our expectations of their manifestations, this universal grammar sets a standard which makes it possible to identify different markedness relations in different specific languages in terms of deviation. Markedness is language-specific deviation from the universal model but deviation of a principled nature in that it involves the merging into a single language-specific form of a positive member of a general metacategory and the negatively marked general category concept.

Language-specific unmarkedness is not simply a question of forms sometimes assuming a positive meaning, sometimes a negative or neutral meaning relative to the specifications of a general metacategory, as the examples in (1) to (4) indicate. Markedness relations affect the functional interplay between categories and

create ambiguities relating to both the category itself and other categories. Thus, as noted in section 7.6, the precise value for x in a general metalinguistic rule like:

- (5) -ACTIONAL $\Downarrow$ +ASPECTUAL
 $\rightarrow$ -ACTIONAL $\approx x$ [$x \Uparrow$ +ASPECTUAL]
 $x = \text{complex, punctual, telic, directed, self-contained}$

depends on language-specific markedness relations:

- (6a) $x = \text{complex, directed, self-contained} > \text{punctual, telic}$ if imperfective form is marked
 (6b) $x = \text{punctual, telic, self-contained} > \text{complex, directed}$ if perfective form is marked

In a language with a marked perfective form and an unmarked imperfective form, i.e. where (6b) applies, we can predict potential ambiguity in formally imperfective predicators not only between imperfectivity and -ASPECTUALITY but also between -ACTIONALITY, on the one hand, and complexity, directedness or self-containment (i.e. the values compatible with imperfectivity), on the other. The following Russian examples illustrate this point:

- (7a) Saša *delala* upražnenija.
 (7b) Saša *sdelala* upražnenija.

The imperfective a-example is ambiguous between a [directed, past, imperfective] reading ('Sasha was doing her exercises') and a [-ACTIONAL, past, -ASPECTUAL] reading ('Sasha did/used to do her exercises'), whereas the perfective b-example is immediately interpreted as [telic, past, perfective] ('Sasha did/finished her exercises').

Conversely, in a language with a marked imperfective form and an unmarked perfective form, i.e. where (6a) applies, we can predict potential ambiguity in formally perfective predicators not only between perfectivity and -ASPECTUALITY but also between -ACTIONALITY, on the one hand, and punctuality, telicness or self-containment (i.e. the values compatible with perfectivity), on the other. The following English examples illustrate this point:

- (8a) Ted *walked* to work.

(8b) Ted *was walking* to work.

The simple, perfective form in (8a) is ambiguous between a [telic, past, perfective] reading (i.e. 'Ted walked to work on a particular occasion in the past') and a [-ACTIONAL, past, -ASPECTUAL] reading (i.e. 'Ted was in the habit of walking to work'), whereas the progressive, imperfective form in (8b) is immediately interpreted as [directed, past, imperfective].

The ambiguities that we may identify in connection with language-specific markedness relations, as they appear in isolated sentences, raise the question of how both sentence-internal and sentence-external factors may influence our interpretation of action, tense and aspect. This is the topic of the next section.

8.4. Concord Relations and Context

It is a commonplace in linguistics that the locutionary agent's choice of form at a particular juncture is often determined by interdependencies within the sentence. There is, for example, one such interdependency between, on the one hand, the number and person of the subject of English present-tense clauses and, on the other, the verb form of the predicator: a third-person singular subject typically 'takes' the morphologically marked -s form of the verb (e.g. *takes, makes, sings*, etc.) whereas other subjects typically 'take' the bare verb form (e.g. *take, make, sing*, etc.). Such relationships are usually referred to as *concord relations*: for English we thus say that there is a concord relation between subject and predicator with respect to the categories of number and person.

Concord relations are also important to consider in a description of the categories of action, tense and aspect because they may prove decisive for the choice of verb form. One instance of this is the concord relation between past-tense predicators and past-time adverbials in English:

(1a) I *visited* my uncle *yesterday*.

(1b) *I have visited my uncle yesterday.

In example (1a), there is concord between the past tense form *visited* and the adverbial *yesterday*, which locates the situation explicitly in the past. In example (1b) there is lack of concord (or a violation of concord): with its strong element of present meaning the present perfect form *have visited* is incompatible with the adverbial *yesterday* (for discussion of the perfect, see Bache 1994c).

Other examples of concord involve actionality rather than temporality, as in:

- (2a) Ted *often walked* to work.
- (2b) *Ted *was often walking* to work.

In the a-example, there is predicator-adverbial concord with respect to actionality between the [-ACTIONAL, past, -ASPECTUAL] verb form *walked* and the adverbial *often*, which explicitly imposes a habitual reading on the sentence. By contrast, in the b-example, where the predicator signals [directed, past, imperfective] meaning, there is a clash of actional values.

While predicator-adverbial concord is indeed very frequent, it is by no means the only type of concord relation relevant in a discussion of action, tense and aspect. Other clause functions may play an important role. Thus in an example like:

- (3) Bombs *were popping* all around us. (Schibsbye 1965:67)

the plural subject noun *Bombs* emphasizes the complex (distributive) character of the situational referent of the predicator *were popping*. Even more strikingly, in the presence of an object, its number and definiteness may conclusively determine the actional nature of the proposition as a whole; compare:

- (4a) ?He *wrote*.
- (4b) He *was writing*.
- (4c) He *wrote* a novel.
- (4cc) He *wrote* the novel.
- (4d) He *was writing* a novel.
- (4dd) He *was writing* the novel.
- (4e) He *wrote* novels.

- (4f) He *was writing* novels.
- (4g) He *wrote* the novels.
- (4h) He *was writing* the novels.

In appropriate contexts, if at all possible as a full, non-elliptical sentence, the intransitive a-example is to be analysed as [self-contained, past, perfective/-ASPECTUAL] and thus contrasts directly at the definition level of meaning with the intransitive b-example, which is [self-contained, past, imperfective]. Examples (4c) and (4cc), which are transitive, containing, respectively, an indefinite singular object and a definite singular object, both invite a [telic, past, perfective] reading in contrast to the progressive variants in examples (4d) and (4dd), which both seem to be [directed, past, imperfective]. Example (4e) with the indefinite plural object *novels* has a strong factual or habitual element about it and is best described as [-ACTIONAL, past, -ASPECTUAL]. By contrast, the progressive counterpart in example (4f) is [self-contained, past, imperfective], owing to the unboundedness of the referent of the object. Finally, the non-progressive example (4g) with the definite plural object *the novels* is either [telic, past, perfective] or [-ACTIONAL, past, -ASPECTUAL], whereas the progressive variant in example (4h) is [directed, past, imperfective] (for the importance of nominal reference for aspectuality, see e.g. Vikner 1994).

In other cases it is the syntactic organization of the clause or sentence as a whole rather than just a single clause function which appears to enter a concord relation with the predicator, as in the following example:

- (5a) Mayor Orden unbuttoned his coat and took out his watch and *looked* at it and put it back and buttoned his coat again, one button too high. (Steinbeck, *The Moon is Down*)
- (5b) *Mayor Orden unbuttoned his coat and took out his watch and *was looking* at it and put it back and buttoned his coat again, ...

In (5a) there is a kind of aspectual concord relation between the predicator and the syntactic setting of the sentence: the example describes a series of consecutive situations and as such calls for a

perfective or -ASPECTUAL representation of each situation rather than an imperfective one; hence the choice of the non-progressive form *looked*. Notice that the situation of 'looking' allows of definition level variation of aspectual meaning in a syntactically more neutral context:

- (6a) He *looked* intensively at his watch.
- (6b) He *was looking* intensively at his watch.

To choose the imperfective, progressive form *was looking* in the more elaborate syntactic setting of (5a,b) is to violate a concord relation between a specific expression of aspectual meaning and a more general expression of situational sequentiality.

Inevitably, there are concord relations *across* the sentence border and between the elements of a sentence and the *extralinguistic* context. The following are examples of extrasentential concord relations (extralinguistic relations being, by definition, difficult to show in the form of examples):

- (7a) The rumours of the illness, came a chanting Etonian voice, were very much exaggerated. It was utter nonsense to suggest that he *was dying*. All that had happened was a 'minor cardiac incident'. (Snow, *Corridors of Power*)
- (7b) The rumours of the illness, came a chanting Etonian voice, were very much exaggerated. *It was utter nonsense to suggest that he *died*. All that had happened was a 'minor cardiac incident'.
- (8a) He ran upstairs and banged on the door. Helen, holding a housecoat over her nightdress, *opened* it. She suppressed a cry. (Malamud, *The Assistant*)
- (8b) He ran upstairs and banged on the door. *Helen, holding a housecoat over her nightdress, *was opening* it. She suppressed a cry.
- (9a) - 'What was his performance like as a young man?'
- 'He *spoke* like a real professional.'
- (9b) - 'What was his performance like as a young man?'
- *'He *was speaking* like a real professional.'

In these examples, all the asterisked b-variants are possible English sentences in isolation. However, in each case, the extrasentential, intralinguistic context (the co-text) is such that a concord relation

is violated. In (7a,b), the co-text, which emphasizes 'illness' ("The rumours of the illness ...") rather than 'death', requires a [directed, imperfective] reading of DIE, not a [punctual, perfective] one. In (8a,b), the co-text dictates a sequential reading of the situations expressed: the predicator must be formed to impose a [punctual, perfective/-ASPECTUAL] meaning on OPEN. And, finally, in (9a,b) the question asked in the co-text obviously concerns past habituality. We are therefore led to expect a [-ACTIONAL, past, -ASPECTUAL] predicator in the answer (as in the a-variant), not a [self-contained, past, imperfective] one (as in the b-variant). On the whole, extrasentential, and especially extralinguistic, concord relations are more diverse than intrasentential relations: the extrasentential and/or extralinguistic element with which the relation is formed may be anything from a grammatical form or syntactic construction to a vague expectation of communicative purpose.

There are at least two related general points to make in connection with the examples reviewed so far in this section: one concerns the relationship between concord and the role of sentence-external factors in general, the other concerns the role of concord in language encoding.

The first point is that the whole question of concord relations includes considerations of co-textual and contextual factors in the choice of verb form and thus has implications for our classification of sentences on the basis of the substitution test. Both external and internal relations affecting the form of the predicator may be accounted for in terms of concord. This indicates that the question of how to describe the distribution of verb forms in sentences may not simply be a matter of observational, descriptive and explanatory adequacy relative to a set of possible isolated sentences of a language. Factors beyond the sentence are important, too – especially if we are interested in the potential distribution of forms rather than the actual distribution in a finite set of sentences. On the other hand, there is an obvious notional connection between sentence-internal concord and concord relations across the sentence

border, as far as action, tense and aspectuality are concerned. Consider once again an example like:

(10a) He *spoke* like a real professional.

In isolation, this sentence is ambiguous even if we think of it in terms of the propositional, referring mode of communication only: it is either [self-contained, past, perfective] (e.g. 'on a particular occasion in the past he spoke like a real professional') or [-ACTIONAL, past, -ASPECTUAL] (e.g. 'when he was a young man he (often, habitually, typically) spoke like a real professional'). In the former case it is a Type IV-sentence in our substitution test in which the replacement of the simple form by the progressive results only in a definition-level change of aspectual meaning from perfectivity to imperfectivity:

(10b) He *was speaking* like a real professional.

With the habitual (-ACTIONAL) reading of example (10a), it is a Type III-sentence in which the replacement of the simple form by the progressive results in a change also of actional meaning from -ACTIONAL to self-contained:

(10c) !He *was speaking* like a real professional.

To determine which of the two readings of the a-example is appropriate in any particular case we simply have to consider sentence-external factors. In the co-text provided in (9a,b) above, which clearly blocks the non-habitual reading, example (10a) is a Type II-sentence, in which the substitution of forms is unacceptable:

(10d) *He *was speaking* like a real professional.

In other words, it seems that our classification of sentences will often depend on sentence-external factors. But, significantly, the sentence-external factor governing examples like (10a,b,c,d) may be *internalized*, i.e. they may be made explicit within the sentence:

(10e) *When Roger was a young man*, he spoke like a real professional.

(10f) *At the meeting the other day*, he spoke like a real professional.

- (10g) He was speaking like a real professional *when, suddenly, his wife got up and left*.

Examples like these show that sentence-internal concord relations may be the result of 'context-loading', i.e. the inclusion of elements within the sentence which may ensure a precise actional and aspectual interpretation of the sentence in the context. Conversely, one may regard bare sentences like (10a) and (10b) as the result of the *suppression* of elements of meaning which are redundant in context. The implication of all this is that a description of action, tense and actionality which takes the sentence as its basic unit may go at least some of the way to account for the role of sentence-external factors, simply because what is sentence-internal in one case may be sentence-external in another. Either way a concord relation is established which affects our analysis of an example and the result of subjecting it to our substitution test. In isolation a sentence with little internal situational concord may be classified as a Type III-sentence (i.e. a sentence displaying a clear change of intensional meaning in the substitution test, cf. section 5.3). In context such a sentence will often be a Type II-sentence (i.e. a sentence which becomes unacceptable when subjected to the substitution test). Conversely, a sentence which in isolation is classified as a Type-II sentence rather than as a Type-III sentence will often contain a high degree of specificity ('context-loading'), i.e. elements of meaning which reveal exactly what kind of situation is expressed. Thus the classification of sentences on the basis of the substitution test is dependent on the scope of one's analysis, whether or not it includes considerations of context. But the governing factors underlying the choice of verb form in both Type-II and Type-III material often seem to be the same. In other words, the categorial interplay often identified in Type-III sentences also seems to be a determining factor in many Type-II sentences. To complete the picture, Type-I sentences (i.e. sentences displaying systemic gaps) may be viewed as the result of a lack of formal opposition in *any* context: here no suppression of context, or no

context loading, will allow alternative forms to replace the original forms

The second general point about the examples used to illustrate concord in this section is that concord is rarely a problem from the point of view of *language encoding*: if the locutionary agent knows what he wants to say, and how he wants to say it, he will offer what information he deems necessary, relative to the particular context in which the communication takes place, in order that the addressee may interpret the message correctly. In other words, in the case of examples like *I visited my uncle yesterday* (as opposed to **I have visited my uncle yesterday*), the adverbial *yesterday* cannot be said to *determine* the choice of the simple past form *visited* and *block* the choice of the present perfect form *have visited*. Nor can we say that the adverbial *forces* the locutionary agent to use a particular verb form – despite the status of the example as a Type II-sentence in our substitution test displaying 'grammaticality restrictions'. What we call concord relations are the result of the locutionary agent's consistent and coherent expression of a proposition: the combination of *visited* and *yesterday* is a communicative option for the locutionary agent if he wants to describe the situation of 'visiting' as something which took place at that particular time in the past. There are other options for the description of the same situation (e.g. *I have visited my uncle* or *I had visited my uncle*), of course, but no matter which of them the locutionary agent selects we can assume that he is not *constrained* by concord but, on the contrary, *creates* as much concord as is necessary for his communicative purposes. This does not mean that the locutionary agent cannot make concord mistakes as a performance feature, only that, in principle, concord is to be viewed basically as a communicative device rather than a set of constraints on the choice of verb form. Concord may be a problem for the learner of a foreign language, and for the addressee if the locutionary agent does not provide enough of it. In any case, concord is a descriptive problem for the linguist who wants to account for the communicative options at the locutionary agent's disposal. And here it is quite legitimate to

operate with constraints – as long as we recognize them simply as part of a descriptive device.

The model proposed here provides a convenient framework for the discussion of concord. By defining an absolute standard representing a context-free system, it offers both an *upper* and a *lower* limit to the role, or 'scope', of concord. The lower limit is the result of the categorical claims of my model as to what is *impossible* and what is *necessary*. According to this universal model, there are defining features of action, tense and aspect, and of the relationship between them, that no sentence-internal concord, or sentence-external co-text, or context, however strong, can affect or change. This is particularly clear in the case of the incompatibility relations: nothing can change the fact that -ACTIONALITY, as defined, is incompatible with +ASPECTUALITY, as defined. Nor is it ever possible to view punctuality imperfectively or present time perfectly. There are certain conceptual limits and these are well-defined in the absolute model. This does not mean that a strong context may not force the linguist to reinterpret the situation expressed by a construction: what is normally conceived of as, say, punctual may in certain contexts have to be interpreted as durative (e.g. in a description of someone opening a door or dropping a coin seen in slow motion), in which case the situation is compatible with an imperfective focus. However, as long as a situation is conceived of as punctual it cannot at the same time be expressed by a truly imperfective construction, no matter what the co-text or context is like. In this sense, the absolute model defines a lower limit to the influence of external or internal concord relations.

But the model also defines an upper limit to such influence in the sense that it displays areas of *possible variability*. Thus, as we have already seen in many examples, concord relations (external as well as internal) may disambiguate a predicator which is potentially ambiguous to the addressee, or to the linguist when he considers the construction in isolation. The possible interpretations of a predicator are borne out explicitly by the system. For example, a positively imperfective construction can be actionally *complex*,

directed or *self-contained* and have any temporal value (but, according to the 'lower limit', it can never be *-ACTIONAL*, *punctual* or *telic*). Conversely, a positively perfective construction can be actionally *punctual*, *telic* or *self-contained* and temporally *future*, *past* or *-TEMPORAL* (but it can never be *-ACTIONAL*, *complex* or *directed*; nor can it ever be *present*). Both unmarked imperfective constructions and unmarked perfective constructions are ambiguous between any positive actional value and *-ACTIONALITY*. Once again the examples in (10) may be used in illustration: the non-progressive form in *He spoke like a professional* is ambiguous whereas the progressive form in *He was speaking like a professional* is not (or rather less so). According to the specifications of the model, it is predictable that the non-progressive *spoke*, being the unmarked, perfective member of the aspect opposition, is ambiguous between a [self-contained, past, perfective] reading and a [-ACTIONAL, past, -ASPECTUAL] one. A precise interpretation, i.e. a selection of one of the possible readings, depends on concord relations. The model thus defines, or delimits, areas where concord *may operate* in order to secure a precise actional, temporal and aspectual meaning, as well as areas where it *cannot*.

8.5. Conclusion

At the beginning of this book, it was suggested that a number of problems within the field of action, tense and aspect require urgent attention. These would include vagueness of terminology, the adoption of less than rigorous methodological procedures and the general lack of clearly established research strategies and evaluation criteria necessary for the construction of a universal grammar. It was argued that there is a deplorable lack of consistency and principle in the way substitutional relations in universal grammar are approached, a general failing that is repeated when the questions of 'basic meanings' and semantic minimalism are also taken into account. The absence of consensus among linguists with regard to the status of action as an autonomous category, distinct from aspect, was felt to be seriously misguided. It was further argued that

it is essential to take categorial interplay and concord relations into consideration in any theory of action, tense and aspect. And, finally, it was claimed that a universal model must needs be formulated in terms of conceptual properties

In the rest of the book all these issues have been addressed and suggestions and tentative solutions offered. The very first step in the approach was to provide a description of the problems that linguists encounter when trying to establish grammatical categories in the first place (chapter 2). In the account of categorization, i.e. of how grammatical categories come into metalinguistic existence, the notion of analytic directionality ('meaning-to-form' or 'form-to-meaning') was abandoned. At the same time, the conceptual basis for linguistic description became clear: the process of relating form and meaning is sparked off by the initial recognition on the part of the linguist of the existence of some sort of association and crucially involves perception and mental computations in all its stages of segmentation, co-ordination, differentiation and classification. It is this feature which eventually facilitates an evaluation of a description in terms of explanatory adequacy.

To integrate the conceptual nature of categorization in the theory of action, tense and aspect, Jackendoff's notion of 'projected world' (i.e. the world as conceived by human beings as distinct from the 'real world') was adopted as a first step in establishing an appropriate framework for a new approach to the description of action, tense and aspect (chapter 3). With a variety of examples from the action category, it was shown that the semantic distinctions pertaining to grammatical categories are determined by the 'psychological reality' rather than the 'real reality' of linguistic referents: reference is thus viewed as a relation between language and a projected world (involving not only 'entities' but also 'situations'). The second step in this approach was to introduce the notion of 'source-language' as distinct from object-language and metalanguage. A source-language is any particular language which provides us with linguistic knowledge and experience as the basis for constructing a suitable metalanguage. An account of the relationship

between source-language, object-language and metalanguage at a language-specific level is seen as a prerequisite to the formulation of a universal grammar and its general metalanguage. As a final step towards defining an appropriate framework for this new approach, it was argued that there is a need not only for primary data but also for secondary data in the form of other people's work within the field.

The construction of a universal grammar is thus viewed as the result of a careful process of extraction and transference of properties from specific source-languages and specific source-language grammars (chapter 4). The success of such a process is dependent on a certain 'linguistic etiquette', strict evaluation criteria (observational, descriptive and explanatory adequacy) and adherence to consistent and transparent research strategies. In the discussion of these issues, a number of principles have been put forward: the principle of optimal interscholarly communication, the principle of terminological transference, the principle of organizational isomorphism, the principle of one-to-one correspondence between form and meaning, the principle of pervasive distributional patterns, and, finally, the principle of semantic determination. The distinction between the general-linguistic, universal level and the language-specific level is shown to be similar to the *type-token* distinction sometimes invoked in other analytic contexts. Moreover, as part of a general instrumental research strategy, the formulation of 'too strong' hypotheses in universal grammar (with respect to both distributional patterns and form-meaning relationships) seems the most appropriate way forward. Thus, in the quest for greater knowledge, a *useful* model is rated as more important in the initial stages than a *truthful* model. It is better to have a precise, absolute model which can be applied, tested and falsified with a high degree of precision than a tentative, vague, relativistic model which may be true in a general sense but which is difficult to apply and thus resists attempts at falsification. The former type of model spurs the linguist on whereas the latter creates scholarly inertia.

Basic to any investigation of substitutional relations are the notions of choice and choice relation. These notions are delimited and assigned proper theoretical significance (chapter 5). To obtain the desired levels of adequacy in a theory of substitutional relations, the distribution of the forms in question (i.e. the choice of form in any given case) must be determined with precision (observational adequacy), any regular patterns in the choice of form making up the distribution (i.e. the choice relation) must be brought out (descriptive adequacy), and their conceptual or psychological nature must be accounted for (explanatory adequacy). To these ends it is important to study the *potential* choice of form in our data rather than just the *actual* choice of form. The potential choice of form can be examined appropriately only in a substitution test where the substitutional options are compared in a constant sentential frame, typically where one form of a pair, or a formal opposition, is replaced by the other form.

By performing such a substitution test on particular examples, the linguist gets an indication of the nature of the choice of form in those examples and this may eventually lead to a classification of sentences according to how they fare in the test. An examination of data in the areas of adjective order, relative clause restrictiveness and the simple/progressive distinction in English shows the necessity of operating with four types of sentence according to the nature of the choice relation involved: Type I sentences, which display systemic gaps (i.e. sentences where the substitution test cannot be carried out because the original form has no counterpart); Type II sentences, which display grammaticality restrictions (i.e. sentences where the substitution of forms is ungrammatical); Type III sentences, which display a change of intensional ('what-to-say') meaning in the test; and Type IV sentences, which display a change of extensional ('how-to-say-it') meaning in the test.

This typology of sentences and of important distributional factors enables us to reformulate our evaluation requirements. Thus, for a description of choice relations to be observationally adequate, it must accommodate examples of all four types: in this sense the

typology arrived at in the substitution test defines the *scope* required of an observationally adequate description of choice relations. For a description to be not only observationally but also descriptively adequate, it must specify the relationship between the four main types of sentence and hence between the distributional factors from which these sentence types derive. To reach the level of explanatory adequacy, the description must show the relations across types of sentence and distributional factors to be conceptually significant and maximally constrained in terms of the present model of universal grammar.

To cope with the well-attested semantic complexity of language-specific forms (e.g. the complexity of Type III and Type IV sentences) and at the same time keep the quest for semantic simplicity as a research strategy, a new approach to grammatical categories and form-meaning relationships (chapter 6) has been adopted. Essentially, semantic minimalism (the idea that there is a one-to-one relationship between form and meaning) and semantic multiplicity (the idea that there is a one-to-many relationship) can be referred to different levels of analysis. A distinction can thus be drawn between 'grammatical marker' and 'manifestation form', the former being a term for language-specific representatives of *metalinguistic form*, the latter the actual physical manifestation form in a particular language. Metalinguistic form is *monadic* (in the sense that there is a necessary, ad hoc one-to-one relationship between form and meaning), whereas manifestation form is characteristically *non-monadic* (in the sense that there is typically a one-to-many relationship). This approach therefore subscribes to semantic minimalism at the general metalinguistic level, basically as a research strategy, to cope with language-specific semantic multiplicity.

A further, related distinction is proposed between the *definition* level of meaning and the *function* level of meaning. This distinction is a reflection of the patterns of semantic opposition identified in the substitution test. Some data yields minimal formal and semantic pairs (in the sense that the substitutional variants are minimally

distinct both formally and semantically): such cases of 'purity' reveal, or give access to, the one-to-one relations of the meta-categories and thus represent the definition level of the approach here. Other data yields a more complex relationship of meanings from different categories, a *categorical interplay*, in which meanings are derived functionally: such cases represent the function level – the level at which complexity is viewed as the result of a principled functional interaction of the units in the general metacategories as specified at the definition level of meaning. The distinction between grammatical marker and manifestation form and that between the definition level and the function level of meaning, combined with the principles of extraction and transference described in chapter 4, provide the analytic link between language-specific semantic multiplicity and the minimalistic framework of the universal model. This new approach to categories and form-meaning relationships calls for some new terminology and new descriptive conventions. Such innovations have been kept to a minimum; and in proposals for new nomenclature and conventions, formalism which implies allegiance to pre-established linguistic theories has been studiously avoided.

Having discussed the methodological problems of studying action, tense and aspect, and having introduced the metalinguistic framework for a principled description of these categories, this study finally embarks on the actual construction of a universal grammar (chapter 7). The prototypical category concepts of actionality, temporality and aspectuality are identified on a preliminary basis in order to determine the categorical rank of these categories and their order of description. From the point of view of the propositional, referring mode of communication, action is seen to be more central than tense, which in turn is seen to be more central than aspect. The prototypical inventories of these categories are then established on the basis of definition-level variation of meaning elicited in the substitution test with special attention paid to the conceptual nature of the category members. One of the results of this part of the investigation is that action is

not only clearly distinct from aspect but has certain special characteristics which mark it as different from most other categories: despite its centrality as a propositional category and its role in the categorial interplay with tense and aspect, it is in many languages more closely related to lexicalization, derivational morphology and morphosyntactic subsystems than to a pervasive autonomous formal category. Furthermore, action has more category members than tense and aspect, and unlike tenses and aspects, they are interrelated in a hierarchy of oppositions rather than independent and discrete. One consequence of this special status of the action category is that it is often difficult to find regular minimal pairs at the definition level of meaning. Category members are in fact more conveniently identified at the function level of tense and aspect, which both function as operators on action. In a sense, therefore, the definition level of action is the function level of tense and aspect. The final part of the chapter explores the categorial interplay between action, tense and aspect in terms of conceptually significant (in)compatibility relations between the individual members of the categories and constraints on the locutionary agent's choice of category members (as well as the dynamic function-level variation of meaning caused by these factors).

The present chapter first offers an overview of the universal model, containing an exhaustive list of structures, category inventories, definitions, compatibility relations, constraints, and a survey of definition and function level variation of meaning. The remainder is devoted to examples of the possible applications of the model: as a notational system for the description of language-specific data, as an instrument to determine language-specific markedness relations, and, finally, as a framework for a discussion of discourse and concord relations.

It is not being claimed here that all the problems referred to in the introductory chapter have actually been solved. That would have been a too ambitious aim and impossible anyway to realize in a work of this scope. However, it is hoped that this study will lead to an

increased awareness of the many methodological problems involved in studying the semantics of morphosyntactic categories and an acceptance of the importance of accommodating substitutional relations in universal grammar in a principled way. This study seeks therefore to make only a modest contribution: to offer a coherent tentative model of action, tense and aspect, as well as to propose a number of tentative solutions to some of the many recalcitrant problems which bedevil research in the field of universal grammar.

This page intentionally left blank

References

- Agrell, S. (1908). *Aspektänderung und Aktionsartbildung beim polnischen Zeitwort*, Lund.
- Allerton, D. J. (1979). *Essentials of Grammatical Theory*, London: Routledge & Kegan Paul.
- Bache, C. (1978). *The Order of Premodifying Adjectives in Present-Day English*, Odense: Odense University Press.
- Bache, C. (1982). Aspect and Aktionsart: Towards a Semantic Distinction, *Journal of Linguistics* 18, 57-72.
- Bache, C. (1985a). *Verbal Aspect: a General Theory and its Application to Present-Day English*, Odense: Odense University Press.
- Bache, C. (1985b). The Semantics of Grammatical Categories: a Dialectical Approach, *Journal of Linguistics* 21, 51-77.
- Bache, C. (1986a). Review of Comrie 1985, *Journal of Literary Semantics* 15, 66-70.
- Bache, C. (1986b). Tense and Aspect in Fiction, *Journal of Literary Semantics*, 15, 82-97.
- Bache, C. (1986c). Aspect in English, in Sørensen (ed.) 1986, 1-26.
- Bache, C. (1992). Nogle Metodologiske Overvejelser om Begrebet 'Grammatisk Kategori', in *Odense Working Papers in Language and Communication*, no. 2, Odense: Institute of Language and Communication at Odense University.
- Bache, C. (1994a). Grammar in a Pedagogical Context, *PEO Special Issue (Traditions and Innovations: Papers Presented to Andreas Haarder)*, English Department of Odense University, 21-41.
- Bache, C. (1994b). Introduction: An Overview, in Bache et al. (eds) 1994, 1-22.
- Bache, C. (1994c). Verbal Categories, Form-Meaning Relationships and the Perfect, in Bache et al. (eds.) 1994, 43-60.

- Bache, C. (1996). Presentation of a Pedagogical Sentence Analysis System, *Hermes* 17, 11-35.
- Bache, C., H. Basbøll & C. E. Lindberg (eds.) 1994. *Tense, Aspect and Action: Empirical and Theoretical Contributions to Language Typology*, Berlin and New York: Mouton de Gruyter.
- Bache, C., M. Davenport, J. M. Dienhart & F. Larsen (1993). *An Introduction to English Sentence Analysis* (2nd edition), Copenhagen: Munksgaard.
- Bache, C. & L. K. Jakobsen (1980). On the Distinction between Restrictive and Nonrestrictive Relative Clauses in Modern English, *Lingua* 52, 243-267.
- Bergman, B. & Ö. Dahl (1994). Ideophones in Sign Language? The place of Reduplication in the Tense-Aspect System of Swedish Sign Language, in Bache et al. (eds.) 1994, 397-422.
- Bolinger, D. (1977). *Meaning and Form*, London and New York: Longman.
- Brugmann, K. (1904). *Kurze vergleichende Grammatik der indogermanischen Sprachen*, Strassburg.
- Bybee, J. L. (1985). *Morphology: A Study of the Relation Between Meaning and Form*, Amsterdam and Philadelphia: Benjamins.
- Chomsky, N. (1965). *Aspects of the Theory of Syntax*, Cambridge, Mass.: MIT Press.
- Chomsky, N. (1986). *Knowledge of Language: Its Nature, Origin and Use*, New York: Praeger.
- Close, R. A. (1962). *English as a Foreign Language*, London.
- Comrie, B. (1976). *Aspect*, Cambridge: Cambridge University Press.
- Comrie, B. (1985). *Tense*, Cambridge: Cambridge University Press.
- Craig, C. (ed.) (1986). *Noun Classes and Categorization*, Amsterdam and Philadelphia: Benjamins.
- Dahl, Ö. (1985). *Tense and Aspect Systems*, Oxford and New York: Blackwell.
- Dik, S. C. (1978). *Functional Grammar*, Amsterdam: North-Holland.

- Dik, S. C. (1989). *The Theory of Functional Grammar. Part I: The Structure of the Clause*, Dordrecht: Foris Publications.
- Dik, S. C. (1994). Verbal Semantics in Functional Grammar, in Bache et al. (eds.) 1994, 23-42.
- Dowty, M. R. (1972). *Studies in the Logic of Verb Aspect and Time Reference in English* (Studies in Linguistics, I.), Department of Linguistics, University of Texas at Austin.
- Eco, U., M Santambrogio & P. Violi (eds.) (1988). *Meaning and Mental Representations*, Bloomington and Indianapolis: Indiana University Press.
- Egerod, S. (1994). Aspect in Chinese, in Bache et al. (eds.) 1994, 279-310.
- Ek, J. A. van & N. J. Robat (1989). *The Student's Grammar of English*, London: Longman.
- Davidsen-Nielsen, N. (1990). *Tense and Mood in English: A Comparison with Danish*, Berlin and New York: Mouton de Gruyter.
- Forsyth, J. (1970). *A Grammar of Aspect: Usage and Meaning in the Russian Verb*, Cambridge: Cambridge University Press.
- Friedrich, P. (1974). *On Aspect Theory and Homeric Aspect*, Indiana University Publications in Anthropology and Linguistics, Memoir 28 of *International Journal of American Linguistics*, Bloomington: Indiana University.
- Fries, C. C. (1952). *The Structure of English: An Introduction to the Construction of English Sentences*, references to London: Longmans, 1967.
- Galton, H. (1964). A New Theory of the Slavic Verbal Aspect, *Archivum Linguisticum* 16, 133-144.
- Givón, T. (1984). *Syntax: A Functional-Typological Introduction* (Volume I). Amsterdam and Philadelphia: Benjamins.
- Givón, T. (1990). *Syntax: A Functional-Typological Introduction* (Volume II). Amsterdam and Philadelphia: Benjamins.
- Goedsche, R. (1940). Aspect versus Aktionsart, *The Journal of English and Germanic Philology* 39, 189-196.

- Greenbaum, S. & R. Quirk (1990). *A Student's Grammar of the English Language*, London: Longman.
- Greenberg, J. H. (ed.) (1962). *Universals of Language*, Cambridge, Mass.: MIT Press.
- Greenberg, J. H. (1962). Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements, in Greenberg, J. H. (ed.) 1962, 73-113.
- Greenberg, J. H., C. E. Osgood & J. J. Jenkins (1962). Memorandum Concerning Language Universals, in Greenberg, J. H. (ed) 1962, xv-xxvii.
- Halliday, M. A. K. (1967). *Intonation and Grammar in British English*, The Hague: Mouton.
- Halliday, M. A. K. (1970). Language Structure and Language Function, in Lyons (ed.) 1970, 140-165.
- Halliday, M. A. K. (1973). *Explorations in the Functions of Language*, London: Edward Arnold.
- Halliday, M. A. K. (1994). *An Introduction to Functional Grammar*, 2nd edition, London: Edward Arnold.
- Halliday, M. A. K. & J. R. Martin (eds.) (1981). *Readings in Systemic Linguistics*, London: Batsford Academic and Educational Ltd.
- Harder, P. (1994). Verbal Time Reference in English: Structure and Functions, in Bache et al. (eds) 1994, 61-80.
- Hatcher, A. G. (1951). The Use of the Progressive Form in English, *Language* 27, 254-280.
- Hermann, E. (1927). Objektive und subjektive Aktionsart, *Indogermanische Forschungen* 6, 207-228.
- Hermann, E. (1933). Aspekt und Aktionsart, *Nachrichten der Gesellschaft der Wissenschaften zu Göttingen, Fachgruppe III*, Nr. 10, 470-480.
- Herslund, M. (1988). Tense, Time and Modality, in Rosén, V. (ed.) 1988, 289-300.

- Hjelmslev, L. (1943). *Omkring Sprogteoriens Grundlæggelse* (Prolegomena to a Theory of Language), references to *Travaux du Cercle Linguistique de Copenhague, Vol. XXV*, Copenhagen: The Linguistic Circle of Copenhagen, 1993.
- Holt, J. (1943). *Etudes d'aspect*, Acta Jutlandica 15.2, Copenhagen and Aarhus.
- Hopper, P. J. & E. C. Traugott (1993). *Grammaticalization*, Cambridge: Cambridge University Press.
- Hornby, A. S. (1954). *A Guide to Patterns and Usage in English*, London.
- Huddleston, R. (1984). *Introduction to the Grammar of English*, Cambridge, London & New York: Cambridge University Press.
- Jackendoff, R. (1983). *Semantics and Cognition*, Cambridge, Mass.: MIT Press.
- Jackendoff, R. (1987). The Status of Thematic Relations in Linguistic Theory, *Linguistic Inquiry* 18, 369-411.
- Jackendoff, R. (1988). Conceptual Semantics, in Eco et al. (eds) 1988), 81-97.
- Jackson, H. (1990). *Grammar and Meaning*, London and New York: Longman.
- Jacobs, R. A. & P. S. Rosenbaum (1968). *English Transformational Grammar*, New York and London: John Wiley & Sons.
- Jacobsohn, H. (1926). Review of Wackernagel 1920, *Gnomon* 2, 369-395.
- Jacobsohn, H. (1933). Aspektfragen, *Indogermanische Forschungen* 51, 292-318.
- Jakobson, R. (1932). Zur Struktur des Russischen Verbums, in *Charisteria Gvilelmo Mathesio Qvinqvagenario ... oblata*, Prague, 74-84.
- Jakobson, R. (1962). Implications of Language Universals for Linguistics, in Greenberg (ed) 1962, 263-278.
- Jensen, P. A. (1987). Presentation af en Lille Perle, Review of Sørensen (ed.) 1986, *SPRINT* 2 (Copenhagen Business School), 47-60.
- Jespersen, O. (1909-49). *A Modern English Grammar on Historical Principles*, references to London: Allen & Unwin, 1965.

- Jespersen, O. (1924). *The Philosophy of Grammar*, references to London: Allen & Unwin, 1975.
- Jespersen, O. (1931). The expanded tenses, *S. P. E. Tract* 36, 524-530.
- Katz, J. J. (1972). *Semantic Theory*, New York: Harper & Row.
- King, L. S. (1983). The Semantics of Tense, Orientation, and Aspect in English, *Lingua* 59, 101-154.
- Koschmieder, E. (1928/29). Studien zum slavischen Verbalaspekt, *Zeitschrift für vergleichende Sprachforschung* 55, 208-304 (Part I) and 56, 78-105 (Part II).
- Kruisinga, E. (1925). *A Handbook of Present-Day English. Part II: English Accidence and Syntax I*, fourth edition, Utrecht: Kemink en Zoon.
- Lakoff, G. (1987). *Women, Fire, and Dangerous Things*, Chicago and London: University of Chicago Press.
- Lakoff, G. & M. Johnson (1980). *Metaphors We Live By*, Chicago and London: University of Chicago Press.
- Langacker, R. W. (1991). *Concept, Image, and Symbol: The Cognitive Basis of Grammar*, Berlin and New York: Mouton de Gruyter.
- Lauridsen, K. (1986). *Øvelser til Engelsk Grammatik*, Copenhagen: Schønberg.
- Leech, G. N. (1971). *Meaning and the English Verb*, London: Longman.
- Leskien, A. (1909). *Grammatik der altbulgarischen (altkirchenslavischen) Sprache*, Heidelberg.
- Lyons, J. (ed.) (1970). *New Horizons in Linguistics*. Harmondsworth: Penguin.
- Lyons, J. (1977). *Semantics I-II*, Cambridge: Cambridge University Press.
- Lyttle, E. G. (1974). *A Grammar of Subordinate Structures in English*, The Hague: Mouton.
- McCoard, R. W. (1978). *The English Perfect: Tense-Choice and Pragmatic Inferences*, Amsterdam, New York & Oxford: North-Holland.
- Matthews, P. H. (1974). *Morphology*, Cambridge: Cambridge University Press.

- Matthews, P. H. (1993). *Grammatical Theory in the United States from Bloomfield to Chomsky*, Cambridge: Cambridge University Press.
- McCoard, R. W. (1978) *The English Perfect*, Amsterdam; North-Holland.
- Palmer, F. R. (1974). *The English Verb*, London: Longman.
- Palmer, F. R. (1984). *Grammar* (new edition), Harmondsworth: Penguin.
- Pollak, W. (1970). Aspekt und Aktionsart, *Linguistik und Didaktik* 1/2, 40-47 and 155-163.
- Porzig, W. (1927). Zur Aktionsart indogermanischer Präsensbildungen, *Indogermanische Forschungen* 45, 152-167.
- Radford, A. (1981). *Transformational Syntax*, Cambridge: Cambridge University Press.
- Refsing, K. (1994). Tense, Aspect and Actionality in the Ainu Language, in Bache et al. (eds.) 1994, 311-322.
- Reichenbach, H. (1947). *Elements of Symbolic Logic*, New York; The Free Press; London: Collier-Macmillan.
- Rosch, E. (1973). Natural Categories, *Cognitive Psychology* 7, 532-547.
- Rosch, E. (1977). Human Categorization, in Warren 1977, 1-49.
- Rosén, V. (ed.) (1988). *Papers from the Tenth Scandinavian Conference of Linguistics*, Vol. 1, Department of Linguistics and Phonetics, University of Bergen.
- Rundgren, F. *Intensiv und Aspektkorrelation*, Acta Universitatis Upsaliensis, 1959:5, Uppsala and Wiesbaden.
- Salkie, R. (1987). Review of Bache 1985a, *Lingua* 73, 130-140.
- Schibsbye, K. (1965). *A Modern English Grammar* (2nd edition), Oxford: Oxford University Press.
- Sinclair, M. (1990). Rules of Conceptual Well-Formedness and Optional vs. Obligatory Iterativity, *Lingua* 80, 253-293.
- Streitberg, W. (1891). Perfective und Imperfective Actionsart im Germanischen, *Beiträge zur Geschichte der deutschen Sprache und Literatur* 15, 70-177.

- Svantesson, J.-O. (1994). Tense, Mood and Aspect in Kammu, in Bache et al. (eds.) 1994, 265-278.
- Sørensen, F. (ed.) (1986). *Aspects of Aspect: Three Studies on Aspect in English, French and Russian*, CEBAL 9, Copenhagen: Nyt Nordisk Forlag Arnold Busck.
- Sørensen, H. M. (1943). Om Definitionerne af Verbets Aspekter, *Im Memoriam Kr. Sandfeld*, Copenhagen, 221-233.
- Sørensen, H. S. (1958). *Word-Classes in Modern English*, Copenhagen: Gad.
- Taylor, J. R. (1989). *Linguistic Categorization*, Oxford: Clarendon Press.
- Trubetzkoy, N. S. (1939). *Grundzüge der Phonologie*, Travaux du Cercle Linguistique de Prague 7, Prague.
- Verkuyl, H. J. (1987). Verbal Aspect in Russian and in English? (review of Bache 1985a), *Linguistics* 25, 403-420.
- Vestergaard, T. (1985). *Engelsk Grammatik*, Copenhagen: Schønberg.
- Vikner, C. (1994). Change in Homogeneity in Verbal and Nominal reference, in Bache et al. (eds.) 1994, 139-164.
- Vonen, A. M. (1994). The Expression of Temporal and Aspectual Relations in Tokelau Narratives, in Bache et al. (eds.) 1994, 371-396.
- Wackernagel, J. (1920). *Vorlesungen über Syntax mit besonderer Berücksichtigung von Griechisch, Lateinisch und Deutsch*, Basel.
- Warren, N. (ed.) (1977). *Studies in Cross-Cultural Psychology*, Vol I, London, New York and San Francisco: Academic Press.
- Weinrich, H. (1964). *Tempus: Besprochene und Erzählte Welt*, Stuttgart: W. Kohlhammer.
- Weinrich, H. (1970). Tense and Time, *Archivum Linguisticum* 1 (New Series), 31-41.
- Zubin, D. & K. M. Köpcke (1986). Gender and Folk Taxonomy: The Indexical Relation between Grammatical and Lexical Categorization, in Craig, C. (ed.) 1986, 139-180.

Index

A

absolute standard *see* descriptive standard

action, actionality 12, 33, 35, 52ff, 80f, 117, 119, 136, 160ff, 180f, 191ff, 203ff, 209ff, 217ff, 227ff, 263f, 267ff, 271ff, 277ff, 295ff, 299ff

±ACTIONAL 227ff, 280ff, 301ff

actional change 280ff

adequacy 10, 18, 32f, 54, 56, 72ff, 108f, 119, 122, 131f, 137, 145f, 149, 157, 168, 174f, 181, 323ff

adjective, adjective order 60, 106, 108, 111ff, 325

Agrell, S. 217

Ainu 224

Aktionsart 12, 217

Allerton, D. J. 10, 73, 110f

American structuralism 21f, 25

American structuralist phonology 11

Amis, K. 262

analytic directionality 26ff, 32ff, 39ff, 59, 155, 323

analytic standard *see* descriptive standard

animal language 21, 23

Arabic 293

arbitrariness 43, 84ff

AS-construction 167

aspect, aspectuality 12, 33, 35ff, 44, 80f, 88, 94, 107, 117ff, 139, 158, 182f, 187f, 191ff, 208ff, 257ff, 271ff, 292ff, 299ff

±ASPECTUAL 258ff, 304ff

aspectual focus 118, 160, 177, 179f, 185, 205ff, 212ff, 257ff

atelic, atelicness 53f, 237ff, 302

Atkan Aleut 72

B

Bache, C. 9, 12f, 17, 34, 53, 55, 57, 60f, 64, 78, 81, 111, 115, 131, 134, 137, 151, 155, 162, 174, 185, 217, 231, 245, 248, 250f, 258, 261, 263, 265, 278, 314

Basbøll, H. 9, 13

basic level term 30

basic meaning 18, 177, 322

Bergman, B. 92

Bolinger, D. 133

bounded 38, 40, 237

Brugmann, K. 217

Bybee, J. L. 90f

C

Carey, P. 103ff

categorial interplay 18, 81, 92, 166ff, 174ff, 186ff, 209ff, 271ff, 292ff, 311f, 323, 327

categorial rank 209ff, 327
 categorization 46ff, 52, 55, 67, 97f, 147, 323
 category 26ff, 36ff, 41ff, 46ff, 49ff, 80ff, 90ff, 104f, 107ff, 117, 133ff, 155ff, 178f, 196, 199ff, 209ff, 301ff, 310ff, 323
 category architecture 18, 46, 92, 94, 159ff, 173ff, 186
 category concept 108, 138f, 149ff, 158, 173, 174, 182ff, 199ff, 217ff, 244ff, 257ff, 301ff, 310f, 327
 category members 138f, 149ff, 158, 173, 174, 182ff, 271
 category structure 182, 184
 chaos in language 26
 Chinese (Modern Standard) 224
 choice, choice relation 75f, 101, 103ff, 108ff, 120ff, 137, 165ff, 178, 320, 325
 Chomsky 10, 26, 73
 classifying function (adjective order) 112
 co-selection (rules) 196, 216, 272ff
 co-text 317ff
 code-orientation (relative clauses) 115f, 129, 131, 157f, 175
 cognitive semantics, structures, etc. 10, 55f, 76, 83, 97, 136, 175, 200
 communicative function 211, 221
 compatibility/incompatibility 17, 167ff, 179, 186ff, 209, 271ff, 304ff, 328
 completion 39f

complex (situations), complexity 231ff, 267, 272ff, 284ff, 302ff
 compositional semantics 15, 50
 Comrie, B. 9, 40, 53, 81, 135, 228, 257f, 259, 293
 conceptual reality, conditions, structures etc. 51ff, 96, 109, 117f, 127, 132, 137, 165, 169, 197, 200, 212ff, 228, 231, 233, 240, 243f, 246, 253ff, 268, 270, 271ff, 323ff
 concord relation 16-18, 141, 313ff, 323
 constraint 195f, 274ff, 304ff
 context 313ff
 context loading 319
 contrast formation 176f, 179
 convention (category) 183f, 197
 coreferentiality 130
 cross-linguistic phenomena, generalizations etc. 25, 33, 36ff, 60, 67, 77, 79, 82, 88, 90, 140

D

Dahl, Ö. 9, 12, 23ff, 35ff, 44, 62f, 66f, 80, 90ff, 137
 Danish 30, 34, 72, 83f
 Davenport, M. 57
 Davidsen-Nielsen, N. 34
 decoding 49, 51
 definition (category) 183, 185
 definition 156ff
 definition level (of meaning) 173ff, 197, 222, 244, 246ff, 260ff, 267ff, 305f, 326f

deixis 45, 185, 250ff
 derivational morphology 16, 90,
 134, 224, 244, 328
 descriptive adequacy *see* adequacy
 descriptive function (adjective
 order) 112
 descriptive representation 182ff,
 271ff
 descriptive standard 26, 59, 62f,
 71, 76, 82, 86ff, 140, 149,
 181, 255, 274, 299f, 311, 321
 diachrony 23ff
 Dienhart, J. M. 57
 Dik, S. C. 9
 directed situations, direction 53f,
 241ff, 269, 275f, 290ff, 302ff
 directionality *see* analytic
 directionality
 distribution (of forms) 74ff, 82ff,
 93ff, 101, 108ff, 117ff, 131f,
 150, 156, 166, 169f, 174,
 178, 181, 324f
 distributive (adjectives etc) 61f,
 77f, 227, 232ff
 Dowty, M. R. 53
 drift phenomena 23f
 durative, duration 52f, 218ff,
 235ff, 302
 dynamic 228f

E

E-language 10
 Egerod, S. 224
 Ek, J. A. van 27
 elicitation 111, 119

encoding 49, 51, 320
 English 15-17, 27, 29, 34, 37f,
 43, 51, 56ff, 62ff, 72f, 76, 81,
 84, 91f, 93, 95, 100f, 106ff,
 110ff, 121, 123f, 133ff, 143ff,
 152ff, 159ff, 170ff, 191f, 199ff,
 210, 212, 223ff, 245ff, 260ff,
 272ff, 310ff, 325
 equipollent oppositions 11, 310f
 etiquette 71ff, 95, 100, 324
 evaluation criteria 71ff, 324
 event time 245
 expectation 23ff
 experiential realism
 explanatory adequacy *see*
 adequacy
 extensional factor 131f, 150, 154,
 172
 external focus *see* aspectual focus
 extralinguistic context *see* context

F

feature 307ff
 fiction 200, 265
 Finnish 56
 focus *see* aspectual focus
 form 134, 136ff, 162ff, 221, 326
 form type 33, 36ff, 77, 80, 89ff
 form-meaning relationship 27ff,
 49, 52, 92, 133ff, 159ff, 174,
 184, 196, 199ff, 326
 form-to-meaning *see* analytic
 directionality
 form/function distinction 57f
 formal complexity 142ff

formal logic 54
 formal pair *see* pair
 formal rationale 85
 formula 193ff
 Forsyth, J. 17, 62f, 134, 148,
 189, 217, 269, 293
 Fowles, J. 220f
 Friedrich, P. 311
 Fries, C. C. 60
 function level (of meaning) 173ff,
 186, 197, 222, 244, 271ff,
 279ff, 306f, 326f
 functional grammar 9, 73
 functional interplay *see* categorial
 interplay
 future time, future tense 39f, 133,
 186f, 190, 245ff, 255ff, 292ff,
 303
 future-in-the past 246

G

Galton, H. 134, 311
 gap 121, 124, 131f, 150, 154,
 169, 174, 189
 gender 30f, 84, 148
 generalization 45
 Generative Grammar 10, 21, 73ff,
 95
 German 30f, 83f, 86, 217, 223
 Germanic philology 217f
 Gesamtbedeutung 146, 174
 Givón, T. 9, 203
 Glossematics 11
 Goedsche, R. 217

gram 92
 grammatical category *see* category
 grammatical form *see* form
 grammatical marker *see* marker
 grammatical subspecification
 163ff
 grammaticality 74, 131f
 grammaticality restriction,
 constraints 150, 154, 174,
 189
 grammaticalization 90, 218, 222
 Greek 257
 Greenbaum, S. 27
 Greenberg, J. H. 10, 22

H

habit, habituality 39f, 219f, 226
 Halliday, M. A. K. 9
 Harder, P. 34
 Hatcher, A. G. 263
 Hermann, E. 217
 Herslund, M. 34, 244
 historic present 251
 Hjelmslev, L. 11, 72, 110f
 Holt, J. 257
 Hopper, P. J. 90
 Huddleston, R. 27
 hypothesis 24ff, 56, 77, 86, 89,
 91, 95, 100ff, 110, 192, 324

I

I-language 10

idealization, ideal construct 82ff,
91ff, 101, 135ff, 149, 264
identification-orientation (relative
clauses) 115f, 157f, 176
imperative 152
imperfective, imperfectivity 17,
88, 94, 121, 125, 139, 151,
166, 168f, 182f, 187f, 191ff,
258ff, 272ff, 304ff
incompatibility *see* compatibil-
ity/incompatibility
Indo-European languages 90
inflectional morphology 16, 90,
134
intensional factor 131f, 150, 154,
172
inter-level approach 42, 46, 66ff
internal focus *see* aspectual focus
interscholarly communication 72,
100, 140, 299, 324
inventory (category) 183f, 244ff,
257ff, 301ff
irreversibility *see* reversibility
isomorphism *see* organizational
isomorphism
Italian 56
iterative, iteration 45, 52ff, 226,
232ff

J

Jackendoff, R. 10, 14, 50ff, 96f,
323
Jackson, H. 27
Jacobs, R. A. 106
Jacobsohn, H. 217

Jakobsen, L. K. 115
Jakobson, R. 11, 22, 148
Japanese 23
Jenkins, J. J. 22
Jensen, P. A. 124
Jespersen, O. 34
Johnson, M. 10, 51

K

Kammu 72, 224
Katz 55
Khoisan languages 23
Köpcke, K. M. 30, 86
Koschmieder, E. 217
Kruisinga, E. 34

L

Lakoff, G. 10, 30, 51, 56, 88,
136, 138
Langacker, R. W. 10, 221
language-specific grammar 27ff,
40ff, 57ff, 66ff, 71f, 77, 79ff
99ff, 141ff, 299, 310ff
Larsen, F. 57
Latin 28, 65, 257
Lauridsen, K. 124
Leech, G. N. 27
Leskien, A. 217
lexical semantics 14, 33
lexicalization 218ff, 244, 328
Lindberg, C.-E. 9, 13
linguistic etiquette *see* etiquette

locutionary agent 109ff, 118f,
124ff, 167f, 176ff, 189, 200ff,
210ff, 250ff, 257ff, 313ff, 320,
328

Lyons, J. 115, 257f

Lyttle, E. G. 106

M

Malamud, B. 316

manifestation form 163, 168,
174, 197, 326f

markedness 114, 148f, 165f, 189,
191f, 280ff, 310ff

marker (of grammatical form)
162, 197, 326f

Martin, J. R. 9

Matthews, P. H. 22

McCoard, R. W. 62f

meaning 41ff

meaning-to-form *see* analytic
directionality

medias res 261

mentalism 10

metacategory 136ff, 162ff, 174ff,
182ff, 196, 199ff, 209ff, 264,
270, 311

metagrammar 32

metalanguage 11, 13, 25ff, 46ff,
56ff, 66ff, 71ff, 89ff, 98ff, 136ff,
155, 181, 183ff, 199ff, 209ff,
299ff, 323ff

methodology 9, 21ff, 35ff, 41ff,
56, 92, 110, 169, 322, 327

minimal actional pair 222f

minimal factor criterion 153f,
159, 184

minimal pair (formal, semantic)
156f, 166ff, 174f, 177ff, 197,
222ff, 257, 264, 326

modality 208, 255f

Modern Standard Chinese *see*
Chinese

monadic/non-monadic 159ff, 174,
197, 326

mood 35ff, 152

morphosyntactic categories 16

morphology 16, 90

multidimensionality (action)
224ff, 244, 328

N

narration 250

neutralization 158, 172

non-monadic *see* monadic/non-
monadic

non-past 245, 255

notation 307ff, 328

number 45, 176, 313

O

object-language 56ff, 67ff, 71,
98ff, 181, 323f

objectivism 56, 73

observational adequacy *see*
adequacy

one-to-many correspondence (form
/meaning) 93, 145, 148, 175,
326

one-to-one correspondence (form
/meaning) 18, 93ff, 100, 137,
144, 148f, 165, 175, 324, 326

order class 60
 order of description 209ff
 order of premodifying adjectives
 see adjective, adjective order
 order preference *see* preference
 organizational isomorphism 79ff,
 95, 100, 324
 Osgood, C. E. 22

P

pair *see also* minimal actional
 pair 150ff, 166ff, 197
 Palmer, F. R. 27
 paradigmatic relation *see*
 substitutional relation
 participant 203
 past perfect 15
 past time, past tense 39f, 107,
 134ff, 143, 186f, 190, 200ff,
 245ff, 247ff, 255, 292ff, 299f,
 303
 past-in-the past 246
 perfect form 15, 73, 154f, 253,
 257f
 perfective, perfectivity 17, 94,
 121, 125, 139, 151, 166,
 182f, 185, 187f, 191ff, 258ff,
 272ff, 304ff
 performative 278
 permutation 111
 person 313
 phase, phasal constituency 227,
 266, 270f
 phrase structure analysis 58
 phrase structure rule 81

Pollak, W. 217
 Porzig, W. 217, 257
 Prague School linguistics 11
 preference, preferred order 111,
 113f
 prefixation 151f, 223
 present perfect *see* perfect form
 present time, present tense 39f,
 107, 133, 143, 186f, 190,
 200ff, 230f, 245ff, 247ff, 252ff,
 276ff, 292ff, 303
 presentation-orientation (relative
 clauses) 116, 157f, 175f
 presentational focus *see* aspectual
 focus
 primary data 66ff, 324
 primary meaning 93
 principle of extraction 99ff
 privative opposition 11, 138,
 148, 184, 189, 310ff
 procedural characteristic 227ff
 process 39f
 progressive 15, 29, 66, 73, 84,
 92f, 106ff, 117f, 123ff, 134,
 137, 158, 167f, 170f, 177,
 179ff, 200ff, 233ff, 248f, 260ff,
 273ff, 325
 projected world 11, 52ff, 127ff,
 200ff, 211ff, 228, 246, 250ff,
 266, 323
 propositional semantics, function
 etc. 203, 211f, 218, 221f,
 224, 229, 250ff, 265, 327
 prototype 10, 82, 88f, 96, 136,
 140, 147, 174, 299, 327

punctual, punctuality 52f, 219ff,
235ff, 268, 274f, 287ff, 295ff,
302ff

Q

questionnaire investigation 36ff
Quirk, R. 27

R

Radford, A. 10, 73
randomness 83ff, 113f
recognition 46, 48, 49ff, 83, 155,
199, 323
reduplication 224
reference (situational) 208, 215
reference time 245, 259
referent (situational) 208, 214,
218ff, 259
referential scope 127
Refsing, K. 224
reimperfectivization 151
relative clause 106, 108, 114ff,
157f, 175f, 178f, 325
relativism 21, 25, 56
remote past 246
research strategy 86ff, 94, 149,
299f, 324
restrictiveness *see* relative clauses
reversibility (adjective order) 111f
Robat, N. J. 27
Rosch, E. 88
Rosenbaum, P. S. 106
Rundgren, F. 217

Russian 17, 56, 62ff, 121, 134,
148, 151f, 166, 169, 189,
191f, 210, 216, 223, 257,
269, 272, 282, 293, 312

S

Salkie, R. 12, 36
Schibsbye, K. 27, 314
secondary data 66ff, 71, 324
secondary meaning 93
secondary tenses 246
self-contained situations, self-
containment 53f, 241ff, 270,
288, 290, 303
semantic complexity 135f, 142ff,
168, 174f, 326
semantic concord relation *see*
concord relation
semantic determination 101, 324
semantic minimalism 196f, 322,
326
semantic multiplicity 196f, 326
semantic rationale 83ff, 93f
semelfactive, semelfactiveness 45,
52f, 226
sentence 119ff, 313ff
sentence typology *see* typology of
sentences
simple form 29, 106ff, 117f, 154f,
158, 170f, 177, 179ff, 200ff,
233ff, 260ff, 273ff, 325
simple past 15, 51, 73, 230f
simplex (situations) 231ff, 273ff,
302
Sinclair, M. 53

situation, situation type 119f,
 200ff, 210ff, 218ff, 228ff
 situational focus *see* aspectual
 focus
 situational reference *see* reference
 situational referent *see* referent
 Slavonic philology 217
 Snow, C. P. 316
 source-language 56, 63ff, 67ff,
 71ff, 98ff, 181, 323f
 specific occurrence 39f
 speech time 245
 standard *see* descriptive standard
 stative, states 228f
 Steinbeck, J. 315
 strategy *see* research strategy
 Streitberg, W. 217
 subjectivity 54ff, 185
 subjunctive 152
 subsituation 232ff, 272ff
 subspecification *see* grammatical
 subspecification
 substitution test 11, 108ff, 120ff,
 153ff, 171, 175, 181, 193,
 195, 197, 202ff, 230, 232ff,
 247ff, 260ff, 284ff, 319, 325
 substitutional pair *see* pair
 substitutional relation 10, 14-16,
 50, 73ff, 95, 103ff, 150, 152ff
 169, 202ff, 322, 325
 suffixation 151f
 superficiality criterion 37
 superordinate level term 30
 superordinate situation 234
 Svantesson, J.-O. 224

synchrony 23ff
 Systemic Grammar 9
 systemic gap *see* gap
 systemic meaning 50
 Sørensen, H. M. 217
 Sørensen, H. S. 106

T

Taylor, J. R. 10, 30, 51f, 82, 88
 telic, telicness 53f, 237ff, 268,
 275, 288ff, 295ff, 302ff
 ±TEMPORAL 245ff, 292ff, 303
 temporal adverb 27, 45
 tense, temporality 12, 26ff, 33ff,
 44, 80f, 105ff, 117f, 119, 136,
 159ff, 171, 186f, 190, 205ff,
 209ff, 244ff, 276ff, 292ff, 299ff
 terminological identity 77ff
 terminological transference 100,
 324
 terminology 9, 13, 25, 56ff, 76ff,
 90, 94, 99f, 138, 151, 197,
 322
 TMA category 36ff, 66, 90f
 Tokelau 72, 224
 token *see* type-token distinction
 tradition 40f, 47f, 61, 65, 72,
 151, 184
 traditional grammar 110
 Traugott, E. C. 90
 Trubetzkoy, N. S. 148
 truth-condition 14, 126ff,
 Type I-IV sentences 122ff
 type of situation *see* situation

type *see also* form type 33
 type-token distinction 71, 95ff,
 324
 typological linguistics 22, 35ff
 typology of sentences 119ff, 150,
 325

U

unbounded 38, 40, 237
 universal grammar 10, 12f, 21ff,
 32ff, 39ff, 56ff, 67ff, 71ff, 89ff,
 98ff, 109, 139f, 149, 197,
 199ff, 209ff, 255f, 299f, 310ff,
 322ff
 unpaired verb 121

V

valency role 203
 validity (of pairs) 151

variation 23ff, 88, 193
 verbal category *see also* category
and metacategory 117, 142ff,
 199ff
 Verkuyl, H. J. 12
 Vestergaard, T. 27
 Vikner, C. 315
 voice 75, 107, 152
 Vonen, A. M. 224

W

Weinrich, H. 34, 244
 well-formedness restriction 131f

Z

Zubin, D. 30, 86

This book addresses some methodological problems in the study of tense, aspect and action: How should linguists go about describing these categories and with what terminology? How does our work in this area relate to descriptions of language(s) in general? What research strategies should be explored? Bache discusses the interaction between language-specific grammars and universal grammar, including the problems of analytic directionality, semantic minimalism, and the general metalanguage of universal grammar. The book has several sources of inspiration: generative linguistics, structuralist phonology, glossematics, functional grammar, cognitive semantics and prototype theory. Bache argues strongly for the inclusion of a paradigmatic dimension in the study of the semantics of morphosyntactic categories. Rather than adhering to one particular linguistic school, Bache provides a general description of tense, aspect and action in the form of generalizations that should be accommodated in any theory.

Carl Bache is Professor of English in the Institute of Language and Communication at Odense University, Denmark. His research is on English grammar and general Linguistics. He has published books and articles on adjective order, relative clauses, language pedagogy, syntax and the semantics of grammatical categories.