

Klein, W. (2002). Why case marking? In I. Kaufmann & B. Stiebels (Eds.). *More than words: Festschrift for Dieter Wunderlich. studia grammatica 53*, 251-273. Berlin: Akademie Verlag.

Why case marking?¹

Wolfgang Klein

En vieillissant on devient plus fou, et plus sage.
[La Rochefoucault]

1. Introduction

In the memorable year of '68, on a hot summer day, Dieter Wunderlich and I were lying at the beach of Laboe, north of Kiel, and wondered about why languages can be so different. In those days, I tried to learn Chinese and Basque at the same time, two languages which are structurally as different as one can imagine. In both cases, the success was somewhat limited. But there was one thing I gained from this experience: this is the deep conviction that inflectional morphology is largely superfluous, because other than the Basque, the Chinese easily do without it. Dieter did not quite share in this view, but the sun was hot, and the sea was cool, and we did not settle the issue on the spot. Some 33 years and an endless number of morphology papers later, he finally took the bull by the horns: 'Why is there morphology?' was the title of his talk at the 23rd Annual Meeting of the German Linguistic Society - that society whose co-founder and first president he was. The following remarks are a variation on this theme, and again, as in Laboe, they are from the perspective of the second language learner. Their gist is this: If we want to understand the nature of the human language faculty and the nature of linguistic systems, we should see what this capacity does when it brings about such a system, and not just look at the final result. The normal manifestation of the human language faculty are learner varieties, and 'fully-fledged languages' are only a

I wish to thank Ingrid Kaufmann and Barbara Stiebels for most helpful comments on an earlier version of this paper.

special case of learner varieties. This view is strongly at variance with the traditional perspective in linguistics; but I believe it might help us to get a fresh view on old phenomena. In the first part of this paper, I will elaborate on this perspective, and in its second part, I will illustrate what it might help us to understand the function in case marking.

2. Learner varieties are the normal case

Within the various disciplines that investigate the manifold manifestations of the human language faculty, research on how people learn a second language does not rank very high. Does this fact only reflect irrational but rock-solid caste prejudices on the part of those who want to protect their privileges? Or has it anything to do with second language acquisition (SLA) research itself - its object, its methods, its theoretical or empirical standards, its potential benefit for mankind?

To begin with the latter, it appears that among the various linguistic disciplines, SLA research is probably the only one that is, or at least can be, of any substantial practical use. This should be a solid base of self-confidence, and a good reason to be held in some esteem by others. In fact, when linguists find themselves in a situation where they are urged to justify their existence in the eye of the common beholder, this is one of their arguments (together with aphasia, machine translation and automatic speech recognition).

As to the second explanation, I do not think that the field of SLA in general scores so badly as regards the standards of cogent argumentation, of conceptual clarity, of clean data collection and of empirical validation. This is not to mean that it could not improve considerably in many ways, and any effort in this direction should be made. But there is little reason to assume that the empirical basis of typological comparison is on the average more solid than what is normally done in SLA research. If, for example, a study of word order typology is based on 400 languages, then this means that the author cannot have spent much time on understanding what the word order regularities of each language are. Nor is there a good reason to believe that notions commonly used in theoretical linguistics are of necessity clearer and better defined than those used in the study of second language acquisition; we shall discuss this for ubiquitous notions such as 'subject' or 'object' below.

The problem seems to be rather that no one sees how the analysis of the odd productions of the second language learner, this distorted, flawed, ridiculous, chaotic mimicking of "real language", could tell us something substantial, something principled, something fundamental about the nature of the human mind. It is this perception that must be changed in the first place. Learner varieties are a genuine manifestation of the human language faculty, and the careful and systematic investigation of how they are internally structured and how they develop over time is a genuine contribution to the understanding of this faculty. In fact, I believe that learner varieties are its core manifestations, and "real languages" - or a speaker's perfect knowledge of a "real language" - are just borderline cases. They are particularly interesting for social and cultural reasons, they are also interesting because they often exploit the structural potential of the

human language faculty to a particularly high extent. But to the linguist, they should be no more privileged than is the noble lion over the humble *drosophila melanogaster* to the biologist.

We are used to take perfect mastery of a language to be the normal case, and the linguistic knowledge of a perfect speaker - a speaker who masters a "real language" up to perfection - to be the primary object of the linguist's efforts. But what does it mean that a speaker masters a language perfectly well, what must his or her knowledge be like in order to qualify as native? Our common *façon de parler* in these matters somehow implies that there are such entities as "real, fully-fledged languages", such as German, Greek or Yukatec, and speakers 'know' them to a higher or lesser degree. But this is simply a myth.

There are five thousand languages on earth. There are about 200 countries on earth. This means that there are - on the average - 25 languages per country, with a range between 1 and several hundred. As a consequence, the normal case is simply that a person has varying knowledge of different languages. That would be the good way to state the facts for the layman who believes that there are well-defined entities called 'languages'. But there aren't. What really happens is this: **HUMAN BEINGS, EQUIPPED WITH THIS SPECIES-SPECIFIC MENTAL CAPACITY CALLED HUMAN LANGUAGE FACULTY, MANAGE TO COPY, WITH VARYING DEGREES OF SUCCESS, THE WAYS IN WHICH OTHER PEOPLE SPEAK.** They develop **LEARNER VARIETIES**. Under specific conditions, they push this process to a degree where their own competence to speak and to understand does not perceivably differ from that of their social environment (or, perhaps, a special group within their social environment, like school teachers). Then, we speak of "perfect mastery". But this perfect mastery is just a special case of a learner variety - that case in which neither the learner nor his neighbours notice any difference, or at least no difference they would consider to be of particular social importance. Normally, the speaker's language faculty also allows him or her to develop more than just one such learner variety; the degree to which these come close to 'perfection' varies considerably. But all of them are manifestations of the human language faculty. Many learner varieties do not exploit the full potential of this faculty, for example in terms of syntactic or morphological structure or of lexical repertoire. But even my Russian learner variety, which is very elementary indeed, uses more of the human language faculty's morphological potential than the 'fully-fledged language' with most native speakers on earth, Chinese.

If we really want to understand the nature of the human language faculty, we must investigate how its manifold manifestations are organised and how they develop over time. This includes the study of 'fully-fledged languages' - or more precisely, the speaker's knowledge of a fully-fledged language - as a special case. This case is perhaps particularly interesting for cultural and sometimes even for structural reasons. After all, the ways in which Friedrich Schiller, Thomas Bernhard and the average inhabitant of Niederkassel put their words together are more complex, more refined, more multifarious and therefore perhaps more instructive to an understanding of the human language capacity than the learner variety of Keiko Watanabe, Ergün Üzlemir or Giuseppe Scorsece after five years in Oberbilk. But we should keep in mind that the learner va-

rieties of the latter are the normal case, nowadays as well as in the history of mankind; and here as everywhere in science, the investigation of the normal case should not be something peripheral, left to those at the bottom end, who are graciously, and with occasional friendly applause, allowed to borrow from those working higher up on the ladder. The systematical and careful study of how people process linguistic input in communicative situations, of how they use their innate capacities in order to turn this input into learner varieties and of how they abandon these for other, more complex or just differently organised learner varieties until this process eventually comes to a halt, in short: the study of second language acquisition is not a minor, a derived branch within the various disciplines that set out to investigate the human language faculty. It is central to an understanding of that remarkable capacity with which a friendly nature has endowed us.

Whilst I believe that this argument is perfectly logical, I realise that it would be more convincing to demonstrate how work on learner systems can lead to new insights about the structure and the functioning of language. In the remainder of this paper, I will try to do this for an area which has always been in the focus of research from the days of the Greek grammarians to the days of SFB 282 - inflectional morphology.

3. Two questions

Fortwährend schiebt sich die Tradition zwischen die Tatsache und den Betrachter.

[Jelinek 1913:21]

There is considerable research on how second language learners acquire the inflectional morphology of the target language. Numerous studies document the learners' struggles with the oddities of German noun declension, Spanish irregular verbs or agreement marking in French. By far most of this work deals with SLA in the classroom, where - as especially those among us who had to learn Latin or Greek in school will remember (*forsan et haec olim meminisse iuvabit*, Aeneis I) - the memorization of morphology² plays an eminent role. Implicitly or explicitly, this research is strongly norm-oriented: there are clearly defined rules of how words should change their form, these rules are made explicit to the learner, and acquisition research measures the learner's successes and failures to apply them. This work does not require any deep understanding of why certain morphological regularities are as they are. What counts is the mere fact that it is not *die Flücher* but *die Flüche*, whereas it is not *die Tüche* but *die Tücher*; or that it is *j'ai fait la communication* and not *j'ai faite la communication*, but *la communication que j'ai faite* rather than *la communication que j'ai fait*. Therefore, this research is of only moderate interest to the linguist.

2 Throughout this paper, the term 'morphology' *tout court* relates to inflectional morphology only.

There is much less research on how learners approach inflectional morphology outside the classroom. It is this research that might help to answer the question of how learners construct inflectional morphology out of the material with which they are confronted. This material takes the form of a more or less continuous sound stream uttered in a communicative context, and by processing and interpreting this input, the learner must somehow derive how certain lexical entries change their form under certain conditions - in other words, how words are inflected and what this inflection is good for. Other than in the classroom, this process is not determined by the particular way in which the rules to be learned are presented to the learner. It is entirely governed by the inherent properties of the learner's innate language faculty, on the one hand, and by whatever he knows about other languages, in particular about his first language, on the other. Hence, the investigation of this process should inform us about the natural principles of second language acquisition. But it can also help us to answer a second question which goes beyond the immediate concerns of the acquisition researcher. This is the question of what these findings can tell us about the nature of inflectional morphology and hence, as our tradition has it, about a core part of the human language faculty.

In the Western tradition of linguistics, the notion of 'grammar' was for two millennia almost equivalent to 'inflectional morphology'. Most of Donatus or Priscianus deals with the rules according to which words change their form, rather than with the rules according to which they are put together. Even phenomena which we now tend to view as syntactic or semantic, such as argument structure, were mainly seen from the perspective of case marking: *uti* requires the genitive, *persuadere* requires the dative, *videre* requires the accusative. The study of how time is expressed in language was, and still is, mostly concerned with what some morphological changes on the verb contribute to this task. The first grammars of 'modern' languages, such as English, German or French, readily adopted this 'morphology bias', and the fact that the inflectional systems of these languages were less elaborate than in Latin or Greek was generally seen as a sign of erosion and decay (see Jelinek 1913 for a most instructive documentation of this tradition).

This view was hardly ever challenged before the end of the 19th century. How is it at the beginning of the 21st century? The answer to this question is more difficult as might appear. First, the fact that some languages, such as Chinese or Vietnamese have virtually no inflectional morphology renders the 'classical view' obsolete. In the design of human language, inflectional morphology is a common but by no means indispensable part. Second, there is good reason to assume that the way in which we investigate firmly established grammatical categories such as Tense, Mood or Case is still strongly determined by this traditional perspective and, as a consequence, is often led the garden path. Third, odd as the notion of a grammatical 'decay' may seem to us - it is simply a fact that to the extent to which we have clear historical records, languages tend to reduce or to give up inflectional morphology rather than to elaborate it. There are some exceptions, such as the formation of future marking in Romance languages (*aimerai* from *amare habeo* and similar ones). These are often referred to in the linguistic litera-

ture, but all in all, they are rare and do not affect the overall picture.³ English, Dutch, and even German show very reduced inflectional systems when compared to their common Westgermanic origin, let alone when compared to older stages of Indo-European. Chinese, the paradigmatic example of a language without inflection is assumed by some scholars to once have had it, but alas, it is gone and has only left some traces in form of lexical tones. So, some exceptions aside, the entire historical development seems to go away from morphology, or to vary on a theme by Dr. Samuel Johnson: 'Inflectional morphology has, like governments, a natural tendency to degenerate'. These observations face the general linguist with two questions:

- Why do we have this asymmetry?, and
- Why do languages have inflectional morphology in the first place?

This now is the point where the study of other manifestations of the human language capacity than 'fully-fledged languages' with all their oddities inherited from the past can help us. We should have a look at how this capacity constructs learner varieties when exposed to some input. I do not want to argue that this broader perspective provides the final answer; but it can give us some evidence on how and why inflectional morphology is born. In earlier work on untutored second language acquisition (see Perdue 1993; Klein and Perdue 1997), it could be shown that after some time, learners regularly develop a special type of linguistic system - the "basic variety" (BV). The BV is a relatively stable and well-structured form of language not found in first language acquisition and tutored second language acquisition; its structure seems to be independent of source and target language, i.e., it seems to reflect universal properties of the human language faculty. About one third of the learners we have investigated fossilise at the level of the BV, i.e., they stick to its structural characteristics and only enlarge their vocabulary; others go more or less beyond that stage, but hardly anyone comes close to the language of the learning environment.

As any other language, the BV has a lexical repertoire, i.e., a set of elementary expressions, and a grammar, i.e., rules which turn these elementary expressions into more complex ones. But there is no functional inflection of words. Still, the BV is a well-organised and a highly efficient linguistic system. As a rule, the absence of inflectional morphology does not seriously harm the speakers' communicative potential - in contrast to the absence of appropriate lexical items. Nevertheless, many of them go beyond the BV level - not only in lexical but also in structural respects. They develop morphology. Why?

3 In their comments to the first version of this paper, Ingrid Kaufmann and Barbara Stiebels give some more examples of morphology creation. These examples are correct – but still, the asymmetry between formation and loss of morphology in historical time is overwhelming. I do not think, therefore, that there is strong evidence in favour of a 'morphological cycle', as discussed by Wunderlich (2001). It is correct, however, that we can only oversee - at the very most - the last ten percent in the evolution of human language, and in the dark ages, there could have been some such cycles.

First observations show that this is a very complicated and tedious process. Do they start this long march just because their social environment exhibits this kind of linguistic behaviour? Or are there inherent reasons - communicative and structural deficits in the form of language they use? To the extent to which the latter is the case, that is, to which the acquisition of morphology is more than mimicking the input, we might have some evidence on the question why and how inflectional morphology develops at all. At this point, this is only a possibility and a reason to rethink the role of inflectional morphology.

4. Learner varieties and 'real' languages

The study of second language acquisition has its origin in practical concerns - in problems of second language teaching. This background has naturally led to a particular view on SLA, for which two assumptions are constitutive:

- There is a well-defined target of the acquisition process, and only this is a 'real language', and
- learners miss this target at varying degrees and in varying respects - they make 'errors' in production as well as in comprehension.

We may thus view the 'target deviation perspective', and it is this view which dominates the teacher's as well as the linguist's unreflected attitude towards SLA.

The alternative to the target deviation perspective is to understand the learner's performance at a given time as an immediate manifestation of his or her capacity to speak and to understand: form and function of these utterances are governed by principles, and these principles are those characteristic of the human language faculty. This **LEARNER VARIETY PERSPECTIVE** can be characterised by three key assumptions (Klein and Perdue 1997: 307s):

- During the acquisitional process, the learner passes through a series of **LEARNER VARIETIES**. Both the internal organisation of each variety at a given time as well as the transition from one variety to the next are essentially systematic in nature.
- There is a limited set of organisational principles of different kinds which are present in **ALL** learner varieties. The actual structure of an utterance in a learner variety is determined by a particular interaction of these principles.
- Learner varieties are not imperfect imitations of a 'real language' but systems in their own right and characterised by a particular lexical repertoire and by a particular interaction of organisational principles. Fully developed languages, such as Japanese, Chinese or Kpelle are special cases of learner varieties. They represent a relatively stable state of language acquisition - that state where the learner stops learning because there is no difference between his variety and the input - the variety of his social environment.

In other words, the process of language acquisition is not to be characterised in terms of errors and deviations, but in terms of the two-fold systematicity which it exhibits: the inherent systematicity of a learner variety at a given time, and the way in which such a learner variety evolves into another one. If we want to understand the acquisitional process, we must try to uncover this two-fold systematicity. And if we want to understand ‘fully fledged languages’, we should try to understand how our innate language faculty constructs them, when exposed to a certain input. This applies to all parts of a language - including inflectional morphology.

5. Lexical repertoire and rules of composition

In whichever way views vary on the nature of human language, two points seem uncontroversial: There must be a set of elementary expressions (‘lexemes’), and there must be ‘rules of composition’ which describe how complex expressions are formed from simpler ones. This holds for all manifestations of the human language faculty, ranging from very elementary learner varieties to ‘fully fledged languages’.

A lexeme is a cluster of minimally three types of features

- semantic, i.e., those which describe the lexical meaning (or ‘lexical content’) of an expression
- phonological, i.e., those which describe its phonological shape
- categorial, i.e., those which characterise its behaviour with respect to rules of composition.

Other properties may be linked to a word, such as graphematical features; but what seems crucial are the three types mentioned above. This does not preclude, however, that in some specific cases, semantic features are absent or phonological features are absent. What seems indispensable are categorial features; but this is perhaps a matter of dispute.

Grammatical rules are traditionally divided into morphological and syntactic, depending on whether they operate within the shape of a word or go beyond the individual word; there are some borderline cases, just as there are borderline cases between ‘lexicon’ and ‘grammar’.

So far, I have more or less re-stated the obvious. The next point is much less uncontroversial. I would want to make a rigid distinction between two types of ‘rules of composition’ - those which operate on lexical information, on the one hand, and those which serve to integrate the complex expression into the context, on the other. I will call the former ‘LC-rules’ (for lexical content) and the latter ‘CI-rules’ (for context integration), respectively. LC-rules serve to form complex lexical contents from simple ones; in doing so, they also affect categorial and phonological features of the times on which they operate. Typical examples are

- the constituent which expresses agent comes first (based on semantic features)

clusters of features	LC-rules	CI-rules
- semantic		
- categorial	relate only to lexical	relate to contextual
- phonological	information	information
- perhaps others		

Where does inflectional morphology fit into this picture? It belongs to the rules of composition, but to which sort? This will be discussed in the next section.

6. What is inflection good for?

Inflection is not just a change in the shape of a word. As a rule, it operates on all three types of lexical information - phonological, semantic and categorial. Take, for example, the rule which turns the German verb stem *schweig-* into the 'past participle' *geschwiegen*. It changes the phonological properties in various ways: it adds the prefix *ge-*, the suffix *-en*, and it turns the diphthong [ai] into the long vowel [i:]. Next, it somehow modifies the meaning, an effect which is much harder to describe - maybe it indicates a 'posttime'; we shall turn to this point in section 7.2 below. Finally, it also affects the categorial properties; thus, the resulting form cannot be made finite, as is the case with the bare stem; but it can, for example, be combined with an auxiliary to form a present perfect.

The role of temporal marking and of finiteness in acquisition beyond the Basic Variety has repeatedly been addressed in the literature on SLA outside the classroom (see, e.g., Starren and van Hout 1996, Giacalone Ramat 1997). Therefore, I will not elaborate on these two inflectional categories here but turn to another no less fundamental such category - case marking. The more specific question to be addressed in the remainder is thus: What is case marking good for?

Hard to tell. In the BV, it is strikingly absent. What do its speakers lose apart from the fact that their language does not sound like the language of their social environment? Could it be that the wisdom of the adult language learner, when not under the teacher's whip, simply chooses to ignore something because there is no reason to learn it? The idea sounds blasphemous; but then, we should come up with a clear idea what case marking is good for.

Traditionally, case marking on a noun phrase may be 'absolute' or 'governed'. Examples of the first type include the 'ablativus absolutus' (*his rebus gestis, Caesar pontem fecit*) and 'adverbial noun-phrases', for example *Roma* 'in Rome' vs. *Romam* 'towards Rome'. The latter type also exists in German, but it is restricted to some isolated adverbials such as *den ganzen Tag* 'all day'. In any event, it seems a very different phenomenon than 'governed case marking', where a noun-phrase must be inflected in a particular way because some other element with which it is combined requires such a

case marking. In German, as in most other languages, these ‘case-requiring’ elements are primarily prepositions and verb stems; others, such as adjectives, are marginal.

Consider, first, prepositions. With one remarkable exception, case marking in prepositional phrases is just decorum; neither to the BV speaker nor to the linguist is it transparent why *ohne* governs the accusative, *mit* governs the dative and *wegen* governs the genitive. In fact, native speakers were well-advised if they adopted the learner’s way in this regard - no case marking at all. The only exception is variable case marking with prepositions such as *in*, *auf*, *vor*: with the dative, they denote a location, and with the accusative, they mark in addition that this location is the target of some change of location. Thus, *auf dem Tisch* indicates a place which is higher than and in contact with the table; *auf den Tisch* indicates in addition that this place is the endpoint of some movement.

Whereas there are only a few prepositions, there are thousands of verb stems which require a particular case on their arguments; what is this marking good for? In what follows, I will discuss this question first for the ‘Basic Variety’ and then for ‘Standard German’, a language which is notorious for its complex noun declension in general and its case marking in particular (‘I rather decline two beers than a single German noun’, Mark Twain).

7. Case marking and the ‘Argument-Time Structure’ of verbs

7.1 Where the BV fails

Elementary utterances in the BV usually consist of an uninflected verb and one or two nominal arguments. There are three types of organisational principles; in Klein and Perdue (1997), these were called phrasal, semantic and pragmatic; the most important ones are⁴:

(2) Structural constraints in the BV

PH1. NP₁ - V
 PH2. NP₁ - V - NP₂
 PH3. V - NP₂

SEM. The NP-referent with highest control comes first⁵

4 The following exposition is confined to what is essential in the present context; copula constructions, for example, or constructions with three arguments - rare anyway - are not discussed here. For a more comprehensive account, see Klein and Perdue (1997) and the literature quoted there.

5 The ‘control asymmetry’ is based on the idea that the arguments of a verb can be ranked by the greater or lesser degree of control that their referents exert, or intend to exert, over the referents

PR. Focus expression comes last

Phrasal rules exclusively operate with categorial features; hence, they are LC-rules in the terminology used above. Semantic rules operate with semantic features. Note, however, that these features do not come from the NP itself but from the verb; it is not inherent to the referent of an NP to be an agent ('high control') or a patient ('low control'). The pragmatic constraint, finally, is a clear example of an CI-rule. The fact that some constituent is focussed is not a property of its lexical information. Hence, we have a clean separation of these rule types.

This is a very elegant and versatile system. But problems arise when these neat principles get into conflict. The clearest case we noted is a scene in the re-telling of Chaplin's 'Modern Times', in which one of the protagonists - the girl - is accused to have stolen a (loaf of) bread, a situation which can be easily described by (3):

- (3) Mädchen stehle Brot
 Girl steal bread

There are two nominal arguments, the first one is the 'controller', the second one is focussed (probably together with the verb, a point which does not matter here). These three rules taken together result in an utterance such as (3). But as the story goes on, the speaker has to express that (allegedly) it was not the girl who stole the bread but Charlie. Now, the speaker must either violate PR, as in (4a), since *Charlie* is focussed and hence should be in final position, or SEM, as in (4b), since Charlie is the controller and hence should be in first position:

- (4) a. Charlie stehel Brot
 Charlie steal bread
 b. Brot stehle Charlie
 Bread steal Charlie

Here, the BV system is structurally too simple: it cannot handle these conflicting requirements.

There are two ways to deal with this problem. The first one consists in a *ranking* of the two principles, for example as in (5):

- (5) Semantic constraints outweigh pragmatic constraints.

I suspect that native speakers of English indeed have such a ranking. They would always consider the first argument to be the 'controller'. Therefore, sentence (4b) intuitively sounds very bizarre to a native speaker of English - but much less so to a native speaker of German, where the 'controller' might easily be in final position; hence, in

of the other argument(s). Strength of control is a continuum, including the possibility that two arguments rank equally high (in which case, of course, the 'control principle' cannot be decisive in what comes first).

cases of ambiguity, they tend to follow the opposite ranking. Whichever ranking is chosen - the fact remains that one of the constraints is violated. If we adopt the English strategy, for example, it is not clear which argument is in focus; if we adopt the 'German strategy', it is not clear which element is the 'controller' (except that, in this particular example, it is unlikely that the bread is the 'controller').⁶

The other way, and in fact the only principled way, to solve the problem is the 'invention' of another device which allows the speaker to mark either what is focus or what is controller. In the case of a BV speaker, this 'invention' is not free - it is directed by what is the case in the target language, maybe also by what is the case in the source language. By contrast, the first *homines sapientes*, whilst in principle in the same situation, had no model to lean on: they had to create something freely. It appears that natural languages have used two options for the 'additional device' - they either use suprasegmental means, or they create a specific segmental expression, a 'morpheme'. This morpheme may be free, or it may be attached to one of the relevant words. In the present context, I will not go into suprasegmental devices. Let me just note, first, that they are widely used to this end, and second, that to the best of my knowledge, they only mark an expression as 'focussed' or 'non-focussed' but never as 'agent', 'patient' or the like. They serve CI-functions, not LC-functions.

The other choice, the formation of a specific morpheme, has both options. It is possible to invent/adopt a morphological 'focus marker' (or 'non-focus marker'), and it is possible to invent/adopt a morphological 'controller marker', a 'patient marker' and so on. In SLA, the first possibility is exemplified by some learners of French who use a 'particle' [se] to mark an element in initial position as focussed - a precursor of the cleft construction 'c'est ... que' (see Klein and Perdue 1997: 330s). The other possibility is tantamount to case marking, either by inflection or by some free morpheme. Various options to achieve this are possible, for example

- 'controller' is marked by a special suffix, and 'non-controller' is marked by another suffix
- only 'controller' is marked
- only 'non-controller' is marked
- 'non-focus' is marked by a special suffix (thus indicating something like 'topic-hood')

and so on. It may also be that the relevant marking only occurs when (at least) two arguments are present (otherwise, confusion can arise), but it is also possible that the 'case role' is marked in all occurrences, no matter whether there is a second argument with which it can be confused.

In the case of language acquisition, the learner is not free to choose between these various options and to build his or her own system. Eventually, the learner has to copy what the social environment does, irrespective of whether he really understands it or not. Adult learners may be somewhat reluctant to do this, if it is difficult for them and

6 Languages differ in their ranking, and as we argued in Klein and Perdue 1989, there is some evidence to assume that learners 'transfer' the priorities of their source language into their learner varieties.

if they do not see what it is good for. This may be one of the reasons why they often get stuck at one point. Children normally don't; this may be either due to the fact that they are simply better in imitating things which they do not understand, or that they are more willing to do it. No one understands why *ohne* has an accusative and *mit* has a dative; but some people simply learn it without asking, and others don't.

Our ancestors, who first invented inflectional morphology including case marking, were not under the influence of an already existing system. But we have no direct evidence of what they did: all we have is the result of a long process of transformation, elaboration, reduction. A fully-fledged language, and its inflectional morphology in particular, resembles an old city on which many generations have left their traces, to the better or to the worse. This explains many oddities, such as the quaint case assignment of some verbs or prepositions; but it does not preclude a very systematic basis - a set of 'default principles'. In the next section, I will discuss what this set of default principles could look like in the case of Standard German.

7.2 Case marking and the 'argument-time structure' of German verbs

Conventional wisdom has it that verbs, in contrast to nouns, refer to 'events' or, more generally speaking, to 'situations'. This is a very misleading notion. To which situation does *schlaf-* refer? It is the entire sentence which refers to a situation, and the verb makes a - substantial - contribution to the description of this situation. Consider, for example, the situation referred to by following sentence, when uttered on some occasion:

- (6) Tessi öffnete das Pförtchen.
Tessi opened the little door.

The verb stem *öffn-* indicates some properties which the two NP-referents have at some time intervals. The little door must first be not open and then open, Tessi must do something, for example turn a knob and push the door into a certain direction, or push a button, or say 'Sesame, open! - whatever; more generally speaking, she must somehow be 'in control of' the situation, in contrast to the referents of the other arguments.⁷ If all of this is essentially correct, then **THE FUNCTION OF THE VERB IS TO INDICATE PROPERTIES OF ARGUMENT-TIME PAIRS**. These pairs themselves are not expressed by the verb but by noun phrases, by adverbials, by morphological variation of the stem and perhaps by other means. Sometimes, they are to be derived by context. What the verb itself provides are open slots to be filled appropriately, i.e. pairs of argument-time variables. In what follows, I shall use A, B, C, ... as variables for arguments and t_1 , t_2 , t_3 , ... as variables for time spans; an argument-time pair (briefly AT-pair) is denoted by $\langle A, t_i \rangle$. It will be helpful to consider some examples.

7 Exactly this is the origin of the 'control asymmetry' in the Basic Variety.

In (7), there is only one argument variable and one time variable, and the descriptive property is ‘open’. The argument variable is specified by *das Pförtchen*, the time variable is only vaguely restricted by the morphological tense marking on the copula:

- (7) Das Pförtchen war offen.
The little door was open.

In (8), there is only one argument variable, as well; but properties are assigned to it at two times, which I will call FT (‘first time’) and ST, respectively:

- (8) Das Pförtchen öffnete sich.
The little door opened (itself).

The FT-property of the single argument is ‘not open’, the ST-property is ‘open’. In this case, the argument-variable is filled twice, by an NP_N and by *sich*.⁸ The two time-variables are not specified (but they are restricted by the past tense marking, i.e., they must be before the utterance time).

Let us now return to (6). Here, the verb assigns varying properties to two entities at different times. The entity which specifies the first argument variable is said to do something, whatever this may be, and the entity which specifies the second argument variable is first said to be not open and then, to be open. Hence, we have three AT-pairs which are assigned descriptive properties by the verb stem. The lexical meaning of the verb can then be described as a Boolean cluster of elementary predications over AT-pairs (leaving aside for the moment whether the descriptive properties are adequately described by terms such as ‘active’, etc.):

- (9) a. *offensei-* open $\langle A, t_i \rangle$
b. *öffn-* not-open $\langle A, t_i \rangle$ & open $\langle A, t_j \rangle$
c. *öffn-* not-open $\langle A, t_i \rangle$ & open $\langle A, t_j \rangle$ & ‘active’ $\langle B, t_k \rangle$

This does not exhaust the lexical content of verb stems. If there is more than one AT-specification, as in (9b) and (9c), then the relationship between these must be indicated, too. In the first place, this includes the temporal relation between the time spans. Thus, t_j must be AFTER t_i ; this is what we covered above by the labels first time FT and second time ST. If there is a third time span, as in (9c), the relation between t_k (the time of B’s being active) and t_i as well as t_j must be indicated, as well. For sentence (6) to be true, Tessi may still push the button of her automatic door opener, although the door is already open. But the sentence is not true if the door opened but he started his activity only when it was already open. Thus, t_k must overlap with t_i ; it may but need not overlap with t_j .⁹

8 Here and in what follows, NP_N is a noun phrase marked as nominative, NP_D is a noun phrase marked as dative, and NP_A is a noun phrase marked as accusative.

9 There are other than merely temporal relations between different AT-specifications. In (6), for example, it does not suffice that Tessi did something and the door made a transition from not open to open. For this sentence to be true, this temporal coincidence must not be accidental: we assume that the latter were not the case if the former were not the case. Hence, a sort of counter-

As any lexical entry, a verb is a cluster of phonological, categorial and semantic features, the latter being called here lexical content (cf. section 6 above). The lexical content of a verb has a STRUCTURAL COMPONENT and a DESCRIPTIVE COMPONENT. The structural component is the AT-structure, which consists of the various AT-pairs together with a specification of the temporal and non-temporal relations between these. The descriptive component consists of the various qualitative or spatial properties assigned to an AT-pair. These two components can be coupled in different ways. They may be conflated into a single morpheme, for example, as is the case with *öffn-* (in both variants). In *offensei-*, the descriptive property is contributed by *offen*, whereas the verb *sei-* does not specify a qualitative or spatial property; it only has an AT-structure, and it can be made finite (in contrast to the other component *offen*). Other cases are possible, but I will not go into these details here. Before now turning to what all of this has to do with case marking, it will be useful to sum up in which way the present view differs from the traditional perspective.

Traditionally, lexical verbs are assumed to have an ‘argument structure’. It is also assumed that verbs (and more complex expressions such as full VPs) can be classified according to their inherent temporal properties into ‘event types’, ‘Aktionsarten’ etc. They have an ARGUMENT STRUCTURE as well as an EVENT STRUCTURE. The present view takes these two notions together: verbs have an ARGUMENT-TIME STRUCTURE. This has a number of consequences. One of these¹⁰ relates to the way in which semantic and formal ‘government’ is analysed, i.e., the semantic and formal restrictions which the verb imposes on the ‘filling’ of its argument variables. By semantic government, I mean ‘case roles’ or ‘thematic roles’ such as agent, theme, experiences, benefactive, patient etc. I believe that these notions, whose fuzziness has often been lamented, are nothing but a gross classification of the descriptive properties which Vs may assign to an AT-pair. I see little use in such a classification beyond an initial orientation of the ‘descriptive component’ - except it can be shown that such an assignment has clear structural consequences. But this already relates to the other side of government, i.e., to constraints on morphological properties such as accusative, dative or to syntactic properties such as ‘subject’ or ‘direct object’. These constraints are traditionally seen as a part of the verb’s categorial features. It would be much more elegant, however, if they could be derived from the AT-structure or from the Descriptive Component. Thus, one might look for principles such as ‘If an argument is described at two times, then it is realised as NP_A’ or ‘An argument which is assigned the property

factual relation may obtain between various AT-specifications; this, I believe, is the background of the predicate CAUSE found in many decompositional analyses of verbs. As is usually the case for lexical entries, such a relation, where it exists, may be individually marked for each entry or covered by a lexical default rule; this is an empirical issue which we will not follow up here.

- 10 Another one concerns the notion of ‘event time’. If, for example, the verb in itself contains several temporal variables, a notion such as ‘event time’ turns out to be a gross oversimplification: what, for example, is the ‘event time’ in (6): is it t_i , t_j or t_k ? Or is it some interval which contains all or some of these? Similarly, notions such as ‘anteriority’ or ‘posteriority’ or even ‘simultaneous’ turn out to be highly problematic. What, for example, is the ‘posttime’ in (6)? Is it the time where the little door is open, or is it the time after Tessi’s activity?

‘active’ is always encoded as an NP_N. It is unlikely that this is possible for the entire verb lexicon of a language; but it should be possible for the default case. Languages are the product of a complex historical development, and just as there are idiosyncrasies in other parts of the lexical information, we should expect them here, as well.¹¹

With this caveat in mind, it appears that German has a number of very simple default principles for case assignment by the verb, and a rule which determines their relative weight in cases of conflict.¹² These are:

- (10) DP A: One argument variable is filled by an NP_N.
- DP B: Two-times argument variables are filled with NP_A.
- DP C: One-time argument variables are filled with NP_D.
- DP D: If the verb assigns the property ‘active’ to an argument, then this argument is realised as NP_N.¹³
- DP E: If the verb is lexically empty, then the argument which expresses the descriptive property is realised as NP_A.¹⁴

In cases of conflict, DP A is strongest.

This means that an NP_N can encode one-time arguments as well as two-times arguments; it also encodes a ‘controller’, if there is such an argument. Other NPs are much more restricted in what they can encode.

The rules in 10 are extremely simple, and if we are to believe the Scholars that *simplicitas est sigillum veritatis*, then there is good reason to assume that they are true. But there are also various problems, one of which I will discuss now.

Under the analysis suggested here, an NP_A is always a ‘two-times argument’. This is plausible in cases such as *Dieter opened the door*, where the door is first not open and then open. But it is not plausible for other cases, such as *Dieter hated his uncle*, where the second argument is NP_A. This fact is nicely reflected in Dowty’s idea that the ‘prototypical’ patient is a ‘change-of-state’ argument (Dowty 1991). It appears to me, however, that the notion of ‘change-of-state’ in general confounds two interrelated but in principle independent features of verb meaning, which are clearly kept apart in the notion of AT-structure. These are its **DESCRIPTIVE PROPERTIES**, such as being open or being in Heringsdorf, and its **TEMPORAL STRUCTURE** i.e., the intervals and subintervals

11 Under this view, there is not so very much a distinction between ‘structural case’ and ‘lexical case’ but between ‘assignment by default’ and ‘assignment by exception’.

12 I believe that very similar principle also apply to other languages – but I am very hesitant to make any claim for universals, and for a universal hierarchy in particular. Therefore, I will confine this discussion to what I believe is the case in German. One reason for this hesitation is the fact that I do not believe in a universal notion of, for example, ‘accusative case’. At best, there is some family resemblance between accusative in, for instance, English and Basque. It would make sense, however, to replace these traditional notions by notions such as ‘two-times case’, i.e., case of an argument which is specified for two time variables. But this would lead us far beyond the scope of this paper.

13 It is this default principle which gives rise to the controller asymmetry discussed in section 7.1.

14 This principle primarily concerns the descriptively empty ‘two-place copula’ *haben*, as in *Karl hat Angst/rote Haare*.

at which some argument is assigned these descriptive properties. Compare, for example, the two sentences *Dieter slept* and *Dieter woke up*. In the first case, a descriptive property ('asleep') is assigned to Dieter at some time t_i ; morphological marking indicates that this time is (normally) in the past. In the second case, two distinct properties are assigned to Dieter; first, say at t_j , he must be asleep, and then, say at t_k , he is not asleep. Hence, the lexical content of the verb *to wake up* comprises two temporal variables, t_j and t_k , which are sequentially ordered and which are associated with different descriptive properties. In this case, the properties are mutually exclusive, a constellation which is perfectly well covered by the notion of a 'change-operator' (such as the familiar BECOME). But it is also imaginable that the lexical content of a verb lexeme has two time variables with less divergent properties. Take, for example, *The temperature fell* and *The temperature rose*. For the first sentence to be true, it is necessary that at some interval t_k , the temperature is 'lower' on some scale than at some earlier interval t_j ; for the second sentence to be true, the temperature must be 'lower' at the first interval t_j than at the second interval t_k . Verbs of this sort are not 'telic' or 'resultative'. The Vendler tests identify them as activities, rather than as accomplishments or achievements. I am not sure whether they should be described by a change-operator.

Is it possible that the lexical content of a verb provides two time variables with IDENTICAL descriptive properties? At first, this idea sounds bizarre: why should this be the case? But compare the two sentences *Dieter was in Heringsdorf* and *Dieter remained in Heringsdorf*. They both assign a 'static' spatial property to Dieter. But somehow, the second sentence gives the impression that Dieter was there at some time t_j and then, at some time t_k , could have gone but hasn't. The difference is brought out more clearly if we add a modal verb, such as in *Dieter was allowed to be in Heringsdorf* and *Dieter was allowed to remain in Heringsdorf*. In the first case, the permission concerns his entire stay, whereas in the second case, it only concerns the second subinterval. In order to describe the semantic effect of this morphosyntactic operation appropriately, we must assume that it has SELECTIVE access to the verb content - to a subinterval which is descriptively not different from the first interval. The addition of a modal verb is not the only morphosyntactic process which demonstrates this. Negation is another case. In *Dieter was not in Heringsdorf*, his entire stay there is denied; in *Dieter did not stay in Heringsdorf*, it is only denied that he was not there at a second subinterval during which he could have been there. The possibility to have two temporal intervals with the same descriptive properties is not confined to verbs with only one argument. It is also found with 'transitive verbs' such as *to leave* in sentences like *Could you please leave the door open*. Here, the idea is that the door is open at a first time and should also be open at a second time, in contrast to the possibility that, due to the addressee's action, it is closed at this second time.

The conclusion is therefore, that we must carefully distinguish whether a verb content has one, two or even more temporal variables and whether the descriptive properties assigned to these variables are identical, slightly different or 'radically' different. An operator such as BECOME conflates these notions. There is no change in a verbs such as *to remain* or *to stay*, and similarly in German *bleiben*; still, there are two subin-

tervals which are selectively accessible to morphosyntactic operations.¹⁵ The linguist's decision of whether a verb stem involves one or more temporal variables can therefore not be based on mere semantic intuition; it must explore how the content of this verb stem can be modified by all sorts of morphosyntactic operations.

Such an operation is the formation of the 'past participle', briefly mentioned in section 6.1 above.¹⁶ I will call this operation GE-; V is the lexeme to which it applies. The way in which the attachment of GE- affects the phonological information of V is complex but well studied; it brings about the forms of the past participle. The change in categorial information is somewhat less clear; some operations applicable to the verb are now blocked, for example, the past participle can no longer be made finite (unless some other verb is attached). How does GE- affect the semantic features provided by V? Under the present approach, it changes its AT-structure and possibly adds further descriptive properties. I assume that the latter is not the case but that GE- only operates on the AT-structure as follows:

- (11) The past participle denotes ST-properties of V.

Remember that under the present approach, ST-properties are relative to an argument, typically the NP_A. If the verb does not provide any ST-properties, because there is no appropriate AT-pair specified for two times, then the past participle can still be formed; but when attached to an argument, the resulting construction is not interpretable: there is no appropriate argument slot. This is the case for verb stems such as *schweig-* or *gehör-*; therefore, *das geschwiegene Kind* or *der (mir) gehörte Apfelsaft* should not make sense, and so it is. A stem such as *einschlaf-*, by contrast, does have two time slots for its single argument, and therefore, *das eingeschlafene Kind* should be possible, and so it is. The stem *öffn-* has two time slots only for one of its arguments, and therefore, *das geöffnete Tor* assigns the SL-properties (being open after having been not open) to this argument, i.e., to the door.

In conclusion, the assumption that an accusative indicates, in the default case, that an argument has two time variables makes perfect sense, so long as we do not confuse the existence of two time variables with a 'change of state'.¹⁷ On the other hand, the AT-analysis suggested here explains a number of additional facts of German. Only transitive objects 'passivise' - that is, only these objects provide the two time slots that are necessary for a past participle to apply. As just stated, it explains why *das geschwiegene Kind* is odd, whereas *das eingeschlafene Kind* or *das gestillte Kind* are fine. It

¹⁵ There are also exceptions in the opposite direction. The situation described by *Dieter worked in a shoe factory* includes many quite heterogenous subintervals, hence many 'changes'. None of these subintervals, however, is selectively accessible to any morphosyntactic operation, such as negation, adverbial modification or addition of another verb stem.

¹⁶ For a detailed discussion of how its various usages can be captured under the present treatment, see Klein 2000.

¹⁷ I do think, however, that there are accusatives which encode a 'single-state argument', for example measure phrases such as 'The colossus of Rhodes weighed one hundred tons'. Characteristically, these cannot form a 'passive'.

naturally accounts for the ambiguity between ‘unergative’ and ‘unaccusative’ verbs with one argument. The argument of an ‘unergative verb’ is specified at one temporal interval, and thus, it behaves like the ‘subject’ of a transitive verb. The argument of an ‘unaccusative verb’ is specified at two time intervals, that is, it behaves like the ‘direct object’ of a transitive verb. Finally, the analysis also makes plausible why *auf dem Tisch*, i.e., with dative, is ‘static’, whereas *auf den Tisch*, with its accusative, is ‘dynamic’ - the latter involves two temporal variables.

8. What is a subject, what is an object?

Right after I had joined the project, I began to study linguistics, and very soon, I was deeply bewildered by the fact that there is not the faintest unanimity in this apparently so precise, this allegedly so mathematiced and physicalised branch of science. In this discipline, the authorities don't even concur on most elementary, quasi introductory issues such as what's a morpheme or a phoneme.

[Stanislaw Lem, The master's voice]

It has often been noted (see, e.g., Reis 1982) that what is called ‘subject’ is actually a cluster of heterogenous features - morphological features such as case marking, syntactic features such as position, semantic features such as agentivity, and pragmatical features such as topic status; these may but need not be present. In other words - this notion is a cloud. This is in no way different for ‘direct object’. How is it defined? In school grammar, no definition is given at all; normally, these notions are illustrated by examples, and the relevant generalisations are left to the reader. Modern approaches, lest they simply continue this tradition, define them either in terms of case roles, such as ‘theme, benefactive, patient’, etc., or in terms of tree geometry.

The first way is unsatisfactory because these notions themselves are most unclear - a fact that has often been deplored (see the extensive discussion in Helbig 1973). Moreover, they do not make sense in many cases. It may be justified to call the NP_D a ‘benefactive’ in *Er half ihr*, but surely not in *Errötend folgt er ihren Spuren*.

The tree geometry approach, generally used in Generative Grammar and in some other branches of structural linguistics, looks much clearer - in fact, so much clearer that it is most often taken as self-evident. One might say, for example: ‘The direct object is the first NP immediately dominated by V on D-structure’ (this is the definition in Chomsky's ‘Aspects’, where this idea was first worked out, the argument is analogous for other variants of generative grammar). But this clarity is only apparent. Such an account only shifts the problem to the question WHY A PARTICULAR TREE STRUCTURE IS ASSUMED IN A SPECIFIC CASE. It is neither the Lord nor the Pope who places *einen Apfel* immediately under V in *Adam aß einen Apfel*. It is the linguist who draws pictures. Trees, as this term is used in linguistics, are abstract structures based on two types of structural relations between its elements - dominance and precedence. These,

and only these, relations are available to represent the structural relationship between simple or complex expressions. It is the linguist's task to decide why certain elements are connected to each other by a vertical stroke, i.e., by a dominance relation, and why a certain element is placed in the tree such that it precedes some other element. Very often, the two relations available turn out to be insufficient, and the linguist's way out is usually to stipulate several trees, together with some mechanism to relate these to each other ('transformations', 'reanalysis', and other ones). In any case, it is not the tree which says why something is connected to something else in a particular way - why, for example, an NP is in the 'direct object relation' to a V. It is the linguist who constructs the tree in a given case, and this decision must be based on clear and reasonable criteria. Mere reference to the position in the tree is no solution.

Recently, a number of linguists, in particular Manfred Bierwisch, Paul Kiparsky and Dieter Wunderlich, developed an analysis of this problem which potentially overcomes these difficulties, although it operates with trees, as well. Details vary; the most elaborate version is found in the 'Lexical Decomposition Grammar' of Wunderlich and his group (1996, see also Wunderlich 1997, 2000). In this approach, the asymmetry of argument variables is defined by the features 'higher role available (in the same clause)' - 'lower role available'. Consider, for example, the sentence *Tessi gab ihm den Schlüssel*. The variable filled by *den Schlüssel* is assigned the feature complex 'higher role available, no lower role available', the variable which is filled by *Tessi* gets assigned the feature complex 'no higher role available, lower role available', and finally, the third variable, which corresponds to *ihm* gets assigned 'higher role available, lower role available.' Morphological case marking is then easily defined on the basis of such a feature complex, such as, for example, 'no higher role available, lower role available' is marked by nominative in German.

This is a very elegant approach, indeed. But it raises two basic problems. First, which independent criteria are crucial to decide why some element is 'higher' than some other element? They cannot be based on morphological marking, because this would render the analysis circular. Are they based on case roles - say 'benefactive' is lower than 'agent' but higher than 'theme'? Then, we are back to the familiar problems with these notions. The other way - and this is the main criterion taken in Lexical Decomposition Grammar - is to exploit the depth of embedding in lexical decomposition. But it does not work for verbs which, under this approach, are not lexically decomposable, that is, to those which do not involve a BECOME operator or a CAUSE; in other words, it is essentially confined to telic verbs. - Second, I do not see how this analysis works for Vs with NP_N and NP_D alone, such as *helf-, gebühr- or ähnel-?* In Wunderlich (1997), this case is analysed as a lexically marked deviation from the case assignment dictated by the 'role hierarchy'. This is surely not false; we must always be prepared that there are exceptions, and they must be individually marked in the lexical entry. But this should always be the last resort. In these cases, however, there seems to be more involved than a lexical idiosyncrasy. After all, there should be a reason why it is possible to say *die von uns unterstützten Flüchtlinge*, but not *die von uns geholtenen Flüchtlinge*. The lexical content must contain some feature which predicts that THIS FACT IS ON A PAR WITH THE PECULIAR CASE MARKING; precisely this is done by the

‘argument-time’-analysis suggested above: In the case of *unterstütz-*, one of the two arguments is specified for two times; therefore, this argument is marked as accusative, and its past participle can directly combine with an argument, such as in attributive use. By contrast, *help-* has no argument specified for two times; hence, of of them is marked for dative, and the past participle cannot directly combine with an argument.

9. Conclusion

Was soll der Scheiss?
[Unknown linguist, repeatedly]

I surely do not believe that the analysis sketched in the preceding sections is the final answers to the problem of why there is case marking. There is hardly an area in linguistics in which this is so manifest as inflectional morphology with which linguists have now been struggling for more than two thousand years. Here as elsewhere, being the inheritor of a long tradition is both beneficial and burdensome. But I firmly believe that looking with an open eye to the way in which second language learners try to make sense of the sounds that hit their ears may help us to get a fresh understanding of the principles that rule all manifestations of the human language faculty.

References

- Dowty, David (1991). Thematic proto-roles and argument selection. *Language* 67, 547-619.
- Giacalone Ramat, Anna (1997). Progressive periphrases, markedness, and second language data. S. Eliasson & E.H. Jahr (eds.) *Language and its Ecology. Essays in Memory of Einar Haugen*. Berlin: Mouton de Gruyter, 261-285.
- Gould, Stephen Jay (1989). *Wonderful Life. The Burgess shale and the nature of history*. New York: Norton.
- Helbig, Gerhard (1973). *Die Funktionen der substantivischen Kasus in der deutschen Gegenwartssprache*. Halle: Niemeyer.
- Jellinek, Max Hermann (1913). *Geschichte der neuhochdeutschen Grammatik. Erster Halbband*. Heidelberg: Carl Winters Universitätsbuchhandlung.
- Klein, Wolfgang (1998). Assertion and Finiteness. Norbert Dittmar and Zvi Penner (eds.) *Issues in the Theory of Language Acquisition*. Frankfurt/M.: Lang, 225-245.
- (2000). *The argument-time structure of recipient constructions in German*. To appear in Werner Abraham & Jan-Wouter Zwart, eds. *Typological Studies on West Germanic*. Amsterdam: Benjamins.

- ; and Perdue, Clive (1989). The learner's problem of arranging words. In B. MacWhinney & E. Bates (eds.) *The crosslinguistic study of sentence processing*. Cambridge: Cambridge University Press, 292-327.
- ; (2000). An analysis of the German Perfekt. *Language* 76/2, 358 – 382.
- ; and Perdue, Clive (1997). The basic variety, or Couldn't natural languages be much simpler. *Second Language Research* 13, 301-347.
- Perdue, Clive. (ed.) (1993). *Adult language acquisition: Cross-linguistic perspectives*. Cambridge: Cambridge University Press.
- Reis, Marg (1982). Zum Subjektbegriff im Deutschen. Werner Abraham, ed. *Satzglieder im Deutschen*. Tübingen: Niemeyer, 171 - 211.
- Starren, Marianne; and van Hout, Roeland (1996). The expression of temporality in a second language. *Zeitschrift für Literaturwissenschaft und Linguistik*, 104. 35-50.
- Wunderlich, Dieter (1996). Dem Freund die Hand auf die Schulter legen. Gisela Harras and Manfred Bierwisch (eds.) *Wenn die Semantik arbeitet. Klaus Baumgärtner zum 65. Geburtstag*. Tübingen: Niemeyer. 331- 360.
- (1997). CAUSE and the structure of verbs. *Linguistic Inquiry* 28, 27-68.
- (2000). *The force of lexical case: German and Icelandic compared*. [to appear in a Festschrift]
- (2001). *Why is there morphology?* Paper presented at the 23rd Annual Meeting of the Deutsche Gesellschaft für Sprachwissenschaft, Leipzig, March 2001. [References relate to the handout].