

LEXICAL ENTRIES FOR VERBS IN A CONTRASTIVE
LEXICON ENGLISH—GERMAN

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In this paper I would like to examine some of the problems that have to be coped with if one tries to set up a contrastive lexicon English-German on the basis of lexical entries that have been formulated within the frameworks of case-grammar based generative models and valence theory. I will therefore be mainly concerned with comparing the format of lexical entries for verbs as it emerges from the works of Fillmore and from Stockwell et al. (1973) to the one used in Helbig and Schenkel (1973) and in Emons (1974).

In connection with his distinction between three linguistic levels, the level of the system, the level of the norm and the level of speech Coseriu (1972) has criticized contrastive grammar for taking as the basis of its comparisons the "Redebedeutung" or even the "Satzbezeichnung", i.e., the referential meaning of individual sentences in particular situations. A contrastive grammar thus runs the risk of confronting radically different functions of linguistic structures in different languages for the only reason that in certain contexts they may have the same reference (cf. Coseriu 1972 : 47). According to Coseriu, contrastive grammar can therefore be solely attributed a descriptive value of its own if it contrasts the systematic function of linguistic structures of different languages (cf. 1972 : 48).¹

The theory of a contrastive grammar outlined in Krzeszowski (1972) and (1976) overcomes Coseriu's criticism by distinguishing explicitly equivalent sentences of two languages L_i and L_j from sentences which are translations of

¹ Coseriu's critique of the par aphrase principle of generative grammar (cf. 1972 43 - 44) cannot be gone into here in detail. This principle may be defended on the grounds that if a linguistic grammar is expected to describe all the structures of a language it should also correlate those which are paraphrases of each other.

each other. The knowledge that two sentences S_1 and S_2 are equivalent is part of the linguistic competence of a bilingual speaker whereas the translation of a sentence of L_1 into L_2 is part of the translational performance of the speaker (cf. Krzeszowski 1972 : 80). In the former case Krzeszowski postulates identity of input structure, i.e., semantic representation, which may result in partially different surface structures, as against the latter case where corresponding sentences go back to distinct input structures.

It follows from this identity postulate for semantic input structures that a contrastive generative grammar has to include at least five structural levels. On the first, the semantic level, the basic sentence semantic relations are represented in terms of universal, category-neutral structures which serve as inputs to derivations. The categorial level maps these semantic representations onto language specific categories such as noun phrase, verb, adjective, tense, modality, etc. On the third level, the level of syntactic transformations, major syntactic categories (nouns, verbs, adjectives, adverbs) are put into the linear order in which they may appear on the surface (cf. Krzeszowski 1972 : 82). The fourth level seems to correspond to Chomsky's (1965) level of deep structure in so far as lexical items are inserted into the derivations in accordance with the requirements of strict subcategorization for which they are marked in the lexicon. The post-lexical transformations of the fifth level generate the linear order in which minor categories show up on the surface.

The aims and the theoretical consistency of this model of a contrastive generative grammar are, without any doubt, very appealing. It raises however, at once the question whether it can be used to contrast any pair of languages and which of the generative systems presently available is to be chosen. The answer to both of these questions crucially depends on one's assessment of the role of linear order of elements and of syntactic relations in natural languages. If one accepts the arguments against the underlying linear order of constituents in the grammar of inflecting languages which I have given in (1975) and (1975a) this model cannot be used to contrast, say English and German, since linear order of major categories is introduced on the third level, i.e., before the level of lexical insertion is reached. The co-occurrence possibilities of verbs in German and other inflecting languages can, however, be defined solely in terms of morphologically marked nouns or noun phrases as, for example, Helbig and Schenkel's valence dictionary for German verbs shows.

Krzeszowski's introduction of linear order after the level of semantic structure rules out, on the other hand, a generative semantic type of representation for the input structures, because one of the basic tenets of generative semanticists like, for example, McCawley is that syntactic and semantic representations are of the same formal nature, namely label trees (cf. McCawley 1968 : 71) in which the syntactic function of noun phrases can only be kept apart by referring to their linear position. Thus McCawley (cf. 1970 and 1972)

tries to justify verb-first order in the semantic structure underlying English on the grounds that the linear arrangement VSO serving as input to the system of syntactic transformations simplifies the formulation of these transformations significantly.

This may suffice to indicate that we have to look for another kind of semantic representation if it is to be universally applicable in the sense of providing for linearly unordered category-neutral structures. Among the proposals I am familiar with it is especially Fillmore's case grammar approach (cf. Fillmore 1968) and Brekle's (1970) sentence semantic system which come close to meeting these requirements. Both start out from the observation that the syntactic function of subject of a sentence can be dispensed with in deep underlying structure and assume that a sentence can be divided into a proposition or propositional concept and a modality component. This proposition constitutes the relational nucleus of a simple sentence that has been stripped of all factors involving assertion, quantification, negation, interrogation, tense, mood and aspect. With Fillmore this propositional core consists of a verb and one or more nouns which exhibit semantic case relationships like agent, instrumental, experiencer, locative and some others with respect to this verb. Fillmore's unfortunate choice of rewrite-rules for formalizing these notions as in (1) obscured the nature

$$(1) S \rightarrow M + P \\ P \rightarrow V + C_1 + C_2 + \dots + C_n$$

of the semantic cases (cf. Fillmore 1968 : 24).² They do not represent categories but semantic relations. Within Brekle's model this point is clarified from the outset. In his sentence semantic formulas which stand for propositional concepts relational constants specify the relations that hold between argument variables of different levels, i.e. language specific categories like verb, noun or adjective do not occur but are introduced later from the lexicon of a natural language. Thus a formula as in (2) (cf. Brekle 1970 : 161) represents the propositional concept

$$(2) \text{CAUS } [w, \text{AEFF } (R, y)]$$

"(some) man beating (some) dog"³ "w" and "y" are one-place predicate variables of the first level which usually stand for nouns in this case *man* and *dog* respectively. "R" is a two-place predicate variable of the second level for transitive action verbs like *beat* and relational verbs of state. "CAUS" and "AEFF" are two-place relational constants standing for the supposedly universal relations of 'causing' and 'affecting' or 'effecting'. Other such constants are assumed for locative, directional, temporal and instrumental

² This is explicitly admitted in Fillmore (1975).

³ Brekle demonstrates convincingly the advantages of assuming relational constants over a representation like $R(w, y)$ which leaves the relation between the predicate R and its arguments unspecified (cf. 1970: 64ff).

relations and for some additional ones. See, for example, the formulas under (3) (cf. Brekle (1970 : 171, 149) respectively).

- (3) CAUS {w, INSTR [AEFF (R, y), z]}
 "someone cutting tomatoes with a knife"
 "someone building a house with bricks"
 AFF [LOC (R, y), w]
 "(some) mouse living in a hole"

Adjectives and a subset of intransitive verbs appear as one-place predicate variables of the second level and degree and manner adverbials as one-place predicate variables of the third level.⁴ The sentence semantic formulas thus express the semantic relations that hold between the members of the major word classes in simple sentences independent of language specific syntactic or morphological categories and of other semantic factors such as quantification, negation, aspect, etc. Determining the nature and number of such relational constants is an empirical matter just as with Fillmore's semantic cases (cf. Boas 1976). It involves a process of abstracting these meta-relations from primary linguistic data, i.e., from judgments of speakers about paraphrase relationships without, however, identifying the paraphrase of a lexical item with its semantic structure, as it is done by generative semanticists. Since no mechanical discovery procedures can be given their number depends ultimately on whether, in constructing grammars, preference is given to generality of descriptive categories or to explicitness of information.

Evidence supporting the postulation of certain relations has already come from psycholinguistic research and research in cognition. In Edwards (1973), for example, a close correspondence is found between the relational meanings that are apparently expressed universally in the two-word speech of young children and such phenomena of their sensory-motor intelligence as the concepts of permanent objects and their spatial relations and the concepts of persons as physical objects and as active beings who may cause changes in the locality of objects.⁵

Other aspects of Brekle's system which relate to the purposes of a contrastive grammar are the introducing of the grammatical subject-predicate relation and the insertion of lexical items. Notice first that the relation between grammatical subject and predicate in the sense of the topic being talked about

⁴ Such adverbials occur in "lacing some shoe tightly" \Rightarrow tight-lacing (cf. Brekle 1970 : 174 - 175).

⁵ For references to psycholinguistic studies which suggest that lexico-semantic valence plays a role in sentence retention and reproduction see Fink (1976). Seyfert seems to be unaware of such kinds of psycholinguistic evidence: "Die Relationen, in denen die Argumente zum Prädikat stehen, sind nicht aus einem beschränkten universalen Fundus menschlicher Erfahrung gegriffen, (zumindest besteht keinerlei Ursache für eine solche sehr weitgehende Hypothese), denn sie bestehen nicht *unabhängig* von den einzelnen Prädikaten" (1976 : 215).

versus the linguistic predicate assigned to the topic, must be assumed to be expressible in any language, otherwise the exchange of information would be impossible. To render this relation Brekle assumes a topicalization operation which produces topic-comment structures that constitute a second level of sentence semantic structures. Formally, the result of this topicalization operation is a λ -expression such as (4) (cf. Brekle 1970 : 124) which represents a subclass of the class designated by the argument term which

- (4) λw CAUS (w, F)

is preceded by " λ ".⁶ Although this operation has been devised primarily to reflect the determinatum/determinant relationship holding between the sentence semantic constituents of nominal compounds, Brekle's main domain of investigation, it can in principle be used to express semantically the different selection of syntactic subjects in active and passive sentences. Brekle mentions as further examples for this type of topicalization cleft sentences as in (5) (cf. Brekle 1970 : 130).⁷

- (5) I saw him in England last summer \Rightarrow $\left\{ \begin{array}{l} \text{It was him whom I saw...} \\ \text{It was in England where...} \\ \text{It was last summer when...} \end{array} \right.$

Leaving details aside, the function of such topicalization operations is to represent the fact that any of the variables contained in a well-formed sentence-semantic formula may end up as the determinatum of a morphologic syntagma (cf. (6)) and that

- (6) "someone eating some apple" \Rightarrow $\left\{ \begin{array}{l} \text{apple eater} \\ \text{apple eating} \\ \text{eating apple} \end{array} \right.$

in simple sentence syntagmas any one-place predicate of the first level, i.e. substantive, may become the syntactic subject. Since, according to Brekle, such topicalized expressions render the semantic structures and categories by which objects, facts, states and processes are perceived or realized, the lexical items of a language must be marked as to their membership in a certain class of predicates, i.e., their logical level and valency must be indicated. For verbs in particular this means that they can only be inserted into a topicalized sentence-semantic formula if this formula is in accordance with their possibilities of subject selection and contains the same semantic relations as are conceptually or at least linguistically required by them. Compare such well-known examples as *like* and *please* and (7) (cf. Brekle 1970)

- (7) Some event lasting for some time
 Someone reading something in the garden

⁶ For an extensive discussion of the properties of λ -expressions see Brekle (1970).

⁷ Notice that in the sentence underlying these cleft constructions, the syntactic topic, i.e. the subject of the sentence, is identical to what may be called the semantic topic as against in *It was me who saw him in England last summer*.

where *last* requires for linguistic and conceptual reasons two semantic relationships as against *read* with which from the conceptual point of view *someone* and *something* are conceptually necessary but on the linguistic surface only *someone* is obligatory.⁸

Although Brekle's remarks on these points are highly tentative it seems that his system can provide a way out of the dilemma that the results of a paraphrase-based approach to the semantic structures of natural languages can always be refuted on the grounds that, as constituents of those paraphrases necessarily members of language-specific categories occur which can neither be claimed to be universal nor to have exactly the same semantic readings as their monomorphemic counterparts. Thus, McCawley's famous paraphrases of *kill* as "cause to die" or "cause to become not alive" may show up in contexts where *kill* cannot be substituted for them. Assuming a level on which logically definable relational constants⁹ that have been abstracted from the sentences of natural languages specify semantic relations between category-neutral predicate variables can serve best as an explanatory model of the bilingual speaker's competence to detect equivalent realizations of the same sentence semantic structures in different languages. That these theoretical constructs themselves must be paraphrasable in terms of natural language expressions is a reflex of natural languages being the ultimate meta-languages.

Having outlined a system that meets the requirement of making available a universal sentence-semantic basis for a contrastive grammar I will now examine the formats in which lexical entries for verbs have been given by Fillmore's case grammars and by Helbig-Schenkel's and Emons' versions of valence theory. A main issue to be investigated obviously relates to the ways in which the differences between these theories are reflected in the information associated with lexical entries. From these differences one should be able to determine in how far the theories in question are compatible with the aims of a contrastive grammar.

Take as basis of comparison the lexical entries for the simplex verb *believe* in Stockwell et al. (1973) (cf. (8)) and for *glauben* in Helbig-Schenkel (1973) given below. Notice first that Stockwell et al. disregard in their grammar a

⁸ Compare Heger's (1966) and Lipka's (1972) distinctions between formal and conceptual valence and between the valency of verbs and the valency of predicates respectively. Contrary to Fillmore's (1975: 31) view that "it may not be necessary to believe that everything that is included in our understanding of a sentence is necessarily a part of the grammatical deep structure of that sentence" it may turn out that in the semantic base of certain contrastive grammars all conceptually obligatory constituents must be present. This seems probable if the degree of typological difference between the confronted languages is very high such that, for example, a certain semantic relation is linguistically required by most of the verbs in one language as against the other.

⁹ See Brekle (1970: 113ff) for the description of these two-place relational constants in terms of homogeneity and symmetry.

number of factors listed in Fillmore (1968a) and (1971) as belonging to a complete description of a verb, namely its central sense, its selectional restrictions, certain presuppositions or 'happiness conditions' which have no obvious syntactic consequences and its morphological relatedness to other items. It must also be mentioned that they adopt Chomsky's (1965) second model of a syntactic base, i.e., the one in which a context-free phrase-structure grammar generates a string of dummy-symbols and grammatical formatives. Substitution transformations whose structure indices are the complex symbols associated with the lexical entries insert them if the tree meets the conditions of the structure indices.

Believe is characterized in (8) (cf. Stockwell et al. 1973: 755) by a complex symbol in which three types of features have to be distinguished: categorial features, contextual features and rule features.

- (8) *BELIEVE*
 +V
 -ADJ
 +[—+NEUT-[-DAT-LOC-INS-AGT]
 -FACT
 -IMPER
 --WH-S
 *PASS
 +STAT-REDUCT
 *RAISE-TO-OBJ

The fourth type, inherent features, are not specified because of the exclusion of selectional restrictions. Since adjectives and verbs are subsumed under the symbol *V* in the base, the categorial feature *-ADJ* of *believe* ensures that 'BE — insertion' does not take place. The contextual features are represented by a 'case-frame' in which the obligatory cases are specified positively, the impossible ones negatively and the optional ones are omitted. The number of cases for verbs being maximally five, *believe* lacks any optional ones. The specification of rule features refers to the transformations which can apply to the lexical item. *-FACT*, for example, marks *believe* as a non-factive predicate, i.e., it can only be inserted into a deep structure in which the embedded proposition is not presupposed to be true. The syntactic reflex of this is that in the deep structure tree *NEUTer* must dominate 'that *S*' and not 'the fact that *S*' (cf. Stockwell et al. 1973: 507). The features *-IMPERative* and *-WH-S* constrain the sentential realization of *NEUTer* to indicative sentences, i.e., they exclude a sentence like (9). *-WH-S* as such prevents true indirect questions as in (10) from occurring. That the embedded sentence in (11) is a pseudo-interrogative is shown by the impossibility of paraphrasing (11) as *I believe the answer to the question what he said* (cf. Stockwell et al. 1973: 576).

- (9) *I believe that a bridge be built.
 (10) *I believe who left early.
 I know who left early.
 (11) I believe what he said.

The starred notation of a feature like *PASS* means that the lexical item must be specified either positively or negatively before the complex symbol is inserted into a tree. The feature +STATIVE-REDUCTION has the effect of blocking the application of the rule 'RAISE-Subject-to-OBJECT' if the verb of the sentential object is a non-action one, i.e. if, as in (12) (cf. Stockwell et al. 1973 : 570), it has neither 'progressive' nor 'past' nor 'perfect' in its 'auxiliary'-constituent.

- (12) a) I believe that he works hard.
 b) *I believe him to work very hard.
 c) I believe that he is working very hard.
 d) I believe him to be working very hard.
 e) I believe that he has worked very hard.
 f) I believe him to have worked very hard.¹⁰

At this point a difficulty has to be mentioned which results from the nature of categorial, contextual and rule features and is characteristic of generative transformational grammars in general. These features together with the categorial rules of the base and the transformations are not meant to represent an algorithm for generating any particular sentence containing the verb *believe*, but determine systematically its possibilities of occurrence in all types of sentential structures. It is therefore only if the generative grammar is interpreted as a production system, i.e., if it is used to generate structures at random by a computer, for example, that the problem of a parasitic growth of deep structures (cf. Miller 1975) arises. In this case many deep structure trees can be randomly generated which must be filtered out by the transformational component. This cannot happen, however, if the generative grammar is interpreted according to Chomsky's original intention, namely as a set of statements about well-formedness. Given a particular sentence, the generative grammar assigns to it a structural description. This structural description is the result of taking the "right" options while going through all the rules of the base. From most of the stages of such a base derivation it is possible to arrive at a sentence more or less different from the original one. Thus, from the systematic point of view it is only after having chosen a certain sequence of structural options and feature values that the surface shape of a derivation is definitely fixed. Although the amount of randomly generatable deep structures that are to be filtered out is considerably reduced in Stockwell

¹⁰ According to Stockwell et al. this sentence is ambiguous between simple past tense and perfective aspect (cf. 1973 : 570).

et al. as compared to Chomsky (1965) by making verbs selectionally dominant over nouns, i.e., by adopting the case grammar approach and inserting verbs first,¹¹ the distinction between generalized statements about, for example, the possible occurrence of a lexical item and its derivational history in a specific structure must still be kept in mind, especially in the case of verbs which exhibit optionality of certain cases in their lexical entry.

It appears that most of the criticisms, levelled by workers in valence theory such as Emons (1974) and Heringer (1973) against case grammar in general and the optionality of cases in Fillmorean frames in particular, are due to their misconceptions about these aspects of derivations in generative grammars and about the conceptual versus linguistic obligatoriness of certain constituents which was discussed above. Thus, in pointing out that "Man weiß auch nicht, wie Fillmore (7) (in our numbering (13)) mit dem angegebenen *case frame* überhaupt beschreiben würde" (Emons 1974 : 50),

- (13) John killed the man with a chisel.

Emons either misconceives the deep structure status of the case frame for *kill* (cf. 14) (cf. Emons 1974 : 49)

- (14) *kill* + [—D (I X A)] (D=Dative)

or he ignores that in generative grammar there is more to the description of sentences than the characterization of lexical entries, namely the other rules of the grammar. His discussion of Helbig's (1971) attempt to relate the distinction between obligatory and optional actants versus free complements in valence theory (cf. 1., 2. and 3. under (15)) (Helbig 1971 : 36) to Chomsky's notions of deep and surface structure suggests that he does both.

- (15) 1. Mein Freund wohnt in Dresden.
 2. Er wartete auf seinen Freund.
 3. Er aß sein Brot in der Schule.

Helbig gives two reasons for an element not to occur on the level of surface structure in a particular sentence. First, if it is a free complement, it is also absent in deep structure. The free prepositional complement *in der Schule*, for example, does not play any role in the derivation of *Er aß sein Brot*, but must be present in the deep structure of (15.3).¹² Secondly, if it is an optional actant on the surface, it must be present in some form or other in deep structure, but has been deleted on the way to the surface. Thus, *Er wartete* is possible, but implies *Er wartete auf jemanden*. This kind of deletion is, however, prohibited with obligatory actants as in (15.1.), because under normal conditions *Mein Freund wohnt* is ungrammatical. Emons concludes from his assessment of optional actants that *Er wartete auf seinen Freund* and *Er*

¹¹ Chafe (1970 : 97) also assumes the centrality of verbs: "it is the verb which dictates the presence and character of the noun, rather than vice versa".

¹² In Fillmore's (1968) model such a free adverbial would be considered as a constituent of the M (modality) — complex (cf. 1968 : 26, footnote 34).

wartete auf seine Freundin would have the same deep structure and, even worse, that these three would therefore have to be identical in meaning, which they are not (cf. Emons 1974 : 72). This contradiction obviously follows only if one has misunderstood the method of deriving similar surface structures from the same deep structure configuration. The derivational stage of deep structure of these three particular sentences is certainly distinct. On the other hand, *Er wartete* and *Er wartete auf jemanden* would receive the same semantic interpretation, just like *she was reading* and *she was reading something* (cf. (7) above). But this is not the only instance of a misunderstanding of generative transformational grammar in Emons' study which tries to describe English verbs in terms of valence theory. In criticizing Helbig for explaining certain free actants as reduced sentences he writes:

Die Entscheidung über zuglassene Tiefenstrukturen richtet sich nach Erfordernissen der Beschreibungssprache, genauer, danach, was man als eine angemessene Beschreibung bestimmter Phänomene ansieht. Man kann aber niemals aus der Art der Konstruktion der Beschreibungssprache umgekehrt Kriterien zur Beurteilung von Phänomenen in natürlichen Sprachen ziehen, wie es Helbig tut. (Emons 1974 : 75).

It is correct to maintain that one cannot derive criteria for the evaluation of natural languages from the kind of meta-language one is using. One is, however, allowed or even forced to derive such criteria from the requirements of a linguistic theory and its corresponding grammatical model if they can be externally justified, as, for example, by their descriptive and explanatory adequacy in reflecting not only the monolingual but also the potentially multilingual competence of speakers of natural languages. In the case at hand and in other cases to be discussed below this means that it is legitimate to explain certain surface constituents as remnants of underlying clauses even if the data of the language one is concerned with seem to contradict such an analysis.

Consider now the lexical entry for the simplex German verb *glauben* as specified in Helbig-Schenkel (1973) (cf. 16)). In accordance with one of its practical purposes, namely to provide the teacher of German and the learner of a foreign language with the means to check his intuitions about the use of German verbs, their partial synonymy and their role in didactic sentence models, Helbig-Schenkel describe what they call "Mitspieler", i.e. actants of verbs, in German on three levels (1973 : 185—186). On the first level the number of actants is indicated. Optional actants are represented in parentheses, obligatory ones without.

(16) *glauben*

I. *glauben*₂ (VI=denken, meinen)

II. *glauben* → Sn, Inf

III. Sn → Hum (*Der Lehrer glaubt, alles bedacht zu haben*).

Inf → Act (*Er glaubt, alles berücksichtigt zu haben*).

I. *glauben* 2+(1)=3 (V2=vermuten, für wahr halten)

II. *glauben* → Sn, Sa/NS_{daß}, (Sd)

III. Sn → Hum (*Der Vater glaubt jedes Wort*).

Sa → Abstr (*Er glaubt seine Worte*).

NS → Act (*Er glaubt, daß er ihn sehen wird*).

Sd → Hum (*Er glaubt dem Lehrer jedes Wort*).

I. *glauben*₂ (V3=vertrauen auf)

II. *glauben* → Sn, Sd

III. Sn → Hum (*Der Schüler glaubt dem Lehrer*).

Sd → 1. Hum (*Er glaubt seinem Freund*).

2. Abstr (als Hum) (*Er glaubt der Sektion*).

3. Abstr (*Er glaubt seinen Beleuerungen*).

The second level specifies these actants qualitatively, i.e., the syntactic environments of the verb are listed in terms of formal, morphological categories such as *Sn*, *Sa* and *Sd* for substantives in the nominative, accusative and dative respectively. *Inf* stands for 'infinitive with *zu*', *NSdaß* for subordinate clause introduced by *daß*. Helbig-Schenkel emphasize that these formal categories must permit the generation of actual sentences if they are combined with rules in the sense of generative grammar (cf. 1973 : 51 and footnote 185), i.e. these morphological categories correspond to strict subcategorization rules. On their third level the semantic environment of verbs is determined by giving the features elements must exhibit in order to fill the actant positions listed on the second level. For the three variants of *glauben* we are dealing with these features are *Hum (an)*, *Act(ion)* and *Abstr(act)*. They obviously have the same function as selectional restrictions.

It is also obvious, however, that Helbig-Schenkel's descriptions are basically surface-oriented. In spite of their occasional suggestions regarding paraphrase relationships between the fillers of certain actant positions, as for example, between (17) and (18) (1973 : 186) where the propositional substantive constitutes the third obligatory actant they do not establish such a relationship between the infinitive in *V1* and the *daß*-clause in *V2*.

(17) Sie glaubt, daß er in Sicherheit ist.

(18) Sie glaubt ihn in Sicherheit.

Once such relationships are accepted, there is no doubt that Helbig-Schenkel's valence indications can be incorporated into a case-based generative grammar of German. Helbig's view that syntactic and logico-semantic valence models supplement each other (cf. Helbig 1975 : 45) then has to be modified in so far as the relation between these two models is not a matter of supplementation but of incorporating the one into the other because of the greater descriptive and explanatory power of a generative transformational grammar.

Evidence for this claim comes, for example, from comparing the lexical entry for *believe* in the above format to the ones given in Emons (1974) and to those for *glauben* just presented. Without going into the details of Emons' justifications for the constitution formula associated with each verb let me simply comment on the role and function of the combinations of symbols in (19) (Emons 1974 : 177–178).

(19) *believe* 12

S12 [P12 + E1 [NOM1/ES1] + E2 [NOM2/ES2 [*that*]]]

(1) *I believe that story.*

(2) *I believe that you come.*

believe 125

S125 [P125 + E1 [NOM1/ES1] + E2 [NOM2/ES2] + E5 [NOM5/
/IK5 [*to*]/ES5]]

(1) *I believe him a coward.*

(2) *I believe him to be a coward.*

The indices 1 and 2 of the first entry characterize the valence of the simplex verb *believe* quantitatively and qualitatively, i.e. as taking elements from the commutation classes *E1* and *E2*. This numbering appears again in the constitution formula with *S* for sentence and *P* for verb. The elements within the first brackets, *P*, *E1* and *E2*, are parts of the sentence *S*, the + sign representing the symmetric part-hole relation, not the concatenation-operator. The symbols contained in the brackets following *E1* and *E2* specify the subsets out of which elements of this class may be chosen. In (20) I have indicated what these symbols stand for.

(20) NOM = nominals such as proper names, personal pronouns, nouns with or without relative clauses, verbal nouns, etc., (cf. Emons 1974 : 144ff).

IK = infinitival constructions with or without *to*, or in *-ing* or *-ed* in certain commutation classes (cf. Emons 1974 : 151ff).

ES = complement clauses of different kinds introduced by *that*, *what*, *when*, etc., (cf. Emons 1974 : 167ff).

A first inspection of the operations by which commutation classes are constituted already suggests that such classes of surface valencies cannot be sufficiently motivated for English. Having given up linear order as a determining factor, Emons' only evidence for distinguishing *E1* from *E2* is the fact that personal pronouns such as *him* and *he* (cf. Emons 1974 : 116–117) cannot be substituted for each other and that in German case-morphemes justify this distinction. The setting up of the commutation class *E5*, which appears in the second entry is, however, even more detrimental to Emons' approach. It forces him not only to assume two entries for *believe*, which ignores the obvious relationships between (21), (22) and (23), but also prevents him from being able to explain in a principled contrastive way why all the German

equivalents except for two in (22) are ungrammatical whereas certain equivalents in (23) work in German.

(21) *Mary₁ believes that she₁ is safe.* — *Mary₁ glaubt, daß sie₁ sicher ist.*

Mary believes that she is safe. — *Mary glaubt, daß sie sicher ist.*

... that he is a coward. — *..., daß er ein Feigling ist.*

... that he has caught a cold. — *..., daß er sich erkältet hat.*

... that he has been cheated by Bill. — *..., daß er von Bill betrogen worden ist.*

(22) *Mary₁ believes herself to be safe.* — *Mary₁ glaubt, sicher zu sein.*

Mary believes her to be safe. — *Mary glaubt, *sie sicher zu sein.*

... him to be a coward. — *..., *ihn ein Feigling zu sein.*

... him to have caught a cold. — *..., *ihn sich erkältet zu haben.*

... ?him to have been cheated by — *..., ?ihn von Bill betrogen.*

Bill.

(23) *Mary₁ believes herself₁ safe.* — *Mary₁ glaubt sich₁ sicher.*

Mary believes her safe. — *Mary glaubt sie sicher*

... him a coward. — *... *glaubt ihn einen Feigling.*

*... *him having caught a cold.* — *... *ihn sich erkältet habend.*

*... *him having been cheated by* — *... *ihn von Bill betrogen wor-*
den seiend.

Bill.

It is only if the English constructions in (21), (22) and (23) are recognized as instances of the same verb whose complement clause may undergo the transformations of 'raise-subject-to-object' and 'to-be-deletion' that its German equivalent can be shown to disallow the first of these transformations but to permit 'equi-NP' instead and under certain conditions a variety of 'to-be-deletion'. This depends, however, on deriving infinitival constructions from sentential origins, which is rejected by Emons on the grounds that (24) is not equivalent to (25) (cf. Emons 1974 : 155; 151 respectively).

(24) *John sees something. He grows.*

(25) *John sees him grow.*

He also refers to Heringer (1973) who on the basis of German data like (22) and (23) argues that infinitival constructions as against complement clauses cannot contain *E1*'s (cf. Emons 1974 : 236–237), i.e., the subject of an infinitival verb must be identical with the subject of the main clause in German. But this is exactly where German and English differ as our examples in (22) show. In English the direct object of the main clause may function at the same time as the subject of the infinitive without any morphological indication. If it is an element other than a personal pronoun one cannot decide whether it is part of the main clause or of the remnant of the subordinate clause.

For such reasons valence theorists will have to give up their language-specific classifications in favor of analyses that admit of a common theoretical frame-work within which contrastive statements can be made, namely a version of a case-grammar based generative model. In this frame of reference the difference in complement-clause reducing possibilities¹³ just described can also be related to other differences between English and German such as the degree of complexity of prenominal modifiers, the non-existence of chopping-transformations across sentence boundaries in German and the fact that with English verbs more noun phrases can, in general, be subjectivalized than with verbs in German.¹⁴ All these differences are ultimately due to the highly inflecting character of German as against English.¹⁵

The conclusion to be drawn from our considerations are that for a contrastive generative grammar a sentence-semantic system like Brekle's must be assumed which can be combined with case-grammar based syntactic generative grammars of English and German in which lexical entries for verbs are characterized by rule features referring to transformational properties. In the case of German the formulation of these rule features has to incorporate the results of syntactic valence analyses, i.e. the morphological markings of German surface structures must be accounted for.

What has been left open, however, is the question where exactly after the insertion of lexical items linear order of elements has to be introduced in German, immediately after the level of deep structure or at a shallow level of structure. Another open question concerns the way in which similarities between a lexical item and its semantic paraphrase in one language and the non-equivalence conditions of basically equivalent lexical entries of different languages should be accounted for. It may be that, in order to arrive at relevant generalizations about such phenomena, it is necessary to examine more closely Brekle's (1969) suggestion that two generative components should be assumed: a syntactic and a semantic base component, both stating well-formedness for their respective domains.

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¹³ For similarities between English and German with respect to relative clause reducing processes see my paper (1976a).

¹⁴ I have dealt with these phenomena in (1975), (1975b) and (1976).

¹⁵ The role of morphological marking is also obvious in *Sie hält ihn für einen Feigling* as against **Sie glaubt ihn einen Feigling* and *Sie glaubt von ihm, sich erkältet zu haben* versus **Sie glaubt ihn, sich erkältet zu haben*. *Für* and *von* guarantee that the particular syntactic relations of their complements are discernible.

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