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LEONHARD LIPKA

GRAMMATICAL CATEGORIES, LEXICAL ITEMS AND WORD-FORMATION

1. In a recent article[1] D. Bolinger has proposed to treat such grammatical categories as word classes, together with such features as Mass/Count, Divisibility, Plurality, as attributes of a lexical item, and consequently "to separate the word altogether as a semantic entity, leaving a set of grammatical attributes which speakers are more or less free to attach at will" (p. 37). With this approach "'Violations' of at least some grammatical rules become a pseudo-problem" (p. 37); *sugar*, for example, is not treated as a mass-noun: the attribute Mass can either be chosen or not, as in *a sugar*. Certain attributes are more likely to occur with specific items, as in the case of *despise* which "will still be marked as a Verb but the label will not mean that it 'is a' Verb but that it receives that attribute virtually 100% of the time" (p. 37). With *sugar* the probability of the attribute Mass is much lower and the item could perhaps be labelled 'Mass 89'. "The extent to which a given word 'is' something becomes a statistical question and of secondary interest" (38). The approach seems to bring a considerable "gain in flexibility and economy" (p. 37) in the description of a language, but it also raises some basic questions in particular with regard to word-formation. It is the aim of the present article to deal with the problems involved, and to weigh up the advantages and disadvantages of Bolinger's proposal.

2.1. In 1937 B. L. Whorf published an article on 'Grammatical Categories'[2] in which he set up "two distinctions of supreme importance" (p. 93) viz. one between overt and covert categories and one between selective and modulus categories. A selective category is a grammatical class with fixed membership, a modulus category is nonselective and "generally applicable and removable at will" (p. 95). Examples of modulus categories are the English noun-plural, and more generally the "cases, tenses, aspects, modes and voices of Indo-European and Azteco-Tanoan languages" (p. 95). According to Whorf, word class membership can either be treated as a selective

[1] Dwight Bolinger, 'Categories, Features, Attributes', *Brno Studies in English* **8** (1969), 37–41. I am indebted to D. L. Bolinger, H. E. Brekle, M. Keutsch, G. Stein, and A. Viesel for comments on an earlier version of this paper, and to E. Coseriu, D. Kastovsky, and H. Marchand for extensive discussions which were very helpful to pinpoint the problems involved.

[2] Reprinted in *Language, Thought, and Reality. Selected Writings of Benjamin Lee Whorf*, ed. by John B. Carroll (M.I.T., New York, London, 1956), 87–101.

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category, or as a modulus category: "A distinction of the same semantic type as that between verbs and nouns in selective categories may be handled by modulus categories instead. That is, the possible moduli include not only voice, aspect, etc., but also VERBATION and STATIVATION" (p. 96). The term 'stativation' is preferred to 'nomination' or 'nominalization', because the form is not considered as a derived noun, "but simply as a lexeme which has been affected by a certain meaningful grammatical coloring" (p. 97). The lexicon of English is considered by Whorf as consisting of two divisions – one part contains selective nouns and verbs, while the other "contains bare lexemes to which either verbation or stativation may be applied at will" (p. 97), i.e. the zero-derivatives of modern word-formation. Whorf arrives at the conclusion that "In Hopi the verb-noun distinction is important on a selective basis; in English it is important on a modulus basis; in Nitinat it seems not to exist" (p. 99). As can be seen, Bolinger's proposal is very much in line with Whorf's conclusions.

2.2. As far back as 1921 E. Sapir wrote to the same purpose: "We might go on examining the various parts of speech and showing how they not merely grade into each other but are to an astonishing degree actually convertible into each other. The upshot of such an examination would be to feel convinced that the 'part of speech' reflects not so much our intuitive analysis of reality as our ability to compose that reality into a variety of formal patterns. A part of speech outside of the limitations of syntactic form is but a will-o'-the-wisp".[3]

2.3. In an article on 'Nouns and Noun Phrases' E. Bach[4] discusses "the idea that there is one category underlying the classes of nouns, verbs, and adjectives" (p. 121), and sums up "I have tried to show that the distinction between such parts of speech as nouns, adjectives, and verbs have no direct representation as such in the base, but are the results of transformational developments in one or another language" (p. 121).

3.1.1. Many linguists, however, show a very different approach, particularly those interested in word-formation. E. Coseriu[5] even goes as far as to say that "las categorías verbales no son convenciones, sino realidades del hablar. El establecer una categoría verbal no depende de una simple decisión arbitraria, como, por ej., el establecer la fecha en la que empieza la Edad

[3] Edward Sapir, *Language* (New York, 1921), 118f.
[4] Emmon Bach, 'Nouns and Noun Phrases', *Universals in Linguistic Theory*, ed. by E. Bach and R. T. Harms (Holt, Rinehart and Winston, 1968), 90–122.
[5] Eugenio Coseriu, *Teoría del lenguaje y lingüística general* (Madrid, 1962).

Media... las categorías son realidades del lenguaje, que existen independientemente de nuestra decisión de deslindarlas y definirlas" (p. 247). He is not, however, here concerned with attributing a category to a specific lexeme, but with defining the actual categories.

3.1.2. In a study on the structure of lexical items[6] Coseriu quotes an interesting example which is highly relevant to the problem of word classes as grammatical categories. In Spanish, *falso*, *verdadero*, and *verdad*, *falsedad* exist side by side. Of the two antonyms denoting a quality and a state respectively, one is derived in each case, viz. the adjective *verdadero* and the noun *falsedad*. Each derivation is "un rapport 'orienté', à sens unique" (p. 215), but here the directions are reversed. However, the most interesting fact concerning these examples is, as Coseriu points out, that we only have *es verdad* 'it is true' and *es falso* 'it is false', but not **es verdadero* and **es falsedad*. According to Coseriu (p. 208), what he calls the 'norm' of the language here decides on the choice between the alternative categorial expression of the same content – noun in one case, adjective in the other. From the above example we might arrive at the following conclusions: First, if the language has a choice between a simple and a derived lexical item, the simple item seems to be preferred when a more complex construction is formed. Second – and this has a more direct bearing on our topic – lexical items which have certain categories of word classes attributed to them, are not used alike in the same word class shape, even if there is such a close relationship between them as antonomy. From all this it appears that the status of derived forms of lexical items is not the same as that of simple forms.

3.2.1. Assuming that word classes are categories attributable 'at will' to 'bare lexemes' which carry the semantic load would of course seem to contradict the concept of derivation by a zero-morpheme. More fundamentally, an approach to word-formation which starts with the description of morphological shape, and has proved most useful in the work of H. Marchand,[7] would be impossible. The implications of Whorf's position and similar views

[6] E. Coseriu, 'Structure lexicale et enseignement du vocabulaire', *Actes du premier colloque international de linguistique appliquée* (Nancy, 1966), 175–217.

[7] Hans Marchand, *The Categories and Types of Present-Day English Word-Formation*, 2nd rev. ed. (München, 1969), to be quoted as 'Cat 2', and esp. 'On the Description of Compounds', *Word* **23** (1967), 379–87. Cf. also Klaus Hansen 'Zur Analyse englischer Komposita', *Wortbildung, Syntax und Morphologie. Festschrift zum 60. Geburtstag von Hans Marchand*, ed. by H. E. Brekle and L. Lipka (The Hague, Paris, 1968), 115–26, and the same, 'Die Bedeutung der Worttypenlehre für das Wörterbuch', *Zsch. f. Anglistik und Amerikanistik* **14** (1966), 160–78.

which deny a derivational relationship between zero-derived words and their bases are discussed by D. Kastovsky.[8] He stresses the fact that "The essential points are that the relation between base and derivative must be pattern-forming and not isolated, and that a semantic relationship exists" (p. 52).

3.2.2.1. The question of whether word classes are attributable at will to lexical items which are neutral in this respect is connected with the problem of semantic features and collocations. In an article on the study of lexical items and their collocations, J. McH. Sinclair[9] tries to assess the influence of grammar on lexis, and gives as an example of a case "where the coincidence of grammatical and lexical boundaries is considerable" (p. 424) *mat*, noun, collocating with *door*, *wipe*, *hall*, etc.; *mat*, verb, collocating with *hair*, *jam*, *thick*, etc.; and *mat*, adjective, collocating with *paint*, *finish*, *surface*, etc. (p. 424). Word class boundaries and semantic content correspond to a large extent in these examples. If we consider two further homonyms *mat*, which Sinclair does not mention, viz. *mat*, noun, in *comb the mats out of a dog's thick hair*, and *mat*, verb, 'cover or supply with mats', the problem becomes more complicated. If we call Sinclair's examples *mat*, noun, mat_1, and *mat*, verb, mat_2, and our *mat*, noun, mat_3, and *mat*, verb, mat_4, then mat_1 and mat_4, as well as mat_2 and mat_3 are derivationally connected, sharing common semantic features and a number of collocations, but belonging to different word classes.

3.2.2.2. In another collocational study, in the same book, M. A. K. Halliday[10] should also perhaps have taken homonyms into account. This failure to discriminate between homonyms is criticized by D. T. Langendoen,[11] who points out that there are two different adjectives in *strong table* and *strong tea*. We probably have still another *strong* (though some semantic features may be overlapping, but others certainly are not, as e.g. Concrete, Liquid) in Halliday's example *strong argument*. But the main point of what Halliday wanted to demonstrate is not affected by this, viz. that the two lexical items in this collocation remain the same even if they appear in different word classes as in *strong argument*, *he argued strongly*, *the strength of his argument*, *his argument was strengthened*. He contends that an item *strong* can be

[8] Dieter Kastovsky, *Old English Deverbal Substantives Derived by Means of a Zero Morpheme* (Diss. Tübingen, 1968), esp. 31–35.
[9] J. McH. Sinclair, 'Beginning the Study of Lexis', *In Memory of J. R. Firth*, ed. by C. E. Bazell, J. C. Catford, M. A. K. Halliday, R. H. Robins (London, 1966), 416–30.
[10] M. A. K. Halliday, 'Lexis as a Linguistic Level', *In Memory of J. R. Firth*, 148–62.
[11] D. Terence Langendoen, 'Review Article. C. E. Bazell, J. C. Catford... In Memory of J. R. Firth...', *Foundations of Language* 5 (1969), 391–408.

abstracted which collocates with an item *argue* (p. 151). Langendoen agrees, saying "The fact that derived forms of predicates enter into the same semantic relationship with arguments as the predicates themselves... simply means that grammatical transformations apply to create these forms out of the underlying predicates" (p. 402) but argues that "Halliday is right to group *strong* and its derived forms together, but he is wrong to call them all the 'same items'" (p. 402). Halliday uses the term 'scatter' for the different word class shapes in which one lexical item may appear at the surface structure level. In a further example he distinguishes between two different items *make up* whose 'scatter' consists in both cases of verb and noun but with a different 'collocational range', viz. *make up*$_1$, as in *she made up her face* and *your complexion needs a different makeup*, and *make up*$_2$, as in *she made up her team* and *your committee needs a different makeup* (p. 153). He then goes on to discuss the grammatical status of lexical items like *let in for* which could be treated as a 'single discontinuous item' as in *he let me in the other day for a lot of extra work*, "but this complexity is avoided if one is prepared to recognize a lexical item *let in for* without demanding that it should carry any grammatical status" (p. 154). Similarly, the ambiguous *he came out with a beautiful model* (p. 154) contains either a lexical item *come out with* or an item *come* and two different items *model*. We shall return to the question of polymorphemic items below (cf. 4.5.2.).

3.2.3.1. Further support for the notion that word classes may be regarded as surface structure additions to basic semantic elements or lexical items may be found by comparing translations, as shown in the work of M. Wandruszka. An interesting example for this type of approach is provided by comparing verb-particle combinations in English and German, where the particle denotes a direction, to their rendering in Romance languages.[12] A 'chassé-croisé' takes place, and the direction is normally expressed in the verb, while the process itself and the manner of movement is indicated by a participle, an adverb, or even a noun, as in *she dances out*/ *elle sort en dansant* and *to look up*/*lever les yeux*.[13] It might be objected that the different constructions have different connotations and different aspectual value in the respective languages. It is true that translations rarely achieve a 100 per cent correspondence with regard to denotation as well as connotation. One could even go as far as to say that it is only designation – not meaning – which is

[12] Mario Wandruszka, *Sprachen. Vergleichbar und unvergleichlich* (München, 1969), 459–82.

[13] M. Wandruszka, 'Implication et explication', *Revue de linguistique romane* **31** (1967), 316–30, esp. 317 and 320f.

rendered in translations in different languages.[14] Yet it is more or less the same semantic elements which appear in different word classes in the surface structure of English and French.

3.2.3.2. If we keep to the same linguistic system, we can also find constructions in English, German, and French where actions and processes are not denoted by verbs, but rather by constructions which obviously contain a specific semantic element in nominal form, and a semantically almost empty verbal dummy, which in German has been termed 'Funktionsverb' by P. v. Polenz.[15] 'Complex verbal structures'[16] of this type are English *have a look* (*swim*, *smoke* etc.), *give*, *make a speech* etc., German *zur Entscheidung bringen*, *kommen* vs. *entscheiden*,[17] French *faire du cheval* (*de l'escalade*, *le mur*, *l'idiot*), which, according to G. Nickel, have the advantage of structural economy and flexibility in allowing a neat separation of those elements which carry lexical meaning and those which have a grammatical function. Yet the question whether such structures are more economical than simple verbs is debatable. Moreover, there is often a considerable difference in meaning (cf. *love* vs. *make love*).

3.2.3.3. The process of nominalization in English (and other languages), as demonstrated by R. B. Lees,[18] is of paramount importance and results in various types of compounds and more complex noun phrases at the surface structure level (*blackbird*, *oil well*, *doctor's office*, *eating apple/that he was sick*, *what lay on the table*, *his rapid drawing of the picture*). It is further proof of the fact that whole sentences can be transformed into a particular word class – in many cases without change of semantic content – to make them fit into required syntactic slots. But nominalizations do not necessarily receive the morphological shape of the word class 'noun' (e.g. *that he was sick*). Verbalization (Whorf's 'verbation') can also be a highly grammatical process with an extremely high productivity rate (e.g. *legalize*; but cf. recent *vietnamize* which is more complex, and *beautify*, *chlorinate*, *hyphenate* which follow certain specific rules). Many lexical items can also be transposed into

[14] E. Coseriu, 'Bedeutung und Bezeichnung im Lichte der strukturellen Semantik', *Commentationes Societatis Linguisticae Europaeae III*, ed. by P. Hartmann and H. Vernay (München, 1970), 104–21: "Die eigentliche Aufgabe des Übersetzens ist es also, mittels einer anderen Sprache dieselben Sachverhalte zu bezeichnen, d.h. mit Hilfe prinzipiell anderer Sprachbedeutung doch 'dasselbe' als Redebedeutung auszudrücken" (120).

[15] Peter von Polenz, *Funktionsverben im heutigen Deutsch* (Düsseldorf, 1963).

[16] Cf. Gerhard Nickel, 'Complex Verbal Structures in English', *IRAL* (1968), 1–21, esp. 15.

[17] Cf. Hans Jürgen Heringer, *Die Opposition von 'kommen' und 'bringen' als Funktionsverben. Sprache der Gegenwart* 3 (Düsseldorf, 1968).

[18] Robert B. Lees, *The Grammar of English Nominalizations*, 2nd printing (The Hague, 1963).

the class of adjectives without receiving additional semantic features in the process,[19] like *music* and *musical* (*theory*), *president* and *presidential* (*address*). In the construction *heavy smoker*, *early riser*[20] we have an adverb transposed into the function of an adjective (*he smokes heavily*, *he rises early*).

4.1.1. The situation is, however, far more complicated than it appears at first sight, and we have to set up several types of changes of word class. The simplest case is obviously when all the elements of a sentence are carried over into a nominalization and nothing is lost in the transformation, as in H. Gleason's[21] example *His continual drumming on the table with his knife and fork while the toastmaster is introducing the speaker of the evening* (*makes me nervous*) where the nominalization could simply be replaced by *it*.

4.1.2. As soon as certain elements are omitted or deleted in the transformation, a number of problems arise. H. Marchand[22] distinguishes between 'transpositional' adjectives which "merely transpose the complement part of the verb" (p. 134) like *adjectival*, *congressional*, *polar*, *presidential*, and are not found in predicative use, and 'semantic' adjectives (p. 137) which occur in copula constructions and acquire "additional semantic features" (p. 139), in particular "an element of judgement". While "a transpositional adjective only renders a syntactic relation... the semantic adjective goes beyond this by adding appreciation of the fact" (p. 139). Certain adjectival forms can represent both a transpositional and a semantic adjective. While a *criminal court* 'is' certainly not *criminal* but 'deals with crime', a *criminal lawyer* can be either. A similar case is *musical*, "but we have not simply to do with semantic homonymy, but with *musical* as representing several different grammatical syntagmas. *Musical* is one word in *musical clock*, where it stands for a sentence like 'the clock (produces) *music*' (S–V–*eff. O*), another in *musical theory*, which is based on a possible sentence 'theory (deals with)

[19] Cf. H. Marchand, 'On Attributive and Predicative Derived Adjectives and some Problems Related to the Distinction', *Anglia* **84** (1966), 131–149, to be quoted as 'APAdj', and 'Expansion, Transposition, and Derivation', *La Linguistique* **1** (1967), 13–26, to be quoted as 'Exp'.

[20] Cf. APAdj, 145–49 and Exp, 26.

[21] H. A. Gleason Jr., *An Introduction to Descriptive Linguistics*, Rev. ed. (New York, 1961), 191.

[22] APAdj. H. Marchand first makes an explicit distinction between transpositional and semantic derivation in his review of Karl E. Zimmer, *Affixal Negation in English and Other Languages* in *Language* **42** (1966), 134–42, esp. 138. This idea goes back to the distinction between 'transposition hypostatique' and 'transposition sémantique' in Charles Bally, *Linguistique générale et linguistique française* **4** (Berne, 1964), §§116, 129, 165. Bally's concept of the transpositional process is modified and further elaborated by Marchand.

music' (S–V–*aff. O*), different again in *musical comedy*, which mirrors something like '*music* (accompanies the) comedy' (*S*–V–O)" (p. 141). This analysis is the logical conclusion we must arrive at, if we start from Marchand's basic tenet: "A morphologic syntagma is nothing but the reduced form of an explicit syntagma, the sentence" (p. 133). In a later article[23] Marchand states that "unlike semantic derivatives, syntactic derivatives are generable" (p. 18), and posits "a clear distinction between transposition, which is the general phenomenon, and derivation which is a problem relevant to word-formation" (p. 17). The most important element in a syntagma is "the determinatum which decides to which grammatical and lexical category the syntagma will belong" (p. 19). Marchand's concept of 'transposition' is not restricted to change of word class. "The use of *professor* in *professorship* implies not change of word class, as both words are substantives, but change from the semantic class 'personal substantive' to 'abstract, condition-denoting substantive'... Change from 'abstract' to 'concrete', from 'personal' to 'impersonal' must be considered in the same light as the change from one grammatical word class (part of speech) to another" (p. 17). The adjective *white* and the derived adjective *whitish* can be similarly analysed.[24]

4.1.3. Besides the distinction between 'transpositional' adjectives, which merely render a syntactic relation, and 'semantic' adjectives, which include additional semantic features, Marchand has introduced another important distinction into modern word-formation, viz. 'verbal nexus substantives' vs. 'compounds and derivatives not containing a verbal element'.[25] In verbal nexus substantives, i.e. compounds or derivatives which have "verbal components as the determinant (e.g. *crybaby*) or as part of the determinant (e.g. *housekeeping*)" (VeNe, p. 57) all the elements of the underlying nominalized sentence may be present (*hairdresser*, *watchmaker*) but not necessarily so

[23] Exp.

[24] E. Coseriu, for one, does not agree with this interpretation. Following J. Kuryłowicz – 'Dérivation lexicale et dérivation syntaxique. Contribution à la théorie des parties du discours', *BSL* **37** (1936), 79–92, esp. 86, who supposes that abstract nouns like *hauteur*, *blancheur* are derived in two separate stages from the respective adjectives, via *le fait d'être haut* (*blanc*) (cf. also J. Kuryłowicz in *Actes du sixième congrès international des linguistes 1948* (Paris, 1949), 175–7), and therefore contain a copula – Coseriu distinguishes between 'modifications' (Modifikation) and 'développements' (Entwicklung). Cf. Coseriu (1966), 213ff. Although *professorship*, like diminutives, does not imply a change of word class, it is different in that it already involves a certain grammatical usage of the lexeme (*being a professor*) and is thus a 'développement', while diminutives are simple 'modifications' of one lexeme.

[25] H. Marchand, 'The Analysis of Verbal Nexus Substantives', *Indogerm. Forschungen* **70** (1965), 57–71, to be quoted as 'VeNe', and 'On the Analysis of Substantive Compounds and Suffixal Derivatives not Containing a Verbal Element', *Indogerm. Forschungen* **70** (1965), 117–45, to be quoted as 'noVe'.

– in syntagmas lacking the verbal element they never are. "The difference between the compound *oil well* and the syntactic group *oil producing well* illustrates the problem that faces us with purely nominal compounds" (noVe, p. 133). Marchand arrives at the conclusion that "This leads us to consider purely nominal combinations as the elliptic result of either the type *letter/writ/er* or *shoe/repair/shop* where the verb is not represented" (noVe, p. 134). For both types of syntagmas, however, an analysis based on the syntactic structure of the underlying sentence is essential. According to which element is topicalized[26] in the new syntagma, i.e. made the determinatum of the combination, we can have a 'SUBJECT-type' (*writer, escapee, dancing girl, apple eater, hatter, novelist, honeymooner, blackbird, bulldog, snowball, tear gas*), an 'OBJECT-type' (affected or effected) (*draftee, eating-apple, drawbridge, steamboat / beet sugar, bloodstain*), a 'PREDICATION-type'[27] (*dancing, arrival, guidance, apple-eating*, zero-derived *dance, bloodshed / goodness, piracy, priest-hood*) or an 'ADVERBIAL-complement-type' (*swimming pool, writing pen, closing-time*, zero-derived *bus stop / vicarage, safety-belt, corn-belt, date-line, bird-cage*). "Linguistic elements that serve to place a statement in an actual speech situation (called 'actualisateurs' by Bally) are omitted" (VeNe, p. 69).

4.2.1. We thus have four types of features which distinguish a reduced syntagma – whether it be a syntactic group, an expansion (either compound or prefixal combination), or a derivation – from a full syntagma (sentence), viz. missing 'actualisateurs', missing tagmemic[28] elements, missing lexical morphemes, and additional semantic features.

4.2.2. *Theatre/go/er* is a complete nominalization of the sentence 'someone goes to the theatre', but articles, prepositions, tense-morphemes are deleted and one PRO-form, *someone* (=*he, she*) is replaced by another one *-er*, in the shape of a bound morpheme.

4.2.3. Tense indication is also obviously deleted in *drawbridge*[29] from 'the

[26] Cf. Herbert Ernst Brekle, *Generative Satzsemantik und transformationelle Syntax im System der englischen Nominalkomposition* (München, 1970), esp. 77ff, 128ff.

[27] Earlier called 'ACTIVITY-type', cf. Cat 2, footnote 29.

[28] My use of *tagmeme* and *tagmemic* here follows D. Kastovsky's in 'Wortbildung und Nullmorphem', *Linguistische Berichte* (1969), 1–13, esp. 3, which is based on Pike and Longacre, and also B. Elson and V. Pickett, *An Introduction to Morphology and Syntax* (Santa Ana, 1964), 57.

[29] H. Marchand also gives *mincemeat* from 'the meat has been minced' as an example of tense deletion. In British English, however, there is a morphological differentiation between *minced méat* from 'the meat has been minced' – where tense is overtly expressed by *-ed* – and *míncemeàt* 'sweet of currents, raisins, apples, brandy etc.' which does not contain meat, and is not a synchronically analysable syntagma.

bridge will be, is to be drawn', *escapee*, *refugee*, *draftee* from 'he has escaped (taken refuge, been drafted)'. *Drawbridge* and *draftee* lack an essential tagmemic element, the subject of the underlying sentence, which is not represented by any part of the new surface structure resulting from the nominalization transformation.

4.2.4. In adjectival compounds of the type *colourblind*, which are obviously not verbal nexus combinations, many more elements are missing, including tagmemic ones, like the subject and predicate of the underlying sentence, which are indispensable in the full syntagma. Thus only the predicate complement of 'someone is *blind* with regard to *colour*', corresponding to a predicative adjective in a copula sentence, is transformed into an adjective which can now occur in attributive position as well.[30] Apart from the 'actualisateurs' and essential tagmemic elements, the relator 'with regard to' is also deleted in the adjectivization transformation. This apparently mainly functional element can also have definite semantic content, as in the 'patterns' with *-proof* and *-tight*, e.g. *waterproof*, *airtight* 'proof (tight) *against* water (air, etc.)'. In these 'patterns' the general relation 'with regard to' is specified as 'against'. It can be easily supplied in the analysis of the compound, and this fact accounts for the practically unlimited productivity of the pattern and the grammatical nature of the process involved.[31]

4.2.5. The situation changes with combinations of the type *grass-green*, *knee-deep* and *tail-heavy*. They have the same surface structure (Noun + Adjective), but a different underlying sentence, a different relationship between determinant and determinatum, and also additional semantic features. These tend to isolate idiomatic formations from simple transpositions more and more, in a process of increasing lexicalization.[32]

4.2.6. Thus we have a continuum of syntagmas whose surface structure contains less and less of the underlying deep structure. At one end we have

[30] This corresponds to the attitude of earlier transformational theory, which explained attributive adjectives as derived from predicative use, and embedded in attributive position. Cf., however, Wolfgang Motsch, 'Können attributive Adjektive durch Transformationen erklärt werden?', *Folia Linguistica* **1** (1967), 23–48.

[31] In a written communication concerning my use of the relator 'with regard to' D. Bolinger raises the question "if it is given this latitude, why not more?" – since e.g. *dog meat* could mean both 'meat-for-dogs' or 'meat-from-dogs' – which then leads to "the question of how much structure actually is 'in' a compound, and how much is inferable, in fact is *meant* to be inferred, from context". We will return to this problem in 4.4.3.3.

[32] For further differences in the deep structure of adjectival compounds of the type 'Noun + Adjective' and lists of formations in English and German, cf. my dissertation, L. Lipka, *Die Wortbildungstypen WATERPROOF und GRASS-GREEN und ihre Entsprechungen im Deutschen* (Diss. Tübingen, 1966).

the sentence which, as a full syntagma, overtly expresses all the semantic and grammatical features the information contains,[33] including Bally's 'actualisateurs'. At the other end, we find idioms, which are highly lexicalized new units of the language, whose meaning cannot be deduced from the semantic value of the single constituents, like *bone-dry*, *headstrong*, *iron-sick*, *brand-new*, *cock-sure*, *stone-deaf* / German *gastfrei*, *hasenrein*, *kopfscheu*, *scheißfreundlich*, *spottbillig*, *sturmfrei*, *blitzsauber*, *kreuzbrav*, *steinreich*, *stockkonservativ*.

4.2.7. The influence of additional semantic features can also be clearly seen if we compare syntactic groups like *blǽck bírd*, *blǽck bóard* with parallel compounds of the type *blǽckbird*, *blǽckboàrd* which are morphologically distinguished only by a different stress pattern.[34] But even syntactic groups which are not morphologically isolated may acquire important additional semantic features, which leads H. E. Brekle to say that in *blǽck márket*, *blǽck bóok*, *blǽck frόst* "der Begriff 'Motivation' in diesen Fällen synchronisch gesehen nicht weiter relevant ist".[35]

4.3.1. If we now return to the question of transposition, i.e. change of word class by means of derivation, we can state that suffixes should best be assigned an intermediate position between purely grammatical morphemes (like the plural $\{Z_1\}$ past $\{D_1\}$, etc.[36]) and purely lexical morphemes (like *boy*, *heart*, *see*, *sit*, *blue*, *good*, *well*, *fast*). They clearly have semantic content – viz. 'ACT' or 'ACTION' (*-al*, *-ance*, *-ence*, *-ation*, *-ing*, *-ment*, *-∅*), 'STATE' (*-hood*, *-ment*, *-ness*), 'AGENT' (animate or inanimate) (*-er*, *-∅*), 'make' (*-ify*, *-ize*, *-∅*)[37] – but at the same time they have transpositional function.

4.3.2. The combination of lexical items with purely grammatical morphemes, as in plural-formation, seems at first sight to be a productive process with no restrictions. But we only have to think of plurals like *oxen* (instead of **oxes*), *brethren* (besides *brothers*), verb forms like *sang*, *taken* (instead of **singed*, **taked*), comparatives like *worse*, *best*, and adverbs like *clean*, *fast*

[33] The linguistic information is, however, not complete if the sentence contains pronouns or other PRO-forms as dummies, whose semantic value can only be assessed from the larger unit of the text, or situational and social context.

[34] Cf. the comprehensive treatment of the problem in H. E. Brekle, 'Syntaktische Gruppe (Adjektiv + Substantiv) vs. Kompositum im modernen Englisch. Versuch einer Deutung auf klassen- und relationslogischer Basis', *Linguistics* **23** (1966), 5–29.

[35] Brekle (1966), 11.

[36] Cf. my article 'Assimilation and Dissimilation as Regulating Factors in English Morphology', *Zsch. f. Anglistik und Amerikanistik* **17** (1969), 159-73, esp. 166f and Cat 2, 209f, 214f.

[37] For details see Cat 2.

to be instantly reminded that in a natural language there are no productive systems which are completely unrestricted. The same holds for suffixes, whose nature is not exclusively grammatical, in that they have semantic content besides their transpositional function. Though "An *-ing* sb may be derived from almost any 'actional' verb" (Cat 2, p. 302), there are, however, restrictions, in particular with stative verbs. Though agent-noun deriving *-er* is mainly a 'word class transposer', it has various other semantic functions as well, as Marchand points out (Cat 2, p. 215), viz. in *foreigner*, *potter*, *Londoner*, *fiver*, *niner*, *backhander*, *two-seater*, *double decker*, *six-pounder*, *souther*. Though adjectives are normally transposed into adverbs by the addition of *-ly*, there are a number of exceptions to this highly productive grammatical pattern. It is therefore not surprising that much more specific lexical morphemes should be subject to considerable restrictions in the process of suffixation, and that, for example, "The suffixes *-dom*, *-hood*, *-ly*, *-ship*, *-some*... do not have the derivative range the corresponding German suffixes have" (Cat 2, p. 227).

4.3.3. As we have just seen, extremely productive derivative morphemes like *-er* can have many other semantic functions, besides their normal function. Several suffixes with the same function and similar semantic content also occur in complementary distribution as in the nominalizations *arriv/al*, *guid/ance*, *bewilder/ment*, (but no **arrivance*, **guidement*, **bewilderal*) and the verbalizations *legal/ize*, *beaut/ify*, *clear/*∅. The choice of the suffix is morphologically conditioned, i.e. determined by the specific lexical morpheme. But all these exceptions and restrictions do not mean that a highly productive central core does not exist in the system. Thus the derivation of agent-nouns by means of the suffix *-er* is in most cases a grammatical process. The verbalizing *-ize* is, according to Marchand, 'a categorial marker' (Cat 2, p. 214), and the pattern *legal*, *legal/ize*, *legal/ize/ation* is due to an almost unrestricted transpositional process, which does not add semantic features.

4.4.1.1. Let us now consider what kind of elements have to be supplied when analysing a reduced syntagma or when transforming a sentence into a smaller syntagma. This necessarily implies a distinction between an analytic and a synthetic approach to word-formation.[38] If we start from a reduced syntagma, trying to find out what is present besides the simple surface structure, a number of syntactic and grammatical elements (tense morphemes, etc.) must be added, and a number of specific semantic features must be deleted, to arrive at the underlying sentence. But if we start at the other end,

[38] The necessity to distinguish clearly and explicitly between the analytic and synthetic approach was pointed out to me by D. Kastovsky.

using an actual sentence or a propositional concept (Brekle's 'Satzbegriffe'), certain syntactic elements will be deleted and specific semantic features added which would distinguish a word-formative syntagma from a purely grammatical transformation. The two types of procedure are roughly represented by H. Marchand, who uses the analytical approach, and H. E. Brekle, whose approach is synthetic. Yet Brekle's starting point is not an actual sentence, but a tenseless propositional concept: "Wir betrachten die Nominalkomposition als einen sprachlichen Bereich, der... sich *vor* der Entwicklung aktualer Satzstrukturen aus dem generativen Prozess ausgliedern lässt... da z.B. weder im Deutschen noch im Englischen Tempus- oder Modalkategorien eine Rolle spielen".[39] Both analysis and synthesis are useful and necessary in the field of word-formation. They must, however, be complemented by a consideration of the collocations of lexical items, as can be clearly seen in the case of derived adjectives and verb-particle combinations (e.g. *hold up/ a bank, traffic, your hand*). The question whether certain adjectives are transpositional or semantic can only be solved if we also consider the head of the construction (cf. also 4.4.3.1., 4.4.4.1., 4.4.4.2.).

4.4.1.2. Basically, we can find two types of additional elements in word-formation, depending on the approach used. In analysis – besides 'actualisateurs' and tense morphemes – tagmemic elements may have to be added, and others which can be called 'relators'. Using the synthetic method, certain more or less general semantic features will have to be supplied, in transforming a sentence (or propositional concept) into a reduced syntagma. This distinguishes word-formative transformations (e.g. *eating-apple*, involving the feature Purpose) from grammatical transformations (*the eating of the apple* from 'someone eats apples'). Analytically, additional elements may have the form of Adverbial tagmemes like Place, Time, Instrument, Manner, and Degree; Object tagmemes like Effected and what I shall tentatively call 'Annihilated' Object; and Predicate tagmemes like the BE-relation, the HAVE-relation, and combinations involving a Causative component (as in 'make').[40] 'Relators' like 'with regard to', 'at' (locative and temporal), 'of' and the genitive relation also belong here. Specific lexical realisations of such general relators in certain 'patterns', like *against, every, from* (*northerly wind*, cf. 4.4.4.1.), *living in* (*Londoner, Roman, countryman*) may have an intermediate status, but are still accounted for by the analytical approach.

[39] Brekle (1970), 58. This idea was originally put forward in his lectures by E. Coseriu, who pointed out that *Abfahrt* does not correspond to *er fährt ab*, but is rather any 'Abfahren' (unspecified with regard to either tense or mood) by any person.

[40] For BE, HAVE, and Cause cf. Edward H. Bendix, *Componential Analysis of General Vocabulary: The Semantic Structure of a Set of Verbs in English, Hindi, and Japanese* (The Hague, 1966).

Comparison, which can be represented by the specific lexeme *resemble*, goes back to an embedding transformation, and must therefore also be regarded as an analytical category, and not as an additional semantic feature. In synthesis semantic features must be added to account for the full meaning of word-formative syntagmas. Evaluation, Habitual, Inherent, Purpose, Result, Repeated,[41] Animate and Inanimate are some of these general semantic features. Some of them are connected with certain tagmemes like Purpose with Instrument, Result with Effected Object, Inherent (property) with BE and HAVE.

4.4.2.1. Using an analytical approach, various tagmemes and relators may be found to be missing in word-formative syntagmas.

4.4.2.2. If we first consider adverbial tagmemes we can state that the category Place, like the related category Time, is different from the other traditional adverbial complement Instrument. While in many languages the lexemes referring to time relations have historically developed out of those denoting Place and both are relatively accidental with regard to the whole sentence and to information, Instrument, as a much more essential category is tied up semantically with the agent, and thus syntactically with the subject. The hypothesis that Instrument is of greater importance is also supported by another phenomenon which Marchand has pointed out with regard to the syntagma *washing machine*, viz. that there is a "base semantic sameness of the concepts 'material agent' and 'instrument'" (Cat 2, p. 55).[42] Many inflected languages have developed a special case which overtly marks the category Instrumental, though this case may have other functions as well.[43]

4.4.2.3. Place is contained in combinations which denote the natural habitat, like *polar bear*, *cave man*, *water rat*, *fieldmouse*, *Londoner*, *European*, or place where someone lives (cf. 4.4.3.3.) or works, as in *bank clerk*, *garage mechanic*, *hospital orderly*. Another Place-relation is present in *landing field*, *bus-stop*,

[41] The feature could also be called Repeatedly or Repetition. The choice of either is completely arbitrary, since the names are category labels belonging to the metalanguage. However, I have here chosen Repeated as it is shorter and also provides a parallel to Animate, Human, Abstract, Concrete. As an element of the surface structure, the feature automatically receives the form of the adverb 'repeatedly' when used with a verb.

[42] Cf. John Lyons, *Introduction to Theoretical Linguistics* (Cambridge Univ. Press, 1968), 343. D. Kastovsky, however, suggested to me that the feature Purpose might be used as a criterion to differentiate Instrument and agent. Whenever it is present, we have an Instrument – on the other hand, the subject as an agent excludes Purpose.

[43] Cf. Charles J. Fillmore, 'The Case for Case', in Bach/Harms, *Universals* (1968), 1–88.

freezing point (which also have the feature Habitual), and still another one in *dine out, throw out, hoist up, walk up.*[44]

4.4.2.4. Time is found in syntagmas like *closing time, nocturnal birds, night train, Easter lily, June bug.* Formations resulting in verbs do not seem to exist.

4.4.2.5. As mentioned above, the category Instrument is connected with both agent and Purpose. Lakoff (1968)[45] who has already (1965) excluded Manner adverbs from deep structure, wants to do the same with Instrument, and argues that in a sentence like *Seymour sliced the salami with a knife* 'use' must appear in the deep structure but is later deleted, and the sentence has the same deep structure as *Seymour used a knife to slice the salami.* The question of whether adverbs belong in deep structure obviously depends on the particular concept of deep structure one adopts. Instrument is present in nouns like *baking powder, washing machine, sleeping pill, driving gloves,*[46] *nutcracker, toothpick, blotter, reminder, steam boat, water mill* and in verbs like zero-derived *bridge, bolt, brush, comb, filter, hammer, nail, shovel,* and *ladle out, smoke out, brick up, buttress up, button up, plough up, sponge up.*

4.4.2.6. In certain combinations the category Manner overlaps with Instrument, and cannot be clearly separated.[47] Is *brush up* (*the dust*) 'remove with a brush' or 'remove by brushing'? Parallel are *comb out* (*leaves from hair*) and *pump out* (*water*). In *blow out* (*a candle*) the analysis with Instrument

[44] As E. Coseriu has pointed out in private discussion, *cave, field* etc. (but not *water*!) themselves denote a place, as *time, night, June* etc. (in 4.4.2.4.) themselves denote time. This is of course true – but it does not affect the grammatical necessity to supply an obligatory Adverbial tagmeme of Place or Time in the reconstruction of an underlying sentence, when treating combinations like *cave man, field mouse, night train, June bug* analytically. From a purely semantic point of view *cave man* and *water rat* would be different. *Water mill, smoke out* would be similar to *water rat* in that they overtly contain neither an Adverbial tagmeme of Instrument, nor a semantic feature Instrument.

[45] George Lakoff, 'Instrumental Adverbs and the Concept of Deep Structure', *Foundations of Language* **4** (1968), 4–29. Cf. Coseriu (1970), 109.

[46] D. Bolinger wants to analyse *driving gloves* as "you drive with gloves *on*. The instrument is for protecting the hands *while* driving". We would then here have a sort of 'accompanying' *with*. Cf. Owen Thomas, *Transformational Grammar and the Teacher of English* (New York, 1965), 170, who distinguishes 'instrumental adverbials' (*with my little finger*) from 'concomitave adverbials' (*with his roommate*). This is also tied up with the linguistic status of instrumentality as discussed by Coseriu (1970),117f, who regards 'paraphrases' like *with a knife, using a knife* as being in a relation of 'equivalence', while from a functional point of view *with a knife* must be comparded to *with flour, with a friend, with joy.*

[47] According to E. Coseriu this difficulty arises from the ambiguity of the diagnostic question *how*? Generally speaking it can be answered by a manner, instrument or substance-denoting adverbial (*quickly, with a hammer, with flour*). The ambiguity of *with,* as mentioned before, further complicates the problem. In *he put out the candle with one blow* the phrase *with one blow* is a Manner adverbial.

is excluded, so *blow* can only denote Manner, viz. 'put out by blowing'. A number of suffixes derive adjectives and adverbs containing the category Manner, but they are all very restricted in their productivity. We find *tigerish, apelike, kinglike, clockwise, crosswise* (combinations with *-ways*, as e.g. *sideways* are not in this way analysable), *foxy, snaky*. The only productive suffix is *-ly* as in *hastily, rapidly, cowardly, gentlemanly* (cf. 4.4.2.).

4.4.2.7. Intensity, which involves the category Degree, and is not to be confused with emphasis,[48] can be expressed by grammatical morphemes (*-er, -est/ more, most*), particles and adverbials. But it is also found in various reduced syntagmas, viz. *stone-deaf, dead certain* (where *stone-, dead* are allomorphs or suppletives of intensifiers of adjectives like *very, exceedingly, absolutely*), *the king of kings, speed up, eat up, chop up* and German *Mordssäufer.*

4.4.2.8. In the category Effected Object, the feature Result is naturally always present. It is normally expressed by the lexemes 'make, produce', which are implicit in *sneezing powder, sleeping pill, tear gas, honey bee, silk worm, automobile plant, oil well, novelist, pamphleteer, prosaist, hatter, map out, plot out, bundle up, pile up*, and overt in *watchmaker*. Due to extralinguistic cultural developments *watchmaker* (as well as German *Uhrmacher*) can no longer be explained as 'someone who makes watches', but at best as 'someone who repairs watches'. The problem can be solved by distinguishing between combinations which are analysable and those which are also motivated. *Watchmaker* is definitely still analysable, but no longer motivated with respect to 'make'.

4.4.2.9. The reverse relationship, which can be tentatively labelled 'Annihilated Object', can be rendered by 'destroy', and is found in *bug spray, fly paper, fire engine, insect powder, mothball* – which all contain Instrument (see below) – and *wipe out* (*the population*), *blow up* (*a bridge*). Basically it is also an affected object, yet of a particular kind. Its theoretical status is certainly not on a par with that of the Effected Object. But the wide semantic range of 'destroy' and the parallel category of Effected Object seem to justify the usefulness of the term.

4.4.2.10. A BE-Relation, i.e. an underlying copula sentence, is present in *blackbird, oak-tree, teaching profession, girl friend*, and, with a subclass 'consist of', in *sugar loaf, snow ball, whooping cough, repair work.*[49] If a

[48] Cf. Lipka (1966), 82ff.

[49] D. Bolinger gives another possible analysis for *whooping cough* 'a cough like a whoop', and *sugar loaf* 'sugar in the form of a loaf'.

Causative component is added, we get 'make', as in *legalize, beautify, darken, clean*, but also 'produce', with an Effected Object (see 4.4.2.8.).

4.4.2.11. The HAVE-Relation, which underlies such lexemes as 'possess, contain', is naturally tied up with the BE-Relation,[50] in the sense that if 'someone has something', the thing 'is with' that person. In Russian 'I have' is often expressed by means of the construction 'at me is' – *u menja (est')*. A HAVE-Relation is contained in the zero-derived *bird-brain, paleface, popeye, whitethorn, whitecap*, but also in *armchair, picture book, lungfish* (and in the reverse order) *arrowhead.* All of them also include the feature Inherent (property). If we add the feature Causative, we get 'acquire' with animate referents, and the ornative 'provide with, cover with' if the recipient is not the agent, as in *bedew, bepowder*, the zero-derived *butter*, and in *feathered, bespectacled.*

4.4.2.12. Comparison, which is related to metaphor, is present in combinations of widely varying morphological shape where the elements are connected by items like *resemble, is as... as, is like* and various rectional constructions[51] containing *like*, which may be equivalent to manner adverbials. As already mentioned, Comparison involves embedding, and goes back to two underlying sentences. Adjectives in this category, both compound and derived, include *grass-green, pillarbox-red, childish, cowardly, burgundy, coral*; substantives include *bulldog, frogman, eggplant, stone-face, goldfish, cat's eye, flanellette* and zero-derived *egghead*; verbs include (*the soldiers*) *fan out, he wormed out* (*of a difficulty*), *blossom, branch, mushroom, ape, parrot, father, dovetail, snowball.*

4.4.3.1. What I have called 'relator' is perhaps best represented by the items *concerning, with regard to* which have to be supplied in the analysis of such adjectival compounds as *colourblind, waterproof, airtight, bloodthirsty, duty-free, musicmad, word-perfect.* Although a certain adversative shade may be present which accounts for a possible analysis with *against* in the case of the patterns with *-proof, -tight*, the semantic features are so weak that the main function of the missing element is to relate the adjective and the noun in a general way. This becomes especially clear if we consider the parallel case of certain transpositional adjectives in *-al, -ic, -ical*, where the same relator *concerning, with regard to* can be used. *Dialectal, functional, intellectual*; *atomic, dramatic, geographic, syntactic*; *logical, mathematical, theoretical* admit of such an analysis. The head of the construction in which the adjective

[50] Cf. Bendix (1966), 39, 55.
[51] Cf. Cat 2, 31.

is used attributively, however, also plays an important role, as we shall see presently. The derived adjective in *intellectual faculties*, *dramatic criticism* is different from that in *intellectual person*, *dramatic change*. In the formation of manner-adverbials such general relators naturally have a central place. With sentence-modifying adverbs *concerning*, *with regard to* can be found, but also *from the point of view of*, as in *aesthetically*, *artistically*, *economically*, *emotionally*, *functionally*, *intellectually*, *psychologically*, *syntactically*. Other adverbs may be seen as reduced from larger syntagmas containing the relator *in a – way*, *manner* with an adjective as attribute, e.g. *beautifully*, *gaily*, *heavily*, *humorously*, *quietly*, *rapidly*, *silently*. The semantic emptiness of relators is obvious in the case of *of* which is an equivalent of the relation in the alternative genitive construction (*doctor's office*) and in various transpositional adjectives (*presidential adviser*). As soon as there is no implicit verbal nexus combination (*he advises the president*), we have to supply a verb which must have specific semantic features.

4.4.3.2. As pointed out in 4.1.3., in many cases a verb has to be supplied. Thus *doctor's office* goes back to a sentence 'the doctor has an office' or 'the office belongs to the doctor', *driver's seat* to 'the driver uses the seat' or 'the seat belongs to the driver', and *Addison's disease* to 'Addison has described (discovered) the disease'. The choice of the particular verb is determined by various factors. As Marchand has demonstrated, using the example *water rat* (Cat 2, 2.2.16.3.5.), a number of systematically possible relations between the elements of a combination are excluded by "grammatical-semantic criteria". But even with verbal nexus substantives "The syntactic relations between certain verbs and certain substantives are by no means arbitrary. The only possible relation existing between *eat* and *apple* is that of Predicate-Object" (Cat 2, p. 55). Marchand goes on to say that in *shoemaker*, *chimney-sweep*, *pickpocket* certain relations are excluded, since "Shoes do not make, chimneys do not sweep, pockets do not pick, etc." (Cat 2, p. 55). In generative grammar this problem is seen as one of selectional restrictions.

4.4.3.3. Our knowledge of the possible relationship between *eat* and *apple*, *chimney* and *sweet* etc. is based on our extralinguistic knowledge about the objects and actions which are designated by the respective lexemes. The relationship is the same in any language which contains such lexemes. Although the possible grammatical function as subject, predicate, or object is entirely linguistic, the conceptual relation between the lexemes is not. Coseriu (1970) points out: "Im Falle von *Holzkiste* z.B. weiß man dank des deutschen Sprachsystems nur, daß es sich um eine Kiste handelt, die etwas

mit Holz zu tun hat; durch die allgemeine Kenntnis der Sachen tritt dann eine Einschränkung ein: gewisse Möglichkeiten ('aus Holz', 'für Holz', 'mit Holz') werden angenommen, gewisse andere hingegen werden ausgeschlossen (so ist es z.B. kaum möglich, daß *Holzkiste* eine Kiste bezeichnet, "die durch die Kraft des Holzes funktioniert"; vgl. dagegen *Windmühle*, Wassermühle)" (p. 116). The possible relationship between two lexemes can thus be negatively characterized, as in the case of *shoemaker*, *chimney-sweep*, *pickpocket*, but it can also be described in a positive way, as in 'aus Holz, für Holz, mit Holz', by giving a list of possible relators. The interpretation of compounds, however, does not only depend on our knowledge of the denotata, but, according to Coseriu (1970), is also "durch die Sprachnorm (traditionelle Fixierung des Sprachsystems) festgelegt" (p. 113), which accounts for the fact that *Hauptmann*, *Hauptstadt* are interpreted "nicht etwa als 'homme-tête', 'ville-tête' und auch nicht als 'homme principal', 'ville principale'... sondern unmittelbar als 'capitaine' und 'capitale'" (p. 113). Yet these two factors alone – extralinguistic knowledge and semantic fixation by the 'norm' – are not sufficient to explain how word-formation functions as a productive process. As a third factor the formation of new words on the analogy of specific surface structure 'patterns' (like *-proof*) which either have a common deep structure or the same additional semantic features also plays an important role. All three together probably constitute the answer to Bolinger's question (cf. footnote 31) as to how much structure there actually is in a compound. In this connection it is necessary to note that Coseriu (1970) – in contrast to Bally, Marchand, and others – is of the opinion that: "Die Komposita gehen eben nicht auf aktuelle Sätze und auch nicht auf konkrete Satzstrukturen... zurück und können deshalb auch nicht durch den Bezug auf solche Sätze und Satzstrukturen erklärt werden" (p. 116). It is true that – apart from cases like 'The ice on the lake *broke up* early in the year. The *break-up* came as a surprise' – it is not normal for derivatives or compounds to be genetically derived from sentences. The assumption of underlying sentences which explain reduced syntagmas, however, is a useful procedure for revealing the internal structure of compounds and derivatives. Coseriu admits that compounds may be directly derived from constructions like 'Kiste aus Holz, Kiste für Holz, Kiste mit Holz', which may then go back to a sentence. Even if one does not argue for a deep interpenetration of the domains of syntax and semantics as Weinreich[52] did, claiming that "the semantic part of a dictionary entry is a sentence – more specifically, a deep-structure sentence" (p. 446), the postulation of an underlying sentence for the analysis of compounds and derivatives seems a perfectly legitimate

[52] Uriel Weinreich, 'Explorations in Semantic Theory', *Current Trends in Linguistics* 3 (The Hague, 1966), 395–477, esp. 468.

theoretical device. It provides a basis for establishing "types of reference",[53] which are essential in the description of such compounds as *eating-apple*, *apple-eating*, *safety-belt*, *corn-belt*. Moreover, it enables word-formation to go beyond a mere listing of syntagmas according to the fixation of their meanings by extralinguistic conditions and the 'norm' of a certain language.

4.4.4.1. What Coseriu called "lexikalische Solidaritäten"[54] also plays an important part in the analysis of syntagmas, in particular with regard to the head of a construction containing a transpositional adjective. Thus *property* in *governmental property* implies *belong*, leading to 'the property belongs to the government'; *official* in *governmental official* implies *work*, leading to 'the official works for the government'; and *decision* in *governmental decision* already contains *decide*, leading to 'the government has decided'. Similarly *solar heat* (*radiation*) goes back to 'the heat (radiation) *emanates* from the sun', or 'the sun *emanates* heat' and a *northerly wind* to 'the wind *blows* from the north'. In both *emanate* and *blow* a vectorial component is certainly present. That it is *from* and not *to the north* is, however, a semantic feature which cannot be deduced from the grammatical structure or lexical 'solidarities'. The same applies to the transpositional *polar* in *polar bear*, which goes back to 'the bear lives *near* the pole'. Though the verb *live* is contained in the feature Animate of *bear*, the additional feature Proximate, *near*, has to be learned separately.[55] This is not to be confused with the distinction between the transpositional adjective in *tropical heat* 'the heat is in the tropics', and the semantic adjective in *tropical heat* 'the heat is like the heat in the tropics, it is as hot as in the tropics'. *Every* is another semantic feature which can be expressed by a specific lexeme (but is not additional in the way Purpose is, as it is only the specific semantic realisation of a general relator) like the *from* in *northerly* and the *near* in *polar*, and is contained in transpositional adjectives like *daily*, *weekly* etc. As shown above, the head determines the verb, but the additional feature *every* is neither contained in *day*, nor in the transposing suffix *-ly*. A *daily newspaper* 'appears *every* day', we 'get' or 'eat' our *daily bread* '*every* day', *a daily good deed* is 'done *every* day', and a *daily reading* is 'read *every* day'. An archilexeme 'occur,

[53] Cf. Cat. 2, 32.

[54] E. Coseriu, 'Lexikalische Solidaritäten', *Poetica* **1** (1967), 293–303.

[55] The animal can of course not be imagined to live on a particular spot, but compare *cave man* or *cave dweller* which do not contain the possible feature Proximate. Bolinger would think of *polar bear* as 'bear that lives in the polar regions', with *near* figuring as a component of *polar regions*. In *northerly wind* he prefers to assume the general relator 'with regard to', "the only interest of speakers in wind direction being where the wind is from since that determines how dry or warm it will be". Coseriu is also in favour of a centripetal attitude of the speaker, and believes the vectorial component is located in *wind*.

take place, exist' can be assumed for all the various specific verbs, but *every* is an additional semantic feature.

4.4.4.2. Implicit verbs are not always deducible with absolute certainty. *Tea merchant* may be analysed as going back to either 'he trades in tea' or 'he buys and sells tea'. *Drawing lesson* may be derived from 'someone teaches someone drawing during that time', 'someone learns drawing during that time', or perhaps from the complex sentence 'someone teaches and someone learns drawing during that time'. A *potter*, *pamphleteer*, *novelist*, or *prosaist* 'produce' what is denoted by the noun from which the agent noun is derived, while a *musician*, a *psychiatrist*, and a *pianist* 'produce, practice or play' the respective thing. The verb *live* (somewhere) is implied in a variety of derivations like *Londoner*, *Roman*, *European*, *countryman*, *fieldmouse*. In constructions of the type *good student* (*mother*, *burglar*) the adjective *good* is a transposed adverbial modifying an implicit verb (*he studies well*).[56]

4.4.5.1. Having investigated what kind of elements must be added if we start from a reduced syntagma, we shall now turn to the synthetic approach to word-formation. If we compare an underlying sentence with its corresponding compound or derivative, certain rather general semantic features may be present in the reduced syntagma which are not contained in the sentence. Such additional features can be found in reduced syntagmas of the most diverse morphological shape.

4.4.5.2. Evaluation, in the form of judgement or appreciation, can be contained in a number of derivations, although the underlying basis may be entirely free from negative or positive connotations. This is frequent with derived adjectives, but other possibilities like substantives containing *-ie*, *-y* or a zero-morpheme also fall under this heading. Examples of negative evaluation are *childish* (*man*), *criminal* (*action*), *cowardly*, *wooden* (*style*), *darkie*, *fatty*, *softy*, *cheat* (vs. *cheater*). As mentioned before, the semantic features in the head of the attributive construction can have a considerable influence. Positive features are present in *manly*, *womanly*, *princely*, *daddy*, *auntie*, *birdie*. A special nominal construction which is found in English, French and German, *that brute of a man*, *ce coquin de valet*, *ein Engel von einer*

[56] Cf. H. E. Brekle, 'On the Syntax of Adjectives Determining Agent Nouns in Present-Day English', *Festschrift H. Marchand* (1968), 20–31. We do not mean to give a complete analysis. Bolinger points out that the essence of *lesson* is more than its temporal extent, and *good student* more than a transposed *he studies well*. Coseriu mentions the ambiguity of the simplex *lesson*, parallel to *lecture*, which has a different meaning for a professor and a student.

Frau[57] is definitely emotionally tinged, containing positive or negative evaluation.

4.4.5.3. The feature Habitual (action) is contained in a number of nouns and nominal constructions, where the relevant verb may be overtly expressed, implicitly present, or not directly deducible from the elements of the combination. A subclass of agent-nouns is formed by the further specifying feature Professional (=Habitual+'for a living'), as in *shoemaker*, *potter*, *baker*, *teacher*, *novelist*, *musician*, zero-derived *pickpocket* (and with the reverse order of elements) *chimney sweep*. If this feature is lacking, the noun denotes the habitual performer of an action, in the morphological shape of a compound, a derivative (including zero-derivatives) or a syntactic group, as in *sleepwalker*, *mocking bird*, *crybaby*, *rattle snake*; *gadabout*, *cheat*; *heavy smoker*, *early riser*. As Marchand has pointed out (APAdj, p. 146) *newcomer*, *latestarter* and *a sudden return* are non-habitual, and *a sudden laugher* is at least awkward, if not non-existent.

4.4.5.4. The feature Inherent (property) can be found in a variety of combinations like *colourblind*, *blackbird*, *madman*, *paleface*, *hunchback*, *pop-eye*. An additional Causative feature[58] may be present, as in *pukeweed*, *sneezing powder*, *sobstory*. Brekle (1970), in his analysis of nominal compounds, has established a relational category INALPOSS, from 'inalienable possession', following Fillmore (1968).[59] There is, obviously, an inherent connection with possession, and consequently a HAVE-relation on the one hand, as well as a connection with a BE-relation on the other hand. The feature Purpose can also be regarded as present in a subclass of lexical items all containing Inherent. As is well known, Spanish makes an overt morphological distinction between inherent and accidental qualities or properties, using *ser* and *estar* respectively. The common denominator between Inherent and Habitual is Time, which is limited in Habitual (often, repeatedly), and unlimited in Inherent (always).

4.4.5.5. The feature Purpose, which can be rendered by the lexeme 'designed for', is found in the syntagmas *writing-table*, *washing machine*, *dining room*, *swimming pool*, *bake house*, *whetstone*, *drawbridge*, *birdcage*, *gunpowder*.

[57] Cf. Cat 2, 43.
[58] Cf. Lyons (1968), 352f, 383f; Bendix (1966), 63; Ch. J. Fillmore, 'Lexical Entries for Verbs', *Foundations of Language* **4** (1968), 373–93, esp. 377.
[59] Fillmore (1968), 'The Case for Case', esp. 61–81: 'The Grammar of Inalienable Possession'.

4.4.5.6. The semantic feature Result is present in *fleabite, sunburn, hairdo, yield, beet sugar, heap up, smooth out.*

4.4.5.7. Other additional semantic features which are not present in an underlying sentence are Repeated, as in *daily, weekly* (cf. German *hüsteln*) and Animate/Inanimate.

4.5.1. On the preceding pages I have pointed out that very complex sentences can be transformed into nominals in the process of nominalization. Morphologically, however, only the head of a construction can become a noun (*his drumming on the table...*). Such transformations, which do not involve any additional semantic features, play an important part in anaphoric use of language in a larger context (*John continually drummed on the table / His continual drumming..., The ice on the lake broke up early in the year / The break-up came as a surprise*). But the usual way of creating new lexical items requires what one might call word-formative transformations with a variety of complicated factors, as Marchand's work clearly shows (4.1.). In contrast to full sentences, reduced syntagmas of all types are characterized by the possible lack of 'actualisateurs', certain tagmemic elements, specific lexical morphemes, and the addition of semantic features (4.2.). Transposition and derivation, either by means of overt suffixes, or by a zero-morpheme, usually imply a change of word class, and are subject to restrictions, as is the process of adding purely grammatical morphemes (4.3.). The additional elements in a reduced syntagma may be either deleted tagmemes and 'relators' (along with certain specific lexical realisations) in the case of an analytic approach, or certain general semantic features, if the synthetic approach is used (4.4.).

4.5.2. Before applying our conclusions in 4.1.–4.4. directly to the problem of treating word classes as mere attributes of specific lexical items, we must return to a subject we touched upon in 3.2.2.2.: discontinuous lexical items. Halliday wants to recognize *let in for* as a lexical item, "without demanding that it should carry any grammatical status", thus avoiding the 'complexity' of treating it as a "single discontinuous item". I do not quite see how this can be done. In actual use, the item definitely patterns like a verb, and thus has a grammatical status. Though we have three separable elements, there is no basic difference from separable phrasal verbs – or verb-particle combinations, as they are also called – made up of two constituents, of the type *eat it up, throw him out.*[60] With regard to the possible distance between the

[60] Cf. my forthcoming Habilitationsschrift 'Studies in the Semantic Structure of Verb-Particle Constructions in Contemporary English'.

elements of a discontinuous lexical item, German goes even further than English. The elements of the verbal item are separated by many constituents in the sentence *Er brachte seiner Frau das hübsche Geschenk von einer längeren Reise ins Ausland, die sehr interessant war, mit*, but if we use the perfect tense, they are much closer (though still separated by the morpheme *ge-*) viz. *Er hat seiner Frau... mitgebracht*. The item is no longer discontinuous if an infinitive is involved, as in *Er will seiner Frau... mitbringen*. The morphological shape of the verbal constituent in the combination remains the same as in the simplex verb (*bringen, gebracht*, English *find*, they *found him out*). Notwithstanding the discontinuous nature of the item, the whole combination is treated like a verb. If a noun is derived from it by means of a zero-morpheme, it forms the plural like any simplex noun (*the blackouts in the big cities, ten pressups*). I see no harm in recognizing the combination as a single lexical item (like other reduced syntagmas, only discontinuous), with a particular grammatical status.

5.1.1. We can now return to the question of the grammatical status of word classes. In a special number of *Lingua*, dedicated to the investigation of word classes in a wide variety of languages, D. Crystal has published a penetrating study of word classes in English.[61] Denouncing the usual approach in which familiar grammatical terms, including word classes, "have been bandied about in a cavalier way" (p. 24), he states that "familiarity has bred too great a content" (p. 26). Word classes in English have been "badly defined and used uncritically" (p. 55). He points out that "the distinction between establishing and describing the word classes of English is still often confused and unnoticed" (p. 25), and stresses that "the important and interesting aspect of the problem... lies in the nature of the *criteria* which are used in defining the classes" (p. 27). Naturally, there is a ratio between the number of criteria and classes (p. 29), and "the more subclassification one allows, the more points of general similarity become less clear" (p. 30). Using a number of criteria (phonological, graphological, morphological, lexical, semantic or notional, syntactic), of which the syntactic ones are central, one is faced with the problem of ranking the criteria (p. 45). To this, "the only realistic solution seems to be statistical; that criterion is ranked first which applies to most classes, and which least applies to other classes" (p. 45). With regard to the 'noun', "the criterion of being subject would be clearly primary" (p. 46). Crystal illustrates this approach, using four criteria for the noun, viz. (1) subject-function, (2) inflection for number, (3) article, (4) morphological indication, with the examples *hardship, peroration / information*,

[61] David Crystal, 'Word Classes in English', *Lingua* **17** (1967), 24–56.

boy, girl / news / phonetics. All four criteria are positive in *hardship, peroration,* whereas in *phonetics* only criterion (1) is. Words which are positive to all criteria form a central class within the membership of a word class. Thus 'central adjectives' are those which satisfy the five criteria Crystal gives (p. 51).[62]

5.1.2. If we follow the approach just outlined, where membership of a certain word class is rather a matter of degrees, on a quantifying scale (cf. Crystal, p. 50), we have, of course, to cope with the question of overlapping classes. Ch. Hockett tried to solve this problem by establishing mixed classes like NA (noun and adjective), AV (adjective and verb), NAV (noun, adjective, and verb), besides the three traditional classes 'noun', 'adjective', 'verb', thus arriving at "seven major classes" (N, A, V, NA, NV, AV, and NAV) (p. 227) plus "an eighth class of *particles*" (p. 227).[63] Crystal assigns a number of words to "a series of overlapping 'bridge-classes'" (p. 53).

5.1.3. There is one point in the discussion of word classes which was often overlooked, especially by Bolinger, Whorf, and Hockett, viz. that a distinction must be drawn between simplex and derived words. Most derived words are clearly characterized as to their membership in a particular word class by the suffix (cf. 4.1.2. and 4.3.). As mentioned before, Marchand has called the verbalizing *-ize* 'a categorial marker'. Crystal described the same phenomenon by saying that "numerous words... have grammatical meaning 'built-in'... due to a morphologically-identifying suffix, e.g. '-ance', '-tion', '-less', '-able', '-ize', '-wise', and many more" (p. 34), and speaks of 'noun designators' (*-phile, -let, -ence, -dom, -ism*), 'adjective designators' (*-ish, -oid, -ward*), 'verb-designators' (*-ify, -ize, -ate*), and 'adverb-designators' (*-wards, -where, -ly*) (p. 42). With regard to zero-derived words he claims, however, incorrectly that as to the direction of the derivational relationships "The basis of the implied priorities here (statistical? semantic? logical? etymological?) was never made explicit" (p. 48). As early as 1964 Marchand had set up criteria for establishing the derivational relationship between zero-derived words.[64] It is symptomatic that when arguing in favour of attributing

[62] In my dissertation (see fn. 32) I have used the same approach to define the 'adjective' in English and German, in order to delimit the word-formation type 'noun + adjective' (6–15). In addition to the criteria given by Crystal, I have used the function of 'modification' and 'characterization', and the purely notional criterion of 'polarity'. I tried "Gruppen zu bilden, die entweder alle Charakteristika dieser Wortklasse, oder auch nur einige davon aufweisen" (10).

[63] Charles Hockett, *A Course in Modern Linguistics* (New York, 1958), 226ff.

[64] H. Marchand, 'A Set of Criteria for the Establishing of Derivational Relationship between Words Unmarked by Derivational Morphemes', *Indogerm. Forschungen* **69** (1964), 10–19. The criteria are: semantic dependence, restriction of usage, semantic range, semantic pattern, phonetic shape, morphological type, and stress.

word classes 'at will', scholars (especially Whorf and Hockett) usually start from zero-derived words and deny any derivational relationship. Kastovsky has refuted such arguments in detail[65]. From the point of view of word-formation, Bolinger's proposal – however attractive because of the resulting simplicity in describing a language – reveals serious shortcomings, as it cannot handle or explain the pattern-forming creative power of word-formation. Categories like word classes would also be treated as grammatical attributes of lexical items of the same kind as semantic features like Mass.[66]

5.2. The views of a wide range of linguists discussed in 2. and 3. all depend on the particular concept of deep structure one subscribes to, and in connection with this, on what they would consider to be the 'same item'. If the notion of sameness one adopts allows for a certain amount of variation, then verbation, stativation, nominalization, adjectivization, and transposition in general are comparatively accidental phenomena on the surface structure level. Then *he argued strongly* and *the strength of his argument* contain the same basic items, and so do certain equivalents in translations, or complex verbal structures as opposed to simple verbs. In this case, word classes are modulus categories and can be applied at will. If the requirements for sameness are greater, then word classes will gain in importance, and will not be regarded as mere additions in the surface structure. However, independently of the grammatical model one adopts, word classes are a syntactic as well as a morphological reality, and in word-formation the morphological shape of syntagmas has to be described, especially since the productivity of most types seems to depend on the patterns in the surface structure.

5.3. From the points discussed in 5.1. it seems clear that a category like word class cannot be treated independently of a specific grammatical model. Though we can perhaps make some statements about the category in isolation, the advantages and disadvantages of a certain technique can only be considered within the frame of a particular theory, whose form is mainly determined by its aims. Word-formation theory, which tries to explain how new lexical items originate in a certain language, definitely cannot do without word classes. As a methodological prerequisite for describing word-formative patterns they are indispensable. Not only do we need a starting-point for the

[65] Cf. Kastovsky (1968), esp. 31ff.

[66] Bolinger holds the opinion: "The line can't be neatly drawn, I think, between mass-noun and e.g. noun-verb in terms of the one's being semantic and the other some kind of categorial reality", adducing the different behaviour of mass nouns with regard to intensifiers, quantifiers and articles. In spite of the partial overlapping of the various aspects, I still think that there is an essential difference.

description of compounds and especially derivatives, which is best supplied by an analysis of their morphological structure, but all our experience points to the fact that new lexical items are created on the analogy of the morphological shape in the surface patterns. For a complete description such an analysis is not enough, as Marchand has extensively demonstrated,[67] but it is the necessary basis for any investigation into word-formation. That a number of general semantic features is found in syntagmas of widely varying morphological shape, as described in 4.4.4., does not contradict the above statement. It only demonstrates that the analytic approach has to be supplemented by a synthetic one. We can only start studying reduced syntagmas after we have established a number of word-formative types on the basis of their morphological shape. Marchand's 'Categories' is ample proof of this point.

5.4. It seems essential that we establish a distinction between the possibility of treating word classes as attributes which are attached 'at will' (within a certain grammatical model) and the necessity to acknowledge the reality of word classes as linguistic facts (in word-formation). The concrete existence of actual word-formation, couched in certain categories and types according to word classes, in my opinion appears to be ample proof of the necessity of word classes. Categorial markers like *-ance*, *-ness*, *-ize*, *-ify*, *-able*, *-ish*, *-ly*, *-wards* leave no room for the arbitrary attribution of word class categories. Coseriu's example (cf. 3.1.2.) *es verdad*, *es falso* further proves that word classes are a linguistic reality which depends on the 'norm' of a language.

5.5. A final point must be mentioned, which, in my opinion, has been a little neglected by Bolinger: the question of hierarchies and levels. It seems to me that even in a grammatical model as that conceived by Bolinger, the category word class, when it is attributed to a lexical item, is not on the same level as Animate, Count or Divisibility. Only when lexical items are couched in a particular category of word class, then other features, semantic or grammatical, like Animate, Count, Tense, Number can be attributed to them. Crystal (p. 41), in discriminating the criteria which may be employed to define word classes, makes use of the concept of 'level' also. Below the level of the complete syntagma, the full sentence, we will have to establish a hierarchy of elements, ranging from tagmemes, word classes and morphemes to more or less general semantic features. Abstract/Concrete, Animate, Human are quite general features (cf. the reflex in determiners and pronouns) while Liquid/Solid, Purpose, are less general, though in many syntagmas they are

[67] H. Marchand (1967).

certainly not less influential. The importance of the features is not restricted to the question of subcategorization, as with *professor*, *professorship*, *white*, *whitish* etc. Also the delicacy of the distinctions is not simply a matter of 'diminishing returns',[68] as relatively low-level features which occur less frequently than more general ones may have a decisive influence in certain constructions. To establish more than a rough scale of features (Abstract, Animate, Human etc.) much detailed work in semantic analysis remains to be done.

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[68] Cf. Lyons (1968), 152f.

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