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KLAUS SCHUBERT

An unplanned development in planned languages

A study of word grammar

1. From project to language

One of the most intriguing and at the same time instructive phenomena which attentive linguists have been able to observe since the last third of the 19th century is how human-made language systems, launched into communicative use, develop from mere projects towards real languages. Since Volapük (first publication, after some preliminary announcements in 1879: Schleyer 1880; cf. Golden 1987b) in the 1880's became the first language project to succeed in building up a communication community, planned languages have developed in this way to various extents. Indeed, one may discuss whether any of them to date has attained this goal and has become a human language. Detlev Blanke (1985: 105ff. and *Tabelle 2*; see also in this volume) classifies planned languages with regard to the communicative functions for which they are actually used and arrives at three major groups: projects, semi-languages and languages. According to Blanke, the overwhelming majority of the known systems, several hundreds, have remained projects. A handful have proceeded half-way and become semi-languages, and only one has turned into a full-fledged language: Esperanto. Other scholars use different distinctions. It is often claimed that a planned language system, when transformed in practical use into a real language, cannot avoid undergoing language change in the same way as ethnic languages do, and that such a development inevitably entails a substantial loss of the regularity and simplicity of the original language design (Ferdinand de Saussure 1916/1969: 111; Vendryes 1921: 193). Georg and Barbara Meier (1979: 4) do not think that the development needs to follow exactly the lines of ethnic languages: "Künstliche Sprachen können erfunden werden und münden dann als Welthilfssprachen – falls sie praktisch

verwendet werden – **mit gewissen Eigengesetzlichkeiten** [...] in den Kreis der natürlichen Sprachen ein" (emphasis changed).

The present paper takes such a property of Esperanto as its starting point – one which was never explicitly planned, but came to exist in the language during its first decades of use. This property is the combinatorial behavior of morphemes in word formation, which allows for a division of all morphemes into three distinct classes. This feature is abstract enough for having been neither intended by the author, nor noted by the users of the language. Yet the combinatorial properties of morphemes are so crucial to the whole grammatical system of a language, that this unnoted and unplanned development must have influenced the entire process of becoming a human language.

From this starting point, the present paper proceeds according to the following hypotheses:

- (1) The morpheme classes of Esperanto have arisen due to influence from ethnic languages.
- (2) The discovery of the morpheme classes was facilitated by Zamenhof's "invisible" lexicalist approach to grammar.
- (3) The Esperanto morpheme classes were detected in the centre of European Structuralism, and their further study has brought about a separate branch of Structuralism.
- (4) The work within that interlinguist branch of Structuralism reveals properties of human language that are by no means restricted to planned languages, but are essential to ethnic languages as well.
- (5) The strict regularity of Esperanto makes the language a ready laboratory tool for linguistic investigation with a bearing on both planned and ethnic languages.

However, this is not a study of Esperanto only. On the one hand, I try to substantiate my claim that Esperanto morpheme classes have not only emerged due to influence from ethnic languages, but are, as it were, a more perspicuous copy of what is a less visible characteristic of those languages themselves. On the other hand, I take up other planned languages, because word formation rules of Esperanto, in particular its morpheme classes, have been vigorously criticized by supporters of other systems. Esperanto word formation is one of the main reasons that Ido was launched. Ido was originally intended as a set of reforms of Esperanto, but turned into a planned language of its own (a semi-language, in Blanke's classification). If it is true that the

phenomena dealt with here have to do with a planned language moving by degrees into practical use in diverse areas of communication, then Esperanto – the most successful planned language, as Alicja Sakaguchi (1983: 343) puts it – should be in the focus of interest.

2. Zamenhof's lexicalist grammar

However easy it may be to learn a planned language, it is of no use if there is nobody you can speak the language with. In other words, a new project is unattractive as long as it has not got a language community, and as long as it is unattractive, it will not get a community. A major reason for the failure of most language projects is that their authors did not manage (or care) to build up such a community. There is at least one brilliant way out of this vicious circle: designing the language in such a way that it can be understood by people who have not learned it.

Planned languages can be typologically ranked on a scale between the two poles **a priori** and **a posteriori** (Moch 1897; Couturat–Leau 1907a; Blanke 1985: 100; Sakaguchi 1983). Roughly speaking, this classical distinction comes down to either inventing words and grammatical functions (**a priori**) or borrowing them from existing languages (**a posteriori**). The learnable systems are all found on the **a-posteriori** side of the scale. Within the **a-posteriori** half, however, the language designer still has got to navigate between the two poles of **naturalness** and **regularity**. In a nutshell, a naturalist approach implies borrowing a large number of obvious language elements, i.e., first of all, words, whereas a regularist language designer borrows a smaller number of words and gives more importance to non-obvious language elements, borrowed or invented, such as grammatical rules and regularities. Naturalist languages are tailored to resemble ethnic languages. Most of those created for worldwide use are what Blanke (1985: 174) with a well-coined term calls *romanische Imitationssprachen*. Such Romance imitation languages are for example Interlingua (by Alexander Gode [1951], cf. Gode et al. 1951/1971; Gode–Blair 1951/1971) and Occidental (by Edgar von Wahl, first published in 1922, cf. Jacob 1947: 60-71; Gilbert 1962/1977: 22-23; Kuznecov 1984: 149ff.; Blanke 1985: 161; Duličenko 1987; the language was later called Interlingue, its author is often referred to as de Wahl). Gode designed his Interlingua as an

incarnation of Whorf's "Standard Average European" (Whorf 1956; cf. Blanke 1985: 175), and von Wahl explicitly says (in Occidental) what the resemblance to Romance languages is good for: "... it deve esser comprensibil a omni civilisat europæo quasi sin instruction anteriori" ('it should be comprehensible to every educated European, as it were, without previous instruction'; Wahl–Jespersen 1935: 37). Dénes Szilágyi (1931/1976: 177) allows somewhat more preparatory study than von Wahl. He says (in Latino sine flexione): "[Intelligibilitate immediato] de uno idioma artificiale significa, quod uno Europæo de educatione medio pote intellige textus in dicto lingua, post lectura de uno breve schedio grammaticale" ('Immediate intelligibility of an artificial language means that a European of average education can understand a text in the language in question, after having read a short grammatical account'). The goal of immediate intelligibility is implicit when Frits Goudkuil (1981: 3), so to speak, begs his readers' pardon for writing a textbook to make Interlingua fully understandable.

Esperanto, on the other hand, is a regularist language. The imitation aspect plays a much less obvious role in the design of Esperanto. (I shall argue below that it nevertheless does play a role.) Strictly speaking, Esperanto does not even borrow words. It borrows morphemes that must be fitted into the Esperanto system. Because of this characteristic feature, regularist languages like Esperanto are also called **autonomous** languages. What is the difference between these two types of languages in practical communication? The crucial word in von Wahl's statement is *comprensibil*. Since **understanding** is so central to the reasoning of von Wahl and other naturalist language designers, one can say that naturalist languages aim at first hand at **passive** users who can **understand** a text thanks to previous knowledge of some of the reference languages (cf. Lo Jacomo in this volume). Valter Tauli (1968: 168) sees one of the main deficiencies of naturalist languages in their irregular word formation. According to Heinz Wendt (1961: 356) these naturalist designs bring about mere writing systems, not meant to be spoken. If users of such a system turn to **active** use, they will encounter difficulties in finding out which of the competing rules and patterns to use in a particular case (cf. Tauli 1968: 169). To give a concrete example: Interlingua has *mense* 'month' and *mensual* 'monthly' or *estate* 'summer' and *estive* 'summer [attributive], aestival'. Four words to be memorized. Esperanto does not borrow four words, but two morphemes, *monat* and *somer*, and forms *monato* 'month', *monata* 'monthly', *somero* 'summer' and *somera* 'summer [attr.], aestival'. Autonomous languages thus facilitate

active use. If you have learned the Esperanto morpheme *somer*, you can confidently form *somero*, *somera* etc., and of course there is a verb, *someri*, which can be used if it makes sense (cf. Lo Jacomo in this volume). Again it is Szilágyi (1931/1976: 177) who most clearly words the trade-off: "[Intelligibilitate immediato], que es uno consequentia de internationalitate (naturalismo), es opposito ad apprehensibilitate facile, que es uno functione de regularitate" ('Immediate intelligibility, which is a consequence of internationality [naturalism], is the opposite of easy learnability, which is a function of regularness').

The price for higher regularity is somewhat more effort in understanding. An autonomous language cannot be immediately intelligible in the way intended by von Wahl. But in view of the undeniable advantages immediate intelligibility implies for the spread of the language, the author of "the most successful" planned language must have found a solution.

Indeed Zamenhof already in his very first booklet devises a way to communicate in Esperanto with a person who has never heard of the language. Write a letter in Esperanto and add a "key" for the addressee's language. A "key" is what we in today's terms would call a morpheme dictionary for Esperanto and another language. How can one decipher a letter with a dictionary without knowing the grammar? Zamenhof (1887/1939: 248) says that in order to make his language look familiar to Europeans (naturalist argument!), his textbook explains the grammar in a familiar way, that is, he speaks of words with inflections, with case, number, and tense endings, etc. But things are explained in that way only for the ease of the reader. In reality, says Zamenhof, the structure of Esperanto is totally different: The whole language consists of nothing but unchangeable words and has no grammar at all. (Other projects "without any grammar" were launched since, e.g., Glosa by Wendy Ashby and Ron Clark, cf. Golden 1987a: 3.) If several of these words combine to express one concept, they are written together, but with a special mark in between. So, when the textbook explains *frat'in'o* 'sister' as a noun with a nominative singular noun ending (*o*), this in reality is a three-word unit, each element of which can be looked up separately in a dictionary: *frat* 'brother' + *in* 'female counterpart' + *o* 'existing entity'. (Today we would call these "words" morphemes and speak about a very highly **agglutinative** language, cf. Wells 1978: 33. In Esperanto practice the morpheme boundary marks disappeared as soon as people had got used to recognizing morphemes without this help. They were revived a

century later for making use of Esperanto's unchangeable morphemes in machine translation, cf. Witkam 1983: IV-110; Papegaaij 1986: 86. I use morpheme marks [''] in this paper where appropriate.)

In my opinion, Zamenhof's claim that anyone who receives a letter in Esperanto with an appropriate morpheme dictionary will be able to decipher the text is exaggerated. Naturalist languages rely on the assumption that words, word formation patterns, etc., can be understood by virtue of ethnic models. This assumption is obviously true only inasmuch as the person in question is acquainted with the reference languages (normally Romance languages, including Latin). Zamenhof's morpheme-by-morpheme translation relies on a similar assumption, but on a more abstract level. It presupposes that morphological forms and syntactic functions can be understood through ethnic models. This is a general feature in the work of both Zamenhof and his contemporaries: In the 19th century, traditional grammar of Greek-Latin origin was still believed by many to have almost universal validity. This is the more true for laymen in language science as Zamenhof was. If it had not been so common to tacitly presume cross-linguistic validity for formal grammatical phenomena, Zamenhof would never have seriously propagated such a deciphering method. But of course it could work with the educated Europeans of those days who had a common grammatical background. Indeed one may say that without this self-evident common background, Zamenhof would hardly have been able to maintain that his famous sixteen rules are the complete grammar of Esperanto. What can one do with the information that the "past participle active ends in *int*" (Zamenhof 1889/1963: 59), if there is no indication whatsoever of the function of such a participle in Esperanto? But these are ruminations of 1987. In 1887, you had been told by your Latin teacher what a participle is.

3. Word formation between naturalness and regularity

Tacitly relying on generally known rules of (European) grammar, Zamenhof had not told the Esperantists much about how to use his system. His textbook described only the forms, not the usage. His works gave samples, but hardly any explicit rules, since Zamenhof had from the very beginning been fully aware of two interdependent facts: that the system he had suggested could only develop by being used and that as soon as the usage decided, he could no longer claim any

special authority in order to control the development of the language. The latter insight is the lesson Zamenhof had learned from the beginning of the failure of Volapük and from the authoritative way in which Schleyer wished to control his language (cf. Schmidt 1986: 16; Jordan 1987: 105-106; Kuznecov 1987: 93).

One of the functions Zamenhof did not say much about was word formation. He just used it. The development followed Zamenhof's example, and the early Esperantists started forming compound and derived words in much the same way as most European languages do: The rightmost morpheme is the semantic nucleus and the morphemes to its left modify it. Compounds that did not conform to this rule were not accepted by the language community, even if they originated from Zamenhof himself. For instance Zamenhof's *mil'jar'o* 'millennium' ('thousand' + 'year' + noun, cf. Russian *tysjače'letie*) was rejected, because a millennium is not a 'year' of some kind. The word is today *jar'mil'o*, as a millennium is a 'thousand' of something (cf. German *Jahr'tausend*).

This basic word formation method has remained uncontroversial ever since. The more specific particulars of Esperanto word formation, however, were a major target of criticism for Louis Couturat and Louis de Beaufront, among others, who wanted to reform Esperanto and initiated Ido, a new planned language (cf. Jacob 1948: 3-6 on their criticism and Blanke 1985: 187 on the question of Ido's creator). They found Esperanto's derivation system too illogical and unsystematic (Couturat 1910; cf. also Dyer 1923: 91-101). They made it on logical grounds more precise, with the result, in Manders's judgement (1947: 346), that derived Ido words are very perspicuous to the hearer, but overload the speaker with obligatory subtle choices about whether or not to use specific suffixes. Accordingly, it is evident that Ido in this respect tends to facilitate **passive** rather than active use in the same way as naturalist languages. This tendency harmonizes well with the naturalist-like preference in Ido for Romance vocabulary. Many years later, Arturo Alfandari designs his Neo, explicitly with the pretension to devise a better language than Esperanto. But although Alfandari (1961: 12) criticizes Esperanto for its way of forming complex words, he does not give more precise rules for Neo, but relies quite overtly on ethnic models (Alfandari 1961: 19). Neo is in this regard an example of many similar attempts.

Let us return to Ido, the project with the most explicit word-grammatical motivation. Although Ido did not bring about the intended reform of Esperanto, it was the onset of a wave of many

elaborate studies of Esperanto word formation. What one could blame Couturat and de Beaufront for, is that they tried to prescribe how the Esperanto system should work rather than describing how it did work. One of the first scholars who, in the course of the word formation debate initiated by the Ido project, gave up prescribing and started describing, is René de Saussure. He did not say "Esperanto is illogical", but assumed the existence of a logical system in Esperanto and asked what it was. Or, as Sergej Kuznecov (1982: 88) puts it: "Kutjura idet ot logiki k jazyku, a Sossjur – ot jazyka k logike" ('Couturat goes from logic to language, but Saussure from language to logic').

One of the crucial points, felt to be illogical by Couturat, de Beaufront, and others, was the fact that Esperanto roots do not all behave in the same way in derivation. Compare, for instance, the roots *komb* 'comb' and *bros* 'brush': The instrument is *bros'o*, but *komb'il'o*, the activity is *komb'o*, but *bros'ad'o*. Due to Zamenhof's rule that every possible morpheme combination is allowed (and can be used if it makes sense), *bros'il'o* and *komb'ad'o* exist as well, but *bros'il'o* is 'an instrument for brushing' with the implicit message that it is not a brush, but rather something else used for the purpose, and *komb'ad'o* is 'continued combing'. If adjectives are formed, *bros'a* means 'related to a brush', whereas *komb'a* is 'related to combing'.

René de Saussure did not at first hand think about how to remedy this "illogical" feature of Esperanto, but investigated its nature. In Esperanto, content morphemes cannot be used as words without the word class-identifying morpheme *i* (verb, infinitive), *a* (adjective), *e* (adverb), or *o* (noun), respectively. (This is why I say that Esperanto does not borrow words, but morphemes: No content word taken over into Esperanto can stand alone as a word; it must take one of these morphemes.) Saussure found that the mere root without a word class morpheme already can be classed as either a verb, an adjective, an adverb, or a noun. In order to distinguish this property from word class, Saussure calls his newly established morpheme class *gramatika karaktero* 'grammatical character' of roots (René de Saussure 1910b: 4, 1910c: 8). It is easily found in a dictionary, thanks to Zamenhof's lexicalist approach to grammar, which brought about morpheme rather than word dictionaries. The "keys", produced for fitting into a letter, are so thin and tiny that they are usually overlooked by libraries (but they are for sale for a variety of languages). More accessible to scholars is Zamenhof's *Universala Vortaro* ('Universal dictionary') of 1893 which became a part of the *Fundamento de Esperanto*

(‘Foundations of Esperanto’, Zamenhof 1905/1963: 137-233). In *Universala Vortaro*, *bros* is translated as a noun and *komb* as a verb (translations are to French, English, German, Russian, and Polish in parallel).

The difference between morpheme class and word class is obvious: The morpheme class is an inherent semantic property of the morpheme, whereas a word class can be changed, thus forming a paradigm: Esperanto *somer* belongs to the morpheme class of noun, but *somer’a* is an adjective, *somer’e* an adverb, *somer’i* a verb and only *somer’o* is a noun. (Perhaps one should choose different terms for the morpheme classes, e.g. *events*, *qualities*, *circumstances*, and *items*; Papegaaij–Schubert 1988: 31.)

Kuznecov makes two important points with respect to Saussure’s discovery. Firstly, as soon as Esperanto had begun to fulfill communicative functions, had begun to be a social reality, an unforeseen property arose: morpheme classes. This implies that interlinguistics should investigate its subject in the same way as the linguistics of ethnic languages does. Secondly, René de Saussure is the first to do interlinguistics in this way, and as a result of his work, interlinguistics has become a normal branch of linguistics (Kuznecov 1982: 87).

4. A theory of word formation

It is impossible in this study to relate the entire story of Saussure’s discovery and its reception by other interlinguists. It may suffice to say that the idea of morpheme classes was not, and still is not, accepted by all scholars. Votes against come from Pierre Janton (1973: 61ff.) and István Szerdahelyi (1975: 130, 1976: 9-10 and other studies), who refer to other authors. Some discussion is provided by Isbrucker (1959), Grigor’ev (1974: 10-12) and others. More recent contributions originate from Wacha (1984), Révész (1984) and Rokicki (1984, 1987). Zamenhof (1962: 3) indicated agreement with Saussure’s analysis as early as 1910.

Regardless of the opinions of the scholars, Saussure’s morpheme classes have proven very fruitful in the study of Esperanto word formation. They found their most productive adept in Kálmán Kalocsay. Kalocsay, one of the most renowned poets of Esperanto, developed a theory of Esperanto word formation that is based on

morpheme classes and contains a painstaking account of many details and peculiarities. His ideas were first published in smaller works (e.g., Kalocsay 1931/1970, 1938/1980), and later became a major part of *Plena gramatiko de Esperanto* by Kálmán Kalocsay and Gaston Waringhien, which has been published in, to date, five ever more revised and elaborated editions (1935, 1938, 1958-1964, 1980, 1985). The fourth and fifth edition bear the title *Plena analiza gramatiko de Esperanto* and are at present the most comprehensive grammatical accounts of Esperanto. In the following paragraphs I sum up Kalocsay's theory (Kalocsay–Waringhien 1980: 365-528) concisely and then I add newer findings. I try to relate his thoughts in today's words, giving Kalocsay's original terms in brackets with a literal gloss.

Kalocsay's word formation theory describes how morphemes of different types function in multi-morpheme words. Due to the almost total agglutination (Wells 1978: 33, note 6) of Esperanto, this theory contains both **morphology** and **word formation** proper, because both function and content morphemes are included in the description. In view of Zamenhof's and Saussure's attempts not to distinguish these two groups of morphemes, but to consider them all to be content morphemes, assigning a dictionary meaning even to morphemes as abstract as the word class identifier *o* (see Zamenhof's analysis of *frat'in'o*, above), it is less surprising that Kalocsay covers all morphemes by one uniform theory. Kalocsay's theory can thus be said to be a **word grammar**, containing both a word-syntactic and a word-semantic description of how morphemes combine to form words.

I use the term *word grammar* to denote rules about the elements of words, in the same sense as one speaks of *text grammar*. The term *word grammar* is sometimes used for rules about how words combine, especially by Richard Hudson (1984). In my definition, word grammar comprises both the study of how function morphemes combine with content morphemes (morphology) and of how content morphemes combine with each other (word formation) (cf. Schubert forthc.). In the Martinet school it is common to speak of two types of *monème*, namely *morphèmes* (which I call function morphemes) and *lexèmes* (content morphemes) (Martinet 1970/1980: 16). This distinction is encountered in interlinguistics, too (e.g., Janton 1987: 80).

If complete, a word grammar should describe which morpheme combinations are considered grammatically correct, and how the meaning of a complex word can be inferred from the meanings of its separate morphemes. In other words, both the internal syntax and the internal semantics of words should be accounted for.

Since virtually every morpheme combination is in principle permissible in Esperanto – a feature which furnishes it with the enormous productivity that is characteristic of an autonomous planned language – there is not so much to describe in the realm of word-

syntactic combination restrictions. An appropriate theory for Esperanto must rather concentrate on inferring the meaning of complex words. According to Frederick Bodmer (1943/1966: 190) this accent on meaning is a general feature in the grammar of agglutinative languages, including Esperanto. Since in Esperanto all content words are complex, i.e., consist of at least one content morpheme and a word class identifier, Kalocsay's theory covers almost the entire vocabulary. His word grammar contains the following subtheories about inferred meaning:

- **Transformation** (*pluformado*): about combinations of a morpheme with a word class identifier that does not coincide with its morpheme class. E.g., *somer'a* (noun root + adjective identifier).
- **Compounding** (*kunmetado*): about combinations of several content morphemes each of which belongs to a morpheme class of its own. E.g., *somer'monat'o* 'summer month', both *somer* and *monat* belong to morpheme classes, i.e., both are noun roots. The theory of compounding is based on the principle of **morpheme effect** (*vortefiko* 'word effect') exercised by one morpheme in a compound on another.
- **Derivation** (*derivado*): about combinations of a morpheme and an affix that does not obey the principle of morpheme effect. E.g., *grand'eg'a* 'very big' ('big' + intensifier + adjective identifier).

At least inasmuch as word formation is concerned, Saussure's adverbial morpheme class behaves exactly like adjective morphemes, so that Kalocsay uses only three classes (Kalocsay–Waringhien 1980: 375).

Transformation is extremely productive in Esperanto, because any morpheme can be combined with any of the four content word class identifiers: *somer'o* → *somer'a*, *somer'e*, *somer'i*. (In the finite verb forms, the *i* is replaced by tense or mode identifiers, e.g., *somer'as* 'it is summer'; in this respect Esperanto is not totally agglutinative, since for instance *as* expresses two functions, word class and tense, one of which also has a separate morpheme; as opposed to verbs, adjectives, adverbs, and nouns cannot lose their identifier, and "inflection" morphemes are just added to it: *somer'o'j'n* 'summers' ['summer' + noun + plural + accusative].) In *somer'o* the ending coincides with the inherent morpheme class of the root, so that the ending is said to be

(semantically) **redundant** (*pleonasma*; cf. Saussure 1914/1982: 28). It is nevertheless (word-syntactically) required to form a complete word. (Only in poetry can noun endings be left out, but this has nothing to do with redundancy.) *Somer'a*, etc., are formed by transformation. Kalocsay's theory describes how to infer the meaning of transformed words (Kalocsay–Waringhien 1980: 377-381). This inferring mechanism is so reliable, that most Esperanto dictionaries refrain from entering transformed words (an interesting exception being Evgenij Bokarev's Esperanto-Russian dictionary, 1974).

Compounding is word formation proper. Kalocsay's account is based on three premises: the three morpheme classes, a distributional classification of morphemes, and the idea of morpheme effect. Morpheme classes have been discussed above. They are formed on semantic grounds. In addition, morphemes can be classified by virtue of their distribution in words, i.e., in a word-syntactic way. Kalocsay takes over essentially the distinctions given in current textbooks. If we reword these criteria in the terms of language science, the following groups are established:

- An **independent morpheme** can function as a word. These are the function words of Esperanto, e.g., *la* 'the', *du* 'two'.
- **Declension morphemes** are *j* for the plural of nouns and adjectives and *n* for the accusative, the only oblique case, of nouns, adjectives, and adverbs.
- **Endings** are the word class identifiers *i*, *a*, *e*, and *o*, and the verb endings *is*, *as*, *os*, *us*, and *u* for past, present and future tense, subjunctive, and imperative, respectively.
- **Affixoids** are **prefixoids** and **suffixoids**. Kalocsay has more to say about the distinction between suffixoids and suffixes than about the distinction of suffixoids and roots (Kalocsay–Waringhien 1980: 435). Only as an additional feature does he mention that they are distinguished from roots by special semantic inferring rules, which in my opinion is a property that is not only crucial for the definition of suffixoids, but plays an essentially important role in language development (see below). Affixoids are distinguished from affixes by their exercising morpheme effect on other morphemes (see below). Examples are the prefixoids *ek* 'begin to' and *re* 're-' (repeated or returning) or the suffixoids *il* 'instrument for -ing', *ind* 'worth -ing' and *ig* (causative).

- **Affixes are prefixes and suffixes.** They do not exercise morpheme effect and are thereby distinguished from both affixoids and roots. Examples are the prefixes *mal* 'opposite' and *ge* 'of both sexes' or the suffixes *eg* (intensifier) and *aĉ* 'of bad quality'.
- All other morphemes are **roots**. In principle, this is the open morpheme class into which new morphemes can be included by borrowing from whatever sources. As the limit is quite vague, roots can become affixoids in language development. Terminologists sometimes suggest borrowing new affixoids directly, thus without a development via a root status. As in ethnic languages, this is obviously only possible by means of language planning. In addition, it is doubtful whether the new morphemes, labeled affixoids by terminologists, do not in the beginning behave like normal roots in word formation.

What is a **morpheme effect**? In a compound, e.g., *somer'monat'o*, there is one governing morpheme (*ĉefelemento* 'main element'), e.g., *monat* in *somer'monat'o*, and a number of dependent morphemes (*flankelemento* 'side element'), *somer* in the example. Usually only the head morpheme carries an ending. Esperanto textbooks say that an internal ending is optional and should be used on euphonic grounds: *manĝ'oĉambr'o* 'dining room' is by most speakers found more pronounceable than *manĝĉambr'o* (*ĝ* = [dʒ], *ĉ* = [tʃ]). However, whether or not an internal ending is used, the textbooks say, the meaning remains exactly the same. (This is not always true, see the end of section 5.) To sum up, a morpheme can occur in a compound without an immediately adjacent ending.

One might therefore suppose that such a morpheme adds to the meaning of the compound its own inherent meaning, i.e., the meaning indicated by its morpheme class. A verb root would add a verbal meaning, a noun root a nominal meaning, and an adjective root an adjectival meaning. However, this is not so. Kalocsay's morpheme effect is an account of the fact that morpheme meanings do **not** combine in this straightforward way in Esperanto. The governing morpheme exercises an effect on the dependent ones and takes them into the sum of the meanings **as if the dependent morpheme were transformed**. In detail, the morpheme effect can be inferred from the morpheme class of the governing morpheme. Verb roots transform their dependents into either adjectives or adverbs, while both adjective and noun roots transform their dependents into nouns. It is not

uncommon to symbolize morpheme classes by capital *I*, *A*, and *O* and word classes by small *i*, *a*, *e*, or *o* (compare the word class identifiers). Using these symbols, the morpheme effect may be depicted as follows:

a	←	I
e	←	I
o	←	A
o	←	O

The distinction of *e* (adverb) and *a* (adjective) occurring in the left column is an additional hint at the fact that the observed phenomenon is transformation, thus a change in word class, and not any change in morpheme class, as there is no adverb morpheme class.

Derivation is the third method of word formation. Its role is rather limited in Esperanto, since the derivation morphemes are less frequent than the compounding ones. Derivation is word formation without morpheme effect. This phenomenon is confined to combinations with **affixes**. Affixes are in Kalocsay's system defined by virtue of their neither exercising nor undergoing morpheme effect. The consequence of this property is twofold: First, an affix cannot be a governing morpheme. Both prefixes (that occur to the left of a root) and suffixes (that occur to the right, thus in the normal position of a governing morpheme) are dependent morphemes. Thus *bat'eg'i* ('beat' + intensifier + infinitive) has *bat* as its governing morpheme. Semantically it is therefore a special, modified version of 'beat', namely 'beat strongly', and not a modified version of the intensifier *eg*.

5. New ideas about Esperanto word formation

Obviously Kalocsay's elaborate word formation theory cannot be fully rendered on a few pages. In the previous section I have tried to catalogue the main functions and regularities Kalocsay describes, but omitted all details of exactly how to infer the meaning of a given complex word in Esperanto. Still without entering a discussion of these particulars, I shall, in this section, add a few recent observations of my own that may complement and refine Kalocsay's account. These are the following findings:

- The internal morpheme structure of complex words can be described in a simpler way than Kalocsay does, which also makes the functions that work on this structure a good deal less complicated.
- There is a way in suffixoid compounds to escape the laws of precise meaning inference.
- There is grammatical evidence for the distinction of roots and suffixoids, which is rather vague in Kalocsay's account.

Especially the latter statement will then be taken as the starting point for some thoughts about the internationality of both planned languages.

Kalocsay distinguishes **regressive morpheme effect** (*rekta vortefiko* 'direct word effect') and **progressive morpheme effect** (*inversa vortefiko* 'reverse word effect'). Regressive morpheme effect, which is the much more common of the two (hence *rekta*), is exercised upon a dependent to the left of the governing morpheme, whereas progressive morpheme effect acts to the right. The latter effect is possible for instance in the case of prepositions occurring as roots in compounds. In *sen'fort'a* 'powerless' ('without' + 'powerful' + adjective) *sen* exercises morpheme effect upon *fort*. The fact that the morpheme immediately to the left of the ending is not the governing morpheme brings about a feature in Kalocsay's theory that has been felt as a difficult complication by some scholars: *fort* is an adjective root so that the *a* to the right of it should play the role of a redundant ending. According to Kalocsay, however, it does not. *Sen* as a preposition belongs to the morpheme class of adjectives and *fort* as its dependent is thus transformed into a noun. *Fort* thus adds to the meaning of the word not 'powerful', but 'power'. The inferred meaning is something like (*sen fort'o*)'a 'the quality of being without power', i.e., 'powerless'. (Note that *sen fort'o* is a two-word syntagma, no longer a single word.) The *a* ending is termed **pseudo-redundant** (*pseüdopleonasma*) by Kalocsay.

The distinctions of regressive and progressive morpheme effect and of redundant and pseudo-redundant endings are brought about by the fact that Kalocsay reasons on morpheme strings. In the light of modern dependency grammar, however, the structure of complex words can easily be described in terms of dependency relations between morphemes. Such relations are not established in terms of sequential order. With a word-level dependency grammar in mind I have in the previous section already spoken about a **governing** and a **dependent**

morpheme, without regard to the question whether the dependent morpheme occurs to the right or to the left of its governor. In such an account the *a* of *sen'fort'a* is in the same way redundant as the *o* of *somer'monat'o*, since in the dependency structure of the word it is directly linked to the governing morpheme of the word:

a	o	i
sen	monat	bat
fort	somer	eg

In my opinion, a dependency analysis of word structure can in many ways improve the explanatory power of word-grammatical descriptions. (A dependency grammar which builds up its whole system beginning at the morpheme level has been devised by Richard Hudson, 1984.) If linked to a dependency grammar on sentence or text level (Schubert 1987: 28), it can, moreover, make more obvious the fact that there is not such a fundamental difference between grammatical phenomena **among** words on the one hand and **within** words on the other hand, as is sometimes believed (Schubert 1987: 14-16).

In the rest of this section I discuss properties of **suffixoids**. This group of morphemes seems especially important to word formation theory and to the comparison of planned and ethnic languages, because, compared to the other function morpheme classes, there are very many suffixoids in Esperanto, which in addition are strikingly frequent.

Kalocsay is quite vague about the distinction between roots and suffixoids. He seems to presuppose a traditionally given list of suffixes (which indeed commonly appears in textbooks) and divides them up into suffixes proper and suffixoids, saying (Kalocsay–Waringhien 1980: 435) that suffixoids are distinguished from suffixes proper by behaving like roots. But why does he not class them as roots? He makes major efforts to do so, for example by saying that suffixoids exercise exactly the same morpheme effect as roots. This is, as far as I can see, an attempt to make the system nicer than the language is. According to my analysis there are suffixoids with a morpheme effect that does not occur in roots. Some suffixoids, e.g., *abl* ‘-able’, ‘what can be -ed’ (e.g., *vid'abl'a* ‘visible’), *ind* ‘worth -ing’ (e.g., *vid'ind'a*

‘worth seeing’) and in particular the participle morphemes, have a verbalizing effect:

i ← suffixoid

But Kalocsay does not acknowledge this. A feature that is for him an argument for distinguishing suffixoids from roots is that some of the suffixoids are short and more easily combinable doublets of roots, e.g., *il* for *instrument*. This much is said in the section entitled "*Difino*" ‘definiton’ (Kalocsay–Waringhien 1980: 435-437). Only in the next section, "*Specialaĵoj*" ‘peculiarities’, Kalocsay and Waringhien mention that the meaning of a root-suffixoid compound, as opposed to that of a root-root compound, is not exactly the sum of the morpheme meanings. *Paf’il’o* (‘shoot’ + ‘instrument’ + noun) is not just any instrument for shooting, but a ‘gun’.

This is a much more crucial finding than its hidden place in Kalocsay and Waringhien’s grammar suggests. It comes down to the fact that the meaning of suffixoid compounds is inferable only to a certain degree. This makes Esperanto word formation very flexible, because not every nuance of meaning that may be obvious from the context anyway, needs to be expressed. The overload of precision requirements, detected in Ido (despite which Ido still has limited inferability in suffixoid compounds, cf. Noetzli–Liljedahl 1919: 22-23; Beaufront 1925: 132-167; Jacob 1970: 4), is absent in Esperanto. Ultimately, however, this **limited inferability** implies that the exact meaning of such a word is defined by a convention in the language community and must be learned. Nevertheless, this need for learning the meaning of compounds concerns at first hand the exact shade of meaning, whereas "adding up" the morpheme meanings yields quite a good approximation for a reader or hearer who is confronted with a new compound.

Limited meaning inferability adds an interesting viewpoint to the ongoing discussion on naturalness versus regularity. Esperanto first spread in countries of European culture, and Esperantists with a native or acquired command of West European languages often tend to borrow into Esperanto foreign words of classical Greek-Latin origin or from French, English, and other European languages, in a similar way as this is done in the ethnic languages of the region. This is a naturalist tendency that fits well with von Wahl’s ideal (see above). The more the language community grows towards non-European countries and cultures, however, the more speakers and writers insist

on inferable meaning. Compounds, rather than new loan words, seem to be a requirement for internationality. Suffixoid compounding is one of the most readily available instruments for meeting this demand, since it is a frequent and highly productive method of word formation. But as a closer look at the linguistic facts shows, the meaning of suffixoid compounds is not always completely inferable. After a hundred years of human use, the vocabulary of Esperanto, in much the same way as that of ethnic languages, grows not so much in the central stock of every-day words, but in specialized fields such as technological and scientific terminology. If the increasing pressure for the use of compounds rather than of new loan words results in large-scale formation of suffixoid compounds in these fields, this might introduce more and more unanalyzable compounds whose meaning is idiomatic. An extreme use of suffixoids thus may overcharge the flexibility of the word formation system.

A productive word formation system of a human language needs a certain degree of inexactitude which should be neither too much restricted by terminologists' desire for precision, nor made too vague by excessive use. As far as one can extrapolate from the development until now, the interaction between Europeans and the increasing number of non-Europeans in the Esperanto community will in my opinion maintain a sound balance between neologisms and complex words.

When speaking about imprecision in inference of meaning, one should not overlook that Esperanto suffixoids are not only distinguished from roots by limited inferability, but at the same time also by **more precise** inference rules. This is no contradiction. It can best be seen when attempts are made to paraphrase complex words by means of more basic words. As in ethnic languages, the semantically most unobscure compounds in Esperanto are noun-noun combinations. Only the context can tell us whether *ĉokolad'skatol'o* 'chocolate box' is a 'box made of chocolate' or a 'box for chocolate'. The suffixoids are in this respect much more precise than roots. The "doublet" of *skatol* leaves no doubt: *ĉokolad'uj'o* ('chocolate' + 'container' + noun) is a 'container for chocolate'. The semantic relation between the two morphemes is significantly more precise than in the case of a root-root compound. There are two things to be distinguished: the **semantic content** (the meaning) of the morphemes and their **semantic relation**. The limited inferability, discussed above, concerns not the semantic relation between the two, but the exact semantic interpretation of the suffixoid: In frequent use, and thus by

convention, the meaning of a suffixoid compound like *ĉokolad'uj'o* may be restricted to not just any chocolate container, but a special type of such a container, e.g., a chocolate tin. But the semantic relation between a suffixoid and a dependent morpheme is precise.

This has an unforeseen implication. Suffixoids, as all morphemes in Esperanto, may function as roots. *Uj'o* 'container' is a correctly formed word. Root words can be combined with other root words to form compounds. But if one of the root words is made of a suffixoid, there is a conflict between the vague semantic relation between morphemes in a root-root compound and the more precise one in a root-suffixoid compound. Interestingly enough, a simple way out has been found in spontaneous use: Since suffixoids, as opposed to many roots, are in their sound form always well-suited for compounding, no euphonic internal ending (like in the root-root compound *manĝ'o'ĉambr'o* 'dining room', see above) is needed in front of them. But if nevertheless an ending is inserted, this signals that the morpheme to the right of that ending is not taken as a suffixoid, but as a root. Since there is no dependent morpheme, *uj* in *uj'o* functions as a root. In mathematics, for example, the word *ar'o* 'set', made of the suffixoid *ar* 'group of -s', is a term. The term 'set of comparison' can then easily be made of *kompar'o* 'comparison' and *ar'o* 'set'. Unfortunately the compound *kompar'ar'o* does not have the intended meaning, but according to the regularities of suffixoid compounds denotes a 'group of comparisons'. The precise semantic relation between a suffixoid and a dependent root yields no other interpretation. In current usage, the 'set of comparison' therefore becomes *kompar'o'ar'o*. This explanation sounds rather far-fetched and arbitrary and might by critics be taken as evidence for Esperanto being far removed from the status of a human language. The interesting feature of this regularity, however, is that the **dividing function of an inserted ending** has emerged in human use and not from the desk of a language planner. Most of the speakers who use dividing internal endings are certainly unaware of this explanation.

6. Planned and ethnic languages

The present paper deals with a phenomenon that emerged in the system of a planned language during its development from a project into a language. This phenomenon, the semantic morpheme classes in

Esperanto, was brought about by Zamenhof's tacit reliance on the models of ethnic languages. But what exactly are these models? Are there morpheme classes in ethnic languages?

The question is not often asked in this way, since there is hardly any ethnic language with such a sharp distinction between morphemes and words. There are not very many ethnic languages in which the set of one-morpheme words is restricted to function words, as in Esperanto. Therefore, much of the discussion that in Esperanto concerns morpheme classes must in the linguistics of ethnic languages be sought where word classes are discussed. Word classes are a chapter that is unclear in many grammars. Very many grammarians take them for granted, and those who are somewhat explicit on their definitions cannot deny that they have not found one clear and distinct criterion. Aleksandr Isačenko (1975: 11) acknowledges a group of words as a word class only if there are a common general meaning **and** common morphological or syntactic features. Indeed many authors in one way or other mix syntactic and semantic criteria. But, "En effet, une bonne classification ne peut, de toute évidence s'appuyer **simultanément** sur plusieurs caractères", as Lucien Tesnière (1959/1982: 52) objects. In Esperanto, it is no problem to classify words purely on syntactic grounds and morphemes purely on semantic grounds. Ulrich Engel (1982: 64-65) has shown that a purely syntactic word classification is possible in an ethnic language as well, and his method can be transferred to arbitrary languages (Schubert 1987: 46-50). But when writing about German syntax, Engel does not see a reason semantically to classify morphemes independently from words. Yet, in a study of German word formation Jorma Koivulehto (1985: 140) has found good reasons for separately classifying morphemes. Koivulehto introduces, as it were, René de Saussure's morpheme classes into the grammar of German.

The existence of a grammatical category in German and Esperanto is of course not exactly what one would call a proof for linguistic universality. But it is a well-known fact that the basic word (or morpheme?) classes verb, adjective, and noun are found in very many languages throughout the genetic and typological groups. And in quite a number of language analyses from the realm of logic, these three types are found labeled as basic predication types or the like (e.g., Snell 1952: 14; Dik 1978: 63; for further discussion see also Jespersen, 1924: 61; Isačenko 1975: 10-19). So, the idea that these three

morpheme classes exist in many languages may be acceptable at least as a working hypothesis.

What is new about that? Do we need Esperanto to find out that there are verbs, adjectives, and nouns in the languages of the world? Of course not. But what the analysis of Esperanto in my view does suggest is a much clearer distinction between form and content than is common in the word formation theories of ethnic languages. The semantic morpheme classes in Esperanto have emerged in the language not by virtue of language design, but in human use in a language community. The fact that they acquired a central role in the functioning of the whole grammatical system of the language is a mirror-image of properties of ethnic languages. However, the mirror-image is much clearer than the originals. Owing to the autonomous structural perspicuity of Esperanto, syntactic and semantic features can be distinguished, whereby much of the grammatical mechanism that was borrowed can be seen in a brighter light than in the source languages themselves.

Maybe this is a general quality of planned languages, and especially of Esperanto as the one that has proceeded farthest in its development into human use: They are a still widely undiscovered medium for linguists. This is the more deplorable, since planned languages are, so to speak, ready-to-use laboratory objects for language science (Back 1979: 270). I certainly do not mean this in the way many people within and outside of language science understand it: I certainly do not think that a language like Esperanto after a century of undirected functioning in a community still is open to arbitrary language planning by either linguists or speakers. It is not open any more, or rather: it is not more so than any ethnic language is. My point is that a planned language, especially an autonomous one which, like Esperanto, is widely used by speakers of numerous different native languages, in many respects displays a good deal of cross-linguistically observable features in a way that promotes linguists' understanding of Language in general.

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References

- Alfandari, Arturo
 1961 *Cours pratique de Neo, deuxième langue* (Bruxelles: Brepols).
- Back, Otto
 1979 "Über Systemgüte, Funktionsadäquatheit und Schwierigkeit in Plansprachen und in ethnischen Sprachen". Helmut Felber – Friedrich Lang – Gernot Wersig (eds.), *Terminologie als angewandte Sprachwissenschaft* (München etc.: Saur), 257-272.
- Beaufront, Louis de
 1925 *Kompleta gramatiko detaloza di la linguo internaciona Ido* [Complete comprehensive grammar of the international language Ido] (Esch-Alzette: Meier-Heucke).
- Blanke, Detlev
 1985 *Internationale Plansprachen* (Berlin: Akademie-Verlag).
- Bodmer, Frederick
 1943 *The loom of language* (London: Allen & Unwin).
 1966 *Die Sprachen der Welt*. [Translation of Bodmer 1943] (Köln/Berlin: Kiepenheuer & Witsch).
- Bokarev, Evgenij Alekseevič
 1974 *Esperanta-rusa vortaro // Ĝesperanto-rusksij slovar'* [Esperanto-Russian dictionary] (Moskva: Sovetskaja ĉenciklopedija).
- Couturat, Louis
 1910 *Étude sur la dérivation dans la langue internationale* (Paris: Delagrave), 2nd ed.
- Couturat, Louis – Léopold Leau
 1907a *Histoire de la langue universelle* (Paris: Hachette), new ed. [1st ed. 1903].
 1907b *Les nouvelles langues internationales* (Paris: Hachette).
 1979 [Reprint of Couturat–Leau 1903, 1907b]. Reinhard Haupenthal (ed.) (Hildesheim/New York: Olms).
- Dik, Simon C.
 1978 *Functional grammar* (Amsterdam/New York/Oxford: North-Holland).
- Duc Goninaz, Michel (ed.)
 1987 *Studoj pri la Internacia Lingvo // Études sur la langue internationale // Studies on international language* (Gent: AIMAV).
- Duličenko, Aleksandr Dmitrievič
 1987 "Ob interlingvističeskoj dejatel'nosti È. Valja [On the interlinguistic activity of E. Wahl]". Aleksandr Dmitrievič Duličenko (ed.), *Voprosy obščej i častnoj interlingvistiki*. Interlinguistica Tartuensis 4. Tartu Riikliku Ülikooli toimetised // Učenyje zapiski Tartuskogo gosudarstvennogo universiteta // Acta et commentationes Universitatis Tartuensis 775 (Tartu), 87-117.
- Dyer, Luther H.
 1923 *The problem of an international auxiliary language and its solution in Ido* (London: Pitman).
- Engel, Ulrich
 1982 *Syntax der deutschen Gegenwartssprache* (Berlin: Schmidt), 2nd rev. ed.

Gilbert, William

- 1962 *Planlingvaj problemoj (Esperanto kaj la naturalismo)* [Issues of planned languages (Esperanto and naturalism)] (La Laguna: Régulo), 2nd ed. (Kopenhago: tk), 1977.

Gode, Alexander et al.

- 1951 *Interlingua-English, a dictionary of the international language* (New York: Ungar), 2nd ed. [1971].

Gode, Alexander – Hugh E. Blair

- 1951 *Interlingua, a grammar of the international language* (New York: Ungar), 2nd ed., 2nd print 1971.

Golden, Bernard

- 1987a "Bazaj faktoj kaj bibliografio pri la planlingvo Glosa [Basic facts and a bibliography on the planned language Glosa]", *Informilo por interlingvistoj* [3/15]: 1-7.
 1987b "Conservation of the heritage of Volapük", *Language Problems and Language Planning* 11: 361-367.

Goudkuil, F.

- 1981 *Un introduction in Interlingua // 'n Introductie in Interlingua* [An introduction to Interlingua] (Beekbergen: Servicio de libros UMI).

Grigor'ev, Viktor P.

- 1974 "Ot redaktora [Editorial]". *Bokarev* 1974: 7-17.

Hudson, Richard

- 1984 *Word grammar* (Oxford/New York: Blackwell).

Isačenko, A. V.

- 1975 *Die russische Sprache der Gegenwart. Formenlehre* (München: Hueber), 3rd ed.

Isbrucker, J. R. G.

- 1959 "Pri la vortfarado en Esperanto [On word formation in Esperanto]", *Esperantologio* 2: 13-36.

Jacob, Henry

- 1947 *A planned auxiliary language* (London: Dobson).
 1948 *On language making* (London: Dobson).
 1970 *La strukturo di la linguo internaciona Ido* [The structure of the international language Ido] (s.l.: International Language [Ido] Society of Great Britain), [Text in English].

Janton, Pierre

- 1973 *L'espéranto* (Paris: Presses Universitaires de France).
 1987 "Latentaj strukturaj trajtoj de la esperanta gramatiko [Summary: Latent structural traits of Esperanto grammar]". Duc Goninaz (ed.) 1987: 79-90.

Jespersen, Otto

- 1924 *The philosophy of grammar* (London: Allen & Unwin / New York: Holt), new ed. 1925.

Jordan, David K.

- 1987 "Esperanto and Esperantism: symbols and motivations in a movement for linguistic equality", *Language Problems and Language Planning* 11: 104-125.

Kalocsay, Kálmán

- 1938 *La gramatika karaktero de la Esperantaj radikoj* [Morpheme classes in Esperanto roots] (Budapest).

- Kalocsay, Kálmán [continued]
 1970 *Lingvo stilo formo* [Language, style, form] (Oosaka: Pirato), 3rd ed. [1st ed. Budapest 1931].
 1980 [Reprint of Kalocsay 1938] (Saarbrücken: Itis).
- Kalocsay, Kálmán – Gaston Waringhien
 1980 *Plena analiza gramatiko de Esperanto* [Complete analytic grammar of Esperanto] (Rotterdam: Universala Esperanto-Asocio), 4th ed.
- Kiselman, Christer O.
 1988 "La problemo de duarangaj derivaĵoj en Esperanto [The problem of second-order derivations in Esperanto]". Rüdiger Eichholz (ed.), *Akademias studoj 1987* (Bailieboro: Esperanto Press), 65-75.
- Koivulehto, Jorma
 1985 "Zur Frage einer Kategorie 'Wortart' beim Grundmorphem". Kurt Nyholm (ed.), *Grammatik im Unterricht. Meddelanden från Stiftelsens för Åbo Akademi forskningsinstitut 103* (Åbo: Åbo Akademi), 133-141.
- Kuznecov, Sergej Nikolaevič
 1982 *Osnovy interlingvistiki* [The foundations of interlinguistics] (Moskva: Universitet družby narodov).
 1984 "'Kosmoglot' – pervoe interlingvističeskoe obščestvo v Rossii ['Kosmoglot', the first interlinguistic society in Russia]". Aleksandr Dmitrievič Duličenko (ed.), *Istorija i sovremennoe sostojanie interlingvistiki. Interlinguistica Tartuensis 3. Tartu Riikliku Ülikooli toimetised // Učenyje zapiski Tartuskogo gosudarstvennogo universiteta // Acta et commentationes Universitatis Tartuensis 671* (Tartu), 126-164.
 1987 *Teoretičeskie osnovy interlingvistiki* [The theoretical foundations of interlinguistics] (Moskva: Universitet družby narodov).
- Manders, Wilhelmus Johannes Arnoldus
 1947 *Vijf kunsttalen* [Five artificial languages] (Purmerend: Muusses / Utrecht: doct. diss.).
- Martinet, André
 1970 *Éléments de linguistique générale* (Paris: Colin), new rev. ed. 1980.
- Meier, Georg F. – Barbara Meier
 1979 *Handbuch der Linguistik und Kommunikationswissenschaft. Vol. I: Sprache, Sprachentwicklung, Sprachen* (Berlin: Akademie-Verlag).
- Moch, Gaston
 1897 *La question de la langue internationale et sa solution par l'Espéranto* (Paris).
- Noetzli, Albert – Sten Liljedahl
 1919 *Kort lärobok med läsövningar i det internationella hjälpspråket Ido* [A concise textbook with reading exercises of the international auxiliary language Ido] (Stockholm: Svenska Ido-Förlaget // Sueda Ido-Editerio).
- Nordin, John
 1965 *Svensk-Interlingua ordbok med kort grammatik* [Swedish-Interlingua dictionary with a short grammar] (Stockholm: Norstedt).
- Papegaaij, B. C.
 1986 *Word expert semantics. An interlingual knowledge-based approach* (Dordrecht/Riverton: Foris).
- Papegaaij, Bart – Klaus Schubert
 1988 *Text coherence in translation* (Dordrecht/Providence: Foris).

Révész, Sándor

- 1984 "Radikkarakteroj kaj la elementaj vortstrukturoj [Morpheme classes and the basic word structures]". Rokicki (ed.) 1984: 103-125.

Rokicki, Ryszard

- 1984 "Enkonduko en la leksemstrukturan klasifikadon de la esperanta morfemaro [Introduction to a classification of Esperanto morphemes based on lexeme structure]". Rokicki (ed.) 1984: 127-141.
- 1987 "Leksemstrukturaj aspektoj klasifiki la esperantan morfemaron [Summary: Lexeme structure aspects of the classification of Esperanto morphemes]". Duc Goninaz (ed.) 1987: 91-106.

Rokicki, Ryszard (ed.)

- 1984 [11-a] *Scienca Interlingvistika Simpozio (Varsovio 1983)* [(11th) Scientific Symposium on Interlinguistics (Warsaw 1983)] (Varsovio: Akademickie Centrum Interlingwistyczne).

Sakaguchi, Alicja

- 1983 "Plansprachen zwischen Spontaneität und Standardisierung. Semiotik und Interlinguistik", *Zeitschrift für Semiotik* 5: 331-351.

Saussure, Ferdinand de

- 1916 *Cours de linguistique générale* (Paris: Payot), new ed. 1969.

Saussure, René de

- 1910a [pseudonym: Antido]. "La logika bazo de vortfarado en Esperanto [The logical basis of word formation in Esperanto]", *Scienca Revuo* [Aug.].
- 1910b [pseudonym: Antido]. [Separately published offprint of Saussure 1910a] (Genève: Universala Esperantia Librejo).
- 1910c *La construction logique des mots en Esperanto* (Genève: Universala Esperantia Librejo).
- 1914 *La vort-teorio en Esperanto* [Word theory in Esperanto] (Genève: Universala Esperantia Librejo).
- 1982 [Reprint of Saussure 1914]. Reinhard Haupenthal (ed.) (Saarbrücken: Iltis).
- 1984 [Reprint of Saussure 1910b under the name of Saussure] (Saarbrücken: Iltis).

Schleyer, Johann Martin

- 1880 *Volapük, die Weltsprache. Entwurf einer Universalsprache für alle Gebildete der ganzen Erde* (Sigmaringen: author).
- 1982 [Reprint of Schleyer 1880]. Reinhard Haupenthal (ed.) (Hildesheim/New York: Olms).

Schmidt, Johann

- 1986 *Geschichte der Universalsprache Volapük* (Saarbrücken: Iltis).

Schubert, Klaus

- 1987 *Metataxis. Contrastive dependency syntax for machine translation* (Dordrecht/Providence: Foris).
- forthc. "Interlingual terminologies and compounds in the DLT project". [Proceedings of the International Conference on Machine and Machine-Aided Translation (Birmingham 1986)].

Snell, Bruno

- 1952 *Der Aufbau der Sprache* (Hamburg: Claassen), 3rd ed.

Szerdahelyi, István

- 1975 "La semantika modelo de Esperanto [The semantic model of Esperanto]". Zlatko Tišljär (ed.), *Internacia lingvistika simpozio* (Zagreb: Internacia Kultura Servo), 85-152.

Szerdahelyi, István [continued]

- 1976 *Vorto kaj vortelemento en Esperanto* [Word and word element in Esperanto] (Kuopio: Literatura Foiro).

Szilágyi, Dénes

- 1931 "Versus interlinguistica [Towards interlinguistics]", *Schola et Vita* 6: 97-120.
1976 [Reprint of Szilágyi 1931]. Reinhard Haupenthal (ed.), *Plansprachen* (Darmstadt: Wissenschaftliche Buchgesellschaft), 163-187.

Tauli, Valter

- 1968 *Introduction to a theory of language planning*. Acta Universitatis Upsaliensis, Studia Philologiae Scandinavicae Upsaliensia 6 (Uppsala).

Tesnière, Lucien

- 1959 *Éléments de syntaxe structurale* (Paris: Klincksieck), 2nd ed., 4th print. 1982.

Vendryes, J.

- 1921 *Le langage* (Paris: Renaissance du livre).

Wacha, Balázs

- 1984 "Pri la radikkaraktero [On morpheme classes]". Rokicki (ed.) 1984: 95-101.

Wahl, Edgar de – Otto Jespersen

- 1935 "Discussione pri internatona lingvo inter Otto Jespersen e Edgar Wahl in Novial e Occidental [A discussion on an international language between Otto Jespersen and Edgar Wahl in Novial and Occidental]", *Novialiste* [6]: 34-55.

Waringhien, Gaston

- 1980 *1887 kaj la sekvo ...* [1887 and the consequence ...] (Antverpeno: tk / La Laguna: Stafeto).

Wells, John Christopher

- 1978 *Lingvistikaj aspektoj de Esperanto* [Linguistic aspects of Esperanto] (Rotterdam: Universala Esperanto-Asocio).
1982 *Esperanto lingvistisk set*. [Translation of Wells 1978] (København: Gyldendal).
1987 *Linguistische Aspekte der Plansprache Esperanto*. [Translation of Wells 1978] (Saarbrücken: Saarländischer Esperanto-Bund).

Wendt, Heinz F.

- 1961 *Sprachen* (Frankfurt am Main: Fischer).

Whorf, Benjamin Lee

- 1956 *Language, thought and reality*. John B. Carroll (ed.) (New York: Wiley).

Witkam, A. P. M.

- 1983 *Distributed Language Translation. Feasibility study of a multilingual facility for videotex information networks* (Utrecht: BSO).

Zamenhof, L. L.

- 1887 [pseudonym: Esperanto]. *Meždunarodnyj jazyk* (Varšava: Kel'ter). [the preface is quoted from the translation in Zamenhof 1903/1939: 241-253; the sixteen-rule grammar appears in its French, English, German, Russian, and Polish versions in Zamenhof 1905/1963: 51-79].
1889 [pseudonym: Esperanto]. *International language*. [Translation of Zamenhof 1887] (Warsaw: Samen Hof), [see above note].
1903 *Fundamenta krestomatio* [Fundamental chrestomathy] (Paris: Esperantista Centra Librejo), 16th ed. 1939.
1905 *Fundamento de Esperanto* [Foundations of Esperanto] (Marmande: Esperantaj Francaj Eldonoj), 9th ed., annotated by A. Albault, 1963.
1962 *Lingvaj respondoj* [Answers on language]. G. Waringhien (ed.) (Marmande: Esperantaj Francaj Eldonoj), 6th ed.