NEW TRENDS IN THE RESEARCH ON WORD-FAMILY DICTIONARIES (=Wfd)*

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1. TYPES AND FUNCTIONS OF WORD-FAMILY DICTIONARIES

In a Wfd words are not arranged primarily alphabetically but semasiologically according to word-formation. This advantage is taken of the fact that complex words containing a common constructional element are relatively motivated and thus can be arranged in word families. These units are referred to by differently defined terms: root, stem, etymon, core morpheme, lexeme, element.

Such arrangements can result from either a language's synchronic transparency relying on the speaker's metacommunicational synchronic etymological competence (Augst 1975a) or the diachronic extracomunicational scientific analysis of the connections in former language stages which occasionally have to be reconstructed. In Germany researchers have tried to differentiate this terminologically: the first synchronic phenomenon is called "Fächerung" which could be translated with "gradation" (lit. fanning out) or "Ableitungsgruppen" - "derivational groups" (Weisgerber 1963:103). The second diachronic phenomenon is called "Wortfamilie" - "word family".

Whereas the alphabetical dictionary facilitates the search for all the words beginning with a particular prefix, the reverse dictionary organizes all the words ending according to a certain suffix, the Wfd supplies the middle piece: all the words having a stem in common.

A Wfd has to perform two main functions: First with a view to application in (second) language acquisition it serves as a learner's dictionary; it often is connected to a study of word-formation. Already in 1886 Pellissier, arguing with regard to the French language, points out that the student might take advantage of its internal structure (1886: V): "I ... trust that this study of a vocabulary based on such a principal far from being a purely mechanical

* A shortened version of this article was presented as a lecture at the University of York. The author is indebted to Petra Braumühler and Charles Russ (York) for their assistance with the English text.
process will prove to be an intellectual exercise not altogether devoid of interest”. Alfes (1980: 149) with regard to the English language and Erk (1985: 37) with regard to the learning of German technical terms take the same view. But in the literature it is often said that one must not rely too much on the rules of production (Ortmann 1983: 111), because the learner of a foreign language often does not know the specific restrictions of the foreign language. Thus, according to the rules of English word-formation the words *teacheress or *teacherette are possible but they cannot be used for referring to what traditionally is called woman teacher. Furthermore, the WFD can support the acquisition of orthography especially with regard to languages whose orthography is morphologically oriented.

Second, with regard to linguistic theory a WFD represents the organizing structure of the vocabulary which is diachronically and synchronically relevant. If we speculate about the structure the vocabulary we may have in our brains, we are likely to come to the conclusion that it is not alphabetical. In modifying an idea of de Saussure, J. Trier developed the theory of “Wortfelder” (words-fields) bringing together all the words which have one distinctive feature in common such as “cutting” in knife, scissors, sword and scalpel. This example already indicates that the theory of the word-field is an adequate model for the structure of the vocabulary in one’s brain, too. A better model, I think, is the Frame Theory (Wegner 1985) because it brings together all the words which are necessary for a communicative action in a special situation. Long before the development of this theory the foreign language acquisition had used this idea. In my opinion – and in accordance with the theory of de Saussure, too – the arrangement in word families may be considered as an alternative model of the way in which the brain can organize the whole set of words.

A diachronic WFD covers the development of words over centuries or even millennia. According to Jellinek (1914: 132) the following motive or even topos might have induced many dictionary compilers: it is a tempting task to trace the origin of a living language’s total wealth of words in only some primitive stems. As an often used picture it is a tree with one stem, some thick and many, many thin branches. Muské (1985: 37) has modified this common image of the constantly growing pedigree by pointing out that words and word-families are also liable to extinction. But nevertheless many researchers criticize (Hundtschüners and Splitt 1982: 18) “the alphabetical principle... which does not reveal connections of meaning”.

The importance of the synchronic function of word families is determined by how great a value one is willing to attach to the effect of relative motivation in contrast to the sign function of a word. German researchers distinguish between the “Motivbedeutung” (motive meaning) of a word and the “Zeichenbedeutung” (sign meaning of a word); e.g. the word sailor has the motive meaning “a man who has to do with sails” and the sign meaning ‘seaman’. On the one hand the motive meaning is too narrow because a sailor can work on ships having no sails, on the other hand, the motive meaning is too broad, because many persons have to do with sails which are not sailors. The word sail has no motive meaning but only a sign meaning. Every word has a sign meaning, but not all of them have a motive meaning.

What’s the advantage for the language learner or for the native speaker if a word has a motive meaning in addition to its sign meaning? De Saussure drew a distinction between languages whose vocabulary is mainly lexicologically orientated and languages whose vocabulary is mainly grammatically and morphologically orientated. Besides the diachronic motivation of the word families as a tree with stem and branches growing from a center there is the synchronic motivation of the individual’s synchronic etymological competence which does not only comprise the cultural knowledge but also the rules of the vocabulary’s morphological structure and the possibilities of its extensions by forming neologisms. Every following generation has to reestablish the vocabulary. This reconstruction can lead to the same relative motivation as in the preceding generation, but it can also bring about a different motivation or even a dismotivation.

<table>
<thead>
<tr>
<th>same: root - rootlet</th>
<th>different: swindle - swindler</th>
</tr>
</thead>
<tbody>
<tr>
<td>tiemouse, calf</td>
<td>school 1 ‘Schule’</td>
</tr>
<tr>
<td>club 2 ‘Schwarm’</td>
<td>club 1 ‘stick’ 2 ‘circle’</td>
</tr>
</tbody>
</table>

Only a synchronic WFD can reveal the elements of continuity and discontinuity. The elements of discontinuity in the history of a language have nothing to do with the possible synchronic arrangement of the words in the brain. Relying on relative motivation word families can synchronically help to understand the sign meaning of words and support the rules of generation for neologisms. In this view a synchronic etymology is not only a metalinguistic knowledge but a linguistic knowledge, too. In its ideal form a synchronic WFD is a model of the native speaker’s synchronic etymological competence.

2. EQUIVALENTS TO WORD-FAMILY DICTIONARIES

Can we find the phenomenon of word families in other types of dictionaries? An alphabetical dictionary partly represents a WFD when words are suffixed to the right. In English we have root and then rooty, rootless, rooted and so on, but we cannot find unrooted or uprooted in the same article. These compounds and derivations to the right are often comprised by one lexical entry which sometimes entails the temporary giving up of the alphabetic ordering.

Etymological dictionaries are closely related to WFDs, because they are organized according to the principle of roots/etymons, too. But the derivations
and compounds are only listed (as one lexical entry) if they have got an etymology or a word history of their own. Another policy is to add all or many compounds to the lexical entry without further comment. The same applies to dictionaries which are more or less concerned with word-history. Thus, the following statement can be found in the introduction to the Eymological Duden (1963: 5):

Furthermore, we have worked out word families with great care in order to show the manifold relationships among the words and to make imaginable the complex connections in a single language.

3. THE STRUCTURE OF WORD-FAMILY DICTIONARIES

There is a distinction between the macro- and the microstructure. In short, macrostructure refers to the arrangement of wfd's as a whole, microstructure to the arrangement of a special article.

A wfd can be regarded as an alternative to an alphabetical dictionary. This was the motive for its being devised between the 16th and 18th century. In the 19th and 20th century it was looked upon as a special dictionary and it often relied on one or more alphabetical dictionaries from which it drew its word inventory.

The fact that this approach is based on stems or lexemes into which complex words are analyzed (often) gives rise to the question whether the complex word (produced by derivation, composition or inner inflection) is still transparent. The same question arises with regard to metaphors, metonymies and loan-shifts. Are we dealing with polysemy and thus one lexical entry for one word family or with homonymy and thus two lexical entries with two word families? Here the user of a synchronic wfd has to rely on his own etymological competence. The occurrence of controversial cases should not be looked upon as a contradiction because it demonstrates the stage of diachronic change in the vocabulary. A diachronic wfd can only to a limited extent rely on the language user's competence. But its advantage consists in the fact that linguistic analysis or reconstruction of former language stages can make transparent compounds, derivations and metaphors and metonymies which lost their motivation later on.

The user of a wfd has to be able to analyze complex words since he cannot make use of the 'meaning-less' alphabetical ordering which though it is meaningless might facilitate his search. In relation to etymological dictionaries Malkiel (1976: 36) remarks: "An intensive training period is required if the reader is to extract from it the maximum of useful ... information." For this principle to be successful, the user of a synchronic wfd has to possess the same or at least similar synchronic etymological competence as that of the compiler,

and the user of a diachronic wfd has to be familiar with historical linguistics to a certain extent. Therefore, the authors often try to help their users by including a reference to controversial cases (e.g. Pinloche) or by adding an alphabetical index (e.g. Stucke, Tichonov).

A completely new policy has been adopted by Rey-Deboe's 'Robert Methodique' which offers an integrated dictionary consisting of both an alphabetical semasiological dictionary and a wfd. This entails a double reference from the stem (called "element") to the derivation and vice versa.

Now some remarks on the stock of words: In many wfd's only a limited use is made of their sources. So Keller, Erk and Ottmann rely on frequency as their criterion of selection. Augst only includes those compounds which are lacking semantic transparency.

Recently the computer has been put to use in the compilation of wfd (Keller, WolkenJSky/Poltoratsky). However, it often produces nonsemantic divisions which prove its limitation.

Very often lexical entries and thus word families are arranged alphabetically, only Graff is guided by the system of Indo-European roots. The lexical entry is mostly made to stand out by the use of bold type, written in upper cases and/or indentation of the remaining information. In some dictionaries the word families are numbered.

Pinloche and Cohen make use of a vertically dotted line below the lexical entry comprising the whole word-family.

The efficiency of a wfd depends on its compilers' ability to represent the inner structure of a single word-family. In some dictionaries words are organized in word-families without further comment. Stueck even counts them over. Some compilers use a consistent organizing principle according to parts of speech (e.g. Wolkensky/Poltoratsky). Pinloche tries to combine diachronic and synchronic information by using an arrow after which he places only those words and groups of words which can be added only for diachronic reasons. In some dictionaries the etymological background is explained. Often the transparency of derivations is demonstrated by additional tables of suffixes which serve to explain the different functions of prefixes and suffixes. Only in some wfd's must it be taken into account that derivations and compounds do not completely cover the root word but only a certain meaning.

Nevertheless the most outstanding means for rendering the structure of a word-family is the graphic representation of its extensions to the left and to the right. Already in the 18th century Steinbach made a very elaborate use of the means of indention.

Other compilers improved this method by placing the stem in the middle as an axis between the extensions to the left and to the right, which thus are much more prominent. Some compilers have left out grammatical information completely, but others have tried to include it. Augst has pursued a particular
policy. Grammatical information resulting from rules is either not provided or placed in brackets.

Thus we can distinguish two extreme types: Offering an inventory of word-families, which is merely superficially and graphically arranged, this example - e.g. Keller - represents one extreme type of a wfd; almost any further information on semantics, grammar and the structure of dependence is missing. The other extreme is represented by a completely semasiological wfd, containing not only the same information as a good alphabetical dictionary but also the classification of word-families, including their inner structure.

4. HISTORICAL AND PRESENT-DAY WORD-FAMILY DICTIONARIES

This type of dictionary seems to be restricted to 3 Indo-European languages: German, Russian and French. In many other languages such as Spanish, English, Scandinavian, other Slavic languages, they do not exist. The first attempts to compile monolingual dictionaries were made from the 16th to 18th centuries. The theoretical discussions also dealt with the wfd as a competition to the alphabetic and onomasiological type. With regard to the German language the dictionaries by Schottelius (1663), Stiegl (1691), Steinbach (1734) belong to this tradition. Historical research tried to compile wdfs only on an Indo-European basis such as Graff (1834-1846) for Old High German, Benecke/Müller/Zarncke (1854-1861) with regard to Middle High German and Liebich (1899) for Modern German. Hastings (1911), Stucke's (1912), Pinloche's (1922), Bergemann's (1923) dictionaries are intended for learners or the layman. With regard to the Russian language Wolkowsky/Poltoratsky point to a dictionary compiled by Reiff Kornesiev (St. Petersburg 1835) which they consider a predecessor to the Russian wdfs. Moreover, Leger (1894), Zelinskij (1905), Patrick (1938) have to be mentioned. For the French language the Dictionnaire de l’Académie française (1695) may be regarded as the first attempt towards the compilation wfd by the French. However, it was vehemently criticized by Diderot (cf. Quemada 1967). The most important historical wfd in France was compiled by Charrassin (1842); it is synchronic and its articles have got a very interesting structure.

Nowadays, the restriction to Russian, French and German still exist, but Krause (1975) has presented a learner’s dictionary of Esperanto with an ordering principle according to word-families.

According to Hansen (1982: 36) it is not worth-while compiling an English wfd, because different stems often have the same meaning: body - bodily; but mind - mental; root - radical. In contrast to this statement about English Wolkowsky/Poltoratsky (1961) say: “The pattern of roots is more clearly preserved in Russian than in any other Slavic or indeed Indo-European tongue.” The latest wdfs are those compiled by Poticha (1964), Worth/Kozak/Johnson (1970) and Tichonov (1985). For the French language differently designed dictionaries have to be mentioned: Rey/Rey-Debove/Cottez (1971), Cohen (1973) and Rey-Debove (1982) mentioned above. For German Keller (1973, 1978), Augst (1975), Ortmann (1983) and Erk (1985) have to be mentioned and others are in preparation.

5. WORD-FAMILY DICTIONARIES IN THE RESEARCH ON DICTIONARIES

After the early discussion of fundamental problems (concerning wfd) from the 16th to the 18th centuries, this type of dictionary was hardly investigated. Astonishingly even in the 19th century linguists mostly, being concerned with historical phenomena (of language), did not take much interest in the research and the compilation of wdfs. The only wfd was compiled by Liebich, who was a Sanskritist. Although Bergmann mentions the fact he has chosen a word-family dictionary in the introduction (1923: V), he does not justify it. With regard to the lexicography of the English language Trench (1852: 3) argues: “Families or groups of words are often imperfect, some members of family inserted, while others are omitted”, but it is unlikely that he has a wfd in mind.

After the establishment of structural linguistics “a new type of dictionary” was often called for; a type of dictionary - as Antal put it (1963: 76) - which is to be based on morphemes “as the only true dictionary”. But only since 1970 has a new discussion of wdfs started for Russian, French and German wdfs. Worth/Kozak/Johnson consider using computers for their Russian wfd and they also discuss the limitation of the graphic representation with regard to double possibilities of derivations, e.g.

In France emphasis is placed on the homonymy/polysemy-problem. In German lexicography four kinds of problems are discussed:
(a) the use of computers,
(b) the relation between synchronic etymological competence vs. diachrony,
(c) the indication of affixes,
(d) “Word-family-history-dictionaries”.

unready
readiness
unreadiness

In the context of the homonymy/polysemy problem, French lexicography places emphasis on...
I only want to elaborate on the last two points to some extent. Schott (1984) advises against simply adding tables of affixes to a wfd; she is in favour of a method which indicates affixes semantically as well as according to their type of formation. In English - as in German - we have the suffix -er, nomen agentis in swimmer, 3 -er, nomen instrumenti in lawn mower. These index numbers have to be added to the tables of affixes and to the corresponding derivations, so that it becomes obvious to the user to which pattern of formation words with a special affix belong. With the help of this method complex homophonic meaning clusters can be split.

In opposition to the alphabetical - semasiological dictionaries which present borer as a word with two meanings 'drilling machine worker' and 'drill,' the method of indication can show that two words are derived from the verb to bore: one the nomen agentis, the other a nomen instrumenti.

Now to the last point. Hundsdurscher (1985) and Splett (1986) are working on a history of word families from Old High German to the present. This history is supposed to overcome the deficiency of single word histories. For this purpose they want to compile four wfd's, each of which deals with a certain period of German language (OHG, MHG, German of the 18th century and the present-day German). These dictionaries will be structured according to the same principle so that changes can be noticed easily. In my opinion two problems have to be investigated by research in the future:

With regard to derivation the problem of argument transmission has not been taken into consideration. In English we have the verb to refer to and the derivation the reference to. With the derivation the prepositional phrase is transmittable, too. But for the verb to demand sth. of sb. the derivation is the demand for sth. on sb. I think a wfd has to show the argument transmission, too.

Another problem is the derivation and composition as a whole. We must be careful when saying a word is derived from another word. Very often it is not derived form all the meanings, but only from one or some of them.

If one wants to take into consideration these facts which are relevant in compiling a wfd, one will probably have to experience the limitation of graphic representation, or as Keller (1972:207) points out: "A further limitation is an even more basic one: the representation of a multidimensional structure on a two dimensional paper."

6. A German and English example

In my opinion it is necessary to give up the principle of the symmetric axis in order to show the multi-dimensional structure. Therefore, in my example, I use numbers to show the structure (cf. Appendix).

But first of all the source: the German example is based on Handwörterbuch der deutschen Gegenwartssprache [Concise Dictionary of Modern German] published in the GDR, the English article on the Langenscheidt's Handwörterbuch [L. concise dictionary]. I think it is an advantage to accept the limitations of one dictionary and it is a wrong way to add words one knows by chance or to leave out words. If one take this advice, one is not responsible for the material stock of words.

I worked out the English example only for this article as an illustration showing how to organise a synchronic wfd. For a foreigner, I think, it is absolutely impossible to know exactly if there is a relative motivation for a complex or metaphorical word. Therefore I asked English and American native speakers. They told me that they could see a relative motivation for root meaning 'part of a plant' and the verb used in the sentence "The pigs rooted the ground for fruits" in spite of the fact that one must distinguish two radical words historically, but they could see no connection between root 'part of a plant' and the verb in the sentence "the boys rooted for their team." Thus, we have three stems in former English, and two nowadays. But the dictionaries for present day English offer three words.

Now to the first radical word ROOT as 'part of the plant'. It has this literal meaning and 6 metaphorical meanings. The metaphor is taken from the function of the root in relation to the whole plant. But for the use of the word in mathematics and music I cannot say what their relative motivation is synchronically. In English as well as in German and French these metaphorical meanings have been borrowed from Latin diachronically.

In my opinion it is always necessary to formulate the relative motivation expressis verbis, because it can change from generation to generation. I give it in angled brackets.

The noun root is used in compound words. I arrange them in relation to the special meaning used in root: root-crop, root-like belong to the first meaning 'part of the plant', and root-idea to the second, metaphorical meaning, and so on.

After the noun root I offer the verb to root. I do not know how a native speaker feels about it, but in my view the verb derives from the noun, maybe with a zero morpheme, or a conversion; but not the other way round.

But how many verbs to root do exist? I state the transitive and intransitive uses separately, but maybe it is one verb that two grammatical rules apply to. Is to root in a derivation from the noun root having the meaning 'source, essence' or is it a metaphorical use of the verb to root having the meaning the plant rooted in the ground?

After the verb with zero-derivation or conversion the words with affixes follow, first the adjective rooted derived from the particle. From this adjective rooted two second derivations follow: the adverb rootedly and the noun rootedness both referring only to the second metaphorical meaning of rooted.
Then there are three words with suffixes: rootless, rootlet and rooty. The adjective rooty can demonstrate another interesting aspect of the English language: rooty is a derivation of root in the first literal meaning 'part of the plant'. The adjective to the noun root in its metaphorical meaning 'source, essence' or in mathematics or music is not rooty but radical. Maybe it could be advantageous to define the term 'word family' in a different way for the English language, in order to take into account that sometimes both Latin/French and Germanic root-words form one word-family.

In Langenscheidt only one word with a prefix is mentioned: the verb uproot with a second derivation uprooting. After the radical word root 1 as 'part of the plant' with all its meanings and derived and compound words a homophonic word root 0 only used in American slang follows. The English speaker asked did not know that word, and the American did not see a connection to root 1 as mentioned above. It has one derivation rooter 'a person who roots so'. With the help of this word rooter 1 can demonstrate the indication of affixes. As mentioned above, the suffix -er has two meanings 'nomen agentis' and 'nomen instrumenti'. In rooter 1 it is the first meaning of the suffix.

I do not know exactly if it is a good idea to compile an English word in the way which is illustrated by lexical entries introduced here, but I am convinced that it could be a useful instrument for the German language. It can show the synchronic structure of the German vocabulary, i.e. the metalinguistic knowledge the German native speaker has in mind if he thinks of his compound, derived, metonymical and metaphorical words.

But there is a difference between demanding a dictionary and compiling one.

APPENDIX

Wurzel
1. Wurzel St. -n
   1. Teil der Pflanze, meist im Boden, mit dem die Nahrung aufnimmt:
      -ballen, -knolle, -stock, -werk; Pfahl-, Schwarz- <pars pro toto>
   2. (metaph. wie die W. zum Rest der Pflanze) 'Ursprung, Ansatz'  
      W. allen Übels

3. (metaph. wie die W. zum Rest der Pflanze) 'Ansatz von Nase, Zunge,  
   Zahn usw.' Haar-, Nagel-, Hand-, Nasen-, Zungen-, Zahn-, -behandlung,  
   -haut (beides am Zahn)

4. (metaph.) Math. 'Zahl, die n-mal mit sich selbst multipliziert, die  
   Ausgangszahl ergibt' Kubik-, Quadrat-

5. (metaph. wie die Wurzel zur gesamten Pflanze) 'kleinste(r) bedeutungs-
   tragende(r) Teil(e), aus dem ein Wort historisch entstanden ist'

2. wurzel V/i. <zu 1.1>
   1. 'W. in der Erde fassen'
   2. in (metaph. wie der Baum in der Erde wurzelt) 'eng verbunden sein'

3. ein wurzeln V/i. <zu 1.1 od. 2.1>
   1. 'W. treiben, die fest in der Erde greifen'
   2. nur als adjektiv. PP eingewurzelt (metaph. wie die W. fest in der Erde  
      sitzen) 'fest sitzend' e. Aberglaube

4. ent wurzel V/t. <2.1 od. 1.1>
   1. 'aus der Erde reißen mit den W.'
   2. (metaph. od. zu 2.2 wie den Baum mit den W.) 'aus dem angestammten Lebensbereich reißen'

5. ver wurzel V. meist Inf. od. Part. Perf. <zu 1.1 od. 2.1>
   1. (literale Bed. fehlt, aber im GDW 'fest in der Erde w. ')
   2. (metaph. od. zu 2.2 od. metaphor. 2.1 wie der Baum in der Erde fest  
      verwurzelt) 'mit einer festen, innere Bindung herstellen' festverwurzelt  
      (Zus.-adjektiv PP)

6. an gewurzelt adjektiv. PP <zu 1.1 metaph. wie eine Pflanze mit W. in der  
   Erde) 'unbeweglich wie angewurzelt dastehen'

-wurz, z. B. Dick-, kommt im HWG nicht vor.
Die Parallele von 1-5 jeweils literal und metaphor. ist auffällig!  
Zusammenhang zu Würze wäre heute gesucht.

Etymologie: *wurzwalu 'Krautstock' (eine Zusammensetzung)

ROOT 1

1. root S.
   1. 'Wurzel; Wurzelgemüse, Knolle, Zwiebel', root(-crop) 'W-gemüse',  
      root-like w-artig', root sucker 'W-triib', root-stock 'W-stock', root  
      tuberous 'W-knollen', own-rooted 'w-acht'
   2. (metaph. wie die W. zur gesamten Pflanze) 'Quelle, Ursache; Gehalt,  
      Kern' root idea 'Grundidee', root-stock 'Wurzel'
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6. rootlet S. (zu 1.1) 'Wurzelläser'

7. rooty Adj.
   1. (zu 1.1) 'wurzelartig' zu 1.4a, 1.5, 1.6; 1.2
   2. (zu ?) 'wurzelartig, Wurzel...

8. uproot V/t
   1. (zu 1.1 oder 3) 'ausreißen, entwurzeln'
   2. (zu 1.1 od. 3.2 od. 8.1 metaph.) 'entwurzeln'
   3. (metaph. zu 8.1 wie einen Baum) 'herausreißen aus/from'

uprooting S. (zu 8.1, 8.2) 'Entwurzelung'

ROOT²

1. root V/i. for Am. sl.
   1. sport. 'j-n (durch Zurufe) anfeuern'
   2. (metaph. zu 1) 'Stimmung machen für j-n oder etw'.

2. rooter. S. sport. Am. sl. (zu 1.1 u. 1.2) 'Anfeuerer, Schreier, Fanatiker'

Etymologie:
root¹ (außer 2.6, 2.7, 2.8, 3.3) OE rūt
   2.6, 2.7, 2.8, 3.3 OE wrōtan
root² vielleicht frz. root 'shout'

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