
Herbert Wiegand with a "Metalexicographical Panga" in the Jungle: An Unlocking of *Wörterbuch-* *forschung*

Maria Smit, *Department of Music, University of Stellenbosch, Stellenbosch, Republic of South Africa (msmit@maties.sun.ac.za)*

Abstract: This article discusses volume 1 of Wiegand's *Wörterbuchforschung*, which contains a section on the structure of the research field of lexicography, and a section on research on dictionary use. Wiegand firstly discusses different aspects of language lexicography and dictionary research to determine whether this type of research constitutes a scientific discipline. He concludes that it is a scientific research field on its way to become a scientific discipline. In the second section, Wiegand puts forward a theoretical framework for research on dictionary use, based on action theory, and a detailed methodology which includes empirical research. Such a theoretical and methodological foundation, which also takes into account the systematic research on dictionary structure, can be informative to lexicographers and enable them to plan the microstructures of future dictionaries in a more systematic way. This might also lead to a more scientific concept of user-friendliness in dictionaries.

Keywords: DICTIONARY RESEARCH, METALEXICOGRAPHY, DICTIONARY USE, LANGUAGE LEXICOGRAPHY, COMPUTER LEXICOGRAPHY, ACTION THEORY, METHODOLOGY, EMPIRICAL RESEARCH, ACCESS ACTIONS, USER ACTIONS, QUESTIONNAIRES, USER TESTS, PROTOCOLS, EXPERIMENTS.

Opsomming: Herbert Wiegand met 'n "metaleksikografiese panga" in die oerwoud: 'n Ontsluiting van *Wörterbuchforschung*. Hierdie artikel bespreek deel 1 van Wiegand se *Wörterbuchforschung*, wat 'n afdeling oor die struktuur van die navorsingsveld binne leksikografie bevat, en 'n afdeling oor navorsing oor woordeboekgebruik. Eerstens bespreek Wiegand verskillende aspekte van taalleksikografie en woordeboeknavorsing om vas te stel of hierdie soort navorsing 'n wetenskaplike dissipline vorm. Hy kom tot die gevolgtrekking dat dit 'n wetenskaplike navorsingsveld is wat op pad is om 'n wetenskaplike dissipline te word. In die tweede afdeling stel Wiegand 'n teoretiese raamwerk voor vir die navorsing oor woordeboekgebruik wat gebaseer is op aksieteorie, en 'n gedetailleerde metodologie wat empiriese navorsing insluit. So 'n teoretiese en metodologiese basis, wat ook die sistematiese navorsing oor woordeboekstruktuur in aanmerking neem, kan insiggewend wees vir leksikograwe en hulle in staat stel om toekomstige woordeboeke se mikrostrukture op 'n meer sistematiese wyse te beplan. Dit kan ook lei tot 'n meer wetenskaplike siening van gebruikersvriendelikheid in woordeboeke.

Slutelwoorde: WOORDEBOEKNAVORSING, METALEKSIKOGRAFIE, WOORDEBOEK-
GEBRUIK, TAALLEKSIKOGRAFIE, REKENAARLEKSIKOGRAFIE, AKSIETEOORIE, METODO-

LOGIE, EMPIRIESE NAVORSING, TOEGANGSAKSIES, GEBRUIKERSAKSIES, VRAELYTE, GEBRUIKERSTOETSE, PROTOKOLLE, EKSPERIMENTE.

1. Introduction

In the first section of his article "Was eigentlich ist Fachlexikographie?" (1988), the well-known German metalexicographer Herbert E. Wiegand uses the powerful metaphor of a helicopter flying over a jungle. He compares the superficial observation of the jungle by the passengers with observations that have traditionally been made in the field of subject lexicography: they do not even get out of the helicopter, but try to form an idea of what the jungle looks like by taking some aerial photographs. Although some researchers in subject lexicography have occasionally made a couple of intermediate or forced landings, they mostly did so in order to obtain information about other matters. Hardly ever has anybody ventured out of the helicopter to tackle the jungle with a "metalexicographical panga" in order to get a more profound theoretical grip on this area.

What Wiegand said about subject lexicography, can also in a sense be said of his own unremitting efforts within metalexicography as a whole. In contrast to many others who have a more cautious approach, Wiegand has never been afraid of braving into the unexploited and uncultivated areas of metalexicography. After working for many years on his "book", he finalized the first volume in 1998. The title is *Wörterbuchforschung. Untersuchungen zur Wörterbuchbenutzung, zur Theorie, Geschichte, Kritik und Automatisierung der Lexikographie*, published in Berlin and New York by De Gruyter. This volume deals with Wiegand's structuring of the first field of lexicographical research, namely, research on dictionary use ("Wörterbuchbenutzungsforschung"). Volume 2, when it is published, will treat the other three fields of lexicographical research, namely, research on dictionary structure ("systematische Wörterbuchforschung"), research on dictionary history ("historische Wörterbuchforschung") and research on dictionary criticism ("kritische Wörterbuchforschung").¹ It is a pity that only the first volume is available at present, because Wiegand often refers to the second volume in which important aspects of his theory are discussed. This means that, for the time being, the reader can only see half the picture.

Volume 1 ends with a comprehensive bibliography, as well as registers of (i) the definitions formulated in the book; (ii) conventions regarding terminology coined by Wiegand ("Namengebungskonventionen"); (iii) figures and graphs used; (iv) illustrative examples to explain lexicographical procedures and instances of dictionary use; (v) lists of citations from dictionaries; (vi) the pages on which authors are mentioned or cited; and (vii) a general index.

The same high quality of printing which characterizes Wiegand's other works can also be found in this publication in which the multitude of intricate

tables, diagrams and rule formulations have been executed with almost faultless precision.

2. The argument in the first part of *Wörterbuchforschung*

As is characteristic of this metalexigrapher, this volume is a formidable reworking of his many multifaceted and lengthy articles which regularly appeared since the 1970s. He once again follows the path from beginning to end, writing in great detail and with typical German precision about his passion in life: *Wörterbuchforschung* (dictionary research). In a most systematic way he revisits the metalexigraphical beacons he has erected over the years, only to show even more clearly what he regards as the academic and scientific status of dictionary research.² A most frustrating fact for readers who do not have a command of German has always been that so few of Wiegand's works have been published in English. Only one volume containing a selection of articles is available in English translation.³ It is therefore very difficult, if not impossible, for anyone who does not know German well, to get an in-depth insight into the extensiveness and complexity of Wiegand's lexicographical theory. Even those with a good command of German know that Wiegand's works are not easily assimilable, and this first volume certainly is not.

Wiegand has written many articles in journals, monographs, and textbooks, as well as many conference papers, reviews, review articles, reports, bibliographies, discussions, et cetera.⁴ Many of his articles are of substantial length and might just as well have appeared as books in their own right. He is editor and coeditor of numerous publications which serve as the canon for metalexigraphy, such as the journal *Lexicographica*; the three-volume *Wörterbücher, Dictionaries, Dictionnaires (Handbücher zur Sprach- und Kommunikationswissenschaft, Vol. 5.1-5.3)* (Hausmann et al. 1989-1991); the *Studien zur neuhochdeutschen Lexikographie, Vols. I-VI.1/2 (Germanistische Linguistik)*; and the *Lexicographica Series Maior* of which over 90 volumes have been published so far.

The first volume of *Wörterbuchforschung* starts out with Wiegand's classical explanation of what it is all about — what language lexicography is, and what dictionary research is. His main aim is to develop a general theory of lexicography. He claims (1998: VII), and rightly so, that there were no previous examples that he could use in drawing up this theory, and that it took him two decades to do so. The reason for his work has been to establish dictionary research as a scientific discipline, so that it would obtain the status of an official academic discipline (1998: VII). The first part of the first volume deals with "Studies towards the structuring of a research field"⁵, which has as subheading "Language lexicography and dictionary research". This part contains the following sections: (1) What it is all about; (2) What is language lexicography?; (3) Dictionary research: its object of research, its tasks and aims; (4) Is dictionary research a scientific discipline?; (5) Computers, scientific lexicography and dictionary research; (6) The object of dictionary research: a concluding charac-

terisation; (7) Scientific lexicography and other academic disciplines; and (8) A resumé on the status of language lexicography and dictionary research in the mid-1990s.

A lengthy discussion of the question "What is language lexicography?" leads to several subquestions. Wiegand (1998: 15) uses his customary way of building his arguments on citations from other works on lexicography (in many cases in order to refute or correct the arguments of those authors).⁶ He (1998: 15) warns the reader that he will use relatively many citations, and it becomes clear that he has indeed, in his reworking of his theory, added a still greater number of bibliographical sources to strengthen his previous arguments.⁷ It appears that the citations mainly help him to build his arguments, and by interpreting them (and refuting them) he can refine them, thus forming the clear distinctions needed for his comprehensive theory.⁸

The subquestions (i) whether language lexicography is a science or not, (ii) whether it is applied linguistics, and (iii) whether it is a branch of lexicology, remind the reader of the discussions in earlier articles (Wiegand 1983; 1983a; 1984; 1984a; and 1989b), although he (1998: 4) states that these earlier versions are only partially included in the present publication. This certainly is the case, especially because Wiegand adds a wealth of recent literature to support his arguments. As usual, his excessiveness for the sake of completeness overwhelms the reader (for example, the last paragraph on page 18, as well as pages 20, 27 and 43).

Wiegand (1998: 46) makes the important distinction between language lexicography and dictionary research, where the latter forms the scientific metadomain for language lexicography. But before he gives a final verdict on what language lexicography is, he (1998: 47-58) discusses the difference between language lexicography ("Sprachlexikographie"), special-field lexicography ("Sachlexikographie") and the lexicography of encyclopaedic dictionaries ("Allbuchlexikographie"). According to the definition on page 62, language lexicography can either be a self-taught, nonscientific cultural practice, or an independent cultural and scientific practice, consisting of a more or less clearly demarcated self-reflecting component, which can only be mastered, because of its multilayered comprehensiveness, by academically trained staff. Language lexicography is a calculable, analysable, checkable, manageable, testable and teachable practical process, which draws on various results and methods from different disciplines. It forms the central part of the pretheoretical empirical subject domain out of which the various scientific objects for the different research fields of dictionary research can be extrapolated.⁹

Wiegand proceeds by distinguishing the differences between various denotations for lexicographical works (1998: 64-71),¹⁰ and the difference between the terms "metalexicography" and "dictionary research" (he uses "metalexicography" to denote the total metadomain whose object of study consists of (i) dictionary research, (ii) lexicon research and (iii) the research of encyclopaedic dictionaries) (1998: 72-76). This is followed by a characterisation of dictionary

research (1998: 76-88). The question whether dictionary research is a scientific discipline can only be answered after determining what the criteria are for any field of study to be called a "scientific discipline" (Wiegand 1998: 89-97). Wiegand presents numerous citations and reflections on the nature of the notion "discipline". Finally, after giving an exposition of the present status of dictionary research, Wiegand (1998: 102-103, also 256) concludes that, in the mid-1990s, dictionary research is not a scientific discipline yet, but rather on its way to become one. At present, one should rather use the designation "scientific research field" to refer to dictionary research. It is possible for various subdisciplines to emerge, for example (i) dictionary research of the German language, (ii) bilingual dictionary research, or (iii) the use of English monolingual dictionaries (Wiegand 1998: 104-118). Wiegand (1998: 133) ends this section by expressing the wish that dictionary research will in the future become an academic discipline with official status.¹¹

The next section (Wiegand 1998: 133-246) deals with computer lexicography and dictionary research. Firstly, Wiegand (1998: 134-153) discusses crucial aspects of lexicographical processes without the use of computers, and then proceeds to aspects where computers are partially involved (1998: 153-160), as well as processes which are from the very beginning completely computerised (1998: 171-248). Many of these issues have previously been dealt with in Zai-ping and Wiegand (1987), where the organisation of *Das Grosse Deutsch-Chinesische Wörterbuch* was discussed, and in Wiegand (1986), which specifically focused on the computerisation of dictionary projects. Now, Wiegand's arguments are more detailed and more universal, also referring to works by other scholars. The section on computer lexicography especially is now more up-to-date and greatly expanded, because most of the greater lexicographical projects undertaken today make use of corpora stored and sorted in electronic databases. The lexicographical process consists basically of (i) the preparation phase, which can be divided into several steps (conceptualising a dictionary programme, and drawing up a dictionary plan); (ii) the phase of collecting the material; (iii) the phase of preparing the material; (iv) the phase of exploiting the material (the actual writing of dictionary articles); and (v) the phase of preparing the manuscript for publication. Most of these phases are also used when a dictionary is computerised. As earlier in Wiegand (1987a), he once again makes sure that the reader understands the distinction between the notions "lexicographical data" and "lexicographical information" (Wiegand 1998: 160-171), also by referring to many other authors who have dealt with these concepts.¹² Wiegand argues that users have to extract or reconstruct lexicographical information presented in dictionary articles — and different users can extract different information from the same data (1998: 170).

He (1998: 248-256) ends the first part of volume 1 by discussing scientific lexicography and its relationship to other academic disciplines. It is clear that greater lexicographical projects can nowadays only be undertaken in teams, in most cases also involving experts from other disciplines.

3. The argument in the second part of *Wörterbuchforschung*

The first part of volume 1 is the easier part. In the second part of *Wörterbuchforschung* which spans pages 259 to 1031, Wiegand takes research on dictionary use under close scrutiny. Chapter 2 (Wiegand 1998: 259-267) gives an overview of research on dictionary use in the mid-1990s, whereas chapter 3 deals with the theoretical foundation of dictionary use based on action theory (Wiegand 1998: 268-567). The next chapter, chapter 4, deals with the methodology of research on dictionary use (Wiegand 1998: 568-1025), followed by a short resumé in chapter 5 on the position and future tasks of research on dictionary use in the mid-1990s (Wiegand 1998: 1026-1031).

The overview of research on dictionary use in chapter 2 contains many references to publications that have until now dealt with this aspect. In chapter 3, Wiegand (1998: 268-567) gives a lengthy discussion of how research on dictionary use can and should be based on action theories ("Handlungstheoretische Grundlegung der Wörterbuchbenutzungsforschung") as developed in social science research. This section is a much more comprehensive exposition than in any of his previous publications (for example, Wiegand 1987a). He draws on different "action" categories and gradually builds up his own analytical model of different types of dictionary use. He gives examples of dictionary use by "constructed" dictionary users, where these users pose relevant search questions. By means of these examples, Wiegand aims to describe certain central features of user actions, in order to classify them systematically. The examples are representative of search questions that arose during earlier pilot studies, and Wiegand makes general statements and formulates numerous definitions (in fact, 175 of them!) with regard to dictionary use and terminology (either well-known or newly-coined terms).¹³ Some of his examples have been used in earlier work, but many of them are new, or expanded. According to Wiegand (1998: 283-284), it is very important to determine the patterns of action ("Handlungsmuster") that are actually performed when users consult dictionaries. One cannot determine these without some kind of pretheoretical framework, because otherwise it will not be possible to interpret the empirical data. On the other hand, an adequate theory of dictionary user actions cannot be developed without empirical pilot studies.¹⁴ Later in the volume it becomes clear that Wiegand has ample experience of empirical research, when he admits (1998: 1001, note 90) that, because of the empirical projects that he undertook, he received many stimuli for the formulation of hypotheses about user actions.

Hartmann (1998: 160) in his review of Wiegand's *Wörterbuchforschung*, criticises the fact that "the problem situations are invented", meaning that Wiegand devised many of the search questions, the search actions and the features of the constructed users he describes in his examples. This may, however, not be problematic — linguists in the generativist tradition were very positive about the "values of introspective data" as opposed to data obtained from experiments.¹⁵

Wiegand (1998: 296) distinguishes between usual, unusual and didactical uses of dictionaries, before he (1998: 298-301) explains to the reader what the genuine purpose of a dictionary is. Usual search actions include (i) using a dictionary as a reference work (Wiegand 1998: 304-350); and (ii) using a dictionary as reading matter on language (Wiegand 1998: 350-355). Using a dictionary in an unusual way includes (i) using it in order to learn something about it, for example, when writing a review of the dictionary (Wiegand 1998: 355-359); and (ii) using it not as a dictionary but, for example, for drying leaves in it (Wiegand 1998: 359). The latter type of user action is noncommunicative, not related to the purpose of the dictionary, and if successful, without errors. The didactical use of dictionaries is also discussed (Wiegand 1998: 363-366).¹⁶

In a next section, Wiegand (1998: 370-480) adds another dimension when he distinguishes between general, special and dictionary-specific user practice. The first of these practices, as the designation suggests, occurs when a user masters the general system of dictionary consultation, without having to supplement the user act with additional knowledge (for example, the alphabetical order in which dictionaries are usually presented, can be considered as a general user practice in languages using the alphabetical system). Dictionary-specific user practices occur when users are able to perform action types for specific types of dictionaries (not a specific dictionary). As an example, Wiegand discusses user practices specific to retrograde dictionaries (1998: 380-384) and to orthographic dictionaries (1998: 384-390). Special user practice occurs when a user has enough experience of using dictionaries that he/she masters more than one specific user practice.

Many terms are used to determine the exact nature of different user actions, for example, "external and internal access actions" ("externe und interne Zugriffshandlungen"). External access actions are performed when a user, for example, consults the outer texts and/or register(s) of the dictionary (Wiegand 1998: 394), whereas internal access actions occur when a user consults dictionary articles in order to obtain the needed lexicographical data (Wiegand 1998: 404). These external and internal access actions are also subdivided into smaller subtypes, such as "actions following cross-references" ("Verweisbefolgungshandlungen") and "consultation actions motivated by cross-references" ("verweismotivierte Konsultationshandlungen") in the case of internal access actions (Wiegand 1998: 408-423). Of course, cross-references can differ in format and content and they can also cross-refer the user to different parts of the dictionary text or even to other dictionaries, which once again leads to very specific actions. It is clear that Wiegand has considered these many instances of dictionary use very carefully, as can be illustrated by his remarks on the "action following a cross-reference": The "dictionary-incurrent action following a cross-reference" ("wörterbuch-inkurrente Verweisbefolgungshandlung") means that a user is cross-referred to another dictionary by means of a bibliographical index. This does not imply, however, that the user gives up the first search question in favour of a new one. If this should happen, it constitutes another

type of action, namely, a "consultation action motivated by a cross-reference" (Wiegand 1998: 421).

Wiegand, in his discussion of these different action types, resorts to many devices in order to build his theory. Firstly, when using examples, he often refers to dictionary articles in existing dictionaries to illustrate his arguments on types of access actions. By doing so, he also criticises elements in these dictionary articles, which belong under the fifth component of his lexicographical theory, namely, the research on dictionary criticism. Examples of such dictionary criticism can be found in Wiegand (1998: 440 and 446). Hopefully, this aspect will eventually also be mentioned in part V, volume 2, as a specific type of dictionary criticism.¹⁷

Secondly, Wiegand coins new terms and uses already known terms in order to designate all the instances of action types of which he can think. For each term, a definition is given — there are 29 definitions in this section alone. User actions are subdivided into various "families" (18 in total) and "subfamilies" (11 in all), and in each case various designations are given for different actions (1998: 480-494).

Thirdly, as in most of his other publications, Wiegand makes extensive use of graphic illustrations in order to help the reader to get a better overview of the theory.

In the fourth place, in his distinction of "action types", Wiegand represents these actions in the following format:

AUF DAS LEMMA *sich etwas vom Herzen reden* IM WÖRTERVERZEICHNIS DES IDIOMATISCHEN WÖRTERBUCHES (=WB8) "Friedrich (1976)" ZUGREIFEN.¹⁸

This indicates the type of action, the problematic expression which instigated the user action, and the dictionary used during the search. Not all rules are as specific as this one.

Fifthly, Wiegand gives formulas which represent rule systems. These can be simple or very intricate, dazzling the mind of the reader, and taking some time to decipher. An example of a simple rule (Wiegand 1998: 390) is:

{HT-4A-3.3} → {HT-5A-3.3} → {HT-5aA-3.3}

Lastly, Wiegand presents explanations of his rule formulation by means of intricate descriptions in separately marked sections of the conventions regarding his terminology. In coining his terminology, he follows the conventions of formal logical languages (Wiegand 1998: 497). This means that if the reader is not trained in these conventions, Wiegand's works, and especially this part of volume 1, will be very hard to follow.

Wiegand (1998: 500-510) devotes a section (paragraph 3.3.7.) to types of users. He discusses user types, user roles, potential users and addressees. There are learners of dictionary use ("Benutzungslerner"), experienced dictionary users, and trained and initiated users. Dictionary users can be successful or

unsuccessful; they can either be laypersons or scientific users. They can be mother-tongue users or foreigners.

There are also, Wiegand (1998: 510) contends in paragraph 3.3.8., different user modalities and user skills. Predicates which evaluate user skills have not been dealt with extensively in dictionary research, and it falls under the didactical component. Wiegand (1998: 510-519) therefore discusses some predicates which are of importance for the research of dictionary use. The following examples are predicates which can describe user actions: "experienced/inexperienced"; "appropriate/inappropriate"; and "without errors/correcting the errors/with errors".

In addition, there are contexts ("Benutzungskontexte") in which consultation actions can take place (Wiegand 1998: 519-562). External contexts take into account, for example, the place, time, and duration of user action, and different social and communicative aspects. Users have different interests, and different reasons for performing a user action, and the results of their user actions can be different.

Wiegand (1998: 563-567) concludes chapter 3 on the theoretical foundation of dictionary use by an overview of his proposed structure in the format of a table (1998: 564-566). Examples of types of search questions listed in this table are: (i) WHO? (uses, can use); (ii) HOW? (how often, under which social circumstances, under which conditions); (iii) WHERE?; (iv) WHEN?; (v) HOW LONG?; (vi) WHY?; (vii) WITH WHICH CONSEQUENCES? He claims that his proposals in this chapter can lead to a theory-based orientation towards empirical research, and adds that his contemplations are, in fact, based on empirical work previously done on a small scale (1998: 567).¹⁹

Chapter 4 deals with the methodology of dictionary use (Wiegand 1998: 568-1025), and Wiegand points out that one should ask oneself whether methods from empirical social research can successfully be used in the research of dictionary use, and whether the questions asked in research of dictionary use can appropriately be investigated by means of these methods (1998: 568). Some of the methods that Wiegand (1998: 568-823) discusses in great detail are observation, questionnaires, interviews, tests, experiments (only a short section), content analysis (also a very short section), and the use of statistical methods. His discussion includes excerpts from previous studies conducted at the University of Heidelberg, as well as newly devised attempts to structure his theoretical framework. He also refers to the work of other scholars, and weighs the advantages of the methods against the disadvantages.²⁰

Once again, Wiegand breaks down into subtypes the different methods that can be used. In the section on questionnaires, for example, he distinguishes among others between oral and written questionnaires; personal and group interviews; interviews with laypersons and with experts; and standardised, partially standardised and nonstandardised interviews, to name a few.

Wiegand (1998: 587-588) gives four reasons why certain questions have not yet been posed in the research of dictionary use. Firstly, some publishers

have only been interested to market the product, but did not systematically take into account user needs. Secondly, various diverging models have so far been used to study dictionary use, some of which were not specific or theoretical enough for empirical research. Thirdly, Wiegand contends that only very recently has research on dictionary structure presented useful formal and structural devices with which empirical research can be done.²¹ Finally, as fourth reason, Wiegand puts forward that, apart from the "EURALEX/AILA research project into dictionary use", no other extensive research projects have been undertaken in the area of dictionary use.

Wiegand (1998: 589-664) then engages in lengthy discussions on the nature of questionnaires and observations, user profiles, user experience, user habits, the types of questions to be included, techniques to be used in order to obtain useful information, rating scales for grading answers, the layout of the questionnaire, and other issues. These discussions are accompanied by detailed examples of two attempts to devise a questionnaire (Wiegand 1998: 591-597 and 646-656), leading to evaluations of the advantages and disadvantages of the questionnaires and their results when they were first used, and followed by a revised questionnaire (Wiegand 1998: 664-677).

According to Wiegand, one will have to work out in more detail what the methods and contents should be if one wants to use the test as measurement of dictionary use (1998: 677). Three types of tests are possible, namely, (i) the user test, (ii) a test to determine metalexicographical knowledge, and (iii) a dictionary test. The latter has been developed within the framework of the second component of Wiegand's lexicographical theory, i.e. the research on dictionary criticism, and Wiegand refers the reader to part V of volume 2 (1998: 677). A user test can test user skills, language competence, user experience, knowledge of dictionaries, knowledge of patterns of user actions, and the skills to perform specific user actions of a specific type, thereby demonstrating the mastering of a user practice. A user test can be monothematic if it concerns the use of one dictionary only, or polythematic if more than one dictionary is involved. It can test one user in comparison to a group (making a cross-section), or it can test the developing process of one user over a period of time (making a longitudinal section) (Wiegand 1998: 678-679). Tests of this nature can inform the didactical component of dictionary use. Furthermore, tests can be divided into classes of (i) tests for users-in-action (i.e. while they are consulting a dictionary); (ii) tests for users-not-in-action (i.e. usually comprising tests about users' knowledge of dictionaries); and (iii) a mixture of (i) and (ii). It is important to base the development of user tests on theoretical foundations, which means that the features of the users to be tested have to be determined theoretically, and not on an ad hoc basis (Wiegand 1998: 683-684). One should also draw on studies within the field of constructing tests, as done in pedagogical diagnostics, psychology and empirical social research (Wiegand 1998: 684).²² These user tests can, once more, be divided into three categories: (i) subjects have to carry out specific instructions; (ii) the choice of dictionaries can be the focus; or (iii)

questions can focus on determining the subjects' knowledge of dictionaries (or a specific dictionary). Wiegand engages in a detailed discussion of the possibilities and problems of these types of tests, accompanied by numerous examples from his own empirical research (1998: 685-818). Aspects such as objectivity (1998: 760-762), reliability (1998: 762-766), and validity (1998: 766-767; 804-812) are raised.

Paragraph 4.2. is devoted to a detailed exposition of different "genuine metalexicographical concepts for the methodology" in research on dictionary use (Wiegand 1998: 823-1026). Here he categorises situations of dictionary consultation, using amongst other devices, tree diagrams and symbols to illustrate relationships between categories. Once again, this part is richly provided with examples of dictionary use to enable the reader to form a clear picture of what Wiegand aims at. This is a very important part of the volume, and filled with information that has not yet been published in such a comprehensive way. Wiegand (1998: 978, note 87) also points out to the reader that one of the purposes of building typologies is to develop the terminology of a research field, as Wiegand himself undoubtedly does in this part of the book.

The following section discusses protocols of dictionary use (Wiegand 1998: 974-1025). Types of protocols and devices used for protocols are discussed, and examples from Wiegand's own research are used as illustrations.

With regard to experiments, Wiegand (1998: 1023-1024) contends that one cannot successfully describe metalexicographical experiments about the relationship between dictionary structure and dictionary use without a detailed theory of dictionary structure. This aspect is only dealt with in part III of volume 2. But, if both a theory of user actions and a theory of dictionary structure are available, one can empirically prove by means of experiments (in which the independent variable features can be controlled) how the features of the dictionary structure affect the use of a dictionary. This will enable a scientific concept of user-friendliness, which can also make it possible to compare dictionaries on empirical grounds, and not just by approximate judgements.

Wiegand (1998: 1026-1031) ends this comprehensive volume with a résumé on the status and tasks of research on dictionary use in the mid-1990s. He (1998: 1026) claims that it is the youngest of all the research fields, and that there are only about 100 publications dealing with this field at the time of writing. Studies so far have concentrated mostly on dictionary use by laypersons, especially learners of foreign languages. Wiegand (1998: 1026-1027) notes that a fully developed research on dictionary use also has a historical dimension, in which one could, for example, study the dependence of one historical dictionary on preceding ones.²³ He (1998: 1027) states that even though some previous studies pose detailed questions and present worthwhile ideas and interesting results, most of the results cannot be generalised, particularly because of the lack of a common theoretical framework. His own research within the framework of the Heidelberg Project "Empirische Wörterbuchbenutzungsforschung" did, from the start, focus on working out a theoretical basis for re-

search on dictionary use. This effort now forms the backbone of the second part of this volume. Apart from the theoretical basis for research on dictionary use, it is important to develop a methodology. This is what Wiegand did in this volume. He (1998: 1030) expresses the hope that these chapters will help the research on dictionary use to establish a sound theoretical and methodological framework.

According to Wiegand (1998: 1030-1031), tasks for the future will be: (i) to undertake an extensive interinstitutional team research project on the use of dictionaries, where not only students learning German as a foreign language will be involved; (ii) to develop, by taking into account the systematic research on dictionary structure, a standardised concept of user-friendliness; (iii) to develop usable user achievement tests ("Benutzungsleistungstests") in order to be able to use different dictionaries with the same effect; (iv) to develop, together with the systematic study of dictionaries, concepts which enable more systematic planning of microstructures in dictionaries.

4. Conclusion

The preceding discussion demonstrates how successful Wiegand has been in devising a closely-knit theory on dictionary research. He has embedded this theory within the framework of well-established German schools of thought as is shown by his reference to many German scholars in other disciplines, who have done worthwhile research. For example, his arguments, conventions for coining terminology, ways of formulating definitions, and ways of writing down rule systems, are based on those found in social science research, formal logic, mathematics, the natural sciences, et cetera. On page 767 he suggests that, in order to form a theory, one should consult the "canon of scientific theory". Obviously he refers in the first place to a vast collection of German scholarly work (as can also be seen from the bibliography).²⁴ Throughout the years, disciplines have often grown and expanded rather independently in different countries. Sometimes there were influences from German scholars on English scholars, and vice versa. But it is clear that this "canon" that Wiegand refers to, is a closed book to many who have not been trained in the German tradition. So is the work of Wiegand — if you do not read German.

In conclusion, Wiegand (1998: 1025) advocates that lexicographers who are working within a theoretical framework, should take dictionary structure far more seriously than is the case at present. We are looking forward to reading volume 2 which contains the theory of dictionary structure.

Notes

1. Cf. Hartmann (1999: 156-157) for the English equivalents used in this article.
2. Cf., for example, Wiegand (1998: 435), where he explains that, in this work, he has to elaborate on his previous work regarding the instruments he uses for developing his theory in detail.

3. Cf. Immken and Wolski (1999).
4. According to the website which lists Wiegand's publications, he has now published more or less 378 titles.
5. "Studien zur Strukturierung eines Forschungsfeldes" (Wiegand 1998: XI).
6. Once, towards the end of the volume, Wiegand (1998: 930, note 78) admits that he changed his mind because of the work done by another scholar, when he speaks about the concept of congruence.
7. Cf., for example, Wiegand (1998: 15, note 5), where he demonstrates that he did not only consult German, English and French works, but also Italian, Spanish, Portuguese and Russian works on lexicography!
8. Cf., for example, Wiegand (1998: 44), where he interprets Schaefer, and even explains to the reader what Schaefer actually wanted to say. Schaefer (1998: 294), on his part, humorously reacted in his review of Wiegand's book by "quoting" the following part of Wiegand's sentence "Was SCHAEDER ... wahrscheinlich ausdrücken will, ist dies" before he made his final statement about Wiegand's work.
9. This is a very oversimplified rendition of what is actually included in Wiegand's (1998: 62-63) "preliminary characterisation" of language lexicography.
10. This part is a revised and expanded version of the introductory paragraphs of the article "Shangai bei Nacht" (Wiegand 1988a).
11. According to the impressive list of academic institutions in German-speaking countries which already offer courses in lexicography (Wiegand 1998: 121-127), great progress has been made at least in those countries towards establishing dictionary research as an official academic discipline.
12. It is important to note that Wiegand (1998: 252) refines his own terminology with regard to *other disciplines* which can supply data to lexicography. He used to call these disciplines *informationsspendend* ("information-supplying") (Wiegand 1989b: 265), but brings this in congruence with his explanation in section 1.5.2.2. of this volume, changing the expression to *datenliefernd* ("data-supplying").
13. Cf., for example, Wiegand (1998: 292) for an overview of typical search questions, mapped to types of user actions and terminology that can be used in research on dictionary use.
14. Cf. also Wiegand (1987a: 181) where he explains that before one can do any empirical research, one will have to acquire rudimentary knowledge. This may include (i) general, pre-scientific knowledge about dictionary use; (ii) accumulated experience in the use of dictionaries, and reflecting on them; and (iii) theoretically based hypotheses on dictionary use.
15. Cf., for example, Newmeyer (1983: 48-50).
16. Cf. Wiegand (1998: 367) for a figure depicting the types of dictionary use.
17. It is also interesting to note that in the second part of volume 1, Wiegand often refers to many dictionary articles in existing dictionaries, but in some sections he seldom refers to work done by other scholars within the field of research in dictionary use. This is probably because many of the distinctions that he makes within this field, were introduced by himself, and were yet not extensively treated by other scholars.
18. This example is found in Wiegand (1998: 454).
19. Cf., for example, Wiegand (1985; 1987), Ripfel (1989; 1990; 1991) and Ripfel and Wiegand (1988).

20. Cf., for example, Wiegand (1998: 583, 588-589) where he refers extensively to previous work done by other scholars within the area of questionnaires on dictionary use.
21. These formal and structural devices have, of course, mainly been worked out by Wiegand himself, as can be seen in the references on page 589, which include, amongst others Wiegand (1989; 1989a; 1990; 1995).
22. It is interesting to note that Wiegand (1998: 720) observes that psychologists and pedagogues have up to now not realised that a test is a *text* which belongs to a certain text type and that an instruction in a text is a partial text. Consequently they frequently move to and fro between cognitive and textual levels. Wiegand urges for a linguistic study to be done on the test as a text type.
23. Cf. also Wiegand (1998a: 647), where he discusses the practice of "compiling dictionaries from other dictionaries" ("Wörterbücher aus Wörterbücher zu erarbeiten").
24. Cf. also Wiegand (1998: 797), where he draws on concepts and methods used in mathematics and the natural sciences.

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