

MAXDictio

Add-on Module
for
Content Analysis



MAXQDA 2007

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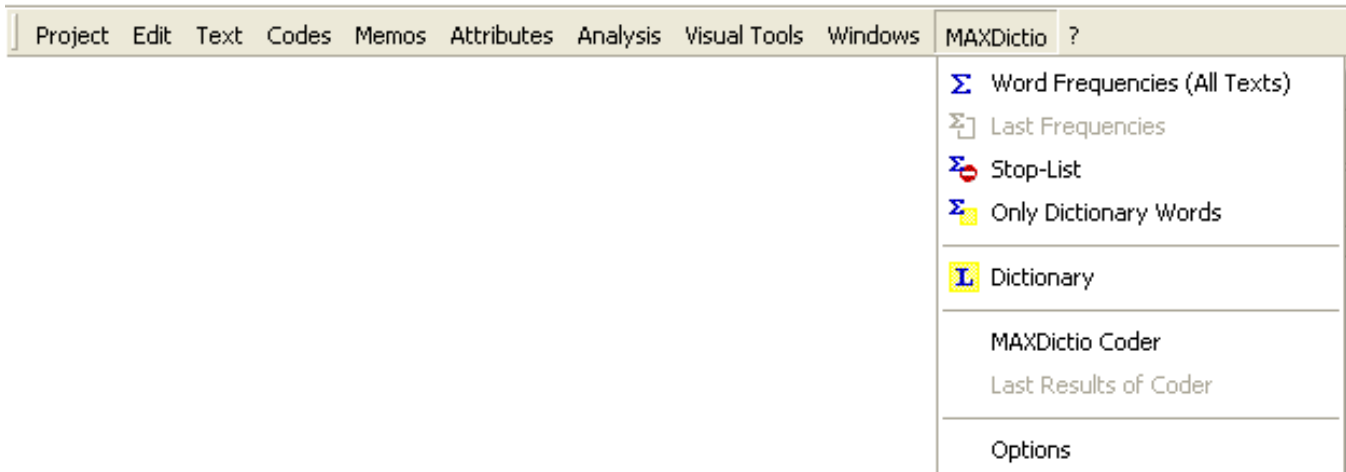
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1 Installation

The **MAXDictio** setup program will setup a new folder called “**MAXDictio**” under C:\Program Files on your hard disc. You can also find the user’s manual in PDF-format in this folder. **MAXDictio** can only be used in connection with an already existing and licensed version of **MAXQDA**. **MAXDictio** is not a separate software, it is accessed as a plug-in within **MAXQDA**. It can only be used with an extra license code; using it for more than one **MAXQDA** license is not possible.

After the installation, you will find the familiar **MAXQDA** interface, the menu supplemented by the option **MAXDictio** next to the help symbol in the menu bar.



By clicking on **MAXDictio**, a pull-down menu will open and you can select one of the offered options.



2 What does MAXDictio offer?

MAXQDA users have repeatedly asked for a tool that would allow them to create an index of the words used in a text, so that they have access to an additional explorative aid for the evaluation of the text. Such a dictionary and content analysis module would make it easy to explore the vocabulary used in a text as well as to find out which words can be found in which texts or text passages. It would also make the differences between the vocabulary of the various texts within one project visible.

Besides the vocabulary functions, the **MAXDictio** module offers a number of techniques which originate from the area of classical quantitative content analysis. **MAXDictio** was not intended to be a competitive software product for quantitative content analysis, but rather it aims to utilize these techniques for qualitative data analysis and provide these as an additional set of analysis methods in a manageable form.

MAXDictio is not intended to be a software program for quantitative content analysis. The functionality offered makes this software attractive for researchers who have managed their analysis with less convenient content analysis software up to now. The functionality of **MAXDictio** software is comparable to other established software programs, such as *Textpack* designed by ZUMA. On the contrary, the way **MAXDictio** allows the user to build up indexes should convince even experienced *Textpack* users.

More precisely, **MAXDictio** provides following functions:

- Word frequencies in the whole text or in marked passages
- Word frequencies in text groups or in text sets which have been put together based on textual criteria
- Free definition of text units (whereby these may overlap)



- Editing texts and assigning them to text units is possible throughout the whole process
- Exportability of the frequency analysis outcomes to MS Office programs (such as Excel or Word) and to SPSS, also by using the Windows clipboard
- Index of selected words of one or more texts
- Possibility to jump from each index entry to the underlying text passage
- Limitation of the analysis by go-lists (containing a list of words which should be analyzed exclusively) and stop-lists (which contain a list of those words that should be blocked for analysis)
- Selective analysis by selected criteria, such as the value of socio-demographic variables, filtering by numeric data
- Creation of word-based dictionaries, basic dictionaries as well as hierarchical
- Transfer of words from the word frequency table into the dictionary (by double-clicking or by drag-and-drop)
- Export of dictionaries to MS Office programs (e.g. from Excel)
- Import of previously used dictionaries
- Coding on the basis of word-based dictionaries
- Results of the coder as editable and sortable Excel-like table
- Further processing of the results in SPSS and Excel
- Creation of a validation file for verification of codes
- Total integration in the functionality of **MAXQDA** using convenient functions such as keyword-in-context or automatic coding of text passages



3 Basic Principles of Working with MAXDictio

3.1 Basic Terms

In the following section, some important and in this manual frequently used terms will be explained, including:

- text
- text section or unit
- word
- word stem
- stop-list
- go-list
- search item
- dictionary
- coding
- text format (RTF, ASCII/ANSI)

Text

A text is a DOC-file in Word or a single document in the DOCUMENT SYSTEM in **MAXQDA**. The format of the text is *Rich Text Format*. **MAXDictio** only analyzes the mere text, which means, for the word frequencies, it is irrelevant which font is being used or if words are written in bold or italic.



Text Section/Text Unit

Similar to a book, texts can be subdivided into chapters and subchapters. Chapters may not overlap, just as in a book Chapter 3 and 4 may not overlap. During import, a text can already be subdivided into sections (text units) with the text pre-processor. But it is also possible to make the text units in **MAXQDA** simply by coding text passages. The **MAXDictio** Coder can analyze text passages separately. Each text unit will appear individually in a line of the table of results.

Word

For **MAXDictio**, a word is any string of characters which are situated between two blanks or cut-off punctuation characters (such as , ; . :).

Word Stem

With a modification of the general terminology, in **MAXDictio** a word stem is to be understood as any part of a word. This means it is not only the left part or the stem form of the word; the “word stem” can also be situated in the middle of the word (so “go” would be a word stem of “going,” “bingo,” and “undergoes”).

Stop-List

Stop-lists contain collections of words that are supposed to be ignored in the word frequency analysis. Generally, these are indefinite and definite articles, numerals, and so on.

Go-List

A go-list functions pretty much conversely to a stop-list. It contains words to which the frequency analysis should be confined, i.e. only words that are on the list will be considered in the analysis.



Index

An index is a list of words that includes their references, i.e. the passages where they can be found in the text(s).

Dictionary

A dictionary is composed of categories and words or character strings which are assigned to the categories. For instance, the words “Italy,” “Great Britain,” “Germany,” “Belgium,” “Netherlands,” and “Spain” could be assigned to the category “Europe.”

In principle, dictionaries are not project-dependent. They can be used again for other projects. The dictionary represents a classification scheme for the coder.

Search Item

A search item is a string of characters, one or more words, which are attached to a category in a dictionary.

Coding

The word ‘coding’ in **MAXDictio** carries the same meaning as in quantitative content analysis. Based on the words in the dictionary, **MAXDictio** counts how frequently the categories appear in the texts or text passages. The table of results shows the number of times a category appeared within each text unit. With the aid of this information, it is then possible to carry out statistical calculations.

Text Format (RTF, ASCII/ANSI)

RTF and ASCII are common file formats in Windows. Rich Text Format allows for use of different font types and sizes as well as text characteristics like bold, italic, or text colors. ASCII files are considerably more limited. They only contain characters of the American Code for Information Interchange



(ASCII). Font types and sizes as well as other text characteristics are not included. In **MAXDictio**, such RTF-specific characteristics will be ignored.

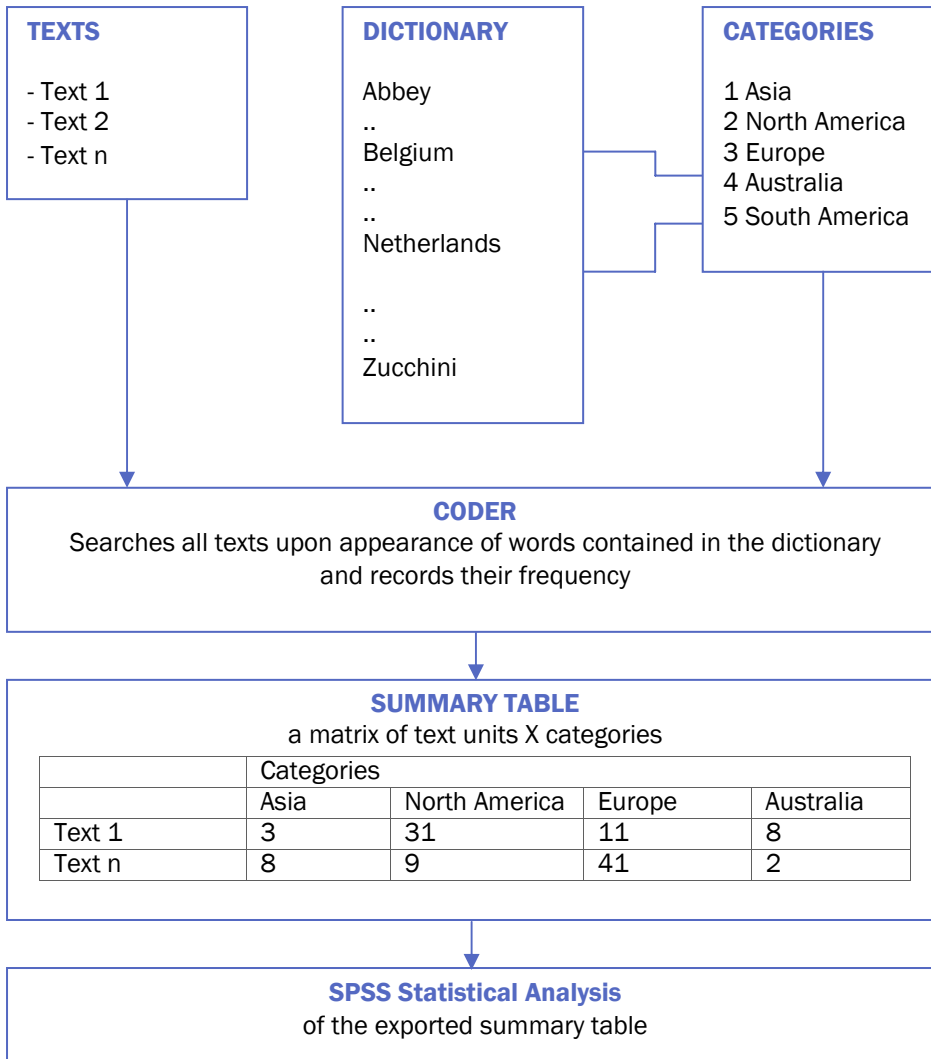
3.2 Schematic Course

Based on well-known textbooks like KRIPPENDORF(2004), an outline of the following classical quantitative content analysis schema is possible:

The starting point of the analysis is a certain number of texts, often called the text corpus. If necessary, the texts can be subdivided into individual sections, such as a book is divided into chapters. These sections are also called text units. They can also function as counting units, so that if the automatic **MAXDictio** Coder is applied, each text unit will be counted separately.

Independent from the texts, you work with a dictionary or encyclopedia. This dictionary consists, on the one hand, of an unlimited number of categories. On the other hand, it includes the words that are attached to these categories. In the example below, the words “Belgium” and “Netherlands” belong to the category “Europe.”

The *Coder* allows automatic coding of all of the texts, individual texts, or a collection of selected texts on the basis of the dictionary. It is as if a certain number of savings boxes are put up for each text – exactly as many as there are categories. The text editing starts with the first word of the text. Then, for each word that is also contained in the dictionary, a counting piece will be put into the savings box in the assigned category. After the whole text has been processed, the number of counting pieces in each savings box is determined. A statistical evaluation for this text will be calculated which contains, among others, the following information: total number of coded words, number of coded places for Category 2, and so on.





4 Word Frequencies for All Texts

4.1 Starting the Function

The simplest function of **MAXDictio** determines the vocabulary of all of a current project's texts.

This function can be accessed by either:

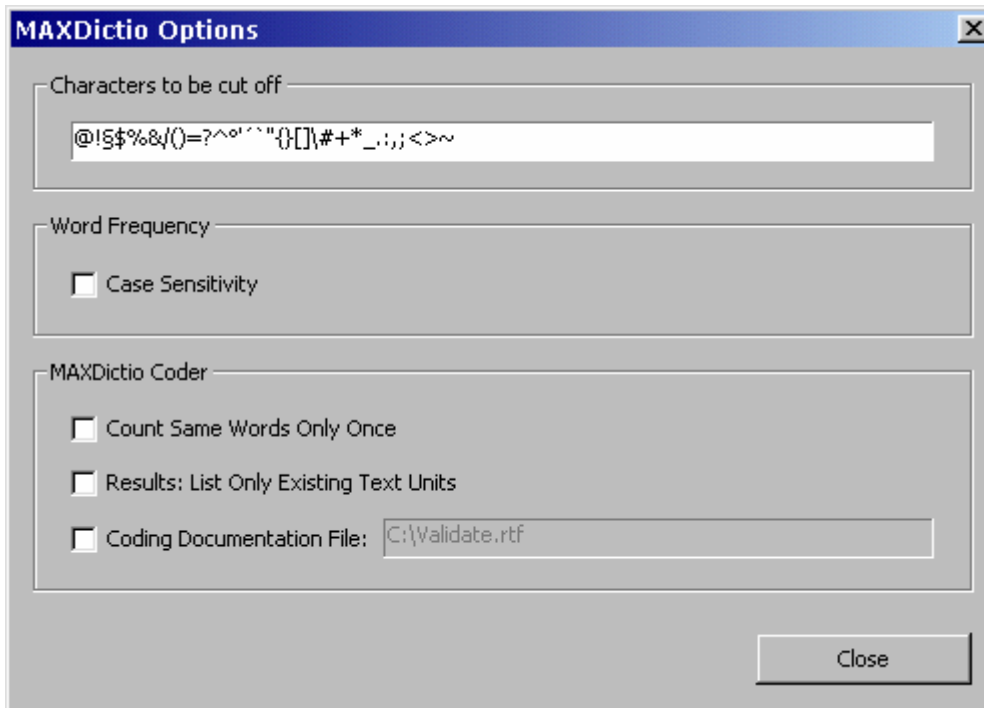
- selecting the option WORD FREQUENCIES (ALL TEXTS) in the **MAXDictio** menu, or
- just clicking on the corresponding quick button in the tool bar.



Depending on the size of the textual material, some time might pass after activating the function, as **MAXDictio** will now work through the material text by text. All words will be isolated, transferred into a list, and counted.

What is a word in MAXDictio? A word is, as showed above, any sequence of characters between two delimiters. Delimiters can be space-tabs or punctuation marks. For example, "work." as the last word of a sentence would be limited by a space on its left and by a period on its right.

Before starting the analysis, you should decide which characters are supposed to act as delimiters. This option is set in the Menu **MAXDictio** > OPTIONS.



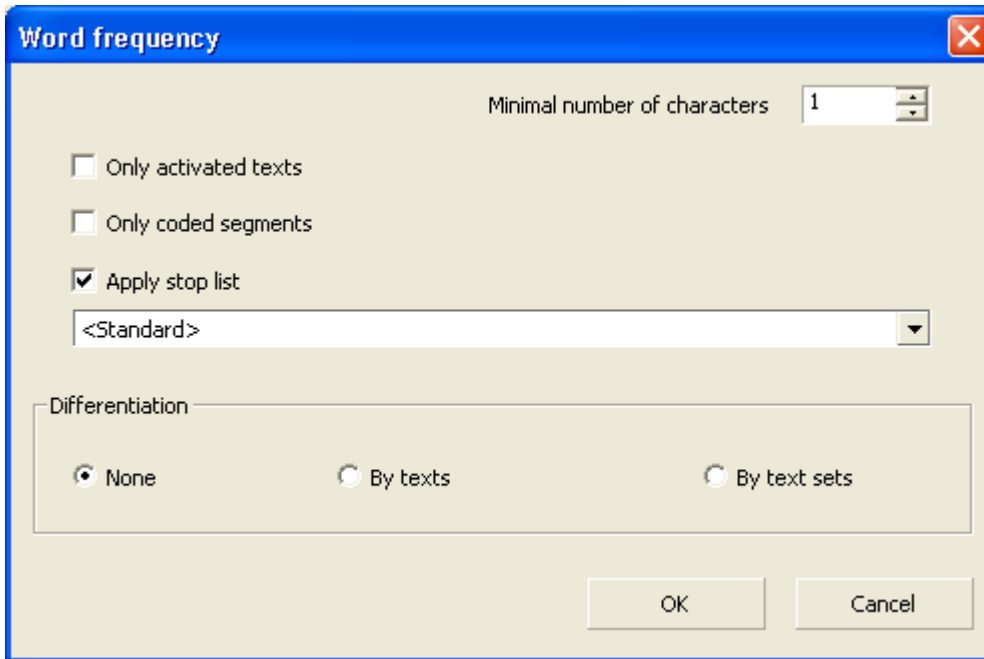
In the dialogue field “Characters to be cut off,” all delimiting characters should be entered. Usually these are the punctuation marks:

"'(),.,:;?>

Some problems might occur with hyphens. If compound words should be counted as one word and not be split up into their separate parts, the hyphen may not be declared as a delimiter. It is best to experiment a little with different possibilities. As the counting of the word frequencies can be repeated with no significant loss of time, it is advisable to look through the results for any conspicuousities, change the options if needed, and then repeat the analysis.



After starting the “Word Frequency“ function, the following dialogue window appears. Here you may select all the options you need.



The following options may be set:

- minimal number of characters* – words with less characters will be skipped
- only activated text* – the frequencies procedure will be restricted to the activated text files
- only coded segments* – the frequencies procedure will be restricted to the coded segments actually displayed in the Retrieved Segments window
- use stop-list* – when the check box is set, a stop-list will be applied

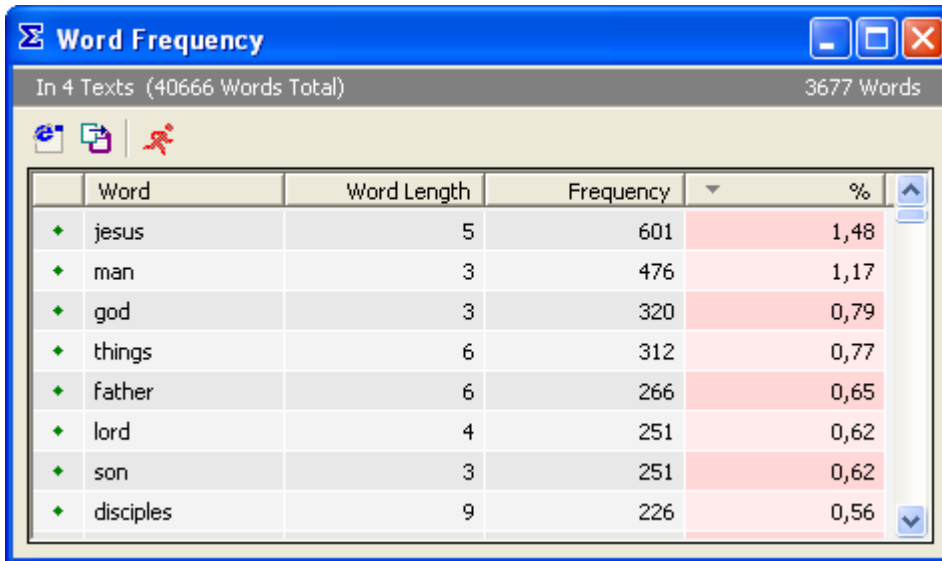


- differentiation* – here you may select if the table of results displays any differentiation (none, by texts or by text sets)

As soon as you click “OK” again, the frequency procedure will start.

4.2 Table of Results

The word frequency result table appears as follows:



Word Frequency

In 4 Texts (40666 Words Total) 3677 Words

	Word	Word Length	Frequency	%
♦	jesus	5	601	1,48
♦	man	3	476	1,17
♦	god	3	320	0,79
♦	things	6	312	0,77
♦	father	6	266	0,65
♦	lord	4	251	0,62
♦	son	3	251	0,62
♦	disciples	9	226	0,56

The table depicted above contains the following information:

1. number of analyzed texts (top left, here = 4)
2. total number of counted and separated words (= “tokens,” here = 40,666)



3. number of different words in the texts (= “types,” here = 3,677)
4. The first column serves to define a word as a stop-word. By double-clicking, you can change its status. At first, the default for each word is the status “go-word.” The symbol depicted then is green. After double-clicking on it, it changes into a red stop sign. The word will then be sent to the active stop-list automatically.
5. In the next column, the words appear as they appear in the text. Whether capitalization will be displayed or not depends on the option selected (in the OPTIONS-menu).
6. The third column contains the word length counted in characters.
7. Column 4 contains the absolute frequency of each word in the processed texts.
8. Column 5 contains the percentage of the word referring to the tokens, i.e. the total number of counted words in all texts. In our example, the word “jesus” was counted 601 times, which is 1.48 percent of the total of 40,666 words.

In quantitative content analysis, the so-called type-token-ratio is a measure for the elaboration of a text. The type-token-ratio is the quotient of different words (“types”) divided by the total number of words (“tokens”). It can be a maximum of 1.

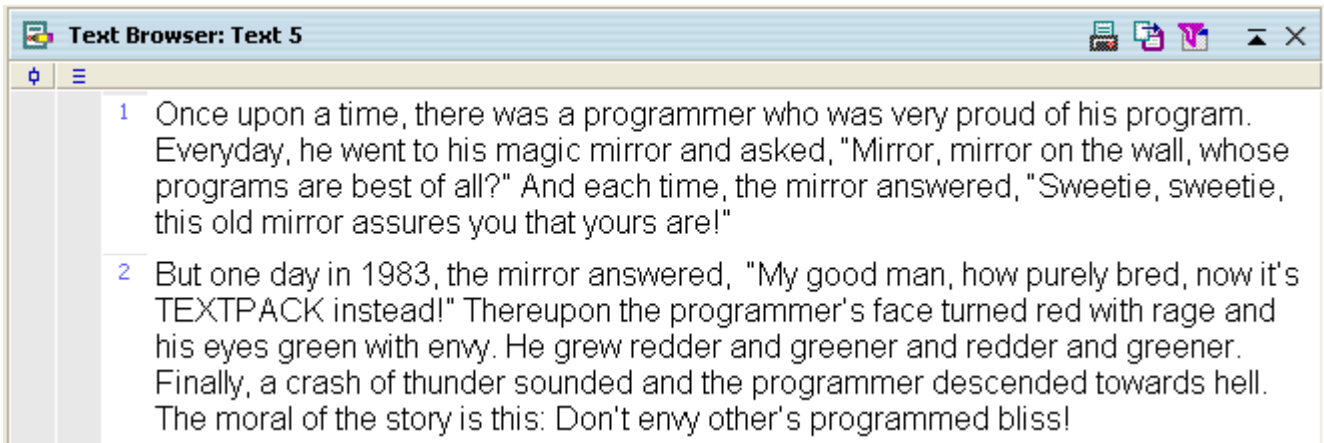
The results can be sorted by the individual columns, namely:

- an alphabetical wordlist in ascending or descending order
- by word length, ascending or descending
- by absolute frequency of occurrence in the text, ascending or descending
- by percentage of the word in the text (word frequency divided by tokens)

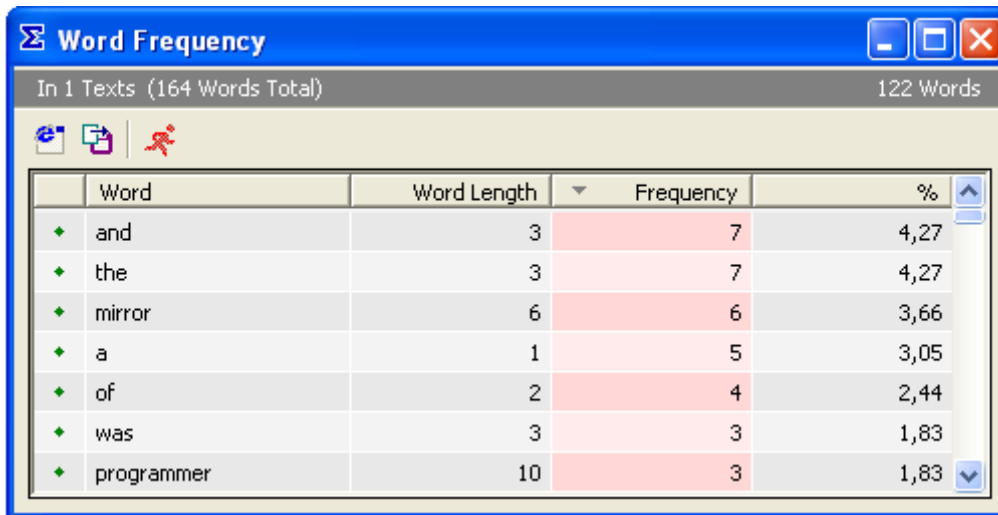


Example

To simplify matters and for means of comparability, we will be using a text section from a fairy tale that is also used as an example in *Textpack*. To be able to insert the text, we must generate a new project and a new text group in **MAXQDA**. Then we type in the text in the **MAXQDA** text browser. Just like in MS Word, **MAXQDA** creates a new paragraph each time the Return key is pressed. The short text appears as follows:



Now we will start the word frequency counting for all texts. After clicking twice on the column "frequency," we get a list arranged by frequencies in descending order. Clicking once will assort the list in ascending order, which means that words with the frequency of 1 are on the top of the list.



	Word	Word Length	Frequency	%
◆	and	3	7	4,27
◆	the	3	7	4,27
◆	mirror	6	6	3,66
◆	a	1	5	3,05
◆	of	2	4	2,44
◆	was	3	3	1,83
◆	programmer	10	3	1,83

As you can see, the words “the” and “and” are the most common words, which were each counted 7 times. This relates to a percentage of 4.27 per cent for each word.

The following demonstrate possible ways to handle the table:

- An alphabetical list in ascending order is generated by clicking on the column title “Word.”
- By clicking on the column title “Word” with the right mouse button, a context menu opens which contains, among other things, the option SEARCH. This option calls up an input field in which you can type the desired word.
- A list of all locations of a word in the text can be created by clicking on the given word with the right mouse button and selecting the option CREATE INDEX in the context menu.
- By double-clicking on a word, it can be added to the active stop-list.

MAXQDA users are already familiar to the window “search results” (from **MAXQDA**’s text search functions) and know that from this window, the locations and their context can be coded as desired.



5 Word Frequencies for Activated Texts and Text Sets

5.1 Starting the Function

The counting of words may be restricted to selected text files or text sets. As usual in **MAXQDA**, this selection is done by activation. To work only with the activated texts, select the option “only activated text“ located in the upper part of the dialogue window.

It is also possible to restrict the analysis to certain texts or text sets. The selection of those items is, as usual in **MAXQDA**, done by activation. After having activated the text files or text sets, the word frequency procedure starts and the option “Only activated texts” can be chosen.

Word frequency

Minimal number of characters: 1

Only activated text

Only coded segments

Apply stop list

<Standard>

Differentiation:

None By texts By text sets

OK Cancel



In this option, only the vocabulary of activated texts will be analyzed. So, if you only want to analyze the vocabulary of one certain text, it is the only option that may be activated. If more texts or a text group are supposed to be analyzed, the appropriate texts must be activated.

If the option DIFFERENTIATION > BY TEXT SETS has been chosen, separate frequencies for your different text sets will be computed and listed in the table of results. With help of the function LOGICAL ACTIVATION of **MAXQDA**, vocabulary analysis for new selections of interviews can also be carried out. First you have to use the function LOGICAL ACTIVATION, then create a new set of activated texts and select the option DIFFERENTIATION > BY TEXT SETS. Like when using the function WORD FREQUENCIES (ALL TEXTS), a certain amount of time may pass until all texts have been processed. Here, the time needed is proportional to the amount of selected material to be processed. Again, all words will be isolated, transferred into a list, and counted. The results will be displayed in a table as shown above in Chapter 4.




5.2 Output of the Results

The form and meaning of the output of the results is the same as in the table of results for all texts. Additionally new columns will be added on the right side of the table containing the percentage values for single texts or text sets.



Word Frequency - □ ×

In 2 Texts (19721 Words Total) 2901 Words

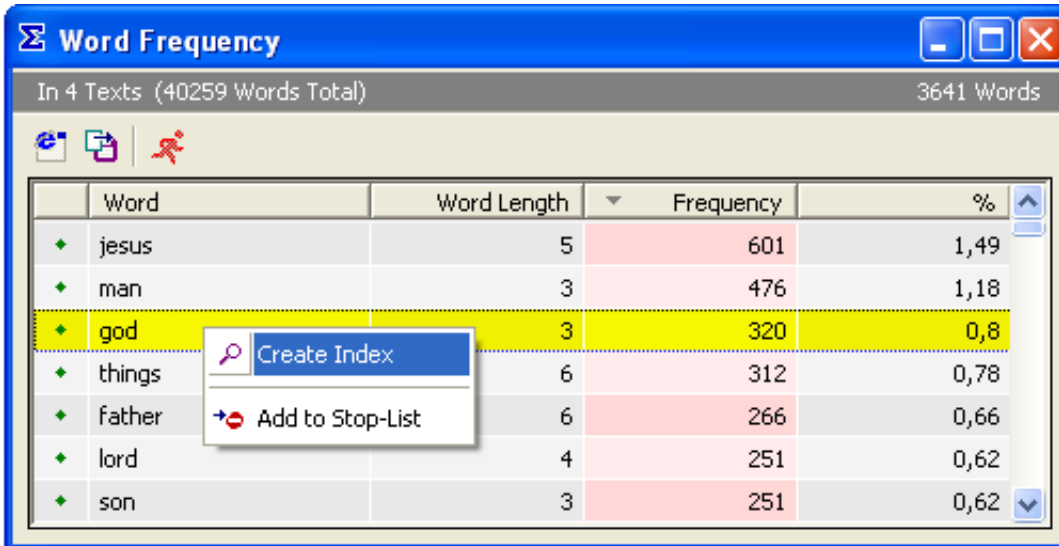
  

	Word	Word Length	Frequency	%	Luke	Mark	
◆	man	3	231	1,17	138	93	↑
◆	jesus	5	184	0,93	96	88	
◆	god	3	180	0,91	125	55	
◆	things	6	164	0,83	112	52	
◆	lord	4	127	0,64	107	20	
◆	at	2	108	0,55	73	35	
◆	son	3	108	0,55	72	36	
◆	their	5	106	0,54	66	40	↓

6 Creating a Word Index

6.1 Accessing the Function

An index of the located positions in the text can be created for each word in the list of word frequencies. Click on the desired word with the right mouse button; then select the function CREATE INDEX from the context menu (see illustration below).



The screenshot shows a window titled "Word Frequency" with a blue header. Below the header, it says "In 4 Texts (40259 Words Total)" and "3641 Words". The main area contains a table with the following data:

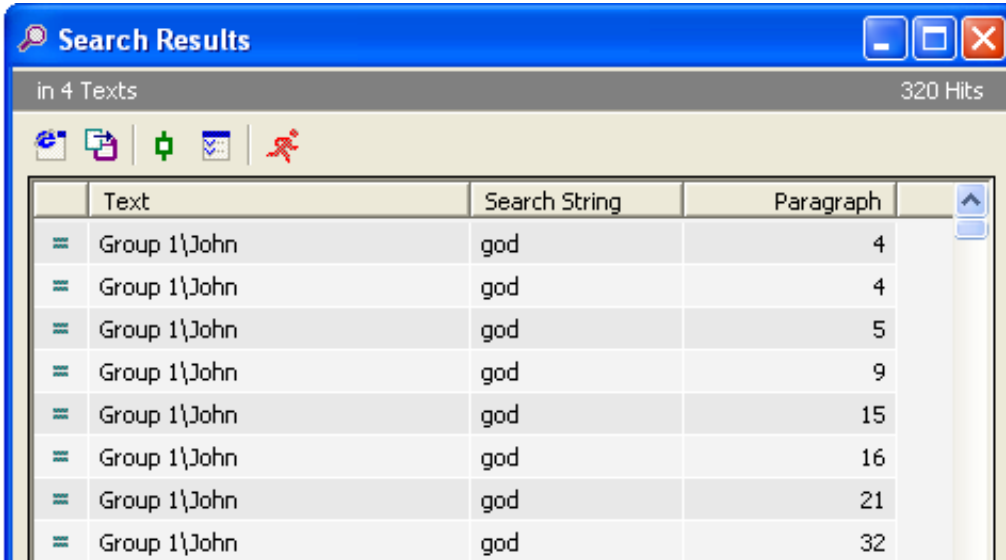
	Word	Word Length	Frequency	%
+	jesus	5	601	1,49
+	man	3	476	1,18
+	god	3	320	0,8
+	things	6	312	0,78
+	father	6	266	0,66
+	lord	4	251	0,62
+	son	3	251	0,62

A context menu is open over the "god" row, showing two options: "Create Index" (with a magnifying glass icon) and "Add to Stop-List" (with a plus and minus icon).

In the illustration, the word “god” was selected, which appears exactly 320 times in the processed texts.

6.2 The Index

The above requested index appears as follows:



	Text	Search String	Paragraph
=	Group 1\John	god	4
=	Group 1\John	god	4
=	Group 1\John	god	5
=	Group 1\John	god	9
=	Group 1\John	god	15
=	Group 1\John	god	16
=	Group 1\John	god	21
=	Group 1\John	god	32

Users of **MAXQDA** are already familiar with the representation of search results in this form, as it is the same as in the **MAXQDA** search function.

In the table heading, information is displayed regarding how many texts the word has been found in and how many located positions there are all together in the text.

The column “Text” in the table indicates the name of the text group and of the text in which the word has been found. In the column to the right, the search item (here: “god”) is listed and the number of the relevant paragraph in the text is shown in the third column.



This table can also be sorted by the single columns, just like other tables in **MAXQDA**, either in ascending or in descending order. Clicking once on the column title will sort the table by column.

By clicking on the column title with the right mouse button, you can open the context menu, which, among other functions, offers to search in this column.

6.3 Going to Located Positions, Exporting, and Coding

By clicking on a located position, the text passage will be opened and loaded directly into the window **TEXT BROWSER**. The window **SEARCH RESULTS** will stay in the front, so that for optimal working conditions, it is advisable to arrange the windows on your screen in such a way that this window won't cover the window **TEXT BROWSER**.

The function **CREATE INDEX** is directly integrated into the lexical search functions and the coder of **MAXQDA**, which means that the located positions can be coded directly by clicking on the “Auto-code” button in the toolbar located on top of the Search Results window. More details can be found in the **MAXQDA** user's manual.

Click here to code the located positions automatically.

	Text	Search String	Paragraph
=	Bible\Luke	jesus	34
=	Bible\Luke	jesus	106
=	Bible\Luke	jesus	112
=	Bible\Luke	jesus	128
=	Bible\Luke	jesus	137



It is also possible to export all the „hits“ along with their surrounding text into a new file – either in rtf-format or as a table in HTML-format. Both kinds of export files can be printed without problem.

The screenshot shows a Mozilla Firefox browser window with a search results page. The browser's address bar shows 'Google' as the search engine. The search results are displayed in a table with three columns: 'Text', 'Preview', and 'Paragraph'. The results are for the book of Luke in the Bible.

Text	Preview	Paragraph
Bible\Luke	31 Behold thou shalt conceive in thy womb, and shalt bring forth a son; and thou shalt call his name Jesus.	34
Bible\Luke	21 And after eight days were accomplished, that the child should be circumcised, his name was called JESUS, which was called by the angel, before he was conceived in the womb.	106
Bible\Luke	And when his parents brought in the child Jesus, to do for him according to the custom of the law,	112
Bible\Luke	43 And having fulfilled the days, when they returned, the child Jesus remained in Jerusalem; and his parents knew it not.	128

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7 Stop-Lists

7.1 Function of the Stop-Lists

Stop-lists are collections of “uninteresting” words, such as definite and indefinite articles, conjunctions, or numerals. Such words are usually sources of irritation when analyzing a text. For that reason, it is advisable to exclude them from the analysis. **MAXDictio** allows you to create as many stop-lists as you’d like, as well as to edit and manage them. Words that are in the stop-lists will automatically left out of the table of counting results.

7.2 Creating Stop-Lists

To create a stop-list, you can either call up the option **STOP-LIST** in the **MAXDictio** menu or click on the quick-button in the **MAXDictio** tool bar.



There are two different ways to add words to a stop-list:

- First, you can enter them by hand by clicking on the **NEW** button found on the top of the stop-words window and then typing the appropriate word.
- Second, you can select words from a word frequency list and add them to a stop-list by double-clicking on them. This allows you to avoid entering these words individually. It is also possible to transfer several words into a stop-list at once. To do this, select all of the desired



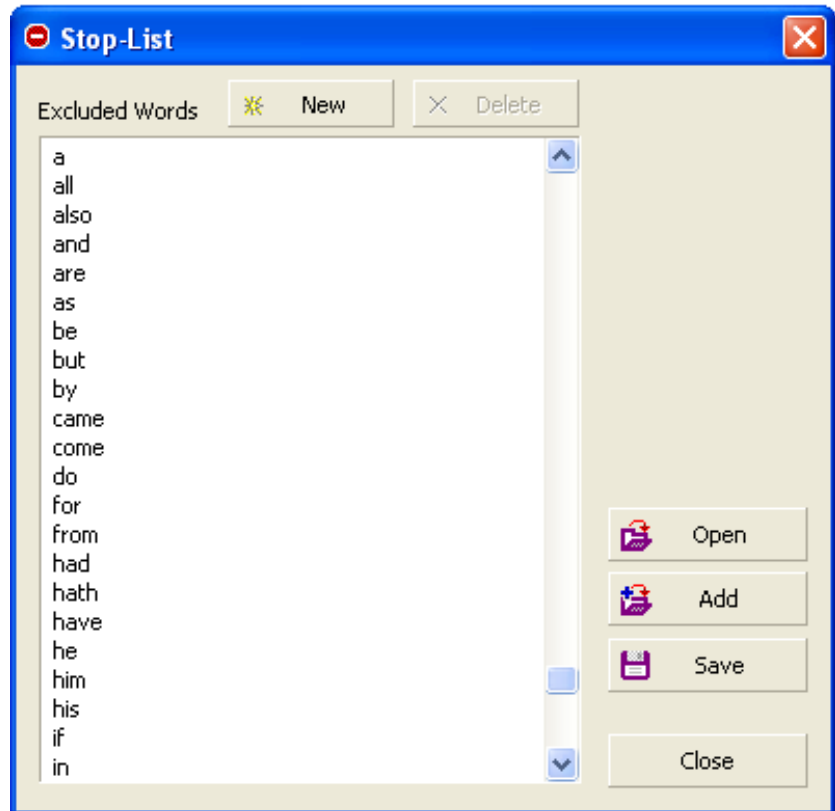
words (Ctrl-button & left mouse button). Then, click on one of the words with the right mouse-button and select the option ADD TO STOP-LIST.

The words in a stop-list are automatically arranged in alphabetical order. This order is pre-set and cannot be modified.

7.3 Saving and Printing Stop-Lists

Stop-lists can be saved as files which allows you to manage as many stop-lists as you'd like. Such lists can then be opened when needed. Two stop-lists can also be merged (button: ADD).

If you wish to print out a stop-list for means of documentation, first save it using the SAVE option. The file will automatically be saved in txt-format, which can be read with all conventional programs. Now you could, for instance, double-click on the file in Windows Explorer, which will open the Editor, from where you can print the file. You can also open the file in MS Word or Excel.



7.4 Dynamic Stop-Lists

The active stop-list is managed dynamically. When a word from the word frequency list has been moved to the stop-list, a red stop sign appears next to it. By clicking on the word anew so that the stop-icon disappears, the word will be removed from the stop-list.

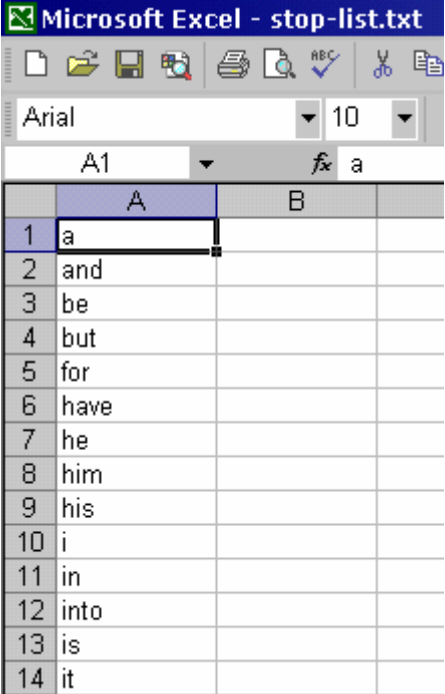
7.5 Creating and Editing Stop-Lists in MS Office Programs

Stop-lists are saved as normal text files and can therefore be opened and edited in any MS Office program. The most suitable program for this would be Excel.

Open the stop-list by selecting the option FILE > OPEN in Excel. The file type must be changed to “All Files.”

In Excel, you can add new words to the list or edit the existing list, and then save it. You don't have to bother sorting the list, as **MAXQDA** will automatically arrange it in alphabetical order when it is opened there.

Stop-lists can be employed for multiple projects simultaneously. It is recommendable to modularize them, which means you could create stop-lists of certain types (for instance: conjunctions) which can be used universally. Then the single modules can be merged in the Stop-Lists window, so that you can create a list that is appropriate for the current project (button ADD).



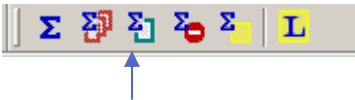
	A	B
1	a	
2	and	
3	be	
4	but	
5	for	
6	have	
7	he	
8	him	
9	his	
10	i	
11	in	
12	into	
13	is	
14	it	



8 Show Last Frequencies and Export

By selecting LAST FREQUENCIES in the **MAXDictio** menu or clicking on the relevant quick button, the last counting results of a word frequency function will be displayed anew.

The format of the then displayed frequencies table is the same as described above.



Word Frequency

In 1 Texts (164 Words Total) 122 Words

Word	Word Length	Frequency	%
and	3	7	4,27
the	3	7	4,27
mirror	6	6	3,66
a	1	5	3,05
of	2	4	2,44
was	3	3	1,83
programmer	10	3	1,83

The displayed results can be transformed into a txt-file by clicking on the EXPORT button in the window's toolbar. The file will be created in the so-called Tab-Delimited format, which means that the fields of the table are separated by a tab-sign and there is a return-sign at the end of one row. The first row of the table contains the column titles (Word, Word Length, Frequency, Percent).



This exported txt-file can be edited with the Windows Editor as well as with MS Word or Excel. Word or Excel are to be preferred, as they maintain the structure of the table with its rows and columns, which makes reading the table much easier.

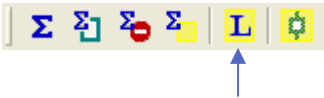


9 Creating and Managing Dictionaries

9.1 Starting the Function

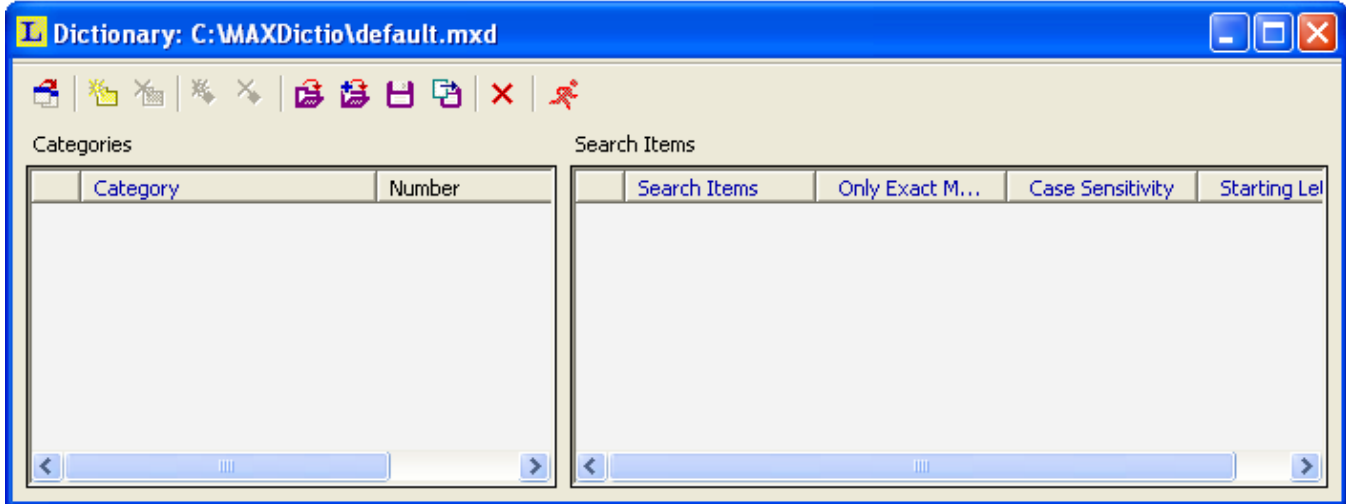
There are two ways to access the **MAXDictio** dictionary function:

- the DICTIONARY option in the **MAXDictio** menu
- the quick button in the **MAXDictio** toolbar



9.2 The Dictionary Window

When using the dictionary function, an empty window will appear at first:



The header of the window indicates the name of the dictionary currently being used. The default dictionary, “default.mxd,” appears automatically unless other dictionaries have been programmed into **MAXDictio**.

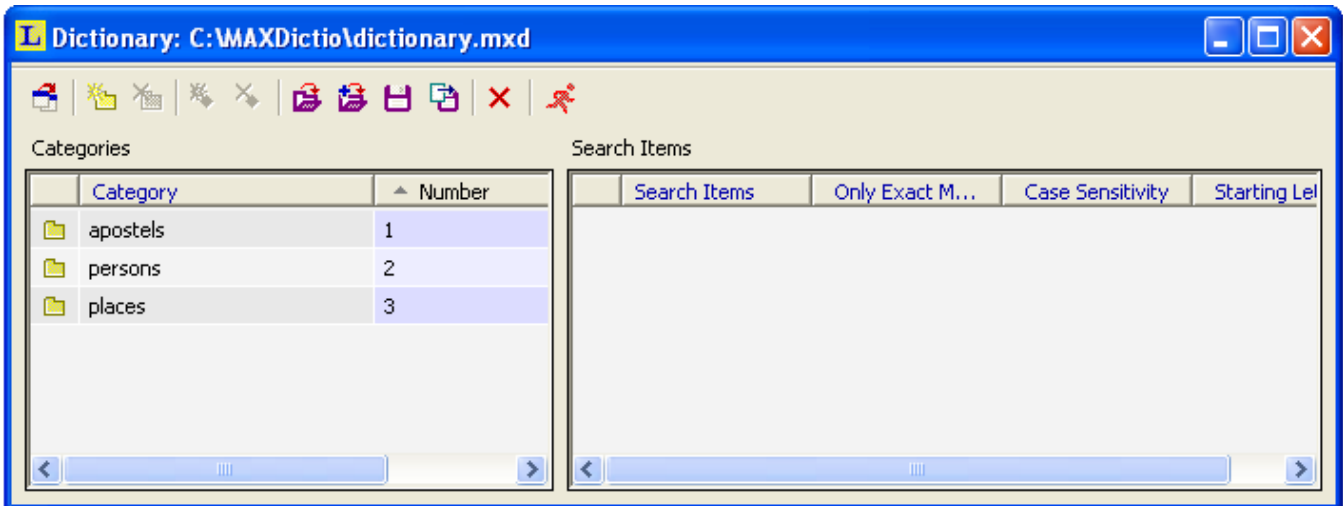
There is a toolbar underneath the title that contains the majority of the functions available in **MAXDictio**, including the following, from left to right:

- Change view* switches from the hierarchical display of the categories to the basic view (in Excel style)
- New category* creates a new category or sub-category
- Delete category* deletes the selected category as well as its sub-categories (if any)
- New search item* creates a new search item for the given category (on the left side)
- Delete search item* deletes one or multiple selected search items



<i>Open</i>	opens an already existing dictionary
<i>Add</i>	merges two dictionaries
<i>Save</i>	saves the current dictionary as a file
<i>Delete All</i>	deletes all categories and search items in the current dictionary
<i>Close</i>	closes the dictionary window

9.3 Creating a Dictionary with Categories and Sub-categories



In **MAXDictio** basic and hierarchical types of dictionaries can be created. Hierarchical dictionaries are similar to the Code System of **MAXQDA** or Windows Explorer, as subordinated levels can be switched on or off as desired. There is no limit to the number of levels, but a dictionary normally doesn't have more than three levels.



A dictionary consists of categories and sub-categories as well as a list of the search items that are allocated to each category.

A dictionary in **MAXDictio** can contain any number of categories. Exactly one list of search items belongs to each category. The number of search items is unlimited as well.

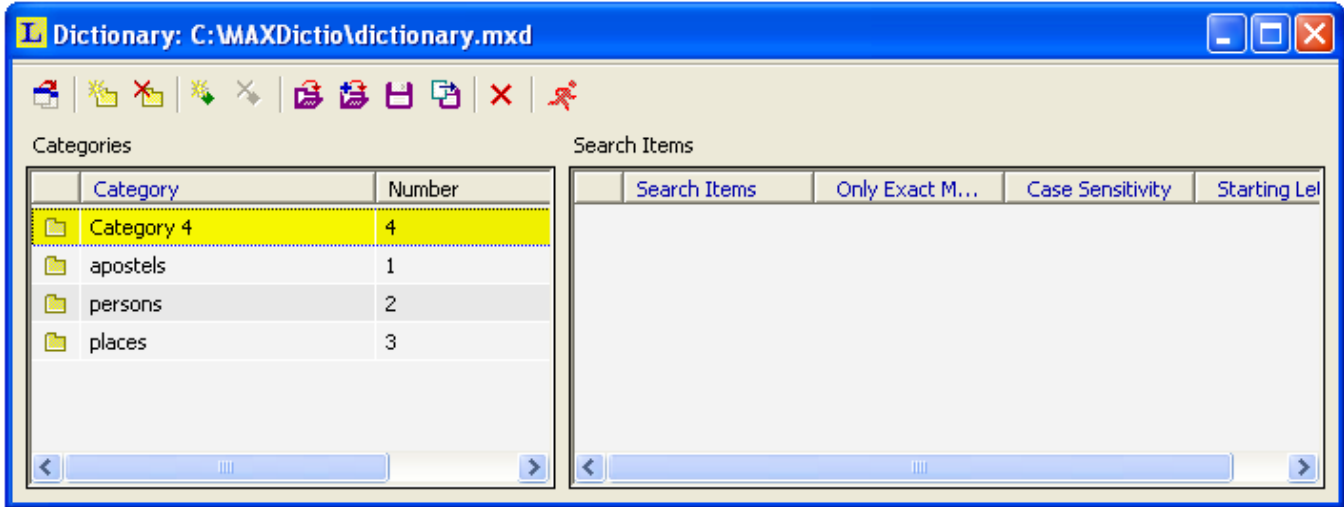
To add a new category, click on the **NEW CATEGORY** button on the left side of the toolbar. Then a new category title can be entered. The title is not restricted to a certain length or form. It can also consist of several words, such as “old-age pension.” The title of a category can be modified later without effecting the dictionary itself.

After clicking on **NEW CATEGORY**, **MAXDictio** will add a category named “Category #.” Here the character # stands for the sequential number of the category in the existing category system. This means it always begins with “Category 1.”

The illustration above shows that there are already three defined categories, namely:

- apostles
- persons
- places

After clicking on **NEW**, **MAXDictio** will add a new category named “Category 4” at the top of the list.

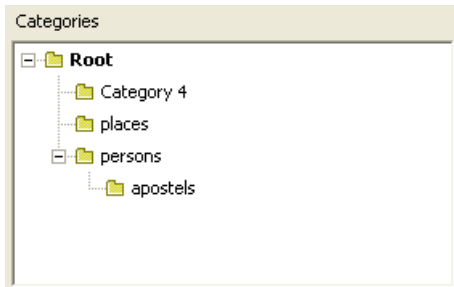


In most cases, you will want to change the title into a more meaningful title. To do so, double-click on “Category 4” and enter the new title. It is also possible to insert a string of characters from the Windows Clipboard with help of the shortcut CTRL+V.

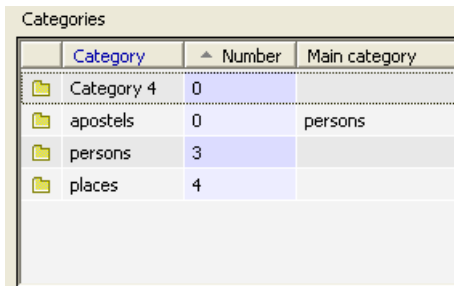
9.4 Sorting and Organizing the Category System

As mentioned above, the category system can be displayed as a list or as a hierarchical tree.

When using the hierarchical view, the category system may be organized in the same way as the code system in **MAXQDA**. By dragging the mouse, categories can be placed at the desired position. If you'd like to make a category a sub-category of another category, just press the Shift key while moving the category to its new position.



When working in list view (see the following figure) you may sort the whole category system by clicking on the column's header.



By clicking on the column title “Category,” the table will be arranged in ascending alphabetical order. Clicking again on the title will cause the reverse order, which means the list would start with categories that begin with the letter “Z.”

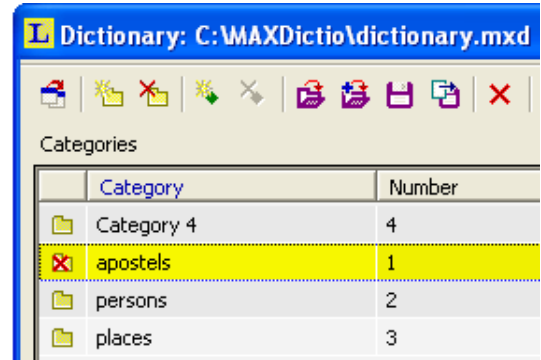
The same thing is possible with the columns “Main category” and “Number.” The Number Column contains an identification number that is created in the sequence the categories were created. Thus, the category defined first, is associated with the number 1.



9.5 Turning Categories On and Off

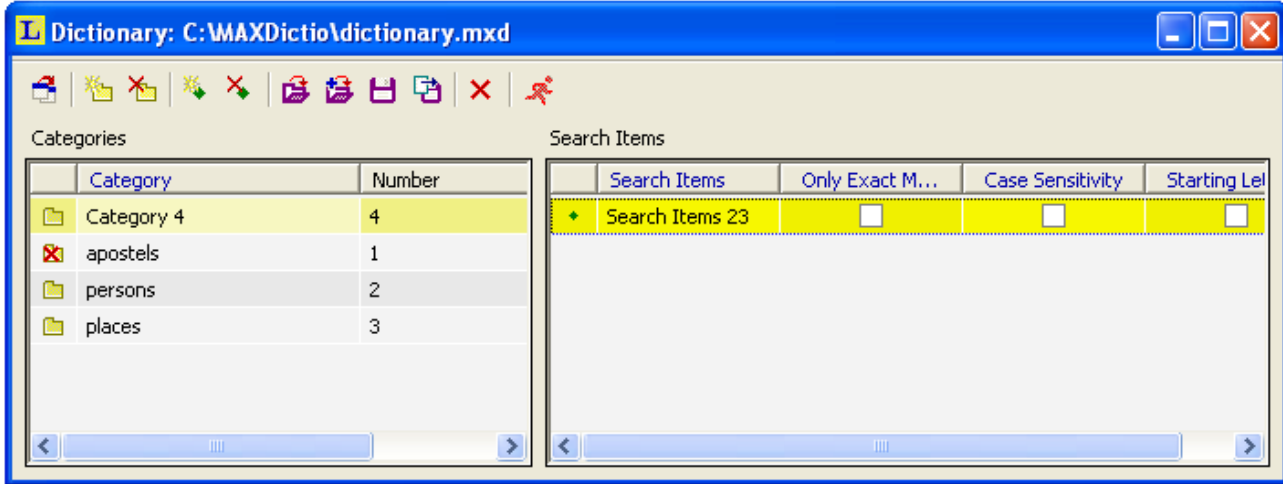
When working in the list view, the categories may be switched on and off so that you can decide which categories will be counted by **MAXDictio**.

In the left column in front of each category is a symbol which indicates whether a category is turned on or off for the counting. The initial state of a category is the on-state. This is indicated by a small green icon. Double-clicking on the icon will change into a red X. This demonstrates that the category will not be considered in the analysis.



9.6 Adding Search Items to the Dictionary

To add category search items, select the desired category by clicking on it with the left mouse button. Then click the **NEW SEARCH ITEM** button in the toolbar. Now it is possible to enter a new search item. However, it is much easier to take a search item directly from a word frequency list and add it to the appropriate category (see description below).



9.7 Deleting Words from the List of Search Items

Individual or multiple search items can be deleted from the list by selecting them and then clicking on DELETE. Several words can be selected by using the combinations Ctrl & left mouse button or Shift & left mouse button (to select all of the words between an already selected word and another).

9.8 Turning Search Items On and Off / Activating and Deactivating Words

Each search item of a category can be turned on or off individually for the analysis. The procedure is the same as with the categories. The symbol next to each word indicates its state: green = on, red X = off.



9.9 Setting Options

Options for future codings with the **MAXDictio** Coder may be set for each search item.

Search Items are strings of characters whose occurrences are supposed to be investigated in the text. These can be individual words, parts of words (such as the stem of a word), or terms consisting of several words or strings of characters.

The Default setting is “Word Stem,” which means that all words in the text that contain the search item as a subset will be coded.

The following options are available:

- ONLY EXACT MATCHES – only exact search item matches will be counted
- CASE SENSITIVITY – case will be taken into consideration
- STARTING LETTERS – the search item must appear at the beginning of a word

Examples:

Only Exact Matches „president“ will code President, but not presidential

*Only Exact Matches and
Case Sensitivity* „president“ will not code President

Starting letters activated „tree“ will code trees and treehouse

Starting letters deactivated „tree“ not only codes Tree, but also street



9.10 Transferring Words from the Word Frequency List into the Dictionary

Each word that is contained in a word frequency list can be sent directly to the dictionary. The best way to do this is to open both lists and arrange the windows on the screen so that they are next to each other and can be seen at the same time.

Select the desired category in the dictionary window by double-clicking on it. All of words you select from the word frequency list will be added to this category.

There are three ways to select search items:

The recommended and simplest way involves double-clicking on the desired word in the frequency list. This will add it directly to the search item list in the dictionary.

Or, you can drag-and-drop the word into the dictionary. These two options are new additions to the 2007 version of **MAXDictio**.

Another option is to click on the desired word with the right mouse button and select **ADD TO DICTIONARY**. In the illustration below, the word „jesus“ was selected. After accessing the option **ADD TO DICTIONARY**, the word will be forwarded to the dictionary as new search item in the presently opened category in the left dictionary window (in our example this is the category „persons“).

You can also select several words from the word frequency list using the conventional key combinations: **Ctrl** & left mouse button for selecting diverse words one after the other; **Shift** & left mouse button for selecting a list of words between the first selected and the last requested word.



Word Frequency In 4 Texts (40259 Words Total) 3641 Words

Word	Word Length	Frequency	%
♦ jesus	5	601	1,49
♦ man	3	476	1,18
♦ god	3	320	0,8
♦ things	6	312	0,78
♦ father	6	266	0,66
♦ lord	4	251	0,62

Context menu for 'jesus':

- Create Index
- Add to Dictionary
- Add to Stop-List

Dictionary: C:\MAXDictio\dictionary.mxd

Categories

Category	Number
apostels	1
persons	2
places	3

Search Items

Search Items	Only Exact M...	Case Sensivity	Starting
♦ jesus	<input type="checkbox"/>	<input type="checkbox"/>	[]
♦ Abraham	<input type="checkbox"/>	<input type="checkbox"/>	[]
♦ Adam	<input type="checkbox"/>	<input type="checkbox"/>	[]
♦ Barabbas	<input type="checkbox"/>	<input type="checkbox"/>	[]
♦ Mary	<input type="checkbox"/>	<input type="checkbox"/>	[]
♦ Pilate	<input type="checkbox"/>	<input type="checkbox"/>	[]



9.11 Transferring Search Items from One Category to Another

It is easy to transfer search items from one category to another. Just click on the term and hold the left mouse button down as you move it into the desired category. This is also known as the drag-and-drop function.

The search item will be removed from the old category immediately. The setting options for the given search item (such as “whole word”) accompany the word to the new category.



9.12 Printing and Documenting a Dictionary

Documenting and printing a dictionary are best done with MS Word or Excel. Dictionaries are saved as mxd-files. They are written in normal text-format and can be opened with Word or Excel.

The illustration to the right shows a dictionary when opened with Excel. In Column A are the categories, in B the search items. Columns C, D, and E contain the selected options (1 for selected, 0 for not selected).

Microsoft Excel - dictionary.mxd					
A1		= apostles			
	A	B	C	D	E
1	apostles	0			
2		apostle	0	0	0
3		Simon	0	0	0
4		Peter	0	0	0
5		Andrew	0	0	0
6		James	0	0	0
7		John	0	0	0
8		Philip	0	0	0
9		Bartholomew	0	0	0
10		Thomas	0	0	0
11		Matthew	0	0	0
12		Judas	0	0	0
13	persons	0			
14		Abraham	0	0	0
15		Adam	0	0	0
16		Pilate	0	0	0
17		Barabbas	0	0	0
18		Mary	0	0	0
19		Joseph	0	1	0
20	places	0			



9.13 Editing Dictionaries in MS Excel

Dictionaries can also be edited in Excel. For instance, search items may be added or category titles can be changed. However, in Excel, all of the names of categories and search items must be keyed in, while in **MAXDictio** they can simply be added from the results of the word frequency analysis.



10 Construction of Go-Lists

10.1 What are Go-Lists?

Go-lists are pretty much the opposite of stop-lists. While stop-lists contain a list of words which are disabled for the analysis and are supposed to be excluded from the counting, go-lists consist of words to which the analysis should be limited. That means that only these words will be counted.

In **MAXDictio**, go-lists are created and managed as dictionaries. But these dictionaries consist mostly of only one “dummy-category.” This category then contains all of the go-words.

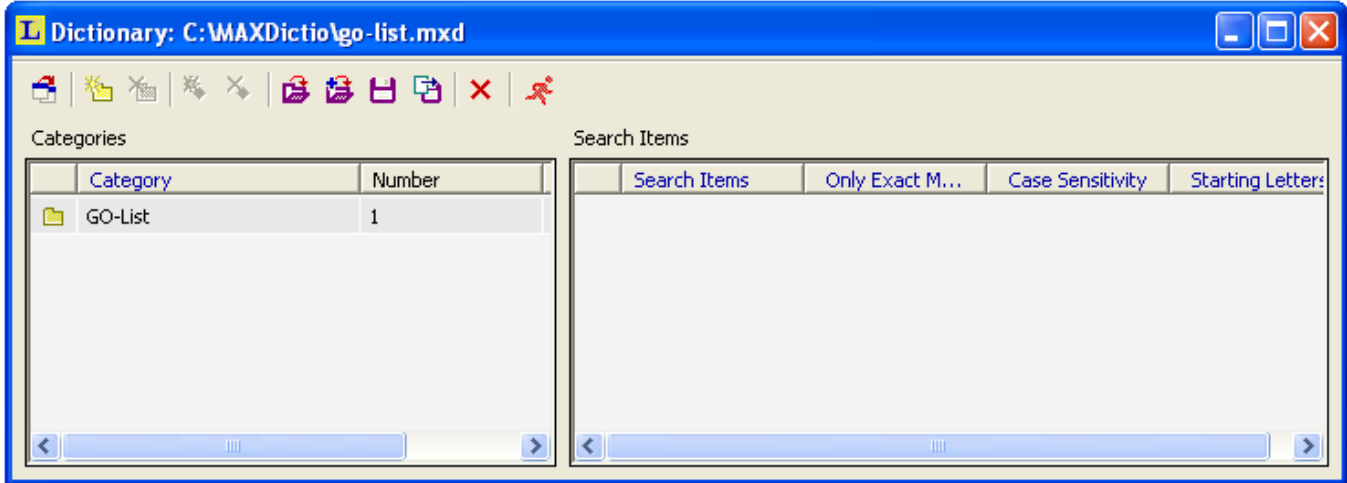
10.2 Accessing the Function and Setting Up Go-Words

First, you access the dictionary using the **MAXDictio** menu or the quick button “DICTIONARY:”



Then proceed as follows:

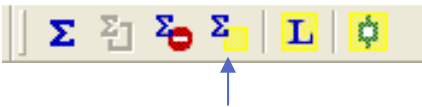
1. If there are still categories listed, use the button DELETE ALL to delete these. Attention: You should save the dictionary in use beforehand.
2. Click on NEW CATEGORY. Now “Category 1” will be created. Go-words can be entered here or transferred from any word frequency list (by double-clicking on selected words with the left mouse button or simply dragging-and-dropping them into the appropriate category).



When creating go-lists, the options “Only Exact Matches” and “Starting Letters” do not play a role, because only exact matches are taken into consideration when using go-lists.

10.3 Analysis of Go-Words

The analysis, e.g. the word frequencies of all texts, is limited to the words in the go-list, when you click the button “ONLY DICTIONARY-WORDS.”





11 The Coder

11.1 Accessing the Coder

The **MAXDictio** Coder automatically codes the texts on the basis of an active dictionary. If nothing has been defined, the standard dictionary is called “default.mxd.” However, the term “coding” in **MAXDictio** has a different meaning than the usual qualitative coding of text segments in **MAXQDA**. Normally, coding in **MAXQDA** means that a text section is selected and then assigned a code or sub-code in the LIST OF CODES. The coding process in **MAXDictio** does not assign such codes to text sections, but performs more of a quantitative analysis of one or more texts on the basis of the categories and search items in a dictionary.

So, the coding process corresponds to the approach in quantitative content analysis, in which the actual text is redundant and substituted by counted results and categories. To explain this: In **MAXQDA** qualitative coding would mean, when coding the Bible, for instance, to select a text section and then allocate it to the code “Apostle > Peter.” Later then, by activating this code, the according passage could be found again. When working with the **MAXDictio** coder, you would define the category “Apostle” with “Peter” as an attributed search item. If the coder finds the search item, this will be registered as a counting result for this category.

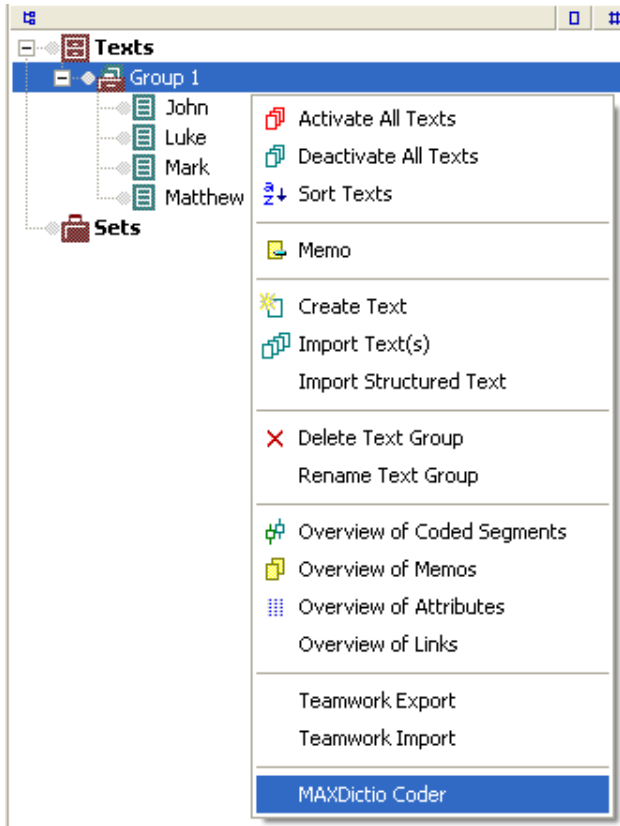
Processing the material with **MAXDictio** results in a matrix that contains the frequencies of the categories.

The coder can be accessed for:

1. a single text
2. a text group
3. all texts of a project
4. a certain text set



To access the coder, go to the list of texts, and click on the desired level with the right mouse button. Then select the option **MAXDictio CODER**. Alternatively you may click on the CODER button in **MAXDictio's** toolbar. As the illustration below shows, the option is the last one in the context menu in the DOCUMENT SYSTEM.

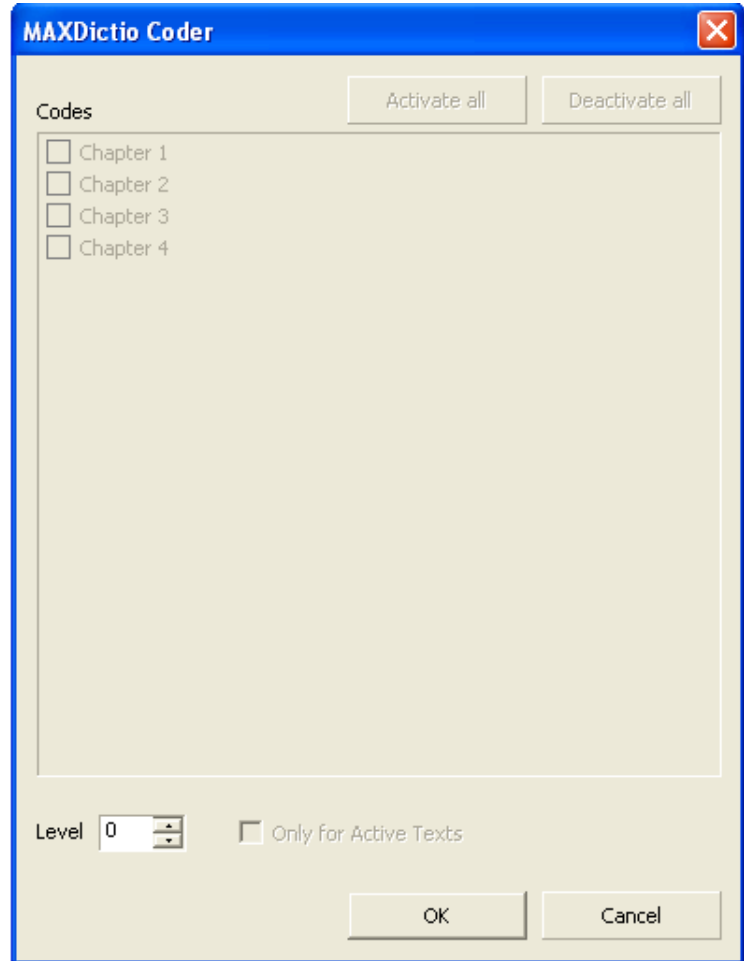


MAXDictio can carry out such a quantitative content analysis for a whole text or single parts of texts. Texts can be divided into paragraphs or sections. These so-called text units are counting units for the coder, which means that for each counting unit, individual issue lines will be created in the results file. This option must be selected first, as the coder will not automatically consider the units when analyzing the text. When a text has been divided into sections, it is still possible to analyze it as a whole.

When accessing the coder, an additional window will appear, in which you can determine on which level a text should be analyzed and coded. The simplest selection would be just clicking on OK and so determining level 0 as coding depth – the least possible degree. In this case, each whole text counts as one text unit, and so for each text only one issue line will be created. The texts will not be differentiated any further.

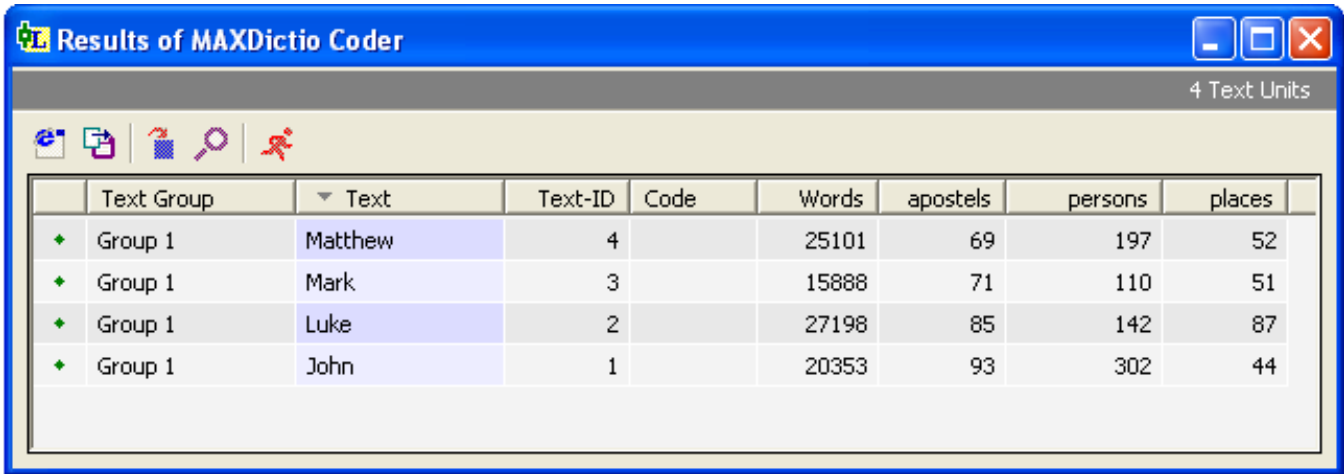
11.2 What Does the Coder Accomplish?

The **MAXDictio CODER** carries out an auto-



matic quantitative content analysis. The procedure is as follows: Starting with the first word of the first text, the program checks the active dictionary to see whether this word is contained in it as a word or word segment. If so, and the word is active for the analysis, the category counter increases by one. The search continues with this word, as it is possible to assign one word to more than one category. If a further allocation has been found, **MAXDictio** will also increase the counter for this category by one. After the whole dictionary has been assessed, the coder proceeds to the next word in the text.

This automatic coding results in a data matrix, in which the texts are represented in the lines and the categories in the columns:



Text Group	Text	Text-ID	Code	Words	apostels	persons	places
Group 1	Matthew	4		25101	69	197	52
Group 1	Mark	3		15888	71	110	51
Group 1	Luke	2		27198	85	142	87
Group 1	John	1		20353	93	302	44

Such a matrix resembles the illustration above. Each line contains the results of one text and begins by naming the text group and text name. The next column, “Code,” contains the name of the code of this particular text unit, if any (see below). Then comes a column that contains the total number of counted words in the text. These numbers are followed by the frequencies of the categories.

There are numbers in the cells that specify how many times a given category has been found in the given text.

This matrix is like other tables in **MAXQDA** – similar to a table in MS Excel. By clicking on a column title, the whole table will be assorted in ascending or descending order.

11.3 Further Processing of the Results

The contents of the matrix can be copied and pasted into other Windows or MS Office programs by way of the Windows Clipboard.

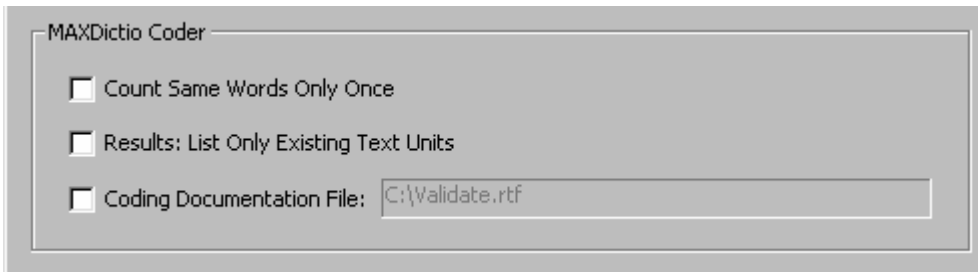
By clicking on the button EXPORT in the toolbar, the whole matrix will be saved as a text file.



The table of results can also be saved in HTML-format by way of the HTML table button. This can easily be printed or imported into other programs.

11.4 Coder Options

In the **OPTIONS** menu of **MAXDictio**, you can determine how the words or search items should be counted that appear more than once in the same text unit. If you only want the counter to count them once, select the appropriate option. If, for instance, a category contains the search item “Peter,” a text unit will be counted once, no matter whether “Peter” is found one or more times in the given text unit. Suppose the category “Apostles” contains the names of the 12 apostles as search items. The counting result 12 means that all 12 apostles have been found in this counting unit, given that the option **COUNT SAME WORDS ONLY ONCE** has been selected. Otherwise, if this option hadn’t been selected, the counting result would not allow such a conclusion.



The second option only concerns structured texts. Here you can set the quality of the result table.

Further, you have the possibility to create a validation file. Such a file allows you to carefully review the coding process. To create the file, select the appropriate option and enter the file name under which the coding process protocol should be saved.

11.5 The Validation File

The validation file contains the original text of each text unit. The locations where search items have been found are marked. Behind each search item, you can find an identification number (ID-number) in brackets which points to the assigned category. The ID-number is determined when the category is created and is shown in the categories window. Categories can also be assorted by their numbers, and so you can create an assorted printout of the dictionary. This printout might be helpful when monitoring the validation file.

	Category	Number	
♦	apostles	1	
♦	persons	2	
♦	places	3	

The following lines are a short extract from a validation file:



1 Now in the fifteenth year of the reign of Tiberius Caesar, Pontius Pilate^[2] being governor of Judea, and Herod being tetrarch of Galilee, and Philip^[1] his brother tetrarch of Iturea, and the country of Trachonitis, and Lysanias tetrarch of Abilina;

2 Under the high priests Annas and Caiphaz; the word of the Lord was made unto John^[1], the son of Zachary, in the desert.

3 And he came into all the country about the Jordan^[3], preaching the baptism of penance for the remission of sins;

The validation file may not be opened with another program while starting the coder. Otherwise, the coder will abort the process with an error message.

11.6 Coding of Structured Texts

The coder offers very complex possibilities of counting structured texts. Texts can be structured in many different ways. Suppose a text is divided into four sections (text units). This corresponds to a book with four chapters. This results in the following structure:

Chapter 1

Chapter 2

Chapter 3

Chapter 4

The chapter names are managed by **MAXQDA** as codes. The subdivision of texts into sections can be achieved simply by coding the relevant paragraphs in the text browser.

Proceed as follows:

1. Create the codes “Chapter 1,” “Chapter 2,” “Chapter 3,” and “Chapter 4” in the **MAXQDA** code system window.



2. Open the text in the text browser, select the first section with the mouse, and assign the code “Chapter 1” to it. Do the same with the sections two, three, and four. In the following example, this has been done with the first four chapters of the Gospel of Mark.

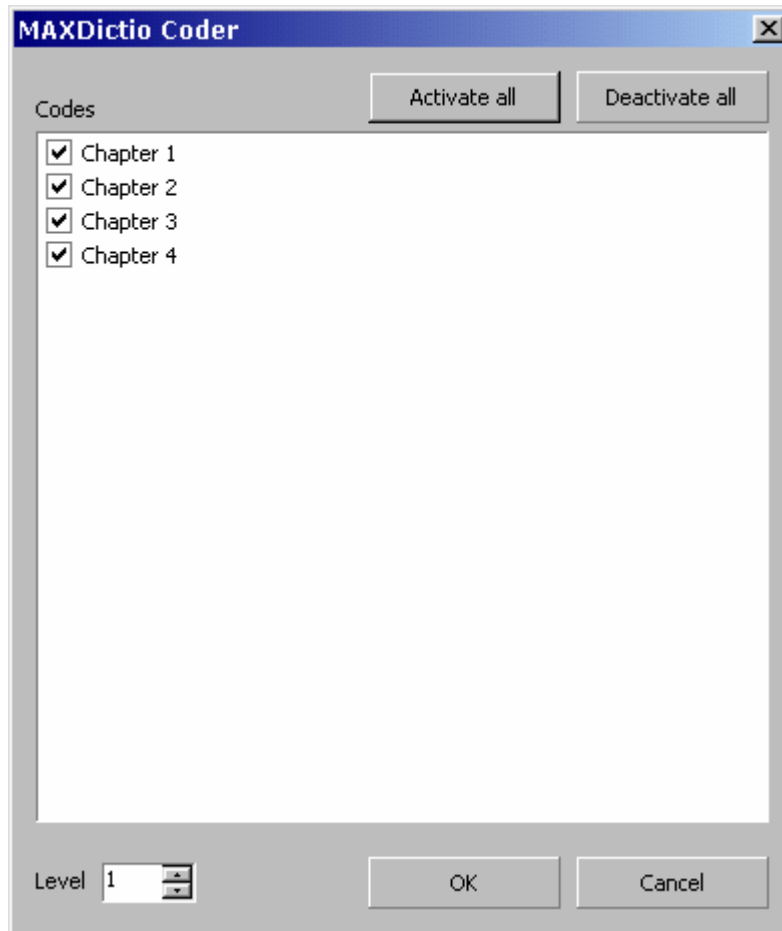
Now, start the **MAXDictio CODER** once more. If the setting of the coding depth were to be left at 0, the text would only be analyzed as a whole; that means the table of results would only contain one line for the four sections.

	Text Group	Text	Text-ID	Code	Words	apostels	persons	places
+	Group 1	Mark	3		3398	32	13	22

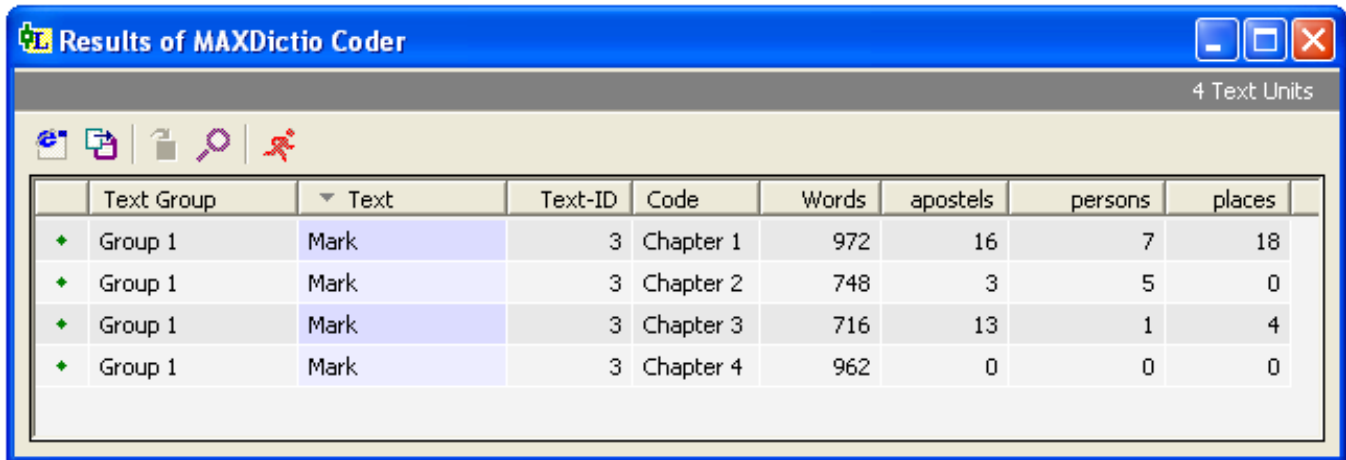
As soon as the depth is set to a value greater than 0, the codes contained in the window will be released for selection. In the selection window, all level 0 codes from the LIST OF CODES will be offered; these are the codes on the highest hierarchy level.



Now you can click on the newly created subdivision codes Chapter 1, Chapter 2, Chapter 3, and Chapter 4. The text will now be counted on a more differentiated level, relating to the individual sections (here: 4).



The following table of results will be created:



Results of MAXDictio Coder
4 Text Units

	Text Group	Text	Text-ID	Code	Words	apostels	persons	places
◆	Group 1	Mark	3	Chapter 1	972	16	7	18
◆	Group 1	Mark	3	Chapter 2	748	3	5	0
◆	Group 1	Mark	3	Chapter 3	716	13	1	4
◆	Group 1	Mark	3	Chapter 4	962	0	0	0

When comparing this table with the overall table, you can see that in the column “words,” the total of 3,398 words is distributed among the four sections. When adding the relevant category frequencies, their sum will be the same as the numbers contained in the overall table. However, this only applies when the option COUNT SAME WORDS ONLY ONCE has not been selected. Otherwise, subdividing a text into sections can produce results that would differ from those of the overall analysis.

If you had only selected “Chapter 1” and “Chapter 2” in the coder window, the result table for this text would only consist of two lines, one for each of the counted text units (Chapter 1 and 2 of the Gospel of Mark).

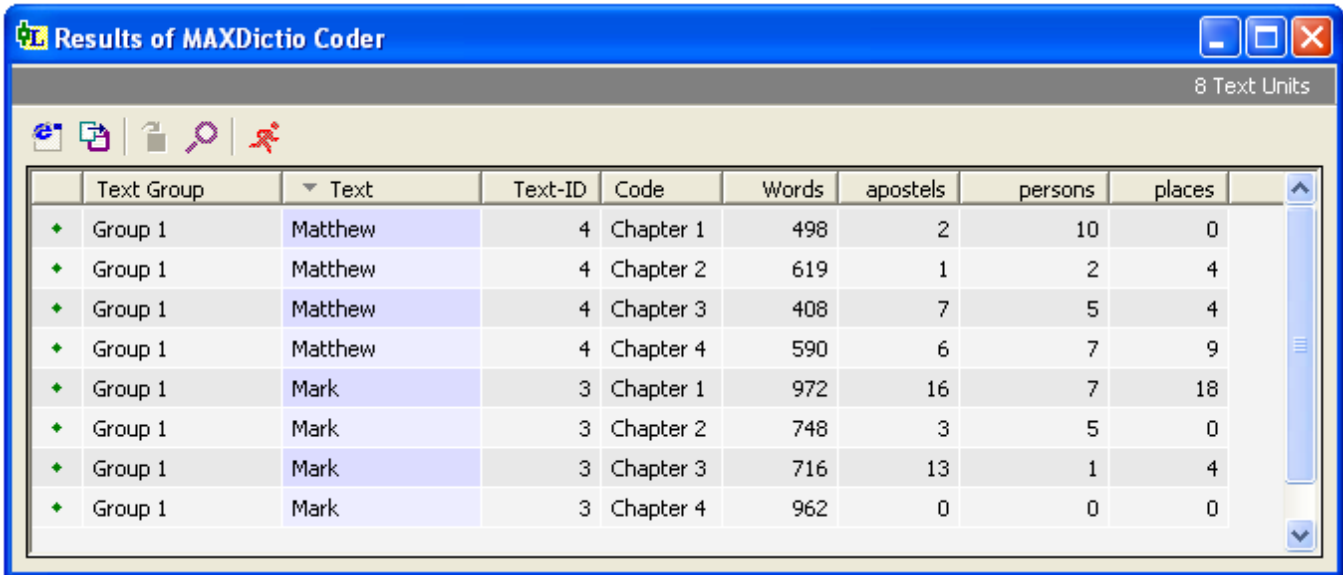
The following norms for structured texts should be taken into consideration:

- The structuring features must be level 0 codes on the highest level of the CODE SYSTEM.
- Overlapping of structuring features is allowed.
- The number of structuring features is unlimited.

Structuring texts can be simplified considerably by using the **MAXQDA** text pre-processor (option: IMPORT STRUCTURED TEXT). With its help, structuring features can already be created while a text is being imported, meaning that they can be written directly into the imported text.

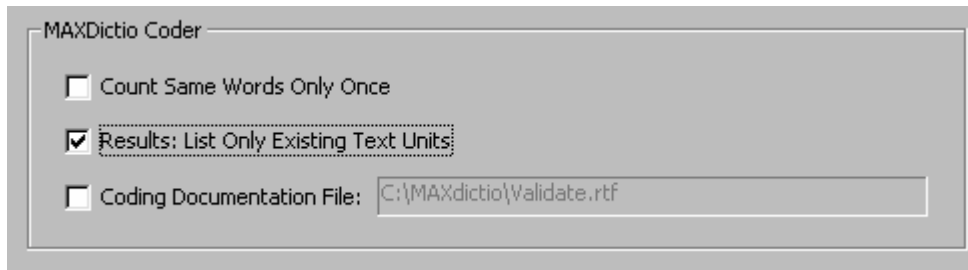
11.7 Result Table of Structured Data

When analyzing structured texts, the analysis is itemized by the existing (or selected) text units. In the example above, the text has been differentiated by chapters. Suppose we want to analyze two texts, the first text consists of four chapters, the second of only three. In this case, the table of results still will be comprised of two times four lines (total: 8 lines), as in the illustration below. Here the text “Mathew” only consists of three text units, a fourth chapter didn’t exist. This is visible by the entry 0 in the last line in the column “words” of the table of results (Mathew Chapter 4).



	Text Group	Text	Text-ID	Code	Words	apostels	persons	places	
♦	Group 1	Matthew	4	Chapter 1	498	2	10	0	
♦	Group 1	Matthew	4	Chapter 2	619	1	2	4	
♦	Group 1	Matthew	4	Chapter 3	408	7	5	4	
♦	Group 1	Matthew	4	Chapter 4	590	6	7	9	
♦	Group 1	Mark	3	Chapter 1	972	16	7	18	
♦	Group 1	Mark	3	Chapter 2	748	3	5	0	
♦	Group 1	Mark	3	Chapter 3	716	13	1	4	
♦	Group 1	Mark	3	Chapter 4	962	0	0	0	

There are cases, in which it is not desired to create empty lines for non-existing text units. This can be prevented by selecting the appropriate setting in the options menu.



Now only the actual existing text units will be counted and listed. The illustration below consequently contains only 7 lines; the last line for the non-existing Chapter 4 has been left out.

Many diverse possibilities result from subdividing texts on a more differentiated level. Analogue to a book, you can divide a text into:

Chapter 1 – Paragraph 1

Chapter 1 – Paragraph 2

Chapter 1 – Paragraph 3

Chapter 2 – Paragraph 1

Chapter 2 – Paragraph 2

Now you can carry out the analysis on the lowest level of the text – the paragraphs. To do this, select level 2 as coding depth. Even after differentiating a text this way, there still remains the possibility to analyze the text on the first level. Then the text will be counted on the level of the chapters. This only functions if there are no allocations to the first order codes “Chapter 1” or “Chapter 2;” the text must be coded consistently on the lowest level. This means that **MAXDictio** demands pro-



ceeding the same as when making a book. If a chapter is subdivided, each chapter starts with the first sub-chapter. Hence, there are no paragraphs that do not belong to a sub-chapter.

Example:

The text below has been processed so that each sentence in the chapters has been coded individually, beginning with the codes “Chapter 1/1,” “Chapter 1/2,” and so on.

The screenshot shows a text browser window titled "Text Browser: Group 1\Matthew". The text is displayed with a vertical coding column on the left. The coding consists of a vertical line of green squares, with small numbers (1 through 8) next to them, indicating the start of a new section. The text is as follows:

	1	MATTHEW
	2	Chapter 1
	3	<i>The genealogy of Christ: he is conceived and born of a virgin.</i>
..1	4	1 The book of the generation of Jesus Christ, the son of David, the son of Abraham:
..2	5	2 Abraham begot Isaac. And Isaac begot Jacob. And Jacob begot Judas and his brethren.
..3	6	3 And Judas begot Phares and Zara of Thamar. And Phares begot Esron. And Esron begot Aram.
..4	7	4 And Aram begot Aminadab. And Aminadab begot Naasson. And Naasson begot Salmon.
..5	8	5 And Salmon begot Booz of Rahab. And Booz begot Obed of Ruth. And Obed begot Jesse.
..6	9	6 And Jesse begot David the king. And David the king begot Solomon, of her that had been <i>the wife</i> of Urias.
..7	10	7 And Solomon begot Roboam. And Roboam begot Abia. And Abia begot Asa.
..8	11	8 And Asa begot Josaphat. And Josaphat begot Joram. And Joram begot Ozias.

The results for the first 8 sections that have been analyzed with coding depth 2, appears as follows:



The screenshot shows a software window titled "Results of MAXDictio Coder" with a blue title bar and standard window controls. Below the title bar is a toolbar with icons for home, print, refresh, search, and error. The main content area displays a table with 10 columns: Text Group, Text, Text-ID, Code, Words, apostels, persons, and places. The table contains 8 rows of data, each representing a sentence from the Gospel of Matthew. The "Text" column is highlighted in light blue. The "Text-ID" column shows a constant value of 4 for all rows. The "Code" column lists chapters 1 through 8. The "Words" column shows word counts ranging from 13 to 22. The "apostels", "persons", and "places" columns show counts for each category, with "apostels" having a count of 1 for the second row and 0 for all others.

	Text Group	Text	Text-ID	Code	Words	apostels	persons	places
◆	Group 1	Matthew	4	Chapter 1\1	17	0	2	0
◆	Group 1	Matthew	4	Chapter 1\2	15	1	1	0
◆	Group 1	Matthew	4	Chapter 1\3	17	1	0	0
◆	Group 1	Matthew	4	Chapter 1\4	13	0	0	0
◆	Group 1	Matthew	4	Chapter 1\5	17	0	0	0
◆	Group 1	Matthew	4	Chapter 1\6	22	0	0	0
◆	Group 1	Matthew	4	Chapter 1\7	13	0	0	0
◆	Group 1	Matthew	4	Chapter 1\8	13	0	0	0

You can see that each sentence has been counted individually as the results are represented by an individual line in the table. In the first sentence of Chapter 1, for instance, 17 words have been counted and in sentence 2 there were 15.



12 Further Processing of the Coder Results with Excel or SPSS

12.1 Questions

The result matrix is an initial point for further statistical analysis. This can help answer further questions, such as:

1. Which category is named most frequently in which texts or text units?
2. In which text (or texts) is a category coded especially often? Where does it appear very seldom?
3. How do the categories correlate?
4. Can patterns be found in the category frequencies?

12.2 How to Transport the Matrix into Excel

The simplest way to transfer the data would be to use the Windows Clipboard. Select the whole result table, copy it, and then paste it into a spread sheet in Excel.

The second possibility would be to create a text file of the matrix by clicking on the option EXPORT. Then you can open this file in Excel.

Both versions work with the same grade of reliability.



12.3 How to Transport the Matrix into SPSS

To export the matrix to SPSS, select to export the file in txt.format by way of a button on the toolbar in the results window. Exporting by saving the file temporarily on the clipboard does not work well due to SPSS's restrictions regarding variable names. In addition, only numerical variables can be copied into the SPSS data editor, so string variables would be lost.

12.4 Convert the Results Matrix into **MAXQDA** Variables

It is possible to save the columns of the results matrix permanently in **MAXQDA** in the 2007 version of the program by converting them to **MAXQDA** variables.

The category frequencies have been added to **MAXQDA**'s variable function as individual variable types. They appear in a different color (yellow) so that they are easier to recognize. The dictionary name serves as the variable name for the converted category frequencies. If, for example, a dictionary category is called "Legal Aspects," this will serve as the variable name in **MAXQDA**'s variable list. The number of times the category appears in each of the texts on the list will be shown in the column of the variable matrix entitled "Legal Aspects." To start the conversion process, click on the icon "Results of the **MAXDictio** Coding" in the table's toolbar. This type of variable cannot be updated by importing a variable matrix.

Because the variables in **MAXQDA** are case variables, i.e. only one data set is available per text, the results matrix can only be converted into variables that have the same case structure. This is, however, only the case at coding level "0;" hence, converting category frequencies into variables is limited to this level.



13 Tips and Hints for Working with MAXDictio

For **MAXDictio** to operate efficiently, it is advisable to create a suitable working environment. Setting up a functional directory structure is the first priority.

It is best to create a “maxdictio” folder in your “My Files” folder. There you can save project files, such as stop-lists, dictionaries, or exported results.

Files created by **MAXDictio** can be recognized by the following file extensions:

Type	Extension
Dictionary	mxd
Word Frequencies	txt
Index of Finding Locations	txt
Stop-Lists	txt

As long as you only use **MAXDictio** occasionally, and the number of the files you create stays manageable, it will be sufficient to just save all of the files in this folder. With a growing number of files, however, it might become necessary to set up sub-directories, such as a folder “results” or a folder for all your dictionaries.

When working with the functions, it is advisable to have MS Excel opened at the same time. Then data can easily be moved using the Windows Clipboard and results of the word frequency function or dictionaries (these only via the EXPORT-function, though) can be inserted in Excel as a spreadsheet and printed out in a clear form.

Besides this, it is important that **MAXQDA** has sufficient resources so that that the program can work as efficiently as possible. Other Windows programs should be closed when starting the function for the word frequencies. The more central memory available, the quicker the word frequency function and the coder can work.



14 Limits of MAXDictio

Neither the number or size of the texts nor the amount of text units or words per text unit are limited. The same applies to the dictionary – the number of categories and allocated words are also unlimited.

To a high degree, working with **MAXDictio** depends on how fast the computer is and how many resources it has. If the number of texts to be counted at the same time reaches a certain quantum, the computer becomes noticeably slower. Projects of up to a million words are manageable for today's average computers with around 1.4 GHz and 256 MB RAM. This should be sufficient for usual projects of qualitative social science.

The more text to be processed simultaneously, the more time the computer needs. All functions also have a bar that indicates the progress. Hence, it is visible how much text **MAXDictio** has already processed and, thus, possible to calculate how much time will still be needed to complete the entire analysis.