COREX: A tool for exploiting the Corpus Gesproken Nederlands (CGN)

Manual

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Introduction

The Corpus Gesproken Nederlands (CGN) is a database of recordings and annotations that contains almost ten million spoken Dutch words. The Corex program allows you to listen to the speech files, to view the multiple annotations and to conduct queries in the corpus. It supports the following features:

- easy navigation through subcorpora, either based on predefined or user defined metadata groupings such as the speaker's sex and age, the region in which (s)he grew up, the text type and other metadata.
- playing of speech signal, synchronised with annotation data
- display of , search through and statistical analysis of annotation data
- display and search of metadata descriptions (e.g. information about the speakers, information about socio-environmental settings of the recording).

This manual describes the Corex program commands. It is organised in a sequential manner based on the windows and panels that open up in the program. The following is a list of the Corex windows and panels and their corresponding sections in this manual:

- 1 Corpus Browser Window
- 2 Metadata Search Panel
- 3 Corex Viewer
- 4 Content Search Panel
- 5 Statistics Panel
- 6 Lexicon Tool
- 7 Syntax Search

Table of Contents

1 Corpus Browser Window	4
1 Corpus Browser Window	4
1.1 Metadata Descriptions Tree Panel	4
1.1.1 Navigating in the CGN corpus	5
1.1.2 Displaying information	7
1.1.3 Selecting parts of the corpus for purposes of analysis	11
1.2 Bookmarks Panel	14
1.3 Info/Content Panel	16
1.4 Description Panel	17
1.5 Menu	
1.5.1 The Search menu	17
1.5.2 The Options menu	
1.5.3 Help menu	
1.5.4 The file menu	
2 Metadata Search Panel	20
2.1 Specify the search options	
2.1.1 Select the category to be searched	
2.1.2 Add or delete a search query	
2.2. Initiate and stop the search	26
2.3 Display the search results	26
2.4 Save the search results	26
3 Corex Viewer	29
3 1 File menu	30
3.1.1 Print view	30
3.1.2 Print all	30
3.2 Panel menu	
3.2.1 Export to HTMI	
2.2. Options many	
2.2.1 Show Matadata	
2.2.2 Dlay only segment	
2.2.2 Time grave	
$2.2.4$ $M_{\rm c}$ it has the	
3.3.4 VISIBLE TRACKS	
3.3.5 Preferences	
3.4 100ls menu	
3.4.1 Praat Synch	
3.5 Audio menu	
3.5.1 Audio Player	
3.5.2 Waveform Panel	
4 Content Search Panel	
4.1 Track Selection Menu and Text Field Box	
4.1.1 Phonetics	40
4.1.2 Prosodic search	
4.1.3 Marked Words	
4.2 Regular Expression Search	44
4.3 Case-Sensitive Search	45
4.4 Add new constraint button	45
4.4.1 Performing a query within results	47
4.5 Delete last constraint button	
4.6 Save Result	48
4.7 Read result	49
4.8 Save results as corpus	
5 Statistics Panel	52
6 The Lexicon Tool	54
6.1 Performing a Query in the Single Word Lexicon	54
6.1.1 Column visibility settings	
6.2 Searching Within Results	
6.3 Saving and printing the search results	
6.4 Searching the CGN with word/lemma ID	57

6.5 Statistics based on word/lemma ID	
6.6 The multi-word lexicon	
7 Syntax Search	61
7.1 The TIGERGraph Viewer	61
7.2 Syntax Search	63
7.2.1 Specify the search options	
7.2.2 Saving the search results	64
Appendix A: example of .res file	65
Appendix B: CGN Metadata	66

1 Corpus Browser Window

Starting the Corex program opens up the window **IMDI-BCBrowser for Corpus Gesproken Nederlands** (referred to in this manual as the "Corpus Browser" window).

In the **Corpus Browser** window you can view and access the Corpus Gesproken Nederlands (CGN): you can read information about the kind of data that is contained in the corpus, you can access the annotation and audio files, and you can initiate searches and do statistical counts.

The Corpus Browser window contains the following four panels:

- 1.1 Metadata Descriptions Tree panel
- 1.2 Bookmarks panel
- 1.3 Info/Content panel
- 1.4 Description panel

Besides these panels, there is the main menu:

1.5 Menu

MDI-BCBrowser for Corpus Gesprol File Options Search Help	103402965-03
Bookmarks File CGN Root global file All Sessions global file DVD List global file Components global file Geogr. Disp. global file Age Disp. global file Search Results rilohal file Metadata Descriptions Tree	Description Info/Content Info/Content

1.1 Metadata Descriptions Tree Panel

The CGN corpus is a collection of 12767 recordings and corresponding annotation data. The **Metadata Descriptions Tree** panel allows you to navigate in a predefined structure of the Corpus Gesproken Nederlands (CGN). It gives access to the so called

sessions, which are the basic elements of the CGN structure. A session includes the audio file and the corresponding annotation files and metadata.

At the bottom of the panel, there are five buttons that allow you to select parts of the CGN corpus for purpose of analysis.



1.1.1 Navigating in the CGN corpus

The top node of the CGN is displayed as the **Corpus Browser** window initially opens up. Double-click on the CGN icon to display its corpus nodes; double-click on any corpus node to open it and to display the next level in the hierarchy.

! Note: The **Metadata Descriptions Tree** distinguishes between open and closed corpus and session nodes. These are represented by different icons:

CS

Ð

Icon of an open corpus/session.

Icon of a closed corpus/session.

Most of the program commands do not work when the node is closed. Therefore, if any of the commands do not seem to work, please make sure that the node is open. Double-click on its icon to open it.

! Note: Because of the large amount of data that is loaded, it may take some time until Corex responds to the 'open' command.

The CGN corpus branches into multiple sub corpora. Sub corpora can be partly overlapping. They just provide a different perspective on the same data.

- All: this is simply a list of all sessions, ordered by number.
- **DVDs**: the CGN corpus as it is grouped according to the audio DVDs that are supplied with Corex.
- Annotation types: Sub corpora that contain annotation types (such as prosody) that are provided only for *part* of the sessions.
- **Components**: the CGN corpus as it is grouped according to the text type (e.g. spontaneous conversations).
- **Regions**: the CGN corpus as it is grouped according to the region where the speaker(s) lived between the ages of four and sixteen.
- **Speaker Sexes**: the CGN corpus as it is grouped according to the sex of the speaker(s).
- **Speaker Ages**: the CGN corpus as it is grouped according to the age of the speaker(s).

The lowest level in the CGN structure is the session. Each session contains the audio data and is linked to the corresponding annotation files as well as the metadata. E.g., we can open the session labelled "*fn000001*" and see in the metadata that it contains a live commentary (text type *I*) of a 26 years old male speaker from the region Gelders Rivierengebied (Region N2c). See section 1.3 for the procedure of opening a session. See Appendix B for an overview of all Metadata codes.

Session names that start with 'fn' are Dutch, session names that start with 'fv' are Flemish.

Each session node contains the following kind of information:

- metadata descriptions, i.e., information *about* the speaker(s), the recording and annotation data (see sections 1.3 and 1.4),
- links to a ***.wav** file (the audio file),
- links to a number of annotation files (.bpt, .tag, .pri, .skp, .tig, .prx).
 - The **.bpt** file contains the manually created broad phonetic transcription. This was done only for a part of the CGN.
 - The .tag file contains the Part of Speech tags (POS tags).
 - The .pri file contains the orthographic transcription
 - The .skp file contains information about the linkage between the audio signal and the orthographic transcription. The linkage is on word level. This means that the time codes for the beginning and end of each word are provided. These time codes were set manually for about ten percent of the corpus. The remaining part was generated automatically. In case the manually performed transcription is available for a session, it 'overrules' the automatically performed transcription.

- The **.tig** file can be read using the Tiger program for syntactical data (this is not a Corex tool, but it is integrated in Corex).
- The .prx file contains the prosodic annotation. For about five percent of the sessions there are two prosodic transcriptions, according to the two schools of annotating prosody that exist in the Netherlands and in Flanders (this makes a total of four schools. However, since each session is either Dutch of Flemish, a session can only have two .prx files).

Double-click on any session node to open a viewer panel (the **Corex Viewer**), which displays the session's annotations (see section 0). Each session has a corresponding audio file. In order to use the Corex **Audio Player** or **Waveform Panel** features, you need the DVD that contains the relevant audio file (see sections 3.5.1 and 3.5.2).

! Note: You can access the **Corex Viewer** and the **Audio Player** and **Waveform Panel** by double-clicking on the session icon: **S** or by right-clicking on an opened session and choosing the option **Corex Viewer**.

Clicking on any of the annotation files will *not* start the **Corex Viewer**. Nor will clicking on the audio file start the **Audio Player**.

! Note: Not all annotation types are available for every session. Available and non-available files are represented by different icons:



file is not available



available transcription file.

m

available .wav file

! Note that a missing annotation file does not have any consequences for the analysis: the Corex program will include this session whenever it performs searches or statistical counts.

! Note that if a .wav (speech) file is not available, you will be prompted to provide a DVD with audio files

1.1.2 Displaying information

A left mouse click on any node in the **Metadata Descriptions Tree** panel will highlight this node; and a right mouse click on any open highlighted node will display a drop-down menu, offering you a number of different options.

! Note: Not all options are available for all nodes.

! Note: For some nodes, one of the options is marked with the symbol #. In this case, the corresponding option will start automatically whenever you double-click on the open node.

• The following options are available if you right click on the highlighted (green) *session node*; in the below example this is session fn000280:



COREX viewer	Opens the Corex Viewer , which displays the session's annotations and gives you access to the audio data (see section 0). This is the default setting for any session - i.e. a double-click on the session node will automatically open the Corex Viewer .
Tiger	Opens the TIGERGraph Viewer (see section 7).
Show as HTML	Displays the metadata neatly formatted for printing
Show LR's	Displays the information for all annotation and audio files contained under this node in the Info/Content panel.

Session Count	Displays the number of sessions contained under this node in the Info/Content panel.
List Sessions	Lists all sessions contained under this node in the Info/Content panel.
Add to Bookmarks	Adds the node to the Bookmarks panel.
Remove from basket	Removes the node from the list of nodes to be analysed (see section 1.1.3). This option is identical to the Remove button in the panel of basket functions below the Metadata Descriptions Tree panel .
Add to basket	Adds the node to the list of nodes to be analysed with a content search, metadata search or statistics search (see section 1.1.3). This option is identical to the Add button in the panel of basket functions.
Clone Node	Opens a second Corpus Browser window that displays only the corresponding node.
Show File Content	Displays the XML file of the node in the Info/Content panel.
Show URL	Displays the directory information for the file in the Description panel.

• The following options are available if you right click on any available *annotation file*:

💁 🕇 fn	000280.tag	
💁 😑 fn	000280.syr	# Show #
💁 🕇 fni	000280.pri	Show format
💁 🕇 fni	000280.sk	
💁 🕇 fni	000280.tig	Save File Content
💁 😑 fni	000280.prx	Clone Node
🖭 😑 fni	000280.prx	Show Content-Type
💁 😑 fn	000280.prx	
💁 😑 fn	000280.prx	Show Description
🗢 🗖 fni	000280.wn	Show URL

Show	Displays the file content in the Info/Content panel. This is the default setting for any annotation file (*. pri , *. skp , *. tag , *. syn , *. bpt) - i.e. a double- click on such a file will automatically display its content.
Show format	Displays the file format in the Info/Content panel.
Save File Content	Downloads the file in a non-compressed format and allows to save it at the location of your choice.
Clone Node	Opens a second Corpus Browser window that displays only the corresponding node.
Show Content-Type	Displays the file format in the Description panel.
Show Description	Displays the file description in the Description panel.

- The following additional option is available only for result corpora (sub corpora you have composed yourself) in the SEARCH RESULTS:
- Remove Removes the node from the Metadata Descriptions Tree panel. Note: After selecting Remove, the icon of the removed node remains visible although it cannot be accessed anymore. The icon will be gone after exiting and re-entering the node **Results**.

The preferred way of displaying the annotation data is by use of the Corex Viewer, because in that way the annotations are linked to the speech signal (see section 3). It is also possible, however, to display all information either in the **Info/Content** panel (see section 1.3) or in the **Description** panel (see section 1.4). The following illustration is an example of how selected information is displayed in the **Info/Content** panel:



1.1.3 Selecting parts of the corpus for purposes of analysis

The Corex program allows you to do metadata and content searches as well as statistical counts in the corpus (see sections 2, 4 and 5). By default, the analysis is done throughout the whole corpus. However, it is possible to limit the analysis to a part of the corpus: to one (or several) corpus and/or session nodes. The five buttons at the bottom of the **Metadata Descriptions Tree** panel are used for the selection process.

To select a corpus or session node, do the following:

- 1. Open the node by double-clicking on it.
- 2. Highlight the node by clicking on it with the left mouse button.
- 3. Either click the Add button at the bottom of the Metadata Descriptions Tree panel.

Or click with the right mouse button on the highlighted item, and select Add to basket from the drop-down menu.

The icon of any selected node will change its colour to grey, e.g.:



Non-selected node.



Selected node.

Once an item is selected, the List button will be highlighted in red:

List

! Note: keep in mind that if this button is highlighted in red, any search will only be performed in the subcorpus that is selected. If nothing is in the basket – if the list is empty – any search will be performed in the entire CGN.

4. Repeat this process to add other nodes to your selection.

! Note: You can only select a node that is open. Double-click on it to open it.

! Note: It is possible to select several different nodes, e.g. the nodes (a) 'male' and (b) 'The Netherlands'. The analysis will then be done over all sessions contained under the node 'male' (regardless of region) and all sessions contained under the node 'The Netherlands' (regardless of sex). This option does not allow you to limit the search to, e.g., all male speakers that grew up in the Netherlands. To limit your search in such a way, make use of the metadata search options (see section 0).

Click the List button to view a list of all selected nodes, e.g.:

🚔 Selected Nodes	
Zuid-Holland file:/X:/data//meta/imdi/corpora/regN1a.imdi.gz Noord-Holland file:/X:/data//meta/imdi/corpora/regN1b.imdi.gz West Utrecht file:/X:/data//meta/imdi/corpora/regN1c.imdi.gz	
Dismiss	

Click the Dismiss button to return to the Metadata Descriptions Tree panel.

You can remove all selected nodes from this list by clicking the Clear button at the bottom of the **Metadata Descriptions Tree** panel.

To remove a specific node from the list, do the following:

- 1. In the **Metadata Descriptions Tree** panel, highlight the node by clicking on it with the left mouse button.
- 2. Either click the **Remove** button at the bottom of the panel.

Or click with the right mouse button on the highlighted item, and select **Remove** from basket from the drop-down menu.

3. Repeat this process to remove other nodes from your selection.

You can save the selected list for future use. Click the **Save** button. The following message informs you that your list has been saved:

Info m	essage 🔀
Ů	Your selection has been saved To remove it use "Clear" and "Save"
	ОК

! Note: Once you have saved a selected list, you can only remove it by first clicking the Clear button (to remove all selected nodes) and then the Save button (to save an empty list).

When you are satisfied with your selection, turn to the **Browser Action** panel in order to initiate searches or statistical counts (see section 0).

1.2 Bookmarks Panel

The **Bookmarks** panel of the **Corpus Browser** window –visible at the top left part – displays shortcuts to various nodes in the corpus just under the CGN root. Having a bookmark allows you to immediately access such a node, without being obliged to first navigate in the entire corpus. By default, the following bookmarks are displayed:

e <u>O</u> ptions <u>S</u> earch <u>H</u> elp		
Bookmarks		
CGN Root	global	file
All Sessions	global	file
Annotation types	global	file
DVD List	global	file
Components	global	file
Regions	global	file
Age/Sex	global	file
Search Results	diobal	file

- **CGN Root**: the entire CGN corpus.
- All Sessions: a list of all sessions, sorted by name, no thematic grouping.
- **Annotation types**: contains three sub corpora phonetic, prosodic and syntactic annotations that are provided for a minor part of the CGN.
- **DVD List**: the CGN corpus as it is grouped according to the audio DVDs that are supplied with Corex.
- **Components**: the CGN corpus as it is grouped according to the discourse genre.
- **Regions**: the CGN corpus as it is grouped according to the region where the speaker(s) lived between the ages of four and sixteen.
- **Age/Sex**: the CGN corpus as it is grouped according to the sex and age of the speaker(s).
- **Search Results**: the saved result corpora of your searches (see section 4.8)

Double-click on any of these items in the **Bookmarks** panel to open the corresponding node in the **Metadata Descriptions Tree** panel.

In addition to the predefined bookmarks, you can create your own bookmarks. Do the following:

- 1. In the **Metadata Descriptions Tree** panel, open the relevant corpus or session node by double-clicking on it.
- 2. Highlight the open node by clicking on it with the left mouse button.
- 3. Right-click on the highlighted node and select Add to Bookmarks from the dropdown menu.

The following dialogue box appears:

Input		×
2	Name for Bookmark my bookmark	
	OK Cancel	

4. Type in a name for the new bookmark.

The new bookmark is added to the **Bookmarks** panel.

These bookmarks remain available every time you restart Corex. To remove a bookmark, do the following:

- 1. In the **Bookmarks** panel, click on the bookmark that you want to remove.
- 2. Right-click on that bookmark and select **Delete Bookmark** from the drop-down menu.

The bookmark is deleted without further warning.

! Note: You can only delete those bookmarks that were created by yourself, but never the ones that are predefined by Corex.

1.3 Info/Content Panel

The **Info/Content** panel displays information about corpus nodes, session nodes and files. To read the information, click on the corresponding icon in the **Metadata Descriptions Tree** panel.

! Note: The information is only displayed when the corpus or session node is open. Double-click on it to open it.

In the case of corpus and session nodes, information about the name of the node, the title, and (in the case of sessions) the recording date is displayed, e.g.:



In the case of a Metadata node, the following kind of information is displayed:



For an overview of all metadata, see Appendix B.

The **Info/Content** panel can optionally display additional information such as a list of all the sessions contained under a node, a count of all the sessions contained there, the content of XML files, the format of file(s), the directory information of file(s) and the

directory information of the file containing the metadata descriptions. To view this information, do the following:

- 1. In the **Metadata Descriptions Tree** panel, click on the node or file the information of which you want to view.
- 2. Right-click on the highlighted node or file.
- 3. Select an option from the drop-down menu (see section 1.1.2 for the available options). The relevant content is displayed in the **Info/Content** panel.
 - If an HTML page, for example the CGN documentation, is displayed in the **Info/Content** panel you can navigate in this document by clicking the < and > buttons.

e Options <u>S</u> earch <u>H</u> elp		Buttons fo	r switchi	19	
lookmarks		between pa	ages (in c	ase	
All Sessions	global file 🔺			18-24 vi	
Annotation types	global file 🔚			()	
OVD List	global file 🗾				
Components	global file 🔛				
Regions	global file	Info/Content			
Age/Sex	global file 🚝				_X
Search Results	nlohal file 💌				\sim
letadata Descriptions Tree		- Title: Sessio	ons containing	; male subjects, c	of 18-24 years
φ- C male	Descrit	otion of			
 less than 17 years (18-24 years) fin000013 	the nod	e "18-24"			
fn000014 fn000015 fn000016 fn000016			1		
asket functions					

• Printing of the content is possible. Click on the **print** button.

1.4 Description Panel

The **Description** panel displays a brief description of corpus nodes, session nodes and files. To read the description, click on the corresponding icon in the **Metadata Descriptions Tree** panel, e.g.:

! Note: The information is only displayed when the corpus or session node is open. Double-click on it to open it.

1.5 Menu

1.5.1 The Search menu

This is the most important pull down menu. From her, we can initiate searches, perform statistical counts in the CGN corpus as well as accessing the lexicon.

🛍 IMDI-BCBrowser for Corpus Gesproke						
<u>File</u> <u>Options</u>	Search Help					
Bookmarke	Metadata Search					
	Content Search					
CGN Root	Syntax Search					
DVD List	Statistics					
Component	Lexicon Tool					
Geogr. Disp						
Age Disp.	ulto					
SPAILTRES						

- Metadata Search is discussed in chapter 2
- Content Search is discussed in chapter 4.
- Syntax Search is discussed in chapter 7.
- Statistics option is discussed in chapter 5.
- Lexicon tool is discussed in chapter 6.

ile	<u>O</u> ptions	<u>S</u> earch <u>H</u> elp		
	<u>C</u> onfigu	ration info		
Bo	I Show/	Hide <u>b</u> ookmarks		
C	GN Root		global	file
All	I Sessions	5	global	file
Ar	notation f	ypes	global	file
D\	/D List		global	file
Co	omponent	S	global	file
Re	egions		global	file
Ag	je/Sex		global	file
Se	arch Res	ults	global	file

1.5.2 The Options menu

Click this button for the following two options:

- Configuration info: displays information about the configuration, which you might need when reporting a bug to the developers.
- Show/Hide bookmarks: offers the possibility to hide the bookmarks panel.

1.5.3 Help menu

• About: click this button to view the copyright and version information.

1.5.4 The file menu

• Exit: click this button to exit the Corex program.

! Note: When you open a second **Corpus Browser** window (either by the option **Clone Node** (see section 1.1.2), or by double-clicking on search results in the **Metadata Search** panel (see section 2.3)), the Exit button of the second window turns into a **Close** button. This allows you to close the second window without exiting the Corex program.

2 Metadata Search Panel

The **Metadata Search** panel is accessed either by the pull down menu option **Search** \rightarrow Metadata Search or by right-clicking on an open highlighted corpus node in the **Metadata Descriptions Tree** panel and then selecting Metadata Search from the drop down menu (see section 1.1.2).

The **Metadata Search** panel allows you to search for sessions that comply with certain metadata conditions (for example, search for all sessions with speakers of a specific age and from a specific region). This can be done throughout the entire Corpus Gesproken Nederlands - the default setting - or throughout selected parts of the corpus (see section 1.1.3).

	📥 IMDI Metadata				
	File Session V Pa	articipant 💌 🔀 🛛 🔍	Specify the search options here.	Male	
	Query specification Session.MDGroup.P	and results 'articipants.Participant(X).Sex="Male	2"		<u>A</u>
<	hits: 297 prog file:/D:/COREX6(data. file:/D	meta/imdi/sessions/fn000001.imd /meta/imdi/sessions/fn000002.imd on number of 03.imd arch progress 04.imd	i Code="n00023" i Code="n00023" i Code="n00013" i Code="n00059" Code="n00060"	Search results	
	The database containing all metadata information. Do not make alterations in this field	Search Stop Save Use these buttons search, to stop the save the results.	results in: results	name for the result file	

- Don't use the Browse button at the bottom right.
- Use the Exit button in the File menu to close the Metadata Search panel.

2.1 Specify the search options

The search options are specified in the topmost part of the **Metadata Search** panel, e.g.:

Use this button to add a condition to query.	The category in which the search is conducted: Participant, sex, male	
File Session V Participant	▼ (X) ▼ Sex ▼	Male
Query specification and resu	lits	<u> </u>
/ Session.MDGroup.Participar Use this button to delete the	ts.Participant(X).Sex="Male"	

The following search steps have been taken:

condition.

- 2.1.1 Select the category to be searched.
- 2.1.2 Add or delete a search query.

2.1.1 Select the category to be searched

The categories to be searched are predefined by Corex and are displayed in form of drop-down menus (see the separate CGN Documentation for an explanation of all the different categories).

The default categories, which are displayed every time you access the **Metadata Search** panel, are **Session** and **Name**. These two options allow you to search for the name of a session.

You can select other categories by clicking on the drop-down menus:

- The first category is always Session.
- The second category is chosen from the following list:
 - Name, Title, Date, Location, Project, Key, Content, Participant, Media File and Annotation Unit. A choice for one of these will lead to a third drop down menu.

or:

• A number of CGN-keys, leading directly to the query of your choice (i.e. they are not further subdivided in other categories).

• ! Note: If you point with the mouse to a category that belongs to a controlled vocabulary (i.e. a pull down menu with fixed categories), a blue box, the so-called tool tip, will appear to explain the meaning of that category, e.g.:

g IMDI Metadata Search le						
Session V Participant	(X) ▼ Kev:0	CGN.birth.region	-	CGN.birth.regio	n Unknown	•
						:d 🔺
		******			regN1a	100
Query specification and results				7	regN1b	88 88
		Tooltip, e	xplaining		regN1c	
Session.MDGroup.Participants.Participant(X).	MDGroup.Particip	meaning of	of	iknown"}	regivia regivia	
		category			regN2b	
its · O progress ·		cutegory			regN2c	•
		NED., OVERGAI	NGSGEB., GELDE	RS RIVIRENGEBIE	D, INCL. ARNHEM B	EN NIJMEGE
					ir	
earch Service: jdbc:hsqldb:X:\data\annot\core	x\indices\imdi					Browse
·)·	
Search	n Stop	Save results in:	results			

• For metadata fields that don't have a controlled vocabulary but a text field box in which you can specify your query, it is possible to use so called **wild card characters** to broaden your query. The wild card characters are * and ?. The character * stands for 'any character zero to n times'. The ? stands for any character once.

In the below example the query in the Session \rightarrow Name text box is 'fn*'. This means all session names that begin with *fn*. This means all Dutch sessions.

👙 IMDI Metadata Search File	Finds every Dutch session	
Session Vame	\langle	ſ'n*
Query specification and results		<u> </u>
Session.Name="fn*"		

! Note: The CGN-specific Keys are often mapped onto the standard IMDI data fields. However some standard IMDI-routes may still lead to a dead end on the one hand, or to data fields that are irrelevant to the CGN on the other hand (e.g. searching for Location/Continent/Africa will not lead to any search results, of course). This problem can be avoided by search paths that include a CGN-specific key. The CGN-specific keys cover most of the metadata. Two main routes to access the CGN-keys are Session/Participant/Key for

participant information and Session/Key and Session/Content/Key for session information.

! Note: If too many categories and drop-down menus are added, the **Metadata Search** panel cannot display them all. To increase its size, click on the full screen icon (in the top right corner of the panel):

In the remainder of this section, some examples of metadata searches are given.

(1) In the following illustration, Location was chosen as the second category. A third drop-down menu appears, subdividing the category Location into Continent, Country, and Region. When Country was chosen, a fourth drop-down menu appeared, displaying the names of all countries.

The selected category is automatically added to the box **Query specification and results**.

誊 IMDI Metada	First and second category			
<u>F</u> ile				
Session V	Location Country	• •	Netherlands	
Query specificatio	on and results			 A
Session.MDGroup	.Location.Country="Netherla	inds"		
	The selected categ automatically add box.	ory is led to this		 *******

(2) In another example, Participant Age was chosen as the second category (i.e., the date of the recording), e.g.:

👙 IMDI Metadata Search			
<u>F</u> ile			
Session Participant (X) Age	< 🕶 24	8.8. ⊳ ▼	18
Query specification and results	vounger		older than 18
Session.MDGroup.Participants.Participant(\0.Age={<"24" && >"18"}	than 24	and	
hits: 480 progress:			
file:/X:/data/meta/imdi/sessions/fv600444.imdi Code="V60249"			RED R
file:/X:/data/meta/imdi/sessions/fv600504.imdi_Code="V60284"			1000
file:/X:/data/meta/imdi/sessions/%600603.imdi_Code="V60303"			
J <u></u>			
Search Service: jdbc:hsqldb:X:\data\annot\corex\indices\imdi			Browse
Search Stop Save results in: results			

In this case, further drop down menus allow you to specify the exact age interval with the following buttons:



Don't forget to press Enter on your keyboard after filling in a number in the text field box. Only then it becomes visible in the Query specification and results panel and only then it becomes effective for the query. You can also insert numbers directly in the Query specification and results panel. Do this only if you know what you are doing. Do not change the entire line.

(3) The last example illustrates a search for keywords. Whenever you select the category Key, a drop-down menu with the available keywords will appear. Select one of the keywords, and another drop-down menu with the available values will appear. For example, you can search in the category Participant for all those sessions that contain the value lang02 (means language number 2, see Appendix B for an explanation of the different values) under the keyword CGN.homeLang (i.e., language spoken at home):

🚔 IMDI Metadata Search							
File							
Session Participant Query specification and results	• 🐼	Key Key Key	y:CGN.homeLang :CGN.birth.year :CGN.birth.place :CGN.birth.place		CGN.homeLang	*regiolect: Antwerpe Unknown Unspecified SD* *regiolect: Antwerpe	en*
Session.MDGroup.Participants.Particip	ant(X).MDGrC	key Key Key Key	::CGN.firstLang ::CGN.homeLang ::CGN.workLang ::CGN.residence.place	heLan	g","*regiolect: Antwerpen	*regiolect: Antwerpe *regiolect: Only in f *regiolect: Bilzen* *regiolect: Brabant*	en-Kempen* Flemish sessions
Search Service: jdbc:hsqldb:X:\data\ann	for ry nt	es\imdi	AQU 11		for the Fler part of the there is a d regiolects a dialects	mish corpus livision in and	Browse
	Search	Stop	Save results in:	results]

! The language keys (CGN.firstLang, CGN.homeLang, CGN.workLang) of the Flemish part of the CGN are many. They are subdivided in dialects and regiolects. For the Dutch part, the only division is between Standard Dutch (SD) and Unknown. The Flemish language keys are so many that the pull down menu does not display all. However in the text box the regiolect of dialect of choice can be filled in manually between stars. For an overview of all the keys, see Appendix B.

2.1.2 Add or delete a search query

You can add and delete queries as follows:



use this button to add a query

use this button to delete the query

These buttons are on the top left corner of the panel. When two or more queries are specified, metadata search will search for all sessions that contain query 1 *and* query 2 (*and* all subsequent queries). For example, in the following illustration, all sessions will be found that contain (1) a male participant X *and* (2) a female participant Y.

🔹 IMDI Metadata Search <u>F</u> ile	Additional query, applies to different participant	
Session Participant (X) Sex	-	Male
Session Participant (Y) Sex		Female 🔹
Query specification and results		A
Session.MDGroup.Participants.Participant(Y).Sex="Fe	emale"	▲ ▼

! Note: The variables X and Y are only of relevance if you specify more than one query. In this case, they allow you to specify that the criteria male and female apply to different persons X and Y(of course, in this case, the criteria could not possibly apply to one and the same person). So this combined query will search for sessions with a male and a female participant. Please ignore these variables if you specify one query only.

2.2 Initiate and stop the search

Click the **Search** button at the bottom of the **Metadata Search** panel to start the search. During the search the number of "hits" (matches) is shown, as well as a "bumper"moving back and forth, to indicate that the search is still in progress.

! Note: The first query may take some time, because the database has to be loaded. Subsequent queries are faster.

! Note: The name of the database that contains all metadata descriptions is specified following the coloured text box **Search Service:**. It is already configured correctly: please do not change its location or name.

Once the search process is started, you can use the **Stop** button to stop the search, for instance if you need only a few hits.

2.3 Display the search results

Once the search process is started, the box **Query specification and results** in the **Metadata Search** panel starts displaying the session node location for each hit.

Double-click on a session node location to open a second **Corpus Browser** window that contains the selected session.

2.4 Save the search results

You can save all sessions that contain the search results as a corpus node. This node is displayed in the **Corpus Browser** window. Do the following:

- 1. In the **Metadata Search** panel, specify a name in the text box following the button **Save results in**:.
- 2. Click the button Save results in:. The results are saved under the specified name.

You can access the results via a short cut in the **Bookmarks** panel. Double-click on **Search Results**. The **Metadata Descriptions Tree** panel will display the new corpus under the node **Results**, e.g.:



This new corpus node "*session 1*" is treated like any other corpus node: it contains sessions (those sessions that matched the search criteria), and the sessions contain metadata descriptions and give access to all the functionality of Corex. This means that content searches, metadata searches and statistical queries can be restricted to the user defined subcorpus.

! Note: You can do a content search on this newly created corpus (see section 0). In this case, if the newly created corpus is based on the category **Participant** (e.g., a corpus of all sessions that contain Annotation units by male speakers below 30 years of age; see section 2.1.1), the content search on this corpus will only search the annotation units of the corresponding participant category (i.e., male speakers below 30 years of age) - if the corpus contains sessions with dialogues between, e.g., male and female speakers, the annotation units of the female speakers will be ignored.

You can remove the saved corpus node again. Go to this node in the **Metadata Descriptions Tree** panel. Click on it to highlight it. Then right-click on the highlighted node and select **Remove** from the drop-down menu.

! Note: After selecting **Remove**, the icon of the removed node remains visible although it cannot be accessed anymore. The icon will be removed after exiting the node **Results**.

! Note: If you have too many result corpora in the search results directory, this will slow down the opening of this directory. Therefore it is important to clean up this directory regularly. The same problem is caused by result corpora that are very large.

3 Corex Viewer

The **Corex Viewer** is accessed by double-clicking on any session node in the **Metadata Descriptions Tree** panel of the **Corpus Browser** window (see section 1.1). It is a view panel that displays all annotation units of the corresponding session. An annotation unit (utterance) is a unit of speech bounded by a natural break in the conversation. In many cases, the annotation unit is a sentence, but in rare cases the annotation unit consists of just one word.



Use the scroll bar to the right of the **Corex Viewer** to navigate in the document.

The **Corex Viewer** is organised around annotation units. Each annotation unit contains the following information: a timecode marking the beginning and the end of the annotation unit and an alphanumeric label identifying the speaker (e.g. "*N00050*" in the above illustration). In some cases the word **comment** or **background** appears instead of the speaker identification number: this indicates that the annotation unit is a comment made by the transcriber.

Clicking with the mouse pointer on a word in the **Corex Viewer** selects the time segment that is associated with that word. It depends on other options how that selected segment is made visible.

A vertical red bar appearing to the left of a unit indicates it is the selected unit. Occasionally two units will have the red bars beside them (this happens when neighbouring units (partly) overlap in time and the current selected time is inside that overlap). This section of the manual describes the options available in the Corex Viewer:

- 3.1 File menu
 - 3.1.1 Print view
 - 3.1.1 Print all
- 3.2 Panel menu
 - 3.2.1 Export to HTML
- 3.3 Options menu
 - 3.3.1 Show Metadata
 - 3.3.2 Play only segment
 - 3.3.3 Time Sync
 - 3.3.4 Visible Tracks
 - 3.3.5 Preferences
- 3.4 Tools menu
 - 3.4.1 Praat Synch
- 3.5 Audio menu
 - 3.5.1 Audio Player
 - 3.5.2 Waveform Panel

3.1 File menu

3.1.1 Print view

This option allows you to print selections of text displayed in the Corex Viewer

3.1.2 Print all This option allows you to print the entire text.

3.2 Panel menu

3.2.1 Export to HTML

Select this option to save the content of the file. A dialogue box opens that prompts you to select the directory in which to save the file. Please save the file as an ***.html** file, e.g.:

Charles and a second se		
	Save the file as an *.html file.	
iles of Type:	All Files	•

You can open the *.html file in an HTML editor and edit it according to your wishes.

! Note: the button says Open, but surely, clicking on it will result in saving the file.

3.3. Options menu

3.3.1 Show Metadata

This option allows you to view the metadata of the opened session in the **Metadata Description Tree** panel.

3.3.2 Play only segment

Restricts the audio player to the segment, i.e. the player does not play the entire audio file from the currently selected time position but only the selected segment, either a word or an annotation unit. See the next section about Time sync.

3.3.3 Time sync

The **Corex Viewer** can be synchronised with the **Audio Player** en the **Waveform Panel** in three ways:

- Synchronisation on the level of the annotation unit. This is the default. All the annotation units (usually just one) that contain the currently selected time are marked in red.
- Synchronisation on the level of the Word. Select the option Word under Time Sync in the Options menu.
- Synchronisation on the level of **auto prosodic units**. Select the corresponding option in the menu.

ź	c	omp-a	a/nl fn	00029)6					X
Fi	le	Panel	Options	Tools	Audio					
00	0:0	1:56.2	Show M	etadata						_
Π	hè		🗆 Play o	nly segr	nent					^
	N	01012	Time Sy	nc	Þ	\odot ann	otation ur	nits	:25	
Ī	S	uh is c	Visible 1	racks	•	O WOF	ds			200
	N	01013	Prefere	nces	(• auto) prosodio	c units)	
Γi	als	s je d'r	wat mee	ə kan .						ľ
	N	01013				00:0	01:56.727 -	00:01:57	.487	
Γ	ja	maarv	wat .							
	N	01012				00:0	01:58.105	00:01:58	.540	

In the above example, the synchronisation was set to **auto prosodic units** Auto prosodic units can overlap annotation unit boundaries, as can be seen in the above example. Auto prosodic units correspond to segments between automatically set (strong) prosodic boundaries.

3.3.4 Visible tracks

Under the Visible Tracks option you can select the tracks (tiers) to be displayed in the **Corex Viewer**. There are up to nine different options or tracks for viewing the annotated text: Orthography, Part Of Speech, Lemma, Marked word, Phonetics, and four types of Prosody. Click on any track that you want to be displayed.

	comp-a	/nl fn	00029	б			
File	Panel	Options	Tools	Audio			
00:0	02:54.28	Show Me	etadata				
١V	WV(pv,t	🗆 Play or	nly segn	nent	on,nomin,red,1,r	V)	
e	rgens	Time Sy	nc	•			
Πv	'NVV(on	Visible T	racks	/	🗹 orthography 🔪		
le	en ID/anha	Preferer	nces		marked		
114	iD(Unbe	p,stan,a	IGI) IN(S	opr.	☑ part of speech		
1	101012				🗆 lemma	You can click on any or all	of these tracks.
Fk	iik				phonetics	The Corex Viewer displays	all selected
V	ŴV(pv,t)	gw,ev) L	ET()		🗆 prosody 1	tracks.	
II.	104042	- /			🗆 prosody 2		
					00:01:09.641 - 00	1:09.815	
h	ier				heb		
JUV	'NW(aa	nw,adv-p	pron,ot	pl'hol'(3o,getal) WW(pv,	gw,ev) 🖵	

It is also possible to view all tracks (orthographic transcription, Part of Speech tag and lemma) for individual words in the annotation unit. To do so, point to the word with the mouse and click on it with the right mouse button. The tracks for the selected word are displayed for as long as you hold down the right mouse button, e.g.:



This option also allows direct lookup in the lexicon. The menu items **Single word lexicon** and **Multi-word lexicon** are short cuts to the lexicon for either the word ID or the lemma ID of the selected word.

3.3.5 Preferences

This option is about viewing the meaning of the symbols for the annotation of the phonology and the prosody. Also, it provides the possibility to change the colour of the symbols for the prosodic annotation.

 Corex Viewer	Preferences Change the visualization options for the prose I Show all prosody symbols in the tracks Prosody colors	ody tracks.	Choose the colors of your choice
Phonetics	Prosodic typ Prominent Length Auto boundary Strong boundary Weak boundary	e Explanat prosodic	Sembol Bold font Color
	Restore defaults		Undo current changes
			OK Cancel

3.4 Tools menu

3.4.1 Praat Synch

You can use the Praat signal-processing program to analyse individual annotation units. But before selecting the **Praat Synch** option, you must first start the Praat program, otherwise an error message appears. And you should also have selected the **Audio Player** option.

! Note: If you continually use the Praat signal-processing program, there will be an accumulation of data objects unless you actively remove the data objects as you finish with them. If you do not remove them, this will quickly result in a problem due to lack of available memory.

3.5 Audio menu

3.5.1 Audio Player

When you select the Audio Player option, you are prompted to insert the corresponding DVD into the DVD drive:

	×
2	Please insert DVD CGN_WAV_29 in drive Z
	OK Cancel

At the prompt, insert the DVD and click the OK button. The **Corex Viewer** appears: there is now a new bar that contains a **media time counter** and a **scroll bar** with a **play/stop** button.

📥 comp-a/nl fr	Play/pause button					
File Panel Options	Tools Audio					
00:02:20.223						
er un ook un grot						
N01020	00:02:12:01 - 00:02:16.702					
ja.	Scroll bar					
N01019	00:02:17.706 - 00:02:17.856					
dus a dan tempe	er je de vraag naar geld door de					
rente te verhoge	h					
N01020	00:02:18.003 - 00:02:21.462					
want dan wordt d	le vraag naar gel dan wordt 't					
geld duurder en d	dan wordt de vraag getemperd .					
N01020	00:02:22.334 - 00:02:26.601					
Media time counter: hours:minutes:seconds.hundredths of seconds.						
Clicking it will turn red all text within the annotation unit segment						
(or word segment	; or prosodic segment, depending on Time syn 1 to enter a new media time	nc).				
Also, it allows you						

All movements of the **Audio Player** are synchronised with the **Corex Viewer** (and the **Waveform Panel**), so that any adjustments to the annotation unit location made in one will also be made in the other.

- The **media time counter** displays the media time location in the annotated text. Click on the **media time counter** box and a **Go To** window opens up allowing you to enter a new media time. Both the **Corex Viewer** and the **Audio Player** adjust their locations according to the new time you specify.
- Use the scroll bar to change the location.
- Click on the play button to begin the **Audio Player**. Once it commences, the play button changes to a **stop** button (a square button). As the file is played, the **Corex Viewer** displays the corresponding annotations.

! Note: If you are having an audio problem, first make sure that the audio volume is correctly set.

3.5.2 Waveform Panel

When you select the Waveform Panel option, a window opens up showing the corresponding waveform. The Waveform Panel is synchronised with the Corex Viewer and the Audio Player, so that any adjustments to the annotation unit location made in one will also be made in the other.

≜ ,wa	aveform of /F:	/comp-a/nl/fn	000294	<u> </u>
3.000	00:01:10.000	00:01:11.000	00:01:12.000	C0:01:
	-			
•				•

- Identical media time indicators are located above and below the waveform.
- Use the scroll bar to change the location in the waveform (and in the **Corex Viewer** and the **Audio Player**).
- A vertical red line moves along the waveform, marking the current media time. You can click on any part of the waveform to move to that location.
- You can modify the resolution of the wave form display by using a menu that appears after right-clicking in the waveform display

4 Content Search Panel

A content search is a query in the annotation files for specific tokens in a certain context. The **Content Search** panel is accessed by clicking on the pull down menu **Search** and subsequently choosing **Content Search**.

The **Content Search** panel gives you considerable flexibility for conducting searches, allowing you to specify several search parameters. Searches can be conducted throughout the entire Corpus Gesproken Nederlands (the default setting) or throughout selected parts of the corpus (see section 1.1.3).

<u>*</u>	Corex S	earch					
File	Query	Options Help					
lin co	GN						
	Sta	rt Search	Annotation on tier ort	hography	matches maar		
1 Track Selection menu: select a track to conduct the search on.		onstraint	Delete last constra	Search term			
		pr 030 000 .					
				🕨 Se	arch		

In the above case we perform a simple one-constraint search for the occurrences of the word (orthographic tier) *maar*. After clicking the Start button (or choosing from the pull down menu Query \rightarrow Search) the following panel appears:

Indexe	ed search dialog	×
Ŷ	Do you want to use indexed search? The reading of the index files takes about 60 sec. e	ach
	Yes No	

In the dialog window, click **Yes** if you want to use an indexed search, otherwise click **No**. An indexed search is much quicker than a non-indexed search. However, the reading of the index files takes up a lot of memory. This is why – for systems that do not have a large amount of memory - the indices are deleted from memory after you pop down the **Content Search** panel. This saves memory space but has the consequence that the above panel appears each time you start a new content search.

1	🛃 Corex Search		
F	File Query Options Help		
Q] CGN 🕨 🔲 🖷 📹 🛣 < 📏		
1	Annotation on tier orthography 🔻 matches fiets	;en Reg. Exp.	
	Add new	e constraint Delete last constraint Hits	
h	its: 8 progress:	100359 19	
c	dan ga je alleen bijvoorbeeld eerder wandelen dan (<mark>fietsen</mark>).		
fi	ile:/D:/COREX6/data/annot/corex/sea/comp-a/nl/fn00038#.sea#fn0I	00389.172	
e	en dan stond er zo'n busje politie en er stonden een paar polities m	net { <mark>fietsen</mark> }	8550
fi	ile:/D:/COREX6/data/annot/corex/sea/comp-a/nl/fn000411.sea#fn0/	OU411.56 Query can be	
ľ	evenijes un langs fonnie en Peter (<mark>netsen</mark>).	interrupted	
fi r	ile:/D:/COREX6/data/annot/corex/sea/comp-a/nl/fn000529.sea#fn0/ naar uh ja nee 't is uh 't is ook gewoon makkelijker øw als ik bij haa	00529.332 ar kom want uh ja zij ze hoeft dan niet uh te { fietsen } of zo.	•
Ī		Stop	
	🔹 comp-a/nl file:/D:/COREX6/d/ta/a 💶 🗖	After double-clicking on the hit, the Corex Viewer	
	N01024 00:00:40.251 - 00:00:43.13	opens	
Γ	ja een hond kan je gewoon meenemen als je		
L	gaat wandelen hè?		
	N01025 00:#0:42.739 - 00:00:44.913		
Γ	dan ga je alleen bijvoorbeeldeerder wandelen		
	dan fietsen .		
	N01025 00:00:45.443 - 00:00:47.546		

As the query is being executed, the number of "hits" (matches) to your search criterion is shown, as well as the progress towards the completion of the search.

Once a search is completed, the session node location is given for each hit. All the hits are displayed and highlighted in green colour in the **Content Search** panel.

! Note: Because of the large amount of data that is searched, it may take some time to complete the query.

Double-click on a hit highlighted in green colour to open the corresponding **Corex Viewer** where the annotation unit containing the search item is shown (highlighted in blue).

4.1 Track Selection Menu and Text Field Box

Located next to **Annotation on tier** is the drop-down menu **Track Selection** labelled **orthography** (the default track or tier). To search on a track other than **orthography**,

click on the drop-down menu and select marked word, part of speech, lemma, or phonetics. Then type in the term(s) you are looking for in the text field box, e.g.:

Corex Search File Query Options Help			
] CGN 🕨 🖷 🕾 🏦	< >		
Annotation on tier orthography orthography marked	matches		Reg. Exp.
Select a track part of speech lemma phonetics its: 0 progress: [prosody 1 prosody 2	Add	new constraint	Delete last constraint

If you have selected either the track **part of speech** or the track **marked** word, the **text field box** changes to a drop-down menu. Select one of the listed items (see the separate CGN Documentation for details of the available categories), e.g.:

🛃 Corex Search File Query Options Help 🛄 CGN 🗼 🗎 🖷	Selected category: ADJ	
Annotation on Aier part Selected track: part of speech progress : prose hits : 0 progress : prose	t of speech matche: ADJ ography ked BW of speech LET na LID netics N sody 1 SPEC sody 2 TSW TW VG VNW VNW(b. VNW(b. VNW(c. VC) VC	(*) (dial) (nom,basis,met-e,rmv-n) (nom,basis,met-e,zonder-n,bijz) (nom,basis,met-e,zonder-n,stan) (nom,basis,zonder,zonder-n) (nom,comp,met-e,zonder-n,bijz) (nom,comp,met-e,zonder-n,bijz) (nom,comp,met-e,zonder-n,stan) (nom,sup,met-e,zonder-n,bijz) (nom,sup,met-e,zonder-n,bijz) (nom,sup,met-e,zonder-n,bijz) (nom,sup,met-e,zonder-n,bijz) (nom,sup,met-e,zonder-n,bijz) (nom,sup,met-e,zonder-n,stan) (nom,sup,met-e,zonder-n)
		Search

! Note: You can use an asterisk (i.e., a wild card that matches any search term) instead of one of the elements specified in the drop-down menu. Do the following:

1. Select a category, and click with the right mouse button into the dropdown menu. The drop-down menu changes into a text box.

- 2. Click with the left mouse button into the text box.
- 3. Press the key DELETE. The last element is replaced with an asterisk. Only the last elements can be deleted, not middle or first elements.
- 4. Repeat steps (2) and (3) to replace other elements.



4.1.1 Phonetics

A part of the corpus is manually phonetically transcribed.

- The phonetically transcribed part can be exclusively accessed by choosing the Annotation types \rightarrow phonetic annotations option in the **Bookmarks** panel.
- Queries can be conducted within this data. If you select the track phonetics, you can type in phonetic characters. You can use the CGN symbol set (derived from the SAMPA (Speech Assessment Methods Phonetic Alphabet) set.) For example, the SAMPA symbol @ matches the phoneme *schwa*. A search for "*h*@*t*" on the track phonetics would thus find all instances of "*het*", e.g.:
- You can also use the predefined selection of phonemes, as is demonstrated below. To do this, click on **Reg. Exp.** and click on the right mouse button when standing above the text field box.

👙 Corex Search							
File Query Options Help Select Reg.Ext).						
(_) CGN 🕨 🖷 📾 🏦 🤍 🗡							
1 Annotation or tier phonetics matches Track: phonetics	W :all vowels						
Add new con:	A short vowels ast constraint						
	@ schwa						
hits: 0 progress: Click on right	'y :diphtongs						
mouse button	to cloan vowels						
	le inasai						
	f fricatives						
	۲:sonorants						
	Search						

• The phonetic transcription also incorporates information about assimilations across word boundaries, degemination and insertions of phonemes between words. The following line from a **.bpt** file is an example of degemination: two phonemes are pronounced as one:

<fw ref="fn000021.7.2" w="en" fon="En=" left="SEP" right="SHARE-NP(n)" fq="man" times=""/> <fw ref="fn000021.7.3" w="nieuwe" fon="=niw@" left="SHARE-NP(n) " right="SEP" fq="man" times=""/>

Look at the values of the data fields *left* and *right*, which are of our concern now. The words 'en' en 'nieuwe' share the phoneme 'n'. This is a non-plosive phoneme, hence SHARE-NP. The pull down menus on the top left of the **content search** panel - if you select the tier **phonetics** – provide the possibility to select the following options:

- SEP: the words do not share a phoneme
- SHARE-P: the words share a plosive
- SHARE-NP: the words share a non-plosive
- SHARE-W: the word "da's" is the only instance of this category
- INSERT: inserted phonemes that are not part of any of the neighbouring words
- If you don't select any of the above categories, the search does not care about any boundary condition and includes all values it can take.



In addition to the general boundary category, a specific boundary phoneme can also be included in the search. In the above example this is the phoneme n. Combined with the SHARE-NP condition for the left boundary this will result in hits such as 'in negen gevallen' where the phoneme n of *negen* is shared with the previous word.

A regular expression is allowed in the text field box. For example, the expression ([nm]) will search for either an 'm' or an 'n'. By default, the text box has the expression (.+) in it. This simply means that it there are no restrictions, it matches any character or string of characters (See section 4.2).

4.1.2 Prosodic search

A part of the corpus is annotated for prosody.

- The prosodic part of the CGN can be exclusively accessed by choosing the Annotation types \rightarrow prosodic annotations option in the **Bookmarks** panel.
- Prosodic units can extend beyond the boundary between two annotation units. It is possible in Corex to apply viewing options and search options to the prosodic unit, in addition to the word unit and the annotation unit (see section 3.3.3 and section 4.4).
- The annotation was performed according to the four different standards of annotating prosody that exist in the Netherlands and Flanders (two for each country). This means that for each annotation unit, which is either Dutch of Flemish, a choice between two options must be made: prosody1 or prosody2.
- For a colour coding of the prosodic symbols, choose Options → Preferences. The below picture is an extraction of the panel that will become visible.

Prosodic type	Symbol	Bold font	Color
Prominent	٨		
Length	%		
Auto boundary	11		
Strong boundary			
Weak boundary		Ľ	

- The boundaries are classified as either weak or strong boundaries. Weak boundaries are by definition the result of a manual transcription, whereas strong boundaries are either the result of a manual transcription (Strong boundary) or the result of the automatic transcription (Auto boundary).
- The prominence of a syllable is denoted by the symbol ^ in the .prx files and with a purple colour in the **Corex Viewer** (in the default settings these can be changed).
- The extended length of a syllable is denoted by the % sign in the .prx files and by a green colour (default) in the Corex Viewer.

👍 comp-a	/nl fn	00034	46
File Panel	Options	Tools	Audio
00:00:00.00	0	<u> </u>	
uh ik ber uh ik ber	gistere gistere	n heel n h <mark>ee</mark> l	I druk geweest want ik heb uhm dat oude I druk geweest want ik heb uhm <mark>II</mark> dat oude
bedje o bedje o	ogezet o ogezet o	lat ouc lat ouc	de kinderbedje van ons . de <mark>l</mark> kinderbedje van ons <mark>il</mark>
N01031			00:00:01.200 - 00:00:08.053
ik ik heb ik ik heb	geen id g <mark>ee</mark> n id	ee ho <mark>ee</mark> ho	be die wa hoe die d'ruitzag De die wa hoe die d'ruitzag
N01032			00:00:10.029 - 00:00:12.245
gewoon gewoon	zo'n met zo'n met	: van d : van d	tie spijltjes of niet ? tie spijltjes of niet <mark>]</mark> ▼

In the above example of a Dutch fragment, the tier Prosody1 is visible.

An example of a line from a .prx file is the following:

<prw ref="fn000055.1.5" w="bijdrage" annot="b^ij^drage" nprom="1" nlength="0" nweakb="0" nstrongb="0"

It shows that the word 'bijdrage' has one prominent unit (the value of nprom is 1) and no weak or strong boundaries and no extended length. This way of coding the prosody gives us the opportunity to perform queries in the prosodic part of the CGN.



The options left boundary and right boundary can be set to different values, as is shown above. Also, the number of weak and/or strong boundaries can be chosen. The same goes for the prominence or length.

The values of these variables can for example be used as an additional constraint on another condition (see below).



In the above example, a prosodic search was conducted. More in particular, a query was done for all occurrences of *nee* (first constraint) preceded by a strong left boundary (second constraint).

4.1.3 Marked Words

Some words are marked (in the **.pri** file). The categories are: dialect, foreign, incomplete, mispronounced, regional pronunciation and uncertain. See the protocol for orthographic transcription for a detailed explanation.

👙 Corex Search	
File Query Options Help	
\ CGN ▶ 🔳 🖫 🗠 🏔 ≪ ≫	
Annotation on tier marked 🔻 matches	foreign
1	dialect
	foreign
	incomplete ·
	mispr te last constraint
· · · · · · · · · · · · · · · · · · ·	regionalpr
hits: 9 progress:	uncertain

4.2 Regular Expression Search

If you type in a letter string in the **text field box**, this will result in matches in the orthographic tier for *exactly that letter string*. However, it is also possible to refine your search term in such a way that it captures *classes of letter strings*. This is called regular expression search and it is an option in all text field boxes of Content Search.

A regular expression search makes use of variables, using Perl syntax, e.g.:

- . matches an arbitrary character
- + matches the preceding pattern element one or more times
- ? matches the previous character zero or one times
- * matches the previous character zero or more times
- ^ matches the beginning of a word
- \$ matches the end of a word
- \b matches the beginning or end of a letter string
- [adg] matches the character a, d or g
- [^ad] matches any character except a and d

A more elaborate survey of this regular expression syntax can be found in numerous books and websites¹² on the programming language Perl.

To enable a regular expression search, do the following:

- 1. Enter the search term(s) in the text field box
- 2. Click in the box to the left of **Reg. Exp**.

A checkmark appears in the box indicating that this option has been selected.

¹ <u>http://www.english.uga.edu/humcomp/perl/regex2a.html</u>

² <u>http://www.wellho.net/regex/perl.html</u>

The following example illustrates a regular expression search for "*fiets.**". Note that the search results not only include "*fiets*", but also, e.g., "*fietsen*" and "*fietskleding*".

👙 Corex Search
File Query Options Help
↓□ CGN ▶ 🗉 🖷 🗃 🏦 < >
Annotation on tier orthography matches fiets.* Mark Regular expression
search Inits: 34 progress: en uhm dus we gaan zondagavond of ja begin of eind van de middag uhm begin van de avond gaan we richting uh Lichtenvoorde en Zieuwent waarschijnlijk. file/D:/COREX6/data/annot/corex/sea/comp-c/nl/fn008020.sea#fn008020.275 t is gewoon dichterbij qua (fietsen) maar ook qua rijden met de auto. file/D:/COREX6/data/annot/corex/sea/comp-a/nl/fn000583.sea#fn000583.179 in uh strakke wielrenbroeken en (fietskleding). file/D:/COREX6/data/annot/corex/sea/comp-a/nl/fn000583.sea#fn000583.180 met een tas op uh tassen op hun (fiets) en alles en uh
Stop

4.3 Case-Sensitive Search

By default, any search is case insensitive. If you want to conduct a case-sensitive search, do the following:

- 1. Enter the search term(s) in the **text field box** (paying attention to upper and lower case letters).
- 2. Click in the box to the left of **Case Sens**. This might be hard to read, but it is the box underneath the box of Reg. Exp. A checkmark appears in the box indicating that this option has been selected.

E.g., it is possible to search for just those instances of the search term "*Het*" that start with an upper case letter.

4.4 Add new constraint button

The Add new constraint button allows you to modify the initial query by adding other conditions. You can add as many conditions as necessary.

To add search parameters, do the following:

- 1. Specify the first search condition (as described in sections 4.1 to 4.3).
- 2. Click on the button Add new constraint. A new constraint is added. The new constraint is always combined to the former with an AND-operator.
- 3. Specify the second search condition (as described in sections 4.1 to 4.3).

4. Specify the relation between the first and the second condition, i.e., specify how many words, annotation units or prosodic units should come between the first and the second condition.

For example: We want to select only those instances of "*zijn*" which belong to the category of possessive pronouns (hereby we exclude instances of *zijn* that belong to the category of verbs).

If we specify "*in distance of 0 to 0 words from matches found in 1*" (as in the screenshot below), Corex will find only those **words** that match both the first and the second parameter. In the current case these are all words "*zijn*" that belong to the part of speech "*VNW* (*bez, det, ...*)").

It is also possible to apply the combined constraints on words within the same *annotation unit*. This is less useful in our example, since we are looking for one word – not one annotation unit - to which multiple constraints apply. If we would specify "*in distance of 0 to 0 annotation units from annotation found in 1*", Corex would find all those **annotation units** that match both the first and the second parameter.

A third option is to search within a range of **prosodic units** from the hit from the previous condition. Note that in this definition of prosodic units, the strong boundaries *within* words are not counted as boundaries.

If you want to add further constraints, repeat steps (2) to (4) above.

The following screenshot illustrates a search for the word "*zijn*" (first search condition) of the part of speech "*VNW* (*bez*, *det*, …)" (second search condition). Corex finds only those words that match both conditions.



4.4.1 Performing a query within results

An alternative way of combining constraints is to select the option **Restrict search** on current result. The advantage of this iterative way of using constraints is that it is faster. The disadvantage is that the overview on the constraints is less clear (you have to remember, i.e. you cannot see which constraint applied to the prior selection). The procedure goes as follows.

- 1. Perform a single constraint query. In the below example this is the search for all instances of *zijn* on the tier orthography (this query was interrupted, but that is not relevant to the example).
- 2. Choose the option Restrict search on current result.

3. Choose the second constraint. The search that is subsequently performed will apply only to the results that have been found in the first query (or a saved query, see 5.5). Don't forget to select the option in distance of 0 to 0 annotation units.

👙 Corex Search	_
File Query Options Help CGN Image: Restrict search on current result Image: Restrict search on current result	New query within current result. Select "0 to 0 utterences"
Annotation on tier orthography matches dus in distance or 0 to 0 utterances	hes in current result erse sons.
Add new constr	aint Delete last constraint
file:///idata/annot/corev/sea/comp-fini/fn007329.sea#fn007329.177 en ja als 1.erom (<mark>gaat</mark>) in 1 algemeen	"Current result"
1497X/data/annot/corex/sea/comp-a/n/fn000758.sea#fn000758.291 zoals 't nou (<mark>gaat</mark>) vind 'k 't lachen.	
die (gaat) dus van start in negentien vierennegentig. file:/Vidata/annot/corex/sea/comp-j/vl/fv600940.sea#fv600940.54	
nij neeft die republikeinse agenda overgenomen maar gezegd van als het o	n bezuinigingen (gaat) dit is de lijn in berzand. Search

4.5 Delete last constraint button

Click this button to remove the last constraint. It is deleted without further warning.

	AND
2	Annotation on tier orthography 💌 matches
2	in distance of 0 to 0 words from matches found in 1 area sens.
	Add new constraint Delete last constraint
	Delete the constraint

4.6 Save Result

Click the **Save Result** option in the **Query** menu to save the results of your search. A dialogue box will open that prompts you to select the directory in which to save the file (see below). Please save it as a **Search Result File** (*.res). There is also a shortcut icon to this option:

🛃 Corex Search		
File Query Options Help	Save Results	
Color Search Ctri-S	金	
E Save result		
1 Creativesult	ipny • matches Zijn	Reg. Exp.
a save result as corpus	Open saved results	G82 5075.
\backslash	Add new constraint Dela	ete last constraint
hits: 704 progress:	<u> </u>	
file:/D:/COREX6/data/annot/corex/sea/con ja je zegt de huizen (zijn) goed geïsoleerd	np-a/n¥1n000250.sea#1n000250.16 Imaard\$t valt dus a ja	
file:/D:/COREX6/data/annot/corex/sea/con want {zijn} file:/D:/COREX6/data/annot/corex/sea/con nee maar die huizen (zijn) echt heel mooi file:/D:/COREX6/data/annot/corex/sea/con dat {zijn} echt goeie goeie huizen.	np-a/nl/fn000250.sea#fn000250.65 np-a/nl/fn000250.sea#fn000250.63 i geboot. np-a/nl/fn000250.sea#fn000250.64	
	👙 Save	×
	Save In: 📳 3½ Floppy (A:)	- F - B - B - B - B - B - B - B - B - B
Savas the regults as a	File Name: myresults	
Saves the results as a Search Result File	Files of Type:	•
(*.res).		
		Save Cancel

The result file contains all possible information on the hit, except the links to the metadata. The format of this file is illustrated in Appendix A. This file can, for instance, be used as a basis to extract all audio segments corresponding to the query results from the audio files.

4.7 Read result

Choose the Read result option in the Query menu to open a file that was saved with the Save Result option (i.e., saved as a Search Result File, *.res). A dialogue box will open that prompts you to browse to the desired file. There is also a shortcut icon to this option:

! Note: Any opened ***.res** file will be displayed exactly as a normal search result, i.e., the locations of the hits are given, the hits are displayed in green colour and double-clicking on any hit will automatically open up the corresponding **Corex Viewer**.

4.8 Save results as corpus



The option **Save result as corpus** is suited if a subsequent **Metadata Search** is to be performed. This is because saving the results as corpus keeps the metadata linked to the annotation data, a link that is lost if you choose the option **Save result**.

Click the Save result as corpus option from the Query menu (or use the shortcut icon $\textcircled{}_{\texttt{b}}$) to save all sessions that contain the search results as a corpus node in the **Corpus Browser** window. You are then asked to specify a name for the new corpus, e.g.:

Input	×
Ş	Please specify a name for your result corpus:
	OK Cancel

Click OK to save the specified corpus under the node **Search Results** in the **Corpus Browser** window (see section 1.2). The **Metadata Descriptions Tree** panel will display the new corpus node, e.g.:



This new corpus node is treated like any other result corpus node: it contains sessions (those sessions where the search term was found), and the sessions contain metadata descriptions and give access to the **Corex Viewer**, the **TIGERGraph Viewer**, the **Audio Player** and the **Waveform Panel**.

You can remove the saved corpus node again. Go to the node in the **Metadata Descriptions Tree** panel. Click on it to highlight it. Then right-click on the highlighted node and select **Remove** from the drop-down menu.

! Note: After selecting **Remove**, the icon of the removed node remains visible although it cannot be accessed anymore. The icon will be removed after exiting the node **Results**.

5 Statistics Panel

The **Statistics** panel allows you to count occurrences of a term throughout the Corpus Gesproken Nederlands (CGN). To access the **Statistics** panel, click on the button menu option **Statistics** in the **Search** menu. The **Statistics** panel looks as follows:

Statistics	Enter a name for the query	Click her delete a d	re to add, store or juery
(fiets)	Query name auto	New Query	Store Query Delete Query
Stored querie(s)	1 Annotation	on tier orthography matchet auto Add new constraint Delete last constraint	Enter the search term. Regular expressions are allowed
	Cornera Names	fiete	auto
	18-24 years (1737)	170	364
	25-34 years (1948)	166	495
	35-44 years (4716)	142	431
	Totals	478	1290
Execute Clear Exc but	ecute/Stop tton	Results of the statistical search	

• An important feature of performing a statistical query is that multiple selections can be added to the basket and that the counts for these selections are displayed separately (see the above example).

To conduct a statistical search, do the following:

- 1. In the **Metadata Descriptions Tree** panel, select the corpus or corpora that you want to search (see section 1.1.3). In the above example, the entire corpus is selected. You have to select a corpus, there is no default corpus in the basket.
- 2. In the **Statistics** panel, enter a name for your query in the box **Query name**. Specify your search options and enter the search term in the **text field box** (see section 4.2 for details on how to specify your search options).
- 3. Click on the button **Store query**. The query will be stored and displayed in the box at the left side of the **Statistics** panel.

If you want to add other queries, click on the button New query, and repeat steps (2) to (4) above.

If you want to delete a query, click on the corresponding query displayed in the box at the left side of the **Statistics** panel. Then click on the button **Delete query**. The query is deleted without further warning.

If you want to delete all queries, click on the button Clear. All queries are deleted without further warning.

4. Click on the button **Execute** to start the search.

The selected corpus or corpora is/are searched for the number of occurrences that match your query. During the search, the **Execute** button switches to a **Stop** button that allows you to stop the search in progress.

The results of the search are displayed in a table format, separately for each query and each corpus. E.g., in the screenshot above, the occurrences of "*fiets*" and "*auto*" are counted separately for each specified corpus (i.e., for the corpus "18-24 years (containing 1737 sessions)", for the corpus "25-34 years (containing 1948 sessions)" and for the corpus "35-44 years (containing 4716 sessions)".

- 5. Once the search is completed, you have the following options:
 - Click on the menu item Show Totals in the Options menu to view the total number of matches for each query.
 - Click on the menu item Save Results in the File menu to save the results

The saved file can be opened in any program that can handle tab-delimited texts, e.g., in Microsoft Excel.

🗉 test.txt	- Notepad			
<u>Eile E</u> dit	Search Help			
	Corpora Names fiets 18-24 years (1737) 25-34 years (1948) 35-44 years (4716) Totals 478 1290	auto 170 166 142	364 495 431	A
				V

6. When you are finished with the statistics search, click on the Exit menu option in the File menu to close the **Statistics** panel and return to the **Corpus Browser** window.

6 The Lexicon Tool

The lexicon tool is accessed by choosing the Lexicon tool option from the Search menu.



The Lexicon is a source of additional lexical information. A result of a query in the lexicon can serve as a starting point for a subsequent query in the CGN annotations.

- All orthographic entries of the CGN (and hence lemma entries and part of speech entries) are incorporated in the lexicon, and the lexicon contains only these.
- The CGN entries are supplied with idealized lexical information, such as standard pronunciation.
- Multiword expressions are also available: the Multiword Lexicon.

6.1 Performing a Query in the Single Word Lexicon

In the below example, a query is performed on the orthographic field. Click on the field selection menu to choose a different field.

۱L	exicon Tool											_ 🗆	X
e	View												
							_	-	-	-			
	Search in Cornus		Part of S	Lemma	Syntax	<u>U</u>	Pr	Pr	Pr	Pr	M L	<u></u>	
	Search in Corpus	aan	SPEC(_			an	an	an	la u		0	-
		aan	VZ(fin)	aan			an	an	an	an		V	200
	Statistics in Corpus	aan	VZ(INIT)	aan			an	an	an	an			
		aan-	SPEC(a				an	an	an			V	
	@ Manufills	aan-uitknop	N(SOOT,	aan-uitkn			a						
	Word ID	aan-uitschak	N(SOOT,	aan-uitsc			a	a	a			V	
		aanbad	VVVV(pv,	aanbidden	[80:		a	a	a	a	((V	
	O Lemma ID	aanbakken	VWW(inf,	aanbakk	[SU:		a	a	a	'a	((V	
		aanbeden	VWV(vd,	aanbidden	[SU:		a	a	a	a	((V	
		aanbel	VVVV(pv,t	aanbellen			a	a	a	'a	((V	
	/	aanbeland	VWV(vd,	aanbela			a	a	a	'a	((V	
	Search Results	aanbelangt	VWV(pv,t	aanbela			a	a	a		((V	
		aanbelde	VWV(pv,	aanbellen			a	a	a	'a	((V	
		aanbelden	VWV(pv,	aanbellen			a	a	a	'a	((V	
		aanbellen	WW(inf,	aanbellen	[SU:		a	a	a	'a	((V	
		aanbelt	VWV(pv,t	aanbellen			а	a	a	'a	((V	
		aanbesteder	N(soort,	aanbest			a	a	a	'a	((V	
		aanbesteding	N(soort,	aanbest	[DET		a	a	a	'a	((V	
		aanbesteding	N(soort,	aanbest	[DET		a	a	a	'a	((V	
		aanbesteding	N(soort,	aanbest	[HD:		a	a	a	'a	((V	
	Lexicon type	aanbesteding	N(soort,	aanbest	[DET		a	a	a	'a	((V	
	Lexicon type	aanbesteding	N(soort,	aanbest	[HD:		a	a	a	'a	((V	
	Ľ [aanbesteding	N(soort,	aanbest			a	a	a			V	
		aanbesteed	VWV(vd,	aanbest			a	a	a	'a	((V	
	\ Print results	aanhetaald	1808(6rd	aanhetal			а	а	a			V	-
/	Lexicon type	Nr of hits: 1918	Г			_							
		_	\sim	Search	term								
				beuren	ter m				1	_			
	Single word lexicon	Find								¥	vithin	resul	ts
						_							
-	O Multi-word lexicon	in field 0	rthography	y									•
						-	_						
-											Fi	eld s	selee
											m	enu	
											1		

- Choose Single word lexicon as the lexicon type (this can also be done by choosing File → Lexicon Type → Single word lexicon.)
- Choose the field of your choice. In the current example this is orthography
- Enter the search term in the **text field box.** It is possible, of course, to conduct a search without using a regular expression. However, in the present example the search is a regular expression. 'aan.*' is a query for all words that start with 'aan' (the syntax of regular expressions is Perl syntax, as demonstrated in section 4.2 about content search. However, contrary to the content search procedure, no check box Reg. Exp. needs to be clicked here).
- Click on the button Find to start the query.

The first time each session the lexicon is initialised and the below panel appears.

≜ Lexicon	Tool	X
Initializing lex	icon	

Then, if there are any matches, the search results appear.

6.1.1 Column visibility settings

Because the number of columns with data fields is large, not all information is visible. You can enlarge each field by positioning your mouse arrow over the division between the columns and sliding the column to the desired size. Also, you can omit some data fields in the display. Select the View \rightarrow Lexicon entry columns from the menu. In the below example three data fields concerning pronunciation are omitted as well as the fields Usage and Word ID and Lemma ID (the last two fields are omitted by default).

N ICM			1				
Lexicon entry columns	I Orthography		Syntax	Pronunciati	Morphology	Definition	Corpus sta
Search in Corpus	☑ Part of speech ☑ Lemma	Select which da	ta fields	s you want	t to		0 V
Statistics in Corpus	I Syntax □ Usage	display					V
 Word ID 	Pronunciation Sta	indard Northern Dutch					
🔿 Lemma ID	Pronunciation For	mal Southern Dutch					
·	Pronunciation SN Morphology	D syllabified with stress					
Print results	Definition						
Lexicon type	Corpus status						
Cinuts word lawings	lemma ID						within result

6.2 Searching Within Results

The lexicon tool does not allow to add new constraints to a query. However, adding constraints can be achieved in an indirect manner by performing a second (and third, etc.) query within results.

- Click in the box to the left of **within results**
- Select a new search criterion, using regular expression search
- (Optional) Repeat the procedure as many times as wished

The lexicon fields do not have predefined pull down menus as do the pull down menu's in the content search panel. You have to type in the search criterion yourself. This gives considerable explorative power, however, once you master the Perl syntax. Remember the most important variables are mentioned in section 4.2

View												
	Orthography	Part of speech	Lemma	Sy	Us	Pr	Pr	Pr.	. Pr	M	De C	5]
Search in Corpus	aan-uitschakelaar	N(soort,ev,basis,zi	aan-uits			a	an	a			V	
	aanbesteder	N(soort,ev,basis,zi	aanbest			a	an	a	'a	(((V	
Statistics in Cornus	aanbesteding	N(soort,ev,basis,zi	aanbest	[D		a	an	a	'a	(((V	
Statistics in corpus	aanbesteding	N(soort,ev,basis,zi	aanbest	[D		a	an	a	'a	(((V	_
	aanbesteding	N(soort,ev,basis,zi	aanbest	[H		a	an	a	'a	(((V	
VVord ID	aanbestedingen	N(soort,mv,basis)	aanbest	[D		a	an	a	'a	(((V	_
	aanbestedingen	N(soort,mv,basis)	aanbest	[H	-	a	an	a	'a	(((V	
) Lemma ID	aanbestedingsprocedure	N(soort,ev,basis,zi	aanbest			a	an	a			V	
	aanbetaling	N(soort,ev,basis,zi	aanbetal	[D		a	an	a	'a	((V	
	aanbetaling	N(soort,ev,basis,zi	aanbetal	[D		a	an	a	'a	((V	
	aanbetaling	N(soort,ev,basis,zi	aanbetal	[H	-	a	an	a	'a	((V	
	aanbeveling	N(soort,ev,basis,zi	aanbevel	[D		a	an	a	'a	(((V	
	aanbeveling	N(soort,ev,basis,zi	aanbevel	[D		a	an	a	'a	(((V	
	aanbeveling	N(soort,ev,basis,zi	aanbevel	[D		a	an	a	'a	(((V	
E	aanbeveling	N(soort,ev,basis,zi	aanbevel	[D		a	an	a	'a	(((V	
Export results	aanbeveling	N(soort,ev,basis,zi	aanbevel	[D		a	an	a	'a	(((V	
	aanbeveling	N(soort,ev,basis,zi	aanbevel	[D		a	an	a	'a	(((V	
	aanbeveling	N(soort,ev,basis,zi	aanbevel	[H		a	an	a	'a	(((V	
Print results	aanbeveling	N(soort,ev,basis,zi	aanbevel	[H		a	an	a	'a	(((V	_
exicon type Single word lexicon	Find N.*								\langle	V W	ithin res	su
O Multi-word lexicon	in field Part of speec	h					Sel	ect	wi	thir	resu	
	Colort Dant of Crossel											

In the above example a query within results is done. The previous selection all words were obtained that begin with 'aan'. In the present query we want to extract the nouns from this selection. The way to put this in Perl syntax is N.*, meaning a letter string beginning with N and a subsequent row of arbitrary characters.

6.3 Saving and printing the search results

The selection can be saved by clicking on Export results. The selection is saved as a .lex file, i.e. the same file format as the lexicon itself (.xml format). It is not meant to be re-opened using Corex, but it can be opened using other applications.

The results can also be printed by clicking on Print results.

! Note: The results will be printed as they are displayed on the screen. It may be useful to limit the number of visible columns and/or adjust some column widths before printing (see 6.1.1).

6.4 Searching the CGN with word/lemma ID

Based on a search result in the lexicon, you can use a word or lemma as a starting point for a content search in the CGN. It is NOT possible to select multiple words or lemmas at once.

Select a word (or lemma, which amounts to the same) with the left mouse button

• Click on the button Search in Corpus

Lexicon Tool											_ [
e <u>V</u> iew												
	Orthography	Partofs	Lemma	Syntax		Pr	Pr	Pr	Pr	M		Т
Search in Corpus	aan	SPEC(Lonna	ojnaz	<u> </u>	an	an	an			0	1
	aan	VZ(fin)	_ aan			an	an	an	'an		V	1
	aan	VZ(init)	aan			an	an	an	'an		V	П
Statistics in Corpus	aan-	SPEC(a				an	an	an			V	1
	aan-uitknop	N(soort	aan-uitkn			a					0	1
Word ID	aan-uitschak	N(soort,	aan-uitsc			a	a	a			V	1
	aanbad	WW(pv,	aanbidden	[SU:		a	a	a	a	((V	1
	aanbakken	WW(inf,	aanbakk	[SU:		a	a	a	'a	((V	1
	aanbeden	VWV(vd,	aanbidden	[SU:		a	a	a	a	((V	1
	aanbel	WWV(pv,t	aanbellen			a	a	a	'a	((V	1
	aanbeland	WWW(vd,	aanbela			a	a	a	'a	((V	1
	aanbelangt	VWV(pv,t	aanbela			a	a	a		((V	1
Export re <u>s</u> ults	aanbelde	VWV(pv,	aanbellen			a	a	a	'a	((V	Т
	aanbelden	VWV(pv,	aanbellen			a	а	a	'a	((V	Т
Drint results	aanbellen	VWV(inf,	aanbellen	[SU:		a	a	a	'a	((V	
	aanholt	VAAA//nu t	aanhollon			~	2	<u>~</u>	5	11	57	
Lexicon type	Nr of hits: 1918											
Single word lexicon	Find	aan.*							<u> </u>	vithi	n resu	lts
O Multi-word lexicon	in field 0	rthography	,									•

After clicking on Search in Corpus, the content search panel will pop up, providing the possibility to conduct a content search. The word ID reference is taken as the search criterion. You can add further search conditions in the usual way, by using Add new constraint.

🕌 Corex S	earch						_
File Query	Options Help						
L CON	•		< >				
1	Start	searching	Spe	ecified Lexicon word id re	eference (4509		_
I				Add new constraint	Delete last constrain	Imported word ID from lexicon	
hits: 21	progress : 📘						
file:/D:/CORE) en daarna d h luisteren hoe	(6/data/annot/co ebben we dus r erg het was en i	rex/sea/comp-a/nl 10g een { <mark>aantal</mark> } uł dan vond ik het alti	/fn000250. n sessies j id heel erg	.sea#fn000250.129 georganiseerd dat ik mijn I.	muziek aanzette op een bej	paalde sterkte en dan ging ik naar hun	toe en dan gin
file:/D:/CORE) en d'r zijn een	(6/data/annot/co { <mark>aantal</mark> } toegan	irex/sea/comp-a/nl gspoorten en één	/fn000252. toegangsp	.sea#fn000252.12 poort uh daar zit vierentwir	tig uur per dag bewaking.		
file:/D:/CORE) ja het is "t is n	(6/data/annot/co og wel erger gev	rex/sea/comp-a/nl weest want 't uhm j	/fn000252. ia { <mark>aantal</mark> }	.sea#fn000252.41 jaren geleden was 't uhm	uh werden ze al om half zev	ven stilgezet.	
file:/D:/CORE)	(6/data/annot/co	irex/sea/comp-a/nl	/fn000252.	.sea#fn000252.205			
					Stop		

6.5 Statistics based on word/lemma ID

Just as in the above section, a word or lemma can be used as starting point for a Statistics Search.

<u></u>	exicon Tool												_ [۱×
<u>F</u> ile	View													
		1	Orthography	Part of s	Lemma	Svntax	U	Pr	Pr	Pr	Pr	M	DC	
	Search in Corpus		aan	SPEC(an	an	an	·	_	0	
	\sim]	aan	VZ(fin)	aan			an	an	an	'an		V	201
(Statistics in Cornus		aan	VZ(iniť)	aan			an	an	an	'an		V	
	Statistics in Corpus	2	aan-	SPEC(a	_			an	an	an			V	
		\[aan-uitknop	N(soort,	aan-uitkn			a					0	
	Word ID	\mathbf{X}	aan-uitschak	N(soort,	aan-uitsc			a	a	a			V	
			aanbad	WW(pv,	aanbidden	[SU:		a	a	a	a	((V	
	🔿 Lemma ID		aanbakken	WW (inf,	aanbakk	[SU:		a	a	a	'a	((V	
	Continuity	Y	aanbeden 🔵	VVV(vd,	aanbidden	[SU:		a	a	a	a	((V	
			aanbel	WWV(pv,t	aanbellen			a	a	a	'a	((V	
			aanbeland	WW(vd,	aanbela			a	a	a	'a	((V	
			aanbelangt	WWV(pv,t	aanbela			а	a	a		((V	
	Export re <u>s</u> ults		aanbelde	WW(pv,	aanbellen			a	a	a	'a	((V	_
			aanbelden	WW(pv,	aanbellen			а	а	a	'a	((V	_
	Print results		aanbellen	WW(inf,	aanbellen	[SU:		а	а	a	'a	((V	
			aanholt	MAAA//put	laanhollon_			-	2	-	1-0	11	h(_ _
	Lexicon type	ı	Nr of hits: 1918											
	Single word lexicon	I	Find	baan.*							<u> </u>	vithi	n res	ults
	O Multi-word lexicon		in field	Orthography	/									•

The below Statistics panel then appears. The specified Lexicon ID reference is already filled in. To conduct a Statistics search, take the steps that are described in section 5. The only difference is that the **text field box** does not apply: this place is taken by the word ID or lemma ID. You can add further search conditions in the usual way, by using Add new constraint.

Query name		New Query	Store Query	Delete Query
1 Spe	ecified Lexicon word id refere	nce	160	
	Add new constraint	Delete	Statistics seems	:*41.
	Had new constraint		Statistics search	l WILL Das
			starting point	D as
			som omg Ponne	

6.6 The multi-word lexicon

The multi-word lexicon is accessed by changing the default selection of the Single word lexicon to Multi-word lexicon. This option is in the bottom left area of the lexicon panel (this can also be done by choosing File \rightarrow Lexicon Type \rightarrow Multi word lexicon.)

Lexicon type
○ Single word lexicon
Multi-word lexicon

The use for the multi-word lexicon is finding lemmas or words that are orthographically separated but that belong to one lemma. For example: the lemma *opbellen*. The *bel op* variant of this lemma cannot be extracted from the CGN by orthographic content search without avoiding false hits (for example: "hij belde aan op een vroeg tijdstip" would be a typical false hit produced by orthographic search).

👙 Lexicon Tool								_ 🗆 X
File View								
	Orthogra	Lemma	Morphol	Definition	Continuity	Part-Ort	Part of s	Part-Opt
Search in Corpus	bel op	opbellen	((op)[P],(b			hal	1040//mi.t	
Statistics in Cornus						op	VVV(pv,t	J
Statistics in Corpus	belde op	opbellen	((op)[P],(b			h a lala	1040//	
Multi-word lemma ID						pelde op	VVVV(pv,v VZ(fin)	J
	belden op	opbellen	((op)[P],(b			h a lala u	104040	
						op op	VVVV(pv,v VZ(fin)	J
Save results								
Lexicon type	Nr of hits: 3	i						
O Cingle word levie an		l famball	*			in .		
U Single word lexicon	Find	^opbell	en\$			Lem	ma	•
Multi-word lexicon	within	results						

Subsequent search in the corpus for one of the hits can be done as shown in 6.3.

! Note: If performing a statistics search based on a multi-word lexicon entry, pay attention to the following The different parts of a multi-word entry cause one hit each. For example, 'op' and 'lopen' will be counted as two occurrences of the word 'oplopen'. So the number of hits must be divided by two. Why doesn't Corex make this simple division? This is because if other conditions are added to the query, this could lead to incorrect results.

7 Syntax Search

- About five percent of the CGN is annotated syntactically. This part of the CGN can be accessed by choosing the Annotation types → syntactic annotations option in the **Bookmarks** panel.
- The syntactic annotations can be viewed and searched by using the Tiger Syntax viewer and Tiger Search. These programs are integrated in COREX.
- A query with **Tiger** can be followed by Corex queries such as POS, but not the other way around. If you conduct a multiple-condition-query including a syntax criterion, always start with the syntax query in **Tiger**.
- The first time (and only the very first time) that you use Syntax Search, you have to load the CGN corpus. All subsequent times that you use Syntax Search, Tiger remembers the corpus that was loaded the previous time.
- A Syntax query can also be performed in a part of the CGN. This depends on the part that is selected (in the basket) prior to choosing Syntax Search.

7.1 The TIGERGraph Viewer

The **TIGERGraph Viewer** is accessed from the **Metadata Descriptions Tree** panel of the **Corpus Browser** window: double-click on a session node to open it, click with the left mouse button on the open node to highlight it, click with the right mouse button on the highlighted node to open the drop-down menu, then select **Tiger** from the drop down menu (see section 1.1.2). Note that this option is only available if a **.tig** (syntax) file is available.



The TIGERGraph Viewer is a view panel that displays syntactical information, e.g.:

The TIGERGraph Viewer supports the following options:

(1) Displaying the syntactical structure of each sentence in the form of a tree structure.

To view information about any of the nodes or words, point to it with the mouse. A blue box (the so called tool tip) will display the corresponding information.

To hide any part of the tree structure, click with the middle mouse button on a syntactic node. The corresponding structure will be hidden.

(2) Navigating in the session file by means of the following options:

- Press Previous / Next to move to the previous / next sentence.
- Press First / Last to move to the first / last sentence.
- Enter the sentence number into the box between **Previous** and **Last** and press ENTER to jump to the corresponding sentence.
- Click on the scrollbar to jump to a sentence.
- (3) Printing the tree structure of the displayed sentence. Make use of the menu item Graph / Print.
- (4) Changing the colour and display options of the **TIGERGraph Viewer**. Make use of the menu items **Options** / **Colour Options** and **Options** / **Display Options**.

For details, please see the separate manual for the "TIGERSearch" tool (a copy of the manual is on your distribution CD-ROM; you can also download the manual from http://www.ims.uni-stuttgart.de/projekte/TIGER/TIGERSearch/manual.shtml).

7.2 Syntax Search

1) A syntax search is started by choosing the option Syntax from the Search menu. The TigerSearch program is then opened.

MDL-RC	Browcer for Corpu	e Ceeproken Nederla	nde on
IMDI-DC	browser for corpu	is desproken Nedenal	ius on
<u>File</u> <u>Options</u>	Search Help		
	Metadata Search		
Bookmarks	Content Search		
CGN Root	Syntax Search	global	file
All Sessions	Statistics	global	file
DVD List Components	Lexicon Tool	global alobal	file file

- 2) TIGERSearch starts loading the dataset, which is the subset of the CGN that is annotated in such a way that syntactical searches can be performed in it.
- 3) Only the entire syntactically annotated subset of the CGN can be input for a syntax search: no subset of this subset.

7.2.1 Specify the search options

The TigerSearch program allows syntactical search criteria to be entered, either textually or graphically. In the below example this is a query for sentences with a "te infinitief", coded as TI. As the query proceeds, a panel is displayed, showing the progress. When the process is finished, the TIGERGraph Viewer appears, displaying the first of the hits. All hits can be viewed by using the navigation buttons (see section 7.1)

👺 TIGERSearch - Corpus: CGN	
Corpus Query Options Help	
🗓 CGN - 🖳 🕨 🖿	▶ 囲 🌹 🛷
CGN CGN CGN Con	Graphical mode
site Summary view	I"]
P S Edge labels	Syntactical search parameter
secondary edges	
word	
🖉 Open 🗧 Bookmarks 🛄 Info	Start Query
🚳 🗣 🏢 Processing the query	Search

7.2.2 Saving the search results

The search results can be saved by choosing **Save matches** from the File menu of the TIGERGraphViewer (see section 4.7).

	9	FIGEF	RGraph	/iewer		
	File	Grap	n View	Options	About	Audio
	Ope	en corp	ous file			
_	Rea	nd feat	ure desci	ription file		
\langle	Sav	/e mate	ches			
	Clo	se				

The result is saved as a **.res** file, i.e. in the same format as is used by Content Search. This offers the possibility to reopen it in the Content Search panel of Corex and execute additional queries within this saved selection (see section 4.7).

Appendix A: example of .res file

An example of the format of the search result file (see section 4.6) is as follows:

hitNr: 0

fileName: /home/broeder/COREX4/Corpora/cgn/annot//r5vl_01/sea/fv601274.sea

tierName: V60196

trackType: ORT

utteranceNr: 2

ortContent: aan de ene kant mensen die handjes schudden groepsfoto's laten maken met fiets zonder fiets en voor de rest vergaderen.

hitWordNr: 0

hitBeginPos: 73

hitEndPos: 78

hitNr: 1

fileName: /home/broeder/COREX4/Corpora/cgn/annot//r5vl_01/sea/fv601274.sea

tierName: V60196

trackType: ORT

utteranceNr: 2

ortContent: aan de ene kant mensen die handjes schudden groepsfoto's laten maken met fiets zonder fiets en voor de rest vergaderen.

hitWordNr: 0

hitBeginPos: 86

hitEndPos: 91

Appendix B: CGN Metadata

N.B. Not all keys are specified for each session

Session Keys (via Session)

CGN.wordCount	number of words in the sample: number
CGN.recCount	duration of the sample expressed in the total number of seconds: number
CGN.byteCount	indication of the size of the .wav file (expressed in terms of a number of units): number
CGN.tempoAV	Average number of words per hour: number
CGN.recDate	recording date: date or year
CGN.locName	place where the recording was made represented in terms of the (reduced) postal code or description of place in which the recording was made: possibly unknown or unspecified
CGN.locale	description of the type of space in which the recording was made: $loc1 = room$ of average size; $loc2 = open air; loc3$ =public place: $loc4 = large room; unspecified$
CGN.segmentation:	The way the speech signal is synchronised with the annotation; manual of automatic
CGN.availability	label of the dvd on which the sound file can be found; e.g. CGN WAV 01
CGN.fon.available	{true, false} whether there is a manual transcribed phonetic annotation available or not
CGN.syn.available	{true,false} whether there is a syntax annotation available or not
CGN.pro.available	{true,false} whether there is a prosodic annotation available or not

Participant Keys (via Session/Participant)

CGN.age	age class to which speaker belonged at the time the sample was recorded; age0 = under 18 years of age; age1 = 18-24 years of age; age2 = 25-34 years of age; age3 = 35 -44 years of age; age4 = 45-55 years of age; age5 = over 55 years of age; ageX = age unknown
CGN.birth.year	year of birth; in case the information is not available 19nn is given as birthYear
CGN.birth.place	place of birth, represented in terms of the first three digits of the postal code preceded by the country code (B for Belgium, NL for The Netherlands; eg B-994, NL-832). For larger cities in the Netherlands several postal codes may apply. When this is the case, the postal code has been represented in terms of the first two digits that these codes have in common, while the variable third digit has been replaced by a hyphen (eg NL-25-). Where information concerning the place of birth is not available, xxx

	has been used. For speakers not born in Belgium or The Netherlands the place of birth is represented by the country code only.
CGN.birth.reg	(geographical) region where the speaker was born. For a list of regions distinguished, see below.
CGN.firstLang	language (variety) speaker was raised in: SD = Standard Dutch; regiolect (eg regiolect: Antwerpen); dialect (eg dialect:Bree); unknown
CGN.homeLang	language (variety) speaker uses at home: SD = Standard Dutch; regiolect (eg regiolect: Antwerpen); dialect (eg dialect:Bree); unknown
CGN.workLang	language (variety) speaker uses at work: SD = Standard Dutch; regiolect (eg regiolect: Antwerpen); dialect (eg dialect:Bree); unknown
CGN.residence.place	speaker's place of residence, represented in terms of the first three digits of the postal code preceded by the country code (B for Belgium, NL for The Netherlands; eg B-994, NL-832). For larger cities in the Netherlands several postal codes may apply. When this is the case, the postal code has been represented in terms of the first two digits that these codes have in common, while the variable third digit has been replaced by a hyphen (eg NL-25-).
CGN.residence.reg	(geographical) region where the speaker resides. For a list of regions distinguished, see below
CGN.education.places	size indication of the (present) size of the place, specified by CGN.education.place; size1 = over 100,000 inhabitants; size2 = between 50,000 and 100,000 inhabitants; size3 = between 25,000 and 50,000 inhabitants; size4 = between 10,000 and 25,000 inhabitants; size5: between 5,000 and 10,000 inhabitants; size6 = fewer than 5,000 inhabitants; sizeX = size unknown
CGN.education.place	place where speaker attended secondary eductation place where speaker lived for the most part between ages 4 and 16) represented in terms of the first three digits of the postal code preceded by the country code (B for Belgium, NL for The Netherlands; eg B-994, NL-832). For larger cities in the Netherlands several postal codes may apply. When this is the case, the postal code has been represented in terms of the first two digits that these codes have in common, while the variable third digit has been replaced by a hyphen (eg NL-25-).
CGN.education.opleic CGN.education.reg	ling type education; eg lager onderwijs, mbo, universiteit (geographical) region where speaker lived while he/she attended secondary eductation (region where speaker lived for the most part between ages 4 and 16). For a list of regions distinguished, see below.
CGN.education.level	level of education: edu1 = high, edu2 = middle, edu3 = low, eduX = unknown
CGN.occupation.leve	l occupational level. For the Netherlands occupational levels occ1 up to and including occ9 are distinguished. For Flanders, the levels occa up to and including occj are distinguished. In

	case someone has been trained for one occupation but presently holds some different job, this has been indicated by combining two or more occLevel descriptions, as for example in occC+G where a professor is also a politician. occX is used whenever the occupational level is unknown.	
CGN.occupation	speaker's occupation	
Content Keys (via Session/Content/Keys)		
CGN.textclass.target	gives information about four aspects: text type, degree of preparedness, mode, and domain; <u>text type</u> specifies the component to which a sample belongs; 15 text types are distinguished; tta-tto (see list below) <u>degree of preparedness</u> : prep1 = scripted, prep2 = unscripted, prep3 = more-or-less scripted; <u>mode</u> : mod1 = broadcast, radio; mod2 = broadcast, tv; mod3 = non-broadcast <u>domain</u> : dom1 = private; dom2= public	
CGN.textclass.keywo	ords one or more keywords that characterize the subject matter in the sample short description of activity speaker(s) was (were) involved in at the time of recording	

Text types:

tta	spontaneous conversations (face-to-face)
ttb	interviews with teachers of Dutch
ttc	spontaneous telephone dialogues (recorded via a switchboard)
ttd	spontaneous telephone dialogues (recorded on MD with local interface)
tte	simulated business negotiations
ttf	interviews/discussions/debates (broadcast)
ttg	(political) discussions/debates/meetings (non-broadcast)
tth	lessons recorded in a classroom
tti	live (eg sport) commentaries (broadcast)
ttj	newsreports/reportages (broadcast)
ttk	news (broadcast)
ttl	commentaries/columns/reviews (broadcast)
ttm	ceremonious speeches/sermons
ttn	lectures/seminars

tto read speech

Geographical regions:

regN1aThe Netherlands, central region, Zuid-Holland, excl. Goeree Overflakee regN1bThe Netherlands, central region, Noord-Holland, excl. West Friesland

regN1cThe Netherlands, central region, West Utrecht, incl. the city of Utrecht regN2aThe Netherlands, transitional region, Zeeland, incl. Goeree Overflakee and Zeeuws-Vlaanderen

regN2bThe Netherlands, transitional region, Oost Utrecht, excl. stad Utrecht regN2cThe Netherlands, transitional region, Gelders rivierengebied, incl. Arnhem and Nijmegen

regN2dThe Netherlands, transitional region, Veluwe up to the river IJssel

regN2eThe Netherlands, transitional region, West Friesland

regN2fThe Netherlands, transitional region, Polders

regN3aThe Netherlands, peripheral region 1 (north east), "Achterhoek"

regN3bThe Netherlands, peripheral region 1 (north east), Overijssel

regN3cThe Netherlands, peripheral region 1 (north east), Drenthe

regN3dThe Netherlands, peripheral region 1 (north east), Groningen

regN3eThe Netherlands, peripheral region 1 (north east), Friesland

regN4aThe Netherlands, peripheral region 2 (south), Noord-Brabant

- regN4bThe Netherlands, peripheral region 2 (south), Limburg
- regNx The Netherlands, unknown
- regV1 Flanders, central region (Antwerpen and Vlaams-Brabant)
- regV2 Flanders, transitional region (Oost-Vlaanderen)

regV3 Flanders, peripheral region 1 (West-Vlaanderen)

- regV4 Flanders, peripheral region 2 (Limburg)
- regVx Flanders, unknown
- regW Wallonia
- regZ region known to be outside of The Netherlands and Flanders
- regX region unknown

Occupational level:

Dutch codes

- occ1 occupation requiring higher level of education (doctor, lawyer, etc.)
- occ2 occupation requiring middle level of education (teacher, journalist, etc.)
- occ3 occupation requiring lower level of education (mechanic, teacher nursery school, bank employee, etc.)
- occ4 occupation not requiring any level of education (garbage collector, cleaning lady, taxi driver, etc.)
- occ5 holding no job, unemployed
- occ6 holding no job, attending school
- occ7 holding no job; housewife
- occ8 holding no job, declared unfit
- occ9 holding no job; other

Flemish codes

- occA occupation in higher management or government
- occB occupation requiring higher education
- occC employed on the teaching or research staff in a university or a college
- occD employed in an administrative office or a service organisation
- occE occupation not requiring any level of specification
- occF self-employed
- occG politicians
- occH employed with the media (journalist, reporter) or artist

occIstudent, traineeoccJholding no joboccXunknown