

## Introduction to Qualitative Analysis Software at CSSCR

Qualitative analysis is based on Grounded Theory. Grounded theory begins with a research situation. Within that situation, your task as researcher is to understand how the players manage their roles. You will mostly do this through observation, conversation and interview. After the data is collected, the researcher notes the key issues.

Constant comparison is the core of the process. At first the researcher compares the interview (or other data) to other interviews (or other data). Theory begins to emerge from those observations. When this occurs, you begin to compare data to theory.

The results of this comparison are written in the margin of the note-taking as coding. The researcher's task is to identify categories (roughly equivalent to themes or variables) and their properties (in effect their sub-categories). This method was pioneered by sociologists Strauss and Glaser (<http://www.geocities.com/ResearchTriangle/Lab/1491/gtm-19.html>).

In general, qualitative software allows you to:

1. Organize texts and their coding) into projects.
2. Explore how words are used in context as well as investigate how often particular categories have been assigned to a word or text segment, which categories occur together, what links exist between categories or coded text segments.
3. Create and maintain categories and categorization schemes.
4. Assign one or more codes to word strings, words, phrases, sentences, lines, paragraphs or whole texts.
5. Keep notes (memos) on text, categories, coded text segments.
6. Obtain different 'views' of the text data as well as the coded parts of a text or a group of texts.
7. Export the coding for further processing with other software, as well as generate reports on the performed analysis.
8. Support team or co-operative work for a text analysis project and merge coded texts.

CSSCR supports these qualitative data analysis software programs:

Program	Operating System
Atlas.ti	(IBM PC)
Folio Views	(IBM PC)
Nudist	(IBM PC and MacIn-tosh)
The Ethnograph	(IBM PC) Uses a DOS interface

The table below summarizes the common uses of qualitative analysis software CSSCR supports.

(this table was modified from a table found in Miles and Weitzeman (1995) on page 316)

	Atlas Ti	Folio- Views	Ethno graph	Nudist
Note taking in the field, transcribing and editing notes	X	X	X	X
Coding, attaching keywords to text	X	X	X	X
Text storage in a database	X	X		X
Search and Retrieval of text	X	X		X
Hypertext linking, connecting text segments together	X	X		(X)
Memo writing, writing reflective comments on your text to be used in later analysis	X	X	X	X
Content Analysis, counting frequencies, sequences and locations	X	(X)	(X)	(X)
Data display, in an organized fashion, i.e. matrix, network, etc.)	X	(X)	(X)	X
Conclusion-drawing and verification	X	X		X
Theory building, Hypothesis Testing	X	X		X
Graphic (diagrams), which could also depict findings	X			X
Report preparation	X			X

( ) around the letters, implies less capable though the function exists to some degree.

## ATLAS.TI

When you first open up Atlas.ti, it will ask you to either open or create a new **Hermeneutic Unit**. A Hermeneutic Unit is a name for the “container” that will keep all your data, findings, codes, memos, structures under a single name. This is also abbreviated to HU. Your data files, are known in Atlas.ti as **Primary Documents**. The Primary Documents can be text, graphics or audio files. You associate these files with your HU. Primary Documents are usually in ascii or ansi format (DOS text files, filename.txt). You assign **Code words** or **Memos** to your Primary Documents, using Atlas.ti by reading and selecting passages from the Primary Documents. From the Codes you create, you can build semantic, prepositional or terminological **Networks**. These Networks are graphical devices which represent the relationship of the various parts of your HU.

### *Coding in Atlas.ti*

When you are Coding in Atlas.ti, you are coding from Quotations, which are from the Primary Document.

Also, you can create Super-Codes, which are like queries in other software programs. A Super-Code will take the parameters that you have specified for a search on existing codes and give you the result.

You must have the Primary Document up, and have codes created. Then click on the Query Tool which is the pair of binoculars on the horizontal toolbar. Then the Query Tool appears. This is where Super-Codes are created.

Memos are places for you to write your thoughts concerning emerging theories and other concepts.

Highlight the text you have coded and use either a right-click or the menu toolbar to add a memo to your coded text. *what is the icon on the menu toolbar?*

Highlight the text you have coded and use either a right click and select memo or use the menu toolbar to add a memo. On the menu toolbar, you can either click on the word “Memos” and select or click on the icon which looks like a yellow post-it note with a gray edge on top.

You can access Atlas.ti through a desktop shortcut on any PC at CSSCR.

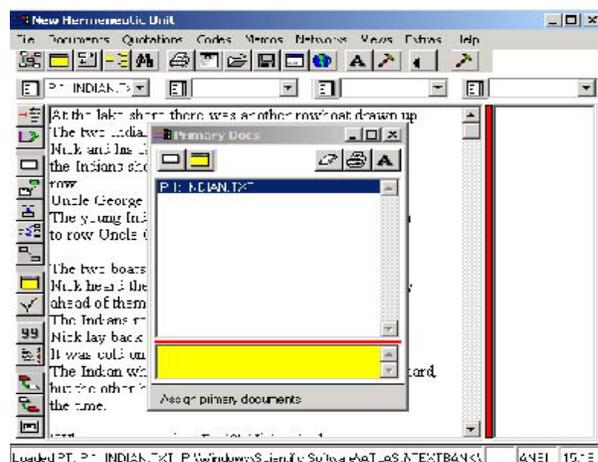
### *Getting Started*

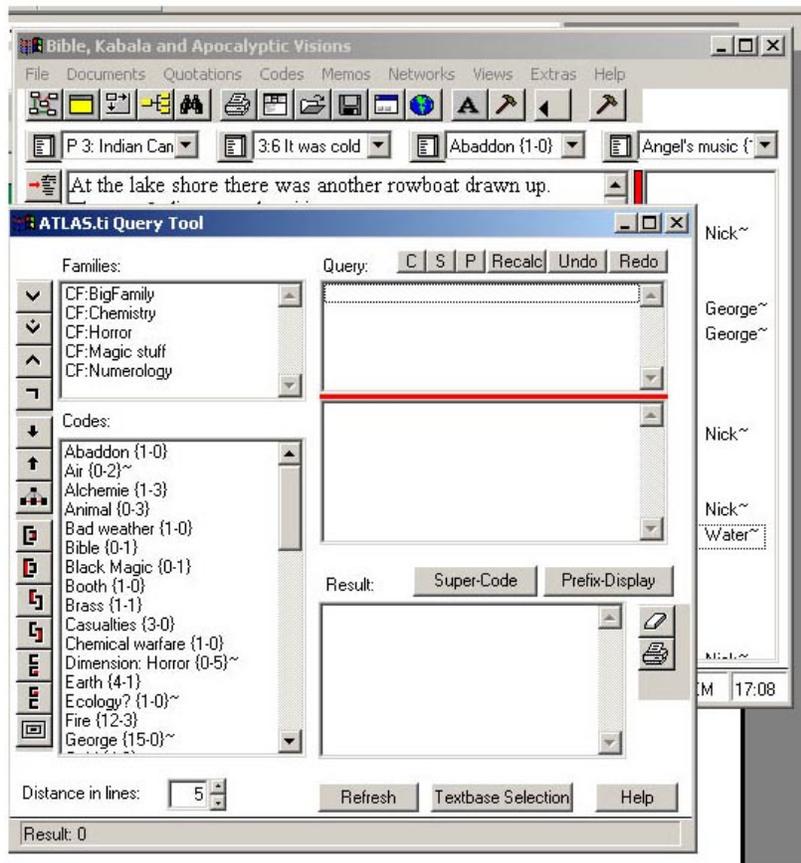
Double-click on the Atlas.ti icon and it will bring up version 4.1 and will ask you what you would like to do today and give you several selections. Choose one and you may now import your documents for analysis. To import your text document, which is saved as DOS text, go to the menu bar and choose Documents, click on Assign and open the text file’s enclosing folder. Double-click on your document and it will be automatically assigned to the HU you have previously named.

Choose one of the following selections: “Open Hermeneutic Unit from Picklist,” “Open last used Hermeneutic Unit,” “Create a new Hermeneutic Unit” or “Just Continue.” If you are just starting out in Atlas-Ti, choose “Create a New Hermeneutic Unit.”

To import your document which must first be saved as DOS TEXT. This means it will have a filename.txt, pattern with “txt” being the type of word file. ASCII and ANSI will also work, but RTF will not work.

In a previous step you created a new hermeneutic unit and named it. When you double-click on your document it will be automatically associated and assigned to the Hermeneutic unit which you have open.





Note that the document shows up in the second menu bar down, in the first box on the left hand corner. It is seen as Primary Document 1: P1. If you wish to bring the document into the screen for coding, double click on the white page icon located to the left of the P1 box. From here you can begin your process of coding.

There are five coding techniques in Atlas.ti, Open Coding, In-Vivo Coding, Code-by-List, Quick Coding and Free Coding.

*Open Coding:*

To apply the Open Coding technique

1. Select the passage or quotation you want to code.
2. Click the Open Coding button or choose CODING/OPEN CODING from the selections context menu.
3. In the prompter enter a descriptive name for the code to be created and click OK.

There will be a change in the code- and quotation lists. The new code is now listed in the code list. If a quotation was created during the above step, a new entry for the quotation is inserted in the quotation list.

It is suggested that you should write a comment for every new code.

*In Vivo Coding:*

Uses the text itself as a name for the code.

1. Mark the text passage (no more than 40 characters) that you want to use as the new code's name.
2. Click the In-Vivo coding button or choose CODING/IN-VIVO CODING from the selection's context menu.

*Code by List:*

1. Select the passage or quotation you want to code.
2. Click the multi-coding button or choose CODING/CODE BY LIST from the selection's context menu.
3. A multiple-choice window offers all codes that can be assigned. To use more than one code, use standard Windows multiple selection techniques
4. Click OK after selecting the codes.

*Quick Coding:*

1. Select a code in the code list window to make it the current code. The code may already be selected from a previous coding procedure.
2. Make a selection in the primary document.
3. Click the Quick coding button or choose CODING/QUICK CODING from the selection's context menu.

*Free Coding:*

Creates a new code without any links. These are usually codes that have not (yet) been used for coding purposes.

1. From the main menu choose CODES/CREATE FREE CODE or click the Create Code button in the codes extra list (not the similar button left of the primary document pane).
2. In the prompter one or more codes (separated by the “|” character).

The newly created code's suffix displays {0-0}: ~

After a code has been created it appears as a new entry in the drop-down list and in any opened object list. You might have already noticed the two numbers separated by a dash enclosed by curly parentheses appended to the code's name by the system. Eventually, a “tilde” character is displayed after the closing parentheses.

**Groundedness.** The first number display the number of quotations already coded with this code. The larger this number, the more evidence has already been found for this code in the data.

**Density.** The number following the dash is the number of other codes linked with this code. Codes with large numbers can be interpreted as having a high degree of theoretical density. This characteristic belongs to the networking procedures explained later.

**Comment.** The tilde character “~” marks commented codes. It is used for all kinds of objects for which comments were written.

## NUDIST

With Nudist4 you can analyze documents such as interview transcripts, field notes, journal articles, papers, email archives or other data that have been saved in text file format. You can code and search your data using words and phrases and track statistical information about your coding and searching processes. You can write memos about your data and your role as a researcher and add context-sensitive annotations to your data files.

You can also export data in tab-delimited format into SPSS (Statistical Package for the Social Sciences) or Microsoft Excel.

Important concepts in Nudist4:

**Raw Files** are the names of the documents that contain your qualitative data. These documents are in DOS text (ascii or ansi) format (filename.txt). Each document or Raw File must contain a **Header**, which is delimited in the following manner.

- \* ABC Industries, Melbourne
- \* 24 Feb, 1997: a week after no-smoking rule imposed.
- \* Open-ended interview re smoke free workplace: interviewer Julie.
- \* "MARY", senior secretary, non-smoker.

The document header appears at the beginning of your document and consists of text units that begin with an asterisk (\*) and end with a hard carriage return (¶). The Header usually gives information that you need to know about the document.

Each document also has **Text Units**. With Nudist4 you can highlight only lines, sentences or paragraphs. Nudist4 calls these Text Units. In special circumstances, you may wish to define 'words' as your text unit. A Text Unit is defined with the use of a hard carriage return in your document. This determines which text unit style you will use in your projects; words, lines, sentences or paragraphs. When you begin to Code your text units, you will be able to highlight these units selectively.

When you start Nudist4, it will ask you to either run the Tutorial, Start a New Project or Open an Existing Project.



You can create as many projects as you wish. When you open a New Project, you will see another file called the Project Startup file or Project.stp and four directories with the following names and functions:

1. Commands: use this folder to store command files you write
2. Raw files: store and save your text files until you import them into Nudist4
3. Reports: store editable reports you create with Nudist4
4. Database: contains internal files that Nudist4 uses to manage your project. It is important to back up this folder/directory regularly.

To import documents into Nudist4, you choose the **Documents** menu from the top menu bar. Go to **Import/Select file to import**, which can bring up files from your hard drive or diskette.



You will then be asked to give a title for the document and it will be imported into Nudist4.

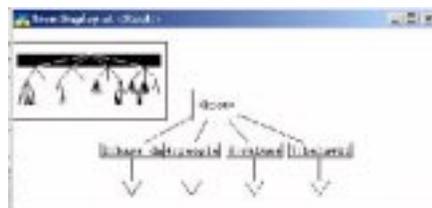
If you remember the Headers discussed earlier, they come into play when a document is imported into Nudist. When the document -associated name is highlighted, everything that had been marked with an asterisk is now located in the Header descriptor box.

From here you can begin **Coding** your text. Using the **Browser Palette** usually located in the upper right hand corner of the screen, or by using the Menu bar, you may begin reading through and coding your document.



On the Menu bar you could also choose, Index System---->Add/Delete Coding.

Also, Nudist4 has a hierarchical Decision Tree in contrast to the more freely formed Networks of Atlas.ti.



## FOLIO VIEWS

The working concept of Folio Views is based on the same principal that is applied when studying a text. As you read a text, you highlight passages or words that are of interest to you, take notes of headings and subheadings in the text or create headings and subheadings of the text you are reading. You can ask questions about the documents through the queries to find words or phrases.

As with the other qualitative data analysis programs, Folio Views has its own concepts and jargon.

The **Infobase** is a collection of text and graphics which, through features provided by the Folio VIEWS 3.1 Infobase Manager, provides advanced tools to adapt information to your particular needs.

The **Infobase Manager** displays, manages and adapts the information for analysis. The Infobase Manager is usually referred to as Views.

**Links** are jumping points between one area in the Infobase and another. You can link an entry from a table of contents to the location of that entry in the main body of the text.

**Notes** are used like post-it notes in reference books. They can contain contextual notes, such as comments or questions, and they can contain graphics or objects.

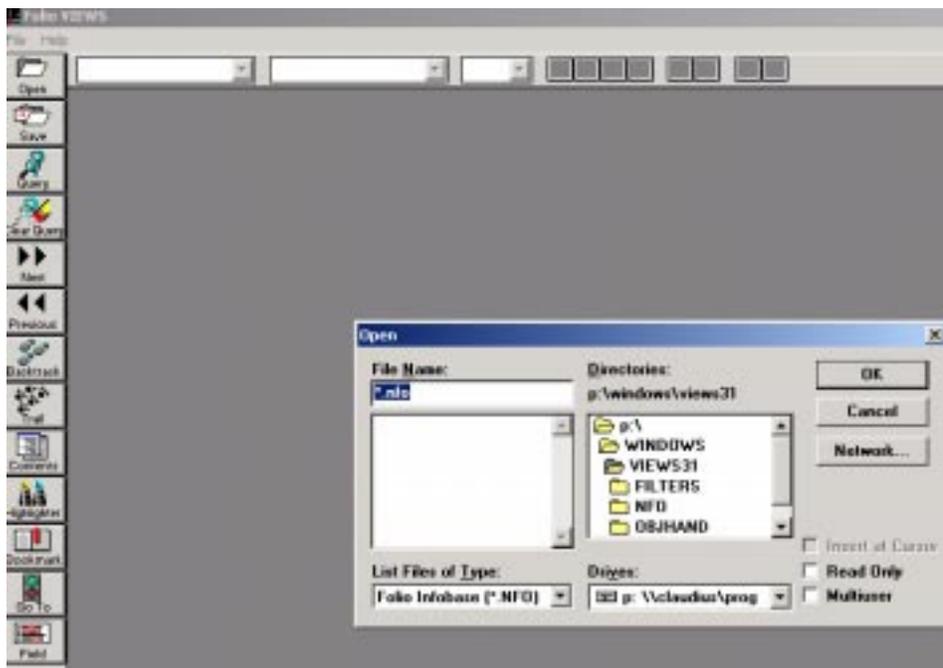
A small note icon at the beginning of a record or paragraph indicates that there is a note attached. Note boxes can be sized and placed anywhere on a document window.

A **query** is a request to perform a search for a word or set of words. The Infobase Manager searches the Infobase and displays how many records contain your word or words. Once you apply the query, the matches are highlighted in the Infobase.

A **Shadow File** is an overlay of an Infobase in which personal editing changes, style changes, notes and highlighters may be stored. You can make any changes here without affecting the Infobase.

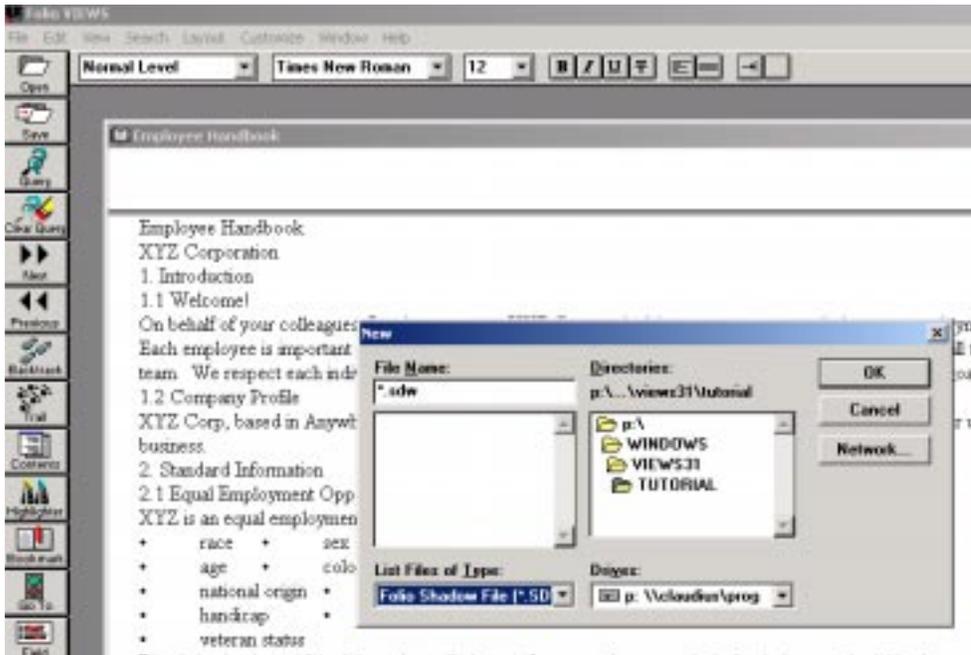
The **Toolbelt** is a collection of quick access buttons. This allows you to access a group of commonly used Infobase Manager commands. You can also assign commands through the Preferences dialog box. You would choose Preferences from the File menu.

### *Opening an Infobase*



Choose open from the file menu. A dialog box will appear; select the file you need.

To bring a document into FolioViews, you need to open a New document, then cut and paste the document you want to analyze into FolioViews and save as an.nfo file.

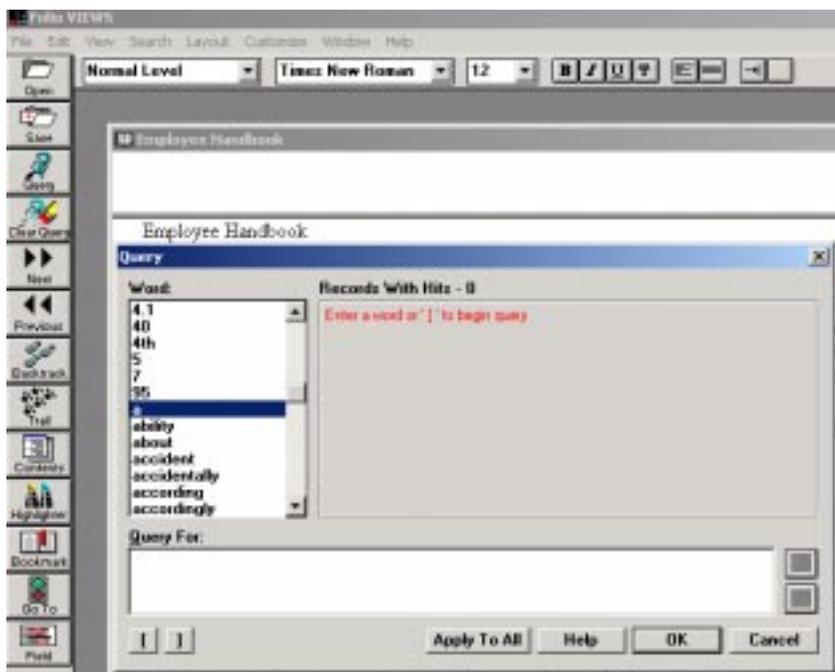


To create a Shadow File, so that you can make changes in a document without affecting the master Infobase document, you would do the following:

Choose New from the File Menu, select List Files of Type at the bottom of the dialog box, choose the Folio Shadow File (SDW) from the list of options, then select or type in the file name. In this case the filename is New.sdw.

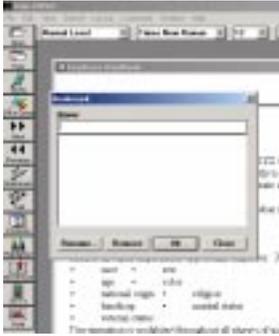
*Queries*

On the Toolbelt on the left hand side of the screen you will see a button labeled “query,” with a magnifying glass. Click on this button and you’ll see this dialogue box:

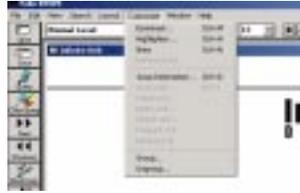


You are now looking through the Shadow version of our Infobase. Enter a word or words and FolioViews will locate the words and give statistics and highlight them. Using the Next and Previous buttons on the Toolbelt you can go over your findings.

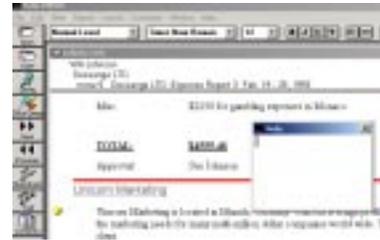
(To create a Jump Link, which is one of FolioViews Links, click on Bookmark from the Toolbelt.)



Bookmark Dialogue Box



Customize Menu



Note Dialogue Box

Now in the Bookmark dialog box, select Golf and choose OK. This will take you to the word Golf. To create the Jump Link, go to Customize and choose Jump Link.

In this case we are going to associate the Played Golf with the Jump Link Destination of Car Accident.

To Make a Note, choose Bookmark from the Customize Menu and in this case select Gambling Expense and choose OK.

Then to create a Note on the expense, go to the Customize Menu and choose Note. Two things have happened. FolioViews will have moved to the part of the document which refers to the Gambling Expense, then when choosing Note, a Note dialog box will appear for you to type into.

### THE ETHNOGRAPH VERSION 4.0

The Ethnograph is a DOS based (Direct Operating System) program. It does not have a Windows GUI (Graphical User Interface) as Nudist, Atlas.ti and FolioViews do. The Ethnograph helps you search and note segments of interest within your data, mark them with code words and run analyses which can be retrieved for inclusion in reports or further analysis.

In CSSCR you need to copy the ETHNO4 file from the server to the C:\temp on your local computer in our lab and run the commands from there.

The core components of Ethnograph are:

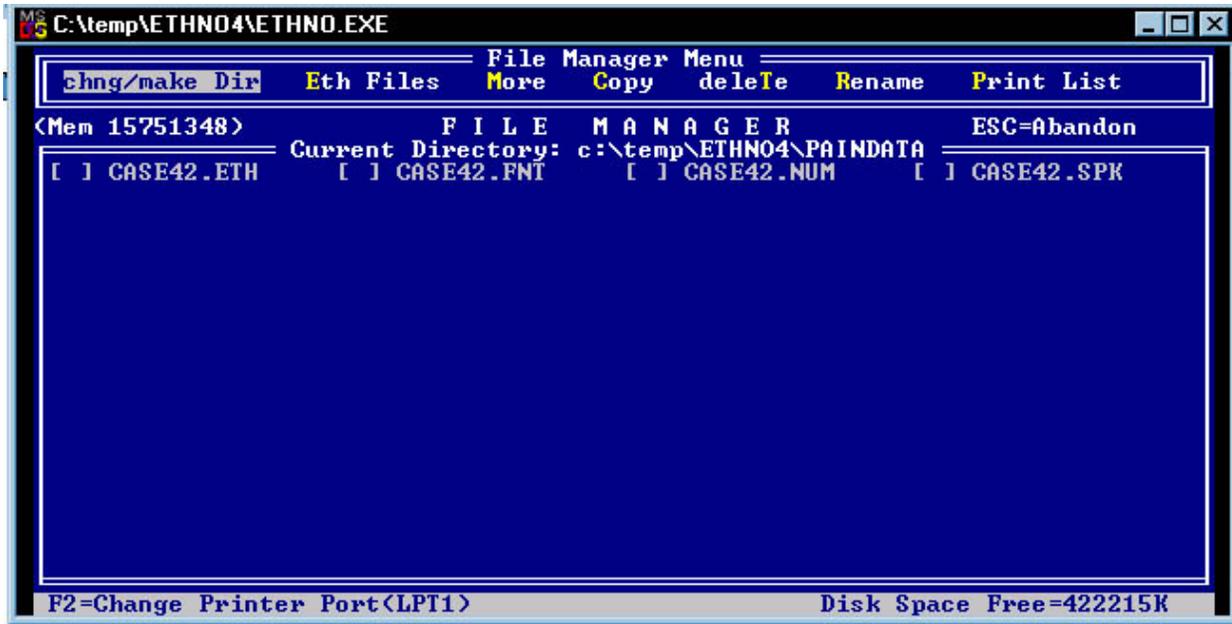
1. Importing and Numbering Data Files
2. Coding a Data File
3. Searching for Coded Segments

To begin you need to change directories (CD) to the Ethno4 directory, in the MS command prompt.

Here the directory is P:\windows\Ethno4

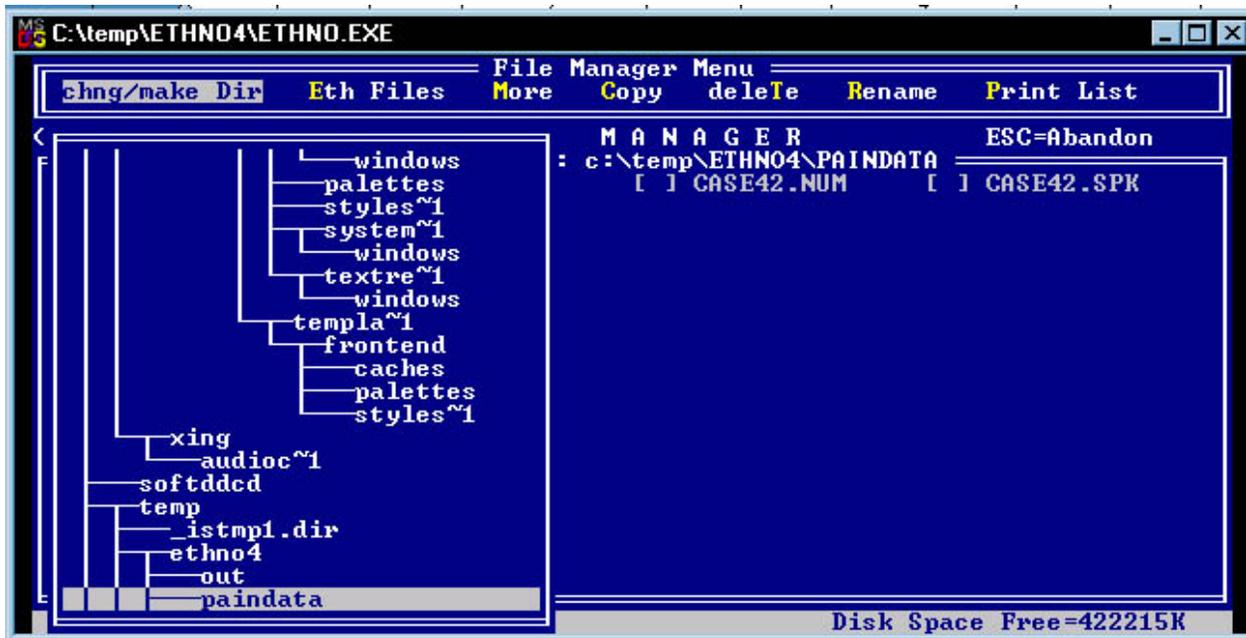
The file command you need to type in is ethn.exe.

The Data File must have a 40-character line, hanging indent paragraph format.

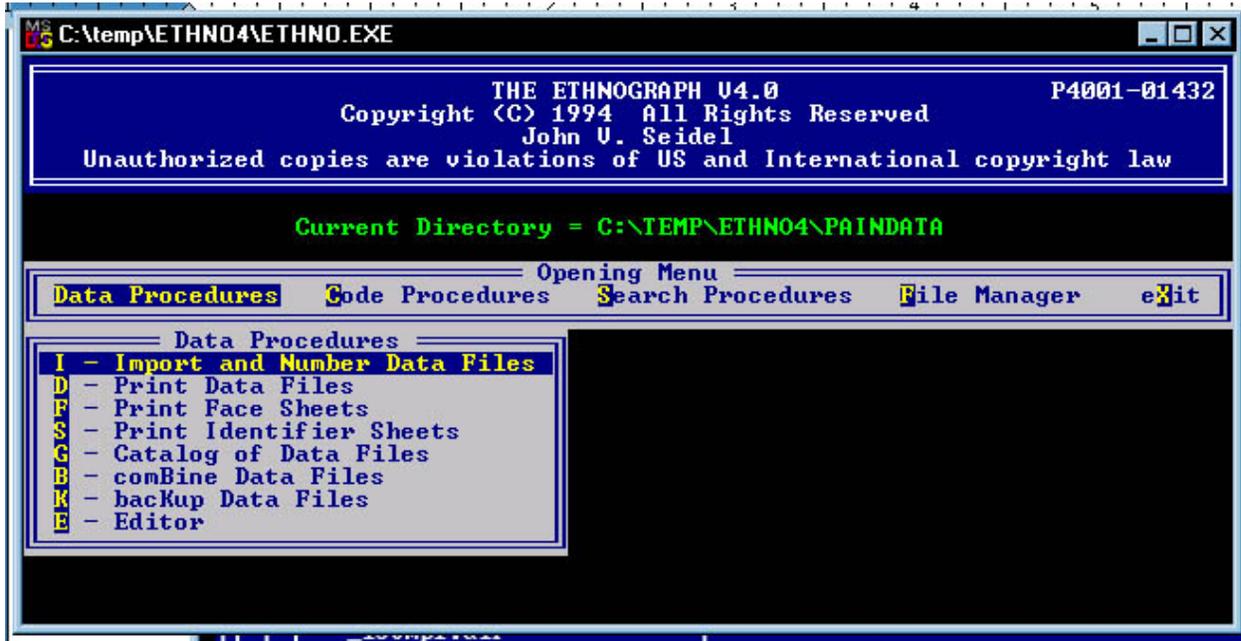


The opening menu for Ethnograph looks like the illustration above. Hit the F key to access your data files. Move around the top menu either by using the highlighted letter, or the arrow keys on the keyboard.

Below is the directory for the data file **Paindata**. Now you may Import and Number the Data File. To go back to the main menu, press the ESC key and choose Data Procedures, or the “D” key.



Now press either the “T” key or enter to import your data file. In the example below, the file to import is CASE42, which has already been typed in. Note the directory path is listed at the upper left.



Press enter. In our example, the file has already been imported. However, if you haven’t imported the file, the following options will appear after you press F10.

**Do you want Printed copies of the files (y/n) :**

**Create a standard SPK (Identifier) file (y/n) :**

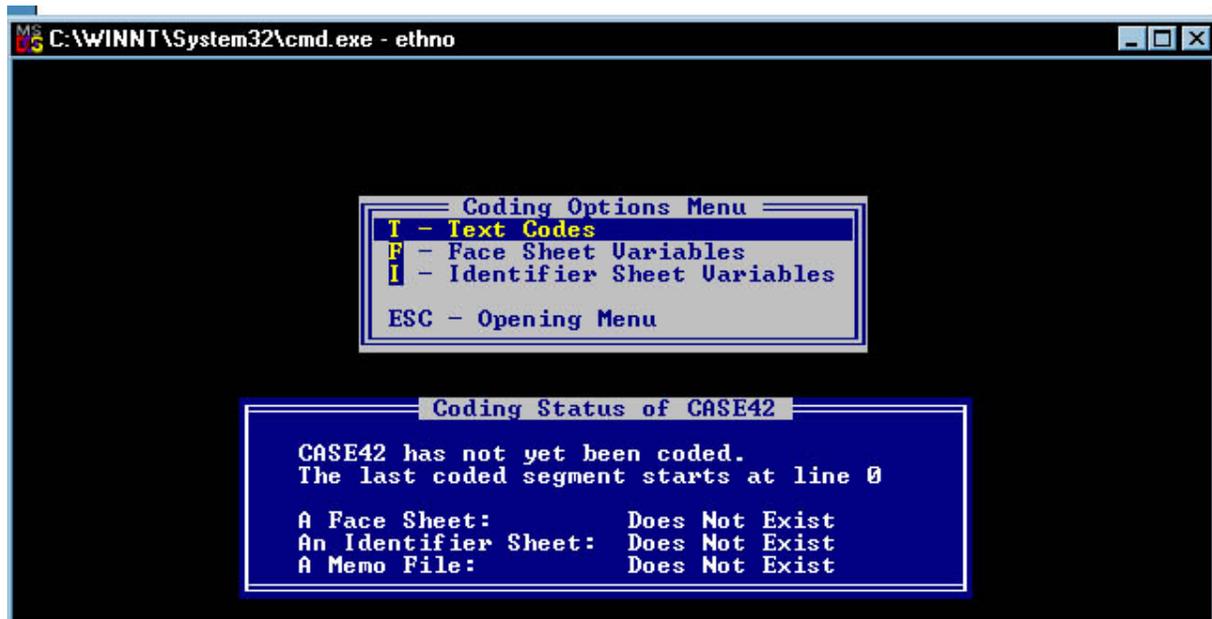
This should always be set to Yes. The SPK file keeps track of Speaker/Section Identifiers in your data file. Then press F10 again to accept the import options.

To view a subset of files, select Oath Files from the File Manager Menu.

- Data Files            Primary and secondary files created and used by The Ethnograph
- Numbered Files    Files with the extensions NUM, SPK, and FNT
- Coded Files        Files with the extension COD
- Face/Identifier
- Sheet Files        Files with the extension FAC and FID
- Memo Files        Files with the extensions MMO and MMX
- Catalog Files     Files with the extension CAT
- Code Book Files   Files with the extensions CBK and CBX
- Master List Files  Files with the extensions MCL and MIL
- Template Files    Files with the extension TMP
- Output Files      Files with the extension OUT
- All Files           All files in the current directory.

*Coding a data file example.*

The Code procedure lets you attach code words to segments of text. It also lets you attach Memos to your



data files, complete Face Sheets and Identifier Sheets for your data files.

From the Opening Menu select Code Procedures. Then select Code a Data File from the drop down menu. Press F5 to obtain a list of files to pick from that you have already created. Select a file from the list and hit Enter or F10.

After accepting the file, you see a window where you may begin the coding process:

Note that this window also gives the Coding Status of the Data File. Pressing Enter or T for Text codes will give another screen where you can code your data.

## CONCLUSION

This document has covered all of the Qualitative Data analysis programs available to you at CSSCR. By going through each of the programs, you will find one that will match your needs and analysis style for qualitative research.