

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/259185207>

# Qualitative Data Analysis Software: MAXqda

Article in *Qualitative Research Journal* · January 2004

---

CITATIONS  
21

READS  
8,257

1 author:



Ralph Godau  
RMIT University

28 PUBLICATIONS 270 CITATIONS

SEE PROFILE

## **Review of Qualitative Data Analysis Software: MAXQDA & MAXDICTIO**

MAX Qualitative Data Analysis (MAXqda) product is supported and distributed by VERBI GmbH ([www.maxqda.com](http://www.maxqda.com)). It's single user standard price (2004) is US\$745. The single education rate of US\$445 (student price US\$250). The add-on module (plug-in), MAXDictio is priced US\$235 and US\$175 respectively. MAXDictio allows additional functionality by providing the ability to do content analysis (word frequencies) and coding based on general or selected set of word-based dictionaries. This feature also allows further processing of results in SPSS or Excel.

As an experienced user of Atlas.ti (Visualisation Qualitative Data Analysis, Management and Theory Building) I am interested in software that supports practical social research applications. Even though MAXQDA & MAXDICTIO does not provide the same type of functionality as Atlas.ti, I believe they have a niche with researchers whose focus is on analysing reams of textual information and who are seeking to develop a hierarchical representation (a useful coding system) that reflects what is being analysed.

MAXQDA & MAXDICTIO was reviewed as "one product" as the combined functionality was regarded by the reviewer as 'necessary' for textual qualitative data analysis.

This product is a simple tool to use and learn, compared with some of the other qualitative data analysis tools that are available, however, I did need to read up on the manual as there were a number of additional features that I found useful. For example, knowing to use the shift key when one needed to move a code to a sub-code level within the code system (code hierarchy).

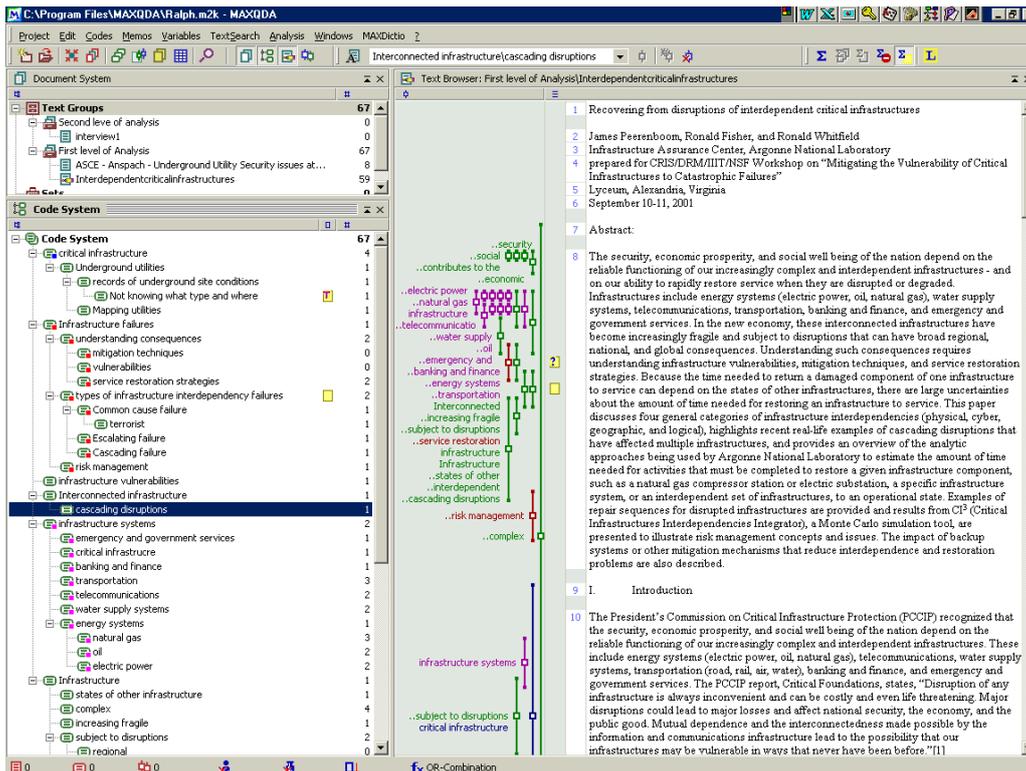
The following sections will briefly describe the key process, e.g. for importing documents for qualitative data analysis, adding attributes to documents (variables), coding documents, developing a coding system, using word frequencies, stop-lists & go-lists, using memos and changing weightings on code segments, and using the activation/retrieval feature.

### ***Importing documents for qualitative data analysis***

Importing documents is a relatively easy task provided that documents are in a Rich Text Format (RTF). This product does not deal with other formats and is confined to analysing text documents only.

Once the document has been imported, the file name appears in the Document System and document itself can be viewed in the Text Browser (see Figure 1). This document then can be re-organised in a document hierarchical structure that is meaningful to the researcher. The researcher needs to be aware when forming these hierarchical structures for the documents that this feature allows more scope (e.g. through 'activation' feature) for searching, analysing and assigning codes, writing memos and identify key variables.

Moving between documents was easy and only required a double-click in the Document System on a file name to change the view in the Text Browser.



**Figure 1: An example of MAXQDA setup showing the text browser, code system and document system**

### **Adding attributes to documents (variables)**

Figure 2 is a simple example of a 'table of variables' window where the researcher has added to the documents an additional variable (document attribute), 'Country', to be used later when the researcher examines the views/responses based on Country of origin. Examples suggested in the manual centred around the ability to distinguish the person being interviewed (e.g. gender) and/or specific observations relating to the field of study.

The screenshot shows the 'Variables' window in MAXQDA. The window title is 'Variables' and it contains a table with the following data:

Textgroup	Country	Textname	Creation Date	Number of Coded Segments
First level of Analysis	USA	ASCE - Anspach - Undergrou...	25/04/2004 8:26:	6
First level of Analysis	USA	Interdependentcriticalinfrast...	1/02/2004 10:14	39

At the bottom of the window, there are 'Export' and 'Close' buttons.

**Figure 2: An example of a table of variables assigned to documents**

These variables can be assigned to the documents before any textual analysis has been done and as the qualitative analysis progresses. Later on in the research process the researcher can export the table for further data analysis in applications such as SPSS and MS Excel.

## ***Coding and developing a coding system***

This product provides for the creation of codes in a number of ways (for example):

- by in-vivo (highlighting a section of text and clicking the in-vivo button)
- creating it directly in the code system (clicking the new code button)
- using the text search function and utilising the code function

The use of the in-vivo feature limits the number characters displayed in the code system (you can go in later and edit the code to display the full title if necessary). This encourages researchers to limit the number of characters in a code (simplifying searching, displays, etc). In the case of in-vivo coding, the text segment is allocated automatically. When creating a new code manually, and with in-vivo codes, you are able to attach highlighted text segments to these (only requires dragging the cursor over the desired text in the text browser and then holding down the left button of the mouse to drag and assign the text to the code). In the case of searches, you need to designate the extent of the text segment (word, paragraph or to include adjoining paragraphs) to assign to the code.

Codes generated are placed in the 'Code System' window (see Figure 1). When codes are first generated, they are placed on the highest level of the code hierarchy. This product allows 10 levels of code hierarchy. Sub-codes can be created by dragging the code to a established sub-code level, or as described earlier, holding down the shift key and dragging the code over the code for which the researcher wants it to be subordinate to.

Codes can be copied by holding down of the control key and dragging the code to create a another in the code system.

These and many other product features make the coding process easy and flexible.

One improvement I would suggest to the developers of the product is to improve the clarity of the text in the code sector (first column) within the text browser which provides a link between the code and what text had been assigned to it (see Figure 1) so that it isn't necessary to use other features to see what has been done. For example (1) placing the cursor over the code symbol and a highlight box appears providing details on the code or (2) changing the colours of the code symbol to distinguish between them.

## ***Use of word frequencies, dictionaries (e.g. stop-lists & go-lists)***

This feature is part of the MAXDictio plug-in and provides a simple tool to examine word frequencies (see Figure 3), create stop-lists (words not relevant to the analysis, see Figure 4) and go-lists (specific words of interest).

It is claimed that this provides access to an additional explorative aid for evaluation of the text and this is true. As a researcher, the plug-in feature integrated seamlessly with the main product when carrying out the process of coding and textual analysis and as such, should be standard feature rather than an addition plug-in that needs to be purchased.

The concept of developing dictionaries based on this analysis (e.g. common language used) is a powerful tool for coding on the basis of word-based dictionaries. The structure of the dictionary is based on allocating search items (single words or group of words) within a category (meaningful groups for exploring specific words of interest). These can be activated or deactivated and provide flexibility in the use of the MaxDictio Coder for exploring the frequency of search items within documents and coded text segments.

Word	Word Length	Frequency	%
infrastructure	14	65	2.26
infrastructures	15	49	1.7
utility	7	29	1.01
outage	6	28	0.97
critical	8	27	0.94
gas	3	24	0.83
natural	7	23	0.8
utilities	9	22	0.76
time	4	22	0.76
pipeline	8	18	0.63
information	11	17	0.59
failures	8	16	0.56
data	4	16	0.56
quality	7	15	0.52
service	7	14	0.49
security	8	13	0.45
level	5	12	0.42
duration	8	12	0.42
interdependencies	17	12	0.42
systems	7	11	0.38
national	8	10	0.35
oil	3	10	0.35
probability	11	9	0.31
estimates	9	9	0.31
restoration	11	9	0.31

Figure 3: Example showing word frequencies (excluding words from “Stop-lists”)

Excluded Words
difficult
e
each
example
existing
figure
following
for
four
from
g
general
has
have
hrs
i
in
include
is
it
its
less

Figure 4: Example of a Stop-list

### Changing weightings on code segments

Weighting scores, also referred to as relevance scores, can be assigned to any text segment linked to a code. The weighting is on a scale of one to 100 with one being the most relevant. This can be done in different ways and the example below (Figure 5) is a summary of coded segments which includes a column providing the weighted score. By double-clicking in the column, the weighting can be edited. This feature is very useful and can assist the researcher to focus on ideas that are more relevant to the research question (enabling the researcher to use their time more effectively and set priorities for further investigation/analysis).

Text	Code	Begin	End	Weight Score	Preview
First level of Analysis[Interdep...	infrastructure systems}emergency and government s...	8	8	80	emergency and government service
First level of Analysis[Interdep...	Infrastructure failures}risk management	8	8	80	Examples of repair sequences for di
First level of Analysis[Interdep...	infrastructure systems}energy systems}electric power	8	8	80	electric power
First level of Analysis[Interdep...	infrastructure systems}energy systems}electric power	35	39	80	Electric PS ompressor torage and Pe
First level of Analysis[Interdep...	infrastructure systems}energy systems	8	8	80	energy systems
First level of Analysis[ASCE - ...	infrastructure systems}energy systems}natural gas	8	8	80	Gases and other contaminates can l
First level of Analysis[Interdep...	infrastructure systems	8	8	80	Infrastructures include energy syst
First level of Analysis[Interdep...	Infrastructure}increasingly interdependent systems	8	8	100	This paper discusses four general c
First level of Analysis[Interdep...	infrastructure systems}transportation	8	8	100	transportation
First level of Analysis[Interdep...	infrastructure systems}banking and finance	8	8	100	banking and finance
First level of Analysis[Interdep...	critical infrastructure	49	49	100	Because the critical infrastructures .
First level of Analysis[Interdep...	Infrastructure	8	8	100	Because the time needed to return
First level of Analysis[Interdep...	Infrastructure}states of other infrastructure	8	8	100	Because the time needed to return
First level of Analysis[Interdep...	Infrastructure failures}types of infrastructure interde...	23	23	100	Cascading failure
First level of Analysis[Interdep...	Infrastructure failures}types of infrastructure interde...	25	25	100	Common cause failure
First level of Analysis[Interdep...	Infrastructure}contributes to the nation's well being}...	8	8	100	economic prosperity
First level of Analysis[Interdep...	Infrastructure failures}types of infrastructure interde...	24	24	100	Escalating failure
First level of Analysis[Interdep...	Infrastructure failures}types of infrastructure interde...	22	25	100	Failures affecting the interdepende
First level of Analysis[Interdep...	Infrastructure}increasing fragile	8	8	100	In the new economy, these intercor
First level of Analysis[Interdep...	Interconnected infrastructure	8	8	100	Infrastructures include energy syst
First level of Analysis[Interdep...	Infrastructure}subject to disruptions	8	8	100	Infrastructures include energy syst
First level of Analysis[ASCE - ...	critical infrastructure}Underground utilities}Mapping u...	17	17	100	Mapping utilities

Figure 5: Code segments assigned a weighted score

## Use of memos

Memos are useful whenever you want to write notes and keep track of ideas on codes, text or any theories that the researcher wishes to develop. Figure 6 represents an example of a memo dialog box that is attached to a code. Memos can also be attached to text. They can be identified using different versions of yellow boxes, see Figure 1. The different versions of

yellow boxes allows the researcher to visually define the type of memo, for example

represents theoretical memos or ideas for theoretical sample. This is important if the researcher is working according to, for example, grounded theory.

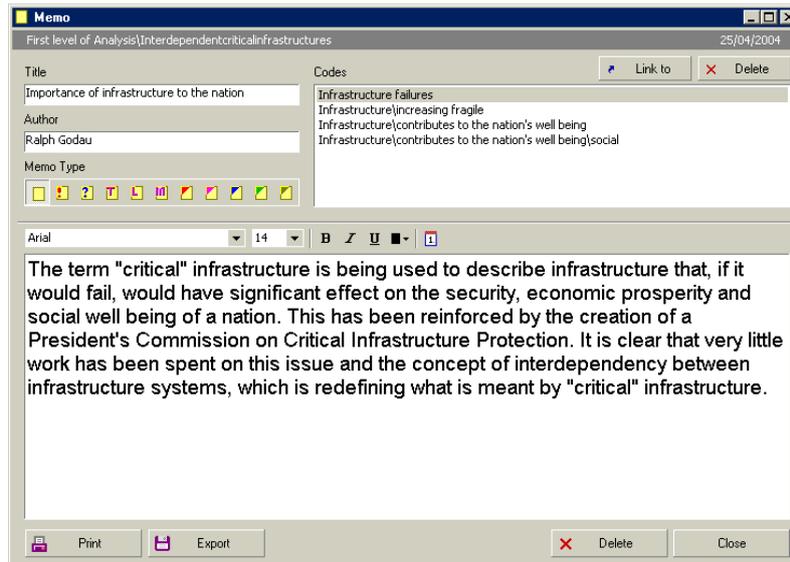
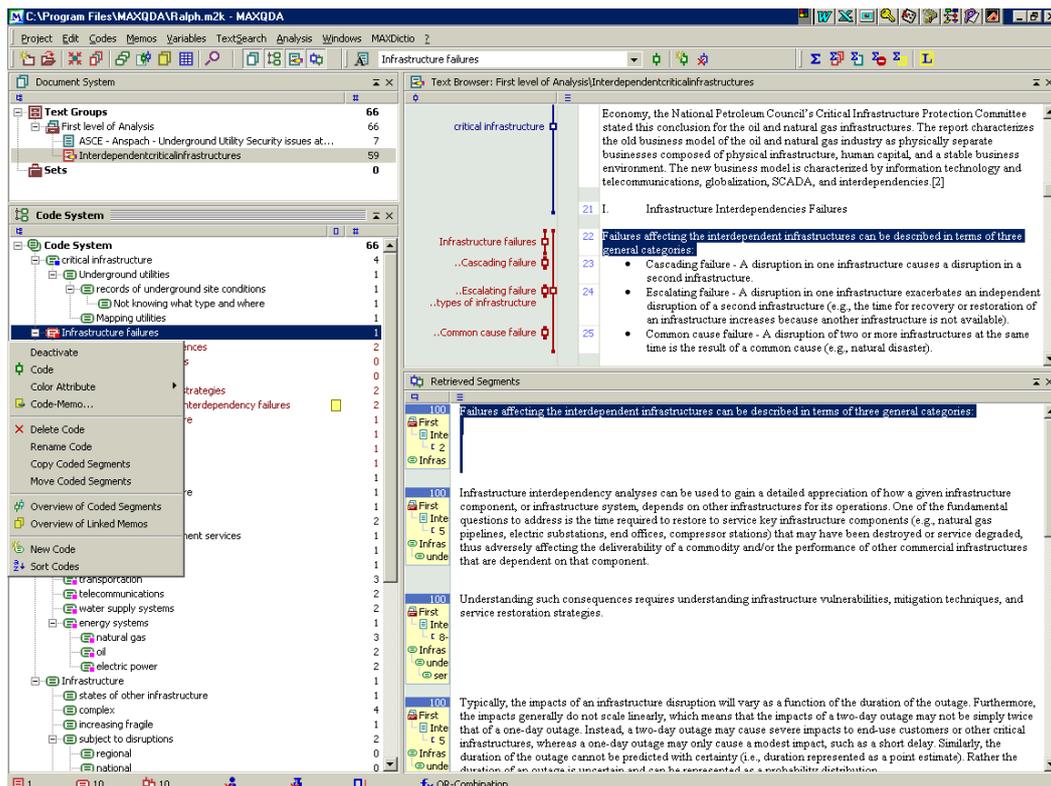


Figure 6: Example of a memo (attached to a text segment)

Once the researcher has prepared a number of memos they can be tracked and explored utilising the memo manager (which provides a list and summary of memos). They can be grouped into the various versions of memos, authors, dates, etc.

## Utilising the activation/retrieval feature

When the cursor is placed over the document or a code and by clicking the right hand button, a menu pops up that includes a activation/deactivation button that allows separation of text associated with the selected codes and documents through the retrieved segment window (refer to Figure 7). The activation feature allows examination of specific themes or concepts across one or more documents.



**Figure 7: A similar example of MAXQDA setup as shown in Figure 1 but includes the retrieved segments and shows the highlighted codes that have been activated.**

## Summary

MAXQDA & MAXDICTIO is a product that deserves consideration from those whose focus is on analysing reams of textual information and seeking to develop a hierarchical representation (a useful coding system) that reflects what is being analysed. The product features allow extensive flexibility in coding, searching, writing memos and content analysis to generate meaningful interpretations.

Although this review only examined the main features of the product there were considerably more features that were not discussed.

This product is simple to use and learn, and provides a level of textual analysis that would be preferred by those who can associate better with textual and hierarchical based analysis than through the construction of visualisations or semantic networks (mind mapping).

## References

Kuckartz, Udo. *MAXQDA: MAX Qualitative Data Analysis Reference Manual*. VERBI GmbH, Berlin, 2001.

Kuckartz, Udo. *MAXDICTIO: Add-On Module for Qualitative Content Analysis*. VERBI GmbH, Berlin, 2003.

*MAXqda - Software for qualitative Data Analysis*. VERBI GmbH. Last update 22.04.2004, downloaded from [www.maxqda.com/maxqda-eng/preise.htm](http://www.maxqda.com/maxqda-eng/preise.htm).

### Author Background: Dr. Ralph I Godau



Ralph graduated from RMIT University in Civil Engineering (1976) and continued his education by completing a postgraduate studies in Business Administration (1984), Masters in Systems Engineering (1995) and a Graduate Certificate of Tertiary Teaching & Learning (1997). Ralph completed his PhD at RMIT University in 2003 on Infrastructure Management. Ralph has been actively involved in facilitating learning at RMIT University for over 9 years and is currently a sessional lecturer in Masters of Engineering Management program.

Ralph is Manager, Asset Services at the City of Brimbank where he focuses on the strategic development of asset management that supports the delivery of services to the current and future generations of the Brimbank community.

Email: [ralphgodau@optusnet.com.au](mailto:ralphgodau@optusnet.com.au)