ATLAS.ti 6
Distinguishing features and functions

This document is intended to be read in conjunction with the 'Choosing a CAQDAS Package Working Paper' which provides a more general commentary of common CAQDAS functionality. This document does not provide an exhaustive account of all the features and functions provided by ATLAS.ti 6 but is designed to highlight some of its distinguishing elements. The Comment section at the end details our opinions on certain aspects of functionality and usability. See also Lewins & Silver (2007) *Using Software in Qualitative Research: A Step-by-Step Guide*, Sage Publications.

Background   http://www.atlasti.com

ATLAS.ti was initially developed by Thomas Muhr at the Free University, Berlin. ■ Subsequently 'Scientific Software Development GmBh' was formed which continues to develop and support the software.

Minimum System Specifications (recommended by developer)

Processor : Intel /AMD 1GB (minimum), Intel Dual Core 2MB (recommended)
Platform : MS Windows XP or Vista (will work on an Intel Mac with Boot Camp or Parallels)
RAM : 500MB (minimum), 2GB (recommended)
Free Disk Space : 50 MB free disk space (minimum & recommended)

Structure of work in ATLAS.ti 6

ATLAS.ti 6 functions using an external database system. ■ The 'Hermeneutic Unit' (HU) is the executable file containing all the project information ■ Data files (documents) are held externally and assigned (linked) to and viewed through the ATLAS.ti interface ■ Functions operate from main menus and 'manager' drop-down menus : Documents, Quotations, Codes, and Memos. These can be accessed through floating Manager windows. ■ Quotations or selections of text are objects in their own right unlike other similar software programs. This enables flexibility in the independent use of quotations in lists, networks (maps), hyperlinks and output. None of these depend on coding functions.

Figure 1. User interface of ATLAS.ti 6, with margin area showing types of object possible to display
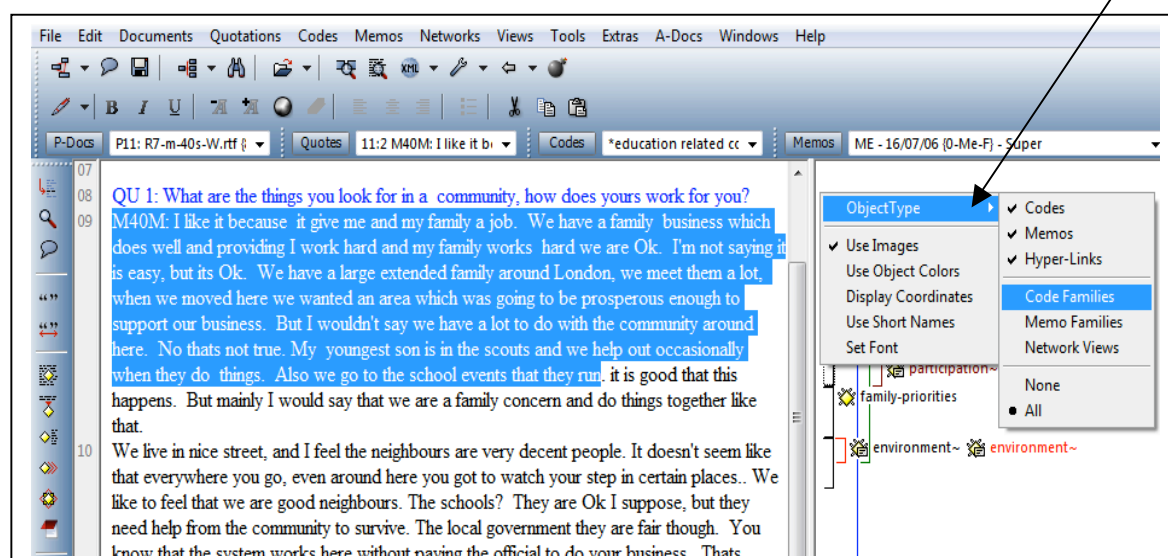
Data types and format in ATLAS.ti 6

Textual Formats : Text only (.txt), Rich text format (.rtf), MS Word (.doc) or Portable Document Format (.pdf) ■ RTF documents can be edited from within ATLAS.ti. Other objects (such as graphics, tables etc.) can be embedded into RTF documents. ■ MS Word and PDF documents cannot be edited after being assigned to the HU. ■ Multimedia formats : Digital video, sound and graphic files can be directly assigned to the project and treated in similar ways as textual formats. ■ Formats include: .jpg, jpeg, .gif, .bmp .wav, AVI Video, .mpg .mpeg, .mp3. See developer information for complete list ■ Google Earth files: you may also create a document in ATLAS.ti from KML or KMZ (Keyhole Markup Language). KMZ files are zipped KML (Keyhole Markup Language) files, which will start Google Earth and fly you to a specified location. Google earth functionality is thus enabled from within the ATLAS.ti interface.

Closeness to data and interactivity in ATLAS.ti 6

Quotations are independent objects in ATLAS.ti in that selections of data can be marked and listed separately; they do not have to be coded to be retrieved. The independence of quotations is a central functionality of the software ■ Whether coded or not, navigating around quotations always locates them in the source context ■ Quotations can be created in any document type (for example, audio, visual and Google Earth^{TM} files as well as textual formats). This enables individual clips of sound or video to be played and worked with in isolation of a written transcript ■ The margin view is fully interactive. Highlighting a code/hyperlink/memo in the margin will display the linked quotation. Objects can be accessed and edited from the margin view. ■ Full Interactivity exists within the network view and between all project objects (documents, quotations, codes, memos and networks).

Coding schema in ATLAS.ti 6

In its main listing and structure the coding schema is visually non-hierarchical and can be sorted in several ways. ■ Families of codes enable short-cut groupings of codes. Any code can belong to any number of families. Filter work to a code family to view or generate output on an aspect of the coding schema. Create Super families from combinations of families. ■ Link codes to one another to impose structure on the coding schema. View links in a network or the Object Explorer but not in the main codes list. Search for coded quotations based on the properties of links between codes.

Coding Processes in ATLAS.ti 6

Drag and drop codes onto clips in multimedia documents or Google Earth documents in the same was as onto highlighted text. Use the range of coding shortcut icons. ■ Code to multiple codes simultaneously. ■ Codes and memos can be edited from the margin view.

Basic Retrieval of coded data in ATLAS.ti 6

Navigate around coded data to view quotations in source context. Textual quotations are highlighted, multi-media quotations are played back. ■ Filtering to families of codes and/or documents focuses the view for internal retrieval or output purposes ■ Lift quotations out of context by outputting ■ The margin display provides an overview of how documents are coded in their entirety but can be filtered in various respects. ■ Code families, hyperlinks and memos linked to quotations can also appear in the margin. The user chooses what to display. Easy print of data with margin displayed alongside. ■ Retrieving a coded Google Earth quotation, as with current functionality for audio visual and graphic coding is possible while in the software, but not in an exportable format.

Data organization in ATLAS.ti 6

Organizing whole documents for the purpose of filtering to subsets is achieved by creating short-cut groupings, known as Document Families (e.g. socio-demographic groupings such as gender, age-group, marital status, etc). Functionality replicates that for organizing codes and memos. ■ The Super-family tool allows combinations of families to be created. Such super-families are dynamic so that as e.g. new

documents are added to the original Families the super-families automatically update themselves. ■ Basic document family structure can be affected via a table import.

Writing tools in ATLAS.ti 6

ATLAS.ti allows the user to write in many different places. ■ Memos are a main object at the same level as documents, quotations and codes. ■ The content of several memos can easily be outputted into one file ■ Memos can be linked to quotations, codes and other memos. Links created between memos and other objects are functional in that visualising them in a network view will illustrate any other linked items.

Searching and interrogating the database in ATLAS.ti 6

Filtering to combinations of (document and code) families can happen inside and outside the Query tool. ■ In addition, the Co-occurrence Explorer Table provides an interactive matrix of codes which overlap or share the same quotation (see figure below). ■ Within the Query tool, various proximity and Boolean operators provide alternative ways to interrogate the dataset. In addition 3 semantic operators allow retrieval based on certain types of links made between codes ■ Supercodes are uniquely saved queries but are listed as codes. Just double clicking on a supercode will re-run the query on up to date data. They can be constituent codes in another query, which itself can become a super-code, thereby enabling easy up to date navigation around complex combinations of coded data. Supercodes can be created at any stage of work ■ Snapshot supercodes capture a search at a specific point in time. Supercodes can be combined with other codes in the formulation of an even more complex 'query'. ■ View co-occurring codes in a network or listed in the query tool; visualise any code which overlaps or coincides with the original selected code. ■ The object crawler allows searching for strings across the entire HU; in documents, codes, memos, networks and comments. ■ The word cruncher counts the occurrence of words across the whole dataset, or a single document. Results can be saved into an exported spread sheet file or pasted into a memo. ■ Auto coding processes provide immediate contact to the string in its surrounding context. Several different units of context can be autocoded around each find, including the sentence. ■ Certain relational links created between codes function as semantic search operators in the Query tool, retrieving e.g. everything connected to a code via a series of uni-directional transitive links.

Figure 2. Two separate co-ocurrence tools **a)** A network based on one code "environment" showing with two clicks, all other codes which overlap with it **b)** Interactive Co-occurrence –shows all, or selected Codes and drop down quotations involved in co-occurrence
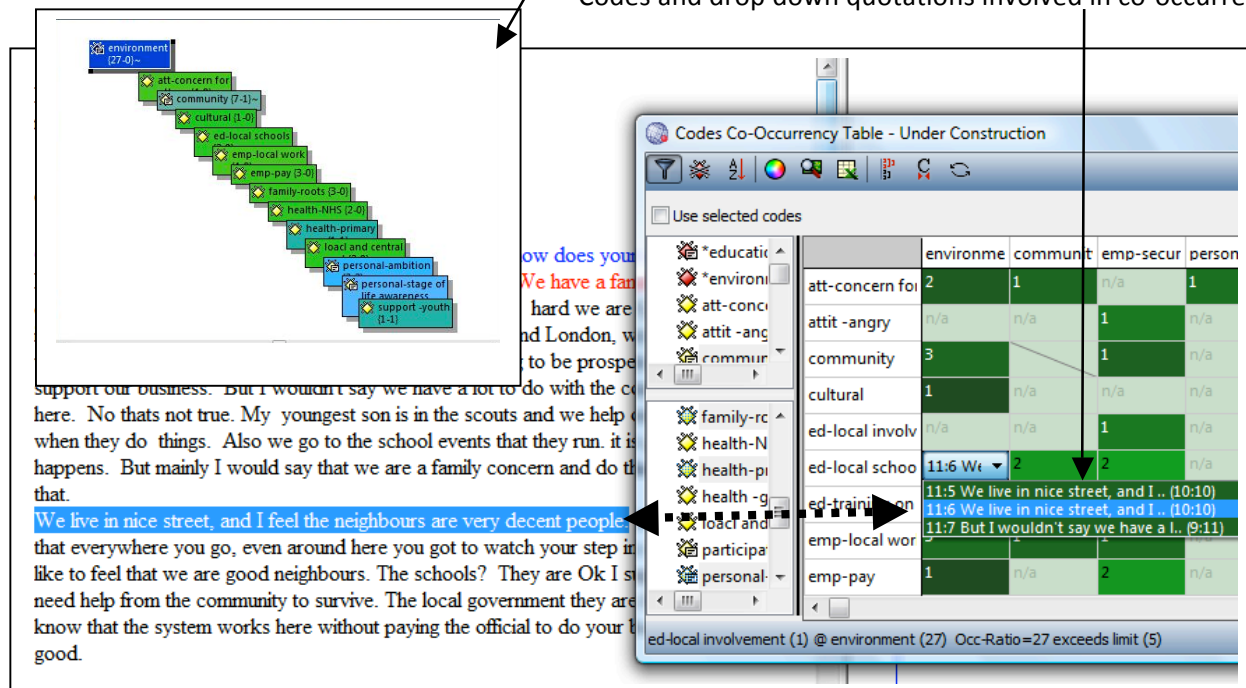
Linking devices in ATLAS.ti 6

Linking is very flexible in that almost any project object can be linked to any other. ■ Linking is usually functional in that subsequently opening a network on a linked object will automatically show other objects linked to it. ■ Effective hyperlinking between points in the data is enabled due to the centrality of the quotation. This allows the tracking of sequence or process within or between data files without abstracting to the coding level. User defined relationships can be created between hyperlinked quotations.

Visual tools in ATLAS.ti 6

Functional and graphic links between objects can be created in the networking tool. ■ Hyperlinks between quotations can be created and visualised in networks. ■ Links between any codes are meaningful and enduring, in that wherever two or more of the same linked codes appear in any network view they will be linked in the same way. ■ Links can be made and visualised between all the four main objects i.e. documents, quotations, codes and memos. Consequently ideas can be visualised and organised in multiple ways

Output in ATLAS.ti 6

Vary output to produce summaries including lists of codes and how they are connected to other codes. ■ The whole HU can be exported into an SPSS, html or xml file. This allows navigation around the project by the non-users of ATLAS.ti5.

Team-working in ATLAS.ti 6

Separate team members can share data files due to the external database system. ■ Merge tool allows many different models and choices in merging HU's.

Comments on ATLAS.ti 6

Flexibility - different ways of working to suit different purposes. Functionality does not rely on code and retrieve yet if that is all the user needs it is very easy to get to that point. The flexibility provided by the quotation structure and the ability to hyperlink between places in the data without abstracting to the coding level is useful. If used extensively the user must come up with ways of managing these linkages.

Support for pdf format documents (new to ATLAS.ti6) is highly developed and provides a completely accurate representation of the pdf and its layout, images etc. This is most useful if the exact format of the pdf is important for the researcher in respect of the analysis.

Google Earth^{TM} (GE) is embedded within ATLAS.ti6 (new to ATLAS.ti6). enables GE functionality to be accessed from within the ATLAS.ti interface. This provides a different way of working with geo-references than provided by other packages. Live navigation around GE through ATLAS.ti and/or create snap-shots of locations to use as primary documents. The creation of snapshots, though not providing live functions of GE within ATLAS.ti will provide a more stable incorporation of the relevant GE image.

Excellent co-occurrence Table Explorer (new to ATLASti6 Build23). This provides an easy way, without building a query to find the co-occurrence of any code with any other code in the data – easy dialogue box for varying options.

Managing the project requires care because of the external database structure. The process of saving and moving the HU and data is slightly more difficult to manage than in other packages, although the Copy Bundle function in the Tools menu makes this process easier. If editing data files within the HU, care needs to be taken in the management and diligent saving of changes. Difficulties may relate to the synchronisation of changes between data files and the HU.

Main working code list (Codes manager) does not have a functioning hierarchical structure to choose from, though it is possible to create code connections and collections of a hierarchical nature. To some users this is an attraction because they feel restricted by hierarchies. To others it lacks choice since visually hierarchical structures can provide a way to systematically 'tidy up' a codes list.

The Query tool : some search operators have very precise parameters and the user must be aware of these to read results and their implications reliably. For simple queries it is easy to use but it lacks the ability to integrate searches for text with searches for coded data.

Unique Supercodes function (via Query tool) is an economic and efficient way to remind, pose questions or build hypotheses. They provide the easiest way to re-run simple or complex searches. The presence of supercodes in the codes list is a constant reminder of previously posed queries which facilitates continuity and rigour.

The network tool is very flexible in that any object can be linked to anything else. The software remembers the links between any two codes, so the user needs to be sure the connection remains relevant, or use proxy codes to illustrate an abstract model*.*

Integration of quantitative or descriptive data with qualitative data is only possible via table imports to categorise whole documents. ATLAS.ti does not have the range of faster ways to integrate quantitative data with structured qualitative data that other packages have - e.g. for open ended questions. Such integration is possible but will be more step by step unless the data extracted from the Survey is organised into documents based on the respondent rather than by question.

Word cruncher has no KWIC: compared to other software the word frequency tool is rather basic and not interactively connected to words in context.

Significant new tools will be added for multimedia via subsequent free updates

Further Reading
• Lewins & Silver (2007) *Using Software in Qualitative Research: A Step-by-Step Guide*, Sage Publications (uses an ATLAS.ti project as worked example)   • Lewins, A. (2008) 'CAQDAS: Computer Assisted Qualitative Data Analysis' in (ed) N. Gilbert, **Researching Social Life** (3rd ed), Sage, London   • Silver, C., & Fielding, N. (2008) 'Using Computer Packages in Qualitative Research', in Willig C & Stainton-Rogers W (eds.) **The Sage Handbook of Qualitative Research in Psychology**, London, Sage Publication (uses an ATLAS.ti project as worked example)   • Corbin J & Strauss A (2007) **Basics of Qualitative Research**: **Techniques and Procedures for Developing Grounded Theory - 3rd Edition,** Sage Publications, London   • Gibbs, G. (2007) **Analysing Qualitative Data**, part of the Qualitative Research Kit, ed. U. Flick, Sage, London   • di Gregorio, S & Davidson J (2008) **Qualitative Research for Software Users**, McGraw Hill, Open University Press, UK (uses an ATLAS.ti project as worked example)   • Carmichael, P. (2002) **Extensible Markup Language and Qualitative Data Analysis** Forum Qualitative Sozialforschung / Forum (FQS) Volume 3, No. 2 – May 2002