

HyperRESEARCH™ V.2.8 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 HyperRESEARCH 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.researchware.com>

HyperRESEARCH was first developed in 1990 by Sharlene Hesse-Biber, T. Scott Kinder, and Paul Dupuis in Boston, Massachusetts, USA. From 1991 HyperRESEARCH has been developed by their company ResearchWare Inc. who continue to develop and support the software. In 2005 ResearchWare Inc. launched HyperTRANSCRIBE™, a tool for transcribing audio and video files. Both HyperRESEARCH and HyperTRANSCRIBE are available for Apple Macintosh and Windows platforms. This chapter reviews version 2.8 of HyperRESEARCH.

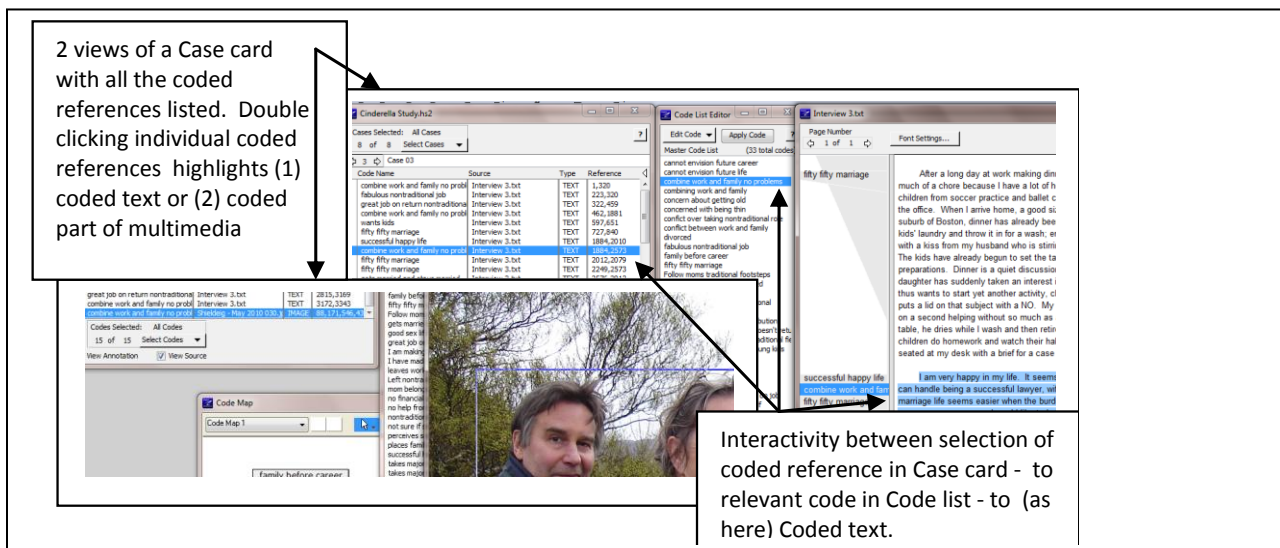
Minimum System Specifications (recommended by developer)

Cross platform, Macintosh and Windows platforms
 MS Windows 95 or later, Mac OS X 10.2 or later, 41 Mb free disk space

Structure of work in HyperRESEARCH 2.8

The project as a whole is called a Study. ■ The database is ‘external’ in that source files are accessed by the Study, but not contained within it. ■ Case structure: a study is comprised of Cases which can refer to one source data file or many. A file may belong to several different cases. The case structure functionality is quite different from other packages reviewed here. For example, the Case card lists coded references for each case separately. ■ Functions operate from Main Menu options. Panes open as free standing windows which can be resized and moved around the workspace as required.

Figure 1. HyperRESEARCH 2.8 The User Interface – the Case card and hyperlinks to text and multimedia data



Data types and formats in HyperRESEARCH 2.8

Textual formats - Text Only. Font settings (typeface and size) can be customized in the text source file and reports windows. ■ Multimedia formats - digital video, sound and graphic files can be directly assigned to the study and treated in similar ways as textual formats - formats include . jpeg, .wav .avi, mov, .mpeg, .mp3. See developer information for complete list. ■ It is necessary to have the latest version of Quicktime installed if using multimedia data.

Closeness to data – interactivity in HyperRESEARCH 2.8

Case cards provide contact between the study and source data files. ■ Hyperlinks connect annotations, case card coded references etc. to source file position (one click) whether the file is textual or multimedia (e.g. the coded video clip will replay as the reference is selected). ■ The coded margin display is interactive, and reports containing references to coded passages are hyperlinked back to source while viewed in the software.

Coding Scheme in HyperRESEARCH 2.8

The coding schema is not hierarchical and codes are listed alphabetically ■ Codes can be grouped by labelling (using prefixes keeping certain codes together) or via the Code Map feature. ■ Code Maps allows user defined collections to be made and thereafter code selections, filtering (and reports) can be made from those starting points.

Coding processes in HyperRESEARCH 2.8

Coding data at a Case Card – when the relevant case card plus the relevant part of correct source file is selected (i.e. on view), codes are assigned to selected text or parts of multimedia by menu selection, double clicking on a code or keyboard shortcuts. The interactive coding reference appears in the Case Card of the case that is selected. ■ Single clicking on the reference will open the relevant file and highlight coded text with a margin display which shows codes that are present with accompanying span indicator to indicate where codes are sitting in data See Figure 1. ■ Coding multi-media data - codes can be applied to parts of graphic files, or to clips of audio / video files. Coded multi-media segments are listed in the corresponding Case Card similar to textual references. A single click on a coded reference in the Case Card replays the coded clip.

Basic Retrieval of coded data in HyperRESEARCH 2.8

Cases can be selected based on various simple to more complex criteria (e.g. on the basis of the case name or the presence, absence, or proximity of codes appearing in a case). ■ View coded segments in context by selecting individual coded references in the case card. ■ Filter to view only codes that have been selected by name of code, or by Criteria e.g. a code's presence or absence in a case, or its inclusion with other codes in a case. ■ Any selection criteria can result in new files of coded passages for export by using the report builder (see below).

Organisation of data in HyperRESEARCH 2.8

Basic organisation happens at a) the case level or b) by coding: a) by case - different source files can be linked to one case e.g. because they concern one individual b) by coding - segments of source material (however small) can also be categorized by coding to enable selection and filtering the presence or absence of codes, e.g. socio-demographic categories, anywhere in a case. ■ Subsequently simple use of the hypothesis tester allows the assignment of codes (Themes) to whole cases to act as another filtering or organizing device (see below).

Writing tools in HyperRESEARCH 2.8

Comments can be attached to coded references on each case card and these annotations are flagged in a column next to the relevant coded reference – they are hyperlinked (one click) to both the text of the annotation and the source file position. In reverse, clicking on a code in the margin opens up any annotation at that coded reference in the Case Card. Annotations can be included in output reports on coded data etc.

Searching /Interrogating the dataset in HyperRESEARCH 2.8

Searching happens by a process of incremental filtering or selecting combinations of codes and/or cases. ■ Codes can be selected by name, by criteria (inclusion, overlaps etc), by Code Map or by specifying and running a hypothesis (see below). Coded references listed in Case Cards reflect the selection. Similarly, cases can be selected on the basis of name, code, or criteria; cases which do not satisfy the specified criteria are filtered out of view within the software. ■ Data associated with any current selection can be output via a report. ■ Complex searching might be incrementally based on several progressive selections e.g. a selection of codes applied to an already filtered case list or vice versa (see also section on Output). ■ The Hypothesis Testing Tool allows the user to formalise and save searches. This may help to determine whether coding supports any assumptions and inferences - e.g. in testing the existence, co-existence (or not) of codes in cases allows adding a higher concept (Theme) to whole cases or the building of rules in order to progressively test elements of a whole hypothesis based on presence/absence etc., of codes. Hypotheses can be saved and re-run on newly coded data. ■ Themes applied to cases at each rule stage can then act as filters to allow navigation through Cases in which they do or do not appear and can act as criteria for building retrieval, reports, or further hypotheses. ■ The Code Map view allows the creation of connections between codes. Individual codes can be selected from the code map in order to retrieve coded data segments which are at a specific level of connection based on the links between codes made in the map. For example, select all codes within 1 or 2 etc levels of connectivity (i.e.1= immediately connected to selected code or 2= connected at one remove etc.). ■ Auto coding allows searching for words or phrases and for resulting ‘hits’ to be coded. Context around hits to be coded to include specified numbers of words or characters before and after hits, or the whole file - sentences not recognised. Search settings can be saved and reloaded (and amended) for future searches.

Figure 2 HyperRESEARCH 2.8 : Report tool : coded retrieval – hyperlinked to source text

Main output of retrieval in report reflects criteria of current selections seen in main user interface

Hyperlinks to source text included in Reports at each listed segment (one click) to source text.

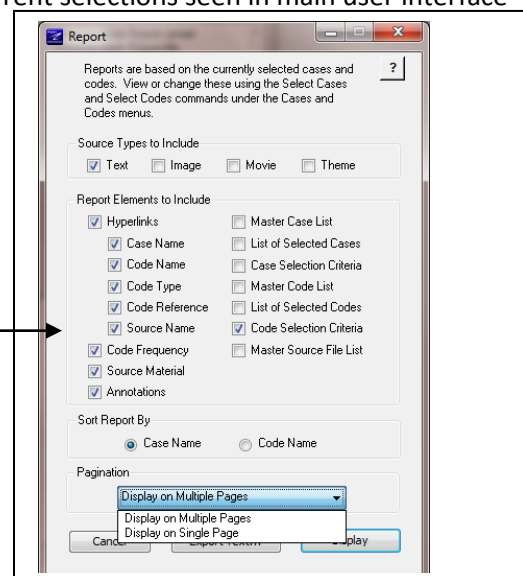
Case Reference	Code	Source	Frequency	Type
Case 02	combine work and family no problems	766,397	1	TEXT
Case 02	explicit concerns and worries	256,262	3	TEXT
Case 02	explicit concerns and worries	514,637	3	TEXT

Source Material:
At forty years old I am very content with my life. I am enjoying a very successful career but most importantly, I have a close, loving family. I haven't given up anything that is important to me and I have stuck by my convictions.

Source Material:
concern

Source Material:
although a career is important, the family should be one's first priority. I feel that men and women are equal. However, I

Report building dialogue box – allows user to select various aspects for inclusion, and to save settings (the incremental nature of case and code selection means that settings often need to be saved).



Output in HyperRESEARCH 2.8

Reports of coded retrieval are initially viewed within the software and any included data segments are hyperlinked back to source files. The report builder includes large range of options for inclusion and is always based on current status of selection in software, on codes /cases -see Figure 2 . ■ Output can be ordered by case or code: when sorted by case all the code references (based on the selection) will be listed for first one case, then the next etc. Source material i.e. the coded data for those references may also be included, as well as annotations, etc. ■ Sorting by code will provide e.g. all of the coded segments (if source data is requested) for the first code across all cases, then the next code etc. ■ Reports are exported as plain text files. Hyperlinks will only work while viewing reports still on display inside the software. ■ Coded references to multimedia files will appear in exported reports, but not the actual clip of e.g. the audio visual file. While in the software however, clicking on any hyperlinked coded reference in the report will replay the clip. ■ Report parameters - the way a report is specified can be saved and loaded again. The information saved includes the original code and case selections, as well as the information you wished included in the report. ■ Code Matrix: code frequency across cases can be exported as delimited files (for any statistical package, including Excel) ■ Code Map - multiple maps incorporating linked codes and the placing of memos and images can be exported.

Teamworking HyperRESEARCH 2.8

Merging study files in HyperRESEARCH is a manual process. You can merge two (or more) studies by copying and paste cases into one study file, thus creating a master file for hypothesis tests, report (search) settings and codes lists can be saved as files and easily shared between studies.

Comment on HyperRESEARCH 2.8

***Cross platform** - the availability of versions for both Apple Macintosh and Microsoft Windows provides analytic options for a wide number of users. HyperRESEARCH belongs to a very small body of software for qualitative data analysis specifically written and kept up to date for Mac users.*

***User interface** - the software is simple to use at one level because there are few possible windows to have on display. Unlike other software packages there are a limited number of ways of initiating and doing each action. This also means however that there are fewer shortcuts. This tends to result in a more step by step feel about the software which will appeal to some because of its simplicity. There is good interaction between panes.*

***The unit of the analysis** is the 'case' not the file, this may or may not appeal to users, since the opposite is the default for most other packages. Any number of files (or just one) can be referenced to a case (or to any number of cases, so email, chat, interview data, photographs) can all apply to one person or a case, just because they are linked by one reference in the case card. Alternatively it would be possible for instance for the 'chat' to belong to more than one case. At one level, the case structure of HyperRESEARCH makes a complex issue really easy. At another level it is a little slippery when starting out, because files are not 'hard wired' to cases so that when in coding mode the user must always be aware what case is open so that the coding for a source file goes to the correct case card. The same issue makes the process of setting up tasks such as auto coding a little slow since the user has to define which source files belong to each case and which to include on a case by case basis - (though settings can be saved to reduce this set-up for future auto code tasks).*

***Multimedia data and text** - the software integrates direct analysis of multimedia and textual data although it is not possible now to synchronise a transcript with its associated audiovisual file even if transcribed using HyperTRANSCRIBE. This will be available in Version 3.*

The Hypothesis Tester and the 'Themes' which can then be assigned to cases as a result of testing is unusual device (amongst CAQDAS packages) because it formalizes a hypothesis testing process. The fact that further tests and normal case selection for reporting purposes can use the earlier assignment of the themes as criteria underscores the importance of understanding how the case increasingly becomes the unit of analysis (though of course you may only have one file in each case). This and the associated ways of handling incremental analysis is rather different to any other software reviewed here. The processes of simple filtering of cases according to the presence or absence of codes or themes is so much more straightforward than any other package that once again the software recommends itself by its simplicity.

The Code Map is an interesting device. The ability to arrange a code map with connections between codes is not unusual, but the ability to display (and output) only the codes (and associated data) in the main interface directly from a specific arrangement in a map, is completely unique. The different functions here are controlled by mode-oriented icons which rather protract processes. In addition the mode buttons only offer options on a long click (rather than single or double click. This is to be expected when using an Apple Mac- but a small learning obstacle for PC users).

The Report builder is easy and useful and providing the user has understood all the ways to filter for case or code selection - this is a better and easier feature than most other software provide in the context of report and output. Via tick boxes, the user has complete control about how much information is included (and importantly, sorted) in a report. Further, reports provide hyperlinks from clearly label coded segments to source text (one click). This is the same whether the coded segment is included in the report or only the reference to the segment is listed (as in multimedia). This is useful as it provides a broad overview of coded data whilst maintaining easy access to source context. It is important to be aware that the contents of the windows, the report builder and therefore the contents of reports, reflect the current code and / or case selection; inclusion of this detail in a report is important, and because the incremental process of selection is sometimes complex, being able to save the settings of reports is beneficial.

Moving the study - there is no customized way to 'pack up' all the elements of the 'Study' (i.e. the Study file and also all the source files) if for instance if you wish to move the files to another computer. If this is required it is important to practice early on and develop a workable protocol for safely moving work. Having all the files in one upper folder and being able to zip that folder would be one workaround.

Further Reading

- 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
- Hesse-Biber, Sharlene, Paul Dupuis, and Scott Kinder. "Testing hypotheses on qualitative data: the use of HyperRESEARCH computer-assisted software." *Social Science Computer Review* 18.3 (2000): 320-28
- Lewins & Silver (2007) *Using Software in Qualitative Research: A Step-by-Step Guide*, Sage Publications
- 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 Publications