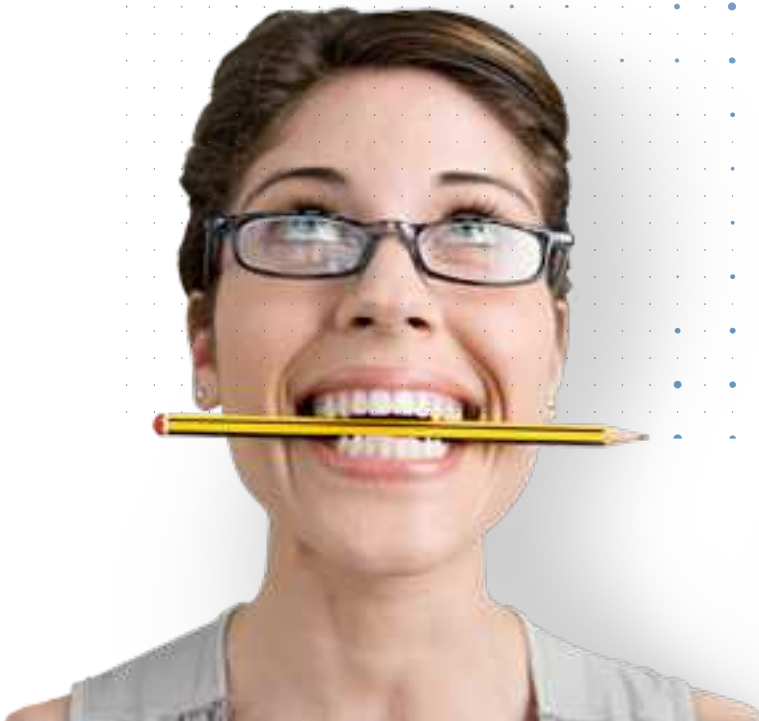


ATLAS.ti 6 User Guide and Reference



Software for qualitative data analysis,
management, and model building.



ATLAS.ti 6 User Manual

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Author: Dr. Susanne Friese (QUARC Consulting)

Realization/Programming: Dr. Thomas G. Ringmayr (www.hypertext.com)

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About this Manual

This manual describes the functions and concepts of ATLAS.ti. Methodological approaches to qualitative data analysis or text interpretation will not be discussed in these pages.

It is not required that you read the manual sequentially from first page to last. Feel free to skip sections that describe concepts you are already familiar with, jump directly to sections that describe functions you are interested in, or simply use it as a reference guide to look up information on certain key concepts.

For users with no prior knowledge of ATLAS.ti, we do, however, recommend that you especially read through the first part of this manual in order to become familiar with the concepts used by ATLAS.ti and to gain an overview of the available functions. These are the chapters: “The VISE Principle” on page 21, “Main Concepts and Features” on page 25 and “Main Workspace: The HU Editor” on page 43.

Further, to set up a project, we recommended that you read about the “Main Steps in Working with ATLAS.ti” on page 38 and “Preparing Primary Documents” on page 71. For all basic-level work like creating quotations, coding, and writing memos, consult the chapters under the main heading: “The Data Level - Basic Functions” on page 181ff. Advanced functions are described under: “Data Analysis and Theory-Building Tools” on page 262ff.

The sequence of the chapters follows the steps that are necessary to start and work on an ATLAS.ti project:

First, the main concepts that ATLAS.ti utilizes are explained; then an overview of all available tools is provided. These introductory and more theoretically-oriented parts are followed by more practically-oriented chapters providing step-by-step instructions. You will learn how to manage your data, how to set up and start a project, and how to prepare and edit documents.

After a project is set up, the basic functions like coding, text search, auto-coding, writing memos, etc. become relevant. Conceptual-level functions like the Network Editor, the Query Tool and Co-occurrence Explorer build on the data-level work (at least in most cases) and are therefore described last.

The chapter “Resources” on page 429 offers some useful advice on how to get support and where to find further information on the software.

How to Use This Manual

This manual is predominantly intended for:

- Those who have no prior knowledge of ATLAS.ti
- Those who have worked with the previous version, ATLAS.ti 5.

There is no need for users with prior knowledge to read through the entire manual. However, we highly recommend that they still read the following sections/chapters:

- “Preparing Primary Documents “, page 71ff, “Working with Internal Documents (for smaller projects containing only text files) “ on page 40; “Data Transcription“ on page 90; “Working with Associated Documents“ on page 97.
- “Data Management in ATLAS.ti“, page 105ff.
- “Setting Up a New Project“, page 112ff.
- “Preparing Google Earth Documents“, page 76ff and “Importing Survey Data “, on page 99 ff (in case this is of interest to you)
- “Suggestions for structuring the list of codes“, page 219ff
- “Co-occurrence Tools“, page 299ff.
- When working in teams, look at the following section: “Team Project Management“ on page 149ff.

You should not expect introductory or advanced information on methodological aspects of qualitative research other than cursory statements from this manual.

Some general familiarity with concepts and procedures relating to the Windows operating system (e.g., windows, mouse) and computing in general (e.g. files, folders) is assumed.

Manual Conventions

Notes:

This paragraph contains a general note that may be of interest or worth remembering.

Tip/Recommendation:

This paragraph contains a tip or recommendation, i.e., something we advise you to make a practice in your work.

Margin notes contain important observations of a general nature.

Caution:

This paragraph contains a warning or caution, i.e., something you should avoid doing or be aware of consequences beyond the action itself.

Instruction:

This paragraph contains an instruction, i.e., something you should follow along and/or execute in the program.

Additional resources/suggested further reading:

Additional information about this topic is available elsewhere, usually online from our web site or some other place on the Web.

Introduction

ATLAS.ti is a powerful workbench for the qualitative analysis of large bodies of textual, graphical, audio, and video data. It offers a variety of tools for accomplishing the tasks associated with any systematic approach to unstructured data, i.e., data that cannot be meaningfully analyzed by formal, statistical approaches. In the course of such a qualitative analysis, ATLAS.ti helps you to explore the complex phenomena hidden in your data. For coping with the inherent complexity of the tasks and the data, ATLAS.ti offers a powerful and intuitive environment that keeps you focused on the analyzed materials. It offers tools to manage, extract, compare, explore, and reassemble meaningful pieces from large amounts of data in creative, flexible, yet systematic ways.

The VISE Principle

The main principles of the ATLAS.ti philosophy are best encapsulated by the acronym VISE, which stands for *Visualization, Integration, Serendipity, and Exploration*.

Visualization

The visualization component of the program means directly supports the way human beings (this includes researchers!) think, plan, and approach solutions in creative, yet systematic ways.

Tools are available to visualize complex properties and relations between the objects accumulated during the process of eliciting meaning and structure from the analyzed data.

The *object-oriented* design of ATLAS.ti seeks to keep the necessary operations close to the data to which they are applied. The visual approach of the interface keeps you focused on the data, and quite often the functions you need are just a few mouse clicks away.

Integration

Another fundamental design aspect of the software is to integrate all pieces that comprise a project, in order not to lose sight of the whole when going into detail.

Therefore, all relevant entities are stored in a container, the so-called "Hermeneutic Unit (HU)." Like the spider in its web, the HU keeps all data within reach. Loading a project with hundreds of files is merely a matter of opening a single HU.

Version 5 further strengthens the idea of integration as it allows the inclusion of a larger variety of data types into the analysis. Rich Text documents including Excel™, PowerPoint™, and other "embedded objects" can now be analyzed as easy as plain text was in the earlier versions of ATLAS.ti.

ser-en-dip-i-ty
 Pronunciation:
 -'di-p&-tE
 Function: noun
 Etymology:
 from its
 possession by
 the heroes of
 the Persian fairy
 tale The Three
 Princes of
 Serendip: the
 faculty or
 phenomenon of
 finding valuable
 or agreeable
 things not
 sought for.
 (Webster's
 Dictionary)

Serendipity

Webster's Dictionary defines the word "serendipity" as "a seeming gift for making fortunate discoveries accidentally." Other translations are: fortunate accidents, lucky discoveries. In the context of information systems, one should add: Finding something without having searched for it.

The term "serendipity" can be equated with an intuitive approach to data. A typical operation relying on the serendipity effect is "browsing". This information-seeking method is a genuine human activity: When you spend a day in the local library (or on the World Wide Web), you often start with searching for particular books (or key words). But after a short while, you typically find yourself increasingly engaged in browsing through books that were not exactly what you originally had in mind.

Examples of tools and procedures ATLAS.ti offers for exploiting the concept of serendipity are the Object Managers, the Object Explorer, the interactive margin area, full text search, and the hypertext functionality.

Exploration

Exploration is closely related to the above principles. Through an exploratory, yet systematic approach to your data (as opposed to a mere "bureaucratic" handling), it is assumed that especially constructive activities like theory building will be of great benefit. The entire program's concept, including the process of getting acquainted with its particular idiosyncrasies, is particularly conducive to an exploratory, discovery-oriented approach.

Areas of Application

ATLAS.ti serves as a powerful utility for qualitative analysis, particularly of larger bodies of textual, graphical, audio, and video data. The content or subject matter of these materials is in no way limited to any one particular field of scientific or scholarly investigation.

Its emphasis is on qualitative, rather than quantitative, analysis, i.e., determining the elements that comprise the primary data material and interpreting their meaning. A related term would be "knowledge management," which emphasizes the transformation of data into useful knowledge.

ATLAS.ti can be of great help in any field where this kind of "soft data" analysis is carried out. While ATLAS.ti was originally designed with the social scientist in mind, it is now being put to use in areas that we had not really anticipated. Such areas include psychology, literature, medicine, software engineering, quality control, criminology, administration, text linguistics, stylistics, knowledge elicitation, history, geography, theology, and law, to name just some of the more prominent.

Emerging daily are numerous new fields that can also take full advantage of the program's facilities for working with graphical, audio, and video data. A few examples:

- Anthropology: Micro-gestures, mimics, maps, geographical locations, observations, field notes
- Architecture: Annotated floor plans
- Art / Art History: Detailed interpretative descriptions of paintings or educational explanations of style
- Business Administration: Analysis of interviews, reports, web pages
- Criminology: Analysis of letters, finger prints, photographs, surveillance data
- Geography and Cultural Geography: Analysis of maps, locations
- Graphology: Micro comments to handwriting features.
- Industrial Quality Assurance: Analyzing video taped user-system interaction
- Medicine and health care practice: Analysis of X-ray images, CAT scans, microscope samples, video data of patient care, training of health personal using video data
- Media Studies: Analysis of films, TV shows, online communities
- Tourism: Maps, locations, visitor reviews

Many more applications from a host of academic and professional fields are the reality. In fact, we encourage all users to let us know about the specific use they are making of ATLAS.ti in their area or work. You can always reach us via the ATLAS.ti Support Center at <http://support.atlasti.com>.

ATLAS.ti offers support to the researcher - without taking control of the intellectual process.

The fundamental design objective in creating ATLAS.ti was to develop a tool that effectively supports the human interpreter, particularly in handling relatively large amounts of research material, notes, and associated theories.

Although ATLAS.ti facilitates many of the activities involved in qualitative data analysis and interpretation (particularly selecting, indexing/coding, and annotating), its purpose is not to automate these processes. Automatic interpretation of text cannot succeed in grasping the complexity, lack of explicitness, or "contextuality" of everyday or scientific knowledge. In fact, ATLAS.ti was designed to be more than a single tool—think of it as a professional workbench that provides a broad selection of effective tools for a variety of problems and tasks.

Teamwork Support

ATLAS.ti facilitates co-authoring, i.e., it allows two or more researchers or work groups to work on the same project, albeit asynchronously. This means each person works on his or her own project file. Access to the same data source is possible. The sub-projects are then merged into one comprehensive MASTER project. ATLAS.ti provides the tools that allow for the transfer and conversion of research data while keeping the respective sources of ideas identifiable at all times.

Main Concepts and Features

The concepts of primary documents, quotations, codes, and memos are the overall foundation you need to be familiar with when working with ATLAS.ti, complemented by a variety of special aspects such as families, network views (=the main visualization tool), and analytical/data querying tools. All of these come together in the overall “project container,” The Hermeneutic Unit (HU, for short).

The Hermeneutic Unit (HU)

The Hermeneutic Unit (HU), provides the data structure for each project in ATLAS.ti. The name was chosen to reflect the initial approach taken when building a support tool for data interpretation. There was no intention to intimidate users with this admittedly tongue-twisting name.

Acquaint yourself with this general “container” concept and its implications. Once you understand the HU concept, you understand almost everything that is necessary to work with ATLAS.ti. And in spite of its impressive name, it is really simple and practical to use.

Everything that is relevant to a particular project (e.g., a research topic) is part of the HU and resides in the digital domain. For instance, the Primary Documents representing the data sources, the quotations, the codes, the conceptual linkages (families, networks), and the memos, etc., are all part of one HU.

One obvious advantage of this container concept is that the user only has to deal with and think of one entity. Activating an HU is the straightforward selection of a single file; all associated material is then activated automatically.

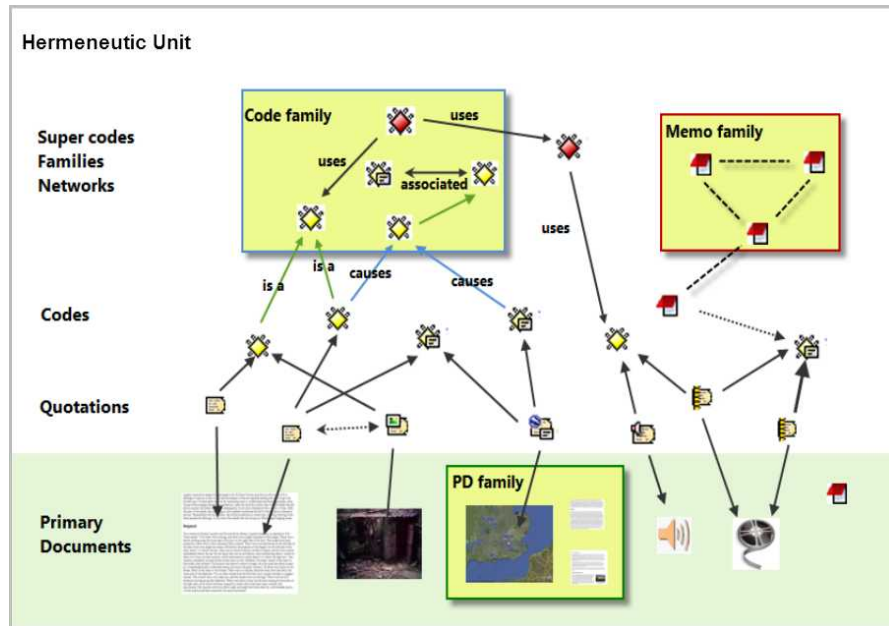


Figure 1: The hierarchy of objects inside a Hermeneutic Unit

The most basic level of an HU contains the Primary Documents, followed closely by the "quotations" as selections of the Primary Documents. On the next level, codes refer to quotations. Memos - you meet them everywhere.

An HU can become a highly connected entity, a dense web of primary data, associated memos and codes, and interrelations between the codes and the data. To find your way through this web, ATLAS.ti provides powerful browsing, retrieval and editing tools.

Primary Documents (PD or PDoc)

Primary Documents represent data sources. These are the text, image, audio, video or geographic materials that you wish to interpret. The content of PDocs usually consists of data files on your computer.

This content is turned into primary documents by assigning them to an HU.

The source files remain external to the HU. However, it is also possible to create internal text documents, and to assign memos as a internal PDs.

When using data files as external sources for your PDs, then you need to make sure that permanent access to these sources is guaranteed. This means the source file has to remain at the referenced location and should not be renamed or moved; otherwise the HU cannot find it. Also, to not jeopardize the integrity of your coding, data sources should not be changed outside of ATLAS.ti.

ATLAS.ti offers an edit mode in case you need to make changes to your data sources. See "Editing Primary Documents" on page 136ff.

A Primary Document has:

- a NAME, which is used when it is displayed in the PD manager. By default the name of the data source (the file name or the memo title) is used
- an AUTHOR = the user who assigned this PD to the HU
- a CREATION DATE= date of assignment
- a collection of QUOTATIONS
- a REFERENCE (e.g., a file name and path) to its data source, which is where it gets its content from whenever it needs to be displayed.

The "Reference" is an important property to understand. ATLAS.ti 6 has a number of powerful functions and tools (see "Adjusting References" on page 122) that keep this "loose" link alive under varying circumstances.

Understanding the relationship between a PD and its data source is important for addressing the most common FAQ, "Where are my PDs?"

The special nature of this relationship explains why simply copying the HU to another computer is not sufficient: a PD won't find its data source unless you copied it as well.

It also explains why you should use Copy Bundle for "migrating" a complete project (HU + data sources) to another computer. See "Copy Bundle – Migrating and Backing Up Projects" on page 129ff.

Finally, it explains why there can be more than one PD referring to the same data source.

Primary Document Families (Data Attributes)

Families in ATLAS.ti are a group of objects (see the entry "Families" below). Primary document families fulfill a special function as they can be regarded as quasi dichotomous variables. You can group all female interviewees into a PD family named "female," all male interviewees into a PD family named "male." You can do the same for different professions, marital status, education levels, etc. The classification is a 0/1 classification: "1" meaning the document is part of a particular group; "0" meaning it is not part of the group.

Following a special syntax, you can also create PD families that can be imported or exported as variables with two or more characteristics based on an Excel table like Gender::male and Gender::female.

PD Families can be later used to restrict code-based searches like: "Show me all data segments coded with 'attitude towards the environment' but only for

females who live in London as compared to females who live in the country side."

You can also use PD families as filter to reduce other type of output like a frequency count for codes across a particular group of documents. See the chapter on "Working with Variables: Primary Document Families" below on page 245.

Quotations

A quotation is a segment from a PD that is interesting or important to the user. In textual documents, a quotation is an arbitrary sequence of characters ranging from a single character, a word, a sentence, or a paragraph up to the entire data file.

Free quotations resemble passages "scribbled" on the margin of a book.

Usually, quotations are created by the researcher. However, if repetitive words or phrases are contained in the text, the Auto-Coding feature can be used to automatically segment these quotations and assign a code to them.

When a quotation is created, ATLAS.ti automatically assigns an identifier to it. This identifier is built from the index of the primary text to which it belongs and the first 30 letters (note that a different length can be set via Preferences) of the text segment, e.g., "1:21 Therefore a more efficient fil...". The identifier is displayed in list windows and printouts. For graphic, audio, and video segments, the original file name of the PD is chosen as an identifier.

Although the creation of quotations is almost always part of a broader task like coding or writing memos, "free" quotations can be created that indicate interesting parts in the primary data for which a meaningful classification has not yet been found ("The Data Level - Basic Functions" on page 181).

Quotations as Layers

Quotations can be regarded like a transparent layer on top of a document. Technically speaking, a quotation consists of the identifier (a number) and a pair of coordinates that specify the beginning and end of the quotation. The content of a PD file (the data source) is therefore not altered by the creation, deletion, or modification of quotations.

Quotations are stored inside the HU, independent of the document to which they belong.

Additional reading: http://downloads.atlasti.com/library/Maietta_2009-05_6.pdf

Types of Quotations

There are six different types of quotations (corresponding with the six different types of Pds ATLAS.ti accepts) :

Text Quotations

A textual quotation originates from an arbitrary sequence of selected characters.

Textual quotations represent (for the computer) a sequence of characters ("strings") and can be of arbitrary size. Sentences, speech turns, or paragraphs are often the basis for the length of textual quotations. Only text offers enough "syntactical clues" to allow for searches for the occurrence of specific evidence that may support a concept. Text also offers the option for automatic segmentation as used by the Auto-Coding procedure ("Text Search & Auto Coding" on page 225).

Graphic Quotations

The creation, activation, and display of graphical quotations has similarities with, but also differs from, their textual counterparts.

A graphical quotation is a rectangular region inside a graphical PD. From its data structure, it is identical to textual quotations, since their main attributes are also the PD identifier and two coordinates that mark the beginning and end, defining a rectangle through its upper left and lower right corner.

Handling graphical quotations is largely analogous to marking text passages in a textual document ("Creating and Working with Graphical Quotations" on page 187).

PDF Quotations

PDF quotations can be of a textual or of a graphical nature. The quotation references for textual quotations indicate the page number and the start and end position on the basis of character counts. For example: (31:1537-31:1745) means that this quotation is from page 31, starting at character 1537 and ending at character 1745. The reference for coded images indicates the position of the quotation within the PDF file, like (@422-@618) ("Creating and working with Textual and PDF Quotations" on page 181).

Audio and Video Quotations

Audio and video quotations can be as short as a few milliseconds. The length of a quotation is selected on a time line. Segment starting points and length are displayed in the following formats:

milliseconds / HH:MM:SS:ms / frames (for videos)

See "Creating and Working with Multimedia Quotations" on page 189.

GoogleEarth Quotations

When creating a GE quotation, you see the ATLAS.ti icon on the GE map. It is linked to one location and thus is different from all other types of quotations that present a range. The quotation ID shows either the name of the document or the feature's name (if applicable). In addition the geographic reference of

the marked location is provided ("Creating and Working with Google Earth Quotations" on page 194

Additional reading (Working with GoogleEarth data):
http://downloads.atlasti.com/library/Cisneros_2009-03_17.pdf

Codes

The term code is used in many different ways. First, we would like to define what that term means in qualitative research, and then in ATLAS.ti.

Coding Objectives

From a methodological standpoint, codes serve a variety of purposes. They capture meaning in the data. They also serve as handles for specific occurrences in the data that cannot be found by simple text-based search techniques.

Codes are used as classification devices at different levels of abstraction in order to create sets of related information units for the purpose of comparison (e.g., a concept like "Coping Strategy").

Keep code names brief and succinct. Use the comment pane for longer elaborations.

From a "low level" tool perspective, codes are typically short pieces of text referencing other pieces of text, graphical, audio, or video data. Their purpose is to classify an often large number of textual or other data units.

In the realm of information retrieval systems, the terms "index," "indexing," or "keyword" are often used for what we call "code" or "coding".

The length of a code should be restricted and should not be too verbose. If textual annotations are what you want, you should use quotation comments instead.

The technical aspects of coding are described in the section "Coding Techniques" on page 199.

Text Search Tool

From simple string matching to sophisticated pattern match (GREP) and category search, all is available in the Text Search Tool (see page 225ff).

Word Cruncher

The Word Cruncher counts all words in textual PDs. The count can be limited to one PD only or include all PDs.

To clean up the count, a stop list can be defined to exclude special symbols or common words like 'and,' 'or,' 'the,' etc. The result can be displayed in an Excel table ("The Word Cruncher", page 264).

Auto Coding Tool

If the primary text itself contains important key words, the Auto Coding Tool scans the text and automatically assigns a pre-selected code to matching text passages. If so desired, the process can be controlled by manual confirmation of each action ("The Auto-Coding Tool", page 231).

Memos

Memos capture your thoughts regarding the text and are an important device for creating theory. A "memo" is similar to a code, but usually contains longer passages of text.

A memo may "stand alone" or it may refer to quotations, codes, and other memos. They can be grouped according to types (method, theoretical, descriptive, etc.), which is helpful in organizing and sorting them. Memos may also be included as the objects of analysis by assigning them as PDs.

See the chapter on "Working with Memos" on page 254ff.

Additional reading (Memo writing):

http://downloads.atlasti.com/library/Friese_2009-09_1.pdf

http://downloads.atlasti.com/library/Friese_2008-12_8.pdf

Families

Families are a way to form clusters of PDs, codes, and memos for easier handling of groups of codes, memos, and PDs. Primary Document families can be regarded as attributes or variables ("Family Life", page 237).

Families can be combined using logical operators similar to codes and Super Codes ("Super Families", page 289).

Network Views

Network Views are a bit more sophisticated than families. They allow you to conceptualize the structure by connecting sets of similar elements together in a visual diagram. With the aid of Network Views you can express relationships between codes, quotations, and memos. PDs, families and even Network Views can also be “nodes” in a network view.

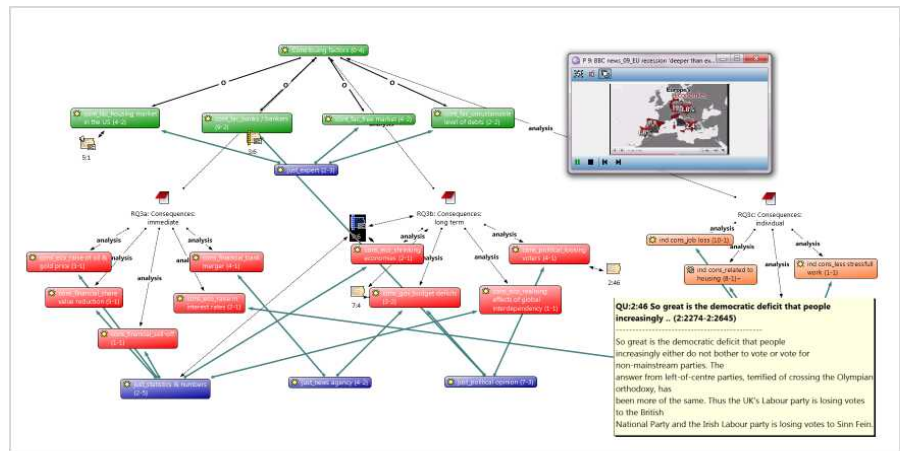


Figure 2: An example of a network view (see Friese, 2011)

Nodes, Links and Relations

A node is any object that is displayed in a Network View. You can change their look and move them around in the Network Editor.

Relations are link prototypes used to create a link between two codes or between two quotations. An example is the “is-a” (ISA) relation, which is frequently used to link concepts of different abstraction level (e.g., DOG <isa> MAMMAL).

Network View Manager

The Network View Manager contains a list of all saved Network Views previously constructed by the user. It can be used to create new Network Views, to access or delete existing ones, or to write and edit comments.

Network Editor

The Network Editor displays and offers all editing capability to construct and refine semantic networks. In addition, it allows the visual creation and traversal of hypertext structures.

Relation Editor

Should the already built-in relations that are used to connect objects in Network Views prove not sufficient, you can edit them or create new ones using the Relation Editor.

Link Managers

The Link Managers provide an overview of all code-code links and of all quotation-quotation links you have created.

You find more information on the network function under “Network Views”, starting on page 318.

Video tutorials:

Network Building (1/3): <http://www.youtube.com/watch?v=7ObpQ5GMLgU>

Network Building (2/3): <http://www.youtube.com/watch?v=0umfcNTZqHc>

Network Building (3/3): <http://www.youtube.com/watch?v=JTKJ95DYA0Q>

Hyperlinks: <http://www.youtube.com/watch?v=R7IbSt5rpk>

Analysis

Query Tool

For more complex search requests, the Query Tool is at your disposal. Here you can formulate search requests that are based on combinations of codes using one or a combination of 14 different operators, Boolean, semantic and proximity operators (“Query Tool”, page 268).

Video Tutorial: <http://www.atlasti.com/video/article/the-query-tool.html>

Super Codes

A Super Code differs from a standard code. A standard code is directly linked with the quotations to which it is associated, while a Super Code is a stored query, thus provides an answer to a question (in the best case) that typically consists of several combined codes (“Super Families” on page 289).

The Co-occurrence Explorer

The Co-occurrence Explorer is more exploratory than the Query Tool. Rather than determining the codes yourself, you can ask ATLAS.ti which codes happen

to co-occur in the margin area. The output can be viewed in form or a tree view or a table view (CTE: Co-occurrence Table Explorer). The CTE provides frequency of co-occurrence and a coefficient measuring the strength of the relation is calculated. Since a coefficient is only appropriate for some type of data, its display can be activated or deactivated.

It is always possible to directly access the data behind the frequency counts or coefficient.

You find this function under the **Tools** menu. For further information, see “Co-occurrence Tools”, page 299.

Codes-Primary Document-Table

The Codes-Primary-Document Table contains the frequency of codes across documents. It can be exported as Excel compatible table. Optionally, the table cells can also contain the word counts for the quotations per code across documents.

	*date of murder	*historic context	*name of suspect	letter authenticity?	letter content	letter date	letter differences	letter recipient	TOTALS
P 3: 1_Jack the Ripper_Story.rtf	13	4		1	2	0	0	0	20
P 4: 1_Jack the Ripper_Letters.rtf	0	0		0	5	4	4	1	16
P11: 3_Investigation_Suspects.pdf	0	0		27	0	0	0	0	27
P12: 3_Criminal Profiling.rtf	0	0		0	2	3	0	5	13
P13: 3_The Ripper Revealed.mp3	0	0		0	1	0	0	0	1
TOTAL	13	4		28	10	7	4	6	77

Figure 3: Codes-Primary-Documents Table

This option can be found under the Codes / Output menu. See “Codes-Primary Documents Cross-Tabulation”, page 311.

Team Tools

User Administration

Manage the ATLAS.ti user database through the user administration tool. This is a prerequisite for collaborative work, but is also useful to individual users through personalizing the login or protecting an HU with a password

User Management options can be found under the Extras menu. See also the chapter on “User Management”, page 150.

Hermeneutic Unit Merger

This tool merges different HUs. A variety of options to control the merge strategy are offered.

You find this function under the Tools menu. Further information is provided in the chapter “Merging Hermeneutic Units”, page 171.

Coding Analyzer

The Coding Analyzer is helpful after merging HUs. It tests for redundant codes, i.e., codes used more than once for data segments that overlap or are embedded in one another (see page 381).

Export

RTF

There are output options for each of the main objects in ATLAS.ti: Primary Documents, Quotations, Codes and Memos. You find it under the respective menus. You can output a list of primary documents along with their comments, all or selected quotations with or without comments, quotations by codes (via the Codes / Output menu), a list of all codes, code-neighbors lists, etc. For memos, you can either output just a list of your memos, the content of memos or the content including the linked objects.

PDF

You can print out coded documents as you see them on the screen with the codes in the margin area. This option will be available in Version 7. You find it under **DOCUMENTS / OUTPUT / PRINT WITH MARGIN**.

XML Generator

The XML generator exports all information contained in an HU in XML format. This universal, open data format allows for a wide variety of possibilities for display, processing, and even integration of your data with external applications. Click on the XML button in the main tool bar to explore the options.

Further detail is provided in the full manual in the chapter “Creating Reports with the XML Converter”, on page 400.

XML Converter

The XML Converter lists HUs saved in XML format and applies so-called "style sheets" (miniature programs written in XSLT) to the XML files. The user may edit the supplied style sheets or add new ones. Just to mention a few outputs that you can create using the XML style sheets:

- A nicely formatted code book (Modern codes (commented only))
- A tag cloud for the elements in the HU (HU tag cloud)
- A list of quotations sorted by documents (Quotations List by Primary Documents)
- The content of quotations sorted by codes (Print Codes in Full)

Use "version 1" style sheets in ATLAS.ti v.5.x and "version 2" style sheets in ATLAS.ti v.6.x.

SPSS Export

You can export your coded data as SPSS syntax file. When executed in SPSS, your quotations become cases and your codes and code families variables. In addition, further identifying information in form of variables is provided like the primary document number for each case, start and end position and creation date. These variables allow you to aggregate your data in SPSS if needed ("SPSS Export", page 413).

If you need a less detailed output, see „Codes-Primary Documents Cross-Tabulation“ on page 311. The table provides an output that is already aggregated by primary documents.

Excel Export

The frequency of codes across documents (**CODES / OUTPUT / CODES-PRIMARY DOCUMENT TABLE**), the results of the Co-occurrence Table Explorer (**TOOLS / CO-OCCURRENCE TOOLS**), and the word frequency count (see "The Word Cruncher", page 264) can be exported as Excel compatible file.

Graphic Files

Network Views can be saved as bmp or emf files: Open a network view and select **NETWORK / SAVE AS GRAPHIC FILE**.

HTML Generator

Publishing online or just creating a printout from a project is available with the HTML generator (see **EXTRAS / EXPORT TO: / HTML**). The results can be viewed platform-independent with any Web browser. This option can be found under the Extras menu and is best suitable for exporting your entire project. HTML preferences can be set under **EXTRAS / PREFERENCES / HTML PREFERENCES** ("HTML Export", page 423).

Miscellaneous Tools

Object Crawler

With the Object Crawler, you can search all of the parts of your project within ATLAS.ti that contain text. Searches are not restricted to just textual PDs: codes, memos, quotations, all families, code-code links, hyper-links, and the HU can be searched. In addition, the scope of the search can be limited to certain fields. You find the Object Crawler under the Tools menu (“The Object Crawler”, page 373).

Object Explorer

The Object Explorer displays all the elements of an HU in a strictly hierarchical manner, even if the structures are non-hierarchical, or even cyclic. You find the Object Explorer under the Tools menu (“The Object Explorer”, page 375).

Main Steps in Working with ATLAS.ti

The figure below illustrates the main steps of working with ATLAS.ti, starting with the creation of a project, adding documents, identifying interesting things in the data and coding them. Memos and comments can be written at any stage of the process, whereas there is possibly a shift from writing comments like adding meta information to your documents, first code nodes that later turn in to code definitions, initial thoughts about specific data segments (the ATLAS.ti quotations) to more extensive memo writing during the later stages of the analysis. Once your data is coded, it is ready to be queried using the various analysis tools provided. The insights gained can then be visualized using the ATLAS.ti network view function.

Some steps need to be taken in sequence--for instance, logic dictates that you cannot query anything or look for co-occurrences if your data has not yet been coded. But other than that there are no strict rules. Network views, in addition to presenting findings, also have an exploratory component and as such can help you to see your data from a different perspective. This may provide further ideas for coding, querying or even further data collection.

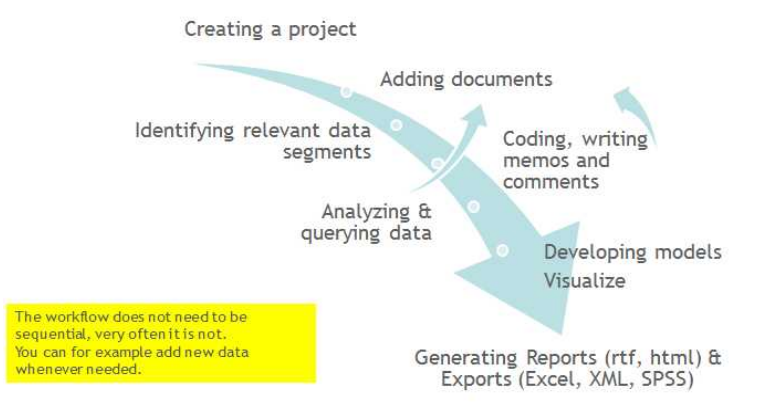


Figure 4: Main work flow

Data and Project Management

A first important but often neglected aspect of a project is data and project management. The first step is data preparation. You find more information on supported file formats in the section “Supported Formats” on page 71.

Apart from analyzing your data, you also manage digital content and it is important to know how the software does it (See the section “Data Management in ATLAS.ti” on page 105 ff.

In order to give you an idea what kinds of issues might come up, here is a list of issues that are important to consider:

- Where will you store your data?
- Do you want to work with external or internal documents?
- Do you want to link your data transcripts to the original audio and video sources? (Version 6 manual addendum)
- Do you think you might have to move your project at some point? (See “Project Maintenance, p. 282ff).
- Should data be edited after it is assigned to ATLAS.ti?

See the section on “Editing Primary Documents” on page 136.

Additional reading: http://downloads.atlasti.com/library/Friese_2009-09_2.pdf

- Do you need data to be shared among team members?

For further information on team project management see “Team Project Management” on page 149.

- Where and how can you create project backups? (“Project Backup and Migration” on page 128).

The One-Folder Setup - For Single Users and Teams

Storing all data files to be analyzed and the ATLAS.ti project file in one folder is the easiest and most flexible way to set up a project. Even when working with video files or other sizable data sets that you may store on an external hard disk or server, you can still use this setup. You just need to save the ATLAS.ti project file (the HU) on the external disk or server as well.

This scenario also works well for team projects. Each team member either stores the project folder with all of the data on his or her computer, or the project folder is kept on a server. In the case of a team project, a few more issues need to be considered, like working with user accounts and different sub-HUs. This explained in detail in the section “Team Project Management” on page 149.

Working with Internal Documents (for smaller projects containing only text files)

Using version 6.2 or higher, it is possible to create internal documents. This means you no longer have to worry about document references and document locations. Your ATLAS.ti project consists of a single data file, the HU. This project setup can be used for smaller projects where the data material is comprised of text documents only.

As this function was recently added to the software, it is difficult to know yet how small is small. A test project containing 40 interviews that amounted to a total size of 5.3 MB and 1800 pages of text outside ATLAS.ti, resulted in a coded HU file of 730k. Thus, working with 100 internal files should still be ok.

This approach is also a good option for working with sensitive data material. When saving the HU, the data material is highly compressed and therefore unreadable outside ATLAS.ti. In addition, the HU can be password-protected. This should make unauthorized access reasonably difficult.

This is how it works: you generate a new empty text document within ATLAS.ti and then you copy and paste the contents that you want to analyze into it:

- Open ATLAS.ti and select the main menu option **DOCUMENTS / ASSIGN / NEW TEXT DOCUMENT**.
- Enter a name for the document into the window that opens.
- The document is loaded in edit mode.
- Copy the text you want to analyze and paste it into the primary document.
- Protect the document by quitting edit mode. You will find the edit mode button in the second toolbar below the main menu on the left hand side. Click on the pen and select the option **SAVE AND LEAVE EDIT MODE**.
- Proceed in the same way with all other documents that you want to analyze.
- Save the HU file.



Make sure that you always create a backup copy of this file and store it at a safe location!

The Process

There are two principal modes of working with ATLAS.ti, the data level and the conceptual level. The Data Level includes activities like segmentation of data files; coding text, image, audio, and video passages; and writing comments and

memos. The Conceptual Level focuses on querying data and model-building activities such as linking codes to networks, in addition to writing some more comments and memos.

Data-Level Work

Data-level research activities include segmenting the data that you have assigned to a project into quotations, adding comments to respective passages (note-making/annotating), and coding selected text passages or data segments, secondary materials, annotations, and memos to facilitate their later retrieval. The act of comparing noteworthy segments leads to a creative conceptualization phase that involves higher-level interpretive work and theory-building.

ATLAS.ti assists you in all of these tasks and provides a comprehensive overview of your work as well as rapid search, retrieval, and browsing functions.

Within ATLAS.ti, initial ideas often find expression through their assignment to a code or memo, to which similar ideas or text selections also become assigned. ATLAS.ti provides the researcher with a highly effective means for quickly retrieving all data selections and notes relevant to one idea.

Read more detail in the section on the “Data Level Basic Functions” in the full manual.

Conceptual Level Work

Beyond coding and simple data retrieval:

ATLAS.ti allows you to query your data in lots of different ways, combining complex code queries with variables, exploring relationships between codes and to visualize your findings using the network tool.

ATLAS.ti allows you to visually “connect” selected passages, memos, and codes into diagrams that graphically outline complex relations. This feature virtually transforms your text-based workspace into a graphical “playground” where you can construct concepts and theories based on relationships between codes, data segments, or memos.

This process sometimes uncovers other relations in the data that were not obvious before and still allows you the ability to instantly revert to your notes or primary data selection.

For more detail, see the section “The Conceptual Level” in the full manual.

General Steps when Working with ATLAS.ti

The following sequence of steps is not mandatory, but describes a common "script:"

- Create a project, an "idea container," meant to enclose your data, all your findings, codes, memos, and structures under a single name. We call this a "Hermeneutic Unit" (HU). A more detailed explanation is provided below (Main Workspace: The HU Editor" on page 43).
- Next, assign documents, text, graphic, audio and video files, and Google Earth as so called Primary Documents (PDs) to the HU. The data files become the source material for your project's primary data and can be located anywhere on your computer or a network. For ease of data management, it is however recommend storing all data and the ATLAS.ti project file, the HU, within one folder. See "Scenario 1 (recommended): Working with One Project Folder - for Single Users and Teams" on page 114.
- Read and select text passages or identify areas in an image or select segments on the time line of an audio or video file that are of further interest, assign key words (codes), and write comments and memos that contain your thinking about the data. We call this the Data-Level working phase ("The Data Level - Basic Functions", page 181).
- Compare data segments based on the codes you have assigned; possibly assign more data files to the project.
- Organize PDs, codes, and memos using "Families" (see the chapter on "Family Life" on page 237 for further information).
- Query the data based on your research questions utilizing the different tools ATLAS.ti provides. The key words to look for are: simple retrieval, complex code retrievals using the query tool, simple or complex retrievals in combination with variables via the scope button, the co-occurrence explorer (tree and table explorer), the codes-primary document table, Excel and SPSS export of frequency counts for further statistical analysis (see "Analysis Tools" on page 262).
- Build semantic, prepositional or terminological networks from the codes you have created. These networks, together with your codes and memos, form the framework for emerging theory. Look for the chapter "Network Views", page 318).
- Finally, compile a written report based on the memos you have written throughout the various phases of your project and the networks you have created and even publish your project as a World Wide Web document or an individual presentation using XML. See "Generating Output", page 390ff.

Additional reading (Working with ATLAS.ti):

- http://downloads.atlasti.com/library/Casasempere_2007-07_11.pdf
- <http://www.qualitative-research.net/index.php/fqs/article/viewArticle/1632/3149>
- <http://atlasmalaysia.wordpress.com/2010/09/01/howtolr/>

Main Workspace: The HU Editor

Overview

The Hermeneutic Unit (HU) Editor is the main workspace. It is opened after the start of the program, and will be your “home page” most of the time.

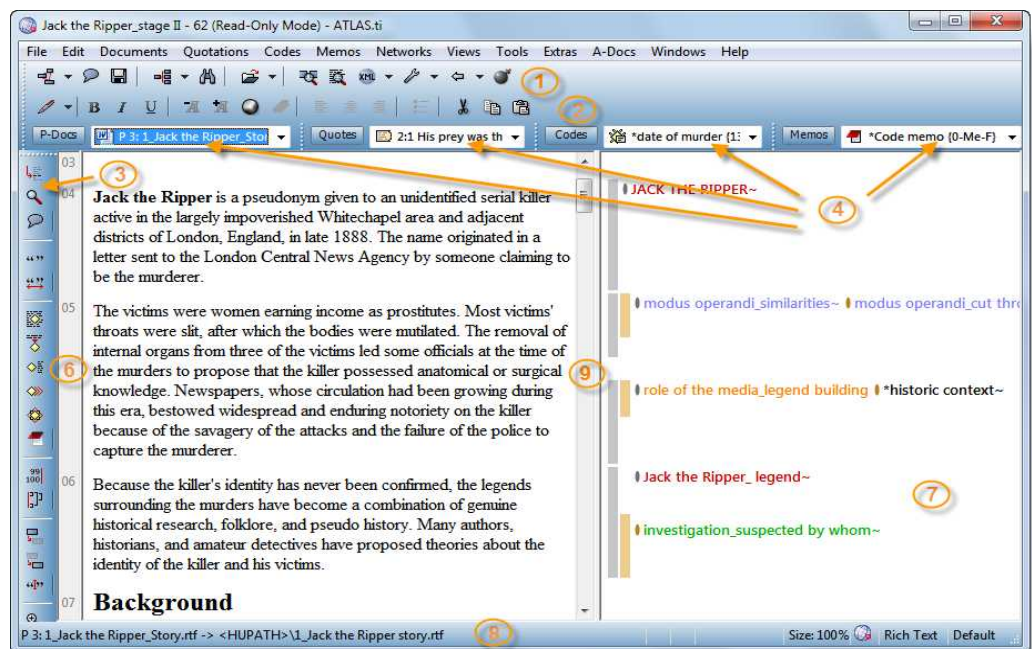


Figure 5: The HU Editor with activated line numbers and margin area.

The HU Editor serves as the main editing tool and offers access to all other workbench tools.

With all optional controls, buttons, and "panes" visible, the HU Editor looks rather overwhelming at first. You can decide which parts of the window to display and customize its appearance to your needs. Use the **VIEWS** menu to hide some of the buttons, windows, etc.

Components of the HU Editor

The numbers in brackets refer to the figure above showing the HU editor.

Title Bar

The *title bar* is common to all windows and dialog boxes. It displays the name of the HU that is currently being edited.

Main Menu

The main menu below the title bar offers access to the different kinds of objects that populate an HU. Commands found in the main menu are often also available from context menus and toolbar buttons.

Tool bars

Tool bars offer functions that are generally also available as menu commands. A short "tool tip" help text is displayed when the mouse pointer rests on a tool button.

The Main Tool Bar [1]

The main toolbar offers many major functions. Unless switched off via the **VIEWS** menu, it is always available.

The Edit Tool Bar [2]

The Edit toolbar is available only when an *editable* Primary Document (PD) is displayed. The tools from the Editing Toolbar can be used after entering edit mode. The various options are explained further in the section on "Editing Primary Documents" on page 136.

The Primary Document Tool Bar [3]

The PD toolbar is to the left of the PD pane. Note that it is disabled unless a document is loaded.

Object Drop-Down Lists [4]

Below the main toolbar, you find four *drop-down lists* that contain the HU's main entities. From left to right, these are the drop-down lists for: **PDs**, **quotations**, **codes**, and **memos**.

Click into the entry field or the little drop-down arrow on the right to select an object. Click the button to the left of the entry field to open an Object Manager.

Primary Document Pane [5]

The dominant window pane in the HU Editor is the *Primary Document Pane*. This pane is the central workspace where text or graphic material is reviewed, marked, coded, and annotated. It is usually augmented by the Paragraph number pane [6] and the margin area [8].

Paragraph Number Area [6]

To the left of the text area, but still inside the PD pane, **paragraph numbers** can be displayed. In fact, displayed is a new number for every piece of text followed by a hard return.



For video and audio documents, paragraph numbers, and the margin area are not displayed.

Margin Area [7]

To the right hand side of the PD area is the optional **margin area**. Brackets are used to indicate quotations. Attached codes, memos, and hyperlinks are displayed next to the brackets. The margin area is fully interactive: the displayed objects are sensitive to mouse clicks and have their own context menus. In addition, a variety of drag-and-drop options are possible. See "Margin Drag & Drop" on page 260 for more detail.

You can resize the margin area using the split bar [9] between the PD pane and the margin pane.

When you double click on a code in the margin area, a comment field pops up showing the code definition if you have written one.

Context menu for a code in the margin area:



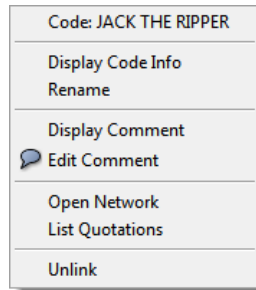


Figure 6: Code context menu

A general context menu can be opened inside the margin area by moving the mouse pointer onto the background between the objects. It allows you to set display properties of the objects.

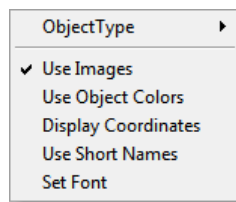


Figure 7: Margin area context menu



Margin area preferences

Several individual preferences can be set for the margin area: the kind of objects shown, whether icons should be used, whether in-place editing should be allowed, etc. In order to set your individual preferences:

Select **EXTRAS / PREFEREMCES / PREFERNCES / GENERAL PREFERENCES** (or use the “wrench” button) and then select the Margin tab.

Status Bar [8]

The *status bars* at the bottom of the window. The leftmost field tells the user about successful termination of operations, displays the file name of the currently loaded file, contains short help texts for menu items and buttons, and shows error messages when necessary.



Figure 8: The status bar

Towards the right side, the current size of the loaded document is shown. Next to it the ATLAS.ti icon. It changes to a pen when the PD is switched to edit mode.

The next field displays the document's content type (e.g., rich text, rich text <<< doc, PDF image, audio, video and GEO).

Click the Default button to select the language.



Figure 9: Select the language you are using

Pop-up or "context" menus are activated with a right mouse button click.

The Pop-up Menu

'Context' or 'pop-up' menus are used for commands that apply to a selected object or to a specific sub-pane inside a multi-pane window. A pop-up menu is activated by a right mouse click at the current location of the mouse pointer. They are also termed *context sensitive* because the offered commands depend on the type and the current state of the object or the context in which the menu was activated.

Using pop-up menus to initiate procedures is a three-step procedure typical for window-mouse user interfaces:

- Select an object.
- Open the pop-up menu with the right mouse button.
- Select a command with the left mouse button.

The HU editor provides specific pop-up menus in each of its sub-panes. The PD pane alone offers a variety of pop-up menus, depending on what is currently displayed or selected. When there is no PD displayed (e.g., directly after starting a session or after closing a PD) you get the wallpaper menu:

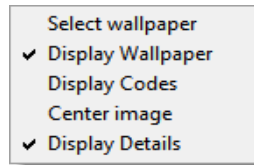


Figure 10: Wallpaper pop-up menu

When a PD is loaded and a chunk of text is selected, a different pop-up menu is displayed:

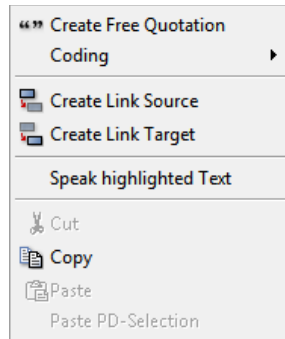


Figure 11: Pop-up menu for a selected text segment.

If the selection is an existing *quotation*, the pop-up menu gets more specific:

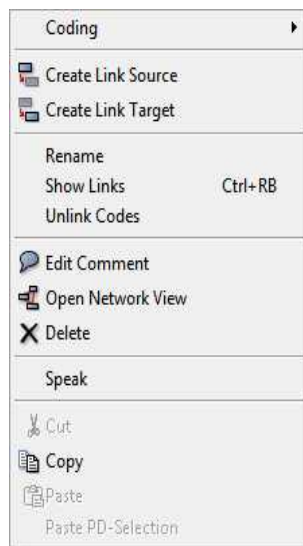
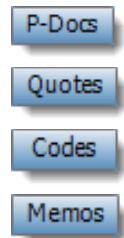


Figure 12: Pop-up menu for a quotation.

The commands are tailored to the objects under the cursor at the time the context menu pops up.

The Object Managers



The advantage of drop-down lists is that they save space. To provide more efficient access to the objects listed in the drop-down lists, the lists can be displayed in a detached window. These windows are called **Object Managers** because they not only allow access to the objects, but provide many more options and functions.

Like many other tools that can be invoked from the main editor, an Object Manager is a *child* or dependent window of the main editor.

Child windows have some common properties:

- They are closely related to their parent window (here: the HU editor) and changes in either the child or the parent window are usually "broadcast" between them (like the selections of objects).
- They can be resized and positioned independently of their parent window.
- They are minimized when the parent window is minimized and they are restored with their parent window.
- They are closed when the parent window is closed.
- However, child windows do NOT move with the parent window.

Roll-up Mode

On low resolution screens, Object Managers can cover relatively large areas of the workspace. You can use the roll-up mode to save screen space. In order to "roll up" a window, click on the icon on the top left of the window as shown in Figure 13 and the select the roll-up option from the menu.

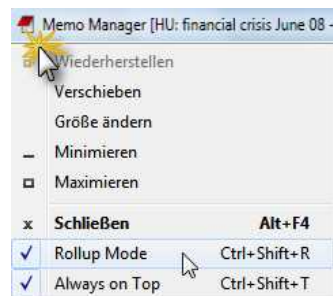


Figure 13: Activate the roll-up mode to optimize space

Launching an Object Manager

Simply click on the button left to the drop-down list.

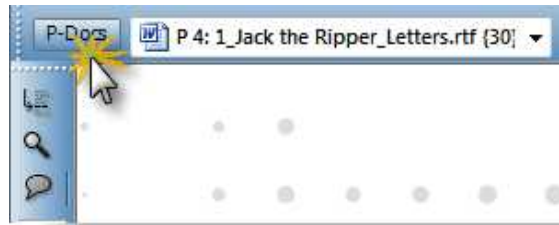


Figure 14: Launching an object manager

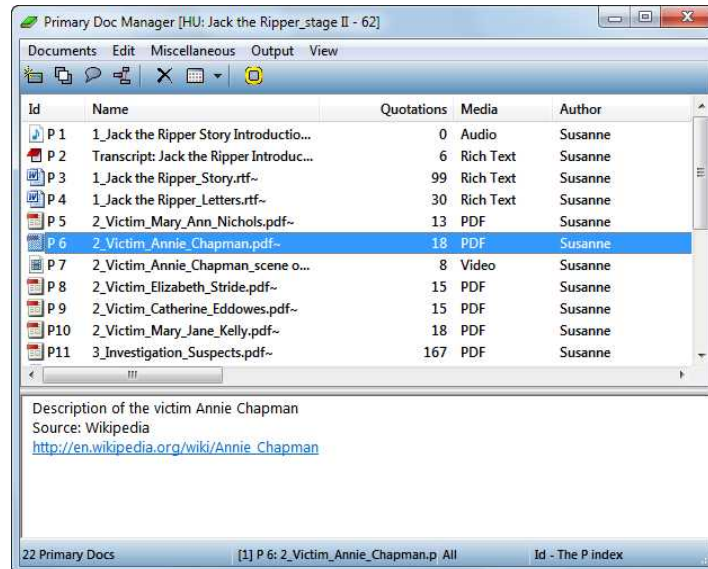


Figure 15: The Primary Document (P-Doc) Manager

Alternatively, select the option **PRIMARY DOC MANAGER**, **QUOTATION MANAGER**, **CODE MANAGER** or **MEMO MANAGER** from the corresponding main menu entry.

The Object Manager Window

The four Object Managers have some common properties. The general layout of their window is as follows:

Title, Menu, and Toolbar

The title bar displays the object type. In the figure above the PD Manager is shown. The menu and the toolbar below the title bar offer access to frequently used functions, some of which are also accessible from pop-up menus.

As the functions are different for all four object types, menu and toolbar options differ for the four Object Managers. The toolbar options are described in more detail below. The menu items resemble the corresponding main menus in the HU Editor.

Note that not all options are available at all times. Some menu and toolbar options need either a single selection or multiple selections.

The List Pane

Below the toolbar is the list pane. Unlike the Object Explorer or the Network Editor that can handle heterogeneous collections of objects, the Object Managers display objects of only one type. When you are in “Details” view mode, a number of attributes of the items are displayed in a table-like manner. The order of the columns can be changed by dragging a column to a different position in the list. Items can be sorted or reversed by clicking on the respective column header.

The Text Pane

The text pane, located below the list pane, displays the comment or, in the case of memos, the text body. All text panes are Rich Text compatible.

The Split Bar

The relative size of the list and comment pane can be modified by dragging the split bar between the two panes. The cursor changes when the mouse moves over the split bar. You can re-size the adjacent panes by dragging the split bar to the desired position.

The Status Bar

The status bar’s fields display from left to right the number of objects, the selected object, the filter, and the sort option.



Figure 16: Status bar of primary document manager

The status bar above indicates that the Primary Document Manager lists 12 documents, none of the PDs is currently selected. The filter is set to display only documents from the PD family: Investigation, and items are sorted by “ID.”

For additional information about how to use the status bar for sort- and filter-related procedures see “Sorting and Filtering” on page 384.

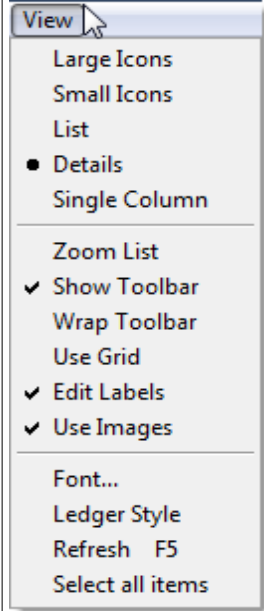
The Pop-Up Menus

The list and text panes offer context sensitive pop-up menus. The list pane’s context menu contains a portion of the commands available from the main menu for the selected objects. The text pane’s menu offers standard commands for editing and formatting.

View Menu

View Options are the same for all Object Managers.

Choose between viewing large icons, small icons, a list of items, or a list of items plus additional information in details view. The Single Column view shows the most essential information like name, how often used, linkages to other objects, start and end position (where applicable).

	<p>ZOOM LIST hides the toolbar, comment pane, and status bar.</p>
	<p>SHOW TOOLBAR toggles display of the toolbar.</p>
	<p>WRAP TOOLBAR displays all buttons in multiple rows if needed.</p>
	<p>USE GRID displays lines between rows in Details view.</p>
	<p>EDIT LABELS enables in-place editing.</p>
	<p>USE IMAGES toggles the display of item icons.</p>
	<p>FONT individually specifies the font used for this list. The default font for the list and the text area can be set in General Preferences.</p>
	<p>LEDGER STYLE shades every other row.</p>
	<p>AUTO-COLOR MODE (only available in the Code Manager). Codes are automatically assigned a color according to their groundedness and density. See "Auto-Color Mode" on page 349 for details.</p>
	<p>REFRESH (F5) refreshes the list display</p>
	<p>SELECT ALL ITEMS is self-explanatory.</p>

Selecting Items in Object Managers

Next to thinking, clicking will likely be one of the most frequent activities when working with ATLAS.ti.

Clicking is done in many different ways such as single- and double-clicking and clicking with the left or the right mouse button. The "semantics" of a mouse-click are not perfectly straightforward, and a few variations must be learned.

A single click with the left mouse button selects and highlights an item in each of the Object Managers.

Double-clicking an item selects the object and invokes a procedure depending on the type and state of the object. The effect of a double-clicking is described for each of the Object Managers below.

For multiple selections, you may use the standard Windows selection techniques.

A single click selects an object, a double-click executes an associated action for the object.

Sorting and Filtering

The Object Managers permit comfortable sorting and filtering. See “Sorting and Filtering” on page 384 for details.

Incremental vertical Tool Bar List Search

This feature is available in the list pane of all Object Managers. Select any item in the list and type in an arbitrary sequence of characters to jump to a subsequent list entry matching this sequence.

For example, suppose a number of codes begin with "em" (e.g., "Emotions") and others with "ex" (e.g., "External Reference"): typing "em" will jump to the first of the "EMotion ..." codes, while entering "ex" will jump to "EXternal reference." Every other character typed advances the focus to the next list entry unless a matching name cannot be found.

The asterisk * enables mid-string matches for incremental search.

A very powerful variation to locate list entries is by typing the asterisk (*) as the first character. While the standard incremental search is always anchored to the start of the name, using the asterisk allows the matching string to appear anywhere inside the name.

Example: typing "*ref" would jump to entry "External Reference" while "ref" would stop at "Reference" if such an entry exists.

This feature is especially useful for searching the Quotation Manager, as quotations have a numeric prefix (like 208:1977).

Avoid long pauses between entering characters. After a certain system-defined timeout, the next character starts a new forward search.

In-place Label Editing

In-place editing in Object Managers is a convenient way to rename objects. On a selected item, you can initiate in-place editing by either clicking again or pressing the F2 key. Don't rush the second click, though, as this initiates a double-click action.

Editing Text



In the Object Managers, the comment for the selected object or a memo's content is displayed in the text pane below the list pane. You may edit the text right there or you might prefer to open a full-fledged text editor (see button to the left). For minor changes, working in the Object Manager's text pane is quite comfortable.

There are several ways to save a changed comment. With General Preferences set to "Accept changes in browser silently," an object's comment (or a memo's body) is saved automatically whenever you select another object in the list. This is the default setting and a quick way to save. However, you will also change the text if you click on another item accidentally.

If you are not using the Quick Save option, you need to confirm saving the comment/memo when selecting another object in the list.

Changes can be explicitly saved at any time by pressing the **Ctrl-S** key combination, or via **EDIT / ACCEPT** from the Object Manager's menu.

Primary Document Manager

For many operations, the Primary Document Manager is easier to handle than the drop-down list. For instance, using drag & drop, files can be assigned directly and very efficiently to an HU (see "Assigning Documents using Drag & Drop" on page 79).

The PD Manager also allows drag & drop rearranging of the documents (see "Rearranging Primary Documents Using Drag & Drop" on page 82).

Double-click: Double-clicking a PD loads the data source and displays its content in the PD pane.

Single-click – pause – single-click (or F2) activates in-place editing of PD names.

Multiple Selection: You can select more than one PD at a time. This is useful for printing a selected list of PDs (**OUTPUT / LIST**).



Colors:

- Usable PDs are colored **black**.
- PDs that are available but cannot be loaded due to a consistency problem are colored **red**. This indicates a problem with editing. You have either modified the document outside of ATLAS.ti or have lost or misplaced the log file that is created when editing a document inside of ATLAS.ti ("Rule No. 2: Never delete, modify or move the auxiliary log file", page 140).
- PDs with an inaccessible data source file are colored **gray**. If this happens, you have either moved the documents to a different location or have renamed them. Look at the column "Origin" in the Pdocs Manager to see where the HU looks for the document. For further information see "The ATLAS.ti Referencing Model", page 105.
- PDs that can be loaded, but are loaded via the fallback path, are shown in a **dark red color**. The fallback path is either the HU or the TBPATh. See "Special Paths", page 108. It is advisable to optimize that path settings when this occurs (**DOCUMENTS / DATA SOURCE MANAGEMENT / OPTIMIZES PATHS**).

The PD Manager Toolbar

The toolbar is a convenient alternative to selecting procedures via the main menu. The **OPTIMIZE PATHS** and the **ACCESSIBILITY REPORT** options from the Data Source Management sub menu have only an effect on the currently selected

document, if you select them in the PD Manager. When selecting these options from the main menu, they are applied to all documents.



Figure 17: PD Manager toolbar

From left to right:

- Assign a new document
- Toogle: The windows either is display always on top (default), or is closed when you click somewhere else.
- Open text pane for writing comments in a full-fledged text editor.
- Open a network view on the selected primary document.
- Disconnect the primary document.
- Various View options
- Open the Primary Document Family Manager.

PD Manager Columns

The columns of the PD Manager's details view offer a vast amount of information to keep track of possible access problems. The arrangement of columns may differ from your current setting.

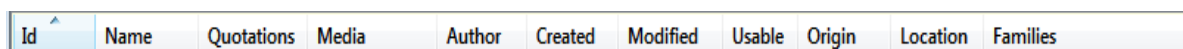


Figure 18: PD Manager Columns

ID: The internal ID number assigned to the document when it was first added as a PD. An icon indicates the document type.

Name: The name of the PD. Note that this name can differ from the file name, as PDs can be renamed within ATLAS.ti.

Quotations: The number of quotations created for this PD.

Media: The media type.

Author: The name of the ATLAS.ti user who assigned the document

Created: The date the document was assigned to this HU.

Modified: The date when the PD was last modified. Modification is not the modification of the data source, but the date of last usage within ATLAS.ti, e.g., a quotation was created or removed

Usable: 'Yes' indicates that a PD's data source can be loaded, and 'no', indicates that the data source not accessible. See "Help with Data Management Problems" on page 433 for further information.

Origin: The original location of the PD's data source from where it was assigned to the HU.

Location: The actual location of the data source file acquired via redirection. Dashes indicate that Origin and Location are identical.

Quotation Manager

This Manager offers you several display and sorting options.

A double-click on a quotation loads its PD (unless already loaded) and displays its content in context.

In this example, quotation "11:23" is selected and its comment is displayed in the text pane.

Single-click selects a quotation. If you have written a comment for the selected quotation, it is displayed in the text pane.

Single-click – pause – single-click (or **F2**) activates in-place editing of quotation names.

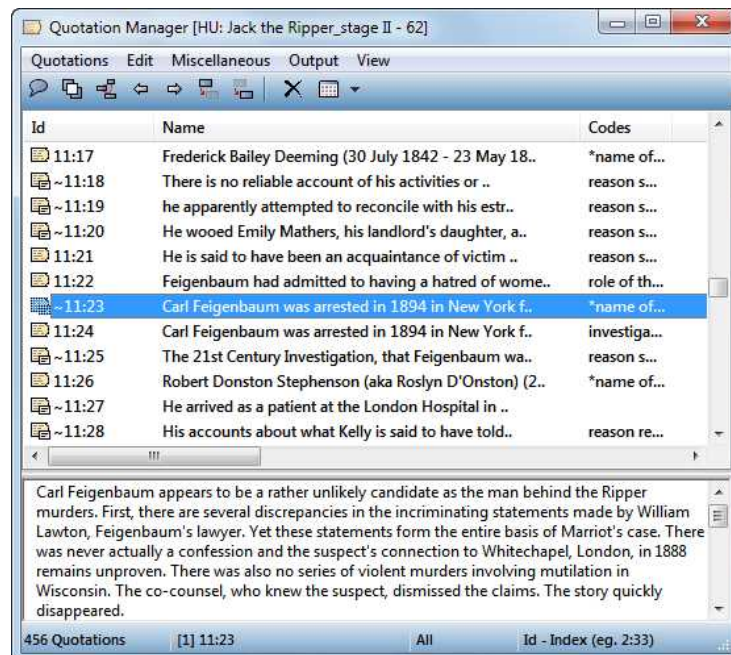


Figure 19: Quotation Manager

Double-click: A double-click on a list entry displays the selected quotation in context.

Multiple Selection: You can select more than one quotation at a time, either to delete them, to attach codes, to open a network on them, or to create output.

Drag & Drop: By dragging one or more quotations onto other quotations, you create hyperlinks.

Colors: The color pattern for quotations follows the same rules as for PDs:

- Quotations that can be activated and displayed are listed in **black**.
- Quotations from PDs that are available but cannot be loaded due to an issue with editing (either a mismatching log file or changes made outside of ATLAS.ti) are displayed in **red**. See (“Rule No. 2: Never delete, modify or move the auxiliary log file”, page 140).
- Quotations from PDs with inaccessible data source files are displayed in **gray**. See “The ATLAS.ti Referencing Model”, page 105.
- Quotations that can be loaded, but are loaded via the fallback path, are shown in a **dark red color**. The fallback path is either the HU or the TBPATh. See “Special Paths”, page 108. It is advisable to optimize that path settings when this occurs (**D**OCUMENTS / **D**ATA SOURCE MANAGEMENT / **O**PTIMIZES PATHS).

Quotation Manager Toolbar



Figure 20: Quotation Manager Tool bar

From left to right:

- Open text pane for writing comments in a full-fledged text editor.
- Toggle: The windows either is display always on top (default), or is closed when you click somewhere else.
- Open a network view on the selected quotation.
- Move forward to the next quotation (or back to the last one)
- Create the link source for a hyperlink (“Hypertext”, page 360)
- Create the target link for a hyperlink.
- Delete selected quotation(s).
- Various View options

Quotation Manager Columns

Id	Name	Density	Codes	Start	Size	Author	Created	Modified
----	------	---------	-------	-------	------	--------	---------	----------

Figure 21: Quotation Manager columns

ID: The ID combines the PD ID and the quotation sequence number. In the example above, the first ID number is 3:10, which means that the quotation is part of the third (3:) document, and it is the 10th (:10) quotation that was created in this document. Quotations are numbered in chronological and not in sequential order. The tilde sign ~ indicates that a comment was written for this quotation; the bracket symbol < indicates that the quotation is a start anchor for a hyperlink.

Name: The first few characters of a quotation are used as the default list name. This name can be changed if desired. The default name of a graphic, audio, or video quotation is the name of the data file name.

Density: Number of links to other quotations.

Codes: Codes that have been applied to this quotation.

Size (media type dependent):

- Text quotation: number of paragraphs
- Graphic quotation: height in pixel of the quotation's rectangle.
- Audio quotation: milliseconds
- Video quotation: frames or time (see "Changing between time and frame references", page 213)
- GoogleEarth quotation: 1

Start (media type dependent):

Text quotation: paragraph number

Graphic quotation: upper left coordinate

Audio quotation: h:mm:ss:mil (hours:minutes:seconds: milliseconds)

Video quotation: start frame or time (see above)

GoogleEarth quotation: Geographic reference

Author: Name of user who created the item.

Created: Creation date and time.

Modified: Date and time of last modification.

Code Manager

Besides the HU Editor, the Code Manager will probably be one of your most

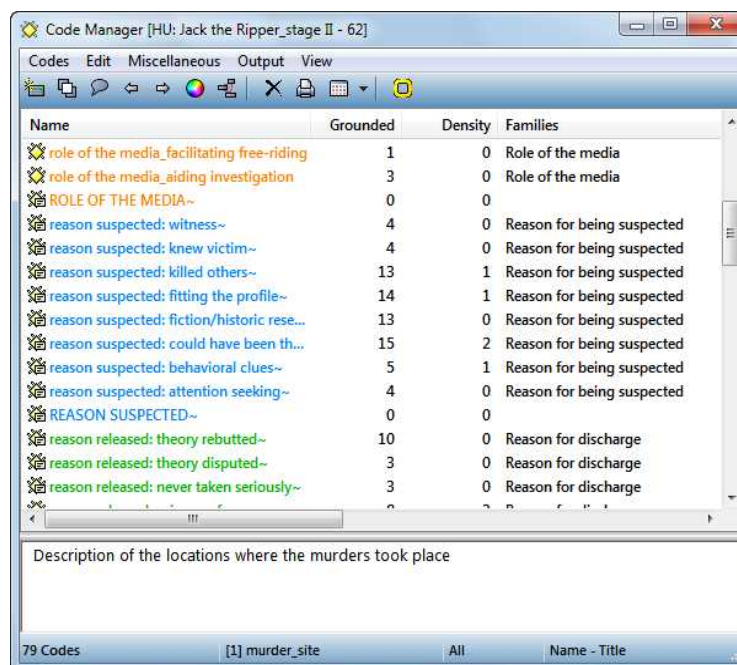


Figure 22: Code Manager in detailed view

frequently used tools.

A double-click on a code displays the coded quotation highlighted in the context of its PD. If more than one quotation is associated with this code, a list pops up from which a quotation can be selected.

The Code Manager is frequently used to create and modify codes, to code data segments via drag & drop, and to retrieve coded data segments. It can also be used to sort your codes in multiple ways in order to analyze codebook evolution.

Single-click: Selects a code. If you have written a definition for the selected code, it is displayed in the text pane. Once selected, the code can be used for drag & drop coding.

Single-click – pause – single-click (or **F2**) activates in-place editing of code names.

Double-click: Opens a list of quotations that have been coded with this code.

Multiple Selection: You can select more than one code at a time to delete, code a data segment with all of the selected codes, open a network, create output, assign them to one or more code families, or to create a code family containing the selected codes (**CODES / EDIT FAMILY**).

Drag & Drop: You can use the Code Manager as a convenient tool for coding by dragging codes onto a highlighted piece of data. If you drag codes onto another code within the same list pane, code-links will be created.

Colors: Super Codes are displayed in red, regular codes in black unless you color them.

Code Manager Toolbar



Figure 23: Code Manager toolbar

From left to right:

- Create a new code.
- Toggle: The windows either is display always on top (default), or is closed when you click somewhere else.
- Open text pane for writing comments in a full-fledged text editor.
- When double clicking a code, a list of linked quotations is opened. Click the forward and back buttons to review the list.
- Open a network view on the selected code.
- Delete selected code(s).
- Create output.
- Various View options.
- Open the Code Family Manager.

Code Manager Columns

Name	Grounded	Density	Families	Author	Created	Modified
------	----------	---------	----------	--------	---------	----------

Figure 24: Code Manager Columns

- **Name:** Code name.
- **Grounded:** Code frequency or "groundedness" (i.e., the number of quotations to which the code is applied).
- **Density:** Number of links to other codes.
- **Families:** Name of code family if the code has been added to a family.
- **Author:** User who created the code.
- **Created:** Creation date and time.

- **Modified:** Date and time of last modification.

Memo Manager

The Memo Manager lists the HU's memos. Memos created or modified today are listed in bold font. The text pane displays the content of the selected memo.

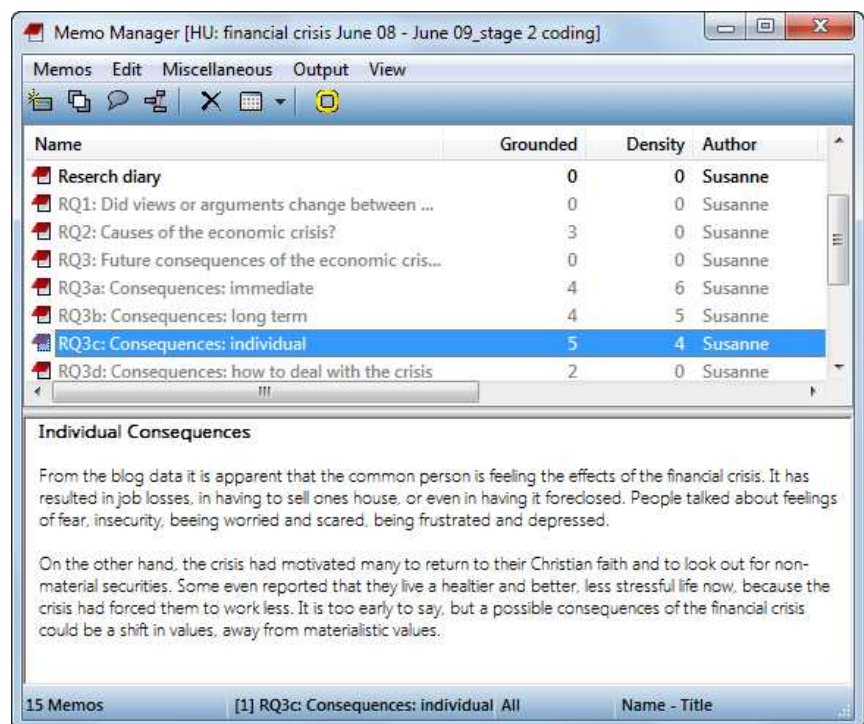


Figure 25: Memo Manager

- **Single-click** selects a memo. The content of the memo is displayed in the text pane.
- **Single-click – pause – single-click** (or **F2**) activates in-place editing of memo titles.
- **Double-click** opens the memo editor. This behavior can be changed to activate the quotation associated with a memo via General Preferences.
- **Multiple Selection:** You can select more than one memo at a time for bulk deletion, to attach all selected memos to a data segment, to open a network on them, to create output, to assign them to one or more memo families, or

to create a memo family containing the selected memos (**M**EMOS / **E**DIT **F**AMILY).

- **Drag & Drop:** You can attach a memo to a data selection (“memoing”) by dragging it into the PD pane (applies to text and image data).
- **Colors:** Memos content resides in the HU’s file storage until selected for the first time. Memos, which are not yet loaded are displayed in gray. Memos which were created or modified today are displayed bold.

Memo Manager Toolbar



Figure 26: Memo Manager toolbar

From left to right:

- Create a new memo
- Toogle: The windows either is display always on top (default), or is closed when you click somewhere else.
- Open text pane for writing the contents of a memo in a full-fledged text editor.
- Open a network view on the selected memo.
- Delete the memo.
- Various View options
- Open the Memo Family Manager.

Memo Manager Columns

Name	Grounded	Density	Author	Type	Size	Created	Modified	Families	PDs
------	----------	---------	--------	------	------	---------	----------	----------	-----

Figure 27: Memo Manager Columns

- **Name:** Memo title.
- **Grounded:** Number of quotations to which a memo is connected.
- **Density:** Number of codes and other memos to which the memo is connected.
- **Size:** Size of content. Counts text characters and embedded objects.
- **Author:** Name of the user who created the memo.
- **Type:** Memo type selected for this memo.
- **Created:** Creation date and time.
- **Modified:** Date and time of last modification.

- **Families:** Name of memo family if the memo has been added to a family.
- **PDs:** Indicates whether the memo is used as the data source for one or more PDs. A dash indicates that it is not used as a PD.

Data Preparation

Starting and Ending an ATLAS.ti Session

This section describes how to start and end an ATLAS.ti session, how to create and save a project (a Hermeneutic Unit)

Make sure to check out the Project Management section before starting any serious projects. You can save yourself a lot of time and trouble by following a set of simple rules for proper planning, storing, and moving your ATLAS.ti project files. See "Setting Up a New Project" on page 112 for details.

Starting ATLAS.ti

ATLAS.ti can be started like many other Windows applications, e.g., via the Windows Start menu or by clicking on projects or program shortcuts:

Select ATLAS.ti from the Programs menu: **START BUTTON / PROGRAMS / SCIENTIFIC SOFTWARE.**

Double-click on the program's shortcut on the desktop or on your task bar (if you have created one).



Figure 28: ATLAS.ti desktop shortcut

Double-click on an existing Hermeneutic Unit (HU) in the Windows Explorer. Or, you can create a fresh HU via a folder's context menu's **New / HERMENEUTIC UNIT** entry.

If you started ATLAS.ti directly (not by selecting a project), you will see the ATLAS.ti Welcome "Wizard" (see below), which offers four options to start a session.

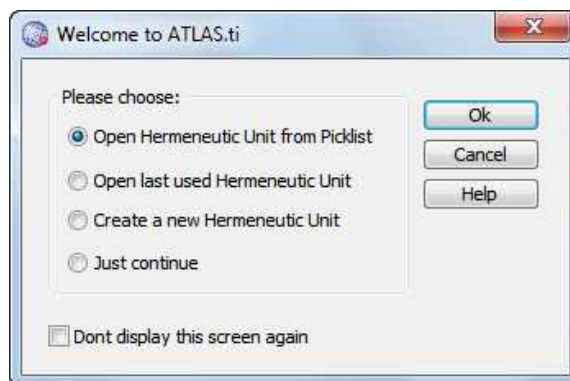


Figure 29: ATLAS.ti Welcome Wizard

The wizard is not displayed if you select an existing project to start the session.

Open Hermeneutic Unit from Picklist: If you choose this option, you can select from a list of recently used HUs. If this is the first time you open ATLAS.ti, you are offered the sample projects.

Open last used Hermeneutic Unit loads the most recently used HU.

In order to start a new project, select the option **Create a new Hermeneutic Unit**.

Select **Just continue** if you want to close the wizard and return to the HU Editor, or select of the other options and click **OK**.

If you make no selection in the "Wizard," it will time out and close automatically after a minute. You can always get it back by choosing **OPEN WELCOMEWIZ** from the HU Editor **HELP** menu.

Logging In

By default (i.e., when first opening the program), you are automatically logged in as "Super" (Super User = Admin). ATLAS.ti associates the user currently logged in with all objects (like codes, quotations, memos, etc.) created during a session. If you keep the default settings, all objects are 'stamped' with the user name "Super."

Create your own user account!

Especially if you work in a team, we recommend that you create your own user account (see “User Management”, page 150).

Ending your ATLAS.ti Session

When you have finished working, select **FILE / QUIT** from the HU editor’s main menu to close the session.

Creating, Opening and Saving a Hermeneutic Unit

Creating a Hermeneutic Unit

For more detail on how to best set up a project see “Setting Up a New Project” on page 112.

When you start ATLAS.ti and a recently used HU is not loaded, you will see “New Hermeneutic Unit” in the caption of the HU Editor. You can start working right away on this new HU.

Alternatively, you can choose **FILE / NEW HERMENEUTIC UNIT** to open a new HU.

To provide a name for your HU, save it to disk:

- Choose **FILE / SAVE** or **SAVE AS** from the main menu, which opens a standard file dialog.
- Browse to the desired folder where you want to save your HU file and enter a name for your HU.
- Click **SAVE**.



Make it a habit to always write a short comment for any new HU. Describe the project’s goals and intentions. You and your team members will benefit from having this useful information available at all times - HU comments are displayed in the HU Browser and also in HTML and XML output. HU comments are also displayed when reviewing file properties with Windows Explorer. To write an HU comment, click on the comment button in the main toolbar.

Opening a Hermeneutic Unit

The Welcome Wizard opens upon start-up unless:

- you have checked the option “**LOAD LAST USED HU UPON START UP**” under **EXTRAS / PREFERENCES / GENERAL PREFERENCES**, Tab: HU Editor..
- Or if you checked the box “Don't display this screen again” in the Welcome Wizard.

The Wizard offers options to work with a recently used HU, create a new one, etc.

No special actions are required to load an HU created with version 5 of ATLAS.ti into ATLAS.ti 6. See: <http://www.atlasti.com/backwards.html>

To open a Hermeneutic Unit using the standard Windows file dialog

- From the ATLAS.ti main menu select **FILE / OPEN** (shortcut: Ctrl-O).
- The Open Hermeneutic Unit file dialog appears. The default folder for ATLAS.ti projects is the "Textbank" directory, which is assumed to be your main repository for HUs and PDs (but you can store your data wherever you want, see Setting Up a New Project on page 112).
- Select a HU and click **OPEN**.

To open a Hermeneutic Unit using the HU Browser

The HU Browser is an alternative to the standard file dialog. It offers the list of most recently used HUs. This list is also offered at the end of the File menu. To open the HU Browser:

- Choose **FILE / BROWSE...** from the main menu.
- Select a HU and click Load HU.
- The HU will be loaded in a new HU Editor.

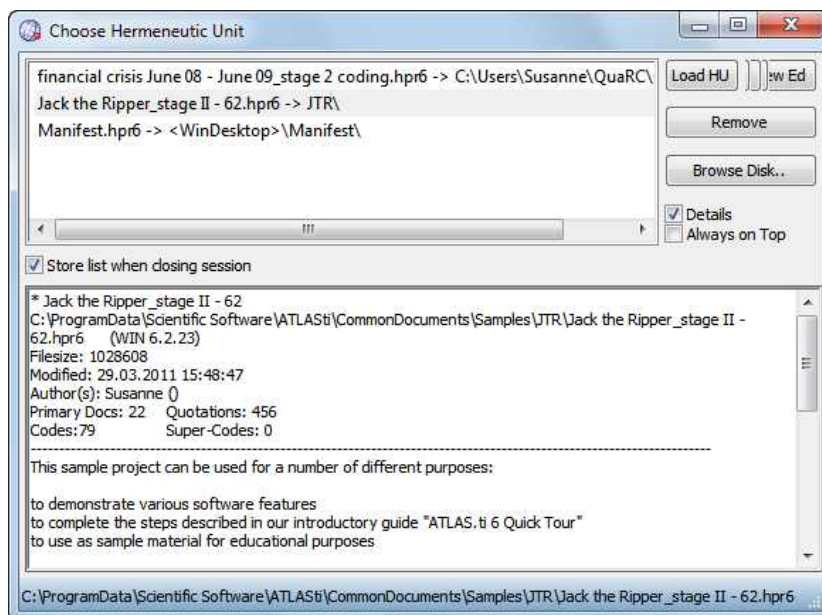


Figure 30: HU Browser

The browser displays some information about the selected HU, e.g., its location, date of creation, (co-) authors, number of assigned PDs, quotations, codes, and its comment.

If needed, you can launch the standard file dialog from within the HU Browser by clicking the **BROWSE DISK** button.

If you want to clean up the list of recently used HUs, click the **REMOVE** button. This action deletes the list entry, not the HU itself.

Although the standard file dialog is generally more flexible, the HU browser's capability of displaying files from different locations in one list is often quite convenient. However, if you only want to "open," you can simply choose from the list of most recently used HUs available in the **FILE** menu.

To open a recently used Hermeneutic Unit

- Open the **FILE** menu.
- Select an HU from the list displayed at the bottom of the File menu.

To open the most recently used Hermeneutic Unit at start-up

When starting ATLAS.ti, the last used HU can be loaded automatically. This start-up method can be selected under **EXTRAS / PREFERENCES / GENERAL PREFERENCES**, tab: **HU EDITOR**. This is the default setting.



To open a Hermeneutic Unit using Drag & Drop

You can drag files from the Windows Explorer or the desktop:

The HU is also protected against accidental concurrent editing.

From the Windows Explorer, your desktop, or any other folder containing HU files, drag an HU onto the HU Editor's main pane or caption.

Protecting the HU against concurrent use (HU Lok file)

When you open an HU, a Lok file is created for this HU (e.g. My Project.hpr6.lok) to prevent concurrent editing of a HU. The Lok file is deleted when you close ATLAS.ti.

Sometimes it happens that the lok is not deleted (either in case of a system crash, power-outage, or the user copied the project folder while ATLAS.ti was still opened). If you then open the HU the next time, a message pops up telling you that the HU is currently in use by someone and can consequently only be opened in read-only mode.

If you are sure you are the only one using this HU and you have not already loaded it in another window, you can treat this message as a "false alarm" and delete the lok file for the HU in the Windows file manager.

Saving a Hermeneutic Unit

If you haven't saved your work already, you will be asked to save the HU when you close the HU Editor. If you leave ATLAS.ti without saving, your work during the last session is lost.

To save the currently open HU, select **FILE / SAVE AS** from the main menu. The file dialog opens.

Select a folder and enter a name for your HU. In terms of facilitating project management, the best option is to save the HU into the same folder with documents (let's call this "your project folder"). If a different folder is shown, browse to your project folder and save the HU there.

Click on the **Save** button. The extension .HPR6 is automatically appended to the file name.

Pending Changes

Pending changes are changes in open memo or comment text editors (unless you have saved the text) and in network editors with modified layout that has not yet been saved. If you are currently editing a PD's data source, this would also count as a pending change. If any pending changes are detected when you are about to close or save the HU, you will be offered the choice to accept or discard such changes. By accepting the changes, they become part of the HU and are then saved to disk along with all other changes in the HU.

The extended dialog below lists all pending changes and allows control over which pending changes are to be committed.

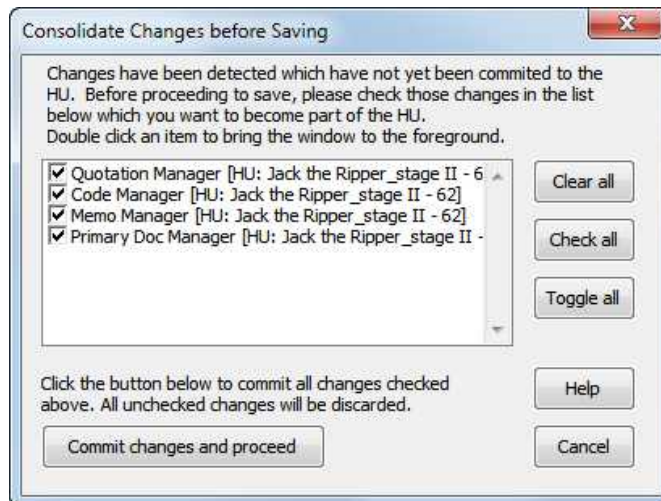


Figure 31: Lists all objects with pending changes

Before taking any further action you can inspect any pending changes in their respective editors simply by double-clicking an item in the list.

Preparing Primary Documents

Primary Documents (PDs) play a major role in ATLAS.ti's framework. They are the interface between a Hermeneutic Unit (HU) and the data. They provide access to data sources, which are usually files stored on the disks of your computer or a network drive. This chapter outlines the steps needed to create, select, and prepare documents so that they will be suitable to use in ATLAS.ti.

Supported Formats

In principle, most textual, graphical, and multimedia formats are supported by ATLAS.ti. For some formats, their suitability depends on the state of your Windows system, particularly in regard to what other software is already installed. Before deciding to use an exotic data format, you should check if this format is available and if it is sufficiently supported by your Windows system.

For a list of formats that are currently supported as primary documents choose "Assign" from the documents drop down menu and click the File Type drop-down list that appears at the bottom of the window (see "Assigning Documents via the File Dialog" on page 78). Only the formats listed in the drop-down list are supported by ATLAS.ti. To ensure that files are compatible with your system, assign a few of your documents as PDs. They should load and display (or play, when the source is multimedia) correctly.

Files that might prove problematic are multimedia files using exotic "codecs" (software that enables playing of a certain multimedia file format on your computer) and files that rely on RTF converters. If a file is listed but cannot be loaded, see "Help with Data Management Problems", page 433.

Language Settings

ATLAS.ti can handle documents in pretty much ANY language and character set, although the program interface is, of course, in English only.

Requirements

A first requirement is that language-specific fonts are installed on the computer. If you use special regional languages, this might require that you install an appropriate language pack on your computer.

Next, make sure that the correct language is set in the **Language** tab at the bottom right of the ATLAS.ti window. It is set to *Default* if nothing else is selected.

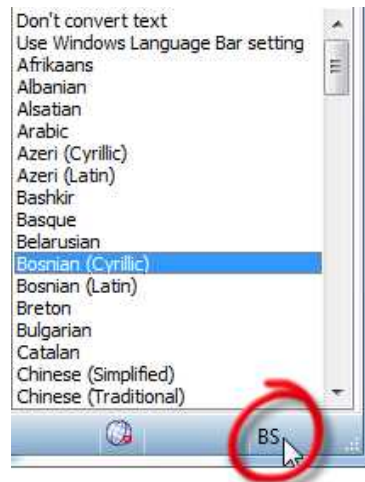


Figure 32: Bosnian (Cyrillic) is selected as language in this case

After you have selected a specific language that is not the default language on your computer, a two letter abbreviation is displayed in the language tab.

Font settings

If characters are not displayed properly in all windows and lists, you may need to adjust the font settings:

- Select **EXTRAS / PREFERENCES / GENERAL PREFERENCES** and then the Font tab.
- Select one or more or all object types for which you want to change the font.
- Select a font and appearance (bold, italic) for these object types.
- If you have projects in different languages, you can specify different font themes.

InVivo Code settings

- First check whether the appropriate language is set in the language tab (see above).
- Then select **EXTRAS / PREFERENCES / GENERAL PREFERENCES** and then the **TEXT EDITOR** tab.
- Select the desired language:



Figure 33: Language setting for InVivo coding

System settings for Thai and Asian language support on Western European and US Windows systems

In case you are working with Thai and Asian languages on non-Asian systems such as Western European or US Windows, the appropriate language pack needs to be installed on your computer.

- Log in to your computer with full administrative rights.
- Select **START / CONTROL PANELS / REGIONAL AND LANGUAGE OPTIONS**.
- Select the **Languages** tab and then the option to install the language files that you need.
- Under the **Advance** tab, select the language in the field "Language for non-Unicode programs".

Size Restrictions

Theoretically, size restrictions do not play a major role due to the way ATLAS.ti handles documents (see "The ATLAS.ti Referencing Model" on page 105). However, you should bear in mind that your computer's processing speed and storage capacity affect the performance. Excessively large documents can be uncomfortable to work with, even when you have an excellently equipped computer. The crucial issue is not always the file size, but rather, in the case of multimedia files, the length of playing time. For textual documents, the number and size of embedded objects may cause extraordinarily long load times. There is a high likelihood that if a textual document loads slowly in ATLAS.ti, it would also load slowly in WORD or WordPad.

For very long texts or multimedia files, navigation can be severely handicapped, e.g., scrolling to exact positions.

We recommend making data sources as small as possible but as large as necessary without breaking passages that belong together. Even with many smaller documents, ATLAS.ti supports unified processing and fast navigation.

Make your data sources as small as possible but as large as necessary.

Preparing Textual Documents

Supported Formats

ATLAS.ti 6 principally handles documents in plain and Rich Text Format (RTF). See also “Supported Formats”, page 74 for additional information.

Rich Text supports character- and paragraph-related formatting. Data from other applications can be embedded

Rich Text

.RTF (Rich Text Format) is a proprietary text data format developed and propagated by Microsoft, and intended as an industry standard for exchanging documents between different applications. It supports such extensions as character formatting (bold, italic, color, etc.) with different fonts and sizes, paragraph formatting (bullets, indentation, alignment, etc.), embedded objects (graphics, tables, video, etc.) and more.

All textual documents are displayed on the basis of Rich Text within ATLAS.ti.

Saving documents as rich text is a standard feature that can be found in most word processing programs. In Word, for instance, this is an option that can be selected in the data type field when saving documents under a different name (“Save as”). We recommend storing documents as “rich text” right away even if they are currently “plain text” and do not contain any formatting.

However, no miracles should be expected from a conversion into RTF. The success of the conversion heavily depends on the characteristics of the converter used. Bear in mind that the quality of such conversions usually does not reach the richness in appearance and procedures of the original (Word, etc.) documents (e.g., multiple lines in tables from a Word document are not displayed identically within ATLAS.ti).

Word doc and docx files

For your convenience we also support the inclusion of documents that are not RTF. To be able to utilize such documents without having to convert them to RTF, ATLAS.ti uses converters installed on your system (as part of the basic Windows or Office installation).

In case you cannot load a Word file and you see the message “**converter missing**” on your screen, then you need to download the latest doc(x) – rtf conversion pack and install it. You find conversion packs online, free of charge.

Limitations of working with doc or docx files

Doc and docx files need to be converted to rich text every first time they are loaded in any work session. If the documents are short, you probably don't notice anything because it is quite fast. If you work with longer documents, it may take a few seconds before the document is loaded.

Store documents in RTF if you want to edit them later.

Doc and Docx files cannot be edited as they are converted “on the fly” during the process of loading. Thus, you want to edit documents originating from Word, WordPerfect, etc., you need to convert them to **rich text** from within their original application **before** assigning them to an HU.

If working on a number of different computers, different converters may produce different results. This can – even though very rarely – result in misaligned codes.

Save your documents in rich text format (.rtf) **prior** to assigning them to an ATLAS.ti HU.

Plain Text

Of course, plain (unformatted) text documents can always be used, including documents using Unicode. In the course of editing plain text documents within ATLAS.ti, they can be “enriched” and saved with all added formatting.

Preparing PDF files

In general it is good to have an understanding what PDF is and what not. When PDF was invented, it was never meant to be a text processable thing. The goal was identical layout in display and print. Thus, PDF is perfect if you need the original layout. When preparing PDFs, you need to pay attention that you prepare a text PDF file and not a graphic PDF. If the latter, then ATLAS.ti treats it as a graphic file and you cannot search it or retrieve text.

When scanning a text, you need to use character recognition software (often provided with your scanner) in order to create a text PDF file.

Another issue that needs to be pointed out is that you can retrieve text, e.g. from a coded segment, but not in PDF format. The output will be in rich text. Thus, you will lose the original layout. This is due to the nature of PDF as mentioned above. It is a layout format and not meant for text processing.

Preparing Graphical Documents

Supported Formats

More than twenty graphic file formats are accepted by ATLAS.ti as valid data sources for PDs, including BMP, JPEG, and TIFF. Scanners often produce TIFF and digital cameras usually create JPEG images. Multipage TIFF files are also supported. They need to be prepared in an image editing software that supports such an option.

Size recommendations

Digital cameras and scanners often create images with a resolution that significantly exceeds the screen’s resolution. When preparing a graphic file for use with ATLAS.ti, use image-processing software to reduce the size so that the graphics are comfortably displayed on your computer’s screen. If an image does not fit into the primary pane, you may need to use the zoom function available via the mouse wheel or the zoom button when displaying the image using ATLAS.ti.

Preparing Audio- and Video Documents

Audio and Video files

ATLAS.ti's multimedia capabilities are built upon DirectX technology. Both MCI and DirectShow are available to use virtually all files that can be played on your computer. While drivers for AVI and WAV files are installed in any basic Windows system (or at least when installing a sound adapter), formats like MOV, QT, AU, SND, MPG, and MP3 may require a dedicated driver.

Check the Multimedia section in **EXTRAS / SYSTEM REPORT** for a complete list of supported media types.

In case you have problems in playing a video file, the likely cause is a missing codec. Codec is a blending of two words based on **coder** and **decoder**. Thus, a codec is capable of encoding and/or decoding a digital data stream or signal. When creating a video file a certain codec is used to encode it; when you want to play it, you need the same codec to decode it. But when this codec is not available on your computer, the file cannot be played. The solution is to go online and to search for a codec package. They are available in a number of languages and are free of charge.

Detailed instructions for preparing video files for use in ATLAS.ti are available from http://www.atlasti.com/uploads/media/video_formats.pdf

Length Recommendations

File size does not pose a problem for ATLAS.ti as an external referencing system is used and data are not imported into the ATLAS.ti project file (see "The ATLAS.ti Referencing Model" on page 105). However, certain issues should be considered regarding the length (duration) of a multimedia clip.

Currently the time line for audio and video file has no scroll bar. Thus, it can only be as wide as your computer screen, whether your audio/video file is 30 seconds or two hours long. Therefore, when using very long clips as primary data, it might be difficult to mark quotations of short duration. If you need fine-grained resolution when creating quotations, chop a big file into smaller clips.

The resolution of multimedia documents also depends on the compression scheme ("codec") used when creating the multimedia output. Higher compression results in smaller file sizes but often in less precision, so marking a specific period or sequence of frames may become problematic.

Preparing Google Earth Documents

Even with a non-standard data source as the "World" as seen through Google Earth we still stay within the Primary Document metaphor. Thus, there is only ONE data source worldwide, and all Google Earth PDs created in any HU all refer to the same data source located at the Google servers.

However, you can also use more than one Google Earth PD (even if there is only world...) in order to create distinct sets of locations, to simulate tours, to simply tell different stories.

The prerequisite for use of the features described in this section is that Google Earth is installed on your computer. See <http://earth.google.com/> (or your respective language website) for more detail.

KMZ and KML documents

KMZ files are zipped KML (Keyhole Markup Language) files, which will start Google Earth and fly you to a specified location.

KML, or *Keyhole Markup Language*, is an XML grammar and file format for modeling and storing geographic features such as points, lines, images, polygons, and models for display in Google Earth and Google Maps.

KML is used to share places and information with other users of Google Earth and Google Maps (and now ATLAS.ti). You can find many KML files that describe interesting features and places On the [Google Earth Community](#) site.

Assigning and Handling Primary Documents

“Assigning PDs” is indeed a sloppy term, and we left it as is mainly for historical reasons. A more accurate name would be “Create PD” or “Assign as PD” or “Assign Data Source”.

Indeed, whenever you select **DOCUMENT / ASSIGN**, a new Primary Document, which is an ATLAS.ti internal object, is created, e.g., (“P 1”) and the “data source” (e.g., file *text_1.rtf*) is associated with this PD at the same time. This distinction between a PD and the actual data source is explained in more detail in “Data Management in ATLAS.ti” on page 105).

More than one data source can be assigned as a PD at the same time (e.g., by selecting multiple files in the file dialog), but there is no need to assign all documents at one time. You can assign more files during the course of the analytical process.

Bulk-assigned files are listed in alphabetically order. For every PD created during assignment, an ID is created consisting of a prefix “P” and a consecutive number. In addition, the name of the data source (file name) is appended to the ID. This name can be changed later for display purposes.

This “one source - multiple PDs” principle is not restricted to one HU. A data source can be assigned as a PD (or many PDs) in more than one HU. This is usually the case in team scenarios. Each PD, however, refers to exactly one data source.

Thus, if you plan to analyze a single document source from several different perspectives, there is no need to create physical copies of the document and assign each of the copies as a PD to the HU. A single data source can be assigned more than once, which creates as many PDs, each with its own number and name, but they all refer to the same data source.

Assigning Documents via the File Dialog

To assign files:

Choose **DOCUMENTS / ASSIGN / ASSIGN** from the main menu. The file dialog box opens by default on the “Textbank” folder. If you have already assigned files during this session, the most recently used folder is opened.

By default, all file types that are permitted to be assigned as PDs are offered. By selecting from the filter drop-down, you can restrict the type of documents.

Browse and select one or more data source files to be assigned to the HU and click the **Open** button.

The selected files are assigned as PDs.

Assigning Documents using Drag & Drop

Assigning documents via Drag & Drop may be more convenient when you have different browsers opened on different folders.

- Open Windows File Explorer. (e.g., by selecting **EXTRAS / EXPLORER** from the main menu)
- Select the folder from where you want to assign files.
- Select one or more files.
- Drag the selected files into the document drop-down list or into the Document Manager.
- A single file can directly be dragged into the main PD area. In addition to being assigned, it is immediately displayed.

Complete folders can be assigned in one step

You may also drag & drop sub folders. This essentially assigns all files stored in the sub folders and any sub folders below. Documents not compatible with ATLAS.ti are rejected.

You can imagine that this operation can assign an unexpected number of files to your HU. Make sure you know what is in the folders.

You can drag arbitrary files (as opposed to the standard assign technique that filters the files offered), but you are responsible for only assigning compatible file types. When ATLAS.ti detects a file extension that does not correspond to one of the file formats specified in the Assign File Dialog, you are asked for confirmation. Remember, a file with unknown type is always assigned as a plain text document. If it does not contain text, garbage is all you will see when it is displayed.

To assign documents by dragging a link

Assign PDs by dragging a link directly from your web browser into the PD Manager window.

But caution is advised: using web-based documents is one thing, and indeed a very powerful option. But as far as contents is concerned, the files need to comply to the restrictions in regard to contents (plain text, rich text, etc.). Furthermore, make sure you have a reasonably fast Internet connection or some operations might slow down considerably.

Assign Documents via a PD-Family Table

This method allows bulk assignment of documents while importing document properties (i.e., families) at the same time.

- Prepare a PD-Family Table, for instance in Excel™ (see “Preparing and Importing a PD-Family Table” on page 248 for details). A table can also be created by using Export PD-Family Table in ATLAS.ti.

Import the PD-Family table by selecting the menu option: **DOCUMENTS / ASSIGN / IMPORT PD-FAMILY TABLE.**

Select the prepared file and click **Open.**

A message pops up informing you about the number of families that have been imported. Click **Ok.**

Primary documents that did not exist already are assigned; new primary document families are created and the documents are sorted into these families or already existing families as indicated by the table. Existing documents will also be sorted into their respective families.

Assign Google Earth Documents



To create a new GE PD,

click the drop down arrow beside the Load Document button in the main toolbar and select **NEW GOOGLE EARTH PD** OR SELECT **DOCUMENTS / ASSIGN / NEW GOOGLE EARTH PD.**

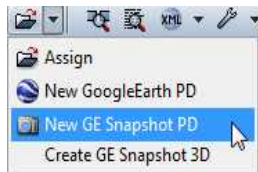
ATLAS.ti starts the application Google Earth for you and displays the Google Earth window within the ATLAS.ti editor. Depending on the speed of your internet connection this may take a few seconds.

Create and Assign a Google Earth Snapshot

You can create a snapshot from the geographic region that is currently shown on your screen within the HU editor. This snapshot is automatically assigned as primary document.

Click on the drop down arrow beside the Load Document button and select **NEW GE SNAPSHOT PD** (or select the option from the **DOCUMENTS / ASSIGN** MENU).

Then check your list of primary documents. The new GE snapshot has been added at the end of list and can now be loaded and treated like an image document.



Create a 3D stereoscopic image (just for a little fun in-between)

3D imaging is a technique capable of recording three-dimensional visual information or creating the illusion of depth in an image. ATLAS.ti allows you to create such images from a GE document. As above, click on the drop down arrow beside the Load Document button, then select **CREATE GE SNAPSHOT 3D.**

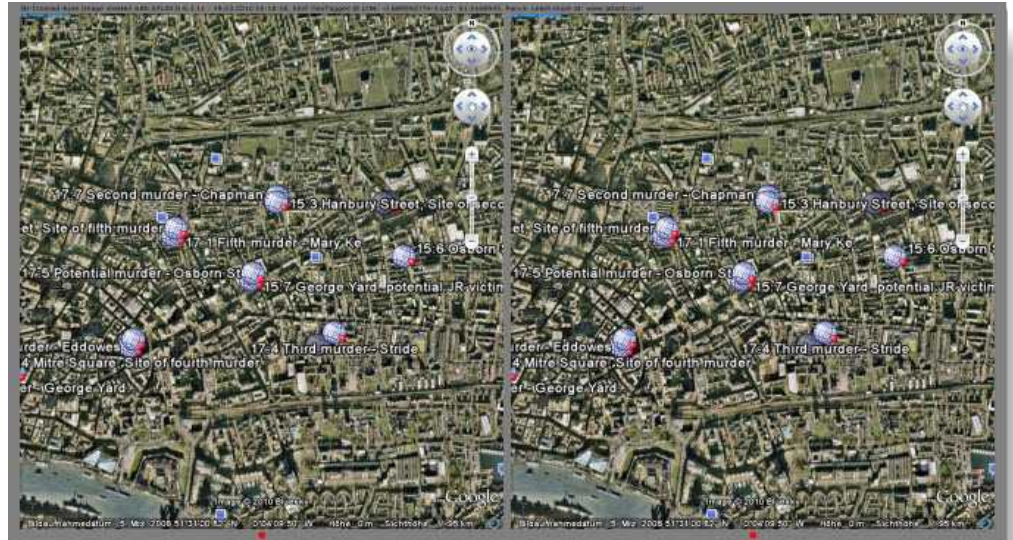


Figure 34: 3D cross-eye image created from an ATLAS.ti GE document

Such images can be viewed with 3D glasses, but free viewing is also possible. To get the 3D effect try the following:

- Move about arms length away from your monitor.
- Put your thumb on your nose.
- Point at the picture on the screen.
- Look at the tip of your finger.

While looking at the tip of your finger, notice the picture on the screen

If you don't get it right away, keep trying. After all, you're trying to get your eyes to see in a different way. Be patient, move further away from the monitor if you have trouble. If the above does not work for you, you find a number of different explanations for free viewing of 3D images on the world wide web.

Assign KMZ Documents

You may also create a PD from an existing document of type KML or KMZ (Keyhole Markup Language). Simply use the Assign function and select a file of an appropriate type.

Assign Memos as Primary Documents

You can also use memos as PDs. This procedure is only recommended for small to medium size projects without the need to share the documents. It allows you for example to apply codes to your analytic notes on the data.

- Select a memo in the Memo Manager.

- Select the menu option **MISCELLANEOUS / USE AS PRIMARY DOCUMENT**.

You find more detail on the memo function on page 254.

Rearranging and renumbering PDs

The ID of a PD determines its position in the list of PDs when in default sort order (by name). Furthermore, it is essential that PDs in HUs to be merged (see "Merging Hermeneutic Units" on page 171) have matching IDs.

To rearrange PDs (to change their IDs), use one of the following options:

- Rearrange a selected PD only.
- Rearrange one or more PDs using drag & drop.
- Renumber all PDs to make the current sort permanent while eliminating gaps in the numbering at the same time.

Of course, all quotations belonging to a repositioned PD are taken along.

Rearranging a Selected Primary Document

- Select the PD in the Document Manager whose list position should be changed.
- Choose **DOCUMENTS / MISCELLANEOUS / CHANGE POSITION** from the main menu.
- Enter a position number after which the selected document is to be moved.

Rearranging Primary Documents Using Drag & Drop

Rearranging PDs via drag & drop is a convenient alternative and lets you rearrange a number of selected PDs concurrently.

- Open the Document Manager.
- Select one or more PDs.
- Start to drag the PD(s).
- A dashed bar appears at the current list insertion point.
- Drop the PDs when you reach the desired location for the documents.

Set the sort criterion to ID by clicking on the ID header for an optimal feedback of the renumbering procedure.

Renumbering all Primary Documents

This option becomes useful after you disconnect several documents from a HU. When disconnecting PDs from an HU, previously assigned IDs (e.g. "P 1") are not "released." This results in gaps in the sequence of PD numbers. You may



remove these gaps by renumbering all PDs in the HU using the **Renumber All** feature.

■ Select **DOCUMENTS / MISCELLANEOUS / RENUMBER ALL** from the main menu.

It is not necessary to renumber PDs in ATLAS.ti. Doing so can give reports a cleaner appearance. However, if you plan to merge HUs, it is essential that PDs have matching IDs.

Loading and Navigating Primary Documents

Loading Primary Documents

Whenever the content of a PD needs to be displayed, printed, or searched, it accesses its data source (file, memo) and loads the content. This request is often triggered indirectly, e.g., by displaying (or printing) a quotation. For performance reasons, documents are only loaded once; they are “cached” unless this option is turned off.

The following lists a few procedures that directly or indirectly load the content of a PD:

- Activating it in the document drop-down list or the PD Manager.
- Activating a quotation in the quotation drop-down list or the Quotation Manager.
- Selecting a quotation for an activated (double-clicked) code or memo.
- Activating a hyperlink in the margin area.
- Using the **LOAD** option from the context menu of a PD node in a Network Editor.

To load a PD using the drop-down list

■ Click on the PD drop-down list.

■ Select a PD by clicking on an entry in the list. The selected PD is displayed in the PD pane. If the list does not display all PDs assigned, the scrollbar lets you navigate the list of entries.


 P-Docs

LOK files protect your documents from accidental modifications.

The HU is also protected against accidental concurrent editing.

To load a PD using the PD Manager

- Open the PD Manager by clicking the button to the left of the PD drop-down list.
- Double-click an entry in the PD Manager to load and display the PD.

File Locking

When a document is loaded a lok file for this document is created (e.g. interview.rtf.lok). This file is the "gatekeeper" that controls access to the data source. Every user on every ATLAS.ti workstation accessing a data source is registered in this LOK file. It also registers the name of the user, the name of the computer, and the time access was granted. None of this information is stored forever; all user-related information is removed when leaving the ATLAS.ti session.

The lok file on the one hand provides information that the file has already been loaded once (see Content Caching below), and supports the editing process in team situations. ATLAS.ti allows more than one user to access a data source at the same time. However, when you switch into edit mode, it might reject the editing attempt in case another user is already editing it ("first come – first served"). If the other user forgets to exit edit mode, left ATLAS.ti running, and went away on a long vacation, you might be informed that "User X has been editing the file for 23 days." Well, either this is really the case, or a LOK file could not be updated or removed because of a crash during an edit session. If you happen to know that there really isn't anybody editing the document, you can simply delete the LOK file for the document in the project folder to gain write access to the document. For more details on editing primary documents see page 136.

Content Caching

By default, the content of PDs is "cached," (i.e., kept in memory) unless this option has been switched off in **GENERAL PREFERENCES**. The benefit of caching is that the time a document requires to be ready for use is greatly reduced whenever its content is accessed more than once (e.g., when auto-coding text passages). The drawback of caching is that a larger amount of internal memory is needed when loading many large documents, which might in turn create performance issues on systems with insufficient memory. Caching can be turned off completely, but you can also empty the cache periodically by choosing menu option **DOCUMENTS / DATA SOURCE MANAGEMENT / CLEAR CACHE**.

With caching turned off, repetitive operations like auto-coding will be significantly slowed down.

Navigating within Primary Documents

The available navigation options depend on the media type of the selected PD.

Navigating within Textual Primary Documents

Textual PDs allow for a variety of options to display different parts of the text:

- You can scroll up and down using the mouse wheel.
- The arrow keys and other navigational keys can be used to move through the text.
- Jump to specific line/paragraph numbers using the **GO-TO-PARAGRAPH** button to the left of the PD pane.
- You may also zoom the content via the **ZOOM PD** button in the vertical tool bar (see left). To reset the view to 100%, hold down both **SHIFT+CTRL** key while you click on the **ZOOM +** button.
- You find a selection of predefined sizes in the Size tab in the bottom right of the ATLAS.ti window:

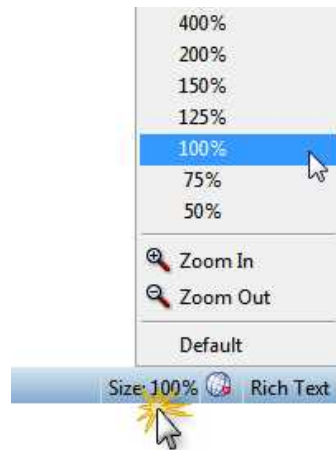


Figure 35: Setting the display size of primary documents

Some additional notes on displaying and navigating PDF Documents

You can view PDF documents page by page or select to view continuous pages. If your PDF documents contain bookmarks, you can choose whether you want to see them or not and where to position them.

To change the settings for PDF documents, select the main menu option **EXTRAS / PREFERENCES / PDF PREFERENCES**.

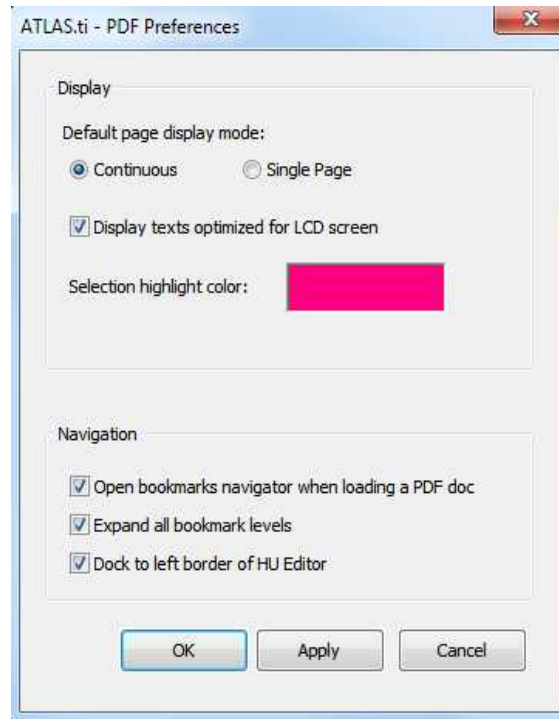


Figure 36: Setting PDF preferences

- Click on the colored rectangular area to select a highlight color.
- Select the continuous page display option to scroll down the entire PDF document.

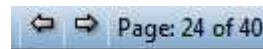
If selecting the single page option, only one page at a time is displayed. When moving down and up the scroll bar, a preview image of the other pages is displayed (see below).



Figure 37: Single page view with preview image

When selecting the single page view, click on the Page button in the status bar to move back and forth. Or click on the preview image to jump to the displayed page.

Figure 38: Page button in the status bar



In case, the PDF document includes bookmarks, a bookmark navigator is displayed. In the preference window (**EXTRAS / PREFERENCES / PDF PREFERENCES**), you can choose whether to display it, where to place it on your screen and how much you want to see.

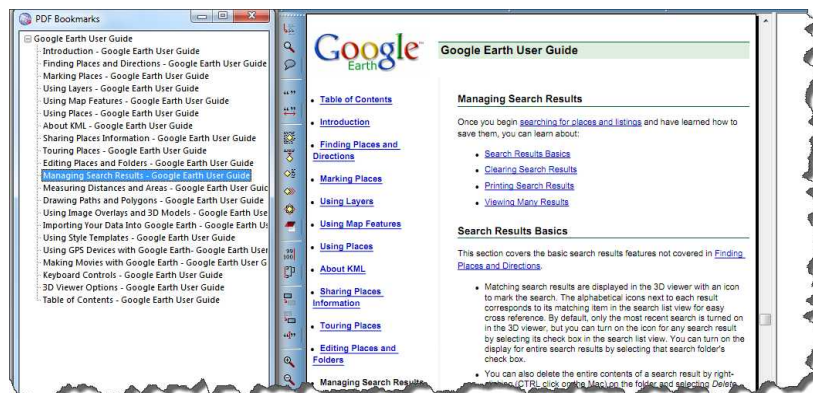


Figure 39: Bookmarks docked to left boarder of HU editor

Changing the display size of PDF documents

If you increase the size of the editor window, the size of the PDF page is enlarged. You can also use the Zoom buttons in the vertical tool bar and the size tab in the status bar to set the display size of your PDF document. The size tab in status bar shows the actual size of the PD.

When clicking on the Size tab when a PDF document is loaded, you have a few additional options:



Figure 40: Additional display options for PDF files

Navigating within Graphical Primary Documents

To change the visible section of a graphical PD:

- Use the scroll bar.
- You can scroll up and down using the mouse wheel.
- The cursor arrows and other navigational keys can be used.

When you click on the upper left corner of a graphical PD, its comment is displayed in a pop-up window.

Navigating within Multimedia Primary Documents

Display selected parts of audio or video documents by moving the track bar slider. Do this by clicking the navigation button of the media control window, or by using short-cut keys:

Play / Pause: Play = p, toggle = Space.

Stop = s

Disconnecting Primary Documents

Removing unwanted PDs from an HU is called “disconnecting.”

If you disconnect a PD, the data source (the document file or memo) to which it refers is not deleted or otherwise affected, but disconnecting a PD does remove all of its quotations from the HU. As a consequence, all references to other quotations (hyperlinks), other codes, and memos are also removed.

Select the PD to be removed from the HU.

Choose **D**OCUMENTS / **D**ISCONNECT from the main menu. Or select a PD in the Primary Document Manager, right click on the document and choose **D**ISCONNECT from the context menu.

Data Transcription

The A-Docs function, introduced in ATLAS.ti 6, allows you to not only transcribe your data within ATLAS.ti, but to also link documents to each other in such a way that you view them synchronously. This means you can read your transcript and listen to the audio file hearing the original tone of voice or viewing the segment in the video file. When in the midst of your analysis, you can mark a segment or a quotation of an associated document and instantly listen to the original audio or view the video. The audio/ video file stops at the end of the marked segment. You can also use the association points as navigation device, e.g., to enter at a particular point in the file or to easily jump around.

Transcribing Audio- and Video Files in ATLAS.ti

Adding and Associating Multimedia Files and Transcripts

Below the process of adding a blank transcript file to an ATLAS.ti project and the process of transcription is explained step-by-step:

- Assign the audio file or the video file that you want to transcribe (**DOCUMENTS / ASSIGN / ASSIGN**).
- Create a a new internal document for the transcript: **DOCUMENTS / ASSIGN / NEW TEXT DOCUMENT**.
- Enter a name for the transcript. It is immediately loaded in the HU editor in edit mode.

Next you need to associated the two files with each other.

One Hermeneutic Unit can include as many associations as you like, one association for each set of associated documents, and two documents per set. The following combinations are currently supported: audio– text and video– text. In order to keep track of your associations, each association has an ID, and a unique name can be given as well. To associate to files with each other:

Open the Primary Document Manager: **DOCUMENTS / PRIMARY DOC MANAGER**

Open the Association Editor: **ADOCs / EDIT ASSOCIATION**.

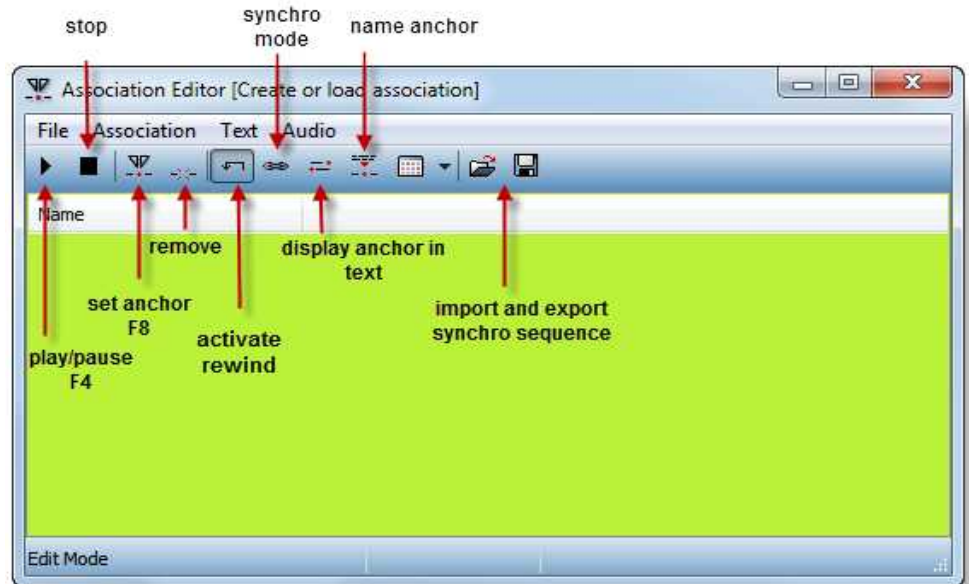


Figure 41: Association Editor

Drag and drop the two documents from the Primary Document Manager onto the header bar in the Association editor (see Figure 42 below).

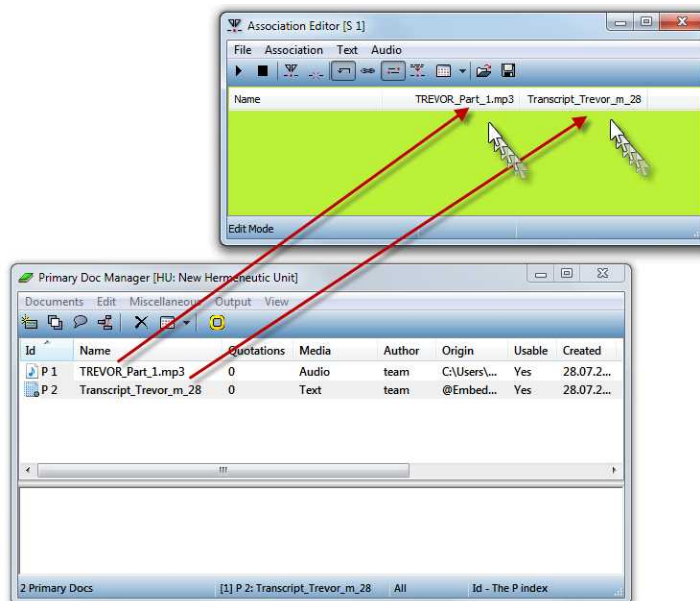


Figure 42: Adding PDs by drag & drop to an association

A new association is automatically created. The default name is S 1, S 2, S3 and so on.

For a better overview, it is recommended that you replace the default name with a unique name:

- Select **FILE / RENAME** from the Association Editor menu and overwrite the default name. Click **OK** to confirm.

Setting Rewind Time

When transcribing, it is often useful to listen once again to the part one just has transcribed. Therefore you can set an interval from 1 to 5 seconds. When starting the multimedia file, the file automatically rewinds the time interval that you have set.

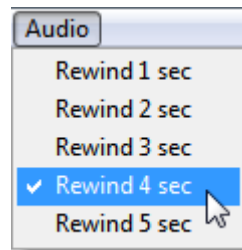


Figure 43: Set rewind time

To set the rewind time, click on the **Audio** menu of the Association Editor and select the desired rewind time.

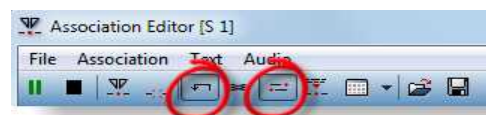


Start Transcribing

- Close the Primary Document Manager.

The new transcript should still be loaded and in edit mode. If not, load the blank transcript PD and enter edit mode (click on the pen button in the main tool bar, see also "Editing Primary Documents" on page 136).

- Check your settings in the Association Editor as shown in figure 44 below.



Check your settings:

- rewind mode active?
- not in synchro mode?
- anchors visible in text?

Figure 44: Settings for transcription

The default setting is for anchors to be always displayed. You can deactivate this option via the main menu **A-DOCS / TEXT / SHOW ANCHORS** or in the Association Editor via the menu **TEXT / SHOW ANCHORS**.

Start the playback of the associated multimedia file via the **F4** key or click the appropriate button in the Association Editor as shown below. Alternatively, you can also use a foot switch that you can configure to the F4 key for starting and stopping the multimedia file.



Click here to start the multimedia file (or press F4)

Figure 45: Starting/pausing multimedia playback

- Listen to whatever part you can remember; then press the **F4** key again.
- Type what you heard.
- Press the **F8** key to set an association anchor. The association anchor links the matching parts in the documents. A red dot is displayed within your text and an entry is added to the Association Editor.

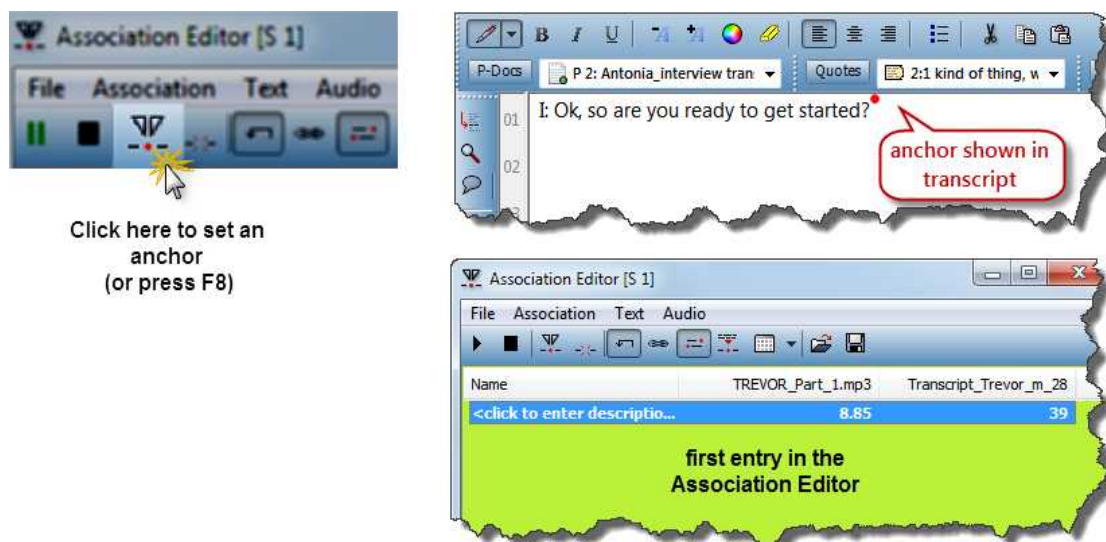


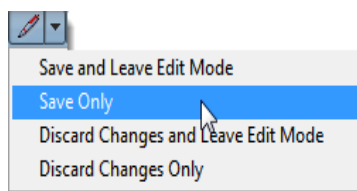
Figure 46: Creating an anchor

- Press **F4** to play the audio file again.
- Listen to whatever you can remember, press **F4**, type the text, press **F8**, then **F4** again. And so on.



Figure 47: Get into the rhythm: F4, listen, type, F4, F8, F4, listen, type...

The closer the distance between two association anchors, the better will be the synchronization. However, it is not required to set anchors at any particular or prescribed intervals (for instance at the end of every line of text). You can also tell ATLAS.ti to automatically insert an anchor at the end of each paragraph (see below). If you mark longer segments, interpolation is used to synchronize the text with the associated multimedia file.



Save the text from time to time by clicking on the edit pen selecting the **Save ONLY** option. When you are finished with your transcript or want to take a break, select the option **SAVE AND LEAVE EDIT MODE..** Then save the HU.

You can either use the functions key **F4** to start and stop a recording, or use a foot switch. This saves about 30% of transcription time. You can use any foot switch that is configurable to the **F4** key (see for example the web page of the developers of the free transcription software **f4**: <http://www.audiotranskription.de/english/>)

Insert Anchors Automatically

If you want ATLAS.ti to set anchors automatically at the end of each paragraph, select **A-DOCS / TEXT / AUTO INSERT ANCHOR WITH RETURN**, or select this option from the **TEXT** menu in the Association Editor.

Delete Association Anchors

If you set an anchor accidentally, you can correct this by clicking **F8** a second time.

Another way to delete anchors is via the Association Editor: Select an anchor in the editor and then either press the **Del** key on your keyboard or select the menu option **ASSOCIATION / DELETE ANCHOR**.

Undo

Setting or deleting an anchor can be reversed via the undo option (**ASSOCIATION / UNDO**).

Naming Anchors

You can use the list of anchors in the Association Editor to navigate through the associated documents. For this purpose, anchors can be named.

To name an anchor, select it, click on the name field and enter a name.

You can also use the currently highlighted text as name. In order to do this, click **F9** or select the menu option **TEXT / GRAB TEXT AS NAME**.

Adding Documents via the Association Editor's Menu

First you need to create a new association: select **FILE / NEW** from the Association Editor's menu. A new association is immediately created. The default names are S 1, S 2, S 3, S 4, etc.

Load the primary document that you want to transcribe (see "Loading Primary Documents" on page 83). Then select the menu option **ASSOCIATION / INSERT PRIMARY DOCUMENT**.

Now **load** the file that you have prepared for transcription. Select the menu option **ASSOCIATION / INSERT PRIMARY DOCUMENT** again. Now the two documents are associated.

Deleting Associations

The active association that is shown in the editor can be deleted via the menu **FILE / DELETE**.

Associating two already existing documents

When you already have a transcript that is however not associated with its audio or video file, you can synchronize the two documents by going through the transcript and setting anchors. This is how it works:

Create a new association in the Association Editor and add the two documents (see above "Transcribing Audio- and Video Files in ATLAS.ti").

Start the multimedia file with **F4**, listen to it or view it. Stop it at a certain point (press **F4** again), locate the matching text in the transcript, and set an anchor at the end of the matching text passage (press **F8**).

Start the multimedia file again with **F4**, listen to it or view it. Stop it at a certain point (press **F4** again), locate the matching text in the transcript, and set an anchor at the end of the matching text passage (click **F8**). And so on....

As you can open the two documents side by side, you can move through the documents quite quickly. It should not take much longer to create the associations than the actual duration of the multimedia file.

Importing documents transcribed in f4

f4audio

Transcripts produced with the help of the freely available program f4audio (manufactured by dr.dresing & pehl GmbH, <http://www.audiotranskription.de/f4.htm>), can be directly imported. Time markers from the transcript are automatically converted to association anchors. The connected audio file is also imported.

To import an f4 transcript:

Store the f4 transcript(s) and the associated audio file(s) into one common folder. See "Scenario 1 (recommended): Working with One Project Folder - for Single Users and Teams" on page 114.

Do not open or edit the f4 transcripts in MSWord! When saving the transcript in Word, the time markers used as association points in ATLAS.ti may be corrupted. Also do not change the file names. If you do, open the transcript in f4 again and re-associate it with the renamed multimedia file.

Select the main menu item **A-DOCS / FILE / IMPORT F4 DOCUMENT**. A file browser opens. Browse to the location where the transcript is stored, select it and click on the open button. The associated multimedia file is automatically recognized when both files are stored in the same folder. If not, the file browser opens again and you can select the multimedia file.

A number of things happen now – probably without you noticing it. The f4 transcript is added as an internal document. The multimedia file is assigned as an external document. A new association is created in the Association Editor, the two documents are added to this association and the f4 time markers are converted to anchors.

f4media

Just like with f4audio, ATLAS.ti also imports f4media directly. Unlike f4audio, f4media does not contain references to the original audio or video document. Hence, another browser window is opened after the import, which lets you select the multimedia document. This is then added to the association and assigned as a PD.

ATLAS.ti determines automatically if it is dealing with f4audio or f4media documents.

Working with Associated Documents

All A-Doc functions can be accessed either via the **A-Docs** menu or from the Associations Editor. A Hermeneutic Unit can contain unlimited numbers of associations, but only one can be active at any given time. The active association is selected via the main menu **A-Docs / USE ASSOCIATION** and closed via **A-Docs / CLOSE ASSOCIATION**. In the Associations Editor, you find these options under the **FILE** menu.

Associations between documents are automatically activated when a document is loaded in the HU Editor. In cases where several associations exist, the first available is automatically selected.

Play Selected Text

If you select a piece of transcript or a quotation in an associated text, the selected linked audio or video can be played:

Highlight a piece of text and select either the menu item **A-Docs / PLAY SELECTED TEXT** or press the key combination **CTRL+P**.

The associated video or audio recording will be played back from the correct position. Playback stops at the end of the selection. The accuracy of selected text playback depends on the precision and the number of the available anchors..

Synchronization-Mode (F3)

In non-synchronous mode, the documents are independent from each another. "Moving around" in either one of the documents does not affect the other. When you switch to synchronization mode, associated documents display *synchronously*, i.e., they are positioned next to each other. Since synchronous playback is not useful or desired in all situations, synchronization mode can be switched on and off.

The non-synchronous mode is particularly important for setting anchor points: In synchronous mode, associated multimedia documents follow the movements of the mouse cursor. This makes positioning anchors difficult.

In non-synchronous mode, it is however still possible to click on an anchor in the Association Editor and jump to the associated data segment.

Activating and Deactivation Synchronous Mode

Synchronous mode can be enabled and disabled via the main menu entry **A-Docs / SYNCHRO MODE** and via the **F3** key.

In the Association Editor, synchronous mode can be selected via the menu item **ASSOCIATION** or the **SYNCHRO** button in the tool bar.



Working with Synchronous Mode

Moving the mouse cursors in the text or clicking a text passage causes associated multimedia documents to be repositioned. Click F4 to start playback at this position.

The opposite case - i.e., moving the cursor in the multimedia document — causes no cursor change in the text document. This would hamper your text work. However, synchronous display is still possible if you select „Karaoke mode“ (see below).

Karaoke Mode (**CTRL-F4**)

“Karaoke” mode lets you follow multimedia content and text documents at the same time. The multimedia document sets the pace while the current passage is highlighted in the text document. Because of the moving text selection, normal text-work tasks such as creating quotations are not possible in this mode.

There are several ways of highlighting text in Karaoke mode. To choose one of it, select them from the **TEXT** menu of the Associations Editor or via the main menu **A-DOCS / TEXT**:

HIGHLIGHT SECTION: Highlights the section between two anchors.

HIGHLIGHT LINE: Highlights the entire line of text that corresponds to the position of the “lead” document.

HIGHLIGHT WORD: Highlights the word that corresponds to the position of the “lead” document.

HIGHLIGHT CHARACTER: Highlights the character that corresponds to the position of the “lead” document.

Load the associated text document, e.g. the transcript.

To start the Karaoke mode, press **CTRL+F4** or select **A-DOCS / KARAOKE**. This activates both the **SYNCHRO** mode and the **KARAOKE** mode.

Press **F4** to start the multimedia document. Both will now be shown side by side. In the text document, the passage is highlighted that is currently played back.

Importing and Exporting Associations

Associations are saved together with the HU and remain affiliated. For exchange between ATLAS.ti projects, they can also be exported and imported as files:

In the Associations Editor, select menu items **FILE / EXPORT...** and save the file. The active association is saved as a file. This file is in XML format and has the extension “.syn”.

The import function (**FILE / IMPORT...**) lets you open files that were created in the above fashion and activates them as new associations in a different HU.

Importing Survey Data

These days a lot of surveys are conducted online. A positive side effect is that (a) all data is immediately available in digital format and (b) respondents often do write lengthy answers to open ended questions. On paper & pencil surveys this was rarely the case. Statistical programs like SPSS™ do offer options to analyze open ended questions but basically you end up encoding each answer with a number. A proper qualitative analysis of the answers is not possible. This is now possible in ATLAS.ti. Make sure you have updated to at least version 6.2 for this function to be available.

A typical work flow for working with survey data looks like this:

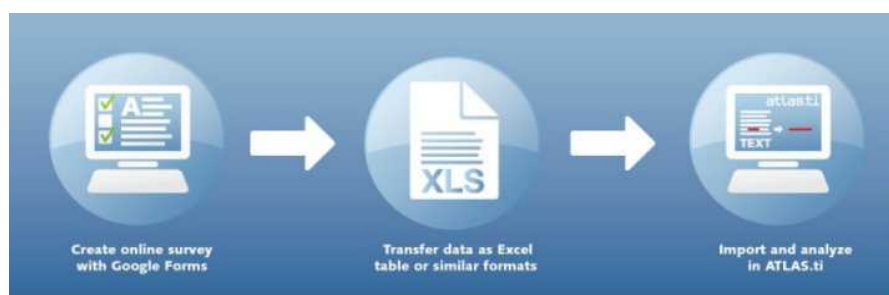


Figure 48: Work flow when importing survey data

Online surveys can be created using a number of tools. What most of these tools have in common is that you can export your data as Excel™ file. And this is what you need to prepare for import in ATLAS.ti (see below). Based on specific prefixes that you add to your variable names, ATLAS.ti interprets the column headers and cells of the Excel™ table in various ways and turns them into primary documents, the contents of the primary documents, primary document families, quotations, codes, comments and code families.

Data are imported case-based. This means each row of the Excel™ table that is imported from the online survey tool is transformed into a primary document.

How survey data is treated in ATLAS.ti

To represent the results of an online survey within the framework of ATLAS.ti in the most accurate and complete manner, a few basic requirements need to be considered.

A survey broadly consists of the name of the survey, the questions, the answers for each respondent. Questions can be of different types like single choice

questions (yes/no, or offering more than two options), multiple choice questions, or open ended questions.

Within the framework of ATLAS.ti these concepts are mapped as follows:

Survey Concept	ATLAS.ti Concept
Open-ended question	Code
Single Choice 0/1	PD Family
Single Choice > 2 options	PD Family from Question plus Value
Multiple Choice	PD Family from Question plus Value

This does not mean that you cannot turn a multiple choice question into a code, it all depends on how you define the columns in the Excel table. If you turn single or multiple choice questions into codes, you later need to do some automatic coding based on the response choices available in the questionnaire.

Always remember that ATLAS.ti is not a software for analyzing statistical data, although it is possible to add information from traditional quantitative questions. It might also be a good idea to be already acquainted with the ATLAS.ti analysis tools like the query tool and its scope function ("Query Tool", page 268), the co-occurrence table explorer ("Co-occurrence Tools, page 299), and the codes-primary-documents-table ("Codes-Primary Documents Cross-Tabulation", page 311) before preparing the Excel™ table for import.

A general recommendation is to include the following variables from the online survey:

- Variables describing the respondents, i.e. the classical demographic variables like age group, gender, profession, educational level, income groups, etc.. Turn those variables into PD families.
- Responses to open-ended questions. Turn those into coded segments.
- Selected other variables like answers to single or multiple choice questions that are important in relation to analyzing the open-ended questions.

Preparing an Excel™ Table for Import

The following table shows the list of all available prefixes that you can add to the column headers in Excel™ in order for ATLAS.ti to interpret the cells in various ways.

Prefixes and their interpretation	
Prefix	Result
!	This column defines the primary document's name
~	This column defines the primary document's column

^	This column defines the primary document's author
&	This column defines the primary document's date, expects ISO8601 format
<	Ignore this column, use to exclude stuff inserted by the survey tool
.	Creates a PD family from the field name. Currently the cell needs to contain the number 1, or the words Yes or Ja to be applied. Use for single choice questions where respondents can answer yes or no (or encoded as 1 and 0). Only the responses encoded with yes/ja or 1 become part of the PD family.
:	PD Family from the field name plus cell value. Use for single choice question like gender.
#	PD Family from the field name plus the actual cell value. Use for single choice questions with more than two answer options or for multiple choice questions.
	Add no prefix to all open ended questions. The text in the column header is used as code. To avoid very long code name, use a short form to indicate the question and add the full question as comment (see next row)
::	All text entered after two colons is added to the object's comment field. This can be applied to cells resulting in PD families or codes.

CaseID	&date Time	^Name	.Academic	.Army:Did you serve?	:Sex	#Favorites::What bands do you listen do regularly?	Tell us a dream	Open End::Now how do I make a question be interpreted as open-ended?
Case 1	20100414T120000	Michelle	0	1	female	Beatles, Stones	I was walking on the roof of a 12-story building...	This is a lengthy response to a question that may elicit loooooong answers.
Case 2	20100415T171000	Hans	1	0	male	Stones, Scorpions	I am sorry, I don't remember any dreams at all	Quite simple: every field name (question) that has no prefix is an open-ended question be default.

Figure 49: Sample table ready for import

By importing the sample table, we get:

- The name, date and author of the resulting PD
- Two dichotomous families **Academic** and **Army**. The following comment is added to the PD Family "Army": Did you serve?
- Two families **Sex::male** and **Sex::female**
- Four families **Favorites::Beatles**, **Favorites::Stones**, etc. For the PD families the following comment is added: What bands do you listen to regularly.

- Two codes **Tell us a dream** and **Open End**. The following comment is added to the comment field of the code “Open End”: Now how do I make a question be interpreted as open-ended?

How to import survey data

■ Prepare an Excel table as explained above.

You can add the prefixes already when you prepare the online survey, or afterward by editing the the resulting Excel table. The drawback of adding the prefixes to the survey is that such early applied mark-up also displays in the online survey interface and your respondents might wonder about the funny characters at the beginning of questions.

Editing the downloaded Excel table prior to importing it into ATLAS.ti has the advantage of not displaying unusual formatting characters to the user. A disadvantage is that you need to do this every time you download the table, for instance, because you are checking incrementally and not all respondents have filled out the questionnaire yet.

■ Mark all cells in the table and format them as Text (right click on the highlighted table and select the option “Format Cells”).

■ Save the table (as xls or xlsx file).

■ Close Excel (or at least the document that you want to import).

■ Open ATLAS.ti and select **DOCUMENTS / ASSIGN / IMPORT SURVEY DATA**.

The import procedure starts and ATLAS.ti informs you when all data are imported.

During the import, one primary document is created from every row. Unlike “normal” PDs who get their contents from files, these primary documents need to have their content (data source) created as well. These data sources are embedded within the HU (see “Reference for internal documents” on page 119).

The creation of the textual contents is done as follows: Each row is scanned from left to right, column by column. Each cell's content belonging to an open-ended question field is appended to the currently built document (case). In addition, each piece of appended text is also referenced as a *quotation* automatically coded with the current question.

Special families are created for all imported PDs and codes to make filtering for the survey material easy. See the section on “Family Life” on page 237 for further information.

■ Save the Hermeneutic Unit. As default name the name of the Excel file is used. If you import the same table repeatedly, rows with already existing PDs are ignored. This way, you do not have to wait until the last respondent has filled out the questionnaire.

Below various screen shoots are shown based on importing the above sample table:

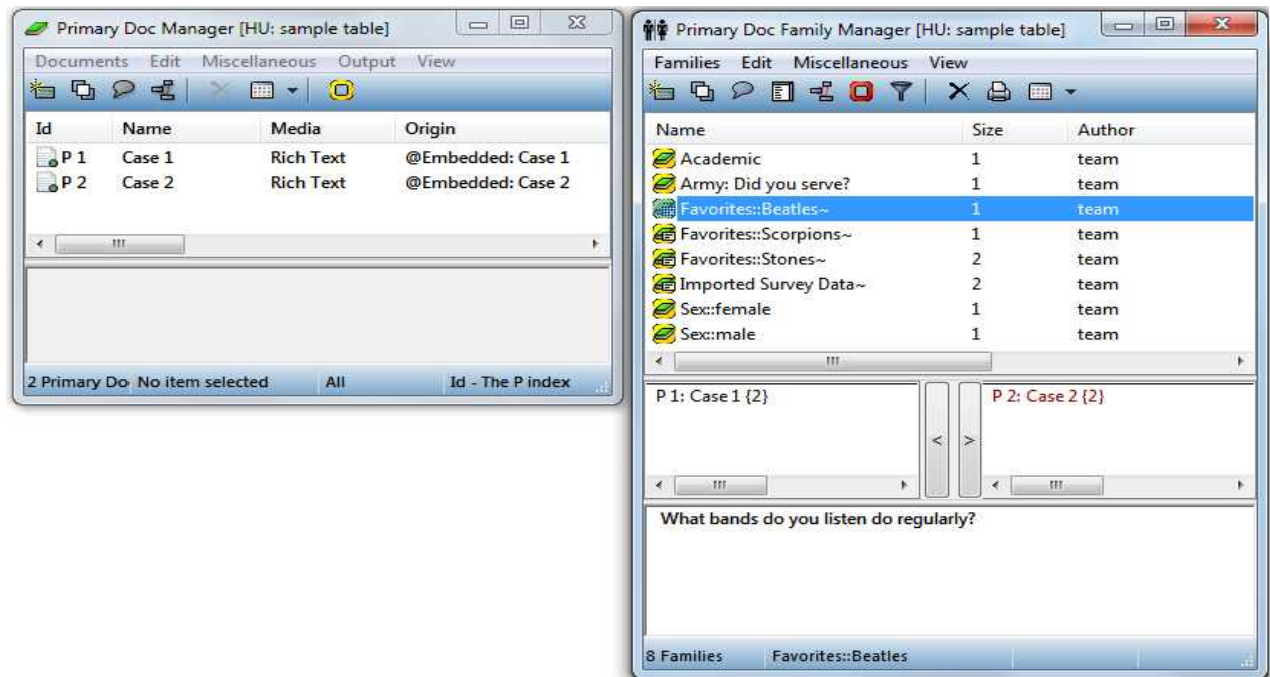


Figure 50: Two primary documents and eight primary document families have been created

Analyzing Survey Data

In order to analyze survey data, you should get acquainted with the following features and functions of ATLAS.ti:

- Primary Document Families, especially their use as data attributes (see Family Life on page 237 and Working with Variables: Primary Document Families on page 245).
- Basic coding techniques to add some additional codes to the precoded responses (see Coding Techniques on page 199).
- Code Families (see page 252)
- The Codes-Primary-Documents-Table (see page 311)
- The query tool and the scope function (see page 268, page 287)
- Creating and working with super families (see page 289)
- The Co-occurrence-Table-Explorer (see page 300).

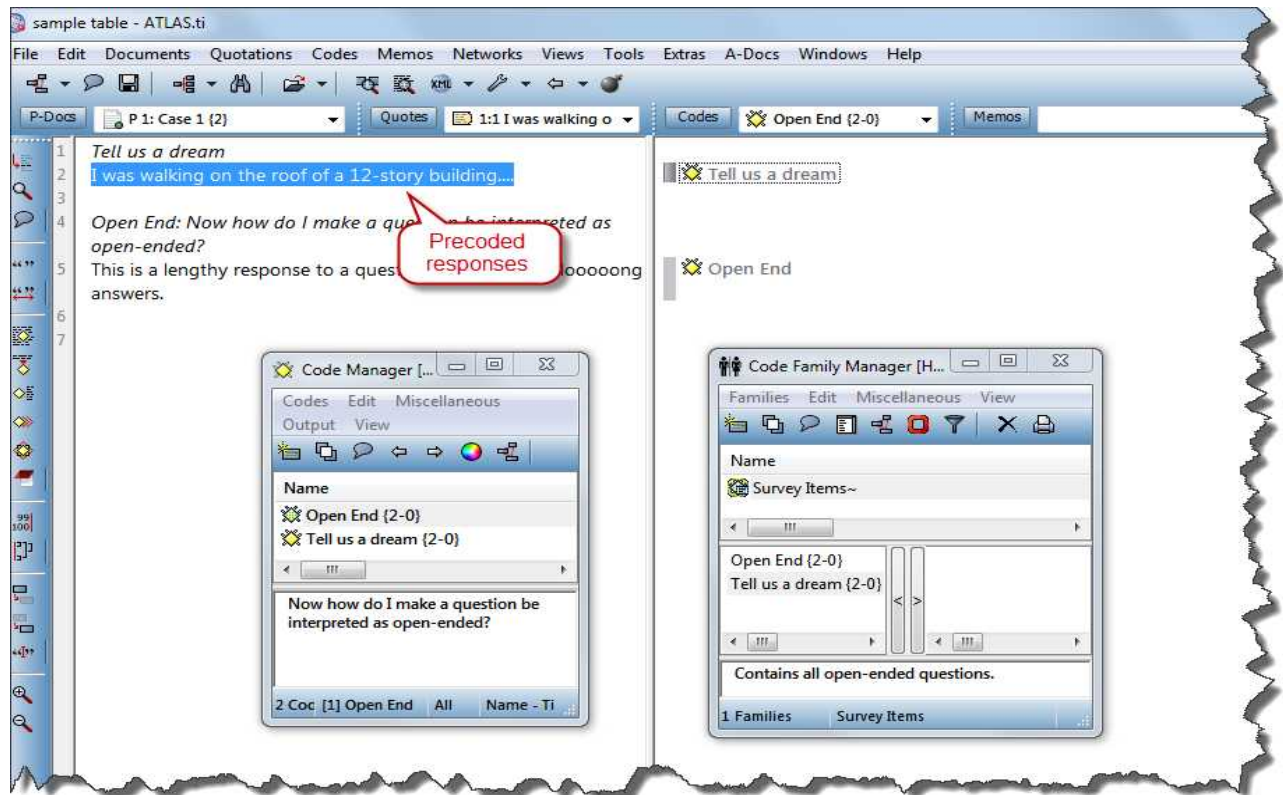


Figure 51: The open ended questions are precoded and a code family for all survey items is created

Data Management in ATLAS.ti

The ATLAS.ti Referencing Model

The content of a file is not embedded, but referenced via its path and name. This connection must stay intact. If it is not, you are about to ask the most frequently asked question: "Where is my PD?"

An HU, or more precisely, its PDs, accesses documents via reference, e.g., file name and paths. Once a data source has been assigned to an HU, it is mandatory that during the course of a project it always accesses this same document and not a different one.

The main consequence of an architecture made up of referenced files is that those files must always be at their original locations when you (or your project) need them. Otherwise, the files are not found (creating a "broken link"). However, you do have the means to make such references more flexible.

This way of treating files results in the following benefits:

- The size of a PD does not affect the size of the HU to which it is assigned. This makes it possible to work with potentially large data sets and files. Imagine that video files are imported. This would very quickly blow up the size of the HU.
- A single data source file can be used by more than one HU. It may even be assigned to the same HU multiple times.
- Team members can share data files. Changes to data sources (editing) are broadcast to ALL HUs that use the files, keeping everyone up-to-date.

Starting with Version 6.2, the possibility to work with internal documents was introduced as a new functionality. If you only want to analyze 20 or 30 transcripts, then this might be an option to consider. See Scenario 3: Working with One Project File (for projects that use text files exclusively) on page 118.

Referencing - a Common Procedure

ATLAS.ti organizes projects into different referenced files. This is a common procedure for many professional applications when things get large or complex. Two well-known examples for systems of referenced files are discussed in this section.

Example 1: The World Wide Web Way

When you click on a link in a Web page, your browser loads and displays the linked page (= target). A Web link is really nothing but a reference to another Web page. Such a reference or URL (Uniform Resource Locator) is very much like a file name, only that the former is unique in the "namespace" of the whole world, while a simple file name is unique only on a certain computer. However, if the linked page has ceased to exist, has been moved or renamed, or if a connection to the site where the file resides can simply not be established, you will get a message that the page cannot be loaded (the infamous "error 404").

If the owner of the missing Web page takes pity on other pages referencing the moved page, she would create a forward link ("redirection") to the new location of the page.

ATLAS.ti works in a similar manner: Files that are assigned to an HU do not become a physical part of the HU, but are referenced via the file's path and name.

Example 2: Word Documents with External References

Word™ gives you the option to organize large documents into one central document and a number of semi-dependent subdocuments--say, one for each chapter of a book.

The objective is to reduce the overall size of the main document and make handling easier and faster. Why load 50 chapters into memory when you want to read or edit only two of them? Furthermore, this approach facilitates teamwork: while the main document is edited by the main author, other team members can work on individual chapters.

Although a multitude of files are stored, Word gives the appearance of working with one single monolithic file. When you click on an "outsourced" chapter, its file is loaded from the disk and displayed just as it would if it was an integral part of the main document.

But, alas, if you decide to copy the main document to another computer and forget to take all subdocuments along, you will experience the dreaded "file not found" error when you want to look at a single chapter.

But even when you dutifully copy all the subdocuments along with the main document, there is no guarantee that you will be able to continue working smoothly on the other computer. If the subdocuments were referenced via absolute path names (e.g., d:\word>manual\chapter22.doc) and your other computer cannot resolve this path because you copied everything into c:\mydocuments\ instead of d:\word, you still will not be able to access the chapters, even though they are all there!

Basic Principles for Working with Referenced Documents:

- During the lifetime of an HU, references to documents always need to point to the same documents (or equivalent copies). In other words: Make an effort to keep your documents where they are when you first assign them to the HU.
- Changing the references to external data sources must be matched by appropriate relocation of the affected documents. In other words, if you change a reference, move the document to the new location specified.
- Moving documents must be matched by updating their references in EVERY referencing HU. In other words, if you move a document, inform all HUs that use this document about its new "address."
- Editing the contents of documents used by any HU must always be done from within ATLAS.ti.

Consequences of Accessing PDs via References

The use of references offers flexibility and economy in handling large numbers of large-sized documents and allows teams to work on shared data sources concurrently. Below it is explained what it means to access documents via external references.

- As we have discussed, coding work on PDs does not affect the data source. A quotation created during the process of coding is nothing but a reference (including the file's path and name, and the start and end position of the selection. The quotations themselves are part of the HU and will always be displayed in the list. To remind you, the quotation is: the ID + the name, by default consisting of the first 30 characters of a textual quotation, or the file name if you work with other media types + a reference via which you can access the content. If the file to which the references refers to is not found when activating the quotation, its content cannot be shown.
- If you move files that you have assigned to an HU to another location (something you should normally not do), you need to update the references inside the HU, (see "Modifying the Project Setup", page 121).
- In order to copy all files that belong to a project, use the **COPY BUNDLE** function instead (see "Copy Bundle – Migrating and Backing Up Projects" on page 129). If you were to copy an HU file using standard Windows functionality, the documents used as PDs are not copied along and would be missing at the target location.

Reference Types: Many Paths, One Destination

There are a different ways to establish external references in order to accommodate a wide variety of situations. ATLAS.ti always uses the most efficient way to reference a document once it is assigned to an HU. This section discusses techniques for making references more flexible: special paths, and, if absolute paths are necessary, path mapping.

Absolute Paths

Absolute paths are fully qualified file names, such as:

D:\Data\ATLAS.ti\ProjectX\Interviews\Interview1.rtf

Or:

\\Server1\D\Data\ATLAS.ti\ProjectX\Interviews\Interview1.rtf

The former path references a file in a non-ambiguous way on a specific computer which has a disk drive *D:*. The latter path (a UNC path) addresses a file on a specific computer in a local area network.

Both paths will refer to the same file if your computer is, in fact, *Server1*.

Pros

- As long as the file itself is not deleted or replaced by another one, it will always be found at this original location.
- Absolute paths stay valid even when moving the HU to another location on this computer or, when UNC paths are used, to another computer within the local network.
- Absolute unique paths in a local area network are easy to share among users.

Cons

- When porting the project to another computer or to another network, files will not be found unless the target has identical conditions (identical drives, identical folder structure, identical computer and network names).
- If referenced files or folders are moved to another drive or to another computer, the references become invalid.

Special Paths

Absolute paths are exact but inflexible. To overcome this restriction, a more flexible reference type is offered: Special Paths.

Special paths eliminate the need to address specific resources (a specific computer, a specific drive, a specific path) that may not be available over the lifetime of a project. There is no need to know the actual file paths when porting a project to another computer.

The HUPATH (the recommended option)

The HUPATH is created when you save the ATLAS.ti HU file and the documents that you have or want to assign to one folder. Let's call this the ATLAS.ti project folder. When you want to analyze or manage a lot of documents, you can work with sub folders within the main project folder. See the examples below:

ATLAS.ti uses **special paths** to reference data sources whenever possible. Special paths offer a degree of flexibility, which increases project portability.

HUPATH is relative to a specific HU. It has no relevance independent of this HU.



Figure 52: Single folder HUPATH setup

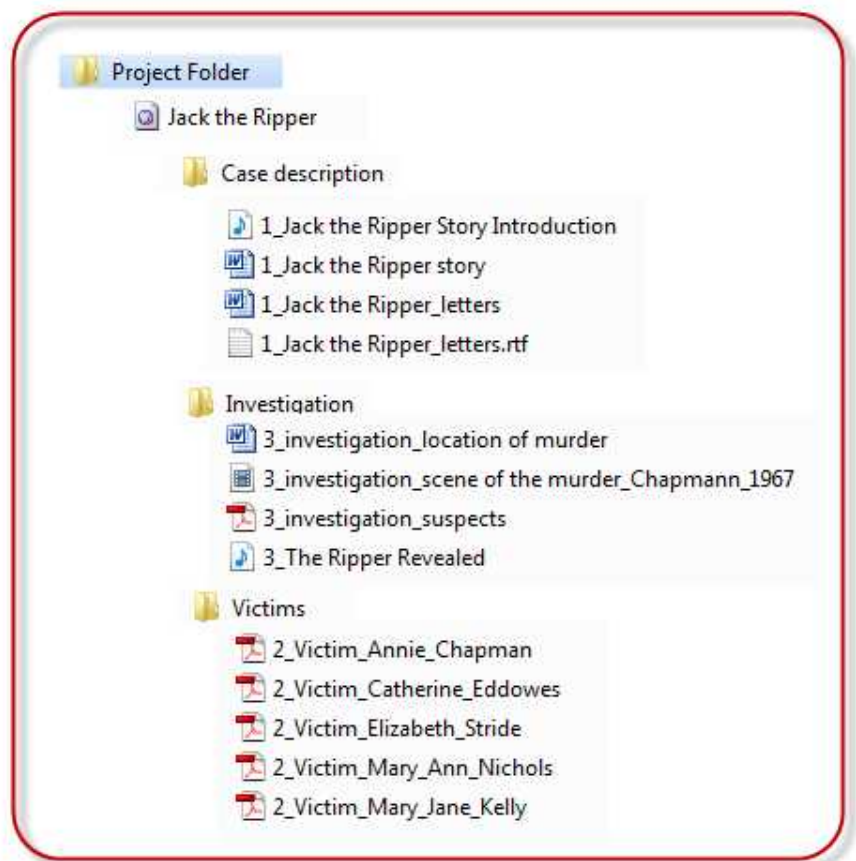


Figure 53: HUPATH setup with multiple subfolders

When documents are assigned as PDs, special paths are used whenever possible. You can deactivate this option under **EXTRAS / PREFERENCES / GENERAL PREFERENCES**, tab: **HU Editor**: When assigning Primary Documents: Use special paths (HUPATH, TBPATH)

Pros

- The HU always finds its PD files as long as subfolders and files are not moved independently of the HU's folder.
- Portability: Moving projects is simple: just copy the folder containing the HU file and the assigned documents..
- Team work: This is in most cases also the easiest setup when working in teams.

Special path: TBPATH

The customizable TBPATH (Textbank Path) has the following objectives:

- It is the default folder opened whenever you assign documents, save HUs, etc.
- It is a convenient location (including subfolders) in which to store your project's documents.

To emphasize that this special path is user-relative, it is set to the following default location after the installation of ATLAS.ti:

TBPATH = My Documents}\Scientific Software\ATLAS.ti\Textbank

This location was selected because the "My Documents" folder is a location that belongs to the user currently logged in under Windows. The user has all required permissions to work on items in this folder.

In cases where more than one user on a specific computer needs to access files from a central repository, this path variable should be set to a location that is outside the user's private folder hierarchy, e.g.: C:\ATLAS.ti\Data\ . The location for the TBPATH can be set under **EXTRAS / PREFERENCES / GENERAL PREFERENCES / PATHS**.

TBPATH is user-relative. It affects ALL projects on which the user works. It is set via GENERAL PREFERENCES.

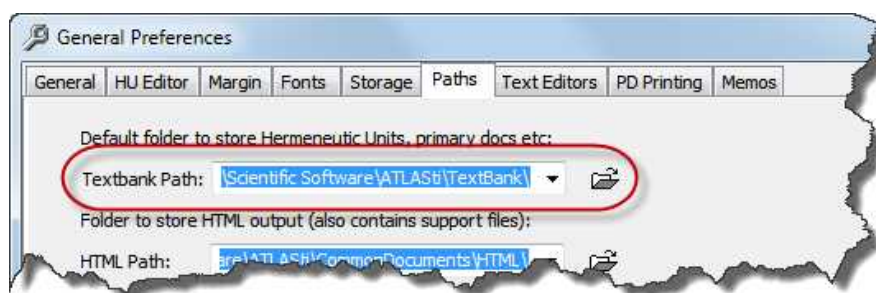


Figure 54: Setting the TBPATH to a user-specified location

All users working on the same local network can use a UNC path instead:

\\Server1\C\ ATLAS.ti\Data\

Each user wishing to access this folder needs to set their TBPATH identically.

Pros

- If this path is set appropriately on different computers, projects can easily be carried back and forth.
- If the location of the data repository changes, access can be easily managed by simply changing the TBPATH to the new location.
- In a local area network, this folder is available to all ATLAS.ti users if it was set to a central location, i.e. one where all users have appropriate permissions.

Cons

- When the TBPATH is changed and the new location does not contain the files or the previous location or an exact copy of these files, references of PDs using the TBPATH reference will fail. As ATLAS.ti has very strict version control features regarding the usability of files used as PDs, access will be rejected if files found at the new location do not match the accessibility information each PD stores when accessing a data source. Inaccessibility can be caused by a file that has been edited.

If the HU itself is stored in the TBPATH folder, HUPATH “wins.” If you want to assign documents using the TBPATH (relevant for certain team scenarios), you need to store the HU file at a different location.

Conclusion

Special paths should be used deliberately wherever applicable. They ease the task of locating referenced documents in a very efficient manner. Using special paths makes management of projects involving multiple HUs, multiple locations, and multiple users convenient. An HU containing special paths instead of absolute references makes it easy to transfer and install projects on other computers.

Setting Up a New Project

This section provides assistance in setting up your ATLAS.ti project in the most efficient manner and for maximum work productivity.

Objectives

Working with ATLAS.ti involves users, files, and computers. An ATLAS.ti project can be as simple as a single person working with a single Hermeneutic Unit (HU) and a few primary documents (PDs) on a single stand-alone computer. It can be as complex as large teams working on different computers in a network or even at different geographic locations; working on several projects at once; moving files between users, computers, and networks; merging partial projects into compiled projects, and many other conceivable constellations.

If you have a single project, work on a single computer, and have no plans to share your work with others, you do not need to concern yourself too much with elaborate project management issues. Keeping in mind a few simple rules is sufficient to make your work with ATLAS.ti smooth and hassle-free. Please see Scenario 1 for a simple project approach.

Project management, however, becomes an issue if your projects and your work environment are more complex than this most basic scenario.

What's in a project? In short, an ATLAS.ti project consists of an HU and its associated document files.

ATLAS.ti project management involves an understanding of how ATLAS.ti handles and accesses documents (see "The ATLAS.ti Referencing Model" on page 105). It concerns itself with ways to fine-tune data-source access for a maximum of robustness and flexibility, but first and foremost, proper project management involves decisions regarding where HUs and documents are to be stored. Most problems can be avoided by a little informed planning about issues such as file locations and paths and the need to copy, move, and distribute your HUs across disks, networks, and computers.

HU management is the least problematic if you can store all project-related documents in the same folder along with the HU itself or in a subfolder (see

Various project scenarios are presented.

Figures 52 and 53 on page 109). However, ATLAS.ti also easily facilitates the distribution of files across the file system and across different computers and networks. These procedures are also discussed in this section.

There are various types of ATLAS.ti users: there are those who have stronger or weaker computer skills, those who work alone or in teams, those who work only at one location or at two or more locations, etc. Accordingly, we have created various project scenarios to illustrate "best practices" in some of the most typical situations.

Each scenario illustrates a specific use case and describes strategies for setting up new projects. This includes issues such as selecting the ideal location for data files and how to best move or backup entire projects.

The scenarios are presented in order of increasing complexity. All scenarios include specific characteristics and easy-to-follow instructions for setting up the project. For most projects, however, Scenario 1 will likely reflect the project management procedures that will be used.

Project Planning and Setup

The scenarios below aim to provide concrete examples of how to create and maintain consistent projects. In real-life situations, you may find that it sometimes makes sense to combine scenarios to achieve the best result.

Scenarios 1 to 3 below can be used by single users and teams. However, as team project management is somewhat more complex, a special section for team project management has been included as well. See Error: Reference source not found on page Error: Reference source not found).

Before starting a new project, give some thought to the location of the documents and the HU. Choosing a proper location can make your work significantly easier, especially when it comes to teamwork. Maximum flexibility can be achieved by storing all associated documents in a common folder hierarchy.

For simple projects, one would typically choose to store the HU and the documents into the same folder.

If a common location for the documents is not possible, (e.g., your documents are scattered across the file system or the local area network), certain rules should be followed. See "Scenario 2: Multiple Document Paths" on page 117ff. However, whenever feasible, data source documents should be stored in a common location, in the following referred to as the "project folder").

Of course, instead of piling all documents into a single folder, you may create appropriate sub folders within the main project folder. This allows for convenient separation of a potentially large number of files into different media types or sub topics. However, after a project has been set up this way, sub

folders should **never** be moved independently of the main project folder (see figures 52 and 53 on page 109).

Set up options for **team projects** are described in “Team Scenario 1: The team is sharing the same data source files on a shared drive” on page 157 and “Team Scenario 2: Teams that do not always or never have access to a shared drive” on page 165.

Splitting a project and merging the split projects later can be accomplished in all of the scenarios presented.

Such a “Split & Merge approach” makes sense not only for teamwork but is also feasible for a “solitary” researcher working on individual aspects of a problem. See “Merging Hermeneutic Units” on page 171 for further details on how to merge projects.

Before splitting a project, it is best to first create a “Master” version which already either contains or references all commonly used resources like documents and codes. For details, see the scenarios below. From the Master project version, a number of copies can be created to distribute to team members in a teamwork setting.

Merging HUs later requires a certain discipline with respect to the Master version. For instance, PDs must not be rearranged, or they won’t match in the merging process.

Scenario 1 (recommended): Working with One Project Folder - for Single Users and Teams

All data files related to your project and your HU will be stored in the same folder hierarchy.

Example

You work on your own on a single project at one computer (desktop or laptop). Your project contains different media types like RTF and PDF files. If you only have text files, consider scenario 3 working with internal files (see “Scenario 3: Working with One Project File (for projects that use text files exclusively)” on page 118).

Project Set up

- Create a new folder for your project.
- Copy all documents to be used by your project into this folder, and use sub folders if you desire an added degree of structure.
- Open ATLAS.ti and assign the documents (**D**OCUMENTS / **A**SSIGN / **A**SSIGN)
- To save the HU click on **F**ILE / **S**AVE and navigate to the main project folder as destination.
- Enter a name for the HU and click on the **S**AVE button.

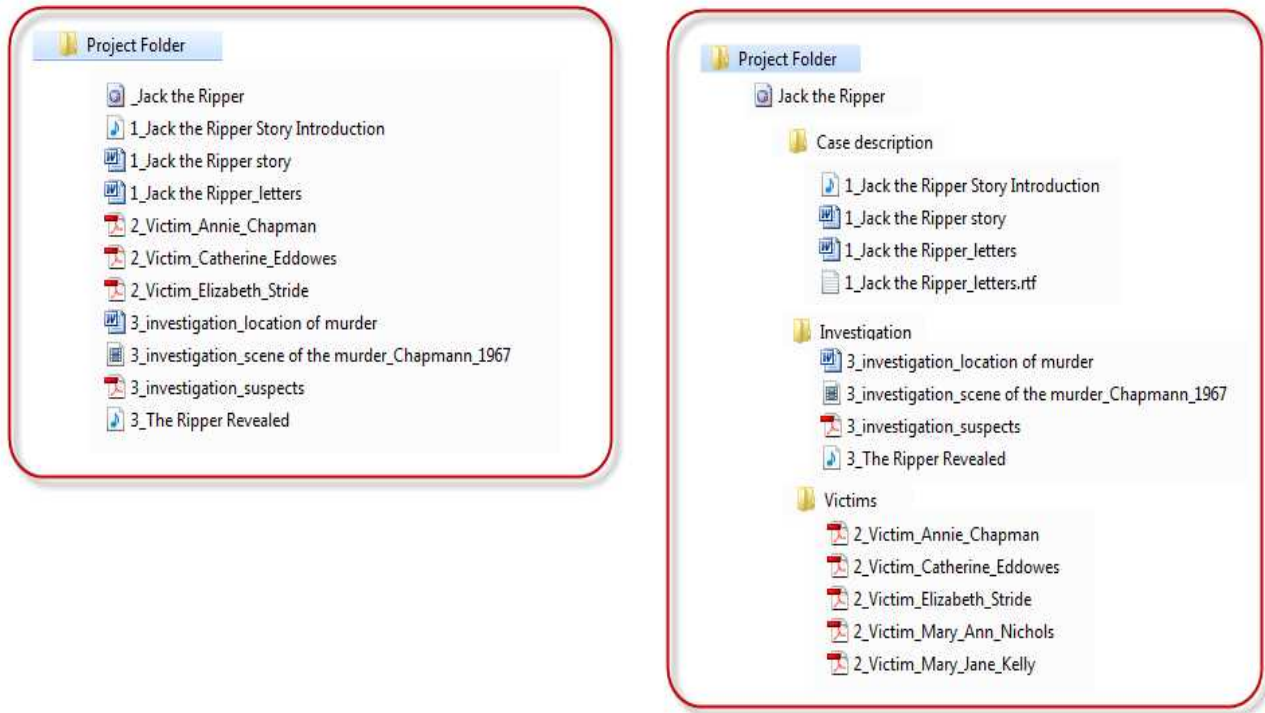


Figure 55: One-folder project set up, with and without sub folders

This results in a project located in ONE folder. All documents automatically receive the special <HUPATH> as reference. You can check this in the Primary Document Manager. Look for the column "origin".

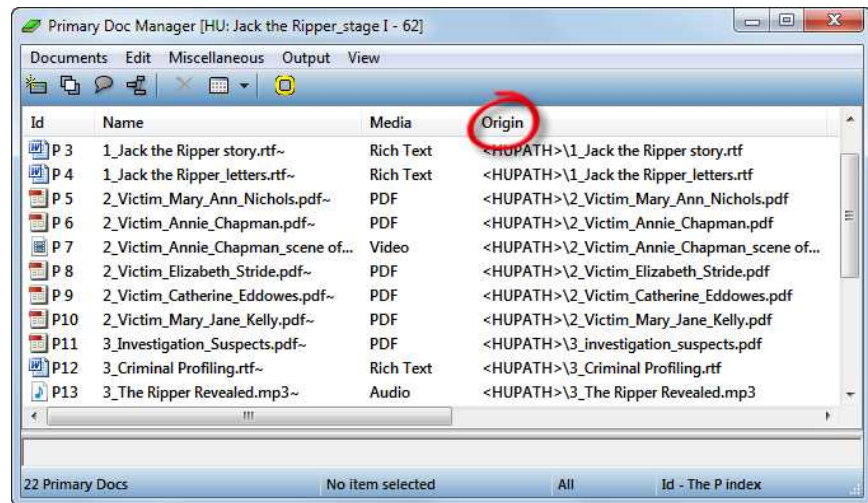


Figure 56: Check the path reference in the PDoca Manager

Project Migration

To migrate the project to a different computer, you can either copy your project folder e.g. to a USB stick or flash drive and move it to a different computer. Or you can create a copy bundle file and move this file. The copy bundle file then needs to be unpacked (“installed”) on the second computer (see “Copy Bundle – Migrating and Backing Up Projects” on page 129).

Don't pack all your documents each time unless they were modified.

If you do not modify your documents, the entire project folder only needs to be transferred once including all data. With subsequent migrations, it is sufficient to move the HU file back and forth. If you want to modify your documents using the ATLAS.ti editing option, see Editing Primary Documents on page 136 for further detail.

Project Backup

To backup your project, it is recommended to create a copy bundle file and to store this file at a save location. It takes just a few seconds to create this file and you are assured that you have a backup of your entire project in case something goes wrong. See Copy Bundle – Migrating and Backing Up Projects on page 129.

Alternatively, you can backup your entire project folder.

Benefits of this approach

- The folder can be completely moved to another location and all documents remain accessible.
- Migrating or backing up your project using the Copy Bundle function is easy and allows the use of arbitrary folders on the target computer.
- Merging projects is easy as all files refer to the same reference, the HUPATH.

Consideration for teams

- Sharing documents is restricted to HUs that reside in the same folder. Thus, if you work in a team, each team member needs a copy of the project folder or access to the project folder on a shared drive. If you work on a shared folder, each team member needs to work within her or his own HU file. These files then need to be merged from time to time into a MASTER HU. See “Merging Hermeneutic Units” on page 171 for a more detailed explanation.

Scenario 2: Multiple Document Paths

Not all documents can be accessed from a single folder hierarchy. Some documents are located in distinct, separate folders that cannot be incorporated under a common root.

Examples

- Legacy data archives that cannot easily be moved to more appropriate locations because of size or access restrictions.
- Documents that are located on a variety of media, such as CDs, DVDs, hard disks, possibly on different computers.

Project Set up

- Store the documents in the desired folders.
- Create the HU in an appropriate location. (See “Creating a Hermeneutic Unit” on page 66.)
- Assign documents from their respective folders. Drag & Drop is an efficient technique here. See “Assigning Documents using Drag & Drop” on page 79.

This procedure results in a project where all documents are assigned with their absolute paths (see “Absolute Paths” on page 108).

Project Migration

The project **cannot easily be migrated** to a different computer, unless the data files can be accessed via a shared location like a network drive and the absolute path references remains intact or can be recreated.

When the drives and the network are available on the target system, a Copy Bundle file can be used to migrate the project.

If drives and networks are not available, see the section on “Modifying the Project Setup” on page 121, especially the sub sections on path mapping and changing paths.

Project Backup

The recommended option for this scenario is to create a copy bundle file. See “Copy Bundle – Migrating and Backing Up Projects” on page 129. If this is not possible, you need to backup the HU plus each single document.

Benefits of this approach

- Archive-friendly: documents can stay where they are and do not need to be placed in a common folder.
- The HU is not tied to the location of its documents and may be copied and moved anywhere without losing functionality, as long as references point to the correct locations of the documents.

Drawbacks

- Copying or moving an HU to other environments is not as smooth. For instance, if a server that hosts PDs is changed (e.g., new or changed disk drives), these documents can no longer be reached unless the path reference is changed (see “Adjusting References” on page 122). When you migrate such a project using Copy Bundle, the situation on the target computer can differ considerably from the computer on which the project was created.

Scenario 3: Working with One Project File (for projects that use text files exclusively)

If you plan to use only textual documents, an approach that does not use any references at all may be a solution. No files other than the HU itself are involved in this scenario.

This approach is also recommended for work with sensitive data material. When saving the HU, the data material is highly compressed and therefore unreadable outside ATLAS.ti (“pseudo-encryption”). In addition, the HU can be password-protected. This should make unauthorized access reasonably difficult.

Issues to Consider – Size and Length of Documents

As the documents become part of the HU file, the size of the HU increases. When working with external files, it is hard to bump up the size of an HU file beyond 1 MB even if you write a lot of comments and memos.

An example project we created with about 1600 pages of transcripts and 360.000 words based on 40 interview transcripts resulted in an HU file size of 700 KB. Another HU containing 10 internal documents of 90 pages each and a total of 650.000 words resulted in an HU size of 1,5 MB.

Both projects were easy to handle. Thus, if your project data contains more than 650.000 words, it is still possible to work with internal files. You need to keep in mind that very long documents take a while to load. This is true in Word and also true in ATLAS.ti. You may want to consider splitting very long documents into a number of smaller subdocuments of only about 100 pages each. For analysis purposes, all subdocuments can be added to a primary document family containing all parts of the long documents.

If the documents contain images, this will increase the size of the HU file considerably.

Team Capability

You can use this scenario when working in teams. Then you need to copy the HU file containing all embedded documents and send it or give it to team members. The work of the various team members can later be combined by merging the various copies of the HU.

If you use this scenario for a team project, **modifying documents is NOT possible**. If documents are edited, you will end up with various versions of them after the merge process. The modified versions can only be added to the project, but not merged with the original version. See “Merging Hermeneutic Units” on page 171.

Project Setup

This is how it works: you generate a new empty text document within ATLAS.ti and then you copy and paste the contents that you want to analyze into it:

- Open ATLAS.ti and select the main menu option **DOCUMENTS / ASSIGN / NEW TEXT DOCUMENT**.
- Enter a name for the document into the window that opens.
- The document is loaded in edit mode.
- Copy the text you want to analyze, e.g. from Word, and paste it into the primary document.
- Save the document and leave edit mode: Click on the Edit button and select the option **SAVE AND LEAVE EDIT MODE**.

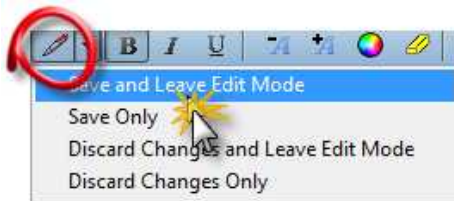


Figure 57: Save the content of the newly created internal document and quit edit mode

- Proceed in the same way with all other documents that you want to analyze.
- Save the HU file: **FILE / SAVE**.

Make sure that you always create a backup copy of this file and store it at a safe location!

Reference for internal documents

Internal documents are referenced as **@embedded** in the PDoc Manager. Open your PDoc Manager and look at the column “Origin” after having created a few internal documents.

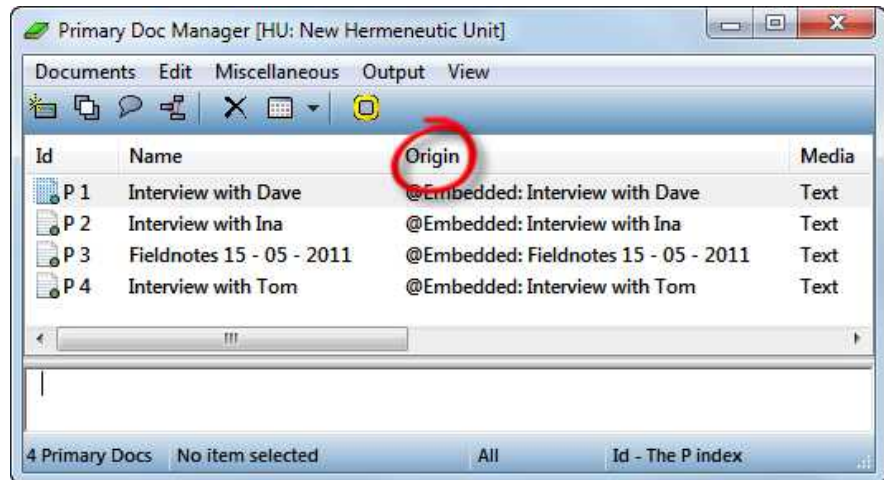


Figure 58: Path reference for internal documents

Project Transfer

Simply copy the HU file and move it to a different location. As your data is now assigned as internal document, there is only one single file that contains your entire project.

Project Backup

Create a copy of the HU file.

Benefits

- The project is a single file as no external documents are used. As the content is pasted into the new internal ATLAS.ti document rather than directly imported from Word, file size is reduced. The size of the HU file including internal documents is much smaller than the sum of the original Word files.
- It is easy to backup, copy, migrate, or delete the project using Windows file functions.
- Data protection: If sensitive documents are part of the HU, they are stored securely within the HU file. Since this file is highly compressed, the documents become fairly unreadable outside ATLAS.ti. Unauthorized access within ATLAS.ti can be prevented by a password protecting the HU.

Drawbacks

- Increased loading and storage times and an increased demand for computer memory, as the HU gets larger.
- When using this setup for a team project, the embedded documents should not be modified after the MASTER HU has been distributed to all team members.

Modifying the Project Setup

Data sources must be accessible for the Optimize Path procedure

Optimizing Paths

In case you read the instructions on the HUPATH setup too late or you want to optimize the setup of an already existing project, it is possible to turn absolute path references into special path references.

The option “Optimize Paths” does two things at the same time:

- Translates a path into the HU or TBPATH if possible. As both options are more flexible than an absolute path reference.
- Replaces an invalid path that was redirected with its mapped path, making this redirection obsolete.

Only those PDs with accessible data sources are included in the path optimization.

“Optimize Path” can be applied to all or a selection of PDs. If you select the option **DOCUMENTS / DATA SOURCE MANAGEMENT / OPTIMIZE PATHS** from the main menu, optimization for all PDs is initiated. When using the equivalent option offered in the PD Manager, only the currently selected PDs are optimized.

Changing Absolute Path References to the HUPATH

Before you open ATLAS.ti, you need to move your documents in the Windows File Manager:

Either move all documents + the HU file into one common folder, or move the HU file into the main folder on the top level if you store your documents in sub folders. If documents have been edited, make sure that all log files stay together with their source files in the same folder (see “Editing Primary Documents” on page 136 for further detail).

Then open ATLAS.ti and briefly check whether you can load all documents. Even before optimizing paths, ATLAS.ti should be able to access all documents. If there is a problem, create an accessibility report (**DOCUMENTS / DATA SOURCE MANAGEMENT / ACCESSIBILITY REPORT**). The accessibility report indicates the potential cause of the problem (see “Troubleshooting” on page 433). Fix the problem before you continue with path optimization.

Next, select **DOCUMENTS / DATA SOURCE MANAGEMENT / OPTIMIZE PATHS** from the main menu.

ATLAS.ti goes through all documents and exchanges path references if a more optimal solution is possible.

Open the Primary Document Manager and look at the column “**Origin**”. You should now see the entry <HUPATH> in front of each document if the optimization process was successful.

Changing Absolute Path References to the TBPATH

The same principles work for documents stored in the TBPATH hierarchy. This means you store your data either directly in the Textbank Folder (not recommended) or in subfolders within the Textbank Folder (recommended). The HU file is stored at a different location; this can be anywhere.

To access the Textbank Folder, select **EXTRAS / EXPLORER / TEXTBANK FOLDER**.

To set the location for the Textbank Folder, select **EXTRAS / PREFERENCES / GENERAL PREFERENCES**, tab: **Paths** → **Textbank Paths**.

Adjusting References

The very concept of external references assumes that the locations of data source files are not changed after they have been assigned to the HU. However, some situations make it necessary to update invalid references to PDs.

Redirection of hanging references becomes an issue when an existing project needs to be adapted to an altered environment (computer or network) or if such a modification is in preparation.

"System modifications" are fairly common occurrences, such as moving folders to disks with more available space, or moving to a new computer altogether. From your project's view, this is also a modification. These cases are similar in that (absolute) paths to documents, which worked well before, now no longer point to the correct document files. It now becomes necessary to give these projects a little help in finding all their documents.

Two Ways to Adjust References

Redirection (Mapping paths): Dynamically uses an alternate path for one, many, or all documents when needed.

Change Path: Permanently changes the path reference to the document for each PD that needs it.

The change path option changes the external reference that is used by ATLAS.ti to access a data source file permanently. The redirection option, in comparison, creates additional alternatives, leaving the original reference untouched. Based on these differences, the two options can be used for different purposes:

Use the **change path** option to do the following:

- To move the data source for a PD to a different location on your computer.
- To modify the path for a single or only a few PDs after documents have been moved.
- To change the name of a data source file reference.

Use the **redirection** option for the following purposes:

- To create alternative access routes to your data source files if the location has changed for many or all of your PDs. This may occur when a system is restructured.
- To create an alternative access route if a drive that was used to assign PDs (e.g., Z:) is not available on your computer, which may happen after migrating to another computer.

How ATLAS.ti loads Primary Documents

If a document cannot be found under its original reference (file name and path), two procedures are initiated: first "Path Mapping" is tried, then "Fallback."

- If a PD's data source cannot be loaded, ATLAS.ti inspects the mapping file to find a valid substitution for the path that is causing the error.
- If a mapping file is found, and a mapping exists for the original path, the program tries to load the file from an alternative path.
- If this does not produce a valid path, then the fallback paths are checked, which are the HUPATH or the TBPATH.
- If even this last attempt to load the file fails, you will see an error message.

A "redirected" PD is indicated as such in the status bar at the bottom of the screen.

P 1: Observational notes.rtf -> redirected: <HUPATH>\Observational notes.rtf

Figure 59: Entry in the status bar if a file is redirected

Redirection is also displayed in the Document Manager's Location column. It shows where a data source file was *actually* found:

Origin	Location
C:\Users\Susanne\Organisation\Desktop\Manifest\Observational notes.rtf	<HUPATH>\Observational notes.rtf

Figure 60: Redirected path information in the Primary Document Manager

In the above example, the file "Observational notes.rtf" was assigned using an absolute path references: C:\Users\...etc.. This was later changed. This file and the HU file were moved into a common folder. Therefore, the file can now be access via the HUPATH.

If selecting the optimize paths option, the reference shown in the column "Origin" will be changed to <HUPATH>.

Redirection should be used with some caution, because every additional alternative to find a matching document increases the probability that you will actually end up accessing the wrong document: same name, different folder, and different revision. This is a problem if you have edited a document and saved various versions in different locations. You should try to make sure that

older documents are not accidentally and erroneously referenced because of too many mapping alternatives. A much safer way to handle references is to change the original reference to match the actual location, in other words:

CHANGE PATH.

If you can avoid Path Mapping altogether – great! But there are a few situations where it might be necessary.

Path Mapping

Path mapping works as follows:

A precondition is that the user has defined path mappings using the mapping tool described below. If a document reference cannot be resolved, ATLAS.ti looks into the mapping table for optional replacement paths for the one that does not work. More than one replacement path can match a single path. All replacement paths are tried in the order they were defined. If a valid replacement is found, it will be used.

Mapping affects the complete hierarchy below the map entry. For instance, if an invalid path `z:\tb\` is mapped to `c:\textbank\`, path `z:\tb\projectX\` and then path `c:\textbank\projectX` would be tried in addition unless a more restrictive mapping precedes this entry.

How to create path mappings

From the menu (HU Editor or Document Manager), select **DOCUMENTS / DATA SOURCE MANAGEMENT / EDIT PRIMARY-DOCUMENT MAPPINGS**.

The Path Map Editor opens:

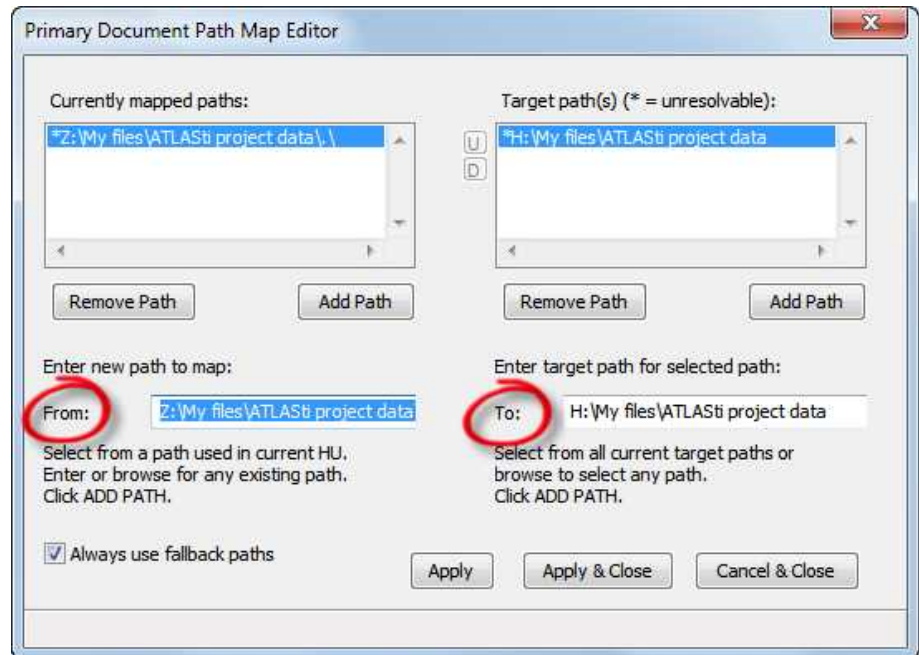


Figure 61: Primary Documents Path Mapping Editor

The figure above shows a mapping example for path
`Z:\My files\ATLAS\project data\`.

With this mapping, the documents:

`Z:\My files\ATLAS\project data\interview_3.rtf` and

`Z:\My files\ATLAS\project data\Special\interview_4.rtf`

would also be assumed at:

`H:\My files\ATLAS\project data\interview_3.rtf` and

`H:\My files\ATLAS\project data\Special\interview_4.rtf`

in case they are not accessible at their original location.

It is possible to define more than one replacement alternative for a given path. However, we strongly advise against making use of such multi-mappings! As we have already pointed out, chances of accessing a wrong document with the same name increase with multiple alternatives.

To enter a path to be mapped:

Into the 'From:' entry field on the left side of the Path Map Editor, type in either the full path, select a path from the drop-down list, or click on the file browser symbol. Generally, useful options (non-accessible paths used in the current HU) are already offered in the drop-down list.

Once a path is entered or selected, click on the *Add Path* button. The path will be added to the list of currently mapped paths.

Now enter (or choose from the drop-down) a replacement path into the 'To:' field on the right side of the Path Map Editor in the same fashion:

- Click on the *Add Path* button.
- Repeat steps 3 to 6 for every path to be mapped.
- Press Apply or Apply & Close to store and activate the new mapping(s).

Redirection: Fallback

A “fallback” path is used when a mapping does not exist or a valid path cannot be found. In addition, the fallback option must be switched on in the Path Map Editor.

The HUPATH is searched first, and if the document cannot be found, it looks into the TBPATh.

Change Paths for one PD at a time

Using the “**Change Path**” option, you can modify the reference of a single PD in a specific HU to its data source. You can modify the path, the file name, or both. Furthermore, the special path can be changed, or an absolute path can be replaced by a special path, if appropriate.

If you change the path for a perfectly accessible document, ATLAS.ti “thinks” that you want to move this document to a new location. Change Path is the best option to do this. But use caution: you are changing conditions for a specific HU. In case you use Change Path to move a document that is also assigned in other HUs, this document will no longer be found. In such multi-project settings, path mapping, which affects ALL HUs and all of their PDs (of the current user), may be the preferred option.

- In the Primary Document Manager, select the PD whose reference should be changed.
- Right click and select **DATA SOURCE MANAGEMENT / CHANGE PATH** from the context menu. If you attempt to change the path for an accessible document, a warning will pop up.

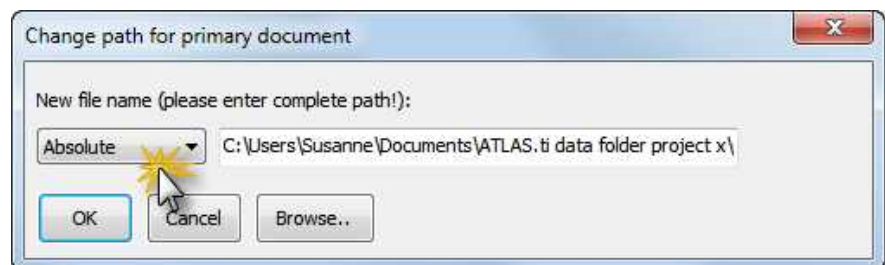


Figure 62: Change path dialog

- The Change Path dialog opens with the current path displayed.
- The drop-down list to the left shows the current reference type, here: Absolute. Click on the down arrow to change to TBPATh or HUPATh if necessary.

The field to the right displays the documents path name relative to the reference type. You can now enter a new file name or path name. Alternatively, you can use the **Browse** button to select a new location (using the previous file name). Hold down the Ctrl-key if you prefer a file browser to select the new file to be used.

If you are happy with the result, close this dialog by clicking **OK**.

If a valid document was detected at the old location, another dialog box asks for confirmation to move the file reference from its current location to the new location.

If you click **Yes**, the file is moved and the PD's reference is updated accordingly.

If you click **No**, the reference is changed but the file is not moved (do this, for example, if there already is a valid file in the target folder). If you click **Cancel**, you are back in the Change Path dialog box.

You can cancel the procedure at any time by clicking the Cancel button.

You must save the HU to make these changes permanent.

Turning External into Internal Documents

You may want to consider this possibility when you already work on a smaller project only containing textual documents and you do no longer want to deal with external files, or if you have assigned doc or docx files and you found out too late that you cannot edit these files. Turning them into internal documents creates an editable version of these files. All coding done so far is transferred as well.

And this is how it works:

Create an internal document for every document that you want to convert (**DOCUMENTS / ASSIGN / NEW TEXT DOCUMENT**)

Then load a primary document that you want to convert. Highlight the entire text (**Ctrl+A**) and copy the entire text (**Ctrl+C**).

Load the new internal file and enter into edit mode by clicking on the Edit button.

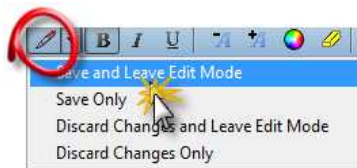
Paste the text into new internal document (**Ctrl+V**). The coding is transferred to the new document as well.

Save the document and leave edit mode.

Repeat this process for all documents that you want to convert.

Disconnect all documents that are now converted into internal files (Right click on the document in the Primary Document Manager and select **DISCONNECT** from the context menu, or click on the Disconnect button).

Save the HU (**FILE / SAVE**).



Project Backup and Migration

Backup Copies

The default settings is that ATLAS.ti creates a backup copy of an existing HU before overwriting it on **save**. Backup files can be distinguished from their original by a name prefix: For file "Sample.hpr6" a backup file "backup of Sample.hpr6" would be created.



To change the default setting, select **EXTRAS / PREFERENCES / GENERAL PREFERENCES**, Tab: **STORAGE** from the main menu, or click on the **Preference** button in the main tool bar.

Keep both the regular backup and the automatic recovery backup on!

Crash Recovery: Automatic Backup

As "backup of .." files are only created from the previous HU when saving the current HU, this functionality would not protect you from losing the work you completed since the last save in the event of abnormal termination of the program, e.g., caused by system crashes or power failures.

For such situations, an automatic periodic backup feature is provided that will store recovery information every 20 minutes (or a period of time you can set via **EXTRAS/ PREFERENCES / GENERAL PREFERENCES**, Tab: **STORAGE**. It is strongly recommended to keep this feature on.

Should ATLAS.ti or Windows crash or in any other way be terminated irregularly, the amount of work lost is only the work conducted since the last recovery backup (or regular save). When quitting ATLAS.ti or after saving the HU, the recovery backup file is removed automatically.

If you experience long delays at the scheduled auto-saving times when working with large HUs, increase the time intervals rather than turning this option off!

When you restart ATLAS.ti after a crash, it will ask you if you want to load a recovery backup of your HU if this backup is indeed newer than the one you last saved.

Any pending changes in open text or Network Editors are not saved by the recovery backup feature. Saving such changes from time to time will preserve these changes.

Copy Bundle – Migrating and Backing Up Projects

The Copy Bundle function lets you make a copy of your entire project, i.e. the HU and all associated files, packed as a single file. As such, it serves a dual purpose: Portability (to migrate a project to another location), and data security (a powerful backup & restore device).

COPY BUNDLE is a powerful tool. By inspecting the HU, it finds and collects all files that make up the project: the data files used as PDs, and all associated auxiliary files. It checks the accessibility of the data sources and provides feedback in problematic situations. From all the project files it compiles a single compressed file. On a target computer, "installing" a bundle distributes the HU, the data source files, and all associated files to appropriate location(s).

Under **TOOLS / COPY BUNDLE**, you find two functions: One to create a bundle and the other to unpack or "install" a bundle. The two procedures are explained below.

Create a Bundle

"Create Bundle" creates a single compressed archive containing the project. In order to create a well-behaving bundle, e.g., one that can be unpacked without effort on a target system, the project should have been set up with flexible use of references in the first place. See "Scenario 1 (recommended): Working with One Project Folder - for Single Users and Teams" on page 114 for details.

The Copy Bundle Tool

The bundle tool is separated into three list panes and one report pane (see Figure below).

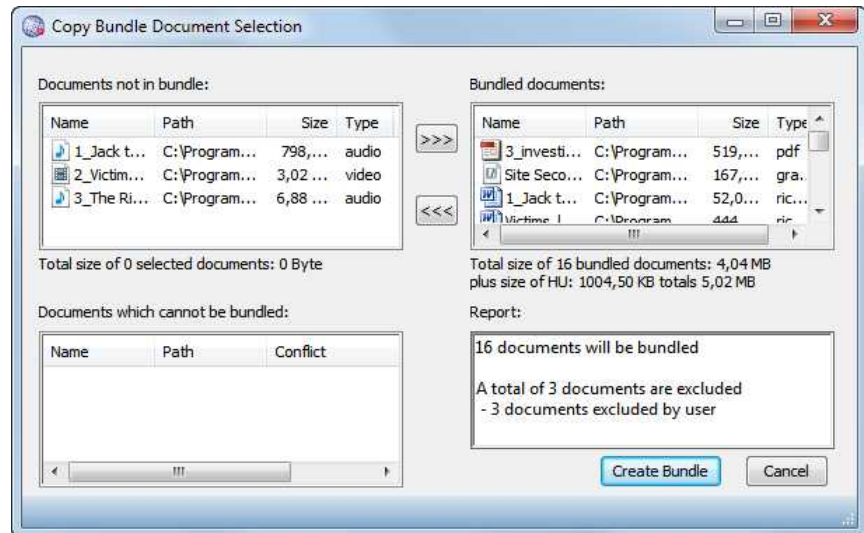


Figure 63: Copy Bundle: Pack & go

Documents not included in the bundle: The user can specifically exclude documents that should not be in the bundle, e.g., unchanged (or even non-editable) large documents (e.g., video, audio files) that have already been carried to the target system via other means or with a previous Copy Bundle.

Bundled documents: This list displays documents that will be included in the bundle.

Documents that cannot be bundled: This list displays documents that are excluded by the system because of an irresolvable conflict. If all PDs in the HU can be displayed in the HU Editor, there should be no conflict when bundling the HU.

The following conflicts may occur:

- *Source Missing Conflict.* The document does not exist.
- *Source Unusable Conflict.* The document cannot be loaded. Possible cause: It was manually copied from another location without its associated LOG file using Windows copy method.
- *PD Source Conflict.* Mismatch between PD and its source. This implies that the data source is not the one that is expected by the PD. Possible causes: mapping changed, data source was replaced by another file, LOG file was edited manually.
- *Ambiguous Reference Conflict.* A data source is used by more than one PD but was assigned using different paths.

Report: In the report pane, the situation before bundling is summarized. This includes a list of all excluded documents and the reason for their exclusion.

How to Create the Bundle File

- Save the HU.

Select **TOOLS / COPY BUNDLE / CREATE BUNDLE** from the main menu. The Copy Bundle window opens. All documents that can be bundled are listed in the top right pane.

To exclude documents, double-click on a document, or select all documents you want to exclude and click on the **Exclude** (<<<) button.

Check the pane on the bottom left for problematic documents. If some are listed, try to resolve the conflict (see "Help with Data Management Problems", page 433, "How to Edit a Primary Document", page 138, "Primary Document Manager" page 54, or "Modifying the Project Setup", page 121 for possible causes).

Check the report pane. If everything is as it should be, click the **CREATE BUNDLE** button.

A standard file dialog window opens. Enter a name for the bundle file or accept the suggested file name. The extension **ACB** (ATLAS.ti Copy Bundle) is automatically appended.

Click Save. By default, the file is saved in the same folder as the HU file.

Install a Bundle

To unpack the copy bundle file on a target computer, it needs to be 'installed'.

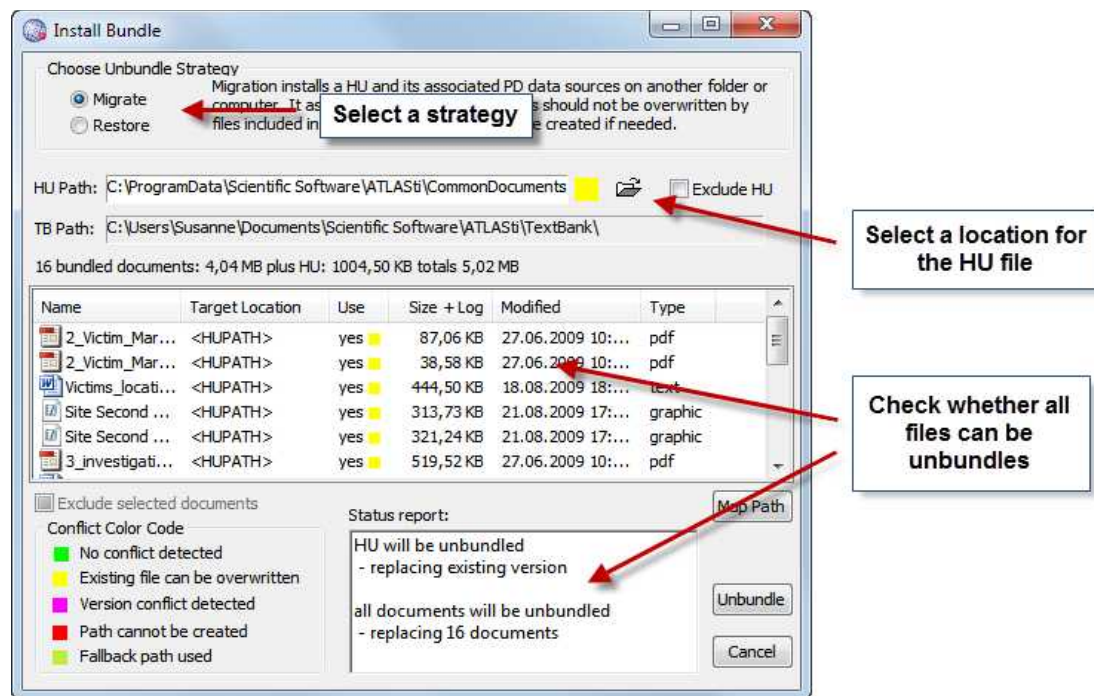


Figure 64: Copy Bundle Install window

The Install Bundle dialog box looks as follows:

Unbundling Strategies

"Unbundling" is the term we have adopted for unpacking (or extracting) the compressed archive containing the HU and its associated files at the new

location. The installation of a bundle on the same or a different computer can be done using two slightly different strategies: Migrate and Restore.

Choose the "Migrate" strategy when moving projects between two work locations.

Migrate

The "Migrate" strategy assumes that the bundle is to be installed on another computer or another disk in order to resume work at this different location. The target path for the HU can be freely chosen. When checking for conflicts, this strategy accepts that older versions of data source files are replaced by newer versions. If a document in the bundle is older than an existing one at the new location, it will not be unbundled. This prevents a document from replacing a newer version of it.

Use the "Restore" strategy when installing a bundle that was created as backup copy.

Restore

The "Restore" strategy is used to restore a bundle created as a backup of a project, i.e., an HU and all the data source files referenced by its PDs. This strategy restores the HU in exactly the same folder as at the original location. It does not reject an attempt to replace a current file with an older version – which is indeed the very nature of "restore."

Paths

Below the strategy selection section, the original path of the HU is displayed. A color marker next to the path indicates possible conflicts for this HU, if it were to be installed in the target environment.



Figure 65: Selecting a location for the HU file

Click on the **Browse** button to select the location where the HU file should be stored on the target computer.

If you transfer a project to a different computer, most likely you will need to change the location. If you use the bundle file as backup and want to install the backup on your computer, there is probably no need to change the location.

If your project uses the **HUPATH** setup, all documents are copied to the location chosen in the field HU Path.

A check box lets you exclude the HU itself (i.e., the HPR6 file) from the installation.

Below the HU path, the TBPATH of the target computer is displayed. This pane is not visible in Restore mode. If a data source is addressed relative to the **TBPATH**, it is copied to the TBPATH named here.

List of Bundled Documents

Name	Target Location	Use	Size + Log	Modified	Type
2_Victim_Mar...	<HUPATH>	yes ■	87,06 KB	27.06.2009 10:...	pdf
2_Victim_Mar...	<HUPATH>	yes ■	38,58 KB	27.06.2009 10:...	pdf
Victims_locati...	<HUPATH>	yes ■	444,50 KB	18.08.2009 18:...	text
Site Second ...	<HUPATH>	yes ■	313,73 KB	21.08.2009 17:...	graphic
Site Second ...	<HUPATH>	yes ■	321,24 KB	21.08.2009 17:...	graphic
3_investigati...	<HUPATH>	yes ■	519,52 KB	27.06.2009 10:...	pdf

Figure 66: List of documents to be unbundled



The list of documents included in the bundle can be sorted with a click on the column header: The following information is provided:

- Name of the document
- Target location of the document, including special paths.
- A field indicating if this document is used when unpacking the bundle. It also contains a small colored box indicating a possible conflict (more on the "Conflict Color Code " below).
- Size (the total of the file sizes of the document file and its optional auxiliary files).
- Last modification date
- Document type

■ No conflict detected

Possible target conflicts are indicated by the colored square in the 'Use' column.



Color Code	Description
■	Green is on for every document that can be installed without overwriting an existing version
■ Existing file can be overwritten	Yellow: A compatible file was detected; replacing this file does not harm the integrity of the HU. Other HUs accessing this document will be synchronized when needed.
■ Version conflict detected	If you unpack a document with this magenta marker, other HUs with references to it may no longer be able to access it. Such documents will not be extracted in Migrate mode. You can, however, include these documents in Restore mode.

 Path cannot be created	Red: If a path does not exist on the target computer, it is created when installing the bundle file if possible.. However, not every path can be created. If you install a bundle on your personal computer and a Z drive is required, ATLAS.ti can not create this drive on your computer. If you see a red box, you either need to change the location for the HU file in the HU Path field (see above), or you need to map the path (see below for further information).
 Fallback path used	A document is marked light green , if an otherwise irresolvable path could be resolved via fallback redirection, i.e. HUPATH or TBPATH.


Mapping a Path

You need to map a path, if the original path of a file on the source computer cannot be created on the target computer. This is likely to be the case when a project was set up with absolute path references on a network drive that cannot be accessed by the target computer.

Such a conflict can be resolved by mapping the non-existing path:

-  Click on the **MAP PATH** button included in the Install Bundle window. This opens the same window as explained in the section “Path Mapping” on page 124).
-  Proceed as described there.

If you do not want to define a mapped path, a second option is to:

-  Select an existing location for the HU file in the field HU Path.

The 'Always Use Fallback Paths' is activated by default in the mapping tool (see “Redirection: Fallback” on page 126 for a definition). If activated, the following happens: all such irresolvable files are unbundled in the HU's folder, i.e., the folder where the HU (HPR6 file) is stored.

It is best to organize projects in ways that use absolute path references as rarely as possible. This reduces the need to use PD Mapping.

Report

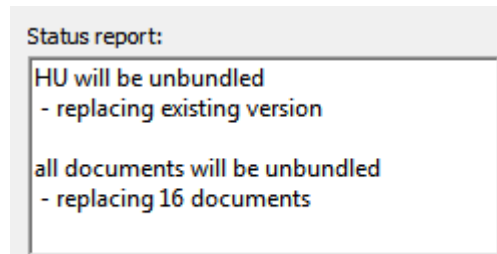


Figure 67: Status report in the copy bundle window

The report pane in the lower right of the Install Bundle window displays a dynamic report of the documents about to be unbundled.

How To Install a Bundle File

- Select **TOOLS / COPY BUNDLE / INSTALL BUNDLE** from the main menu.
- From the file dialog select a bundle file and click **OPEN**. The Install Bundle window opens.
- Select a strategy for installing the bundle: **Migrate** or **Restore** (see "Unbundling Strategies" on page 131).
- If in Migrate mode, select the target location for the HU via the "HU Path:" entry field. All documents using HUPATH are also copied to this folder. It might be a good idea to select a new empty folder as the target.
- Check for conflicts and try to resolve them ("Conflict Color Code" on page 133).
- Exclude unwanted documents or the HU before installing the bundle.
- Click on the **Unbundle** button. When all files have been copied to their respective locations, a message pops up informing you that the unbundling process is finished.

Every file that is replaced during the installation of the bundle is backed up. The name of the backup files is "*backup of ...*".

For all files replaced during installation of a bundle, a backup copy is created

A two-level backup strategy is in effect: The files are first backed up, then the backup files are also backed up. So you might experience quite an increase of files. However, given that disk space is not a big problem these days, we decided to be more generous in regard to giving you the possibility to revert to a previous state. Once you find that everything works well, feel free to remove all "*backup of*" files.

Editing Primary Documents

PDs are often shared between different projects and/or users/team members. A single file can be in use by more than one project.

Click the pencil to enter edit mode.

A powerful change maintenance system records all changes during an edit session in order to inform other projects to update their quotations.

Objectives

One of the core ideas of ATLAS.ti is that PDs are shared and part of an archive. As you already know, all quotations, codes, and memos are actually not parts of PDs, but are "transparent layers" that are stored within the HU. Because of this, editing is blocked by default when you view a PD in ATLAS.ti.

However, it may be necessary to edit the content of a PD. For instance, transcribed texts are often loaded with typos and other writing errors. Documents might not be complete and text may need to be added after they were assigned.

Edit mode needs to be intentionally switched on for textual PDs. This section introduces available editing options and the issues to be considered when editing PDs.

Two versions of a coded text are shown in the figure below: one version before and one version after an editing session. The added text is colored red.

When we refer to "editing a PD," we indeed mean editing the content, thus the data source file on the computer hard disk is modified by this procedure.

A new paragraph was added between paragraph 4 and 5 in the original document. As a consequence, all quotations that referenced paragraph 5 and beyond needed to be updated to take into account their new position. The quotation starting at paragraph 5 (before the editing procedure) and its associated code have shifted to paragraph 6.

A word of caution is in order. Even though a number of safeguards are built into the software to prevent misaligned codes or other nuisances after an editing session, it is still a good idea to know how ATLAS.ti handles edited PDs and to give some thought to the question of how to manage all documents related to an ATLAS.ti project (see also "Project Planning and Setup" on page 113).

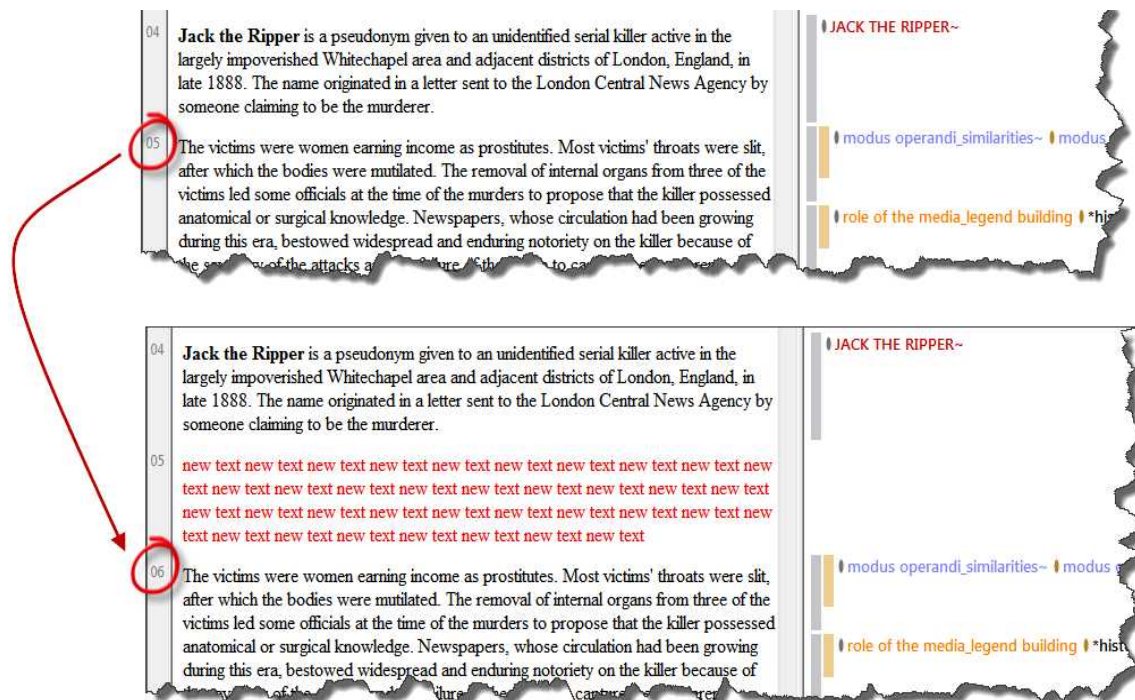


Figure 68: Primary document, before and after editing

Therefore, the objective of this section is to inform you about the dos and don'ts of editing PDs.

Inside Editing Primary Documents

While the following description is covered in other chapters (e.g., "" on page 105), this issue is helpful and important to your understanding of editing documents in ATLAS.ti.

One of the most powerful features of ATLAS.ti 6 is the possibility to edit PDs or more precisely: editing the contents of a PD or editing its **data source**.

Some might ask: why is editing a PD an issue at all? Isn't editing a text a simple thing to implement?

Understanding the Primary Document - HU Relationship

Quotations are not much more than a set of coordinates that remember the start and end positions of a text sequence (or a video passage, an image area, etc.). Quotations are managed and stored inside the HU. The actual document on the disk "knows" nothing of the references ATLAS.ti compiles about it.

What is needed to be able to edit the content of a document and to update the quotations so that they never lose their correct alignment?

- ATLAS.ti needs to record every change that has the capacity of misaligned quotations.
- ATLAS.ti needs to create a "logbook of changes" accessible to EVERY HU that uses this PD.

- It is also necessary to protect the document against editing by more than one user at the same time.

The Edit Toolbar

The Edit toolbar provides a number of options known from other Windows applications. Many of these options are also available from the Edit menu.

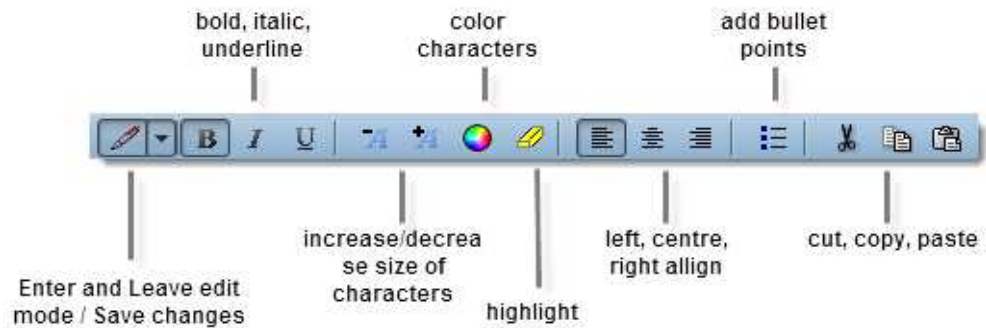


Figure 69: Edit toolbar

The highlight color can be set under **EXTRAS / PREFERENCES / GENERAL PREFERENCES**, tab: **Text Editor**.

How to Edit a Primary Document

Doc and Docx files cannot be edited.

Editing is only possible when logged into ATLAS.ti as an ATLAS.ti user with administrative rights! See "Administrative and Standard Access Rights" on page 153.

- Load a rich text or plain text PD.
- Click on the **Edit** button in the main toolbar, or select **Edit / Document Access / ENTER EDIT MODE** from the main menu.

If a non-editable document (e.g., a doc/docx or PDF document) is loaded, the editing toolbar is not available.

- Edit the document.
- When you are done, save your changes and leave edit mode: Click the **Edit** button and select **SAVE AND LEAVE EDIT MODE**.

Changes to the document must be explicitly saved when leaving the edit session.

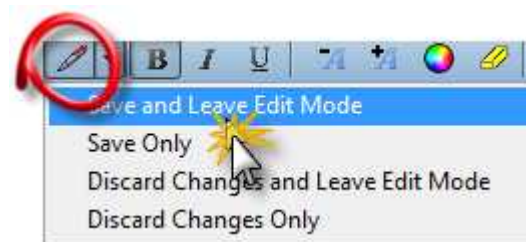


Figure 70: Saving a modified primary document

If you leave the edit session without saving the edited PD, the changes will be discarded. This includes all changes to the HU caused by the editing session, e.g., quotations deleted, copied, or moved by deleting, copying, or moving text. If you do not save, the text will revert to the state before the last edit session or when the document was last saved.

If you choose **SAVE ONLY**, all modifications are saved, a log file is created or an existing one modified and you can continue to edit the document.

If you select the option **DISCARD CHANGES AND LEAVE EDIT MODE**, then all changes are discarded and no log file is created. If a log file already existed, no additional information is added to it

If you choose **DISCARD CHANGES ONLY**, the recent modifications are dropped and the document is reverted to its last saved state.

Since there is no Undo function for document editing activities, make it a habit to select **SAVE ONLY** once in a while during the edit session. Then you can revert to the last saved status in case you made a mistake by selecting **DISCARD CHANGES ONLY**.

Please read - This happens when you save an edited primary document:

Creation of Log files

As soon as you save your changes, an auxiliary file is created. This auxiliary file has the same name as the original source file that was edited, plus the file extension **.log**. It is stored within the same folder as the original file. **If file extensions are shown** in the file manager, you see:

Original source file: Interview.rtf

Auxiliary log file: Interview.rtf.log

The default setting of your file manager is set to “hide commonly known file extensions”. This is an unfortunate setting as it can be helpful in a lot of contexts to be able to see the file extensions. You can easily change this setting under the view options in your file manager. In the event that the **file extensions are hidden**, you will see the following file names:

Original source file: Interview

Auxiliary log file: Interview.rtf

Only the “type” column indicates that the first one is indeed the rich text document and the second one a text file. The characters “.rtf” are part of the file name and do not indicate the file extension.

As they are just plain text, log files are very small, usually just a few k in size. Log files contain information for the HU about how to adjust the codings according to the modifications that have been made.

If you edit a document multiple times, the new modifications are written into the same file. Thus for every edited document, you find one log file in your project folder. Below you see an example of a log entry:

```
<LOGSESSIONS>
<LOGS SECS_1901="3243616859" ISODATE="2003-10-
14T20:40:59">
<TransformMod oldSel="1@10,1050@10" newSel="1@10"
afterOldSel="1051@10" beforeOldSel="1052@9"/>
<TransformMod oldSel="1@10,1@10" newSel="1@10"
afterOldSel="2@10" beforeOldSel="1052@9"/>
<TransformMod oldSel="1@10,1@10" newSel="1@10"
afterOldSel="1@11" beforeOldSel="1052@9"/>
</LOGS>
```

Never, never
delete, modify,
or move a log
file!

As user, there is no need to understand the content of a log file or even to open it. You just need to know that it is there and that it's best not to touch it. If you delete a log file and it cannot be rescued from the recycle bin, you have lost the coding for this document. The only option that remains then is to disconnect the document from the HU, newly assign and recode it.

Best practice rules

Rule No. 1: Always edit from within ATLAS.ti

Editing a document outside ATLAS.ti, e.g. in Word, jeopardizes the congruency of the coding as ATLAS.ti will not "know" where changes have been made. Therefore, ATLAS.ti will not be able to adjust its record of coded segments. If the HU were to load such a document, many or all codes would be misaligned, i.e. unusable.

To avoid such a situation, the HU always checks the size and modification date of a document before it is loaded. If a mismatch is found, the document is not loaded and you see only a blank HU editor.

However, since it would be very restrictive if ATLAS.ti did not allow you to rescue such a document, there is an option to reset the last access information and this forces ATLAS.ti to load the document: Right click on the document in the PDoc Manager and select **DATA SOURCE MANAGEMENT / RESET LAST ACCESS INFORMATION**, see also the section "Troubleshooting" on page 433.

You should be aware this does not mean that your codes will magically re-appear where you expect them. If you have modified a document outside ATLAS.ti, it will be up to you to go over the document, check all codings, and adjust them manually if necessary. Tedious as this may be, you will probably agree that it beats starting from scratch, i.e., re-coding the entire document after all.

Rule No. 2: Never delete, modify or move the auxiliary log file

Deleting a log file is the one single activity that will cause permanent data loss (apart from losing your HU file of course). All other problems related to data management can generally be solved (see page 433). If the log file has been deleted permanently, then ATLAS.ti has no way of knowing where to display the quotations and codes as the reference information where to attach them has changed.

The second best solution in such a case is that you try to rescue an older version of the document from a copy bundle file. For this and other reasons, we recommend to create a copy bundle file after each work session. If something goes wrong, like accidentally deleting a log file, you can always recover a recent version of the coded file.

And this is what needs to be done:

- Disconnect the primary document whose log file has been deleted (see “Disconnecting Primary Documents” on page 89).
- Install the backup copy bundle file into a new folder, at a different location than your project folder. Save it under a unique name. See “Install a Bundle” on page 131.
- Then disconnect all documents but the one (or the ones) that you want to rescue. Save the HU again.
- Merge this HU with your current one (**TOOLS / MERGE WITH HU**). Select the merge strategy: *Different PDs - Same Codes*. You find more detail on merging two Hus in the section “Merging Hermeneutic Units” on page 171.

Enriching A Plain Text Document

Saving a former plain text with formatting does not change the file extension.

If you have edited a plain text document and added formatting attributes like fonts, color, font size, bold, italic, embedded objects, etc., you are asked if you want to keep the formatting information and save the document as a rich text (rtf) document:

If you select No, any features contained in the document beyond plain text will be lost. If you want to keep the rich formatting, you need to confirm the message.

If you select Yes, the file will be saved in rich text format although the file extension (e.g., TXT) is not changed to RTF.

Embedded Objects

What is an Embedded Object?

Data from a variety of applications like Word, Excel, and PowerPoint can be embedded within a PD’s data source. In fact, objects can be embedded in *any* rich text available in an HU, including memos and comments.

In-Place Activation and Editing

An activated embedded Excel table showing the menu and toolbar within ATLAS.ti

Embedded objects can be edited (like an Excel™ table) or “played” (a video clip) without leaving the HU. Depending on the object’s features, the toolbars and menus of the original application can be directly accessed within the ATLAS.ti windows. For example, if you insert an Excel table as an embedded object and double-click on it, the ATLAS.ti main menu and toolbar are replaced

by the Excel menu and toolbar. All Excel functions can be used to modify and work on the embedded table. This is called *In-place-activation* or *editing*.

If you don't have Excel on your computer, all you will see is the image of the table, but it will not be activated.

When activating an embedded object, it might not open "in-place" but in its original application in a separate window. This behavior depends on the embedded object itself and is outside the control of ATLAS.ti.

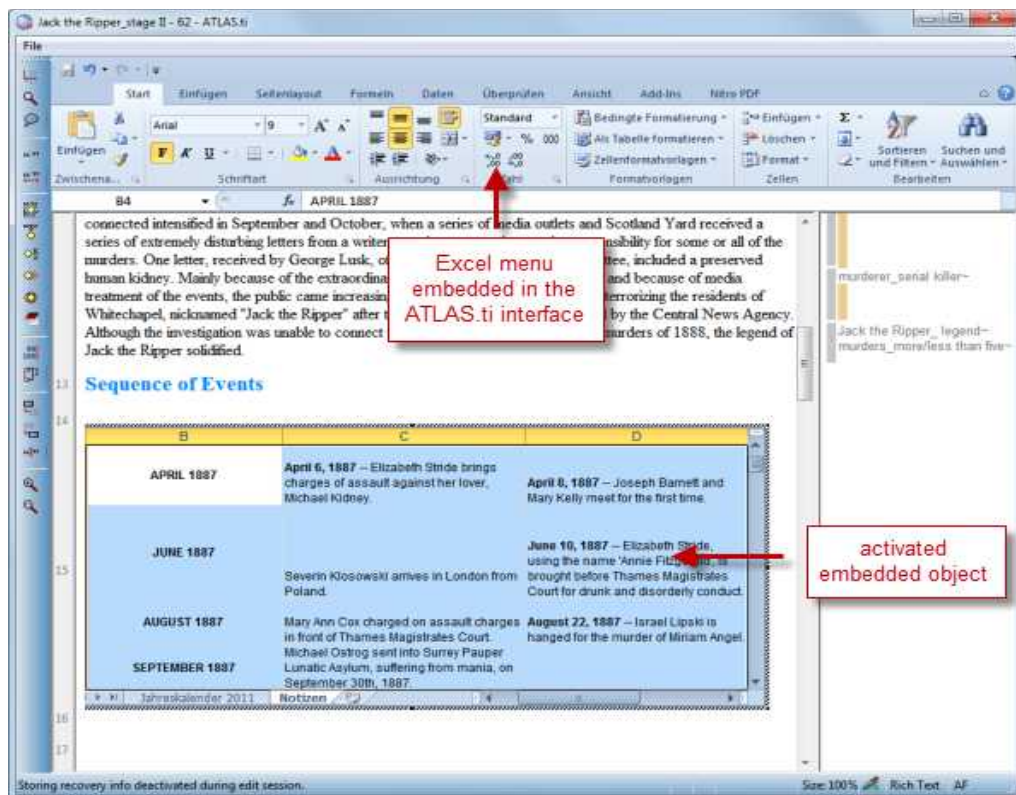


Figure 71: Activated embedded object

How to Embed an Object

There are several ways to embed an object.

Embed an Object via Copy and Paste Special

- Copy a table (or a portion of it) in Excel.
- In ATLAS.ti (enter edit mode within the PD area or in the memo or comment area) choose **EDIT / PASTE SPECIAL** and select the Excel object.

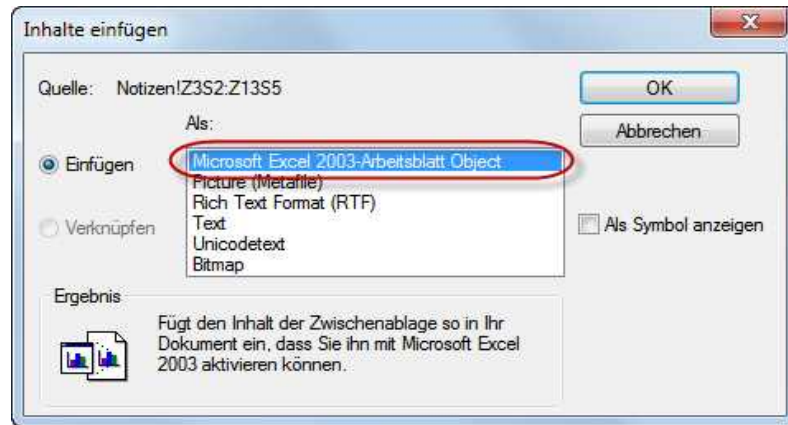


Figure 72: Paste special dialogue (which will show the language of your Windows system)

The list of formats available in the **PASTE SPECIAL** dialog may also contain other non-object formats.

Embed an new or existing Object via Insert Object

- Enter edit mode and select **EDIT / INSERT / INSERT OBJECT** from the main menu.
- The **Insert Object** dialog opens and offers all object types installed on your computer. However, not all of the objects listed in the dialog make sense inside a PD.

Create a new object: To create a new object select the object type and click OK. By default the option 'Create new object' is activated.

Load an object from a file: Activate the option 'Create from file' in the Insert Object dialog. Click OK and browse for the file to be inserted. If the file's content is not an embeddable object, an icon representation is inserted and displayed instead.

Inserting an object from a file is not the same as **INSERT / INSERT FILE**, which appends the usually textual contents of a file at the cursor position.

If you choose to **link** the object, it will also be inserted, but with a significant difference:

Linked objects: A linked object keeps a reference to the original file. When you edit the original Excel table, the changes will be written to the Excel file and will be updated in ALL documents where this object was embedded. Because of this, in-place activation is not available and the original application is launched when double-clicking the object.

An object inserted without checking the link option is fully embedded and has no reference to the file from which it originated. Editing this object will only modify this copy of the object.

Coding Embedded Objects

Every object is treated as a single character when it comes to selecting and coding it in ATLAS.ti.

You cannot “enter” an object in order to select and code parts of it (e.g., a single cell inside an Excel™ spreadsheet or a graphic inside a PowerPoint™ slide).

However, for some objects, selecting a more suitable format from the list presented by Paste Special (see also “Embed an Object via Copy and Paste Special” on page 142) may be the solution. For instance, an Excel table is also offered as Rich Text. It won't look as neat as the original Excel object and it cannot be activated but you can select and code a single cell or several cells of the spreadsheet.

The same Excel table selection pasted into a document as as an Excel object and as Rich Text.

APRIL 1887	April 6, 1887 -- Elizabeth Stride brings charges of assault against her lover, Michael Kidney.	April 8, 1887 -- Joseph Barnett and Mary Kelly meet for the first time.
JUNE 1887	Severin Klosowski arrives in London from Poland.	June 10, 1887 -- Elizabeth Stride, using the name 'Annie Fitzgerald', is brought before Thames Magistrates Court for drunk and disorderly conduct.
AUGUST 1887	Mary Ann Cox charged on assault charges in front of Thames Magistrates Court.	August 22, 1887 -- Israel Lipski is hanged for the murder of Miriam Angel.
SEPTEMBER 1887	Michael Ostrog sent into Surrey Pauper Lunatic Asylum, suffering from mania, on September 30th, 1887.	

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AUGUST 1887	Mary Ann Cox charged on assault charges in front of Thames Magistrates Court.	August 22, 1887 -- Israel Lipski is hanged for the murder of Miriam Angel.
SEPTEMBER 1887	Michael Ostrog sent into Surrey Pauper Lunatic Asylum, suffering from mania, on September 30th, 1887.	

Figure 73: Coding embedded objects as compared to inserted text

The margin shows several codes for the Rich Text version and only one code for the object version below.

Editing Embedded Objects

To edit an embedded or linked object:

- Enter **Edit** mode.
- Double-click the object or right click on the object and select <OBJECT NAME>-OBJECT / EDIT OF <OBJECT NAME>-OBJECT / OPEN from the context menu.

Objects can be activated and edited without the PD being in edit mode. Such changes are not permanent.

Idiosyncrasies

Activating an embedded object is possible even when the embedding PD is not currently in edit mode. For example, you may want to play a video or recalculate a range of cells without making such changes permanent. If you want to make changes and preserve the changes applied to an object in the ATLAS.ti HU, you need to enter edit mode before editing the object.

After deactivating an active object by clicking outside its border, you might find that the object has reverted to its original size.

Resizing an object can only be done by grabbing its selection frame at any resize handle except those located on the frame's right border. To get enough space to the left you might want to center or right-align the object before resizing.

Editing Primary Documents in Team Projects

Editing in team situations needs to be tightly controlled in order to not lose the integrity of the various HU file involved. If team members work at different locations and store data locally, the best solution is to restrict editing to the project administrator. For details on how to setup and manage team projects see 149.

If the team project is set up in way that all team members access the data on a server (see example below), the ATLAS.ti controls the editing process. This is possible based on the Lok and Log files created by ATLAS.ti. See File Locking on page 84, and Creation of Log files on page 139).

Let's assume you work in a team of five people. Each of you is located in a separate office or at different geographical locations. All of you work on the same project and analyze the same pool of data source files. As shown in the figure below, all data source files are located on a network drive and are shared by all team members.

While the data sources referenced by an HU can be shared by multiple users, HUs cannot be worked on concurrently. Therefore, each team member works on her 'own' HU. The work can then be combined using the ATLAS.ti Merge feature.

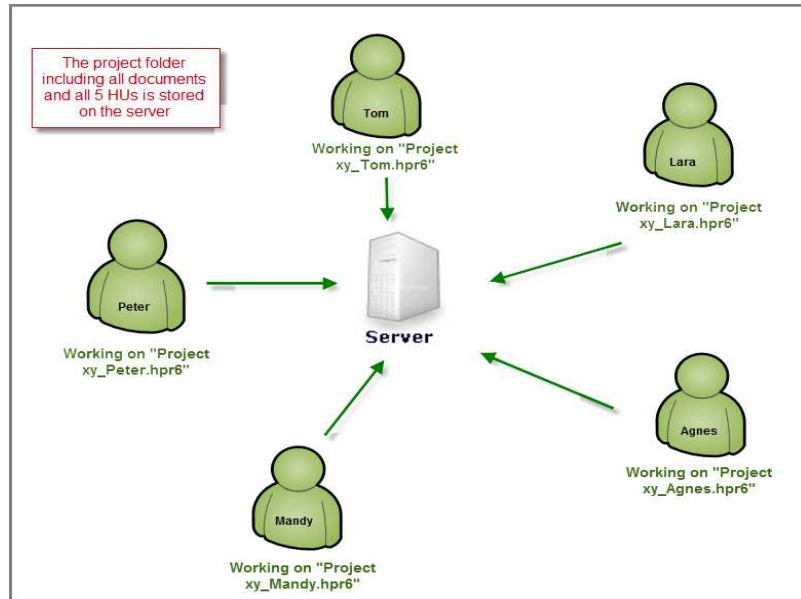


Figure 74: Editing in a team situation

It is Monday morning at 9 a.m. Peter, Tom, and Agnes are currently working on the ATLAS.ti project. Agnes works with PD4. She reads through it, codes it, and writes a few memos. Peter now also wants to look at the document. He loads the document into his HU, checks a few things, and codes a few more data segments. Then he continues to work on P5.

Agnes continues her work on P4. While reading through it, she recognizes that some places are not anonymized and wants to correct it. In order to do so, she enters edit mode. She can however only do so, if no one else is currently viewing the document. If this were the case, the following message pops up:

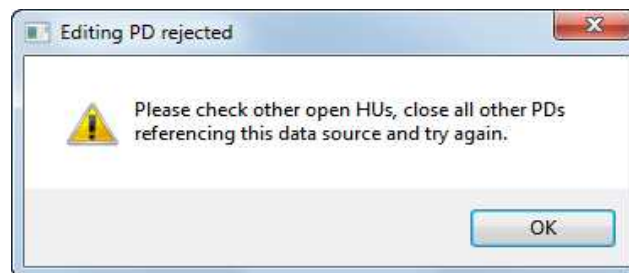


Figure 75: Editing is only possible if no one else is viewing the document

As this is not the case, Agnes can enter edit mode. While Agnes is editing the document, Tom wants to do some work on P4. He can however not load the document. Instead he sees the following message:



Figure 76: Server message informing users that a primary document is currently edited

Agnes corrects the document and leaves edit mode and saves the changes made in the source file of P4.

Tom tries to access P4 a bit later. He receives a message stating that changes have been detected in P4 and that all PDs using this data source need to be synchronized. In order to load the document, Tom needs to confirm this message. If he clicks NO, he will not be able to load the document until he confirms the synchronization. Modified PDs can *only* be loaded after all necessary alignments have been processed during the synchronization.

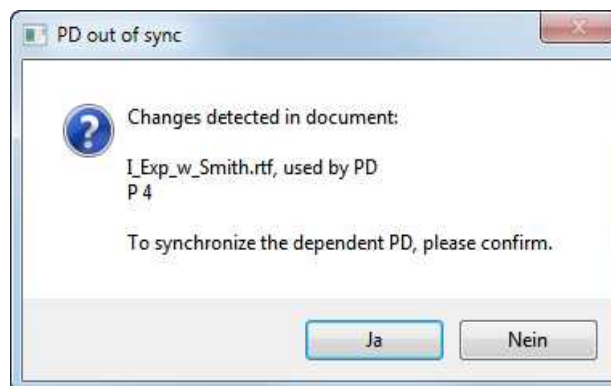


Figure 77: Synchronizing edited primary documents

After synchronizing P4, Tom can continue to work on it, add new codes, memos etc. He may also edit the document. All other team members will be informed about any further modifications. For this reason, there is no danger that the team will end up with five different versions of the document. Due to ATLAS.ti's content surveillance system, each team member works with the most up-to-date version of the document.

The only thing that remains to be done is to merge the Hus from all five team members from time to time, so that all coding and other work performed on the data is joined together. See page 171 further detail on merging HUs.

Synchronize all
PDs at once.

Synchronization on Demand

Instead of synchronizing PDs one at a time, you may want to synchronize all or a selection of PDs at the same time. Choose **D**OCUMENTS / **D**ATA **S**OURCE **M**ANAGEMENT / **S**YNCHRONIZE **P**Ds from the main menu. ATLAS.ti then searches for LOG files, analyzes them, and asks you for confirmation if synchronization is necessary.

Team Project Management

Tasks of the Project Administrator

When working in teams, one person should be the designated administrator.

Sets up the Project

The project administrator is responsible for

- creating the HU with the necessary settings for each team member
- assigning the data
- distributing the project data to team members
- explains team members how to create a user account and how to log in (see "Adding a New User" on page 151).

Makes Decisions with regards to Editing Primary Documents

Editing documents that are assigned to a Hermeneutic Unit is a critical tasks and effects coding. Therefore the pros and cons need to be considered and informed decisions should be made. If editing is allowed, then it either needs to be done at one central location or clear instructions need to be provided containing information about who is allowed to edit what. For more information on editing, see the general section on Editing Primary Documents on page 136 and the project scenarios below.

Merges Hermeneutic Units

Each team member has to work within her or his own sub HU and these need to be merged from time to time. The project administrator sets the time intervals when sub projects are to be merged, provides instructions to team members when and what to send where (this varies depending on the project setup chosen and whether editing is allowed or not), merges the sub HUs (see Merging Hermeneutic Unitson page 171) and distributes the new Master HU to all team members.

Works on the Project

In most cases, the project administrator will be someone from the research team and not a remote IT person. It is essential to understand how data management in ATLAS.ti works, it is not just a matter of installing ATLAS.ti and providing IT resources.

In addition to data management, other things like how to develop a common coding system need to be decided upon. Thus methodological and content related matters are also part of the project management tasks.

User Management



Collaboration or multi-authoring means that more than one author may work on an ATLAS.ti project at different times. ATLAS.ti supports this teamwork by systematically keeping track of each author's productions.

Every object created, including the Hermeneutic Unit itself, is automatically stamped with a date, time, and author. This identification of the author is what makes the log in process upon system start necessary (which by default proceeds automatically). Simultaneous collaboration is not supported, so only one person can work on a specific Hermeneutic Unit at a time. By default, only the author who created the Hermeneutic Unit (the *owner* or original author), is *authorized* to load, read, and edit the Hermeneutic Unit.

Letting others participate in creating a Hermeneutic Unit requires a few bureaucratic adjustments; one of which is the definition of *users* (cf. "User Management" on page 150).

The simple concept of the ATLAS.ti user management allows all data that will be shared by different users to be placed in publicly accessible directories. But even with the Hermeneutic Units stored in a public directory, access can be restricted to the author. In other words, Hermeneutic Units can either be private or public. The default setting is *pubic*. If set to private, other users can be defined as co-authors for this Hermeneutic Unit (see "Access Rights for the HU" on page 154).

To keep it simple, it is best to leave the default setting to public access and to allow all users to create an account with administrative rights. These rights only

ATLAS.ti's user database is independent of the account database in a local area network or your Windows log-in name.

apply when working with ATLAS.ti. Users defined in ATLAS.ti are not necessarily the same as Windows users. Furthermore, administrative rights assigned to an ATLAS.ti user have nothing to do with Windows user rights.

Adding a New User

If you do not intend to use ATLAS.ti in a work group environment, the only procedure you might want to know is how to modify the default account called "Super."

ATLAS.ti knows two classes of users: *administrators*, and all others. Administrators have more rights than "normal" users. The key rights of administrators are the ability to define new users, to install service packs or use the more advanced data source management features. Thus, in order to be able to create new user accounts, you need to be logged as a user with administrative rights. By default, you are logged in as "Super" user and this user has administrative rights.

To create a new user account, select **EXTRAS / USER EDITOR** from the main menu.

If this option is grayed out in the menu, you are logged in as standard user. Choose **EXTRAS / LOGIN** and log in as Super user to be able to access the user administration window.

In addition to being an administrative user in the ATLAS.ti context, you also must have administrative rights as a Windows user in order to write-access the user database which is located in ATLAS.ti's PROGRAM folder below the Program Files folder. This folder is usually write protected for non-administrative users on "secure" (well, in principle ..) operating systems like Windows XP, Windows 2000, Windows Vista, Windows 7 etc..

For Windows Vista and Windows 7 users: When using Windows Vista or Windows 7, you need to run ATLAS.ti in administrative mode. To do this, right click on the program icon when you start ATLAS.ti. Then select the option **Run as administrator**. If you do not see this option, then you do not have administrative rights to your Windows system. Thus, you first need to start Windows with administrative rights.

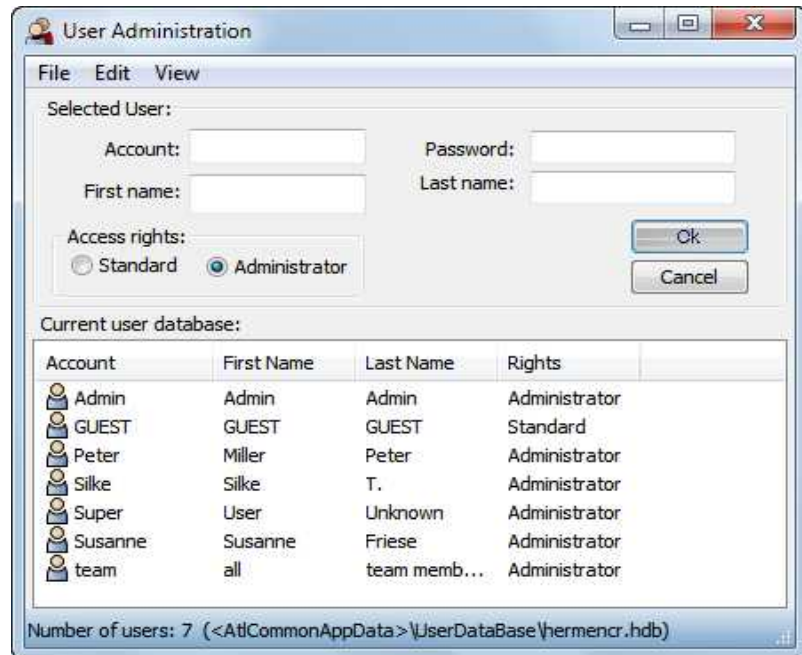


Figure 78: User Administration Editor

The user administration tool allows you to create, modify and remove users.

A user is characterized by five attributes, four of which you are prompted for in sequence: *Account name, password, last name, first name*.

Account name: When working with ATLAS.ti, the account name has to be entered at log-in time. Every object created, including the Hermeneutic Unit, is stamped with the account name.

Password: A password should be at least 4 characters (letters, digits, symbols) long, but should not exceed 10 letters (higher risk of typos). A password can be changed later by the administrator. However, when logging in, you are not required to enter a password if the default settings are kept (see Relaxed User Management below).

Last and first name: Both names really have no important function other than giving the user a correct welcome. However, both a last and a first name must be provided when defining a user.

To add a new user:

- Select **EDIT / NEW USER**.

- Enter an Account name, a password, the last and the first name into the sequence of "prompters".

After completion of the sign up procedure, the new entry appears in the list of users. The "Access rights" attribute is set to "Administrator" by default (see "Administrative and Standard Access Rights" below).

- Change the access rights if needed.

Administrative and Standard Access Rights

Administrative rights allow you to add, delete and change users. In addition, administrative access rights are necessary if you want to edit primary documents.

Users with **standard rights** can only access HUs they have created themselves, or those where there have been registered as co-author. They are not allowed to edit primary documents.

Removing a user

To assure that there is at least one user with administrative privileges in the database, any attempts to remove all administrators is rejected. You cannot, for instance, remove the user who is logged in.

Select the user to be removed in the list, right click and select the option **DELETE USER** or or select the corresponding menu item from the **EDIT** menu.

Changing user attributes

You can change the account name, the password, the first and last names of a user and the access rights.

Right click on a user entry and select the appropriate option from the context menu, or highlight a user and select the corresponding menu item from the **EDIT** menu.

None of the menu options except *New user* will be available if you select yourself in the list of users. If you need to change or even delete your own account, log in under a different administrative account, edit your normal account and log in again (**Extras / Login**). Logging in can be accomplished without the need to restart ATLAS.ti.

Saving the user database

After new definitions and modifications, the user database must be explicitly saved or all changes will be discarded. If you close the user administrator window without saving, you will be prompted to save.

Be default the user data base is stored in a file called HERMENC.R.HDB in the ATLAS.ti program folder. This name and folder should be used, unless you are about to create a copy of the database.

To save the user data base, select **File / Save** from the main menu in the User Administration window.

Logging in

After creating a new account, the next step is log in:

Select **Extras / Login**.

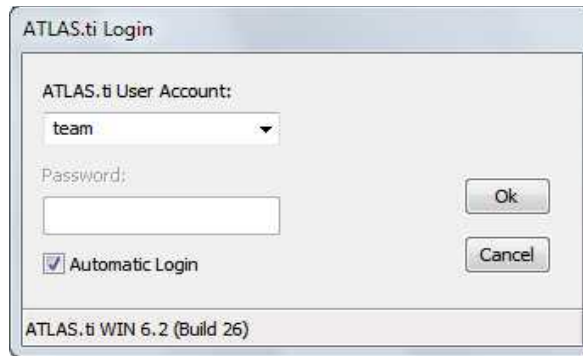


Figure 79: Login Window

Select a user account from the drop-down list.

Password: Note that the password field is grayed out and that you are not required to enter a password. If you do want to password protect your user account, you need to change the relaxed user management setting (see page 156. To set a password for the HU, see page “Access Rights for the HU” below).

Automatic Login: If you are the only person working at this particular computer (or on a public computer using a personal Windows user account), then the automatic login can remain activated. This means the current log in name is also used for the next sessions. If more than one user works on the same computer, then the automatic log in should be deactivated. If deactivated, the login window pops up upon start-up and the user is prompted to log in.

Access Rights for the HU

To change access rights for a HU, choose the option **EXTRAS /CHANGE ACCESS RIGHTS** from the main menu. Four options are offered:

Public - read only: this choice lets all other users load and view the Hermeneutic Unit, it may even be edited, e.g. for training purposes, but it cannot be saved to disk.

Public - read & write (default): permits other users to have the same rights as the author, but not the ability to change the access rights.

Private: By choosing this option you can revoke previously granted rights again.

“Set Password” lets you protect the Hermeneutic Unit against loading unless a correct password is provided. Make sure you remember the password or you will not be able to load your own Hermeneutic Unit again!

As with all other access-related options you need to save the Hermeneutic Unit before any changes are in effect.

Co-Authors

To restrict access to a group of co-authors (i.e., more than one author), the sub-menu **EXTRAS / CO-AUTHORS** offers three options for authors: add, remove, and view the list of co-authors currently defined for this Hermeneutic Unit. This feature only makes sense if public access to the HU has not been granted.

To register co-authors

Co-authors have the same rights as the original author, except for the right to define or remove co-authors, unless having administrative rights themselves.

Select **EXTRAS / CO-AUTHORS / REGISTER CO-AUTHORS**. You are presented the list of all users known to the system (which have previously been defined by the administrator or the original author).



Figure 80: Registering co-authors

Select one or more authors from the list and click OK. A message pops up informing you who is registered as co-authors for the currently loaded HU.

To remove co-authors

Select **EXTRAS / CO-AUTHORS / REMOVE CO-AUTHORS**. You are presented the list of current co-authors. Choose the ones to be removed from the Hermeneutic Unit.

To display co-authors

Select **EXTRAS / CO-AUTHORS / DISPLAY CO-AUTHORS**. You see a list of the co-authors currently assigned to the Hermeneutic Unit.

To filter by co-authors

To display only those parts of a Hermeneutic Unit created by a subset of the co-authors involved, choose the filter-option **CO-AUTHORS** in any of the Object Managers.

The User Database

All ATLAS.ti users are cataloged in a special "database"-file *HERMENC.R.HDB*, located in the ATLAS.ti system directory. This file is loaded on program start-up.

Never modify the user database file *HERMENC.R.HDB* from outside ATLAS.ti, as this will corrupt it and lock you out of the system!

After the initial installation of ATLAS.ti, there is already one "dummy" user with administrator privileges set up: Account = SUPER, password = USER. Because *automatic login* is the default mode, it is quite likely that you usually work under this default account.

Creating and working with different user databases

To create a new data base, save the standard data base *HERMENC.R.HDB* under a new name, e.g. *hermencr_2.hdb*: **FILES / SAVE AS.**

Make the desired changes and save the new data base.

When you start ATLAS.ti the next time, the default user data base "hermencr.hdb" is loaded. To load the newly created user data base, select **FILE / LOAD DATABASE.**

Relaxed User Management

The default setting is "relaxed user management". This feature removes the password requirement for user accounts. The default setting can be changed by editing the central configuration file for ALL users, *ATLAS.INI*. This file can be found in the common application data folder. You need Windows administrator rights to be able to modify this file. To access the file for modification:

Select **EXTRAS / EXPLORER / COMMON APPLICATION DATA.**

Make a backup copy of *ATLAS.INI* file.

Open it with a plain text editor (such as Windows Notepad).

Look for the section: `[lan]` and set the variable "relaxedUserManagement" to either "enabled" or "disabled."

If relaxed user management is disabled, users need to enter their account password when logging in.

Settings in *ATLAS.INI* affect all clients in a networked environment. For any changes in *ATLAS.INI* to take effect, ATLAS.ti has to be restarted.

Changes to *ATLAS.INI* affect all computers in a networked environment.

Team Scenario 1: The team is sharing the same data source files on a shared drive

In the scenario depicted below, four persons let's call them Tom, Peter, Mary, and Paul, all access the same data source files.

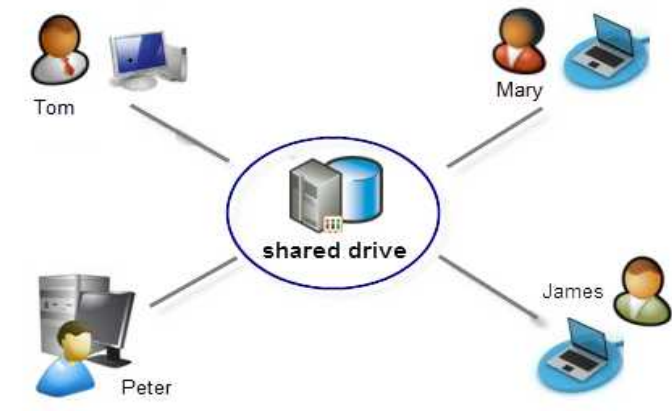


Figure 81: Team scenario 1: the team is sharing the same data source files

Examples

- Team members code all documents, but only for specific aspects.
- Team member code the entire document, but only a subset of the entire data base.

Option A: All-In-One HUPATH Setup

Project Setup - Tasks of the Project Administrator

Any of the four team members, Tom, Mary, Peter or James can take on the role of the project administrator. In most cases, the project administrator is also a team member.

- Create a project folder on a shared drive and move all documents to be analyzed to this folder. The documents may be organized in subfolders within the same main folder (see below).
- Open ATLAS.ti and assign the documents.

Save the Master HU to the project folder. All files are referenced by the special HUPATH (see page “The HUPATH (the recommended option)” on page 108 for further detail).

Copy the HU file as many time as there are team members; add the name or initials to each file name.

Instruct the team members about their tasks.

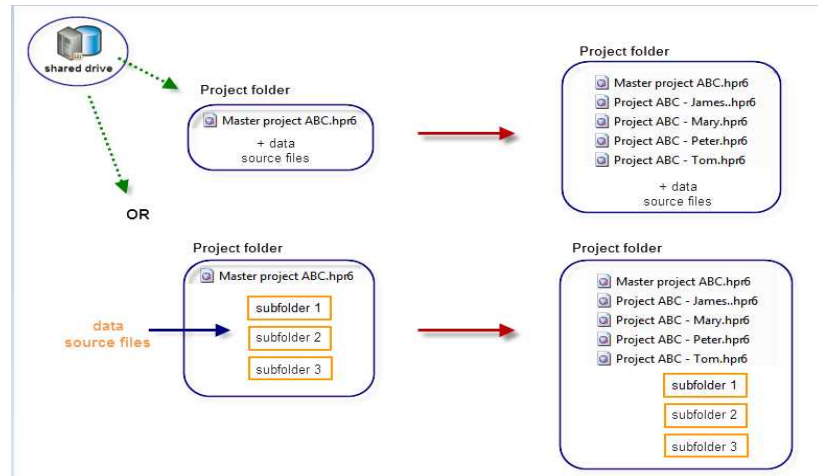


Figure 82: Project setup for team scenario 1 (HUPATH)

Project Setup - Tasks of Team Members

Create an ATLAS.ti user account on your computer and log in under your name (see page 153).

Access your HU file on the shared drive. As the HU file name contains your name, you can easily see which file you are supposed to work on.

Work on your part of the project.

Do *not* change the order of the PDs, otherwise there will be a problem when merging the various subprojects. This means extra work for the project administrator as he or she needs to adjust the order of the documents in each affected HU.

Save your individual HU file to the common project folder after each work session.

Editing Primary Documents (all)

Editing primary documents can be allowed **without restrictions** as ATLAS.ti controls that no two persons edit the same primary document at the same time. See the chapter on “Editing Primary Documents in Team Projects” on page 145 for further detail.

Merging - A Task for the Project Administrator

The project administrator merges the sub projects according to previously agreed upon time intervals (e.g. in the evenings, first thing in the morning, every Friday, etc.).

As all HUs are stored in the project folder on the shared drive, the project administrator can simply access all sub HUs on the shared drive to create a new Master HU.

Depending on the way the work is distributed, the merge strategy may vary. If all team members have access to all documents and a common code list is used, then the merge strategy is: *Same PDs and Codes*. This strategy also works if team members have added codes to the common code list. New codes will be added to the list. See "Merging Hermeneutic Units" on page 171 for more detail. New documents should only be added to the Master HU by the project administrator.

After merging, the project administrator saves the new Master HU. In order for team members to easily see which is the newest version, the date can be added.

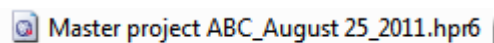


Figure 83: Master project file after merging

All old versions (Master and sub HUs of the team members) can be moved to a backup folder.

If the project administrator is a kind soul, he or she will once again make copies of the new Master HU – one for each team member - or ask the team members to make a copy adding their names to the file name (see figure 84 below).

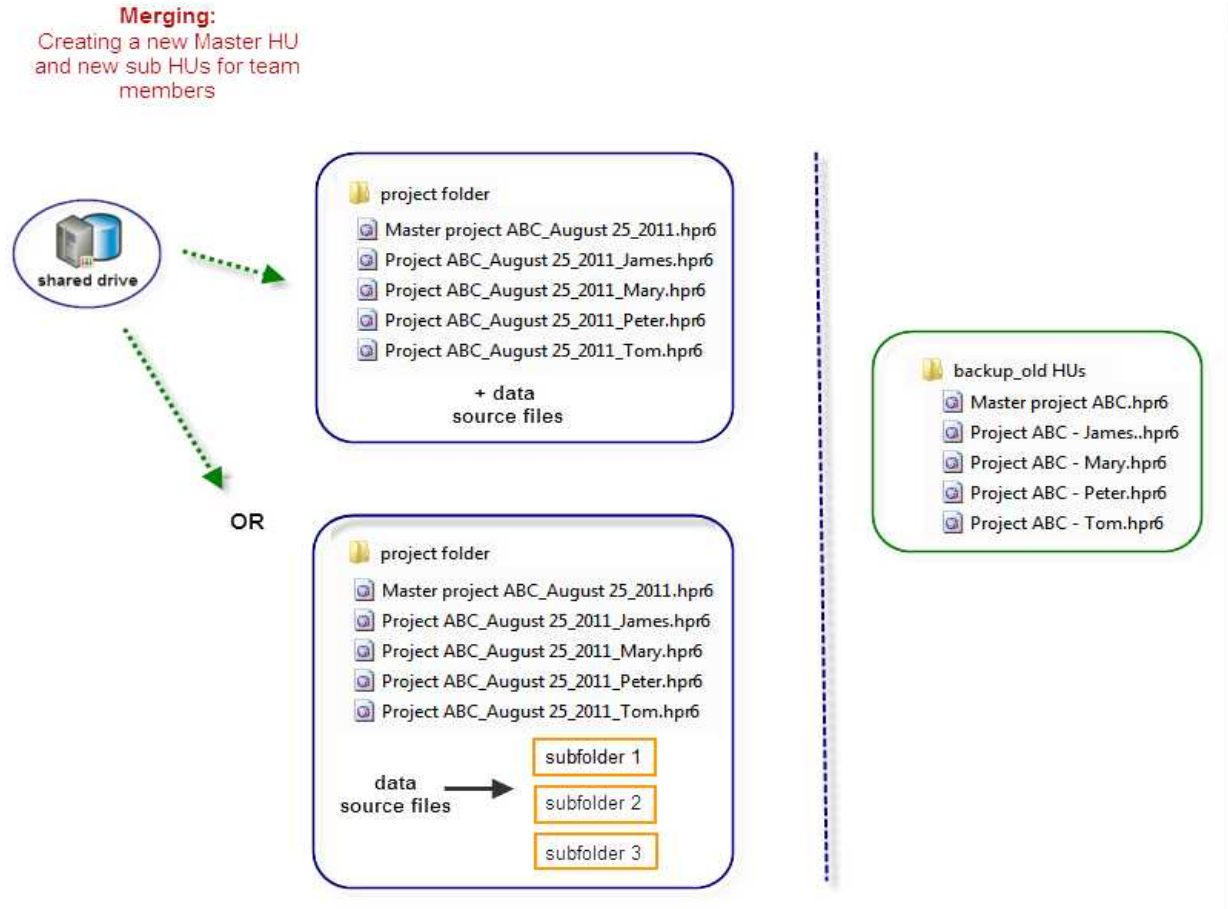


Figure 84: Team scenario 1: Project files after merging

Tasks of team members after merging

- Access the new Master HU file on the shared drive and if this was not yet done by the project administrator, make a copy of this file and add your name or initials to the file name.
- Continue to work on the project.

Backup (all)

Team members: After each work session, each team members copies the HU file and stores it at a secure location (e.g. on their local drive, a backup folder on the shared drive, or an external device). Keep three rolling copies of your backup files.

Project administrator: The project administrator creates a copy bundle file directly after setting up the project and after each merge operation and stores it at a secure location (see "Create a Bundle" on page 129).

Repeat the above work flow until all data are coded and analyzed.

Benefits of this approach

- Facilitates team work.
- All documents are shared, no file duplication is necessary.
- Team members can work simultaneously at the same data source files (but not at the same HU).
- Modifications to a document are propagated to the HUs of other team members.

Drawbacks

- Requires that all team members have access to a shared drive.
- Team members can only work at locations that provides access to the shared drive.

Option B: Working with the Textbank Folder - the TBPATh setup

The TBPATh setup allows the HU files to be stored in a folder AWAY from the document folder hierarchy, e.g. on each individual computer. The computers of all team members however need to be in the same local area network.

Examples

- Documents are stored on a central server with shared access. Users work on several independent projects using some shared documents as well as data material that is only relevant for their respective projects.
- Documents are stored in a location that does not allow the user full write access, e.g., on a CD-ROM, or on a server with restricted access permissions. Therefore, the user cannot create a HU in the document folder.

Project Setup - Tasks of the Project Administrator

As above, any of the team members can take on the role of the project administrator. Thus, one person may have two roles: project administrator and team member.

- Create a new folder for the project data on the shared drive.
- Copy all documents to be used in the project into this folder; use sub folders if you desire an added degree of structure.
- Set your Textbank Path to this location (**EXTRAS / PREFERENCEs / GENERAL PREFERENCE / PATHs**).

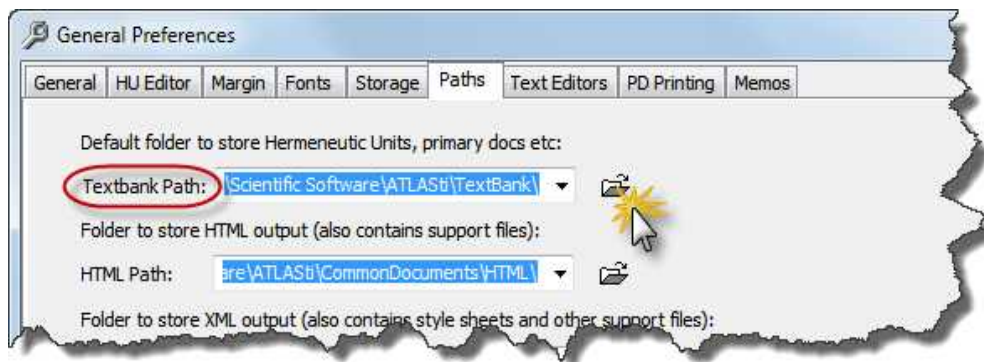


Figure 85: Setting the Textbank Path under General Preferences

- Open ATLAS.ti and assign the documents.
- Save the HU (**FILE / SAVE**) to a location **outside** the project folder, e.g. on the desktop or a local drive.
- The resulting project has all documents assigned through the special `<TBPATH>`. To double check, open the PDoc Manager and look at the column "Origin". If you find that documents were assigned differently, check the following:
 - If you find documents using the HUPATH, you have stored the HU somewhere in the "Textbank folder".
 - Documents with an absolute path (if you see a long path name in the column "origin") indicate that these documents are outside the HU **and** the "Textbank folder". If this is the case, it is best to start the project afresh, delete the HU file and start again.
- If everything is correct and the documents are referenced by the `<TBPATH>`, send the HU file to each team member.
- Instruct the team members about their tasks.

Project Setup - Tasks of Team Members

- Create an ATLAS.ti user account on your computers and log in under your own user name.
- Set the Textbank Path to the project folder as instructed by the project administrator (**EXTRAS / PREFERENCES / GENERAL PREFERENCE / PATHS**, see figure 85 above).
- Save the HU file, which was sent to you by the project administrator on your computer or laptop. Rename the HU file, e.g. by adding your name or initial. Each team member should use a unique name for their personal HU file.
- Make sure that you are connected to the shared drive when working on the HU.
- Do *not* change the order of the PDs, otherwise there will be a problem when merging the various sub projects. This means extra work for the project administrator as he or she needs to adjust the order of the documents in each affected HU.

Do not add new documents if they should be shared by all team members. This needs to be done by the project administrator.

After an agreed upon time interval, send the HU file to the project administrator so he / she can merge the various sub projects.

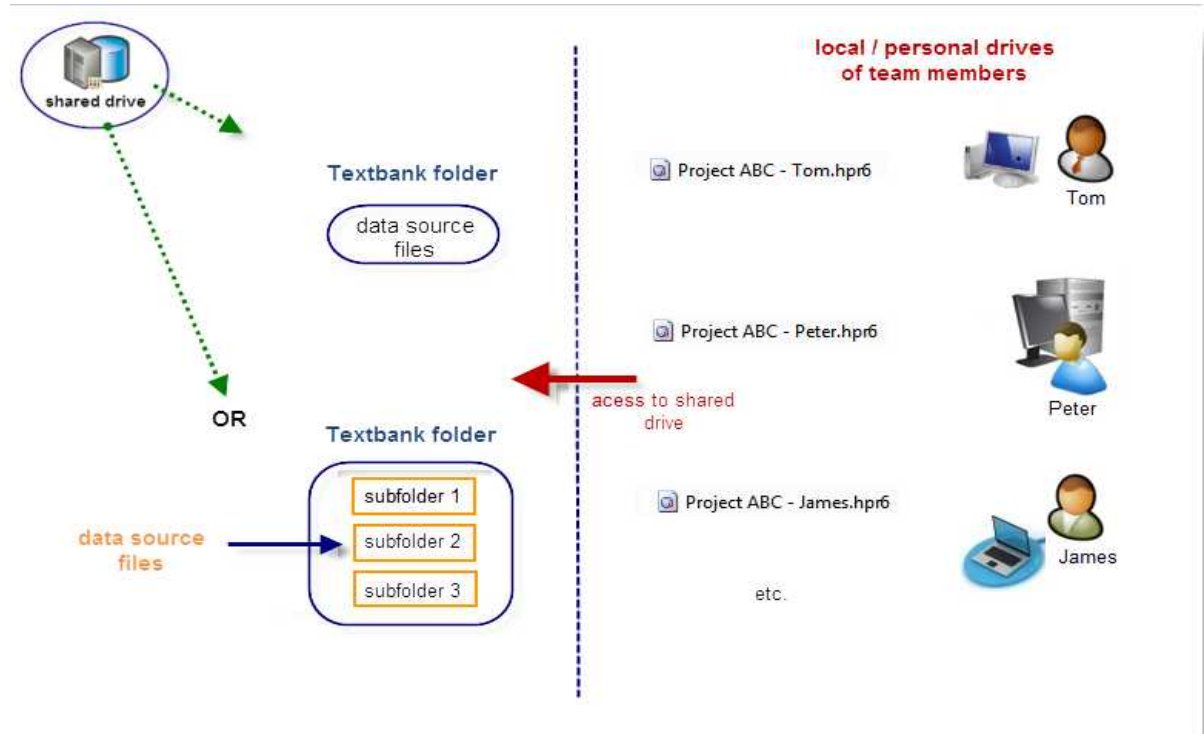


Figure 86: Team project setup using the TBPATh

Editing Primary Documents (all)

Editing primary documents can be allowed **without restrictions** as ATLAS.ti controls that no two persons edit the same primary document file at the same time. See the chapter on "Editing Primary Documents" on page 136 for further detail.

Merging - A Task for the Project Administrator

The project administrator merges the sub projects according to previously agreed upon time intervals (e.g. in the evenings, first thing in the morning, every Friday, etc.).

As all files in each sub HU are referenced by the TBPATh, the project administrator can download / store all HU files in one folder on his/her computer and start with one of the HUs to begin the merge process.

Depending on the way the work is distributed, the merge strategy may vary. See "Merging Hermeneutic Units" on page 171 for more detail.

After merging, the project administrator saves the new Master HU and sends it to the team members. In order for team members to easily see which is the newest version, the date can be added.

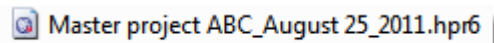


Figure 87: Master project file after merging

All old versions (Master and sub HUs) can be moved to a backup folder.

Tasks of team members after merging

- Save the new Master HU file that is sent to you by the project administrator anywhere on your computer and rename the file by adding your name or initials to the file name.
- Continue to work on the project.

Backup (all)

Team members: After each work session, the team members copy the HU file and store it at a secure location (e.g. on their local drive, a backup folder on the shared drive, or an external device). Keep three rolling copies of your backup files.

Project administrator: The project administrator creates a copy bundle file directly after setting up the project and after each merge operation and stores it at a secure location (see "Create a Bundle" on page 129).

Repeat the above work flow until all data are coded and analyzed.

Benefits of this approach

The HU is not tied to the location of its documents and may be copied and moved anywhere without losing functionality **as long as** the Textbank Path refers to the location of the documents.

Migrating or backing up your project using the Copy Bundle function is easy.

Drawbacks

This scenario relies on the user-configured textbank folder. If the user wishes to work on different projects with documents stored in different folder hierarchies, the textbank folder must be set to the path that was valid when the HU was created.

Team Scenario 2: Teams that do not always or never have access to a shared drive

Peter, Tom, James and Mary work together on a project. All four want to code and analyze the documents and would like to work on their laptops at different locations. This means that they won't be able to access a shared network drive at all times. In addition, all four would like to be able to edit the documents they analyze.

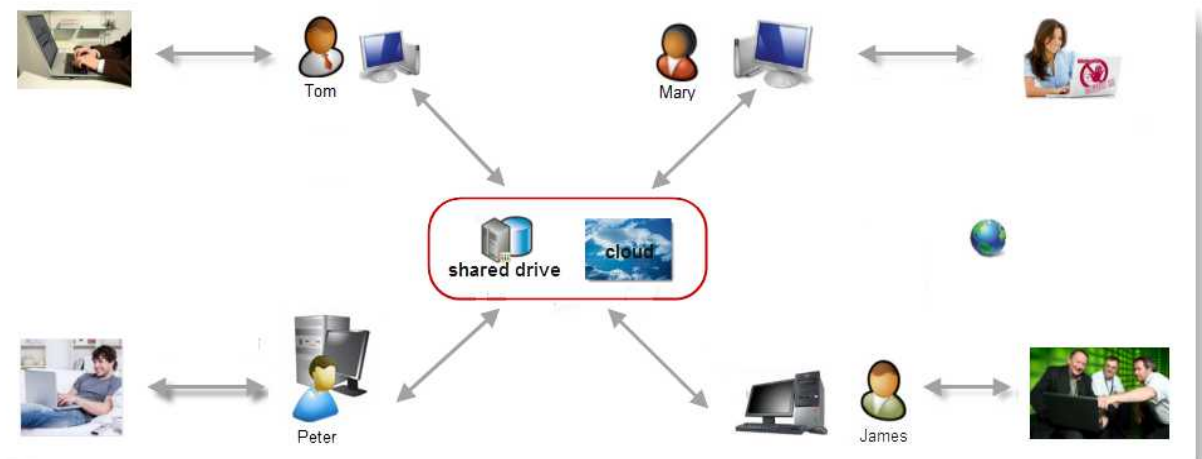


Figure 88: Team project scenario 2 for teams that want or need to work at different locations

This also works if a shared drive is not available and team members are only connected via the Internet.



Figure 89: Team project scenario 2 without a shared drive

To realize this project scenario, it is recommended to use the HUPATH to assign documents.

Project Setup – Tasks of the Project Administrator

As was the case for team scenario 1, also here any of the team members can take on the role of the project administrator.

- Create a new folder for the project on your personal computer or on the shared drive.
- Copy all files to be analyzed into this folder (or in one or more sub folders, see figures 52 and 53 on page 109).
- Start ATLAS.ti and assign the documents.
- Save the HU to the project folder. All files are saved to the special HUPATH (see page 108 for further detail).
- To distribute the project, you have the following options:
 - a) create a copy bundle file and send it to the team members (see page 129),or
 - b) use a program like WinZip or WinRar, compress the project folder and send the zip or rar file to the team members, or
 - c) ask each team member to copy the project folder from the shared drive to their individual computers.
- Instruct the team members about their tasks.

Project Setup - Tasks of Team Members

- Create an ATLAS.ti user account on your computer and log in under your name (see page 151).
- Depending on whether the project administrator has chosen option a, b or c for distributing the project folder, you either need to install the bundle file on your computers (see “Install a Bundle“ on page 131 for further detail), or unzip the zipped file and store the extracted folder on your computer, or make a copy of the project folder on the shared drive and store it on your computer.
- Rename the Hermeneutic Unit file by adding your name or initials to the file name.



Figure 90: Project folder on the computer of a team member (data could also be contained in sub folders within the main project folder)

- Always save the HU to the project folder on your individual computer when working on your part of the project.
- Do not change the order of the PDs, otherwise there will be a problem when merging the sub projects. This means extra work for the project administrator as he or she needs to adjust the order of the documents in each affected HU.
- After an agreed upon time interval, either upload the HU or a copy bundle file to the shared drive or send it to the project administrator so he / she can merge the various sub projects. Whether it is sufficient to upload / send the HU file or whether a copy bundle file is needed depends on the permission to edit documents (see below).

Migrating projects to a Second Computer – for Team Members

If you want to migrate your project to a different computer, e.g. back and forth between a laptop and a PC, then you need to do the following:

When moving the project for the first time

Either copy the entire project folder to an external device like a USB stick and move it to the second computer. Or create a copy bundle file, save it for instance on a USB stick or send it to yourself via email and install it on the second computer (see “Install a Bundle” on page 131 for further detail).

When moving consecutive times and none of the documents has been edited

You simply need to move the HU file back and forth and overwrite the previous version.

When moving consecutive times and at least one of the documents has been edited

Either move the entire project folder and overwrite the previous version on the second computer, or create a copy bundle file and install it (see page 131). During the installation of the copy bundle file, ATLAS.ti checks whether there is a newer version of a file and if so overwrites the old version.

Editing Primary Documents (all)

Editing primary documents can only be allowed **with restrictions**. A decision could be that only the project administrator is allowed to edit documents. Another option is to allow individual team members to edit a sub set of documents, but not any of the other documents.

- If none of the primary documents are edited, it is sufficient to upload / send the HU file to the project administrator for merging. After merging, the project administrator just needs to distribute the new Master HU file to all team members.
- If team members are allowed to edit a specific sub set of documents, they need to upload / send a copy bundle file to the project administrator for merging. After merging, the project administrator needs to distribute a bundle file or a zipped version of the project folder.

- If the project administrator is the only person allowed to edit the documents, it is sufficient to send the HU file for merging. After merging, the project administrator needs to distribute a bundle file or a zipped version of the project folder.

If two people edit the same document at two different locations, one version - this includes the coded version as well - is lost!! See "Editing Primary Documents" on page 136. If you want the benefits of working with rtf files, but don't want team members to edit the files, set the rtf files in the Windows File Manger to "read only" (file properties).

Merging – A Task for the Project Administrator

The project administrator merges the sub projects according to previously agreed time intervals (e.g. in the evenings, first thing in the morning, every Friday, etc.).

If documents are not edited

Team members only need to upload or send their **HU file**.

- If team members have uploaded their HU files to the shared drive, the project administrator can start with the merging process right away on the shared drive.
- If team member send their HU files via email, then the project administrator needs to save all HUs file to the project folder on his or her computer or on the shared drive before merging.
- Depending on the way the work is distributed, the merge strategy may vary. See "Merging Hermeneutic Units" on page 171 for more detail.
- After merging, the project administrator saves the new Master HU. For team members to easily see which is the newest version, the date can be added to the file name. All old versions (Master and sub HUs) can be moved to a backup folder.

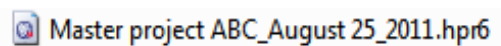


Figure 91: Master project file after merging

Tasks of team members after merging

- Copy the new Master HU from the shared drive, or the new Master file is sent to you by the project administrator.
- Store the new Master HU file in your local project folder.
- Rename the new Master HU file by adding your name or initials to the file name.
- Continue to work on the project.



Figure 92: Project file of a team member after merging

If documents are edited

The project administrator needs to install the various **copy bundle** files sent or uploaded by the team members.

- It is best to install all bundle files into a new project folder. Add the date to the name of the new folder so that is clear to everyone which is the newest version of the project.
- The old project folder can be moved to a backup folder.
- In the Copy Bundle Install window, the HU Path needs to be set to the location of the new project folder (see figure) before installing the bundle files.
- Select "Migrate" as unbundling strategy as then ATLAS.ti controls that older files are only overwritten if a newer version exists.
- After installing all copy bundle files, the new project folder will contain all HU files of the team members, all documents, plus a log file for each modified document (see "Creation of Log files" on page 139). The project administrator can now begin with the merge process, or can first open each individual HU for synchronization. If this is not done prior to merging, ATLAS.ti will request synchronization during the merge process.
- Depending on the way the work is distributed, the merge strategy may vary. See "Merging Hermeneutic Units" on page 171 for more detail.
- After merging, the project administrator saves the new Master HU. For team members to easily see which is the newest version, the date can be added to the file name (see figure 87).
- As some or all data source files were modified by one or more team members, the project administrator can a) store the new project folder on a shared drive, or b) send the new project folder as WinZip or WinRar file to team members, or c) send a copy bundle file.

Tasks of team members after merging

- Either copy the latest version of the project folder from the shared drive. If a shared drive is not available, the project administrator sends a WinZip / WinRar or a copy bundle file of the newest project version. This file needs to be unpacked or installed (see "Install a Bundle" on page 131).
- The old project folder can be deleted (see "Backup (all)" below).
- Rename the new Master HU file (contained within the new project folder) by adding your name or initials to the file name.
- Continue to work on the project.

If only the project administrator is allowed to edit documents

Team members only need to upload or sent their **HU file**.

- The first step is to merge all sub projects. The project administrator can proceed as explained above in the section “If documents are not edited” on page 168.
- After all HU files are merged, the project administrator can make the necessary changes to the documents in edit mode. The project folder then contains the new Master HU, the documents and log files for all modified documents. In order for team members to easily recognize the updated project folder, add the current date to the name of the project folder.
- As some or all data source files were modified, the project administrator can a) store the new project folder on a shared drive, or b) send the new project folder as WinZip or WinRar file to team members, or c) send a copy bundle file.
- The old project folder can be moved to a backup folder.

Tasks of team members after merging

- Either download the latest version of the project folder from the shared drive. If a shared drive is not available, the project administrator sends a WinZip / WinRar or copy bundle file of the newest project version. This file needs to be unpacked or installed (see page 131).
- The old project folder can be deleted (see Backup (all) below).
- Rename the new Master HU file (contained within the new project folder) by adding your name or initials to the file name.
- Continue to work on the project.

Backup (all)

After each work session, each team member copies the HU file (or if documents were edited, creates a copy bundle file, see page 129) and stores it at a secure location. Keep three rolling copies of your backup files / folders.

The project administrator creates a copy bundle file immediately after setting up the project and after each merge operation and stores it at a secure location.

Repeat the above work flow until all data are coded and analyzed.

Benefits of this approach

- Facilitates team work and distributed work organization.
- Team members are flexible and can work at different work locations.
- Team members can work simultaneously at the same project. If editing rights are negotiated, this also includes simultaneous work on primary documents.
- The project folder can be completely copied/moved to another location and all documents remain accessible.
- Migrating or backing up your project using the Copy Bundle function is easy.
- Unpacking the copy bundle file can be done anywhere on the target computer.

Drawbacks

- Negotiations between team members is essential.
- Files need to be duplicated/copied to the various project folders.
- Sharing of all documents is only possible (safely), if the assigned documents are not edited. As every sub project is stored in its own private data folder, modifications to a document are not immediately propagated to other sub projects using the same documents. This only takes place, when the project administrator merges all sub projects.

Merging Hermeneutic Units

The Merge Tool reunites HU's that were originally divided for analytical or economical reasons. Its main purpose is the support of teams. It links together the contributions of different members of a research team. A common scenario is the analysis of different sets of documents by different team members, sharing a common code base. Of course, the single researcher can also benefit from this function using the merge facility to help organize large projects.

Examples of Application

Text Corpus Reuse

With only PDs to add and everything else IGNORED you can transfer all documents from any HU into a freshly created, or already existing HU. The PD comments and any existing quotations are also transferred.

Theory Import

With only codes, networks, and code families selected, a "theory" can also be migrated to another HU. This is similar to the current "Import Networks" feature, but also migrates Network Views and code families.

Team Work

Add codes, unify PDs: This would be the strategy when the same set of PDs is utilized by different team members using different codes.

Unify codes, add PDs: Different PDs were distributed to team members using the same set of codes, or mainly the same set of codes. Codes that are different from the common set are not lost but added.

Concepts

Target and Source HUs

The main concepts in Merge are the *Target HU* and the *Source HU*. The Target HU is the HU into which another Source HU is merged. The target HU has to be loaded into the HU Editor before invoking the Merge HUs option. It is advisable to store the target HU under a different name before starting the merge procedure.

To prevent accidental overwrite of an existing HU, you may create a new HU first, and then merge the two HUs consecutively into this HU. However, this approach takes two merge steps.

Merge Strategies

Three "strategies" can be chosen for the processing of every object category. These are "Add," "Unify," and "Ignore." The object categories that can be processed within the HU are PDs, Quotations, Codes, Memos, PD Families, Code Families, Memo Families, and Network Views.

Add: The objects of this category are added to the target HU. If an identical object is found in the target, the added object will get a new name consisting of the original name plus the suffix "_number". A new number is added until the name of the object is unique. For instance, if a code "Alchemy" already exists in the target, the source version of "Alchemy" is renamed to "Alchemy_1".

Unify: Searches for corresponding objects in the target HU. If such an object is found, all attributes of the source object are "inherited" by the target object. A corresponding quotation is one that resides in the corresponding primary document AND that has the same start and end position.

In this procedure, attention is paid to deviations between two PDs to be merged that may result in a corrupt PD with misaligned quotations.

While most other objects are unified via their name, PDs are treated differently. A PD from the source HU is unified with a PD from the target HU if the following conditions hold:

- Both PDs have the same ID (e.g., P 1).
- Both PDs refer to the same data source.
- If none of the PDs can access its data source, the test uses ID and revision equality only. Thus, HU files can also be merged if the data source files are not available.
- If two PDs found to be the same but at a different revision status, the PD with the older revision status is synchronized.

Ignore: Instances from ignored object categories are not transferred during the merge process. For a finer grained exclusion you can use the "ignore" families option (see next).

"Ignorant" families: To exclude specific objects from the transfer (like private memos or test codes, etc.), you would create a special family with the name "**!MERGEIGNORE**" into which you can move items to be excluded. This can be done for all three family types.

Two PDs are considered equal for unification when three conditions hold.

Use specially named families for fine-grained control over items to be ignored.

How to Merge Hermeneutic Units

When merging two HUs, the Merge Wizard guides you through the procedure. In the first step, the source HU is selected. Next, a merge strategy is chosen and possibly fine-tuned.

Select a target and source HU

Load the target HU. It is advisable to save it under a different name, so that you don't corrupt the original file in case something goes wrong.

From the HU Editor's main menu, select **TOOLS / MERGE WITH HU**. Alternatively you can drag an HU onto the HU Editor's caption holding down the CTRL key. The Merge Wizard opens, guiding you through the merge procedure (see figure 93 below).

The first page of the Merge Wizard displays the current target HU (i.e., the one that was loaded first), requesting you to enter the source HU's file name.

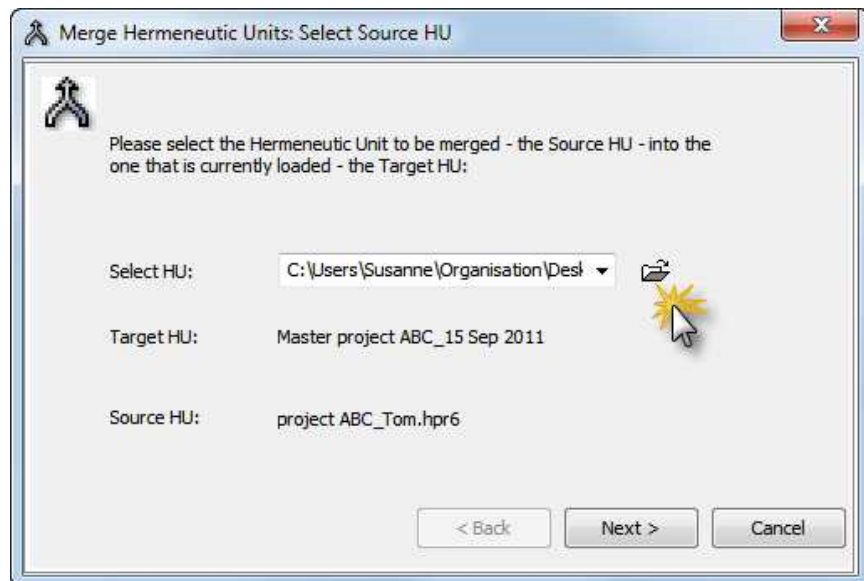


Figure 93: The Merge Tool - select a Source HU after loading the Target HU

Click on the browse button and select a source HU from the file dialog.

Click the **NEXT** button. The source HU is loaded and you can proceed with the next step.

If the merge procedure was initiated by drag & drop, the source HU is already entered into the source entry field. You can immediately proceed by clicking on the **NEXT** button. Next, you need to choose a merge strategy.

Choose a merge strategy

The second step is the selection of *how* the source HU is to be merged into the target HU. Four broad, predefined strategies are available that can be customized in a second step. Object classes can be selectively added, unified, or ignored (see "Concepts" on page 172 above).

The Merge Wizard offers a variety of options to set the merge strategy for every object type.

Select one of the four stock strategies. A short description of the strategy is displayed at the bottom left of the dialog box.

Fine-tune the strategy so it best suits your needs. For all major object types, you can divert from the predefined stock strategy and manually define how the various object types are to be handled in the merge process.

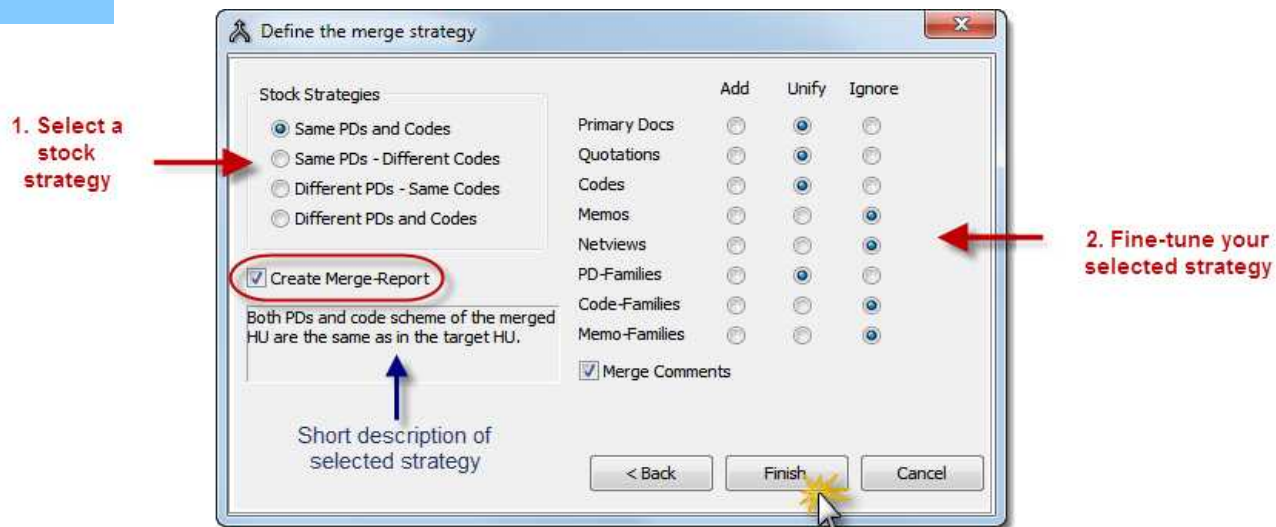


Figure 94: Merge Tool: Select a stock strategy and fine-tune your selection

Same PDs and Codes: Choose this strategy when PDs and codes are (mostly) the same in the target and source HU. All of the same PDs and codes are then unified. Different PDs and codes will be added.

When unifying PDs, please observe that PDs are unified by their P numbers (P 1, P 2, P 3, etc.) and not by their names! Therefore the order of the PDs need to be the same in all HUs to be merged.

The Merge Wizard offers a variety of options to set the merge strategy for every object type.

Same PDs – Different Codes: Choose this strategy when target and source HU contain the same PDs, but different set of codes. If identical codes are found during the merge procedure, the duplicate codes from the source HU are automatically renamed by adding a numeric suffix.

Original code name: Alchemy

Duplicate code: Alchemy_1

Different PDs - Same Codes: Choose this strategy when target and source HU contain different PDs that have been coded with the same code set. This is a common situation when working in teams and different team members have coded different PDs using a common set of codes. If a few additional codes have been added to the common set, these will be added.

Different PDs and Codes: Choose this strategy when both PDs and codes are different. The PDs and codes from the source HU will be added to the ones in the target HU. If identical codes are found during the merge procedure, the

duplicate codes from the source HU are automatically renamed by adding a numeric suffix as shown above.

Check the option "Create Merge Report" to generate an overview of what has been done. The report lists all added and unified objects and their old and new names. Statistics about the source and target HUs and the resulting merged HU are created. The report will be opened in a rich text editor after the merge process is completed (see "Merge Report" on page 177 for details).

Click **FINISH** to start the merge process. This may take a while depending on the size of both the target and source HUs and the strategy chosen. The Unify strategy is generally more consumptive in processing time than adding objects.

If you repeatedly merge the same HUs, you might want to deactivate the option "Merge Comments" as this may unnecessarily blow up the comment for any of the unified objects and leads to duplication of entries.

Conflict Resolution for Links

For certain entities, a default "conflict resolution strategy" is used. If the inclusion of objects could result in the modification of a "link" between objects in the target HU, the target HU link is preferred. Example: If there is a link "is-associated-with" between two codes "Alchemy" and "Gold" in the target HU, and a conflicting link "is-contrary-to" exists between the corresponding source HU codes, then the link in the target HU "wins". However, if *no* link exists between two objects in the target HU, the link existing in the source HU is transferred. This strategy is also pursued for hyperlinks and other connections between objects.

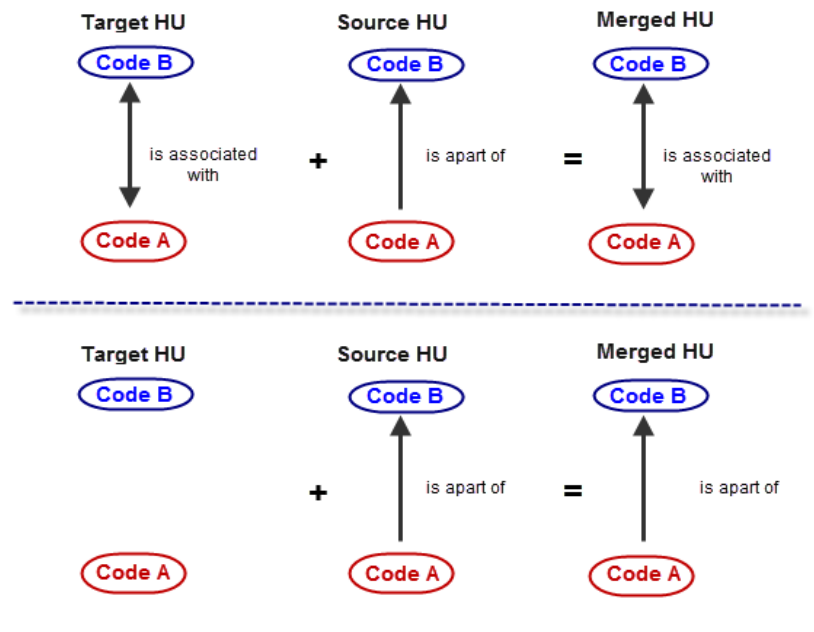


Figure 95: Merging HUs: Link resolution- The link between Code A and Code B in the target HU survives the merge process.

Co-authors are also merged.

Migration of General Features

The comment of the source HU is appended to the target, and the list of co-authors in the target is completed with those in the source HU.

Special Considerations for Quotations

Quotations play a special role because they cannot be handled independent of the PDs. When PDs are ignored, so are quotations. When PDs are added, quotations are added. The interesting case is when PDs are unified: you can then select either UNIFY or ADD.

Add quotations if you want to calculate inter-coder-reliability.

Adding quotations will create *duplicate* quotations in the target PD, even if a matching quotation already exists. This is a useful option if you want to calculate inter-coder reliability (see CAT, a free online tool that allows you to calculate inter-coder-reliability. You can access the tool via **HELP / MORE RESOURCES / THE CODING ANALYSIS TOOLKIT**).

Merging Scaled Codes

When variable codes with a special naming convention (see "Scaled vs. Dichotomous Codes" on page 416) are added during the merge process, their values are invalidated in case of name clash. The reason for this is that imported codes with an identical name are automatically renamed using a numeric suffix.

Note that before applying the SPSS job generation feature on the resulting HU, such codes would need to be manually renamed.

Test merge effects by experimenting with sample HUs.

A Few Additional Considerations

You can *unify* codes, but *add* Network Views. This results in a new network containing the same nodes as those already contained in the target HU's network.

Adding nodes and unifying networks could result in an existing Network View being crowded with both the nodes from the target and the source HUs.

Unifying Super Codes combines their queries using the OR operator.

To get acquainted to the effects of either adding or unifying entities, you should experiment with the various strategies using sample HUs. Observe what happens. Before modifying serious projects, you should gain some understanding of how the merging process works.

After the Merge

After a successful merge operation, some "cleaning up" might become necessary. For example, codes with different names but similar meaning (i.e., synonyms) are now treated as distinct codes. They may need to be merged (see "Merging Codes" on page 218). It could also be the case that you end up with a number of quotations that overlap but are coded by the same code(s). Such instances can be found with the help of the Coding Analyzer (see "Redundant Coding Analyzer" on page 381).

The Merge Report

If you have checked the option "Create Merge Report" in the Merge Wizard (default), a report generator keeps track of every object affected during the merge process.

The report displays:

- the name and location of the source and target HUs
- object statistics and merge strategies for source and target HUs
- added objects sorted by object type (prefixed with a "+")
- unified objects sorted by object type (prefixed with a "=")
- statistics for the resulting HU

Below, excerpts from a merge report are shown resulting from merging "The Sample" HU with itself using the strategy "Different PDs Same Codes". During this merge, PDs, quotations and PD Families are added; and all codes are unified.

The first part of the report provides an overview of the selected merge strategies.

Object Type	Source-HU	Target-HU	Strategy
Primary Docs	22	22	Add
Quotations	458	456	Add
Codes	79	79	Unify
Codings	523	523	-
Memos	21	21	Ignore
Network Views	3	3	Ignore
Primary Doc Families	14	14	Add
Code Families	13	13	Ignore
Memo Families	0	0	Ignore
Code-Links	23	22	Target
Hyper-Links	31	29	Target

Figure 96: First part of the merge report: An overview of the selected merge strategies

Added Objects

When objects are added that have identical names in both the source and target HUs, the added object is renamed using an incremental numbering scheme. Note that the PDs are not renamed. This is because the prefix "P x" is a part of the name, making equally named PDs distinct.

Adding 22 Primary Documents:

```

-----
+ P23: 1_Jack the Ripper Story Introduction.mp3
+ P24: Transcript: Jack the Ripper Introduction
+ P25: 1_Jack the Ripper Story.rtf
+ P26: 1_Jack the Ripper Letters.rtf
+ P27: 2_Victim_Mary_Ann_Nichols.pdf
+ P28: 2_Victim_Annie_Chapman.pdf
+ P29: 2_Victim_Annie_Chapman_scene of the murder_1967.wmv
+ P30: 2_Victim_Elizabeth_S...pdf
-----
+ P37: Murder_Sites in Google Earth (GE)
+ P38: Victims' Circle (GE snapshot)
+ P39: Victims_location of murder.doc
+ P40: Site: Second Murder_1
+ P41: Site: Second Murder_2
+ P42: Site: Second Murder_3
+ P43: Site: Second Murder_4
+ P44: Site: Second Murder_5

```

Figure 97: Added primary documents using a unique identifier in form of the PD number

The imported PD families are renamed using the numeric suffix "_1".

```

Adding 14 Primary Doc Families:
-----
+ Description of Victims +> Description of Victims_1
+ Investigaton (all files) +> Investigaton (all files)_1
+ Investigaton: audio files +> Investigaton: audio files_1
+ Investigaton: video files +> Investigaton: video files_1
+ Jack the Ripper_stage II +> Jack the Ripper_stage II_1
+ Murder sites +> Murder_sites_1
-----
+ Type of data: images +> Type of data: images_1
+ Type of data: PDF +> Type of data: PDF_1
+ Type of data: Transcripts (internal documents) +> Type of d
+ Type of data: Video files +> Type of data: Video files_1

```

Figure 98: Names of added primary documents

Unified Objects

Unified codes are displayed along with their new quotation references within the resulting HU:

```

-----
Unifying 79 Codes:
-----
= *date of murder
    25:41, 25:42, 25:43, 25:44, 25:45, 25:46, 25:47, 25:53
    25:58, 25:64, 25:67, 25:75, 25:80

= *historic context
    25:7, 25:8, 25:48, 25:99

= *name of suspect
    25:85, 33:5, 33:8, 33:9, 33:10, 33:11, 33:12, 33:13
    33:15, 33:17, 33:23, 33:26, 33:29, 33:31, 33:33, 33:36, 33:42
    33:44, 33:47, 33:50, 33:53, 33:57, 33:64, 33:67, 33:72, 33:142
    33:146, 33:159

= *name of suspect: Cohen
    33:163, 33:164, 35:21, 35:27, 35:34, 35:35

= *name of suspect: Biggs
    32:12, 32:15

= victim_last hours and death
    27:2, 28:4, 30:2, 31:4, 32:2, 32:7

= victim_marriage / children
    27:4, 28:5, 30:4, 31:5, 32:3, 32:5

```

Figure 99: Report on unified codes

Statistical Summary

The statistical summary at the end of the report provides an overview of all object types after the merge.

Object sizes per object type after merge:

Object Type	HU after merge
Primary Docs	44
Quotations	914
Codes	79
Codings	1046
Memos	21
Network Views	3
Primary Doc Families	28
Code Families	13
Memo Families	0
Code-Links	23
Hyper-Links	29

Figure 100: Statistical summary at the end of the merge report

The Data Level - Basic Functions

As you may already know from the chapter on the main concepts and features (see page 25), there are two principle levels of interaction, the data level and the conceptual level.

The **data level** includes activities like segmenting and organizing data files, coding data segments, simple retrieval and writing memos, while the **conceptual level** focuses on asking more complex questions about your data, model-building activities, such as linking codes to form semantic networks.

In this chapter, you will learn about the main procedures needed to begin your data analysis. These include how to mark, code, and comment text, graphic, audio and video segments; and how to write memos. In addition you learn about the ATLAS.ti family function. This is a function for grouping objects, i. e. documents, codes and memo, which can then be used as filters for various purposes.

Creating Quotations

The most common operations on primary documents -- especially when starting a project -- are selecting data sections, assigning codes and/or memos to them.

Marking a segment does not by itself create a quotation, though this is often the very next step after making a selection.

Creating and working with Textual and PDF Quotations

Video tutorial: <http://www.youtube.com/watch?v=bU6nu-aWhYM>

For immediate feedback, activate the margin area

In most cases, creating quotations is part of a higher-level procedure like coding or writing memos (described later).

There are a number of ways to create a quotation. These options are available via the toolbar and menus, and via drag & drop. For immediate feedback when creating quotations, switch on the margin area (if not yet activated).

Before a quotation can be created, an appropriate selection must exist.

Selecting Text Segments

In addition to the usual selection techniques known from text editors and word processors, ATLAS.ti offers an extended “semi-automatic” double-click selection technique for textual primary documents.

Here is how it works:

Double-click selection sequence:

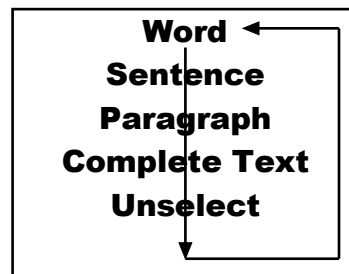


Figure 101: Text segmenting options

- Double-click to **select the word** (assuming it is not yet selected).
- Double-click on the selection to expand it to **the sentence** embedding the current selection.
- Double-click on the selection to expand it to **the full paragraph** surrounding the selection.
- Double-click again to select the **complete text**.
- Double-click once more to deselect **the selected area**.

For the semi-automatic selection of sentences and paragraphs, the currently used Paragraph Model plays a crucial role. For instance, if you have assigned a “Legacy” document with hard returns for every line, selecting a paragraph will select a line unless you have switched interpretation to an “Old Paragraph Model” (see ATLAS.ti Version 5 manual).

Selecting PDF Segments

Selecting PDF segments works essentially in the same way as selecting segments in text or graphic files. If you select text in a PDF file, you need to

pay attention that the cursor is positioned left from the first letter of the text. If you begin your selection further to the left or above the text, then ATLAS.ti handles the selection as a graphic segment (see "Creating and Working with Graphical Quotations" on page 187).

Creating a free Textual or PDF Quotation

Mark a section in the primary document.

Click the **CREATE FREE QUOTATION** button (see left) in the HU Editor's primary document toolbar. Alternatively you can right click on the selection and choose **CREATE FREE QUOTATION** from the context menu. The option is also available from the main Quotations menu.

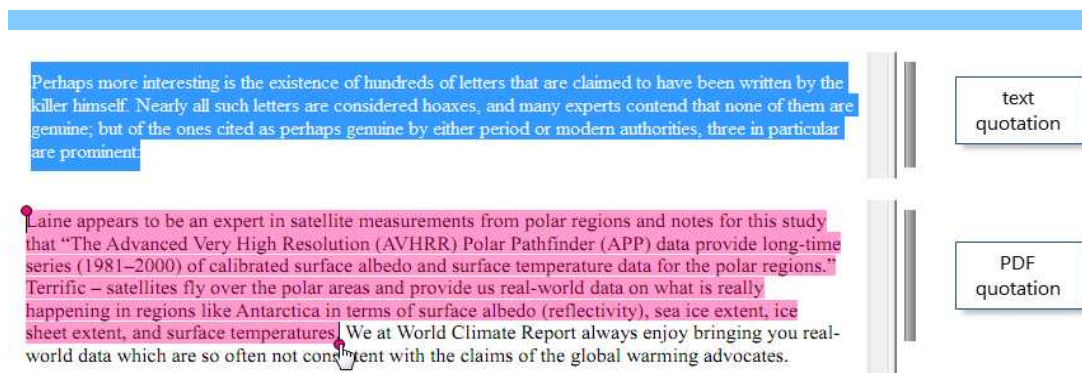


Figure 102: Creating free text quotations

If you accidentally select a section for which a quotation already exists, the context menu will not include the Create Free Quotation command.

A new entry is shown in the quotation drop down list or if opened the Quotation Manager. The default name consists of the first 30 characters of the selected text.

Text quotation are highlighted according to the highlight color you have set in Windows. The highlight color for PDF documents can be set within ATLAS.ti in the PDF preferences window (**EXTRAS / PREFERENCES / PDF PREFERENCES**).

Creating Quotations Using Drag & Drop

This technique allows you to virtually "throw" pieces of text into the quotations list. This however only works for textual, not of PDF files (txt, doc, docx, rtf).

Move the mouse pointer into the selected text. The pointer will change to its "drag & drop" appearance.

By holding down the left mouse button, drag the selection into the quotation drop-down list or the Quotation Manager.



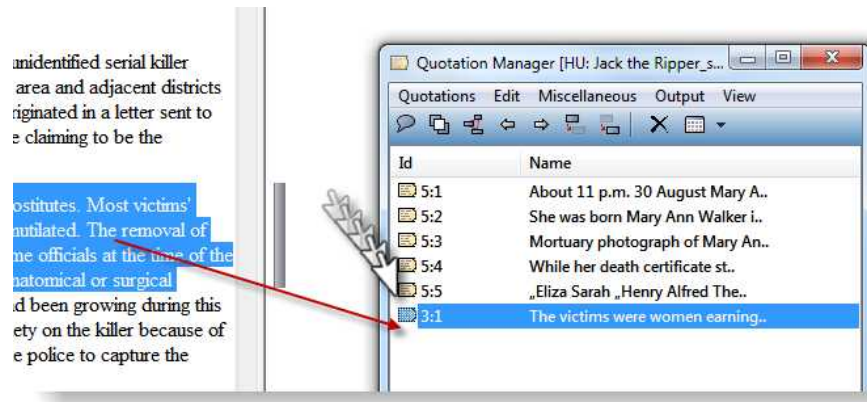


Figure 103: Creating quotations using drag & drop

You have just created a quotation. A new entry appears in the quotations drop-down list and the Quotation Manager. In the margin, a bar will be displayed.

Quotations are also be created in the course of coding or memoing using drag & drop.

Quotation references

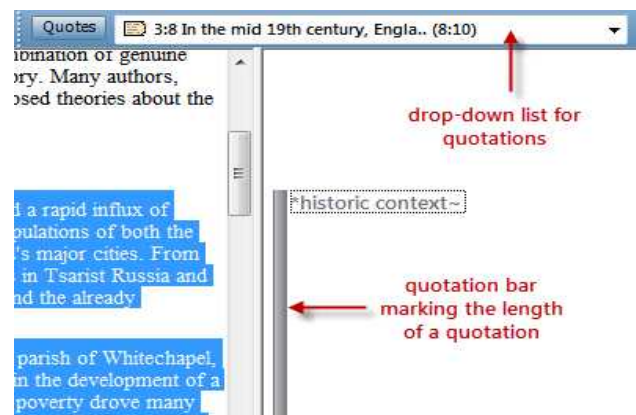


Figure 104: Quotation reference

The bars in the margin mark the length of the quotation graphically. The entry in the quotation field shows a textual reference for the quotation. It consists of the following elements: ID, name, start and end position.

ID: The quotation ID is composed of the number of its P-Doc and a second number indicating when the quotation was created. The ID 8:1 means that the quotation is from P-Doc 8 and is the first one that was created in this

document. The reason for the chronological numbering is to do with the fact that you will not necessarily code a document from the first line to the last. You will jump between passages and modify or delete some quotations during the coding process. A linear numeration would have to be updated with every single quotation that is inserted, which would take up unnecessary computation capacity. Sorting the quotations by their start position, for example, offers a clear linear view of your quotes. Recently an option was added to change the chronological numbering to a sequential order if need be (**QUOTATIONS / MISCELLANEOUS / RENUMBER ALL TO DocFlow**). This can for example be useful when coding open ended questions from survey data and you want to keep the cases in synch with the cases in the SPSS file.

Name: The name shows the first 30 characters of a textual quotation. This is the default setting which can be changed under **EXTRAS / PREFERENCES / GENERAL PREFERENCES**. Quotations based on image, audio or video files show the file name. The name of a quotation can be renamed. This is a useful option for image, audio and video quotations, as we will see below.

Start and end positions: The figures in brackets after the quotation name show the location (start and end position) in the document. For textual quotations, the reference given is to the paragraph numbers within which the coded segment occurs. (9:9) thus means that the quotation starts and ends in paragraph 9.

For image files, the rectangular area marked as the quotation is referenced. Audio quotes use a time reference, and for video quotations you can choose between time or frame numbers.

References for PDF quotations consist of: page number and number of characters on the page for start and end positions. In case the document contains columns, the column number is provided as well.

Video tutorial: <http://www.youtube.com/watch?v=bU6nu-aWhYM>

Activating and Displaying Textual and PDF Quotations

Quotations can be activated (retrieved) and displayed by selecting an entry from the drop-down list, by double-clicking on an entry in the Quotation Manager, or by clicking on the quotation bar in the margin area.

Coded quotations can be retrieved by double-clicking on an associated code (see "Code Manager" on page 59 for detail). Quotations can also be activated from the results pane of the Query Tool (see "Output of Query Results" on page 281).

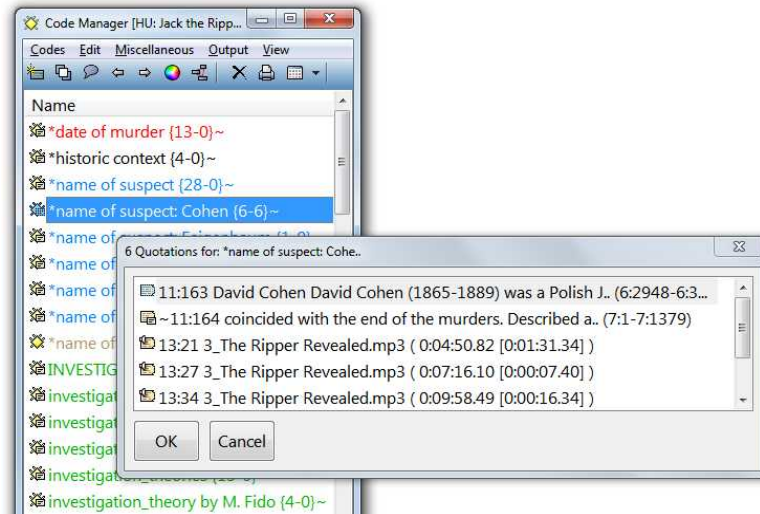


Figure 105: Activating quotations via its code

A quotation can be activated and displayed from virtually any browser displaying quotations: drop-down list, Object Manager, Network Editor, Object Crawler, Object Explorer, etc.

Modifying Textual and PDF Quotations

This feature lets you change the boundaries (start and end position) of a quotation.

- Activate the quotation if not already selected.
- Select a data segment that you actually want to use as this quotation. When increasing the size of the quotation, you can simply highlight the text that you want. If you want to reduce the size of the quotation, you need to deselect the selection first by clicking somewhere above or below the highlighted area. Then select a smaller section. When resizing PDF quotations, you can conveniently use the handles at the upper left and lower right-hand corners.
- Click the modify button, located to the left of the text window or choose **MODIFY BOUNDARIES** from the main Quotations menu.

The quotation will be changed reflecting the new boundaries.

New boundaries match existing quotation

If the new boundaries match another existing quotation, you are asked for confirmation to "merge" the currently modified and the already existing quotation. The quotation resulting from the merge operation collects the references of both quotations. For example, if the modified quotation was coded with code A and the existing quotation with matching boundaries with code B, the new quotation will be referenced by both code A and B.



If you modify a previously renamed text quotation, you are asked for confirmation using the newly selected string (truncated) as its new name.

Deleting Textual and PDF Quotations

Quotations can be deleted. Of course, nothing is removed from the primary document's data source.

Deleting a quotation affects only its references. "Free" quotations are deleted silently. However, if references to codes, quotations, or memos exist, you are prompted for confirmation.

The option to delete quotations is available in a number of different places: the main menu, the Quotation Manager (**QUOTATIONS / DELETE**), the Object Explorer, and the margin area. To delete a quotation in the margin area, right click on the quotation bar and select the option **DELETE**.



Deleting Quotation(s) in the Quotation Manager

- Select the quotation(s) in question.
- Click the **REMOVE** button.

If references exist for the quotation, confirm or reject the deletion process.

All quotations of a primary document are deleted when the primary document is disconnected from the Hermeneutic Unit.

Creating and Working with Graphical Quotations

Creating Graphical Quotations

Selecting graphical segments differs from the operations required for selecting segments within textual documents. However, the overall look and feel is sufficiently similar.

- Move the mouse pointer to the upper left corner of the rectangular section that you are going to create.
- Drag (holding down the left mouse button) the mouse to the lower right corner of the rectangle.
- Release the mouse button. You have now created a selection and the rectangle will be highlighted.



Figure 106: Graphical quotation

To create a quotation, select the “create quotation” button in the vertical tool bar, or right click on the selection, then select **CREATE FREE QUOTATION** from the context menu; or select this option from the main menu **QUOTATIONS / CREATE FREE QUOTATION**. All quotations within a graphical document are numbered consecutively.

Graphical quotations in a document appear as rectangles. The selected quotation is emphasized.

Activating and Displaying Graphical Quotations

In addition to the general activation procedures described for textual quotations, a graphical quotation can be activated by directly double-clicking within its “box” in the document pane. Where two or more quotations intersect, you are presented with a list of quotations from which to choose.

All graphical quotations are indicated by borders. A selected quotation is depicted either in inverse color (or by a thicker border see above). To change the display:

Right-click anywhere within the graphical image and select **SELECTION-DISPLAY TYPE**.



Figure 107: Inverted display of a graphical quotation

Permanent display of graphical quotations' frames can be toggled off and on. To change the permanent display:

Right click an area on the graphical document and choose ***TOGGLE AREAS DISPLAY*** from the context menu.

Modifying Graphical Quotations

The procedure is the same as for textual quotations. Activate the quotation if not already selected.

Select the area that you actually want to use as quotation. When increasing the size of the quotation, you can simply highlight the larger area that you want. If you want to reduce the size of the quotation, you need to deselect the selection first by clicking somewhere next to the highlighted area. Then select a smaller section.

Click the modify button, located to the left of the text window or choose **QUOTATIONS / MODIFY** from the main menu.

The quotation will be changed reflecting the new boundaries.

Deleting Graphical Quotations

As was described for textual quotations above, the option to delete quotations is available in a number of different places: the main menu, the Quotation Manager (**QUOTATIONS / DELETE**), the Object Explorer, and the margin area.

To delete a quotation in the margin area, right click on the quotation boundary and select the option **DELETE**.



Creating and Working with Multimedia Quotations

The following section explains the Media Control window that you need to create and modify audio and video quotations. When working with video data, an additional video window is opened that plays the video. The video window floats on top of all other windows. It can be re-sized and moved to an appropriate position. If you re-size the window and want to return to the original size, double click on the gray frame around the video window.

In addition to the buttons in the media control window, you can use the cursor keys on your keyboard for fine resolution positioning. If you have a multimedia keyboard, you can use the special keys available to control multimedia files.

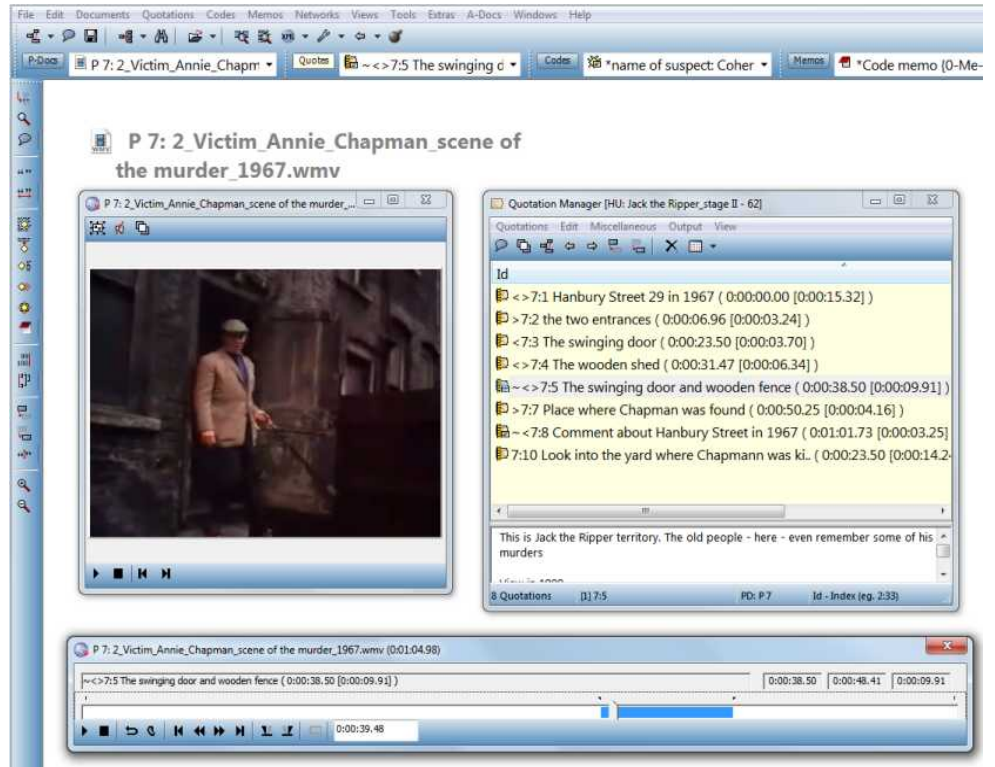


Figure 108: Active video window

Given that there is currently (v.6) no margin area display of audio- and video files, we recommend the following: Open the Quotation Manager and place it on the right side of your screen. Set a filter for the currently selected document, in order to better see what is going on: **QUOTATIONS / FILTER / SELECTED PD**.

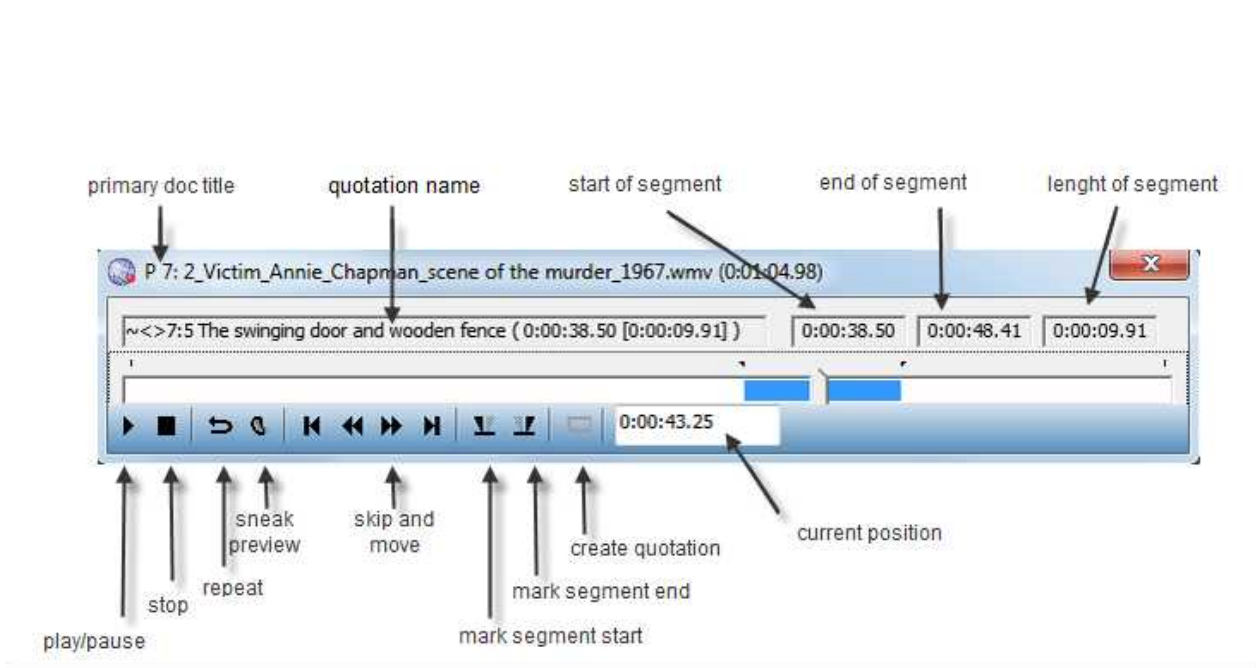


Figure 109: The multimedia control window











The Multimedia Control Window


The **title bar** displays the name of the selected primary document together with some information about the media contents (e.g., length, stereo vs. mono, recording quality, etc.).

Below the title bar are three **info fields** that display the name of the selected quotation, the start and end position, and its length. The position data is displayed in hours::minutes:seconds:milliseconds; for video files, you can also choose to display the position in frames.

The **track bar** represents the entire length of the audio (or video) file. The slider shows the current position. To navigate audio or video files, you can move the track slider, push the skip and move buttons, or use the right and left cursor keys.

The **toolbar** provides the following options (from left to right):

Tool	Description
 Play/Pause	Clicking on this button will toggle between playing or pausing the current audio or video stream. When you hold down the CTRL key at the same time, the current segment will be played. Keyboard shortcut: Play = P , toggle = Space .
 Stop	Stops playing the current file and in addition also "releases" the resource, giving, as it were, other Windows applications the opportunity to access the resource and/or the media player. Keyboard shortcut: Stop = s
Repeat/Loop 	Repeats either the complete file or any selected segment until the pause or stop button is clicked. Especially useful to repeat noise-covered or otherwise hard-to-understand passages during transcription.
 Sneak Preview	Helps to fine-tune a segment end, e.g. to isolate a word from a contiguous spoken text. When moving the position while the Sneak Preview mode is active, a short "preview" of 500 milliseconds (or 2 frames for video data) is played repeatedly, making it easier for marking the boundary of your segment. Using this function takes practice and is best used in combination with the cursor keys.
 Skip back	Repositions the track slider to either the next selection mark to the left or the beginning of the file.
 Move back	Repositions the track slider by 1/20 of the overall size of the file to the left.
 Move forward	Repositions the track slider by 1/20 of the overall size of the file to the right.
 Skip forward	Repositions the track slider to either the next selection mark to the right or the end of the file.
 Selection start	The current position is made the start coordinate of a quotation to be created. Keyboard shortcut: <
 Selection end	The current position determines the end coordinate of a quotation. Keyboard shortcut: > Holding down the SHIFT key while clicking the button creates a quotation for the current selection and starts a new selection. This facilitates fast creation of sequential quotations.

 <p>Create quotation</p>	<p>Creates a free quotation from the current selection. This button is disabled unless a valid segment is marked, or if the segment already matches an existing quotation. Keyboard shortcut: q (note: q also starts a new selection).</p> <p>In combination with the CTRL key, this button trims the current media quotation to the current selection.</p>
---	--

Opening and Closing the Multimedia Control Window

The multimedia control window opens automatically when you load a multimedia document.

When you switch from a media to a graphic or text PD, the media control window is closed. You can also close the control window manually. To reopen the window, open the context menu on the background of the multimedia document pane and choose the menu option: **OPEN MEDIA CONTROL**.

Under **EXTRAS / PREFERENCES / GENERAL PREFERENCES/** → tab: HU Editor, the following characteristics can be set for playing audio or video quotations:

- Play multimedia PD when loaded
- Loop media clip

Activating and Playing Audio and Video Quotations

Audio and video quotations can be selected and (dis)played like any other quotation with one exception. As there is not yet a margin area for multimedia documents, no “clickable” bars represent multimedia quotations.

Modifying Audio and Video Quotations

To modify an audio or video quotation, select it first, e.g. in the Quotation Manager, so you see its boundaries on the time line.

Next, set a different start or end point by clicking on the Selection Start or Selection End button. As the quotation already exists, its name is highlighted in a pale yellow color in the Media Control window. This means that you now have the option to either create a new quotation or to modify the existing one.

Then click on the “Create Quotation” button, but this time hold down the **Ctrl** key. The boundaries of the currently selected quotation are now modified.

Deleting Audio and Video Quotations

Also for audio- and video quotations, the option to delete quotations is available in a number of different places: the main menu, the Quotation Manager (**QUOTATIONS / DELETE**), from the context menu and the Object Explorer.

Creating and Working with Google Earth Quotations

Creating Google Earth Quotations

If you haven't done so, you first need to assign a GoogleEarth PD: **DOCUMENTS / ASSIGN / NEW GOOGLE EARTH PD**. Then load the Google Earth PD by selecting it from the drop-down list. This loads Google Earth into the ATLAS.ti editor.

Open the Quotation Manager alongside the HU editor.

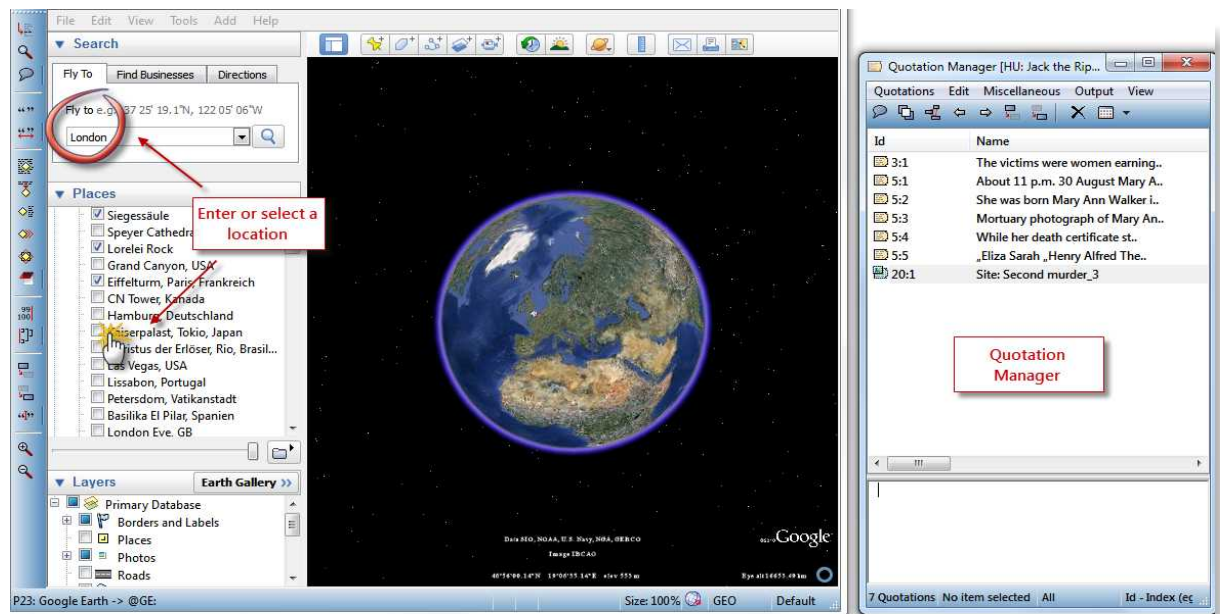


Figure 110: Enter or select a location to fly to

To create a new quotation, position Google Earth to whatever location you want, e.g. by entering a location in the **Fly to** field or by selecting a location in the list of Places.

Double click to select the place where the quotation should be attached to. If you have selected a location from "My Places", this is not necessary.

Next, click the Free Quotation button in the vertical toolbar left of the PD area or choose **CREATE FREE QUOTATION** from the Quotations menu.

The default name of the quotation is the name of the primary document, e.g.. "Google Earth". In case you have selected a feature as quotation like a place from the list of saved places in Google Earth, the name of this place is used. In addition, the geographical reference is provided.




 23:1 Hamburg, Germany [53°32'44,59"N 9°59'40,57"E]
 23:2 London Eye, GB [51°30'11,80"N 0°7'11,76"W]
 23:3 Google Earth [48°51'29,00"N 2°17'39,32"E]

Figure 111: References for Google Earth quotations

Whether the PD name or the feature's name is used, can be set via **EXTRAS / PREFERENCES / GOOGLE EARTH PREFERENCES**. Depending on your project needs, you may choose to rename the quotations.

Activating Google Earth quotations

In the first instance, you only see the newly created quotations within the Quotation Manager or in the drop down list. In order to see the information in Google Earth as well, the information needs to be transferred. Thus, the ATLAS.ti Google Earth PD needs to be "injected" into Google Earth. This is easily done by reloading the PD.

For the ATLAS.ti placemark in the GE document, the name of the quotation is used. In addition, you see the quotations in the Places Panel under Temporary Places on the left hand side.

To reload a PD, select it from the drop down list by holding down the Ctrl-key. OR: select the menu option **DOCUMENTS / MISCELLANEOUS / EXPORT SPECIAL**.

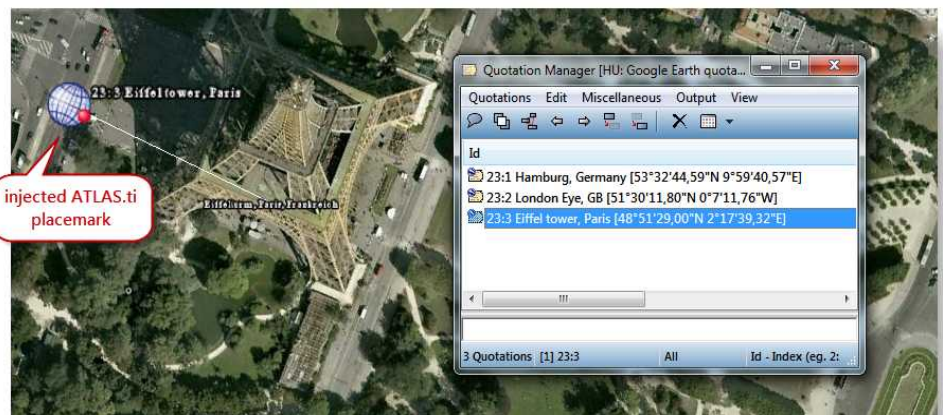


Figure 112: The ATLAS.ti placemark shows the location of the quotation within the GE map

Displaying Google Earth quotations

The hierarchy of the elements under temporary places in GE resembles the structure of the HU. At the top, you see an ATLAS.ti root folder for each HU in the session. Below this folder, the name of the HU is repeated and all its

Google Earth PDs and quotations are created as GE features. If you write a comment for a GE quotation or document, it will be shown as well.

Clicking on a quotation's placemark in GE will show a balloon description with meta information like its codes or memos. If you have written a comment for the GE quotation, it can be shown as well.



Figure 113: Display of quotation comments in GE

Modifying Google Earth quotations



- To modify a quotation, select it in the Quotation Manager.
- Double click on a new location where it should be moved to.
- Select the "revise quotation" button from the vertical tool bar. Or select **QUOTATIONS / MODIFY BOUNDARIES** from the main menu.

Deleting Google Earth quotations



- Select the GE quotation in the Quotation Manager, right click and choose the option **D E L E T E**.

Alternatively, click on the delete button. Or select the quotation in the Object Explorer, right click and select **D E L E T E**.

Moving Around

By default traveling to another quotation is by flying. When you press the SHIFT key during a transfer, you are "tele-ported" to the other location directly. The default speed can be set via **EXTRAS / PREFERENCES / GOOGLE EARTH PREFERENCES**.

Extrusion – Display Quotations at elevated levels

Usually the placemark icons are fixed to the ground. For hilly environments or between large buildings you can raise the icon like a balloon to a certain height (in meters) above ground. The icon is always tied to the ground with a connecting line. You can set extrusion via **EXTRAS / PREFERENCES / GOOGLE EARTH PREFERENCES**.

Display a GE Quotation in Google Maps

If Google Earth is just too heavy, you may open a GE quotation in Google Maps instead.

- Select a quotation, e.g. in the Quotation Manager.
- From the Miscellaneous menu, select **Open in Google Maps**.
- If you have created hyperlinks to Google Earth quotations, right click on the hyperlink and select the option **Open in Google Maps**.

This opens your Internet browser on the same location. However, you do not have tilt and heading. Currently, there is a fixed zoom factor for the Google Map view.

Import Google Earth Quotations

If KM* files include placemark features, these can be imported as quotations. The meta information that was inserted into the placemark is inserted into the quotation comment field in ATLAS.ti. The default setting is to import placemarks during the process of assigning a KML / KMZ file as primary document. This can be configured in the GE Preferences window.

- Assign a KML or KMZ file as primary document (**DOCUMENTS / ASSIGN / ASSIGN**).

Currently, KML and KMZ files have to be created in GoogleEarth. If you have created them elsewhere, open them in GoogleEarth and save them again. Then assign them.

- Next, select **DOCUMENTS / MISCELLANEOUS / IMPORT QUOTATIONS** from the main menu.

Create Graphical Snapshot PDs

The images provided by Google Earth are not stable. They may change over time. When views are changed is not known to the regular user. Thus, although positions on earth are stable, the views are not.

A new set of aerial and satellite images may yield a whole different set of details. This makes making snapshots from a current view a practical thing. Furthermore you can code detailed sections within a graphical PD. Such PDs do not require Google Earth to be installed.

- Position Google Earth to the desired view either manually or by selecting a GE quotation.

- Resize the GE window to the desired size. The content you see will be used for the PD. Only the main area is used, the side bar title etc. are ignored.
- Configure all needed layers.
- From the drop down Assign button, select **New GE Snapshot PD**.

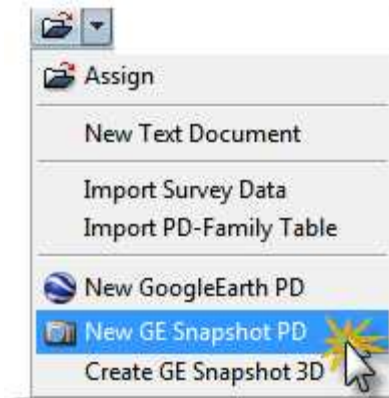


Figure 114: Creating snapshot PDs

A new PD is created. The naming convention is as follows:

If selecting a quotation in the Quotation Manager and creating a snapshot based on that view, the name for the PD will be Google Earth SN (SN for Snapshot).

If selecting a quotation from the Google Earth sub tree in the Places Panel, the name that is shown there is used with the prefix GESN:.

Thus, if you have given your quotation a unique name and want to use it as name for your PD snapshot, then it might be preferable to select the quotation from the Places Panel. If you prefer neither of the two standard options, you can always rename the newly created snapshot PD.

The source files for the snapshot PDs are jpg; they are stored in the same folder as the HU and their name starts with GES plus a two digit letter/number combination.

This feature is only available if GE has already been started. - Repeated entries: If you close ATLAS.ti and restart while GE is still open, GE creates a new feature hierarchy for each HU. You can either manually remove the feature tree from the GE places panel or close it and let ATLAS.ti start it for you by loading a Google Earth PD..

Coding Techniques

The coding procedures described in this section do not fully encompass the complexity of the intellectual activity of coding as, for example, understood in Grounded Theory (GLASER & STRAUSS, 1967).

In ATLAS.ti coding is simply the procedure of associating code words with selections of data. Technically speaking, “coding” is the association between a quotation and a code. The following describes ways to establish, maintain, or remove such associations. Although some of the coding techniques reflect the ideas and terminology used in Grounded Theory, you do not have to use this methodology when analyzing your data within ATLAS.ti.

Four coding procedures are described: **Open Coding**, **In-Vivo Coding**, **Code-by-List**, and **Quick Coding**. In addition, the purpose and creation of free codes are explained. Text search and automatic coding is described further below in a separate chapter (see “The Auto-Coding Tool” on page 231).

Make code names as succinct as possible.

A code may contain more than a single word, but should be concise. Use the code comment area to write a definition. If you find yourself writing prose instead of a succinct code name, you might in fact want to annotate. If this is the case, use comments or memos instead.

Video Tutorials:

Coding Basics: <http://www.youtube.com/watch?v=TUZpXEySp1U>

Code Management: <http://www.youtube.com/watch?v=f1jO3B4Z18>

Margin Area (1/2): <http://www.youtube.com/watch?v=N8e9jPhTXNg>

Margin Area (2/2): <http://www.youtube.com/watch?v=kfyPwkrFYAA>

General Coding Procedure

There are some common steps with each of the coding procedures described below.

First of all, it is useful to switch on the margin display to see the immediate effects of the coding process (note: there is no margin area for audio and video documents). The margin area also permits the direct manipulation of the codes and the associations between the quotations and the codes.

To display the margin area

Choose **VIEWS / MARGIN AREA** from the main menu, or click the Margin Area button in the primary document toolbar. The margin area is a useful feedback device during coding. Codes are displayed alongside the quotation to which they are attached.

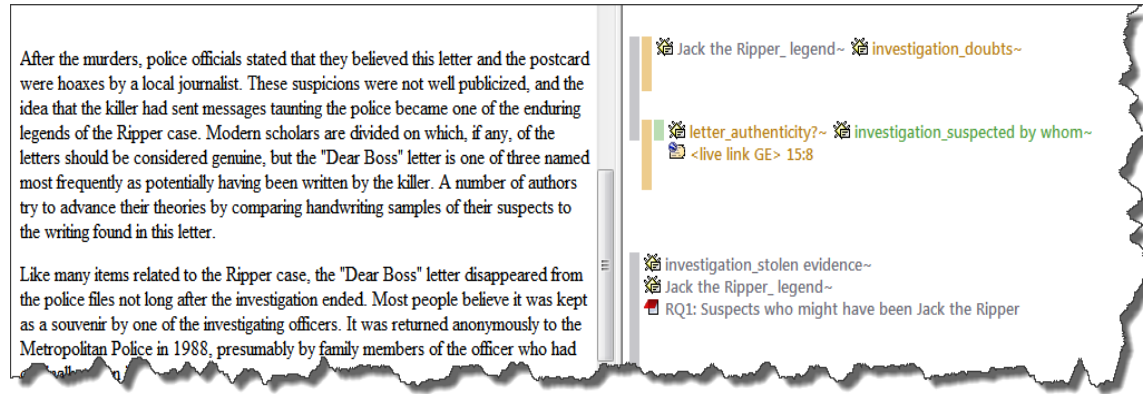


Figure 115: Text with switched on margin area




The size of the margin area can be changed by dragging the split bar between the primary document pane and the margin area with the left mouse button.



Coding creates quotations for selected data sections if needed.

Coding results in codes linked to quotations. Any number of codes may be assigned to a quotation and vice versa: a code may refer to any number of quotations. Coding implicitly creates quotations for data segments that do not already match an existing quotation.

You may activate the basic coding procedures either in the primary document toolbar, the CODING submenu of the CODES menu, the Code Manager or the context menu of the data selection.

The coding options in the primary document toolbar:

	<p>OPEN CODING (CTRL+SHIFT+O) Create a new code, ask user for name of code</p>
	<p>CODE IN VIVO (CTRL+SHIFT+V) Creates a code from the selected text</p>
	<p>CODE BY LIST (CTRL+SHIFT+L) Selects existing codes from code list</p>

	<p>QUICK CODING (CTRL+SHIFT+Q) Codes with the last used code</p>
	<p>CODES TEXT SEARCH RESULTS Codes the results of a text search</p>

How Codes are Displayed

After a code has been created, it appears as a new entry in several locations (e.g. in the margin area, the drop-down list, the code manager).

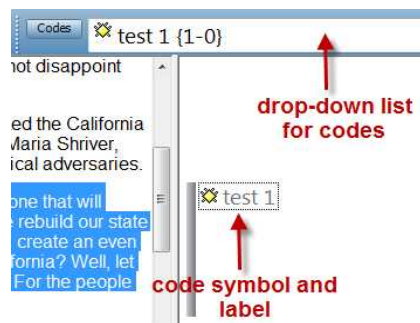


Figure 116: Codes in ATLAS.ti

The selected code word is written next to the quotation bar in the margin. You can recognize codes by the yellow diamond symbol.

The entry in the drop-down list in **Figure 104: Quotation reference** reads: "test 1 {1-0}". The first number shows the frequency (how often the code has been applied). It gives you some information on the groundedness of a code, i.e. how relevant this code is in the data. The second number the density (how many other codes this code is linked to). Hence the code "Test 1" has been used only once so far and it is not yet linked to any other code.

Display of codes in the Code Manager

The Code Manager provides a number of typical Windows display options like Large Icons, Small Icons, List and Details. The details view has already been described at "Code Manager Columns" on page 60.

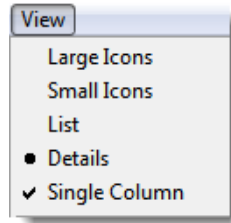


Figure 117: View context menu

The Single Column View

Within curly brackets following the code name, groundedness and density are displayed.



Figure 118: Code display

Grounded(ness). As explained above, groundedness refers to the number of quotations associated with a code. In the above example, groundedness is 8. This means, the code **name of suspect: Kosmiski* has been used for coding eight times.

Density. In the above example the density is 2, thus two codes have been linked to the code **name of suspect: Kosmiski*. Links between codes are established by the user either by dragging and dropping codes onto each other in the Code Manager or by linking them in in a Network View (see page 329).

Comment. The tilde character "~" flags commented codes. It is used not only for codes but for all commented objects.

Open Coding

Open Coding assigns new codes with already existing or newly created quotations. You can create one or more codes in a single step.

Coding with a single new code



- Select the data section or the quotation you want to code.
- Click the Open Coding button (see above) or choose **CODING / OPEN CODING** from the main or context menu.

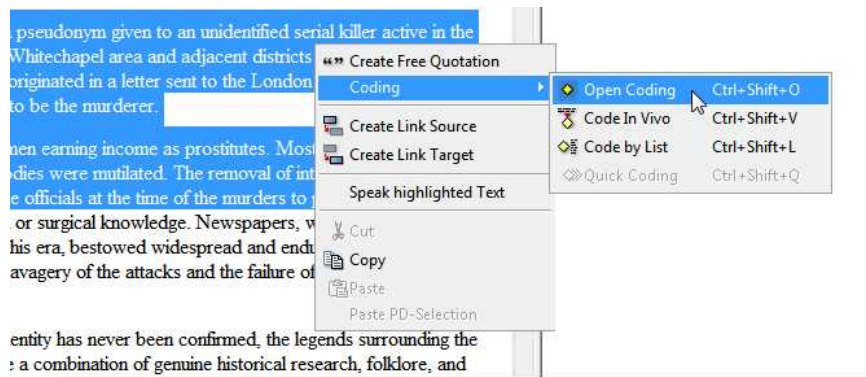


Figure 119: Creating a new code using the context menu

A dialog will open. Enter the code name and click **OK**.

The new code now appears in the Code Manager. The coded segment (quotation) is displayed in the Quotation Manager.

Write comments!

Make it a habit to write a comment for every new code (see Writing Code Comments on page 206).

Creating more than one code concurrently

When using the Open Coding procedure, more than one code can be created at a time. In order to do so, you need to separate the code names with the “vertical bar” or “pipe” character “|” (ASCII 124).

Create more than one code at a time using the “vertical bar” character.

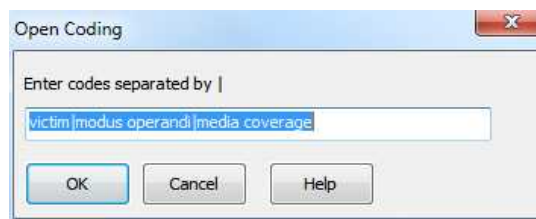


Figure 120: Creating multiple codes at once

The entry *victim|modus operandi|media coverage* creates three new codes. Already existing codes are not created anew.

The Code Manager offers bi-directional drag & drop.

Coding via drag & drop from the Code Manager

The easiest way of coding is via Drag & Drop from the Code Manager.

- Select a data section.
- Open the Code Manager.
- Select one or more codes in the Code Manager.

- Drag and drop the codes into the primary document pane. If a quotation already exists, you can alternatively drop the code onto a quotation bar in the margin area.

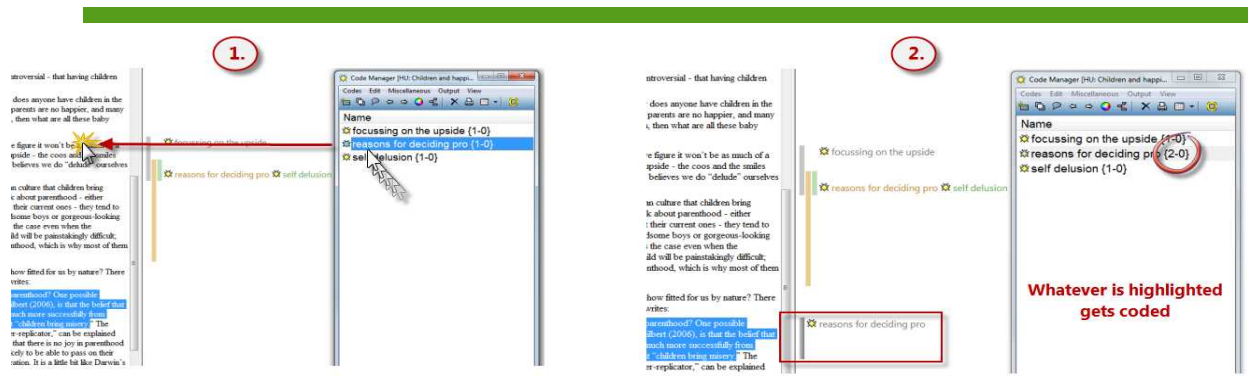


Figure 121: Coding via drag & drop

It is not necessary to drop the codes into the selected area. You may drop the codes anywhere inside the primary document pane.

In-Vivo Coding

Use in-vivo coding when the text itself contains a useful and meaningful name for a code.

In-vivo coding creates a quotation from the selected text AND uses the selected text (trimmed to 30 characters) as the code name. If the selected text's boundaries are not exactly what you want for the quotation, modifying the quotation's "spread" (see "Modifying Textual and PDF Quotations" on page 186) is often the next step after creating the in-vivo code.

In-Vivo coding can only be applied to textual primary documents.



The term "in-vivo" in this context stems from grounded theory, which draws the researcher's attention to expressions used by the interviewees themselves.

To create an In-Vivo code

- Mark the text passage that you want to use as an in-vivo code. Bear in mind that the code name is created from the text selection's first 30 characters .
- Click the In-Vivo coding button or choose **CODING / IN-VIVO CODING** from the menu.
- If needed, change the newly created quotation's boundaries ("Modifying Textual and PDF Quotations" on page 186 for details).

In-Vivo coding via drag & drop

- Mark the text passage that you want to use for In-Vivo coding.
- Open the Code Manager.

Create multiple
In-Vivo codes



This procedure offers a list of all current codes from which one or more code can be selected and associated with the current data selection.

Code multiple
quotations in
one go.

Drag and drop the selected text into the Code Manager's list pane or the code drop-down list.

You can create a code from each word of the selected text by holding down the ALT key when dropping the text.

Code-by-List

- Select the data section/quotation to be coded.
- Click the Code-by-List button or choose **CODING / CODE BY LIST** from the menu.
- From the list window with applicable codes select one or more codes (while holding the Ctrl key) and click **OK**.

The number of codes that you can select from the list is unlimited. If the data section resembles an existing quotation, only codes not already assigned to this quotation are offered.

Code-by-List Inverse

The standard code-by-list technique associates a list of codes to one selected quotation. Sometimes, it makes more sense to associate a list of quotations to one code.

To link a code to many quotations

- In the Code Manager, or the drop down list select the code to be associated with one or more quotations.
- From the main or the code's context menu, choose **CODES / CODING / LINK CODE TO: / QUOTATIONS**.
- A list of quotations that were not already assigned to the selected code opens. Select one or more quotations and click **OK**.

To link a code to many quotations via Drag & Drop

- In the Quotation Manager select the quotations to be assigned to the code.
- Drag & drop the selected quotations into the Code Manager onto the code.

Quick Coding

Quick Coding assigns the last used code to the current data segment. This is an efficient method for the consecutive coding of segments using the most recently used code.

- Select a code in the Code Manager.
- Select a data segment.
- Click the Quick Coding button or choose **CODING/QUICK CODING** from the menu.

Meaning of colored bars in the margin

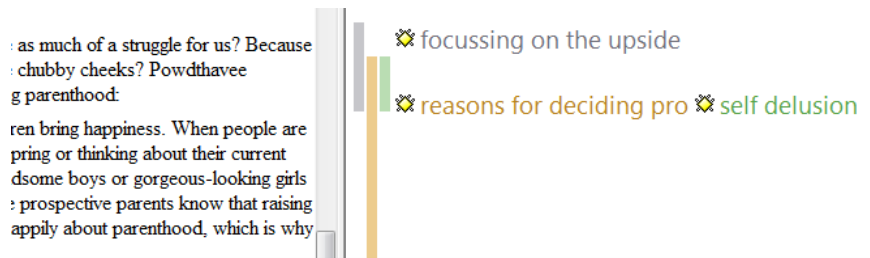


Figure 122: Meanings of colored bars in the margin

As you saw in **Figure 105: Activating quotations via its code**, overlapping codes are displayed in different colors in the margin area. These colors help you to distinguish which bar belongs to which code word. If you were to add even more layers, the next two layers would be displayed in violet and blue. After that, silver is used again. The colors do not contain any information about the different code levels in the sense of higher or lower ranked categories. When you delete a quotation, the colors may change.

It is possible to set your own colors for codes, but not for the bars marking the length of a quotation (see “Setting code colors” below).

Unlinking a code

Just as you can erase a pencil mark in the margin of a paper document, you can “erase” a code in the margin area on screen as well. The digital equivalent is called unlinking. It is mostly used when a segment is coded with more than one code.

To unlink a code, right click on the code in the margin area and click on the **UNLINK** option.

When you unlink a code from a segment that only has one code, the bar remains in the margin. If you want to “erase” both the code and the quotation, you need to proceed as explained below.

Writing Code Comments

Use code comments to define your code words.

Like Primary Documents, comments can be added to clarify the meaning of a code or to explain how the code is to be used for coding. The practice of commenting objects greatly supports a transparent, and, if working as part of a team, cooperative working style.

Creating and Editing a Code Comment

- Open the code manager and select a code.
- Right click and select the option: **EDIT COMMENT** from the context menu.
- A text editor opens. Write or edit an existing comment.
- Save the changes and close the editor.

You can also use the text pane in the lower part of the Code Manager (see “Editing Text” on page 53) to create or edit a comment.

Writing comments for coded segments

If you notice something interesting while coding and you want to write it down, use the quotation comment field for it.

- Right click on the highlighted quotation and select the option **EDIT COMMENT** from the context menu.
- An editor pops up. Write a comment on the selected data segment.
- Save your comment by clicking on the **ACCEPT** button and close the editor.

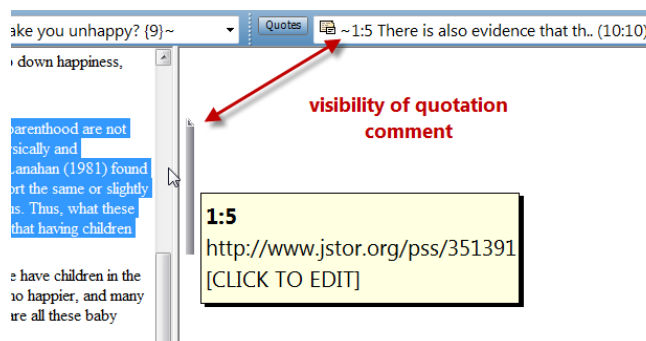


Figure 123: Drag & Drop coding

Quotation comments are visible in the bar in the margin area and by the tilde (~) sign in front of the quotation name in the quotations list.

Setting code colors



If you want to color your codes, select a code in the Code Manager and click on the rainbow colored circle in the tool bar.

To make code colors visible in the margin, right click on a white space in the margin area and select the option **USE OBJECT COLORS**.

In order to still be able see which code label belongs to which quotation bar, a small bar colored in the same color as the quotation bar is shown in front of the code label. The code label shows the user-defined color.

Coding PDF documents

PDF documents allow for various ways of coding. Basically, there are no restrictions, you can code any area within the document. If it is text, you code the characters of the text. If the PDF file contains an image, then ATLAS.ti

automatically switched to image mode and you code a rectangular area within the PDF file. Below you find a number of screen shots demonstrating the various options.

Coding as usual

Just highlight a section of text as you do in other text documents.

The difference is that you can set a selection color (see PDF preferences) and that a PDF quotation has a “handle” on the top left and bottom right that you

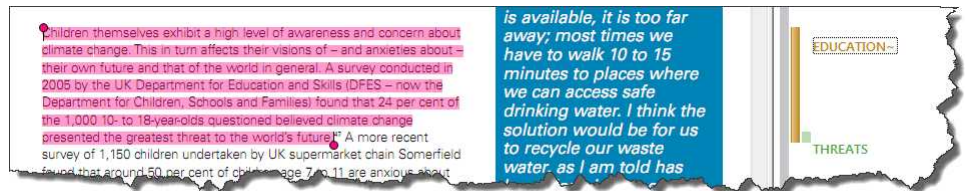


Figure 124: Coding a text segment in a PDF primary document

can use to easily modify the size of the quotation (see image below)

Coding embedded images

Select a rectangular area of your choice and use the handle at each corner to scale to the appropriate size.



Figure 125: Coding an embedded image within a PDF document

Coding columns of text

As usual, just highlight a section of text within a column:

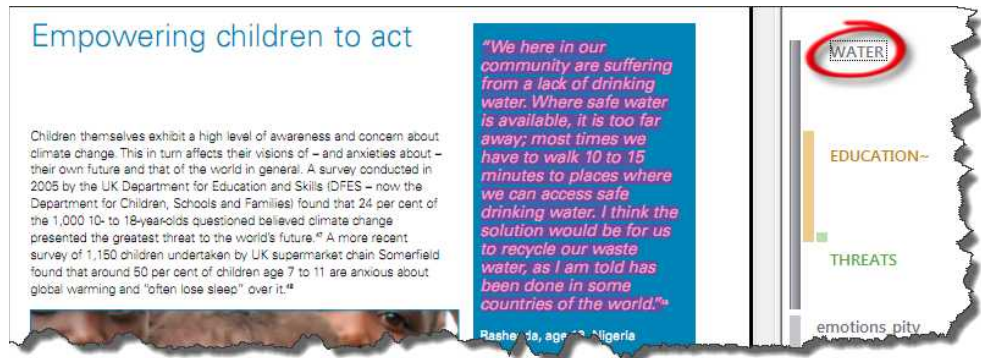


Figure 126: Coding text within a column of a PDF document

Coding Image documents

Load an image document and select a rectangular area. Proceed to code it as has been described for text segments.

To change the display type, right click on the image quotation and select the option **SELECTION-DISPLAY TYPE/INVERTED AREA**.



Figure 127: Inverted display for quotations

Coding audio and video documents

Coding audio and video files involves two steps. First a quotation needs to be created, and only then can you link a code to it.

Step 1: Create an audio or video quotation

- Load an audio or video document.
- In addition to the Code Manager, open the Quotation Manager. Re-size the two windows, so they fit next to each other. Move the time line to a convenient position and expand it so it covers the full length of the screen.
- Set a filter to the currently selected document so that the Quotation Manager only shows the quotes of the video you are working on.
- From the main menu, select **QUOTATIONS/FILTER/SELECTED PD**. The drop-down list and manager show a pale yellow color, indicating that a filter is set.

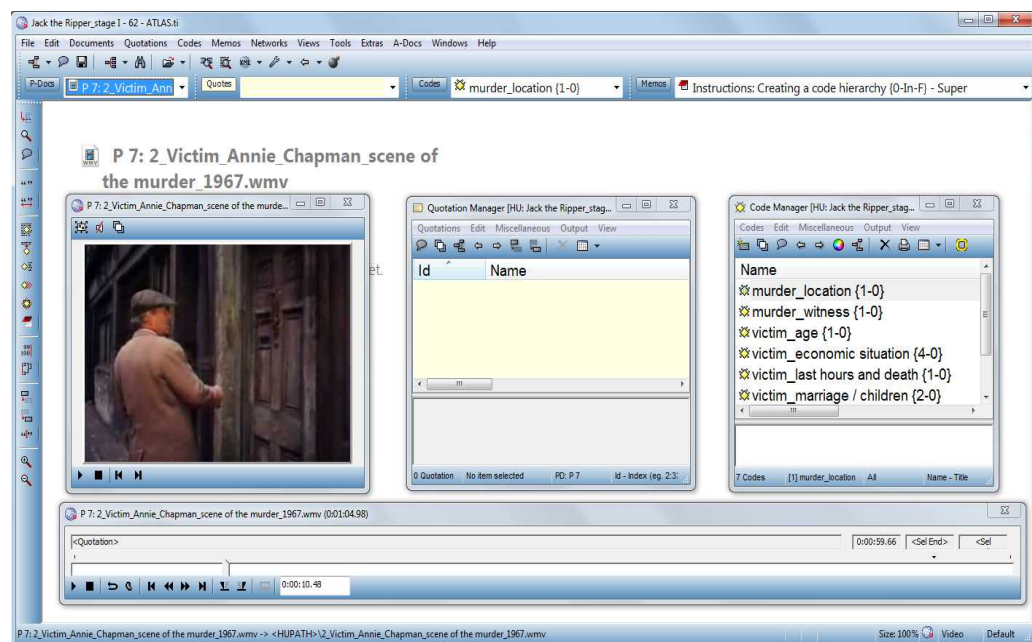


Figure 128: Preparing the screen for coding a video file

Currently the time line cannot be scrolled. Thus, the entire video needs to fit onto it. Therefore the recommendation is to cut your audio or video files to a length of about 20 minutes. Otherwise, the visual presentation of the quotations becomes very tiny and difficult to set.

In version 7, ATLAS.ti will offer a margin area as already available for most other data file formats. Then the above described coding procedure can also be used for coding audio- and video files.

- To create a quotation, move the cursor to a start position on the time line. Click the button Mark selection Start (see figures 109 and 129 below).

- Position the cursor at the end point of the quotation. Click on the Mark selection End button.
- Then click on the Create Quotation button.

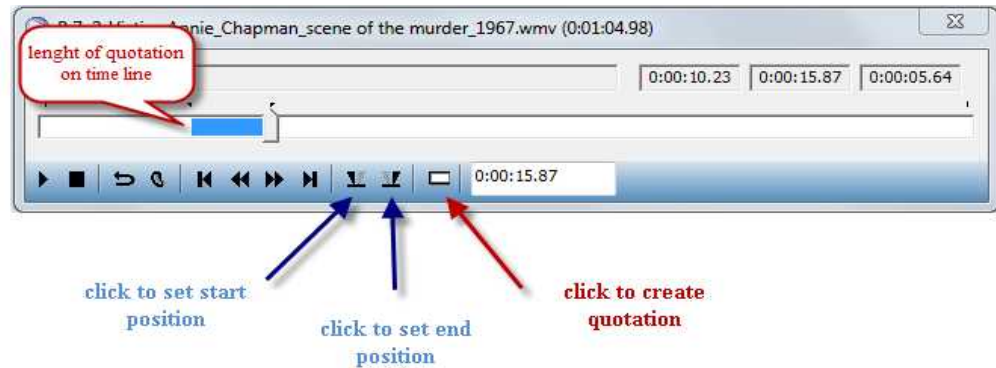


Figure 129: Creating a video quotation

A new quotation is listed in the Quotation Manager. The default name for audio and video quotations is the document name. Each quotation can, however, be renamed (see “Describing video quotations to improve outputs” below).

Step 2: Code an audio or video quotation

To code the video quotation, drag and drop a code from the Code Manager onto the quotation in the Quotation Manager (or vice versa). You can also right click on the quotation in the Quotation Manager and select other coding options from the context menu.

When applying a code, the quotation count behind the code name increases by one. This is all you can see, as there is no margin area yet.

Reviewing audio and video quotations

You can review video quotations via the Quotation Manager or after retrieving them via their codes:

Double click on a code in the Code Manager. OR: Right click on the white background. There you will find the option: **SHOW LINKS**.

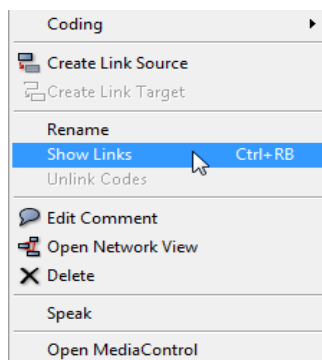


Figure 130: Show links

Unlinking codes

To unlink a code from a video quotation, right click on the white background. Then select the option **UNLINK CODES**.

Modifying the length of a video quotation

To modify a quotation boundary, activate a quotation in the Quotation Manager. Then reset either the start or end position. You can use the right and left arrows on your keyboard to adjust the length of a quotation by frames.

To modify the length, click **Ctrl + the CREATE QUOTATION** button.

Resetting the filter

To reset the set filter, select the main menu option **EXTRAS / RESET ALL FILTERS**.

Describing video quotations to improve outputs

As mentioned above, the name of a video quote is its data file name. If you want to add further information, you have two options: renaming the quotations and adding a comment.

Renaming video quotations and creating text output

In the process of creating video quotations, rename them so they can serve as titles for your video segments. To do so, right click on the quotation name in the Quotation Manager and select the **RENAME** option.

If 30 characters are not enough for quotation names, you can extend the number:

From the main menu, select **EXTRAS / PREFERENCES / GENERAL PREFERENCES / GENERAL**. At the bottom right, you will find the option: **LIST NAME SIZE FOR QUOTES**.

Increase it to the desired number of characters; 80 characters are probably enough for short titles.

This allows you to create a meaningful text output of coded video segments. To create such an output, select a code in the Code Manager. Select the option **OUTPUT/ QUOTATION LIST FOR SELECTED CODE(S)**.

The output will show an overview of all the titles you have created for your video (or audio) segments. Plus, it provides the position within the audio or video file.

Changing between time and frame references

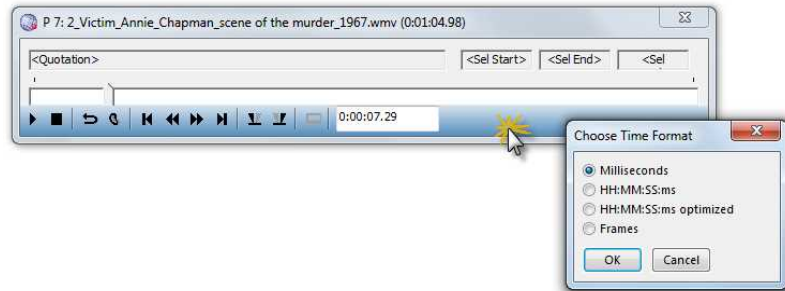


Figure 131: Changing the time format for video quotations

If you prefer time rather than frame settings for quotation references, right click the bottom right hand side of the time line and select **CHANGE TIME FORMAT**. Then a small window pops up showing you the various options available.

Making use of quotation comments

In addition to using quotation names for titles, you can add a description for each video quotation in the comment field. When you output quotations and there is at least one comment, ATLAS.ti asks you whether comments should be included in the output. As above, you can use the Quotation List output option from the **CODES / OUTPUT** menu.

Coding Google Earth documents

Coding Google Earth quotations is similar to coding audio or video quotations.

- Open the Quotation Manager.
- To make it a bit easier to select a quotation, set a filter for the currently loaded Google Earth document: **QUOTATIONS / FILTER / SELECTED PD**.
- Open the Code Manager and drag and drop a code from the Code Manager onto the quotation in the Quotation Manager (or vice versa). You can also right click on the quotation in the Quotation Manager and select other coding options from the context menu.

When applying a code, the quotation count behind the code name increases by one. This is all you can see, as there is no margin area for Google Earth documents..

Reviewing Google Earth quotations

You can review video quotations via the Quotation Manager, or by double clicking on a code that contains GE quotations in the Code Manager, or via the Places pane in the GE editor window.

Unlinking codes

Unlinking a code from a GE quotation currently only works via a network view.

- Select a GE quotation in the Quotation Manager and click on the Network View button in the tool bar, or right click and select Open Network View
- Proceed with unlinking as explained in the chapter on the Network View function (see page 318)

Describing GE quotations to improve outputs

Proceed as explained for audio- and video quotations (see “Describing video quotations to improve outputs” on page 212).

More Coding-Related Functions

This section describes some additional coding-related "house-keeping" functions, such as creating free codes, importing lists of codes, and renaming and removing codes.

Free Codes

You can create codes that have not (yet) been used for coding or creating networks. Such codes are called "free" codes.

Why Create Free Codes?

- To prepare a stock of predefined codes in the framework of a given theory. This is especially useful in the context of team work when creating a base project.
- To code in a "top-down" (or deductive) way with all necessary concepts already at hand. This complements the "bottom-up" (or inductive) *open coding* stage in which concepts emerge from the data.
- To create codes that come to mind during normal coding work and that cannot be applied to the current segment but will be useful later.

Creating a Free Code



From the main menu choose **CODES/CREATE FREE CODE** or click the Create Code button in the Code Manager.

A prompter opens as in Open Coding. Enter one or more code names and click **OK**.

Such a free code shows the name suffix "{0-0}": no quotations, no linked codes.

Importing Codes

Creating Free Codes via the Batch Method

To create a large number of free codes, this works best using the Memo Manager.

- Open the Memo Manager (**MEMOS / MEMO MANAGER**)
- From the Memo Manager's menu, select **MEMOS / CREATE FREE MEMO**.
- As title enter "code list"

- Add your list of code words, one per line.
- Save the memo (**MEMO / SAVE** or **CTRL+S**) and close it.
- Highlight the memo and select the option **MISCELLANEOUS / CREATE CODES FROM SELECTED MEMO**.

Transferring Codes from Other Projects

If you want to import an already existing list of codes from another HU (that might serve as a repository for codes), use the XML Export/Import function for codes (see "Exporting and Importing Codes in XML" on page 420). This option has the advantage that already existing code definitions (i.e., code comments and colors) are transferred as well. If only a subset of codes is to be transferred from one project to another, set a code filter in the exporting HU.

How to transfer codes:

- Select **CODES / MISCELLANEOUS / EXPORT CODES (XML)**.
- Select the option **Send Output to: File**.
- A file dialog window opens. Select a folder, enter a file name and save the file.
- Open a HU into which the codes will be imported.
- For this HU, select **CODES / MISCELLANEOUS / IMPORT CODES (XML)**.
- A file dialog window opens. Select the XML file that you just exported and click **Open**.
- The code list is imported. Check the Code Manager to see whether the procedure was completed successfully and according to your expectations.

Avoiding Name Clashes when Importing Code Lists

If a code with the same name already exists in the HU, the imported code name is prefixed with three exclamation marks. Another attempt to load a code with a conflicting name will be ignored.

Note to ATLAS.ti 4.x users: The old Import Codes function still exists. In case you have some previously created code lists saved as *.cod files that you wish to import, select : **CODES / MISCELLANEOUS / IMPORT CODE LIST**. However, this format cannot be generated any longer.

Renaming or deleting a code has global effects.

Renaming and Deleting a Code

Renaming and deleting codes are procedures that seem trivial, but understanding the "scope" of these operations can be a problem for new users. For both operations you must understand, that there is only ONE code object, e.g., "Happiness" in a given HU, even if you *applied* (associated with quotations, other codes, etc.) this code many times. With the margin area switched on, you may see the code appear many times while scrolling through your document. In fact you are seeing "links" between a quotation represented by a bar and the code, represented by its name, icon, etc.

Renaming or removing a code in the margin besides a text on real paper using an eraser and a pencil affects only one specific occurrence of a code; all other occurrences of the same code are untouched. The effect of the operation is local.

With ATLAS.ti you can do the same. However, you can do additional things that are not possible using traditional paper and pencil techniques.

By renaming or removing a code from an HU, you are affecting every occurrence of the code throughout the entire HU. The effect is *global*. Renaming the code will instantly change all the code “links” in the margin to reflect the new name. Deleting it will remove all occurrences in the margin (and from all other contexts in which it was engaged, like network views, families, etc.).

To Rename a Code

Select a code in a Network View or in one of the following places: the code drop-down list, the Code Manager, the Object Explorer or the Code Forest.

When selecting a code from a list, you can use the **CODES/RENAME** function from the main menu. The Rename option is also available from the context menu.

Enter the new name and click **OK**.

Another method to rename a code is to use **In-Place-Editing**. This option is available in the Code Manager, the Object Explorer, and the margin area. Renaming a code in-place in the margin area has two different effects. The code can be renamed globally – affecting all occurrences - or replaced by another code locally. This preference can be set via the Margin tab of General Preferences dialog. (**EXTRAS / PREFERENCES / GENERAL PREFERENCES, TAB: MARGIN / IN-PLACE-ACTION**).

Renaming or replacing?

Deleting Codes

Deleting a code removes the code from the entire HU. All references that involve this code are removed. It also disappears from Network Views and families that contained this code.

If you only want to remove a code from a specific quotation, you should “unlink” the code instead (see below).

To delete a Code



Select a code in the Code Manager, a Network View, the Object Explorer or the Code Forest.

In the Code Manager, Object Explorer or Code Forest use the **DELETE** function from the menu. In a Network View, right click on a code.

If the code has been used (e.g., is assigned to quotations, connected to other codes, part of a super code, etc.), you are asked for confirmation before the deletion process continues.

Furthermore, if quotations coded with this code are not used in any other context, you are asked whether these quotations should be removed as well.

There is no “undo” function to get deleted codes back! If you are unsure about the effects of an operation, save and/or make a backup copy of your Hermeneutic Unit first!

Unlinking Codes

This option is the reverse function of coding. It removes the links between codes and quotations. Unlike the delete function, neither codes nor quotations are removed; only the association between the code and the quotation is removed.

Two methods are described in the following sections.

To unlink several codes from a quotation

This method is used to remove a number of codes linked to a specific quotation.

- Open the context menu of the desired quotation.
- Choose **UNLINK CODES** from the context menu.
- From the list of all codes connected to this quotation displayed in a pop-up window select the codes to be unlinked and click **OK**.

In the margin area you can see the immediate effect of this operation: the unlinked codes disappear.

To unlink a single code from a quotation

This method is a very direct manipulation of the association between a code and a specific quotation using the interactive margin areas.

- Switch on the margin area display.
- Right-click a code in the margin area.
- Choose **UNLINK** from the context menu. The code disappears from the margin area. It does not disappear from other places in the margin where it has been used.

Remember, the **DELETE** option removes the code for good, including all associations with quotations, codes, memos, etc. - If you want to remove a code from a Network View, but do not want to actually delete it, select the option **REMOVE FROM VIEW** from the context menu.

Merging Codes

When developing a coding scheme, it may happen in the course of the analysis that two or more codes essentially mean the same thing. One cause could be the import of code lists with different names but similar meanings.

Clean up synonymous codes by merging them.

ATLAS.ti offers a procedure to merge synonymous codes into one resulting “target” code. This target code replaces the merged codes and “inherits” all of their references, i.e., quotations, links to other codes or memos, and their comments.

There are two ways to merge codes: a list-based method, and one that works from within the Network Editor.

Merging Codes Using the List Method

- In the Code Manager select the “target” code into which a number of other codes are to be merged.
- Choose **MISCELLANEOUS / MERGE CODES** from the Code Manager's menu.
- In the multiple choice window, select the codes to be merged into the selected code.

If the code had a comment already, then information about when and what was merged into the target code is entered into the comment field of the target code including the comment(s) of the merged code(s).

Merging Codes in a Network View

Here the procedure works the other way around. You first select the codes that you want to merge into another code, and then you select the target code.

- Open an existing Network View.
- Select the code nodes that you want to merge (hold down the Ctrl key to select multiple code nodes)
- From the network view's menu, select Nodes/Merge Codes. Some red lines appear starting at the selected code node, ending at your mouse pointer.
- Mouse the mouse pointer on top of the target code node and left click. This starts the merging procedure. The codes you selected first disappear and their quotations are added to the target code.

Save the HU before merging codes.

The codes merged into the resulting target node are deleted from the Hermeneutic Unit's code database. Since merging cannot be reversed easily, and since this procedure might affect many aspects, save the Hermeneutic Unit before doing the merge. If you are not satisfied with the merge result, you can reload the previously saved HU. Another more laborious way to revert to the previous state is to split the target code. See “Splitting Codes” on page 354.

Suggestions for structuring the list of codes

A frequent question is how to add a structure to the otherwise flat code list in ATLAS.ti.

Adding structure via the order in the Code Manager

The easiest way to work with higher and lower order codes is to structure your codes alphabetically in the Code Manager, e.g., according to the basic pattern below:

```
category A_sub 1
category A_sub 2
category A_sub 3
category B_sub 1
category B_sub 2
category B_sub 3
and so on....
```

As a means to visualize the beginning of a category, you can enter a free code that is not linked to any quotation, as shown below. Such a main category code might initially be empty, but may prove to be quite handy during further coding work. You may come across some data that fits the category but there is no fitting subcode yet, or you are unsure where to put it. Then you can use the main category code to collect these instances. Once a number of instances are collected, you can review them and think some more about them. By reading through or viewing/listening to a couple of examples it becomes often easier to decide how to code it. You may decide to create a new subcode or decide that an existing subcode fits after all.

```
CATEGORY A
category A_sub 1
category A_sub 2
category A_sub 3
CATEGORY B
category B_sub 1
category B_sub 2
category B_sub 3
```

A further possibility is to sort codes by numbers (or numbers and letters):

```
1 CATEGORY A
11_A_sub 1
12_A_sub 2
13_A_sub 3
2 CATEGORY B
21_B_sub 1
22_B_sub 2
23_B_sub 3
```

and so on....

The sorting order is (1) special characters (* + ' # - _ : . ; , etc.), (2) numbers and (3) letters. Therefore, it is NOT a good idea to use prefixes like 1, 1.1, 1.1.1, 2, 2.1, 2.1.2 etc.. Such a numbering scheme will necessarily wreak havoc with your intended sorting order ("10" will be sorted before "2"). When using numerals, always use "01", "02", "03", or and so on for sorting to be on the safe side.

The Jack the Ripper Quick Tour project shows a structured code list achieved by using alphabetically sorted prefixes. You can access this project in ATLAS.ti via **HELP / QUICK TOUR / LOAD "JACK THE RIPPER STAGE II"**.



Figure 132: Structured code list (Code Manager in List View)

All terms preceding the underscore (_) or colon (:) indicate the main category name; the terms following the underscore or colon constitute subcodes. Other projects may require additional sublevels. But don't overdo it!

As main category code and subcode names may contain more than one word, an empty space is not sufficient to separate the two levels of coding. Therefore it is best to use one of the special characters that you find on your keyboard to visually separate levels of coding.

On the use of Code Families for adding structure to a code list

At some point in your analysis, you may group codes into families to use them as filters and to facilitate searches. However, these steps usually follow the process of developing a coding scheme (see Family Life on page 237).

We do not recommend to use Code Families as a means for adding structure to your code list. There are several reasons for it: Code Families do not appear in the Code Manager and cannot be assigned to data segments as codes. You can also not link them to each other in Network Views. You can only display them and visualize the codes that are contained within them. All of this hints, that Code Families in ATLAS.ti have a different purpose.

Code Families are very handy when it comes to querying data or when creating output. You add the codes that you need for a particular query to a Code Family and either use it as an element in a query in the query tool (see page 268), or set it as filter to restrict queries to a particular set of codes in the Co-occurrence Tools (see page 299), or in the Codes-Primary-Documents-Table (see page 311).

Code Families can also be used to reduce certain outputs like the export of code lists (see Transferring Codes from Other Projects), or in SPSS jobs (see page 413).

On the use of the Network View function for adding structure to a code list

Utilizing the network function to introduce a hierarchy in your coding system offers a way to structure your codes. However, you need to be aware that this is not yet conceptual level work. When you use the network view function in such a way, you simply use it to organize your data and your codes. If you begin later to build models and to theorize about your data, the hierarchical relations might be in the way.

To create a code hierarchy you link the higher level code and the lower level code via a transitive, i.e. "is a" or "is part of" relation in a network view, or via drag and drop in the Code Manager.

After you have linked the codes, open the Code Forest: **CODES / MISCELLANEOUS / CODE FOREST**. There you will see a hierarchical display of codes. The code forest can be used for drag and drop coding. But you cannot enter new codes or drag and drop codes to a different position.

The recommendation is experimenting with an alphabetical code structure to create a code hierarchy rather than using code families or the network view function for this purpose. But as in most cases, there is not a "one option fits all" best strategy.

Retrieving Coded Quotations

There are different ways to retrieve coded segments: Quotations for a single code or a combination of codes, quotations displayed in the context of their primary documents, or quotations sent to a report. The simplest “retrieval” is by activating a code in the Code Manager with a double-click.

Quotations are activated differently in context, depending on the media type.

Activating a quotation for a code

A straightforward method is to display quotations in context: textual and graphical quotations will be selected in the document when activated. A multimedia quotation begins to play when selected.

When you select a code in the code drop-down list or double-click an item in the Code Manager, the following happens--depending on how many quotations are coded to that code:

If there is only one quotation

If there is only one quotation for the selected code, it will be activated immediately.

If there are more quotations

Use the **next** and **previous** button in the Code Manager to browse through all quotations for a selected code.

If more than one quotation is associated with the code, they are offered in a pop-up list. Selecting one of the quotations activates and displays it in context.



A fourth letter

Some sources list another letter, dated 17 September 1888, as the first message to use the Jack the Ripper name. Most experts believe this was a modern fake inserted into police records in the 20th century, long after the killings took place. They note that the letter has neither an official police stamp verifying the date it was received nor the initials of the investigator who would have examined it if it were ever considered as potential evidence. It is also not mentioned in any surviving police document of the time.

Ongoing DNA tests on the extant letters have yet to yield conclusive results.

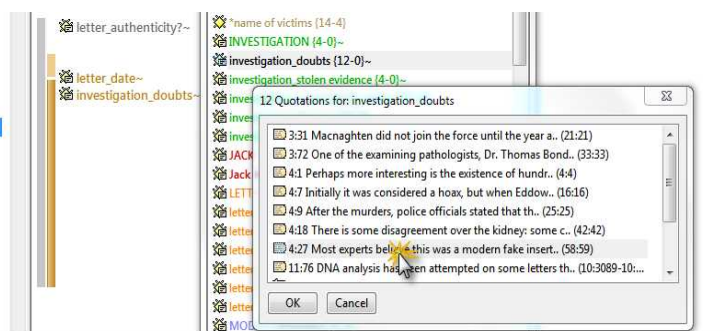


Figure 133: Simple retrieval

Create a Report for Coded Quotations

As an alternative to the contextual display of quotations, you can get different reports of the quotations for a selected code. Reports are displayed in a text editor and can be printed or saved.

To create a quotation report:

- Select a code, for instance in the Code Manager.

From the main menu, select **CODES / OUTPUT / QUOTATIONS FOR SELECTED CODE**. When selecting a code in the Code Manager choose **OUTPUT / QUOTATIONS FOR SELECTED CODE**. Select the option **QUOTATION LIST** if you only want a list of the quotations' names. This report is useful for non-textual data where the quotations do not contain textual content.

If a comment has been written for any of the quotations, you will be asked whether you also want to include the comments in the report.

Next, you have the option to send the report to an editor, printer, save it to disk (option: File), or to save it and run the file in the standard RTF application - usually Word or Wordpad – (option: File & Run).

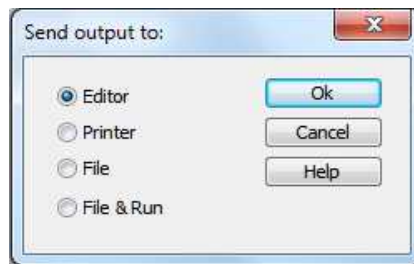


Figure 134: Output options

Use the Query Tool for complex retrievals of quotations.

Reports on Quotations for Code Combinations

To retrieve quotations or generate reports for combinations of codes use the Query Tool. For more information see "Error: Reference source not found" on page Error: Reference source not found.

Other Places to Activate Quotations

Quotations for a code can be activated from the margin area and any browser displaying codes:

The **Margin Area** displays codes (and other objects) associated with quotations. Clicking on a code in the margin area selects the associated quotation in the primary document pane.

By activating objects in the **Object Explorer** (see "The Object Explorer" on page 375) quotations are displayed in context similar to the object manager.

The **Network Editor** (see "The Network Editor " on page 323) also offers access to associated quotations via a node's context menu.

In the **Query Tool** (page 281) you can activate quotations in the result pane of the query tool window. Similarly you can activate quotations in the **Co-occurrence Tools** that result from a co-occurrence query (page 304).

Text Search & Auto Coding

The Text Search Tool is used to search within primary texts for the occurrence of specific text strings that match a designated string or pattern.

The Text Search Tool offers three distinct methods entitled **Standard Search**, **Category Search** and **GREP Search** to scan primary texts for specified text patterns. The functionality of the Text Search Tool is also fully integrated into the Auto-Coding Tool (see “The Auto-Coding Tool” on page 231).

The search mode is automatically determined by the kind of search string entered. Regular Expression search (GREP), however, must be explicitly selected. If you need to know what GREP stands for and what GREP searches are, a detailed explanation is provided at “GREP Search” on page 229.

The Text Search Tool

To open the Text Search tool

Load a primary text.

Either click the *text search* button in the PD toolbar, select **Edit/SEARCH** from the main menu, or use the key combination **CTRL-F**.

Click this button
to activate text
search
Short-cut: Ctrl-F



Figure 135: Text search tool

If the document is in Edit mode, Ctrl-F opens a Windows standard text search. Use the menu option or the search button instead.

Initially, the status bar displays the current search mode (in the figure above: Standard Search Mode). During a search activity, this is the place where you should look for warnings and messages.

Not all options are available for every type of search. For instance, backward and case sensitive searches are not available for Category Search (see below).

A text search always starts from the current position of the text cursor in the currently selected primary text. When the end of this document is reached, you are asked if the search should continue through the rest of the primary text documents.

Standard Search Mode

Use the standard search mode when you want to find exact, specified strings of characters. Word boundaries are not recognized in this mode. Hence, searching for "the" would also find instances like "bo**ther**," "**there**," and "**theater**." Searches that recognize word boundaries are available with the Category Search or by using appropriate GREP patterns.

To start a standard search

- Open the Text Search tool.
- Enter a string into the entry field. The search string should contain the special "pipe" character "|" as this initiates the Category Search.
- Uncheck GREP mode.
- Set **Case Sensitive** as needed.
- Start the search by clicking the **Next** or **Previous** button.

Two search options are available in standard search mode to control the search.

Case Sensitive

Check the **CASE SENSITIVE** box if you want characters to match the searched text exactly. If **CASE SENSITIVE** is selected, you will not find "Love" when you search for "love".

GREP Mode

Checking the GREP box enables GREP mode. If unchecked, the Search Tool is in "standard" mode. You may use the standard wildcard * character even without GREP. More discussion on GREP searches is provided at "GREP Search" on page 229.

Category Search

The Category Search method combines two powerful techniques.

Parallel search is a sophisticated method that handles textual variations. You may specify a number of *patterns* that scan the text simultaneously. Secondly, search expressions ("search swarms") can be stored as a search category and later reused. Besides being short and handy, a further advantage of categories is that their contents can be modified later without changing a single character in other expressions using this category.

Categories are reusable, named search swarms.

Categories allow abstraction from the search string itself and permit easy re-use of complex expressions in later searches. With the simultaneous use of wildcards, a search request using a search swarm might look as follows:

```
*caus*|why|*efore|since.
```

The individual elements of the search swarm are delimited by the vertical bar character "|". The bar can be read as a (Boolean) "OR." The search defined above yields text passages including any of the following strings: "because," "causes," "causation," "before," and "therefore," "why," and "since."

Defining Categories

Search swarms that have proven useful can be assigned names (search categories) in ATLAS.ti to facilitate re-use. For example,

```
CAUSE := *caus* | why | *efore | since
```

defines CAUSE as a placeholder for the original search swarm.

Therefore, instead of retyping lengthy search strings, the user may later simply type the search category "\$CAUSE" into the entry field. The dollar sign is a special character that indicates that the *content* of the CAUSE category is to be used for the search and not the string "CAUSE" itself. Therefore do not use the \$ sign to start a category name.

Categories can be mixed with ordinary strings to build complex search requests such as: `until|$CAUSE|when`

Do not mistake search categories for codes. Search categories are shortcuts for complex search procedures, while codes are concepts representing some level of interpretation. However, when using search categories extensively and building hierarchies of search categories, such a "para-taxonomy" might stimulate the construction of a matching network of codes.

Create hierarchies of search swarms by embedding existing categories.

Hierarchies of Search Categories

As categories may be elements of other categories, recursive search trees of arbitrary depth may be defined.

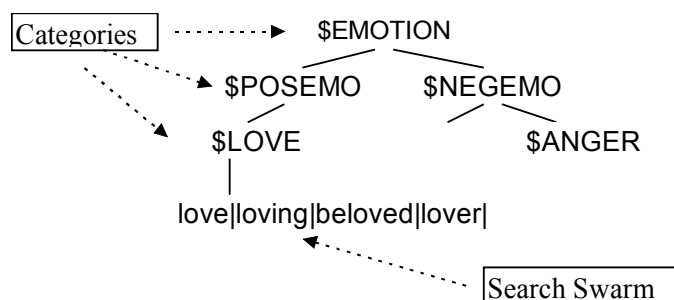


Figure 136: Hierarchy of search categories

The definition for the taxonomy above is as follows:

```
EMOTION := $POSEMO|$NEGEMO
```

```
POSEMO := $LOVE|etc.
```

```
NEGEMO := $ANGER
```

```
LOVE = love|loving|beloved|lover
```

Such category structures are efficient tools to exploit the literal properties of the textual materials you use in your research. Of course, this tool does not find relevant information beyond the characters specified in the search.

How To Use Category Search

- Open the Text Search tool.



Figure 137: Selecting an existing search category in the Text Search tool

List of example search categories in the standard search library.

- Enter a new search swarm or select an existing category from the library of search swarms by clicking on the drop down button at the right of the entry field.
- Click **Next**.

When using Category Search, some of the controls become disabled. Category Search cannot be combined with GREP mode, can never be case sensitive, and the Previous button cannot be used.

To define a new category

- Open the Text Search tool.
- Enter a new definition into the entry field using the following syntax:
- CATEGORY NAME :=** <string or \$category>|<string or \$category>| etc.

When *defining* a new category do not prefix its name with a "\$".

As soon as you press the **Next** button, a new category is created and a search for the first occurrence starts. This category is now available to you for the current work session. If the new category should be available in the future, you need to save it to the search library.

- Click on the Options button and select **SAVE CATEGORIES**.
- In case you do not want to create multiple search libraries, add your new category to the existing search library with the name: **srchbib.skt** and save it at the suggested location in the ATLAS*ti* folder.

Create search libraries for different languages, different topics, different projects, etc.

Managing Search Categories

Search categories are managed in search libraries.

On startup, ATLAS.ti loads a default library of search categories named *srchbib.skt*. You can update this library by adding new categories and removing or modifying existing categories. It is also possible to create completely new search libraries that better fit your requirements (different languages, domains, etc.).

To manage categories, three options are available:

Click the **O**PTIONS button in the Text Search window for this menu:

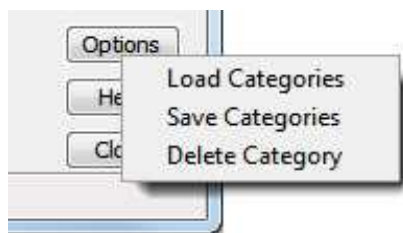


Figure 138: Accessing the search library in the text search tool

Load Categories opens a file dialog window showing existing search library files like *searchbib.skt* or *srchbib.skt*. If you select a library in the file dialog window, the categories from that library are added to the currently loaded categories.

Save Categories stores the currently loaded and newly created search categories in the default library file (*srchbib.skt*) or a new file. If you choose a new name, be sure to give the file the extension SKT, as in "*dutch.skt*".

To clear the internal database of search categories before loading new ones, use the option **Delete Category**. This opens a multiple selection list window. Choose one or more categories to be removed from the internal database of search categories. You can use the standard Windows techniques for multiple selections using the **Ctrl**, **Alt**, or **Shift** keys in combination with the left mouse button.

GREP Search

GREP is a well-known tool in the UNIX environment. The original GREP tool printed each line containing the search pattern, hence the acronym GREP: *G*lobally look for *R*egular *E*xpression and *P*rint.

In ATLAS.ti, the results of a GREP search are not printed line-by-line. Instead, the text matching the search pattern is highlighted on the screen.

The core of a GREP search is the inclusion of special characters in the search string that control the matching process. GREP finds instances in your data that match certain patterns.

The ATLAS.ti GREP search offers a subset of the Regular Expression language used in sophisticated text search systems.

GREP searches are very flexible.

Regular Expressions efficiently exploit the syntactical properties of the technical device called "text."

Supported Basic GREP Expressions

All GREP expressions supported by ATLAS.ti are shown in the table below.

GREP Expression	Description
^	Anchors the entered pattern to the beginning of a line. If used as the first character within brackets, it excludes the following characters (or range) from the search.
\$	Anchors the entered search pattern to the end of a line.
.	Matches any (single) character
*	Matches any number (including zero) of the preceding expression
+	Matches at least one occurrence of the preceding expression or character
?	Matches zero or one occurrence of the preceding expression or character: <i>stones?</i> matches <i>stone</i> and <i>stones</i>
[]	Matches a range or set of characters: [a-z] or [0-9] or [aeiou]. For example: [0-9] finds all numeric characters, while [^0-9] finds all non-numeric characters.
:d	Matches any digit (equivalent to [0-9])
\	The escape character disables the special GREP functionality of the following character. For example: \[matches an opening bracket.

In the following, a few search examples are presented showing the matching GREP expression in the column on the right.

Examples of GREP Searches

Examples	GREP expression
Find text [of arbitrary length!] enclosed within brackets. Note, that the brackets had to be "escaped" with "\", as they are control characters themselves:	\[.*\]
Find all years between 2001 and 2004:	200[1-4]
Find all numbers with 2 digits at the end of a line or paragraph:	:d:d\$
Find all "Meyer"s (spelled in four different ways)	M[ae][iy]er
Find all lines (paragraphs) starting with one arbitrary letter followed by a colon: (If you search for a "d" following the colon you will have to use the Escape character: ^.\:d Otherwise, the letter "d" would be interpreted as a digit.)	^.:

To start a GREP search

- Open the Text Search tool.
- Enter a search pattern (Error: Reference source not found shows an example).
- Check the **Use GREP** box.

The search expression entered in the text search window to the right finds all 3-digit numbers with the last digit being a 7, 8, or 9. This can be a useful search to find certain social security numbers or other personal identification numbers.

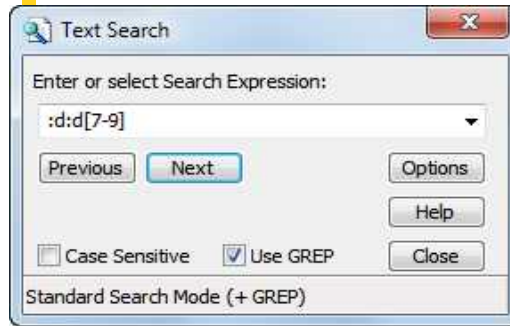


Figure 139: Search expression dialog

- Click on the **Previous** or **Next** button.

The Case Sensitive option may be used in combination with a GREP search.

The Auto-Coding Tool

The Auto-Coding tool finds text passages, selects a specified amount of text (e.g., the exact match, or spread to the surrounding word, sentence, or paragraph), and then codes the passages with a previously selected code.

Auto-coding is useful when coding structural information like speaker turns in group interviews, or other sections that can easily be identified by a text search.

Auto-coding allows you to quickly collect ideas that belong to a certain concept on the basis of words or patterns found in the text.

Concepts

The Auto-Coding Dialog

The Auto-Coding tool combines the Text Search tool with an automatic segmentation and code assignment mechanism. To open the Auto-Coding Dialog, select **CODES / CODING / AUTOCODING** from the main menu.

Auto-Coding =
Text Search +
Automatic
Segmentation +
Coding

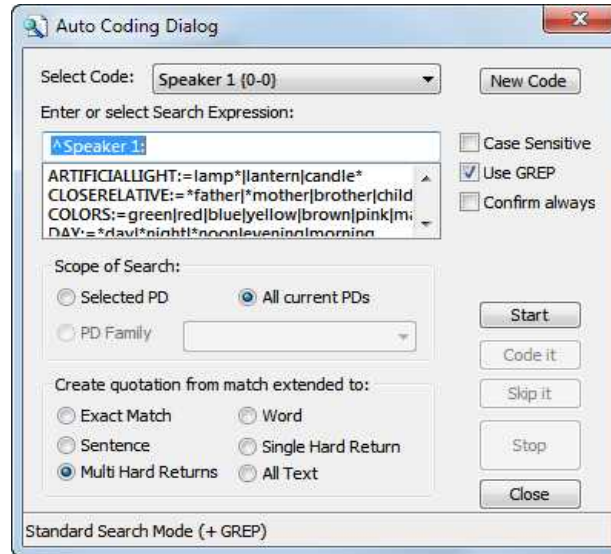


Figure 140: Auto Coding Dialog window

The New Code button allows you to create codes on the fly.

Note the **NEW CODE** button, which allows you to create codes on the fly for the auto-coding procedure.

Based on the GREP search expression shown in the above figure, all occurrences of string Speaker 1: located at the beginning of a paragraph in all textual PDs are found. Next, the whole speaker unit (which could contain one or more paragraphs) will be selected before a quotation is created and the code "Speaker 1" will be assigned.

The option **CONFIRM ALWAYS** is deactivated as the search is unambiguous and is likely to yield the desired results.

Search Expression

The top part of the Auto-Coding Dialog window resembles the Text Search tool (see "The Text Search Tool" on page 225). Search expressions can be entered or search categories can be selected. The search mode can also be set in a similar way as for the Text Search tool.

Scope of Search

Scope of Search can be all textual PDs, the selected PD only, or it may be restricted to a set of texts from a PD family. When you choose "All current PDs," the search starts at the beginning of the currently selected primary text.

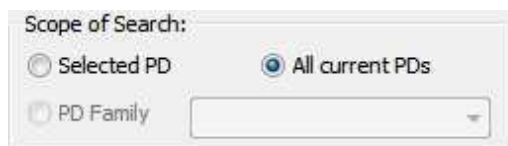


Figure 141: Selecting the scope of search for auto coding

If "Selected PD" is chosen, the auto-coding process starts at the current position of the text cursor.

Segment Size

When a matched string is found, the size of the segment to be coded can be specified as follows:

- the **Exact Match** only
- the **Word** surrounding the matched string
- the **Sentence** surrounding the matched string
- the matched string expanded to paragraph boundaries (**Single Hard Return**).
- the matched string expanded to one or more paragraphs up to the next blank lines (**Multiple Hard Returns**). This option is useful if you have information that should be regarded as one unit, but is separated in multiple paragraphs.
- **All Text** of the PD containing a match.

When transcribing, enter a blank line between speaker turns if you are going to use the auto-coding tool for coding speaker units.

Test search patterns with the Text Search tool first.

Test your Search Expression

The Auto-Coding tool creates a new quotation for every matched text passage that is not yet a quotation. A potentially large number of inadequate quotations could be produced by an imprecise search.

For this reason, you should always test a search pattern by using the Text Search tool first (see "The Text Search Tool" on page 225) or select the Confirm option and click Skip. This test will give an indication if the final search will yield meaningful results. The advantage of testing with the Text Search tool is that no quotations are created.

Another option is to auto code into a new code. If you later find out that the search did not yield good results, you can delete the code and all created quotations with two mouse clicks and try a different search.

How to Auto-Code

Auto-coding can be fully automatic or semi-automatic. The sections below will clarify the difference and will show the advantages of each method.

Fully Automatic Coding

- Select the PD you want to code using the auto-coding procedure. If you only want to auto-code the current text, load the PD in question. If you want to auto-code all texts, load the first PD and position the cursor at the beginning of the document.
- To open the Auto-Coding tool, choose **CODES / CODING / AUTO CODING** from the main menu.
- If no code is selected, select a code from the drop-down list at the top of the Auto-Coding tool.
- Enter a new search string or choose an existing search category.
- Specify the search scope, e.g. "Selected PD"
- Specify the segment size.
- Start the process by clicking **START**.

Semi-Automatic Coding

As it is not always desirable to let the program decide whether or not to code a given text passage, you can control the process by checking "Confirm always." Specific confirmation from the user on each new code will then be requested.

An example for the usage of semi-automatic coding would be to code for the concept "distress." Indications that a person might be distressed could be words like nervousness, tension, unease, edginess, etc. In order to capture this, you would do the following:

- Create a code with the name Distress.
- Open the Auto-Coding tool.
- Select the appropriate code.
- In the search entry field define a new category by entering:
DISTRESS:= nervous | tens | uneas | edg | etc.

The OR operator in this example is marked in red for visibility only. The search term in ATLAS.ti does not show colors or formatting.

- Depending on your data set, select a suitable **scope** of search (current PD, all PDs, or a specific PD family).
- Select the **segment size** to be coded, e.g. sentence.
- Check **CONFIRM ALWAYS** and click on the **START** button.
- Every time the program finds a piece of text that matches your search category, it stops the search and highlights the text it has found. You can then read the surrounding context and decide whether the text passage really has something to do with distress. If it does, click **CODE IT**, otherwise click **SKIP IT**. The program continues to search for the next match.

You can uncheck the **CONFIRM ALWAYS** box at any time and let ATLAS.ti scan through the rest of your texts without prompting for further confirmation.

Brushing-up Results after Auto-Coding

Since no automatic search can guarantee 100% meaningful results, the quotations created and assigned to the selected code during auto-coding should be screened and modified if needed.

Checking and Modifying Quotations

- Close the Auto-Coding tool.
- Open both the Code Manager and the Quotation Manager.
- Select the code you just used for auto-coding.
- In the Quotation Manager, set the quotation filter to "Selected Code".
- Click the Created column header to find all recently created quotations at the top of the list.
- Browse through the quotations assigned to this code by using the **NEXT** and **PREVIOUS** buttons in the Quotation Manager.
- Modify or delete misaligned or inappropriate quotations. See "Modifying Textual and PDF Quotations" on page 186.

Preparing Documents optimized for Auto Coding

The following instructions are useful for preparing transcriptions of focus group sessions, questionnaires, or interviews. Such data usually contains different speakers' sections. The hints given here also apply for other documents that include sections you wish to identify for auto-coding.

It would be tedious to code speaker or section turns manually. Two things are needed: a good "marker" for which to search and, once the marker is found, a reliable identification of the unit (sentence, paragraph) to be coded.

Insert easily identifiable markup in the text to let the auto-coding pattern matcher do this for you. For proper markup, a little knowledge regarding the auto-coder's search procedure is helpful. In combination with a few formatting rules, documents can be created that can readily support auto-coding quite a bit.

For the auto-coding tool to yield useful results, it is necessary to properly structure the source text using *unique identifiers*.

Simple examples are:

- *P:* or *<Peter>* for a respondent with the name Peter
- *07-01-11letter* for a letter written on the first of July 2011.

The identifier should be used exclusively to mark passages in the text that indeed relate to the person or object identified. The plain word *Peter* will likely also occur elsewhere in the text (for instance, when another person is referring to Peter). The markup "*P:*" or *<Peter>* however, is unlikely to occur elsewhere.

In order for the Auto-Coding tool to select a complete speaker section, a *section delimiter* is needed. As discussed above, a speaker or section turn will start with the speaker's identifier markup. The end of a section is best marked by an empty line. By doing this, you can still use single hard returns to segment a speaker section into paragraphs.

When auto-coding such a document, you would choose **MULTI HARD RETURNS** for extending the matched text.

Using `<Peter>` as the search pattern would then yield a quotation including everything from `<Peter>` up to the empty line:

```
INT: Ok, so erm, so you've got the majority of the information anyway, I mean primarily the most important thing really is that erm obviously you can withdraw at any time from the study, apart from when it goes on to the internet.¶
¶
TREVOR: It's too late then yeah.¶
¶
INT: Yes.¶
¶
TREVOR: You're in trouble if you change your mind then [laughs].¶
¶
INT: Exactly [laughs]. But up until that point, and we will sort of tell you when that point's gonna be.¶
¶
TREVOR: It's alright I just won't watch my bit [laughs].¶
¶
```

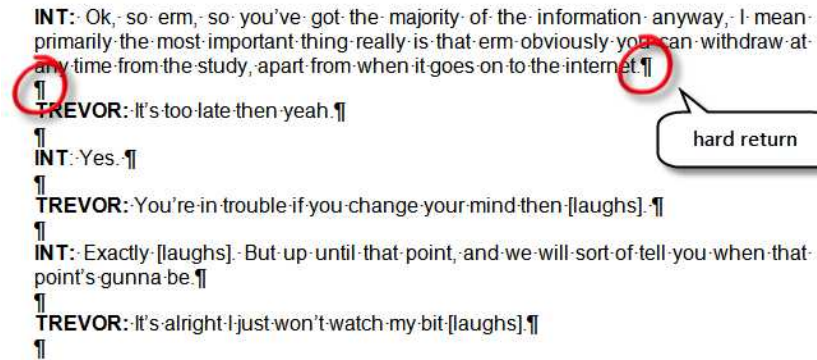


Figure 142: Example transcript

Family Life

Just as codes describe sets of quotations, families cluster Primary Documents, Codes, and Memos. One important objective is to manage large amounts of objects by classifying them into subsets, e.g., all *theoretical* codes, all PDs from *respondents of a certain age group or location*, all memos related to a *theme*, etc.

Purpose of Creating and Working with Families

In the following, the role of families as variables, super families and for controlling the HU merge procedure are introduced.

While families are used to classify a group of objects, the objects they classify can be members of more than one family.

Unlike Network Views, which can contain objects of different types as nodes, families can only contain one type of object. For example, a code can never be a member of a memo family.

Partitioning objects into families reduces the number of "chunks" requiring the researcher's attention. Families are often used for filtering (see "Sorting and Filtering" on page 384), and when formulating queries in the Query Tool (see "Creating a Query with the Query Tool" on page 278).

Example: When conducting an interview study with respondents from various backgrounds and locations, **PD families** can be created to classify the respondents into:

- Female / Male
- Location A, Location B, Location C
- Age Group 1 (20-30), Age Group 2 (31-40), Age Group 3 (41-50)
- Blue-collar worker, White-collar worker, Management, etc.

Families make effective user-defined filters. For example, you can filter PDs to only view female respondents.

In the Query Tool, PD families can be used to restrict the scope of the search. For example, you can ask for all quotations coded by Code_A and Code_B that occur in documents of white-collar female respondents from location B.

The **PD-Family table** function provides a convenient way to import and export variables (see below for a detailed explanation).

Code families can be used to loosely group codes that belong together. Other than in Network Views where specific relationships between codes need to be defined, in code families it is not necessary to specify the ways in which codes relate to each other.

Use **memo families** to sort, filter, and organize your memos.

Super Families

Super Families are combination of other families (including other Super Families). You can build complex families incrementally from existing families using a set of powerful Boolean operators. From a technical perspective Super Families function just like Super Codes (see “Super Codes” on page 282).

Using Families when Merging Hermeneutic Units

A special application of families is used to specify the sets of objects to be excluded in the process of merging Hermeneutic Units (see “Merging Hermeneutic Units” on page 171).

Common Procedures

Although the handling of families and their members is identical, their usage differs between types of families. In the following, the general aspects of and procedures for working with families are described. Thereafter, a description of specific characteristics of the different family types follows.

All procedures for displaying, editing, and creating families are found in the menus of their object type (i.e., under the Documents, Codes, and Memos menus).

The Family Manager

Using the Family Manager you can create, edit, and delete families. You can add and remove items ('family members'), write comments concerning a particular family, or set a family as filter.

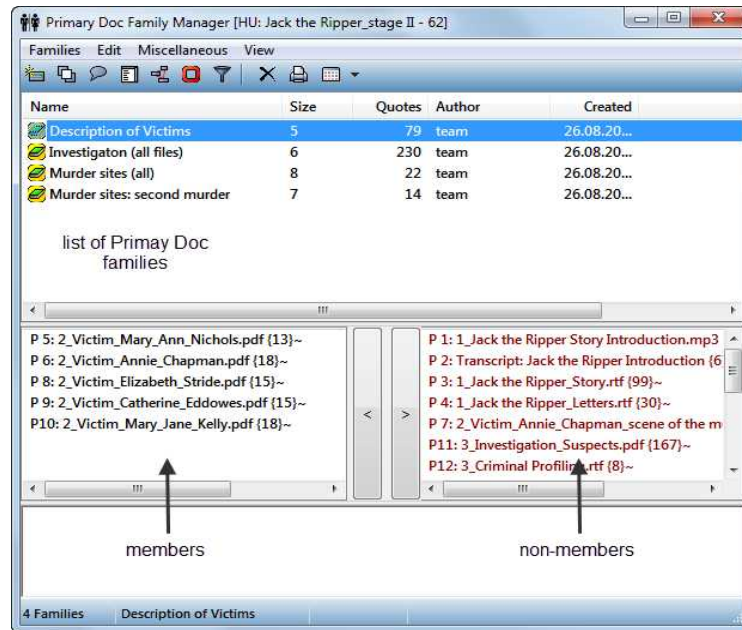


Figure 143: Primary Document Family Manager

Family Managers and the procedures described in the following are the same for all family types.

Components of the Family Manager

The Family Manager's main pane lists all families for the specific object type.

- The window displays the name, (member) size, author, and creation and modification dates (not currently visible). The columns can be used to sort the families according to these criteria by clicking the column header.
- The left list below the family list displays the "family members" already assigned.
- The two buttons between the list panes are for assigning or removing items from the selected family.
- The right list displays all items not currently assigned to the selected family.
- The comment area contains an optional description for the family.

To Open a Family Manager



Select **EDIT FAMILIES / OPEN FAMILY MANAGER** from the **DOCUMENTS, CODES, OF MEMOS** menu.

The **EDIT FAMILIES** submenu is available from the Documents, Codes and Memos menu.

The Family Manager is also available by clicking the Family button in the corresponding Object Manager (see left).



Creating Families

Before using a family, it must first be created in the Family Manager.

- Open the Family Manager for PDs, codes, or memos.
- Click the button **CREATE A NEW ITEM** or select the menu option **FAMILIES / NEW FAMILY**.
- Enter a name when prompted and click **OK**. If you enter the name of an already existing family, you will hear an error sound. A message pops up letting you know that the entered name is not accepted.

Now you can add members and write a preliminary comment describing the family.

The number of items in a family is displayed behind the family's name in parentheses.

Adding Members

After a family is created, adding members is often the next logical step. However, the assignment and removal of items can be done at any time during the life cycle of a family. To add new items to a family:

- Select a family. If you have just created the family, it is already selected.
- Select one or more items in the list pane on the right hand side.
- Click the **Add Items** button to make the selected items members of the selected family.
- If you want to add one item at a time, you can simply double-click an item.

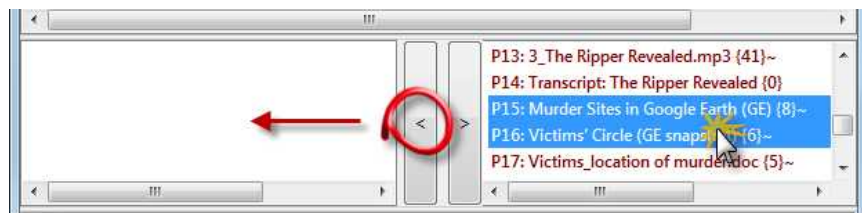


Figure 144: Adding members to a family

Watch the member list being populated with the items you have just assigned.

Another way to add members is to drag them from an Object Manager, the Object Explorer, or the margin area into the member's pane.

Removing Members

- Open the Family Manager for the relevant object type.
- Select a family.
- Select one or more items in the list pane for members.
- Click the Remove Items button to remove the selected items from the selected family. The items are only deleted from this family and not from the system.
- If you want to remove one item at a time, you can simply double-click on each item.

If you *delete* objects that belong to a family somewhere else, they will be removed automatically from all their hosting families.

Assigning Families to Objects

The option **EDIT FAMILIES / ASSIGN FAMILIES** is another way of adding members to a family. This option allows you to easily assign suitable attributes to objects either selected in the Family Assigner or an Object Manager.

Assigning Families to Objects in the Family Assigner

- Open the Family Assigner: **.../EDIT FAMILIES / ASSIGN FAMILIES**.
- Select an object (in the example below, it is a primary document) in the top pane and then the appropriate families in the lower right hand side.
- Click the **Add Items** button to assign the families to the selected object.

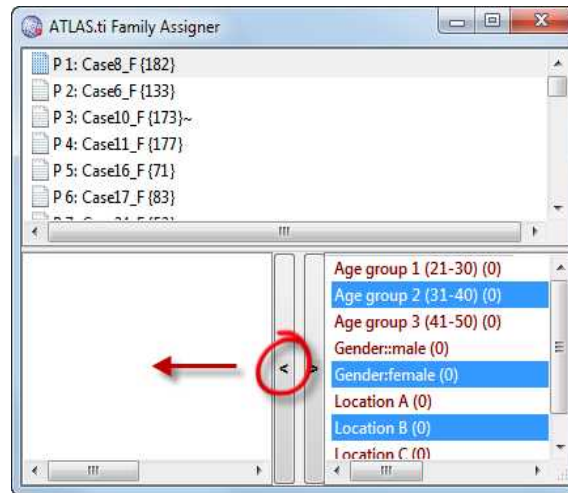


Figure 145: Assign families to objects in the Family Assigner

Assigning Families to Objects in Object Managers

- Select any number of objects in an Object Manager by holding down the **Ctrl**-key.
- Right click on one of the selected items and select Assign Families, or choose ... / **EDIT FAMILIES / ASSIGN FAMILIES** from the menu.
- From the list of families that opens, select one or more families to which the selected objects are to be assigned.
- Click **OK**.

Creating Families from Selected Items

- Select any number of items in an Object Manager by holding down the **Ctrl**-key.
- Right click on one of the selected items and select **EDIT FAMILIES / NEW FROM SELECTED ITEMS**.
- Enter a name for the new family and click **OK**.

Accessing quotations

To access the quotations related to the objects included in the family, double click on a family while holding the **Ctrl**-key.

Writing a Comment for a Family

The family comment can be used to describe why and for what purpose a family was created. This is especially useful when families are treated as attributes.

Creating or Editing a Family Comment

- Open the Family Manager for the relevant object type, e.g., by clicking the Family button in an Object Explorer.
- Select a family.
- In the text pane at the bottom of the window, write or edit a comment.
- Alternatively, you can open a full-fledged editor by clicking the Comment button in the toolbar.



Using Families as Filters

Access the Filter Options via the Main Menu

One added value of families is that you can use them as filters. For example, if you have created a code family including only 'Abstract' codes, you can use this family as a filter to reduce the total number of codes displayed in the drop-down list in the Code Manager and the margin area.

Filter Items using the Family Manager

- Open the Family Manager.
- Double-click a family. Watch how the display in the Object Manager and the margin area changes to display only items that are members of the selected family.

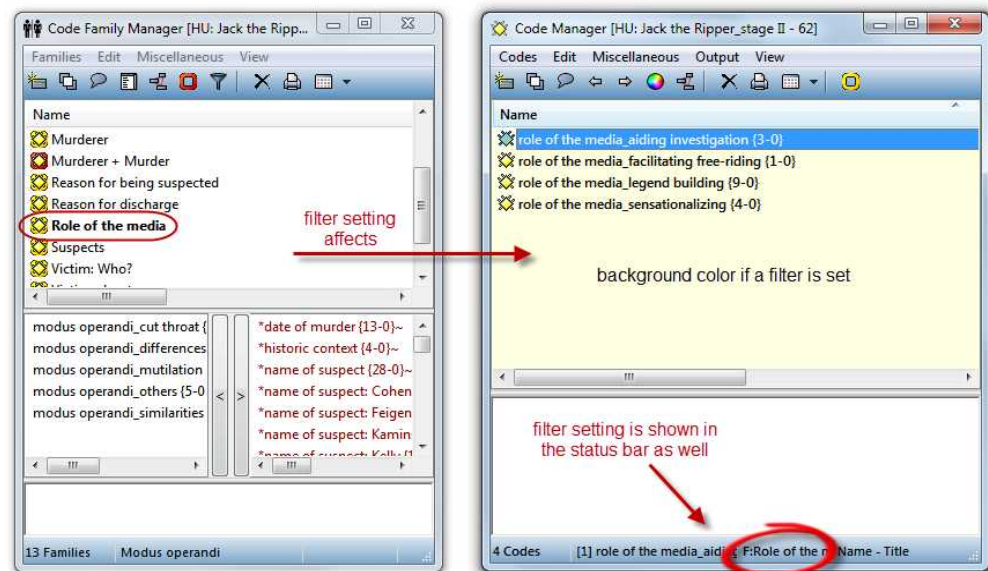


Figure 146: Double clicking on a family in the family manager activates a filter

If a family is activated as a filter, it is displayed in bold letters in the Family Manager. In the figure above, the code family “Role of the media” has been set as filter. In addition, the background color in the Object Manager and drop-down list changes. The active filter is also indicated in the filter field of the status bar in the Object Manager.

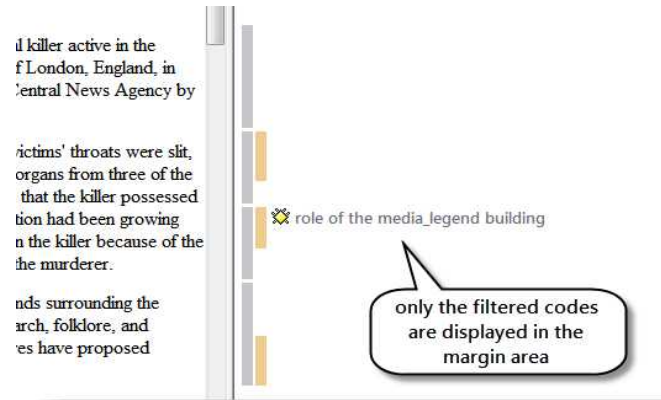


Figure 147: Effect of a code filter in the margin area

To take the filter out double-click on the family again, or select **EXTRAS / RESET ALL FILTERS** from the main menu. A third option is to double-click on the filter field in the Object Manager while holding down the **Ctrl**-key.

Filters do not affect Network Views. Even if you have set a filter, Network Views still display all their nodes.

Removing Families

- Open the Family Manager for the relevant object type.
- Select the family to be removed.
- Click the **Delete** button or select menu option **FAMILIES / DELETE FAMILY**.



Removing a family does not remove any of the contained items.

Working with Variables: Primary Document Families

PD families as variables can be used in queries and SPSS jobs.

Use PD-Family tables to assign PDs and variables at the same time.

Along with sharing all the characteristics of code and memo families, PD families have some additional characteristics.

PD Families can be used to define the scope of a query when used as global attributes supplementing codes. For instance, if the PD families "female" and "age group 1 (21-30)" were assigned to a number of interviews, one can then formulate queries like: "Show me all quotations from interviews with females between the ages 21 to 30 coded with "coping" or "power." For a step-by-step instruction, see "Restricting Code Queries to Sub Groups" on page 287.

In SPSS jobs, PD families are a way to aggregate some of the data (see "How SPSS Export Handles Families" on page 417).

PD-Family tables are an efficient means to create families and to assign PDs to their respective families. You can also use them to assign PDs and to generate variables in one step.

PD-Family Table

PD-Family Tables can be exported or imported as tab-delimited (XLS) or as *comma/semicolon separated value* (CSV) files. All three formats can be read by Excel™ as well as OpenOffice Calc. Below you see an example of an exported file. The gray colored columns have been added for readability. Below each

documents	Name	Path	@Origin	#Gender	#Location	#Age group 1	#Age group 2	#Age group 3
P 1	Case8_F	C:\Users\generic\Example Projects\ <HUPATH>\Christine_44.rtf		female	Berlin	21-30	0	0
P 2	Case6_F	C:\Users\generic\Example Projects\ <HUPATH>\Chris_88.rtf		female	London	21-30	0	0
P 3	Case10_F	C:\Users\generic\Example Projects\ <HUPATH>\Donna_78.rtf		female	New York	21-30	0	0
P 4	Case11_F	C:\Users\generic\Example Projects\ <HUPATH>\Dorothy_69.rtf		female	Tokyo	21-30	0	0
P 5	Case50_M	C:\Users\generic\Example Projects\ <HUPATH>\T_Mr. Leslie_63.rtf		male	New York	0	31-40	0
P 6	Case2_F	C:\Users\generic\Example Projects\ <HUPATH>\ANGELA_372.rtf		female	Tokyo	0	31-40	0
P 7	Case3_F	C:\Users\generic\Example Projects\ <HUPATH>\Ann_C347.rtf		female	Berlin	0	31-40	0
P 8	Case4_F	C:\Users\generic\Example Projects\ <HUPATH>\Betina_103.rtf		female	Tokyo	0	31-40	0
P 9	Case54_M	C:\Users\generic\Example Projects\ <HUPATH>\T_Robert_244.rtf		male	London	0	0	41-50
P 10	Case15_F	C:\Users\generic\Example Projects\ <HUPATH>\Heather_170.rtf		female	New York	0	0	41-50
P 11	Case20_F	C:\Users\generic\Example Projects\ <HUPATH>\Joan_53.rtf		female	Tokyo	0	0	41-50
P 12	Case22_F	C:\Users\generic\Example Projects\ <HUPATH>\Beverly_116.rtf		female	Berlin	0	0	41-50

Figure 148: An Exported PD Family Table

column header and content is explained.

This data exchange format can also be used to conveniently assign a large number of PDs from generic lists.

Documents: The PD sequence number.

Name: The name of the PD.

Path: The resolved path of the PD's data source, i.e., the actual location of the data source at the time the table was exported.

@Origin: Contains the original path reference that was valid at the time the document was assigned to the HU. May contain special paths (e.g., <HUPATH>). This attribute can only be handled intelligently when importing such a table with ATLAS.ti. Other applications may simply ignore it and use the path attribute instead.

All following columns: Families.

Type of Variables

Within ATLAS.ti, all families, when interpreted as variables, are dichotomous because an item may or may not belong to a specific family, thus it is encoded with either 0 or 1 / applies or does not apply.

documents	Name	Berlin	London	New York	Tokyo
P 1	Case8_F	1	0	0	0
P 2	Case6_F	0	1	0	0
P 3	Case10_F	0	0	1	0
P 4	Case11_F	0	0	0	1
P 5	Case50_M	0	0	1	0
P 6	Case2_F	0	0	0	1
P 7	Case3_F	1	0	0	0
P 8	Case4_F	0	0	0	1
P 9	Case54_M	0	1	0	0
P 10	Case15_F	0	0	1	0
P 11	Case20_F	0	0	0	1
P 12	Case22_F	1	0	0	0

Figure 149: By default PD families are like dichotomous variables

By following a simple naming convention, PD families can be turned into nominal and categorical variables for the use outside of ATLAS.ti in statistical and other database applications.

Let's assume that your respondents come from four different locations. To represent this in ATLAS.ti, you need to create four PD families, one for each location. Exporting these for families as PD-Family table to Excel, you get a table as shown above containing one variable per family with the values 0 or 1.

If you prefer just one variable for location rather than four, you need to use the following naming convention when creating your PD families: **VARIABLE**

NAME::VARIABLE VALUE::

Location::Berlin

Location::London

```
Location::New York
```

```
Location::Tokyo
```

When exporting the PD-Family table, the result will be as follows:

documents	Name	#Location
P 1	Case8_F	Berlin
P 2	Case6_F	London
P 3	Case10_F	New York
P 4	Case11_F	Tokyo
P 5	Case50_M	New York
P 6	Case2_F	Tokyo
P 7	Case3_F	Berlin
P 8	Case4_F	Tokyo
P 9	Case54_M	London
P 10	Case15_F	New York
P 11	Case20_F	Tokyo
P 12	Case22_F	Berlin

Figure 150: PD family table with a nominal variable for location

The table shows one variable for Location and the respective values as string: Berlin, London, New York and Tokyo. Note that the variable name is prefixed with a hash sign (#). This is the syntax that needs to be used when preparing a table for import (see below). The hash sign indicates to ATLAS.ti that this variable needs to be turned into multiple families.

Super families in PD Family Tables

Super Families (see page 289) are treated like standard families. If you do not change the default name suggested by ATLAS.ti when creating super families, then they are prefixed by an asterisk (*). In the table below you see two super families combining the families for *age group 1* and *2* with the family *female*.

documents	Name	*Age group 1 & female	*Age group 2 & female
P 1	Case8_F	1	0
P 2	Case6_F	1	0
P 3	Case10_F	1	0
P 4	Case11_F	1	0
P 5	Case16_F	1	0
P 19	Case2_F	0	1
P 20	Case3_F	0	1
P 21	Case4_F	0	1
P 22	Case5_F	0	1
P 23	Case13_F	0	1
P 24	Case14_F	0	1

Figure 151: Display of PD Superfamilies in PD-Family tables

Do not assign a PD to more than one family with the same variable name (e.g., both to `Location::Berlin` and `Location::New York`). ATLAS.ti allows this, as it treats every family as a separate dichotomous variable. However, when converted into a categorical variable "Location" in the process of creating a PD-Family table, such multiple assignments could create problems.

Preparing and Importing a PD-Family Table

Create the following columns when manually preparing a PD-Family table for import from a spreadsheet application such as Excel™:

First column: Use 'Documents' as the header and a PD number in subsequent rows.

Second column: Use header "Name" and enter a name for the PD in each row.

The next one or two columns: As already mentioned above, the document path is stored twofold when a table is created by ATLAS.ti: The actual path at the time of export (column Path) and the path at the time of the assignment of the document to the HU (column: @Origin). The latter can also contain special path components (<HUPATH>, <TBPATHT>) that will be correctly resolved when imported into ATLAS.ti.

When reading a table into ATLAS.ti, the Path column has more or less descriptive character as the @Origin is always preferred. Therefore the Path column can be omitted when creating a table manually. The column @Origin is sufficient and may either be absolute or contain special paths. For details, see "Reference Types: Many Paths, One Destination" on page 107.

If neither the Path nor the @Origin column is defined, the **name** of the document is used as file reference in combination with the special <HUPATH>. In order to be able to access the data, you need to store the HU file and the documents in on common folder.

All following columns: Enter variable names and values, i.e. the document families into the subsequent columns. Novels

Categorical variables: For all categorical variables, use a hash (#) as the lead character, as in: #Profession, #Gender, etc. Enter the values as string.

Missing values: Missing values are indicated by a zero (0) and used for documents not assigned to any family.

If a field name or value contains characters resembling the separator for categorical variables, you need to enclose the name or value with quotation marks.

If the HUPATH setup (as the easiest and most flexible project setup) suits your needs, then an Excel table ready for import could look like this:

documents	Name	#gender	#profession	reading novels
P 1	case 1.rtf	male	teacher	0
P 2	case 2.rtf	male	police	1
P 3	case 3.rtf	female	teacher	1
P 4	case 4.rtf	female	teacher	0
P 5	case 5.rtf	female	police	1

Figure 152: An Excel table ready for import as PD-Family table

You simply enter the consecutive numbers for PDs, the document names and the variables.

Save the table as native Excel tab-delimited xls/xlsx file or in csv format.

Open ATLAS.ti.

From the main menu, select **DOCUMENTS / ASSIGN / IMPORT PD-FAMILY TABLE**. This option is also available from the Documents / Miscellaneous menu.

If you are importing into a new HU, a dialog opens, asking you to save the HU before proceeding. This is needed to be able to access "HU follower" documents using the special <HUPATH>:

Save the HU into the same folder where the documents are stored (unless you have entered an @Origin column with user defined path references).

Next a file dialog opens. If you are importing into an existing HU, the standard file dialog window opens immediately. Select the prepared xls/xlsx or csv file and click **OK** to start the import procedure.

If you import a native Excel file (tab delimited with the extension xls), the families are imported immediately. If you select an Excel compatible file format like csv, select the field delimiter: *comma*, *semicolon*, or *tab*.

Once the import is finished a message pops up informing you about the number of families that have been created.

Importing the above table, results in the following HU:

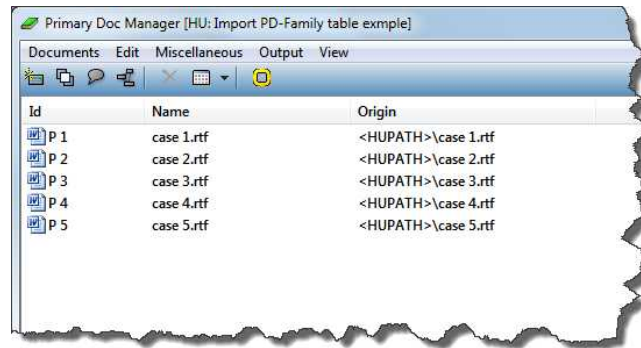


Figure 153: HU file created based on importing a PD-Family table

Five PDs with the names case 1 to case 5 were created, and they access their source document via the HUPATH. This means you need to store the HU file + the five Word documents in rich text format in a common folder as shown below.

If the PDs do not yet exist in the HU, new PDs are created and are assigned to the HU.

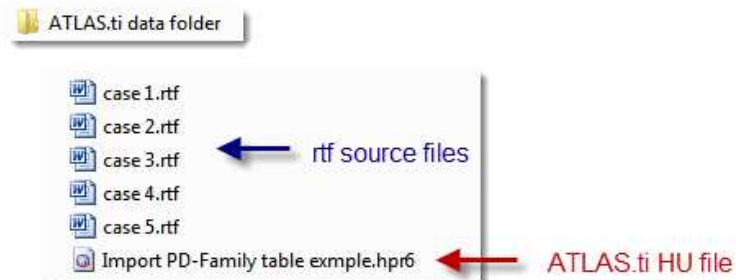


Figure 154: File Management for creating an HU via importing a PD-Family table

Adding new PDs: If your HU already contains PDs, you can assign additional PDs by importing a PD Family table. However, you must be sure that the new PDs are numbered consecutively. If your HU already contains P1 to P10, the numbers of the additional PDs in the documents column need to start at P11. If the document number and path reference do not match an existing reference, then this document is ignored and not assigned as a PD.

Based on the above example table, PD Family Manager shows the following families after importing the table:

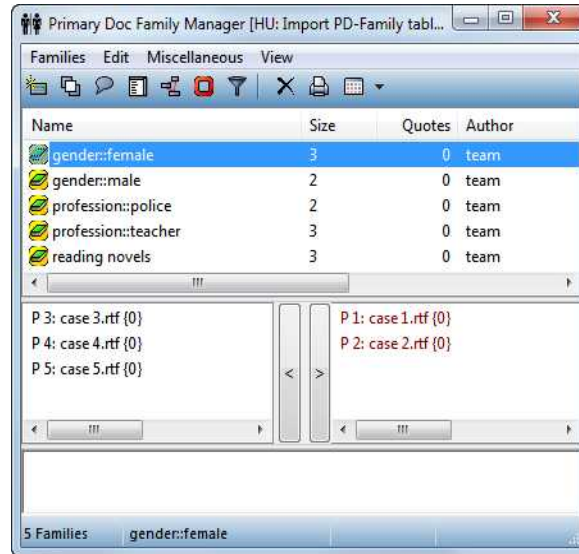


Figure 155: Created PD families after import

Exporting a PD-Family Table

If the documents have already been assigned, exporting a PD-Family table is quite handy as a first step in preparing a table for import. This way ATLAS.ti creates the columns documents, Name, Path and @Origin for you and you do not have to retype the file names. The table can be exported even if no family has yet been created.

If you have named your variable families using a different separator, change the separator when prompted

- Select **DOCUMENTS / MISCELLANEOUS / EXPORT PD-FAMILY TABLE** from the main menu. This option is also available in the PD Family Manager from the Families menu or the context menu.
- You are prompted for a separator value. Click **OK** if you use the default value "::". If you use a different value, change it accordingly.
- Next, select the output format, e.g. **xls**, and click **OK**.
- Finally, specify the output target as usual (see "Output Destinations" on page 391 for details). For example, select **FILE & RUN** for the table to be opened in Excel or OpenOffice Cal immediately

Code Families

Code families in the ATLAS.ti framework are simply named sets of codes

In ATLAS.ti, the term “code family” is used to sort codes into named sets or groups. For example, if you have four categories that are types of actors you can group them into a code family. Four members of the “actors” family might be friends, parents, siblings, and partner.

Creating Code Families from Network Views

This procedure assumes some acquaintance with the network view function (see “The Network Editor ” on page 323). Creating a code family from a Network View’s code nodes might be useful when you need to print all quotations referenced by the codes in the Network View or to filter all codes contained in a Network View.

- Open a Network View.
- From the main menu in the Network Editor, select **SPECIALS / GENERATE FAMILY**.
- You are prompted for a name. The offered default name is the name of the Network View. Accept the name or type in a new name and click **OK**.

Code Families add Analytic Power in Queries

Code families can be used with codes to construct queries using the Query Tool. Families are interpreted in queries as if all its contained codes were combined using the Boolean operator OR. For example, a code family containing the four codes water, fire, air, and earth is interpreted in a query as ‘water OR fire OR air OR earth’.

Furthermore Code Families can be used as filters in combination with the Co-occurrence Tools. They are quite effective in focusing your attention to just the subset of data you are interested in. The Co-occurrence Tools are often used when you want to relate two code categories or two group of codes to each other. Rather than running a query that contains all codes, you create a code family that just contains the codes that you are interested in, set it as filter (e.g. **CODES / FILTER / FAMILIES →**) and then run the Co-occurrence Tree or Table Explorer (see page 300).

A third option is to reduce the number of codes displayed in a Codes-Primary-Documents-Table (see page 311) by setting a Code Family as filter. This is often combined with setting a PD Family as filter as well. This way, you export just the data you want to focus on, instead of producing a large Excel table that contains all documents and all codes.

PD and Code Families in SPSS Jobs

In addition to being used within ATLAS.ti, PD families as well as code families are used when creating SPSS jobs. Both PD and Code Families are a way to aggregate data in SPSS (see “SPSS Export” on page 413 for further detail).

Memo Families

Memo families are useful for sorting and filtering your written reflections about the project. Memos can be separated by type such as theoretical or linguistic (see “Working with Memos” on page 254).

The procedures for creating and handling memo families resemble those for code families.

Working with Memos

Possible uses for memos:
 To take methodological notes
 As a "bulletin board" in team projects
 As a project planning device.
 As a primary document
 To create code lists

Writing memos is an important task in every phase of the qualitative analysis process. The **ideas** captured in memos are often the "pieces of a puzzle" that are later put together in the phase of report writing. **Theory-building**, often associated with building networks, also can involve the use of memos.

Memos are explanatory and descriptive texts that may be **associated with other "objects"** like quotations, codes, or other memos. Memos can also **"stand alone"** – simply as part of an HU. They can contain **methodological notes**; they can be used as a **bulletin board** to exchange information between team members; you can use them to write **notes about the analytical process**, keeping a journal of to-dos. Memos may also serve as a **repository** for symbols, text templates, and embedded objects that you may want to insert into PDs or other memos.

Memos can also be assigned as primary documents, if you want to code them (see page 258 below).

Difference between Memos and Codes

Code names are (or should be) succinct, dense descriptors for concepts emerging during the stage of closely studying the data. They often reduce complex findings to crisp placeholders and/or theoretically relevant concepts.

Beginners often stuff lengthy treatises into a code name, blurring the distinction between codes, comments, and memos and thereby mistaking codes for their more appropriate siblings.

If you find yourself using more than a few words as code word, consider using quotations or the code comment instead.

Like codes, memos have names. These names, or titles, are used for displaying memos in browsers, and help to find specific memos. Just like code names, a memo's title should be short and concise. Don't mix the name with the content!

A comment is a part of another object; a memo is an object by itself.

How Memos and Comments Differ

Memos are very similar to comments in that both are intended to hold lengthy texts, as opposed to codes that are simply naming a concept. Comments exclusively belong to one entity. For example, the PD comment is part of the primary document.

Comments are not displayed in browsers separately from the object to which they are attached. Memos can be associated with more than one object and have an additional **type** attribute, e.g., theoretical, methodological, commentary, etc. They can also be free-standing, unlike comments.

Memo Content

Memos may use plain-text as well as Unicode or Rich Text. The latter allows extended formatting and offers the option to insert pictures, tables etc. You can also include local file names like file://notation.

The Memo Editor

For displaying and editing memos, a modified text editor is used. It is opened via the Memo Manager's toolbar for an existing, selected memo or when creating a new memo.

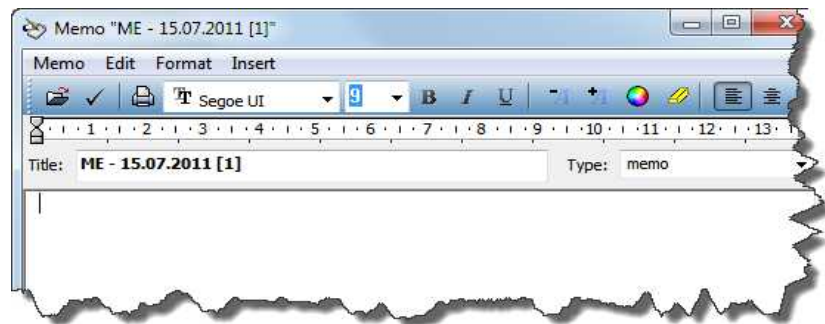


Figure 156: The memo editor

Below the toolbar, the editor includes a title and memo type field. The default title assigned to a newly created memo is: “ME – today’s date”. The title and the default type “Commentary” can be changed by overwriting the default title or by selecting a different memo type.

Various options are available. You can change the default memo title and manage available memo types. You can also be prompted for a title when creating a new memo. For details see “Memo Preferences” on page 259.

After having typed or changed something in the memo editor and before closing the editor, save the contents if you want to keep it. Click on the Save button or select **M**EMO / **S**AVE from the editor’s menu.

Create a free memo



In the Memo Manager, click the **CREATE NEW** button or select **CREATE FREE MEMO** from the HUEditor’s **M**EMOS menu.

A new memo with the default memo title is created. The memo editor opens (default setting).

Change the memo title according to your needs and begin to type the memo.



Save the memo content before moving on to do something else by clicking on the Accept button, or select **Memo / Save** or click **Ctrl+S**. If you forget to save it, you are reminded by the program to do so before closing the editor.

Attaching Memos to Data Segments

The procedure to create and associate a memo with a data segment or an existing quotation is similar to the coding procedures described above (see “General Coding Procedure” on page 199).

Create a memo for a data segment

Select the part of the primary document for which you want to write a memo.

Click the memo button in the primary document toolbar.

If the selected data segment does not resemble an existing quotation, a new quotation is created and the memo is attached. An editor opens and you can start to type.

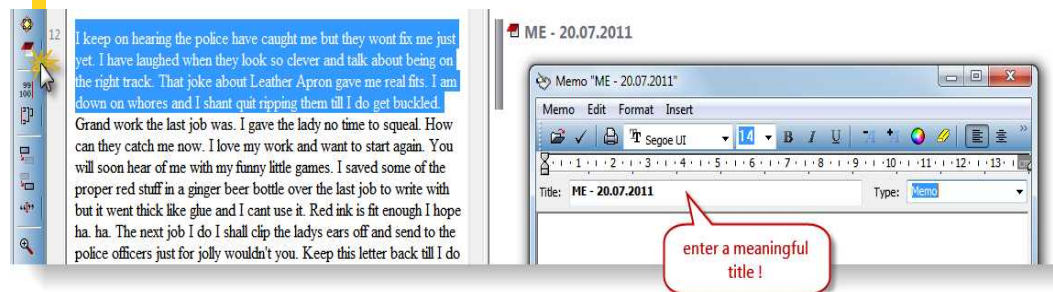


Figure 157: Attaching a memo to a data segment

Adapt the automatically generated memo type and title according to your needs.



You can customize the default values used for memo title and type via **EXTRAS / PREFERENCES / GENERAL PREFERENCES, TAB: MEMOS**.

Attach a memo to a data segment

Select the part of the primary document to which you want to attach the memo.

Select a memo in the Memo Manager and drag and drop the memo to the highlighted data segment (or right click on the memo and select the option **ATTACH MEMO**).

Attach a memo to multiple quotations

One option is to drag a number of quotations from the Quotation Manager onto a memo in the Memo Manager. By using the Quotation Manager, one can comfortably browse and review display quotations before attaching them to the memo.

Another option is to select from a list of quotations:

In the Memo Manager, select a memo.

Choose menu option **LINK MEMO TO:/QUOTATIONS** from the context menu or the Memos menu.

A window pops up showing all quotations that are currently not linked to this memo. Select the quotations to be associated with this memo. Click **OK**.

As a third option you can connect a memo and quotations visually by using the Network Editor (see “To link more than two nodes” on page 331).

Memo Types

Memos can be organized, sorted and filtered by the **type** attribute. Several standard memo types are offered by ATLAS.ti (currently **commentary**, **method** and **theory**). You can add new types or modify existing ones. Memo types may either have a global or local scope. Global types are available in all HUs; local memo types are known only for the HU for which they have been defined.

Memo types are displayed and can be sorted in the Memo Manager's details view in an extra Type column.

Create a local memo type

When creating a new memo, simply overwrite the default memo type displayed in the memo editor's type field with a new type. After saving the memo, this new type may also be used for other memos inside this specific HU.

Add or remove global memo types

Open the General Preferences dialog and select the **MEMOS** tab.

In section 'Global Memo Types' enter a new memo type in the entry field and click the **ADD** button.



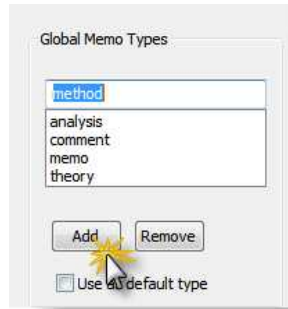


Figure 158: Adding new memo types

To remove a global memo type, select a memo type from the list and click **REMOVE**.

Click **APPLY** and close General Preferences.

The **default memo type** is 'Commentary' unless you have set a different default in the dialog. This default type is used for newly created memos. To change the default type, select another memo type and tick the box 'use as default type'.

Make a local type global

Choose the menu option **MISCELLANEOUS/MAKE TYPE GLOBAL** from the context menu or from the **MEMOS** main menu to make all types of the selected memos global.

Using Memos as PDs

Memos can be assigned as primary documents. How you implement this option in your work depends on the nature of your project, your creativity, and methodological considerations.

Select a memo in the Memo Manager.

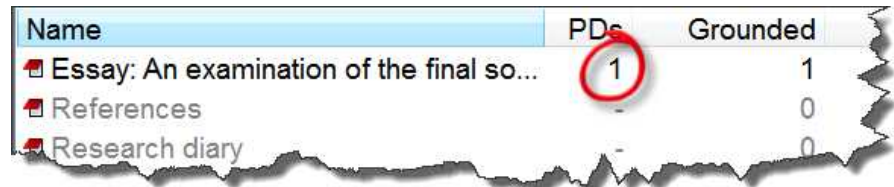
Select the menu option **MISCELLANEOUS/USE AS PRIMARY Doc** from the context menu or the Memos menu. Or, drag the memo into the PD Manager.

Consequences of using memos as PD

Assigning a memo as primary document has two immediate consequences:

- If you want to edit the memo's content, you need to edit the primary document. Once a memo has been assigned as a PD, you can no longer edit the memo in the Memo Manager. The reason is that, as a PD's data source, the memo may be referenced from quotations. Only the PD editing technology guarantees the necessary synchronization after content changes.
- All editing in the primary document also affects the memo. The reason for this is that the data source for the Primary Document IS the memo.

The 'PDs' column in the Memo Manager indicates whether a memo is used as primary document. The number displayed indicates the number of PDs using the memo as a data source. A dash (-) indicates that the memo is not used as a PD.



Name	PDs	Grounded
Essay: An examination of the final so...	1	1
References	0	0
Research diary	-	0

Figure 159: Memo used as PD

Miscellaneous Memo Goodies

Memo Preferences

You may specify a number of settings for memos via **EXTRAS / PREFERENCES / GENERAL PREFERENCES / MEMOS**.

Dragging a Memo to another Hermeneutic Unit

You can drag memos between HUs. This transfers the memo (name, body, type), but none of its referenced quotations, codes, etc., are migrated along.

Using Memos to Create a Code List

Using a "pseudo" memo allows you to bulk-create a large number of free codes:

- Create a new memo.
- Type a list of codes with one code per line, or copy and paste an existing list from an application like Word.
- Save the memo.
- From the **MISCELLANEOUS** menu, choose the option **CREATE CODES FROM SELECTED MEMO**.

Codes in the memo's code list that already exist are prefixed with three exclamation marks. If such prefixed codes already exist, they are ignored.

Drag & Drop Text to Create a Memo

While dropping text into the text pane of the Memo Manager or the memo editor inserts the dropped text at the drop position.

Margin Drag & Drop

Margin
Drag & Drop
can be toggled
on and off via
General
Preferences
"Advanced
Drag & Drop"

All objects populating the margin area (i.e., "margin objects") support drag & drop. The bars visualize quotations segmenting the document, and - depending on the context - the objects attached to the bars represent themselves or the link with the quotation.

The effect of a drag & drop operation depends on the objects that are involved as drag sources (those that are dragged) and targets (those onto which objects are dropped).

A large variety of objects from the margin area can be dropped into the margin area. Furthermore, objects can also be dragged from other object managers and browsers. Objects can be dragged from the margin into other windows and even into "foreign" applications like Word™. In the latter case, the ATLAS.ti objects lose their ATLAS.ti specific "objectness" but at least they render into something useful, e.g., a formatted title and rich text comment.

Move Linked Objects

When an object (e.g., a code, memo, or hyperlink) is dropped on a quotation bar, a new link is created between the object and the quotation represented by the bar. In the figure below, the code 'historic context' is unlinked from its original quotation (silver bar) and linked to the quotation of the target bar.

Replacing a
code: In the
margin drag a
code from one
quotation onto
another code
and the target
code is
replaced.

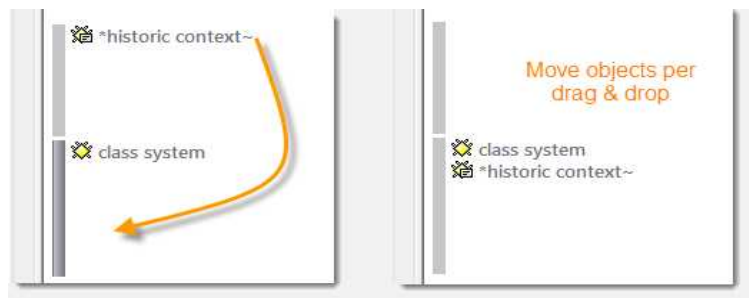


Figure 160: Moving linked objects

Replace Linked Objects

When a margin object is dropped onto another margin object it is replaced. It combines the operation described above with the replacement of the dropped-on object. Three operations are accomplished at the same time: the object is removed from its original quotation, it is linked to the target quotation, and it replaces the object it was dropped on (the latter is unlinked from its quotation).

To copy linked objects: hold down the Ctrl-key and drag a margin object (e.g., a code) onto another quotation bar.

Copy Linked Objects

An object in the margin is unlinked from its original quotation when it is dropped onto another quotation bar or onto another margin object. To keep the object from unlinking from its original place, hold down the **CTRL**-key when dropping. This resembles dragging objects from managers and browsers into the margin area, which does not change existing links.

Linking Quotations

Dragging a quotation bar onto another quotation bar creates a new hyperlink between the two (see “Creating Hyperlinks in Margin Area” on page 366).

Merging Quotations

By holding down the **CTRL**-key you can merge the quotations. The following messages pops up:

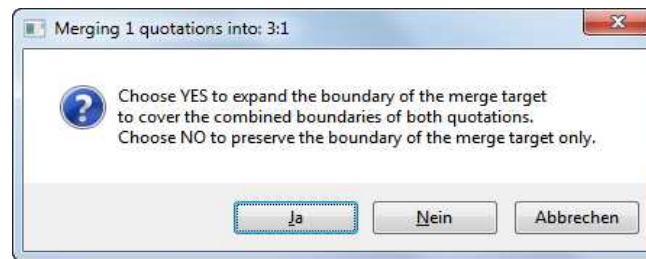


Figure 161: Merging quotations

Click YES, if you want that the new quotations encompassed the length of both of the quotations.

Click No, if you want the dragged quotation to be deleted, thus merged into the target quotation.

Data Analysis and Theory-Building Tools

Overview

Analysis Tools

In the first part of this section, you find a description of exploratory and advanced analysis tools. These are: the word cruncher, the query tool, the co-occurrence tools, the code-primary-documents table, super codes and super families.

Word Cruncher: Creates a word frequency count for textual primary documents (see page 264).

Query Tool: Finds quotations based on a combination of codes like: "Show me all quotations where both Code A and Code B have been applied." Such queries can also be combined with variables in form of PD families. Thus, you can restrict a query to a certain sub groups of your documents: "Show me all quotations where both Code A and Code B have been applied, but only for female respondents between the age of 21 and 30" (see page 268).

Co-occurrence tools: Different from the query tool, where the results are quotations, you can use the two co-occurrence tools to find codes. The tree explorer list all codes on the first level of the tree and if there are more codes that have been applied to the same or overlapping quotations, then you can open the tree branches to see those codes. If you open the tree further, the associated quotations are shown. The second tool, the table explorer, shows a cross-tabulation of codes and within the cells a frequency count of how often each pair of codes co-occurs. The cells also provide access to the data behind them (see page 299).

Codes-Primary-Documents-Table: This table is a cross-tabulation of codes by primary documents. It shows how often a code has been applied to a document (see page 311).

Super Codes are saved queries. They can be reused, e.g. after more coding has been done or after coding has been modified. They can also be used as part of other query, thus, you can build complex queries step by step (see page 282).

Super Families: Like super codes, super families are saved queries based on families. The purpose is to create families on an aggregate level. For instance, if you have your base families for age groups, gender and location, you can create super families that reflect a combination of these base families like all females from age group 1 living in city X (see page 289).

Intercoder-Reliability: To assess intercoder reliability for data coded in ATLAS.ti., you can use the web based tool CAT to calculate Cohen's kappa and Cronbach's α (alpha) On page 315 the functions the tool provides are explained and you find references for further resources on how to prepare ATLAS.ti data for upload.

Tools for Visualization and Theory Building

The first steps of theory building of course already take place much earlier, often already during coding. Ideas are developed further during the process of querying the data. By asking specific questions, you gain more and more insights and start to see how things are related. Memo writing is an essential accompanying activity as well. T

The **network view function** offers further possibilities to explore your data and to visualize your ideas and findings. In a network view editor you can link all objects to each other. Code-code and quotation-quotation links can also be named and commented. Further a number of graphical elements like colored links, the line width, the node or background color can be set. Image documents can be used as thumbnails (see page 318).

Another function discussed below is the creation of **hypertext**. This is a network based on quotations, thus you work on the data rather than on the more abstract coding level. Through hypertext, the original sequentiality of your data is de-linearized, broken down into pieces that are then reconnected, making it possible to traverse from one piece of data to another piece of data regardless of their original positions (see page 360).

The Word Cruncher

This feature offers word “crunching” capabilities for a simple quantitative content analysis. It creates a list of word frequency counts for the selected or all (currently filtered) textual PDs. A stop list and a list of ignorable characters can be used to control the analysis.

Creating a Word Frequency Report



From the main menu, select **DOCUMENTS/ TOOLS / WORD CRUNCHER**, or click the main toolbar’s Word Cruncher button.

A property dialog opens offering a number of options that affect the procedure:

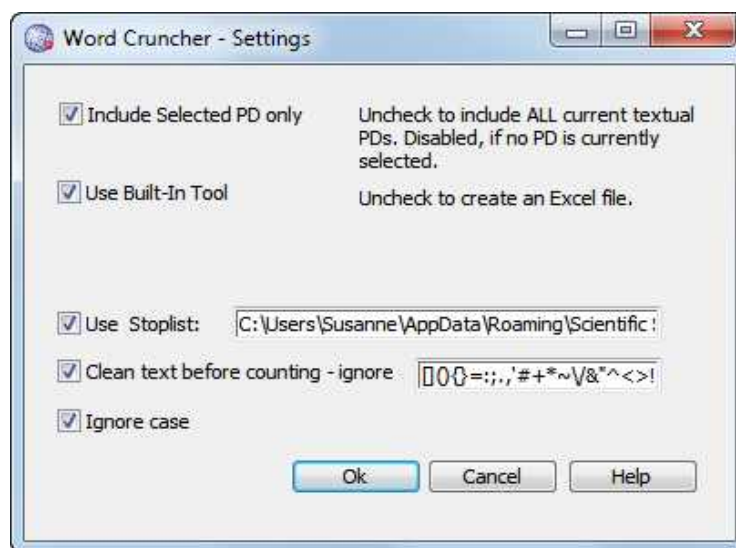


Figure 162: Setting properties to start a word frequency count

You may specify a number of properties before starting the frequency count.

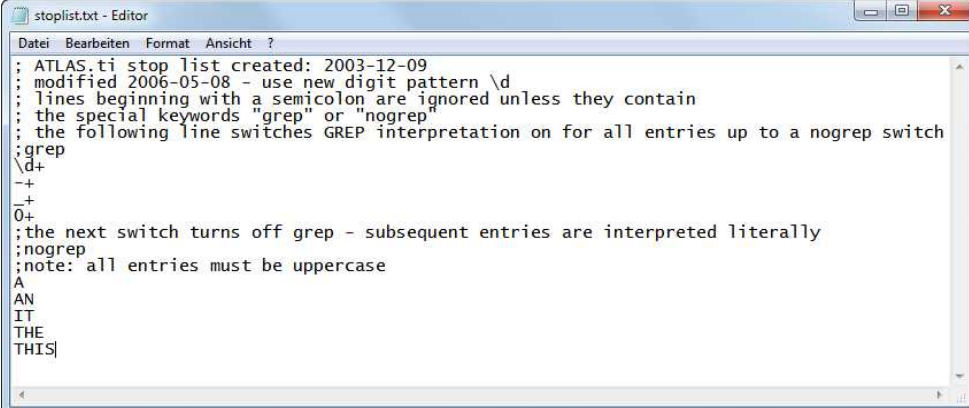
Include Selected PD only: Select the **scope of the count** to be all textual documents or the selected one only.

Use Built-in Tool: If you want to output the frequency count in Excel compatible format, uncheck this option. The built-in tool is a simple list window. In addition to the frequency count, size and percentage for each word is shown. The built-in tool can only be used for a selected PD.

Use Stoplist: Use a stop list to exclude words from the count. Instead of enumerating every variant of a word, you can specify patterns. You can create powerful stop lists for different languages, different topics, and different levels of detail.

The stoplist

The user system folder (**EXTRAS /EXPLORER / USER SYSTEM FOLDER**), contains a sample stop list. The first lines starting with a semi colon contain an explanation of terms that can be used. All lines starting with a semi colon are not included in the frequency count:



```
stoplist.txt - Editor
Datei Bearbeiten Format Ansicht ?
; ATLAS.ti stop list created: 2003-12-09
; modified 2006-05-08 - use new digit pattern \d
; lines beginning with a semicolon are ignored unless they contain
; the special keywords "grep" or "nogrep"
; the following line switches GREP interpretation on for all entries up to a nogrep switch
;grep
\d+
-+
_+
0+
;the next switch turns off grep - subsequent entries are interpreted literally
;nogrep
;note: all entries must be uppercase
A
AN
IT
THE
THIS|
```

Figure 163: Default stoplist

You can use the following regular expressions:

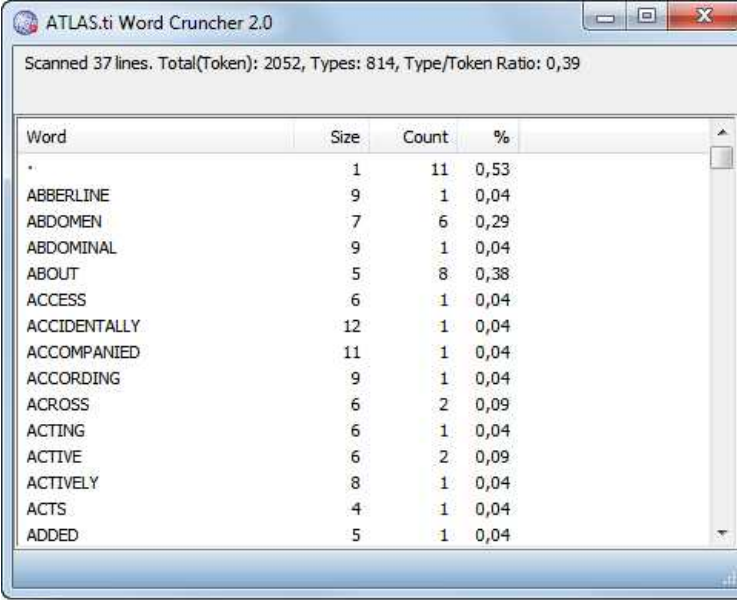
Expression	Effect
:d+	excludes numbers of any length
-+	excludes strings of hyphens of arbitrary size
_+	excludes strings of underscores
0+	exclude sequences of zeros

Clean text before counting – ignore: The characters specified in this dialog will be removed from the source word before it is counted. Example: including " eliminates the difference between "Hello" and Hello.

Ignore case: If checked, upper and lowercase letters are ignored: Hello, HELLO, and hello are not counted separately.

After all options are set, click the **OK** button.

The figure below shows the result when using the built-in tool for a single PD.



Scanned 37 lines. Total(Token): 2052, Types: 814, Type/Token Ratio: 0,39

Word	Size	Count	%
*	1	11	0,53
ABBERLINE	9	1	0,04
ABDOMEN	7	6	0,29
ABDOMINAL	9	1	0,04
ABOUT	5	8	0,38
ACCESS	6	1	0,04
ACCIDENTALLY	12	1	0,04
ACCOMPANIED	11	1	0,04
ACCORDING	9	1	0,04
ACROSS	6	2	0,09
ACTING	6	1	0,04
ACTIVE	6	2	0,09
ACTIVELY	8	1	0,04
ACTS	4	1	0,04
ADDED	5	1	0,04

Figure 164: Word Cruncher output when using the internal tool

When all words are counted, a message pops up informing you that the Excel file can now be opened and where it is stored:

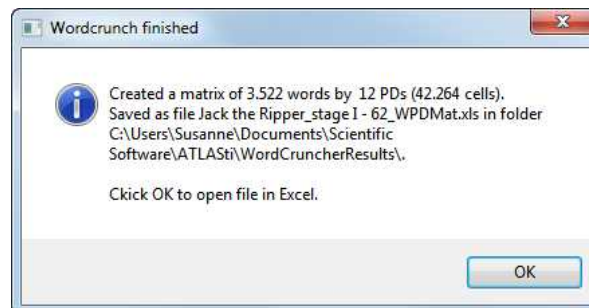


Figure 165: Wordcrunch finished

Of course, you need to have Excel™ installed to be able to see the result.

words	P2	P3	P4	P5	P6	P8	P9	P10	P11	P12	P14	P17
1												
2	0	0	0	0	0	0	0	1	16	0	0	0
3	0	0	0	0	0	0	1	0	2	0	0	0
4 'MERRY	0	0	0	0	0	0	0	0	0	1	0	0
5	0	11	4	0	0	0	0	0	0	0	0	0
6 AARON	0	0	0	0	0	0	0	0	0	4	0	0
7 ABBERLINE	0	1	0	0	0	0	0	0	0	2	0	0
8 ABBERLINES	0	0	0	0	0	0	0	0	0	1	0	0
9 ABDOMEN	0	6	0	2	1	0	2	4	1	0	0	0
10 ABDOMINAL	0	1	0	0	0	0	1	2	0	0	0	0
11 ABDUCTED	0	0	0	0	0	0	0	1	0	0	0	0
12 ABRIF	0	0	0	0	0	0	0	0	0	1	0	0
13 ABILITY	0	0	0	0	0	0	0	0	1	0	0	0
14 ABLE	0	0	0	0	0	0	1	0	1	0	0	0
15 ABORTION	0	0	0	0	0	0	0	0	1	0	0	0
16 ABORTIONS	0	0	0	0	0	0	0	0	1	0	0	0
17 ABOUT	0	8	3	10	4	3	2	15	7	2	0	0
18 ABOVE	0	0	0	0	1	0	1	2	1	0	1	0
19 ABRAHAM	0	0	0	0	0	0	0	0	1	0	0	0
20 ABRASION	0	0	0	0	0	0	1	0	0	0	0	0
21 ABRASIONS	0	0	0	0	0	0	0	1	0	0	0	0
22 ABROAD	0	0	0	0	0	0	1	0	1	0	0	0
23 ABRUPTLY	0	0	0	0	1	0	0	0	0	0	0	0
24 ABSENCE	0	0	0	0	0	0	0	0	1	0	0	0
25 ABSENT	0	0	0	0	0	0	1	0	1	0	0	0
26 ABSOLUTELY	0	0	0	0	0	0	1	0	0	0	0	1
27 ABSTRACTIO	0	0	0	0	0	0	0	1	0	0	0	0
28 ABUSIVE	0	0	0	0	0	0	0	0	1	0	0	0
29 ACADEMY	0	0	0	0	0	0	0	0	3	0	0	0
30 ACCEPTED	1	0	0	0	0	0	0	2	0	1	0	0
31 ACCE	0	1							1	0	1	

Figure 166: Word frequency count displayed in Excel

Use MS Excel™ functionality like sorting by highest to lowest frequency for further exploration.

Working with the stop list

The user system folder (**EXTRAS /EXPLORER / USER SYSTEM FOLDER**), contains a sample stop list (a file named stoplist.txt). The first lines starting with a semi colon contain an commentary, in this case an explanation of terms that can be used (lines that start with a semicolon are excluded from the frequency count):

```

stoplist.txt - Editor
Datei Bearbeiten Format Ansicht ?
: ATLAS.ti stop list created: 2003-12-09
: modified 2006-05-08 - use new digit pattern \d
: lines beginning with a semicolon are ignored unless they contain
: the special keywords "grep" or "nogrep"
: the following line switches GREP interpretation on for all entries up to a nogrep switch
\d+
-+
+
0+
;the next switch turns off grep - subsequent entries are interpreted literally
;nogrep
;note: all entries must be uppercase
A
AN
IT
THE
THIS|

```

Figure 167: Default stoplist

Enter all words you want to be excluded from the count in capital letters, and enter one word per line.

The following regular expressions can be used:

Expression	Effect
:d+	excludes numbers of any length
-+	excludes strings of hyphens of arbitrary size
_+	excludes strings of underscores
0+	exclude sequences of zeros

When you are done, save the stop list and close the window (**FILE / SAVE**, the menu of the text editor appear in the language of your Windows system).

Query Tool

You need the Query Tool for queries using more than a single code.

The **Query Tool** is used for retrieving quotations using the codes they were associated with during the process of coding. This is different from a *text* search: To search for occurrences of text that match a specified pattern or string, you have to use the search function or the Object Crawler (see "Text Search" on page 225 and "The Object Crawler" on page 373).

The simplest retrieval of this kind ("search for quotations with codes") is what you frequently do with the Code Manager: double-clicking on a code retrieves all its quotations. This may already be regarded as a query, although it is a simple one. The Query Tool is more complex in that it can be used to create and process queries that include combinations of codes.

A **query** is a search expression built from operands (codes and code families) and operators (e.g. NOT, AND, OR, etc.) that define the conditions that a

quotation must meet to be retrieved (e.g., all quotations coded with both codes A and B).

By selecting codes or code families and operators, a query can be built incrementally which is instantaneously evaluated and displayed as a list of quotations. This incremental building of complex search queries gives you an exploratory approach toward even the most complex queries.

The Query Tool Window



The Query Tool is launched by clicking the Query Tool button (see left), by choosing **CODES / OUTPUT / QUERY TOOL**, or **TOOLS / QUERY TOOL** from the HU Editor's main menu.

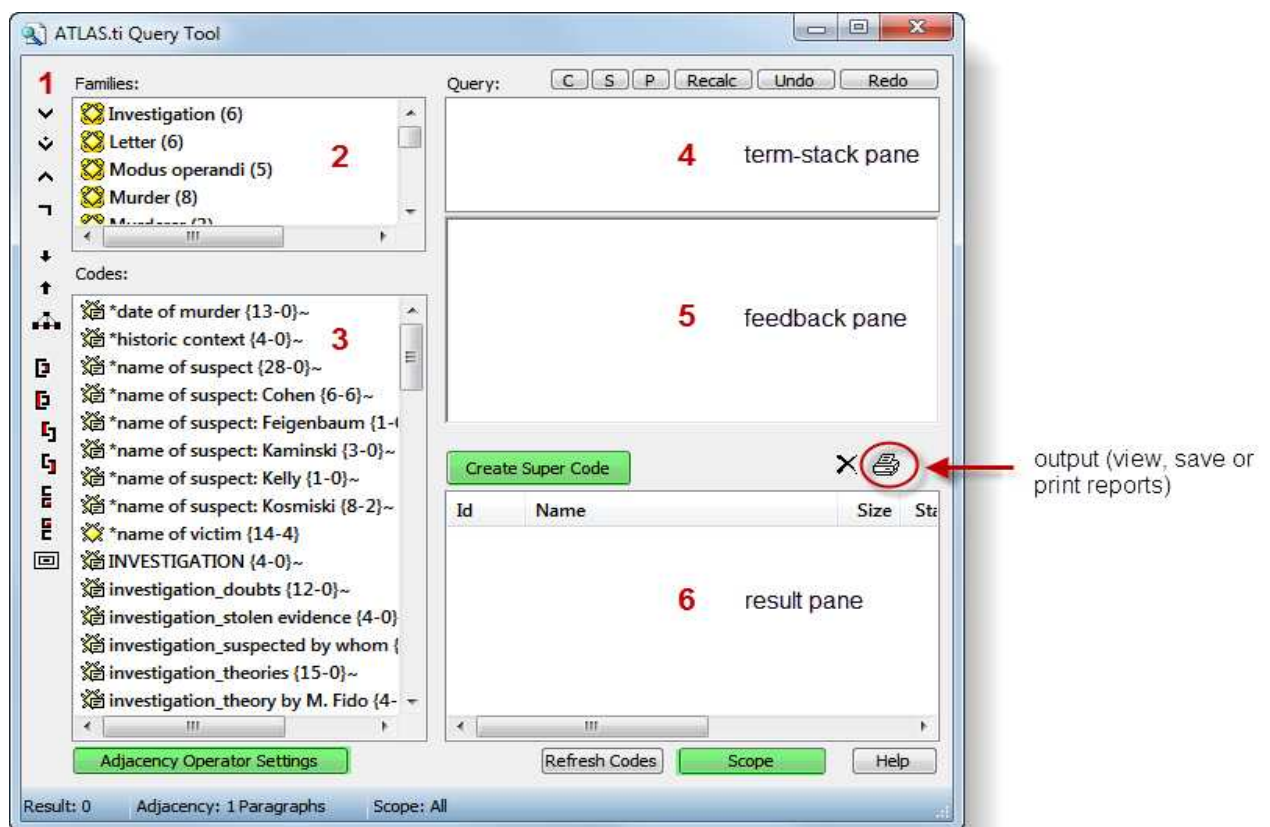


Figure 168: The Query Tool window

The Query Tool has the following main components:

[1] The **operator toolbar**, located near the left margin of the window.

[2] The **code-family pane** in the upper left lists code-families to be used in queries.

[3] The **codes pane** below the code-family pane contains all current codes (set filters do apply).

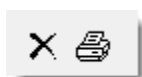
[4] The **term-stack pane** in the upper right displays the stack of all expressions entered in the current query. If more than one entry is visible, there are arguments still waiting to be used in the query. The topmost entry is the current query.

[5] The current query is also displayed in the **feedback pane** directly below the term-stack pane. Here a different notation is used, one that uses parentheses and resembles the calculator style of entering queries.

[6] The result of the query is displayed in the **results list** located in the lower right of the window.

Above the term-stack pane are several buttons for manipulating the stack: swapping (**S**) or duplicating terms (**P**), clearing the stack (**C**), etc.

Close to the results list are two buttons for removing unwanted hits and creating a report.



In figure 163 you see three other buttons highlighted in green. A super code is a saved query (see Super Codes on page 282 for further detail). You need the adjacency operator settings if you want to search for codes near to each other (see Adjacency Operators on page 276). Behind the Scope button you find another important feature. When you click on the Scope button, a second window opens showing the PD families (see page 237) you have created. These are often variables like age, gender, education, profession, location, time intervals etc. The scope function allows you to combine a code query with variables. For instance you can ask for all quotations where you have applied code A and code B, but only for females between the ages of 21 to 30.

Operands

Basic Operands

Two sorts of *basic or atomic operands* may be used in a query: **Codes** and **code families**.

A code represents a set of quotations, while a code family yields the quotations of all the codes that its members have. In other words, a family is interpreted as its member codes connected by the Boolean operator OR. Selecting a code family F1 which contains five codes C1-C5 is equivalent to the query: "C1 OR C2 OR C3 OR C4 OR C5".

Complex Operands

"Operand" does not only apply to basic descriptors. An operand can be **any expression** that itself is used as an argument. An expression "A AND B" may be used in a more complex query as an operand: "NOT(A AND B)", "(A AND B) OR (C AND NOT D)", etc.

All types of operands can be freely mixed in a query using any of the operators described below.

Operators

Three sets of operators are available. They are located within the toolbar at the left edge of the Query Tool.

Boolean operators allow combinations of keywords according to set operations. They are the most common operators used in information retrieval systems.

Semantic operators exploit the network structures that were built from the codes.




Proximity operators are used to analyze the spatial relations (e.g., distance, embeddedness, overlapping, co-occurrence) between coded data segments.


You can display a short help message for each operator by right clicking on its corresponding button in the toolbar.

Boolean Operators

Four Boolean operators are available with the Query Tool: OR, XOR, AND, and NOT.

OR, XOR, and AND are *binary operators* which need exactly two operands as input. NOT needs only one operand. However, as stated above, the operands themselves may be of arbitrary complexity. Codes, code families, or arbitrary expressions can be used as operands: "(A OR B) AND (NOT C AND D)".

	<p>OR</p> <p>The OR operator retrieves all data segments (i.e., quotations) that are coded with any of the codes used in the expression. Example: "All quotations coded with 'Earth' OR 'Fire' ". An example of a more complex formulation based on a combination of queries is: "All quotations coded with 'Earth' OR coded by both 'Fire AND Water' ."</p>
	<p>XOR</p> <p>The OR operator does not really match the everyday usage of "OR." Its meaning is "At least one of...", including the case where ALL conditions match. The XOR operator, in contrast, asks that "EXACTLY one of..." the conditions must meet. It translates into everyday "either-or." Example: "All quotations coded with EITHER 'Earth' OR 'Fire' (but not with both)."</p>
	<p>AND</p> <p>The AND operator finds quotations that match ALL the conditions specified in the query. This means you have applied two or more codes to the same quotation. Example: "All quotations coded with 'Earth' AND 'Fire' ." The AND operator is very selective and often produces an empty result set. "Precision" of this operator is high, but the "recall" is rather low. It produces best results when combined with less restrictive operators or when the overall number of the available text segments is large.</p>

	<p>NOT</p> <p>The NOT operator tests for the absence of a condition. Technically, it subtracts the findings of the non-negated term from all data segments available. Given 120 quotations in the HU and 12 quotations assigned to code "Fire," the query "NOT Fire" retrieves 108 quotations - those which are <i>not</i> coded with "Fire." Of course, the operator can be used with an arbitrary expression as in the argument "NOT (Earth OR Fire)" which is the equivalent of "neither Earth nor Fire."</p>
---	---

The OR operator has the potential to generate a HUGE number of hits. It has high "recall" (a lot is retrieved), but low "precision" (many of the retrieved quotations may not make sense).

Venn diagrams are descriptive schemes for illustrating the different set operations associated with Boolean operators.

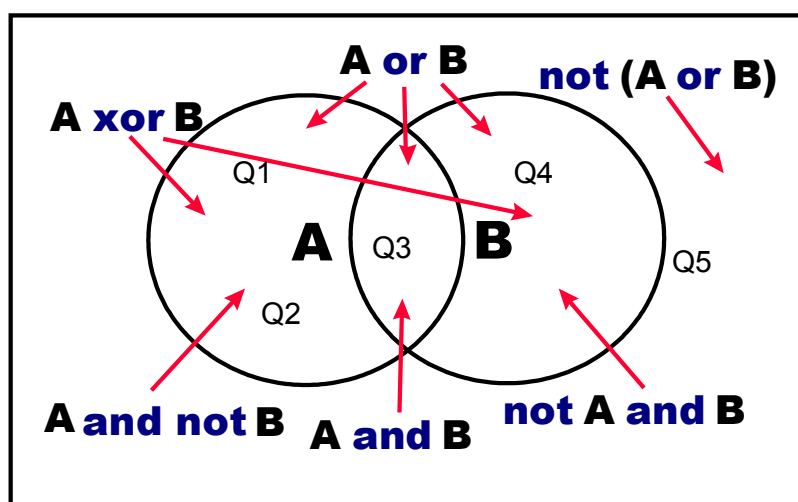





Figure 169: Boolean queries depicted as Venn diagrams

The rectangle encloses the set of all retrievable quotations, e.g. the "document universe." The two circles represent two codes A and B. Q1 to Q5 are quotations coded with A, B, or none (Q5).

Semantic Operators

The Semantic Operator buttons

The operators in this section exploit connected codes resulting from previous theory-building work. While Boolean-based queries are *extensional* and simply enumerate the elements of combined sets (e.g., LOVE or KINDNESS), semantic operators are *intentional*, as they already capture some meaning expressed in appropriately linked concepts (e.g., SUB(POSITIVE ATTITUDES)).

	<p>SUB</p> <p>The SUB (or DOWN) operator traverses the network from higher to lower concepts, collecting all quotations from any of the sub codes. Only "transitive" relations between the codes are processed (see "Relations" on page 321; all others are types ignored. When building a terminology from your codes, use the ISA relation for sub-term links.</p> <p>Example: "All quotations coded with Magic or any (immediate or indirect) sub-term of Magic". Like the OR operator in the set of Boolean operators, the SUB may produce large result sets. However, unlike the OR operator, because you make use of a theory using SUB, the "precision" is much better (i.e., you get only what you expect). Of course, if your network contains dubious connections ("computer ISA intelligent entity"), the quality of your retrieval will decline.</p>
	<p>UP</p> <p>The UP operator looks at all directly linked codes and their quotations on the next higher level.. Unlike the SUB operator, it does not recursively traverse the structure. Only the next level is considered.</p>
	<p>SIBlings</p> <p>The SIBlings operator finds all quotations that are connected to the selected code or any other descendants of its parents. Example: "All quotations coded with Love or any other Positive Attitude (here: kindness)."</p>

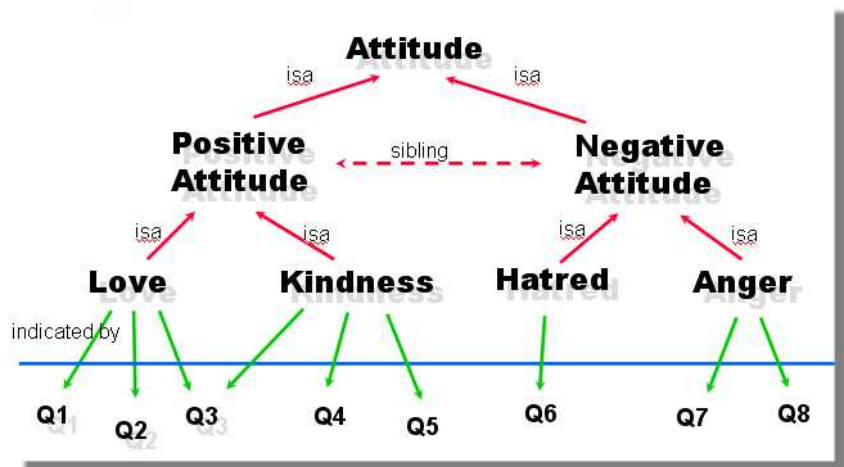


Figure 170: A hierarchy of concepts suitable for semantic retrieval

With such a network of codes the following queries would make sense (Q1 to Q8 = quotations):

SUB (Positive Attitude) => {Q1, Q2, Q3, Q4, Q5}

SUB (Negative Attitude) => {Q6, Q7, Q8}

SUB (Attitude) => {Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8}.

Proximity Operators

The Proximity Operator buttons

Proximity describes the spatial relation between quotations. Quotations can be embedded in one another, one may follow another, etc. The operators in this section exploit these relationships. They require two operands as their arguments. They differ from the other operators in one important aspect: proximity operators are *non-commutative*. This property makes their usage a little more difficult to learn.



Non-commutativity requires a certain input *sequence* for the operands. While "A OR B" is equal to "B OR A", this does not hold for any of the proximity operators: "A FOLLOWS B" is not equal to "B FOLLOWS A". When building a query, always enter the expressions in the order in which they appear in their natural language manifestation.

Because of non-commutativity, every proximity operator comes in two versions.

Another important characteristic for these operators is the specification of the operand for which you want the quotations retrieved. "A WITHIN B" specifies the constraint, but you must also specify if you want the quotations for the As or the Bs. This is done implicitly by the sequence. The code (or term) that is entered first is the one in which you are interested. If B's quotations are requested, you have to enter "B ENCLOSES A" using the query language described below.

Embedding Operators

The *embedding* operators describe quotations that are contained in one another and that are coded with certain codes.

	<p>WITHIN</p> <p>A WITHIN B retrieves all quotations coded with A that are contained within data segments coded with B.</p>
	<p>ENCLOSES</p> <p>A ENCLOSES B retrieves all quotations coded with A that contain quotations coded with B.</p>

Overlap Operators

The *overlap* operators describe quotations that overlap one another.



	<p>OVERLAPPED_BY</p> <p>A OVERLAPPED_BY B retrieves all quotations coded with A that are overlapped by quotations coded with B.</p>
	<p>OVERLAPS</p> <p>A OVERLAPS B retrieves all quotations coded with A that overlap quotations coded with B.</p>



Figure 171: Visualizing the spatial relations between segments

If you want to retrieve all segments for “reason suspected: behavioral clues” related to the code “murderer_description”, you would need to click:

“reason suspected: behavioral clues”, “murderer_description”, WITHIN

If you enter: “murderer_description”, “reason suspected: behavioral clues”, WITHIN, the query tool would not deliver any results or the data segments shown in figure 171.

If you enter , “murderer_description”, “reason suspected: behavioral clues” ENCLOSES, then the query tool retrieves the larger segment “murderer_description” that does contain the behavioral clue. But then you need to read more than you need if you are only interested in the behavioral clues.

If you are interested in the code “alibi” as reasons for having released a suspect in relation to the description of the murderer, then you click: “reason released: alibi”, “murderer_description” overlaps.

If you want to find out about the name of the suspect related to behavioral clues, you enter “name of suspect”, “reason suspected: behavioral clues” WITHIN.



From the above example we have learned that a) you begin with the codes whose content you are most interested in, and b) you first enter the codes and then you select an operator. See is explained in more detail below in the section “The Query Language”.

Often when interested in the relation between two or more codes, you don't really care whether something overlaps or is overlapped by, or is within or encloses. If this is the case, you simply use the Co-occuRE operator, which is a combination of WITHIN, ENCLOSES, OVERLAPS, OVERLAPPED BY and AND.

Nonetheless these very specific operators are also very useful for specific type of data. Think of video data where it might be important whether action A was already going on before action B started or vice versa. Or if you have coded longer section in your data like biographical time periods in a person's life and then did some more fine-grained coding within these time periods. Then the WITHIN operator comes in handy. The same applies when working with pre-coded survey data. ATLAS.ti pre-codes your questions, then you do some further coding. This enables you to ask for instance for all quotations coded with “topic x” WITHIN question 5.

Adjacency Operators

The *distance* operators describe a sequence of disjoint quotations. The maximum distance may be specified. Possible base units are characters and paragraphs for text, milliseconds for audio files, frames for video data and pixels for images.

	<p>FOLLOWS</p> <p>A FOLLOWS B retrieves all quotations coded with A that follow quotations coded with B.</p>
	<p>PRECEDES</p> <p>A PRECEDES B retrieves all quotations coded with A followed by quotations coded with B.</p>

Adjacency Settings

To set the distance, click on the “Adjacency Operator Settings” button. Then select a base unit and specify the maximum distance.

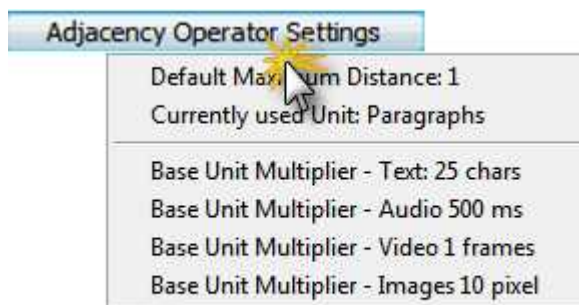


Figure 172: Adjacency operator settings



The Co-occurrence Operator

Co-occurrence is essentially a short-cut for a combination of all the basic proximity operators except **FOLLOWS** and **PRECEDES**.

A CO-OCCURRING WITH B: Find all quotations that co-occur with B (in whatever way).

The procedures used for calculating co-occurrence for two codes is also used in the Network Editor when importing co-occurring codes into a network view. See "Import Co-occurring Codes" on page 339.

The Query Language

Queries are built step-by-step from operands and operators using the principle of **Reversed Polish Notation (RPN)**. This sounds complicated, but it is actually quite easy. See for example:

http://en.wikipedia.org/wiki/Reverse_Polish_notation

RPN, invented by Polish mathematician Lukasiewicz, does not require parentheses to control the priority of operators, nor does it require any other characters like commas, periods, etc. Every click produces a meaningful result and it is impossible to create syntactically wrong queries.

Operands First, Operators Next

The most important point to understand about RPN is the *order* in which operands and operators of a search expression are entered. Using RPN, operands (codes, code families) are entered first, followed by one or more operators. This is an unusual method for most of us who are familiar with notations where operators are placed *between* the operands, as in "3 + 5". Most calculators use this type of notation, also called "infix" notation.

Two aspects must be distinguished: how we read expressions and how we formulate them with a "point and click" language. The infix notation is usually easier to read, but the "postfix" notation is far easier to use when creating

Infix notation:
good for
reading.
Postfix
notation: good
for clicking.

queries using mouse-controlled direct manipulation user interfaces like Windows.

An Arithmetic Example

Here are some simple arithmetic examples using an RPN calculator:

Arithmetic expression	RPN expression
Example 1: $3 + 4$	3 4 +
Example 2: $3 + (4 * 5)$	4 5 * 3 +
Example 3: $(3 + 4) * 5$	3 4 + 5 *

No parentheses are needed in expressions using RPN notation. The precedence of the operators is controlled solely by the order in which operands and operators are entered.

The result of any query is a set of quotations.

Build complex queries incrementally with immediate feedback after each step.



Creating a Query with the Query Tool

The retrieval of quotations with the Query Tool differs from the arithmetic example above by the result in which we are interested.

We are really not interested in the operands (codes, code families) themselves, but in the set of quotations that is the result of *evaluating* an operand. By formulating a query "A OR B," this is what we really mean: "Quotations coded with code A OR quotations coded with B." Therefore, entering the operand code "X" displays the quotation names which were coded with "X" in the results list. Next, you can either view the resulting quotations in context within the primary document, or generate a report that contains the full length quotations with or without their comments.

A Boolean Query

The example below uses the HU "Jack the Ripper_stage II." Please load and display this HU while reading the following. You can access the samples file, via **HELP / QUICK TOUR**.

Our sample query, using Boolean operators, is this: "Find all quotations coded with either code *reason released: alibi*" or code *reason released: lack of evidence*".

Open the Query Tool by clicking on the binoculars button in the main toolbar.

Double-click on the code *reason released: alibi*". The Query Tool displays the following entries:

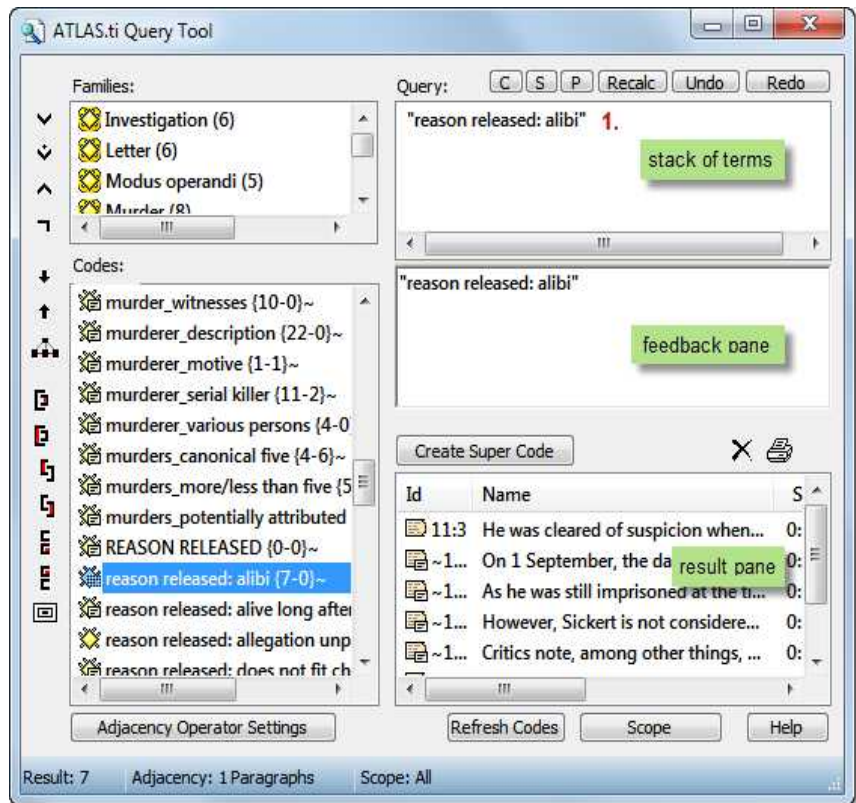


Figure 173: Clicking a Boolean Query: Step 1

The *term stack* and feedback pane now display the code "reason released: alibi". The results pane lists all quotations for this code.

- Double-click on the code "reason released: lack of evidence".

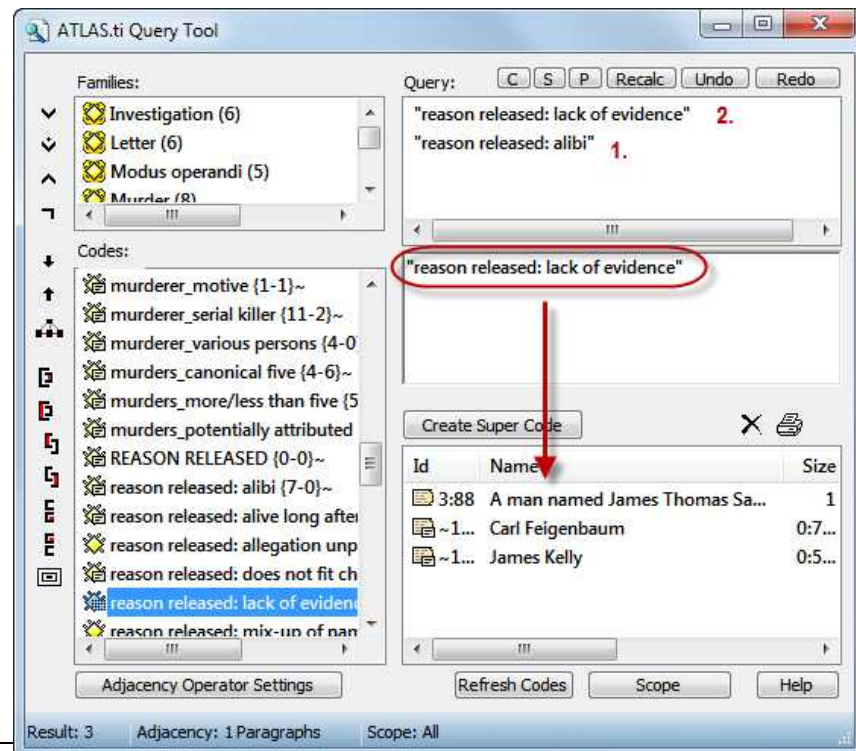


Figure 174: Clicking a Boolean Query: Step 2

With two operands on the term stack, we can combine them with an appropriate operator. The intention was to retrieve all quotations that contain information about an alibi or lack of evidence as reasons to release a suspect.

Click on the OR operator (see left) to combine the two expressions from the stack.

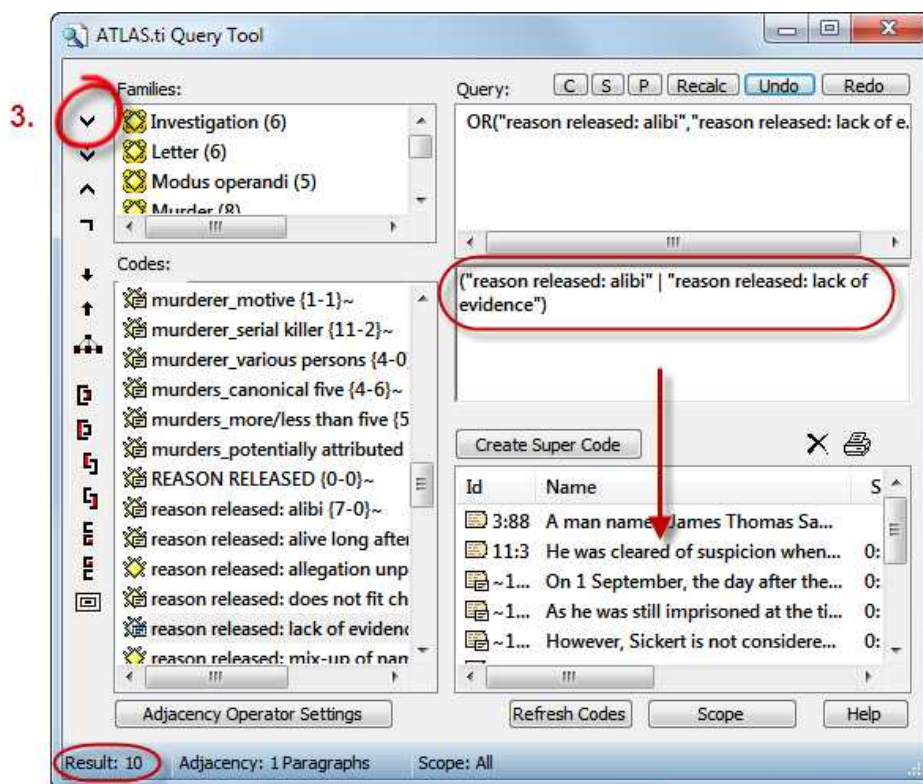


Figure 175: Clicking a Boolean Query: Step 3

The term stack now contains only one term, OR("reason released:alibi", "reason released: lack of evidence"), i.e. the combination of the two codes. This term can be used as an operand to further extend the query, e.g. to negate the expression or add some more codes to it. But we will stop here for now.

The feedback pane displays the query in infix notation, as we would have entered it into a regular calculator ("reason released: alibi" OR "reason released: lack of evidence"). The results pane lists 10 quotations.

You can look at the quotations in the context of the document by clicking on a quotation in the list, or you can create a report.

Output of Query Results

Viewing results in context

Make sure that the Query Tool does not completely obstruct the area where PDs are displayed.

Click on a quotation in the results pane.

The quotation is highlighted in the primary document pane:

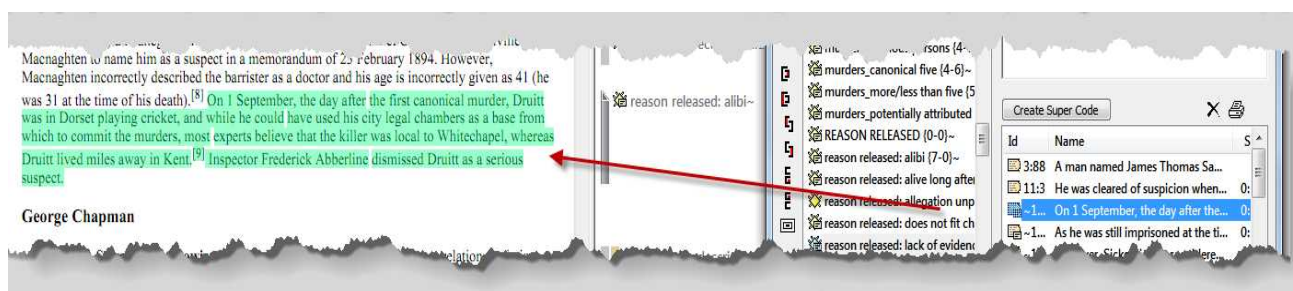


Figure 176: Viewing results in context

Creating a Report

To print all hits found by a query, click the **PRINTER** button to the right of the results list.

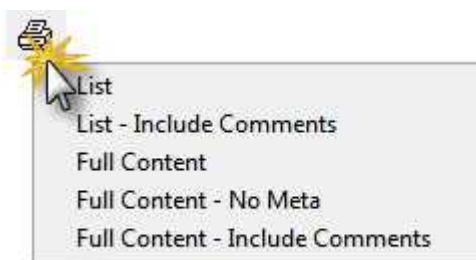


Figure 177: Output options

Select one of the following report options:

- **LIST:** Print a list of all quotations in a compact format showing only the quotation names.
- **LIST – INCLUDE COMMENTS:** Same as **LIST** but includes the quotations' comments if any.
- **FULL CONTENT:** Output the *complete text* of the quotations.
- **FULL CONTENT – NO META:** Output the *complete text* of the quotations and specify the kind of information that is included in the output. You may for example exclude the meta information for each quotation.
- **FULL CONTENT – INCLUDE COMMENTS:** Same as **FULL CONTENT** but includes the quotations' comments if any.

Then, choose whether the output should be displayed in a text editor, saved to disk, or printed (see also “Output Destinations” on page 391).

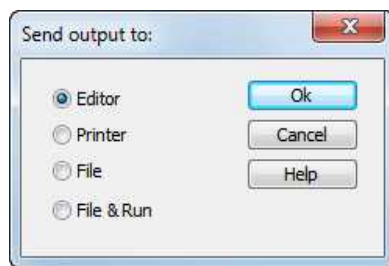


Figure 178: Select output destination

Cleaning up the Hit List

Before creating a report of all the quotations found by the query, you have the option to remove entries from the hit list. You can remove unwanted hits from the list using the erase button right next to the printer button. You could, of course, reformulate your query to improve the precision.

This is how you clean up the hit list:

- Select an unwanted quotation in the hit list.
- Click the **ERASE** button (see left).



"Intelligent"
Super Codes
compute their
quotations "on
demand".

Super Codes

Super Codes are a convenient way to store queries. Super Codes are very similar in look and feel to normal codes, with one important difference: instead of “hardwired” connections to quotations, Super Codes store a query to compute their virtual references whenever needed.

They “automatically” change their behavior during the course of theory building. If you have a Super Code “All about Magic” with a query “SUB Magic” and later add another sub code “White Magic,” all quotations to which the latter code refers are also retrieved by the (unchanged) query of “All about Magic.” Super Codes can be clicked on in the code list like any other code and they will display their quotations in an identical way.

Normal codes are “hard-wired” to their quotations.

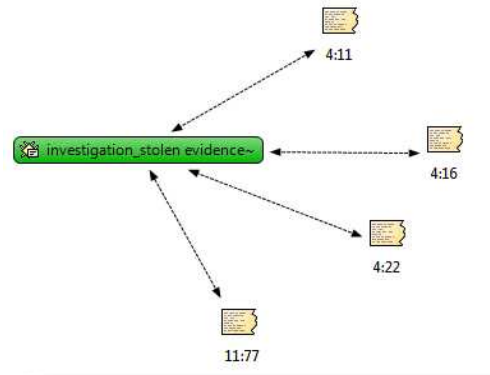


Figure 179: Codes are hard-wired to their quotations

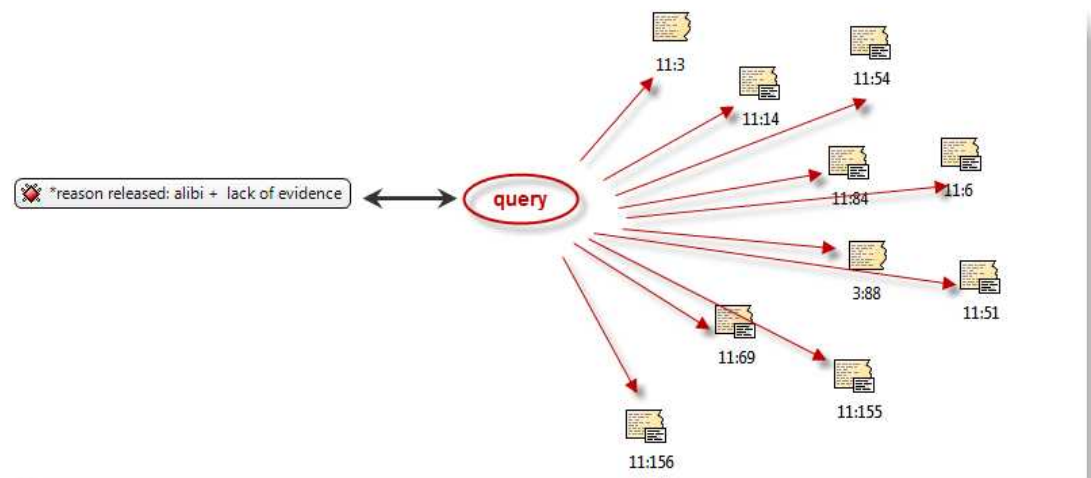


Figure 180: Super codes are linked to quotations via a query

Super codes are displayed in the Code Manager just like regular codes and can be recognized either by a red text color or by their red symbol, if images are switched on in the Views menu. The list of quotations associated with the Super Code can be displayed with a double-click, just as for any other code. Frequencies (density) are only indicated if you activated it, e.g. with a double-click in the Code Manager. If you start a new session, an asterisk (*) replaces the frequency count. The reason for this is that a Super Code is dynamic and its density/frequency count changes as soon as you modify any of the codes contained in the query of the Super Code. For the same reason, Super Codes are *not* displayed in the margin area. There is the possibility to create a regular code from a Super Code (see “Snapshot Codes” on page 286).

Super Codes
can contain
Super Codes
can contain....

Super Codes can be used in code families, Network Views, and, last but not least, as powerful operands in queries, allowing you to incrementally build complex queries.

Creating Super Codes

To create a Super Code, you must have already constructed a query using the Query Tool which is displayed in the term stack. Note that because Super Codes are “intentional,” you can also create a valid and useful Super Code with an empty results list (which might well change in a later stage of your analysis).

- Click the “Super-Code” button in the query tool between the feedback pane and the result pane.

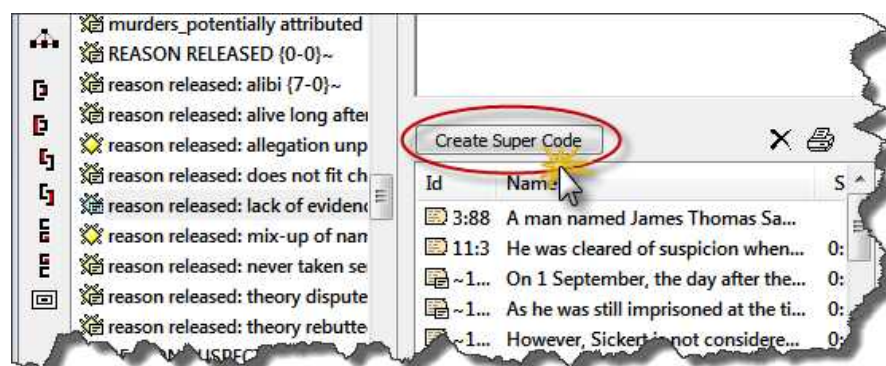


Figure 181: Location of super code button in the query tool

- Enter a name for the new Super Code or accept the default name created from the query expression. Click **OK**.

- The newly created Super Code immediately appears in the list of codes and can be used for new queries (and Super Codes) right away. Its icon and code name are red.

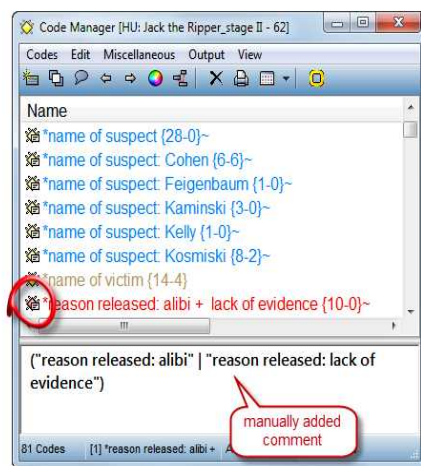


Figure 182: Display of super code in the Code Manager

You can access and edit the query later, but the notation that is used in the edit query window is not so easy to understand. Therefore it is advisable that you enter the query into the comment field of the super code. You can copy and paste it from the feedback pane into the comment field.

Editing a super code

If you want to edit the query a super code is based upon, highlight the super code in the Code Manager and select **MISCELLANEOUS / EDIT QUERY** from the menu.

Click on the **Help** button for instructions.

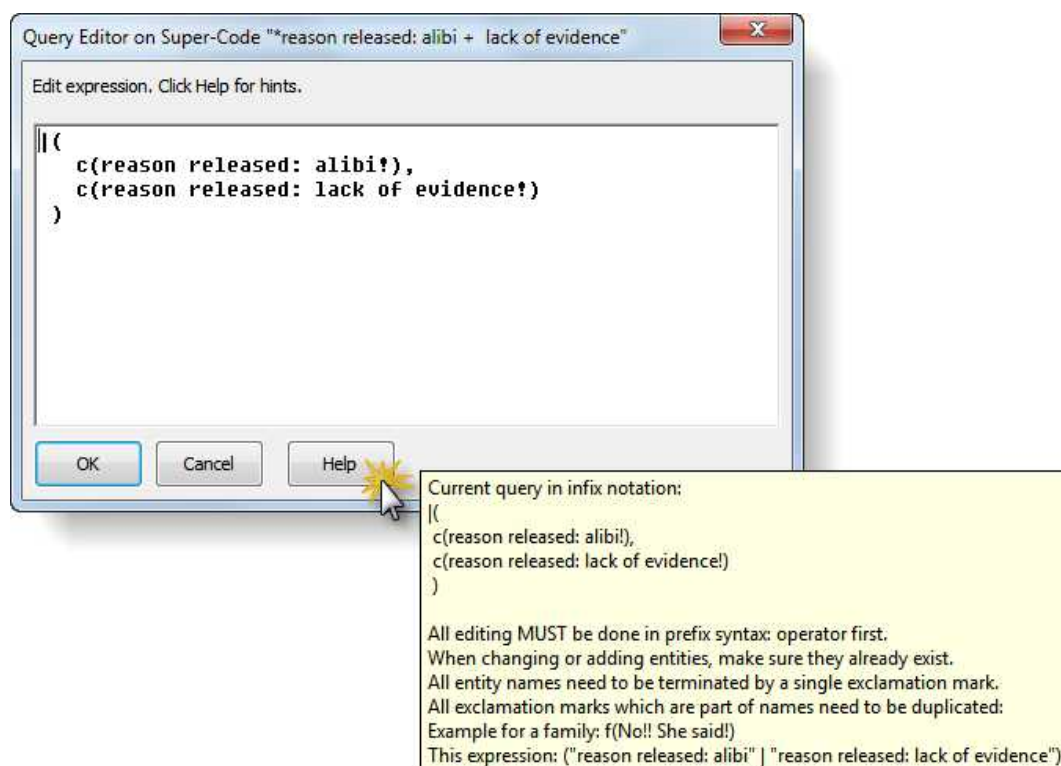


Figure 183: Editing a super code query

Auto-Optimization of Super Code Queries

In order to take into account quotations that were manually removed from the hit list in the result pane of the Query Tool, the system must modify the query before a Super Code is created. Otherwise it would display the full set retrieved by the original query. To accomplish this task, a "suppressor" code is created, which refers to the quotations removed from the hit list.

Example: The original query "All quotations coded with Sanity or Health" (Sanity OR Health) yields 4 quotations 1:1, 1:2, 1:3 and 3:1. From the hit list, quotation 1:1 and 1:3 are removed. The query is now modified by creating a

new “suppressor” code **Q1 referencing 1:1 and 1:3. The original query is modified as follows:

(Sanity OR Health) AND NOT (**Q1)

And returns exactly what you want: quotations 1:2 and 3:1.

Both the Super Code's and the suppressor code's automatically created comment reflect their mutual dependency.

A suppressor code cannot be deleted before the referring Super Code is deleted.

Super codes cannot be used for manual coding.

What You Cannot do with Super Codes

As Super Codes are not directly associated with quotations, certain restrictions apply.

Coding: The most important constraint is that you cannot associate them with quotations directly. Therefore, Super Codes are not presented when doing “code by list,” and drag & drop onto data selections is prohibited.

Merging: Code Merge operations including Super Codes are also not possible.

Prevent Cycles: If you created a Super Code whose query contains a reference to a code family, you cannot assign this Super Code to the code family later. This would create a cyclic structure and is therefore disallowed.

Snapshot Codes

A Snapshot Code is a normal code that records the current state of a Super Code by way of “hard-wired” links to the derived quotations. By creating a snapshot from time to time, you can analyze the development of a Super Code.

Unlike the Super Code, a code created by the snapshot is displayed in the margin area and can be used for further coding. The default snapshot code names are suffixed with [SN<number>].

How to create a snapshot

- Select a Super Code in the Code Manager.
- From the **CODES / MISCELLANEOUS** menu, select option **CREATE SNAPSHOT**.
- The newly create code appears in the Code Manager. The code icon turns yellow, the characters of the code name appear in black and the post-fix [SN1 + a consecutive number] is added to the name. The frequency count is permanently displayed as the snapshot code is no longer dynamic.

reason released: alibi + reason released: lack of eviden.. {-1}

*reason released: alibi + reason released: lack of eviden.. [SN 1] [10-1]~

Figure 184: A super code and its snapshot

Restricting Code Queries to Sub Groups

You can specify the documents that are to be considered in a query. By default, the query's "document universe" is *all* PDs currently filtered in the HU Editor. Clicking Scope opens another window that shows the PDs in the lower left pane and the PD families in the upper left pane. As PD families can be looked at as nominal variables, it is easy to preselect "all interviews with male interviewees aged between twenty and thirty from small towns.

A restricted set of operators is offered (note that only Boolean operators make sense here) and can be used to construct scope selection queries in much the same way as the query itself.

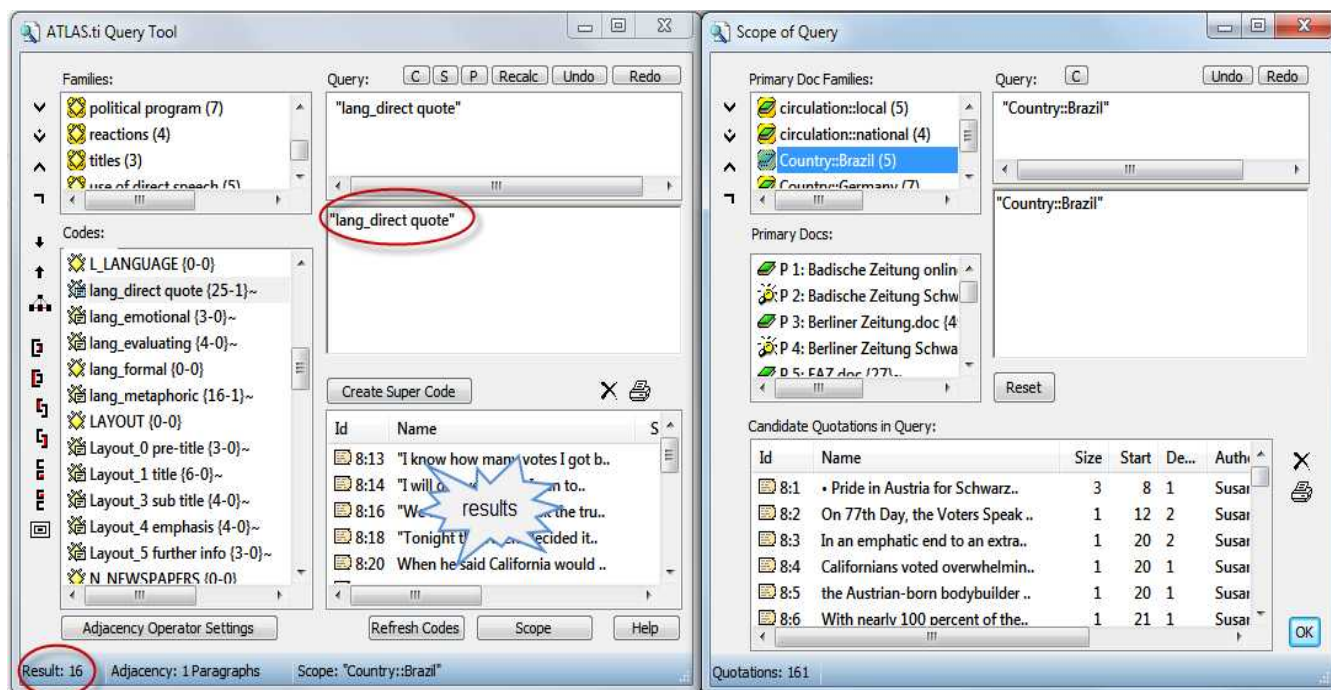


Figure 185: Restricting a search to a sub group of data

Figure 185 above shows a simply query for the code "lang_direct quote" (use of direct quotes in newspapers articles).

The question of interest is whether this writing style is used equally across the various newspapers. The two countries compared are Germany and the USA. The frequency for all documents is 25 (see the code in the code list on the left hand side).

The scope is set to the PD family "Country::USA". This means that the result pane is filtered only displaying quotations from US newspapers. This results in 16 quotations, which can be seen at the bottom left of the query tool window.

Double-clicking on the PD Family "Country:: Germany" in turn yields the remaining 9 quotations (16 + 9 =25). Further comparisons could be by circulation, local versus national papers, or by political orientation comparing papers that are more politically right or left oriented.

For the results always look at the result pane of the query tool window. The bottom pane of the Scope of Query window shows all quotations from the selected document group. In mathematical terms, the result pane in the query tool window shows the intersection between the code query and all quotations from a particular document group.

You can also combine a number of PD families or individual PDs using Boolean operators in the Scope of Query Window (see "Combining group of documents to restrict searchers" below).

A scope is not stored as part of a Super Code's query specification. When you process the query of a Super Code later, the complete data base is queried by default.

Combining group of documents to restrict searchers

A combination of document families like all females in age group II (31-40) from New York is clicked in the same way as you click a code query. You first select two or more PD families and then you select one or more operators:

- Create a query.
- Click on the **Scope** button.
- To create the above described subgroup, you would double click on the three families: female, age group II and City::New York. Then you click on the **AND** operator twice.

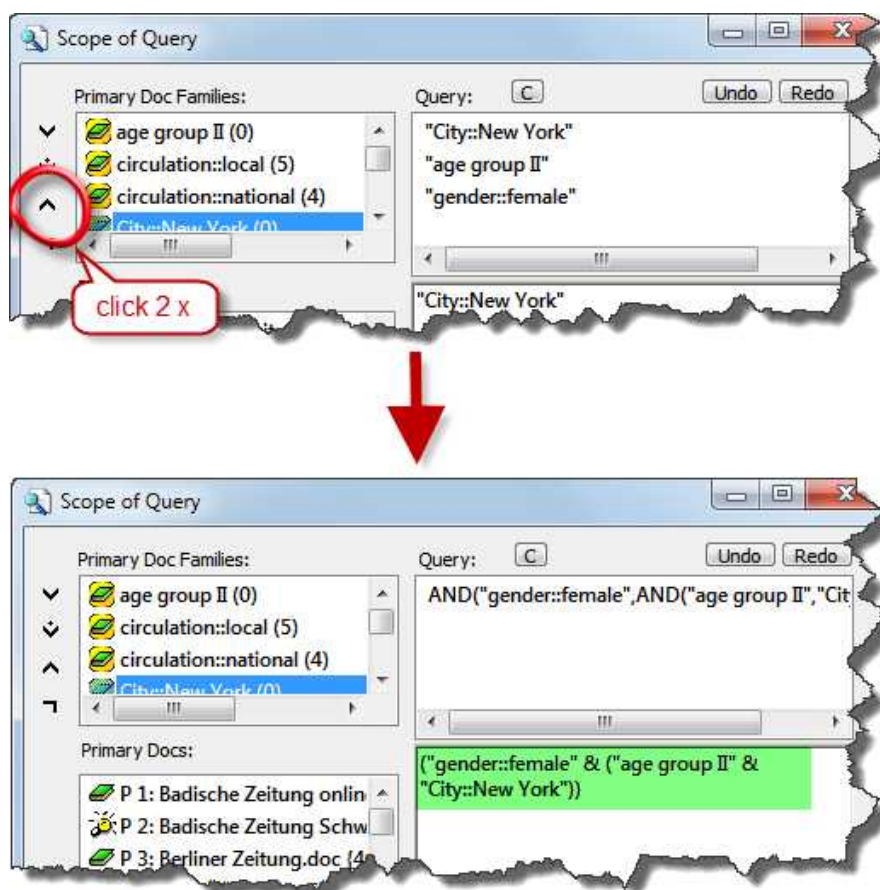


Figure 186: Combining document families to set the scope

Super Families

Just like Super Codes, Super Families re-calculate their members "on demand."

Super Families follow the same underlying logic as Super Codes (cf. "Super Codes" on page 282). They are constructed by combining families or already existing super families.

Their members are determined *dynamically* whenever you activate a Super Family. Super families can be created based on primary document families, code families and memo families. Below an example is shown for primary document families. Creating super code or super memo families works in the same way.

Using Super Families

Example

You are working in the Customer Department of an airline and have been given the task to analyze customer complaints. As basis for your analysis, you have a set of documents dealing with customer complaints about domestic flights and a set of documents dealing with customer complaints about international flights. Your company is particularly interested in differences between domestic and international flights and differences between business and leisure travelers. Important factors to analyze might be gender, level of income, and frequent-flyer status.

The matrix below is based on the four customer groups:

Domestic Flights	International Flights
Business traveler	Business traveler
Leisure traveler	Leisure traveler

To represent these four groups in ATLAS.ti, you create primary document families. Next, you code the data. For example, you may use codes such as "punctuality," "general service," "in-flight services," and "human interaction" to describe complaints customers had.

After coding, you can use the query tool in combination with the scope function to find out how the four groups differ in terms of their complaint behavior.

- Open the Query Tool.
- Double-click on the code containing the information you are interested in, e.g., complaints about 'in-flight services.'
- Click **Scope** to restrict the search to a specific sub groups of your data, e.g. business travelers on domestic flights:
- Double-click on the PD family '*Domestic Flights*' and on the PD family '*Business Traveler*' and combine them using the **AND** operator.
- The result pane of the Query Tool now displays all quotations related to complaints about in-flight services from business travelers on domestic flights.

In order to compare the four groups in regard to different types of complaints, the steps above need to be repeated.

Having frequently used combinations of families available as Super Families eases such tasks considerably. Below, a step-by-step instruction on how to create Super Families is provided.

How to create a Super Family



Open a Family Manager and click the Super Family button, (or select **FAMILIES / OPEN SUPER FAMILY TOOL** from the menu). The Super Family Tool opens:

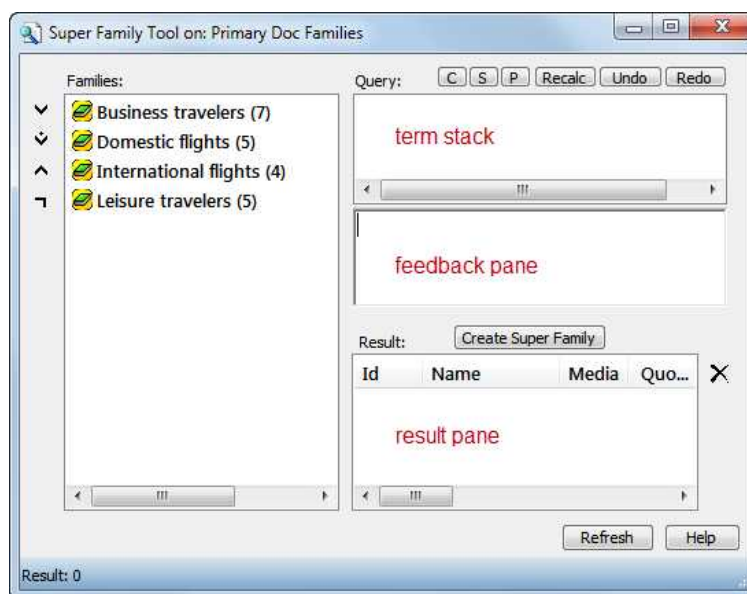


Figure 187: Super Family Tool for Primary Document Families

The Super Family Tool is like a reduced Query Tool (see “Query Tool” on page 268 for details). In the left pane, the available families are listed. For our example above, there are four regular families. The panes on the right-hand side (from top to bottom: the term stack pane, the feedback pane and the result pane) display information once you begin to create a combination of families. The buttons above the stack pane are described in the context of the Query Tool (see “Stack Management” on page 296).

To create a Super Family combining two families (such as “domestic flights” and “business traveler”), do the following:

- Double-click on family ‘*Domestic flight*’. It is displayed in the stack pane.
- Double-click on the family ‘*Business travelers*’. It is “pushed” on top of the stack. Now you have two families on the stack that can be combined with one of the operators.

In order to create a group of all business travelers on domestic flights, click the **AND** operator. This operator “fetches” the two families from the stack and creates the combined expression.

The stack now contains the query expression in prefix notation, the feedback pane shows the infix notation of the query, which is better to read and understand. The resulting items are displayed in the results pane.

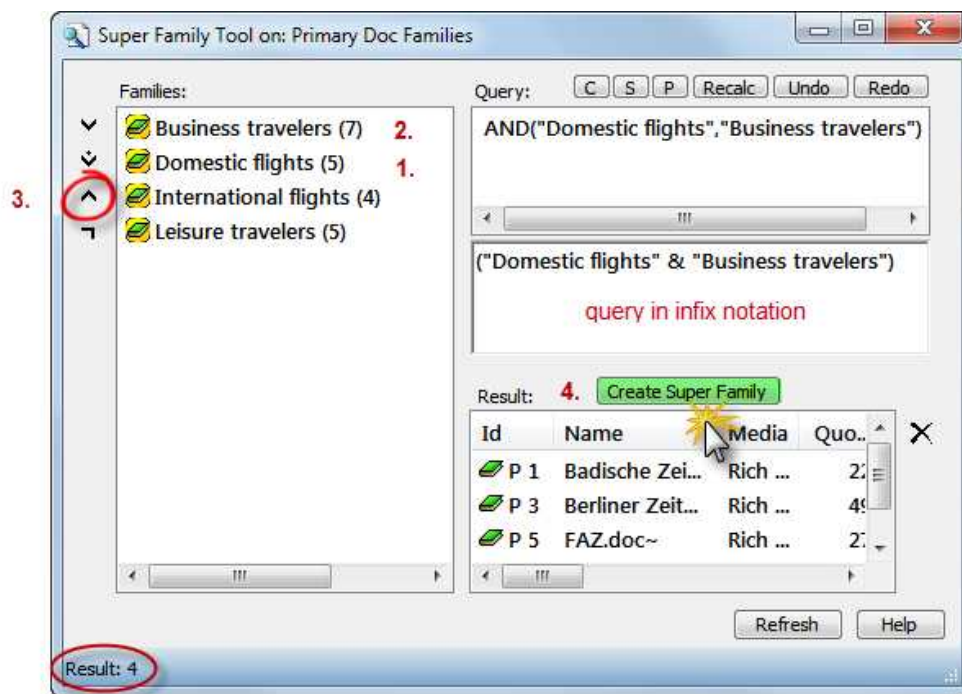


Figure 188: Creating a super family

In the results pane, those members of the families are listed (either PDs, codes, or memos) that match the current query.

Click the **SUPER FAMILY** button to store the query as a Super family.

You are prompted for a name. Accept the default or enter a new name, for instance “*Business travelers on domestic flights*”.

The new Super Family is displayed in the family browser with a red version of the family icon. If icons are turned off, the list entry is colored red.

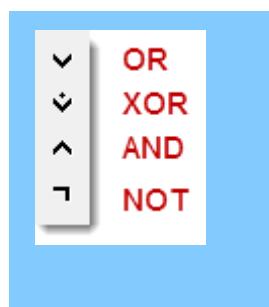


Figure 189: Display of super families

Possible Family Combinations

You can combine families in numerous and complex ways to form Super Families. In the following section, some common combinations are presented. Once you are familiar with the tool, you can venture out and try out more complex combinations.

For the following descriptions of the four operators, looking at the Venn diagram (see "Semantic Operators") may be helpful.



The Super Family tool offers four operators that can be used to combine families. The four operators are also known as Boolean operators: OR, XOR, AND, and NOT.

Combining two families with the OR operator yields those items that are members of one or both families. Combining two families with the AND operator yields only those members belonging to both families.

Combining two families using the XOR operator yields all members belonging to any of the families less those that are in both families.

The NOT operator inverts an existing family. By negating a family *female*, you could simply create a Super Family that, presumably, includes all males. The NOT operator, as well as all other operators, does not only work on families but also on Super Families or in arbitrary partial queries as in "NOT (A OR B)".

Combining Families using Boolean Operators

Combining families to build Super Families is essentially the same as formulating code- and code family-based queries in the ATLAS.ti Query Tool. The sequence of entering a query to create a Super Family is as follows: First, select all families that you want to combine, and then select the operator(s):

Intended Query	What to click	Display in query feedback pane
Members family A or family B (or both)	Family A, Family B, OR	("Family A" "Family B")

Members that exclusively belong to either family A or family B	Family A, Family B, XOR	("Family A" "Family B")
Members that belong to both family A and family B	Family A, Family B, AND	("Family A" & "Family B")
Members that do not belong to family A	Family A, NOT	NOT "Family A"

Combining more than two families

In order to combine more than two families, you can use a simple query to build upon, or you can click it as one sequence. For the beginner, it is recommended to build up to a more complex query step-by-step.

Creating a complex query step-by-step

Let's assume you want to create a Super Family containing all female respondents under the age of 25, living in New York. This means you want to generate a Super Family based on the overlap of the three families *gender::female*, *age group::under 25*, and *residence::New York*. We start by combining the first two families "female" and "under 25". If you had such families, you would:

- Double-click family "*gender::female*".
- Double-click family "*age group::under 25*".
- Select operator **AND**.

The stack pane and the query pane now contain the following terms:

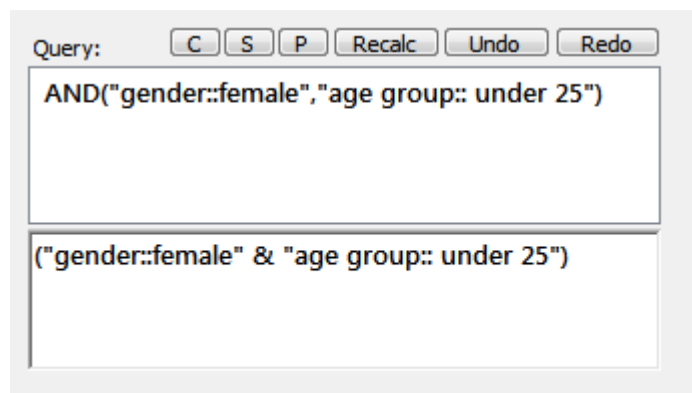


Figure 190: First step in building a more complex query step-by-step

The display in the query feedback pane matches more or less the way we would express the query in everyday language. In the figure above, one item is

displayed in the stack, namely the query we just entered. We can now incrementally build a more complex query from this query.

Double-click on the family *"residence::New York"*. This pushes the family onto the stack, which now contains two items ready to be combined.

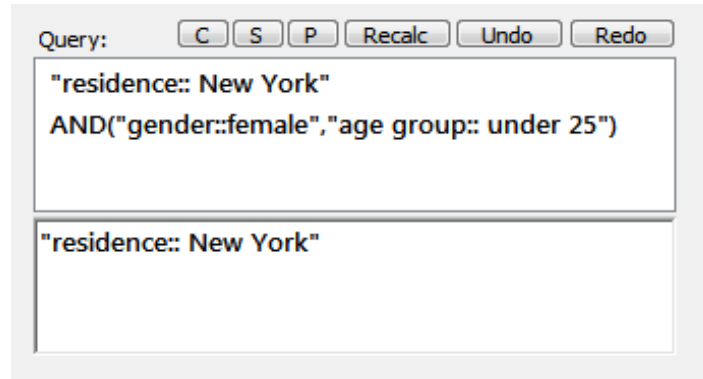


Figure 191: Clicking a more complex query - step 2

The feedback pane always displays the item that is on top of the stack. The topmost item on the stack has either been entered or is the result of applying an operator.

To yield all documents that match all three requirements: female, under 25, and from New York, click the **AND** operator again.

The stack and query feedback pane now looks as follows:

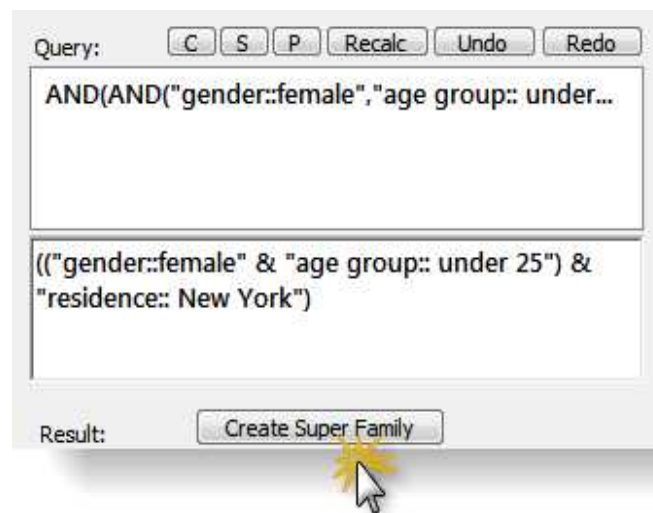


Figure 192: Clicking a more complex query - step 3

If these are all the attributes that you want to combine, click on the **Super Family** button. If you want to combine a fourth or fifth attribute, continue as described above.

Creating a complex query as a sequence

When creating a complex query in one sequence, the rule is to select all families first, followed by the appropriate number and type of operators. Using the same example as above, the sequence would be as follows:

- Double-click on the family "gender::female."
- Double-click on the family "age group::under 25."
- Double-click on the family "residence::New York."
- Select the operator **AND**.
- Select the operator **AND** again.

Further examples:

If you add the NOT operator to the above query, you have create a family combination not containing female respondents, under the age of 25, living in New York.

As an exercise: how would you create a family combination yielding males over 25 not living in New York?

Solution: Combine families "gender::female", "age group::under 25" and "residence::New York" using the OR operator, then negate using NOT. The resulting query looks like this: *NOT ("gender::female" | ("age group:: under 25" | "residence:: New York"))*

Another option is to click the sequence:

- age group:: under 25
- residence:: New York
- OR
- NOT
- gender::male
- AND

The resulting query looks like this: *(NOT ("residence:: New York" | "age group:: under 25") & "gender::male")*

Create a Snapshot from a Super Family

A snapshot creates a "hardwired" standard family containing the items derived from a Super Family as its members.

Example: By creating a snapshot from Super Code family Chemistry, a new (standard) family is created which includes all codes that the Super Family has as its members at this time. While a Super Family reflects any changes in regard to the members of any of its combined families, a snapshot will not change. This is identical to creating snapshot from Super Codes.

Snapshots are a means to audit the process of your analysis. By comparing Super Families with previous snapshots, you can see how and in which direction your thoughts have developed.

Snapshots are "hard-wired" versions of super families.

- To create a snapshot family, select a super family in a family manager. Then select the menu option **MISCELLANEOUS / CREATE SNAPSHOT**.
- By default the post-fix (SN + a consecutive number] is added to the name.

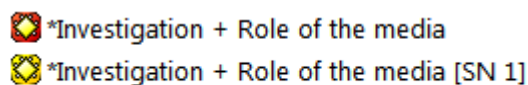


Figure 193: Super family and its snapshot

Additional Query Tool Functions

Stack Management

Several functions are available in pocket calculator style as a series of buttons. Other functions can be activated by context menus opened in one of the list panes.

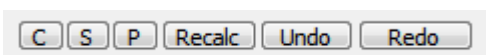


Figure 194: Query tool stack functions

Clear the complete term stack of expressions.

Swaps the two top elements of the stack. Use if you mix up the input order.

"**Push**" a copy of the topmost element onto the stack (in other words: duplicate it). This is a useful feature if you need to replicate a complex expression.

If you created new coding that affect the current query while the Query Tool is open, you have to click **RECALC** to reprocess the query.

UNDO removes the topmost entry from the stack. This is convenient if you clicked on the wrong code.

Redo pushes the last removed entry back onto the stack.

The functions above are also available from the context menu of the term stack pane.

More Functions

Context Menus

Several context menus are available in the various panes of the Query Tool that complement the functions available via the buttons. Most items in the context menus serve an informational need.

The *code family pane*'s context menu has a single command: **Display Codes**. Select to view the member codes of the selected code family.

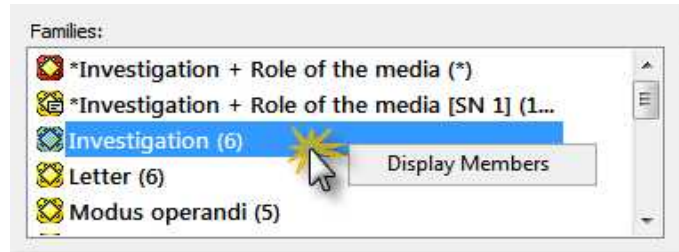


Figure 195: Context menu of the code family pane

The *code pane*'s menu offers information about the selected code **neighbors**, the **term** (i.e., query) if it is a Super Code, **embedding**, **embedded** and **co-occurring** codes.

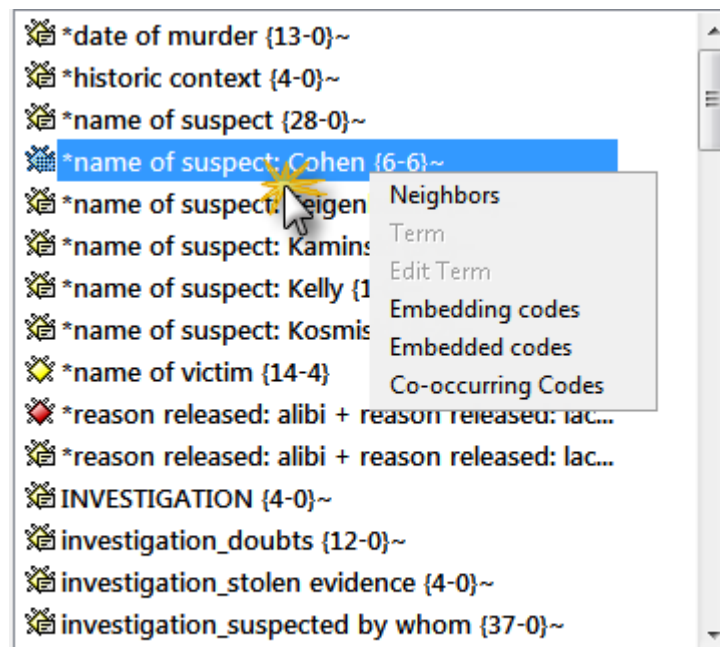


Figure 196: Context menu of the codes pane

The context menu for the *term stack pane* resembles the stack function buttons described above.

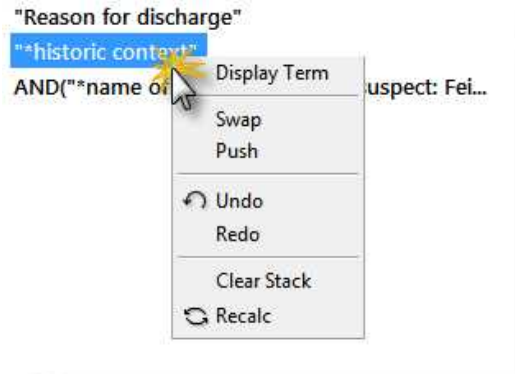


Figure 197: Context menu of the term stack pane

The *results pane*'s menu offers information about the **neighbors** (codes, other quotations, memos), **embedding**, **embedded**, or **co-occurring codes** of a selected "hit." A further option offers the possibility to **remove** the selected hit from the results list, to create a report or to create a PD family based on all PDs included in the results.

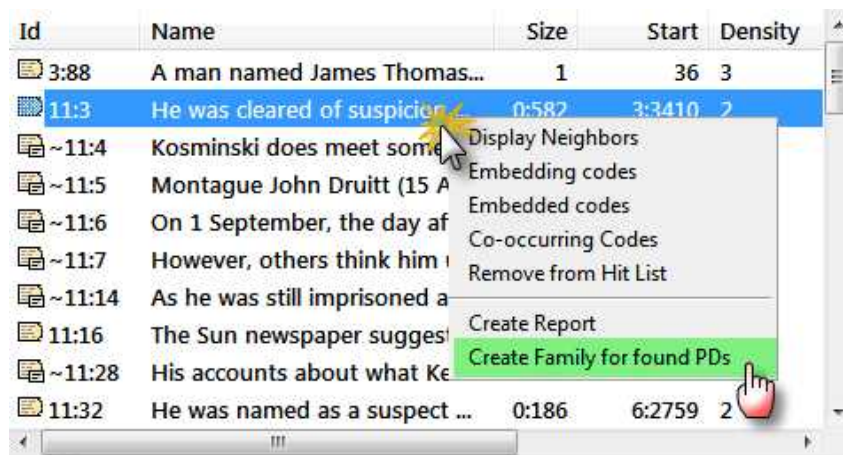


Figure 198: Context menu of the results pane

The last option is very useful in the search of patterns and typologies in your data. It is also of good service when working with images as in a lot of cases the image itself is the unit of analysis.

Co-occurrence Tools

The Co-occurrence Explorer works on a different logic than the Query Tool. In the Query Tool the user has to determine and select codes or code families and the appropriate operator. The results are a list of quotations. The Co-occurrence Explorer by default looks for all codes that co-occur in the margin area combining the operators WITHIN, ENCLOSES, OVERLAPS, OVERLAPPED BY and AND without the user having to select a specific code, code family or operator. It is however possible to work with filters, so that the tool is not always creating output for all data and all codes.

The Co-occurrence Tools offer two output choices. You can either view the results in form of a hierarchical tree or in form of a table. Below you see an example for both.

How to open the Co-occurrence Tools

Select **Tools / Co-occurrence Tools** and then select either the tree or the table explorer.

The Co-occurrence Tree Explorer

When running the tree explorer, you only see the root objects when it opens. Open the branches by clicking on the + sign to see the co-occurring codes on the first level and the associated quotations on the second level.

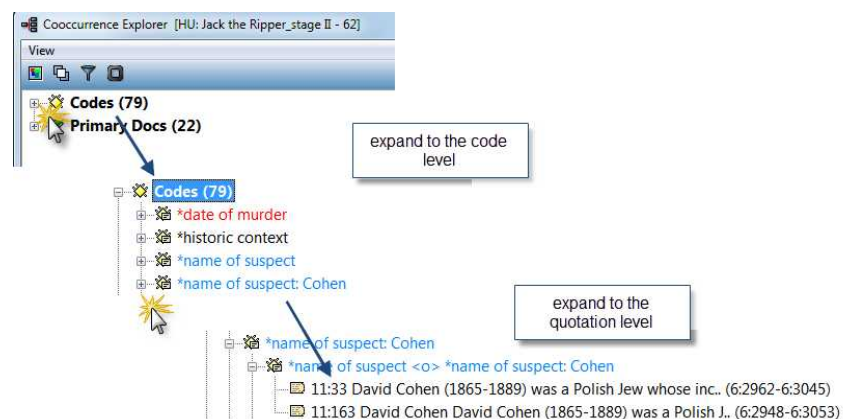


Figure 199: Expanding to code and quotation level in the tree explorer

The same option is available for primary documents. If you expand the branch for Primary Docs, you can see which codes have been applied to this PD. Further, you can expand to the quotation level to look at the material coded there.

Let's take a look at a potential question that the Co-occurrence Tree Explorer can answer:

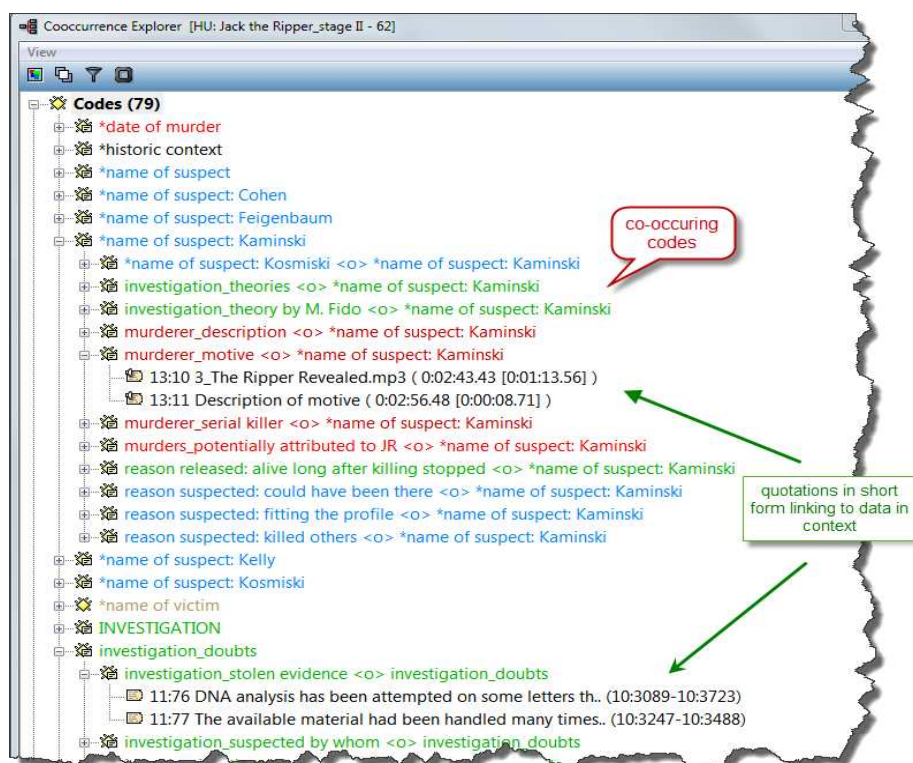


Figure 200: The Co-occurrence Explorer Tree View

With one click you can see which codes were used when the code "name of suspect: Kominiski" was applied: the description of the suspect, his potential motive and a list of reasons why he was suspected. If you expand the tree one more level you gain access to the full context with a click on the quotation link.

In the section "Explaining frequency count and number of quotations listed" on page 304 it is explained how to interpret the listed quotations. If you want a count of the number of quotations that co-occur, you need to run the table explorer (see below).

The Co-occurrence Table Explorer

The Co-occurrence Table Explorer in comparison to the Tree Explorer shows the frequencies of co-occurrence in form of a matrix similar to a correlation matrix that you may know from statistical software.

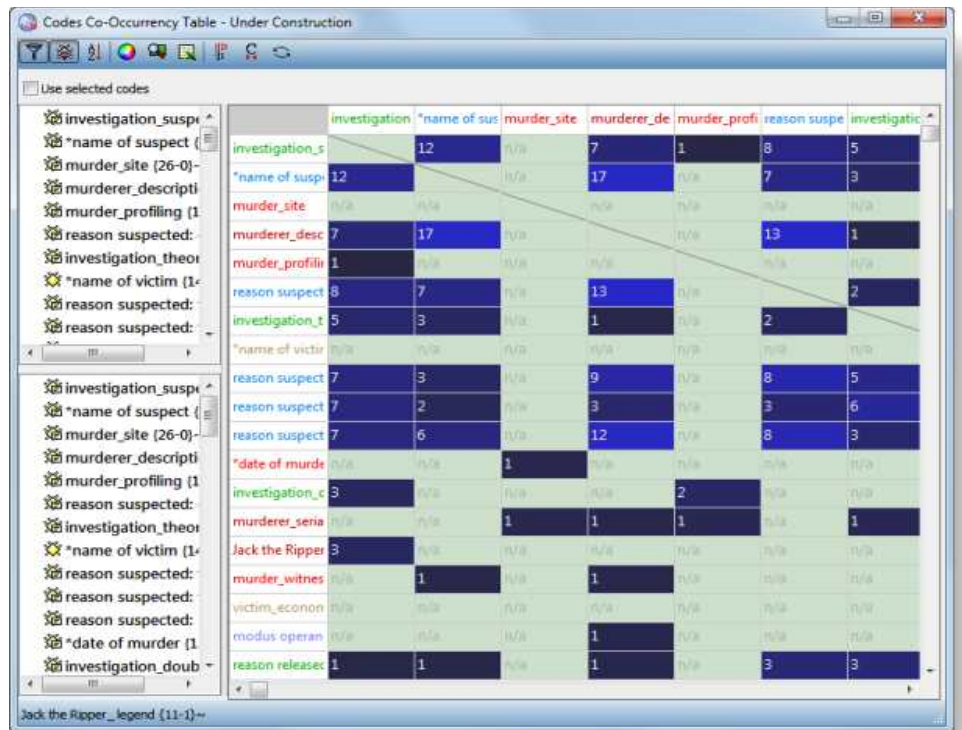


Figure 201: Co-occurrence Explorer Table View

To produce such a table, select **Tools / Co-occurrence Tools / Table Explorer:**

Using the default settings, a c-coefficient is immediately displayed (see figure 207) as well. In figure 201 above, you only see the frequencies of how often each pair of codes co-occurs. The reason for this is to explain the content and handling of the table step-by-step. You find more information on the c-coefficient below on page 305.

n/a

The entry **n/a** indicates that the pair of codes does not co-occur anywhere in the data material (= not applicable).

Toolbar

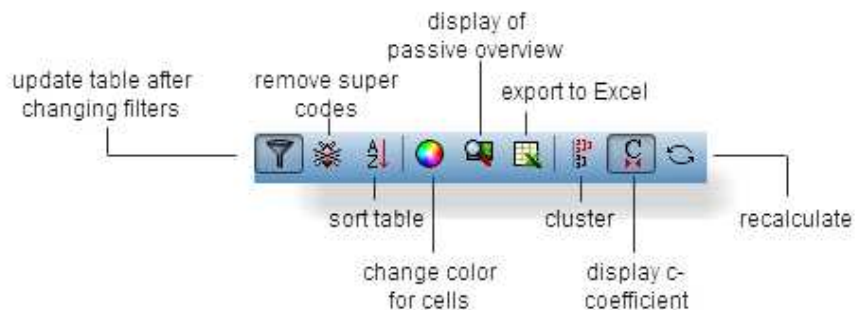


Figure 202: The co-occurrence explorer toolbar

User-defined content

If you have not set a code family as filter, all co-occurrences for each pair of codes will be displayed. This potentially results in a huge table. Therefore, in the columns to the left of the table, you can select the codes that should be listed in the columns and rows. This produces more purposeful tables.

- In the first column, select the codes to be displayed in the columns using the usual Windows selection techniques for multiple item selecting via the Ctrl or Shift key.
- In the second column, select the codes to be displayed in the rows.
- Activate the option **Use selected codes**. You find this option above the two selecting fields.

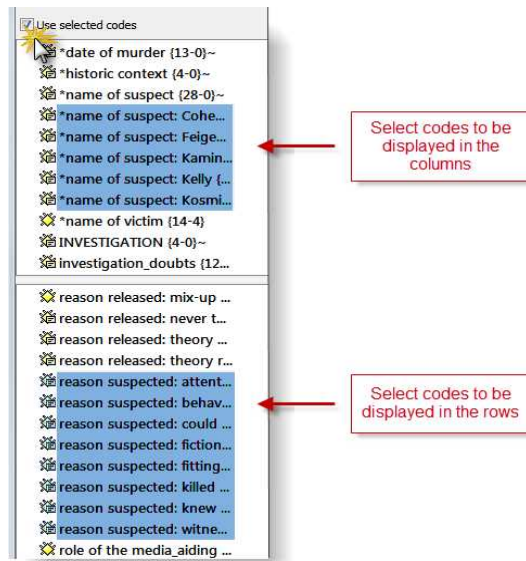


Figure 203: Select codes to be displayed in either the columns or rows of the table

The table below provides a good overview of the reasons why the five suspects Cohen, Feigenbaum, Kaminski, Kelly and Kosminski were suspected:

	*name of suspect: Cohen	*name of suspect: Feigenbaum	*name of suspect: Kaminski	*name of suspect: Kelly	*name of suspect: Kosminski
reason suspect	n/a	n/a	n/a	n/a	n/a
reason suspected: could have been there {15-2}~			n/a	n/a	1
reason suspect	1	2	2	1	1
reason suspect	1	n/a	n/a	n/a	n/a
reason suspect	4	n/a	2	1	2
reason suspect	1	3	1	1	n/a
reason suspect	n/a	n/a	n/a	n/a	n/a
reason suspect	1	n/a	n/a	n/a	2

Figure 204: Co-occurrence Table Explorer with selected codes

As of this writing (version 6.2) the column with the code labels for the rows cannot be expanded and you need to move your mouse over the cell entry to see the full code label. This will change in version 7.

Another way to reduce the codes to be displayed in the table is by setting a code family as filter before running the Co-occurrence Table Explorer.

Inspecting Content

In order to see the quotations associated with the two co-occurring codes, the table cell can be expanded as shown in figure 205. The quotations in the drop-down list provide a direct link to the data in context.

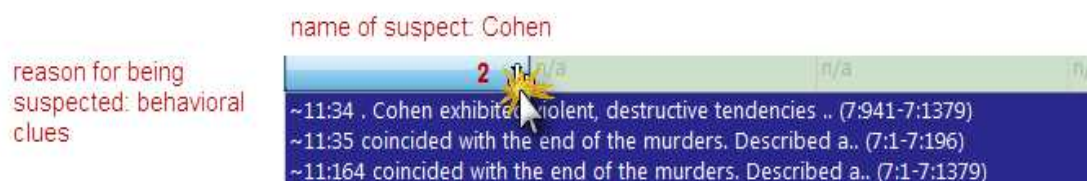


Figure 205: Expanded cell in the Co-occurrence Table Explorer

The number of co-occurrences in the above example is two, however three quotations are listed. Why this is the case is explained next.

Explaining frequency count and number of quotations listed

The co-occurrence frequency does not count single quotations it counts co-occurrence „events“. If a single quotation is coded by two codes, this would count as a single co-occurrence. The complications arise when we take overlapping quotations into account. In such a case when each of the two quotations is coded by one of the codes, this also counts as a single co-occurrence. However, in the cell drop down list you will find both quotations. In fact there are currently no means to discriminate between a single quotation's „strong“ co-occurrence and the „weak“ case for two quotations in close proximity. The drop down list will display an ordered list of all quotations for all co-occurrence events for the pair of codes.

Take a look at figure 205 above. Quotation 11:34 and quotation 11:35 (the two codes for “reasons suspected” are embedded within the larger segment, quotation 11:164, coded with “name of the suspect: Cohen”). This is shown by the quotation references and if you look at the quotation in the context of the data (see figure 206 below). The references indicate that the quotes are from a PDF document and can be found on page 7:

Quotation 11:35 starts at character 1 and ends at character 196.

Quotation 11:34 starts at character 941 and ends at character 1379.

Quotation 11:164 starts at character 1 and and at character 1379.

If you want to read more on quotation references see page 184.

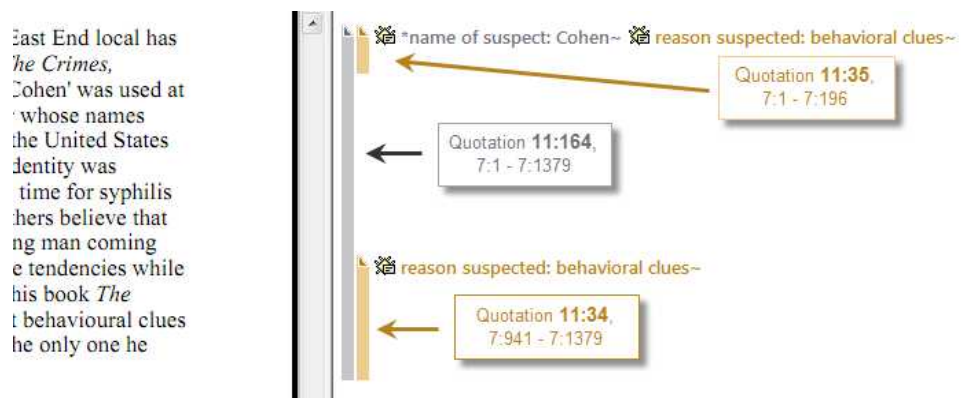


Figure 206: Explaining the relation between frequency of cocurrence and number of quotations

Thus, there are three quotations, but only two co-occurrences that are counted for the frequency count.

Clustering quotations



If you want to count embedded quotations as only one count, you find an option for this in the tool bar called *Cluster Quotations* (see button to the left).

C-Coefficient



Using the default settings, in addition to the frequency count the so called c-coefficient is displayed. You can display or hide it (see button to the left). The c-coefficient indicates the strength of the relation between two codes similar

	*name of suspect: Cohen	*name of suspect: Feigenbaum	*name of suspect: Kaminski	*name of suspect: Kelly	*name of suspect: Kosmiski
reason suspect	n/a	n/a	n/a	n/a	n/a
reason suspect	2 - 0,22	n/a	n/a	n/a	1 - 0,08
reason suspect	n/a	2 - 0,15	2 - 0,13	1 - 0,07	1 - 0,05
reason suspect	n/a	n/a	n/a	n/a	n/a
reason suspect	2 - 0,13	n/a	2 - 0,15	1 - 0,08	2 - 0,11
reason suspect	n/a	3 - 0,30	1 - 0,07	1 - 0,08	n/a
reason suspect	n/a	n/a	n/a	n/a	n/a
reason suspect	n/a	n/a	n/a	n/a	2 - 0,22

Figure 207: Co-occurrence Table displaying c-coefficients

to a correlation coefficient.

The calculation of the c-coefficient is based on approaches borrowed from quantitative content analysis (see Garcia, 2006). Thus, interpreting such a coefficient is only meaningful with a sizable data set and not for an interview study with 10 respondents. Given the possibility to work with survey data to analyze open-ended questions, it however is a valuable addition to the other more qualitative oriented analysis tools that ATLAS.ti provides.

The c-coefficient should vary between 0: codes do not co-occur, and 1: these two codes co-occur wherever they are used. It is calculated as follows:

$$c := n_{12}/(n_1 + n_2) - n_{12}$$

n_{12} = co-occurrence frequency of two codes c_1 and c_2 , whereby n_1 and n_2 are their occurrence frequency

What you may experience is the following:

- Out of range. The C-index exceeds the 0 - 1 range it is supposed to stay with.
- Colored circles. Cells can have additional visual cues, e.g., a red, yellow or orange circle.

Out of range

The c-index (structurally resembling the Tanimoto and Jaquard Coefficient, which are similarity measures) assumes separate non-overlapping text entities. Only then can we expect a correct range of values.

However, ATLAS.ti's quotations may overlap to any degree. Overlaps would only then bear no problem if there wasn't any „coding redundancy“ (the ones you can eliminate using the Coding Analyzer, see page 381 for further detail). Let's look at a few scenarios.

Case 1: Two differently coded quotations overlap, we assume no more quotations available. Let P1 be a textual document, q1 and q2 be quotations and a,b be codes. q1 is coded with a, q2 is coded with b.

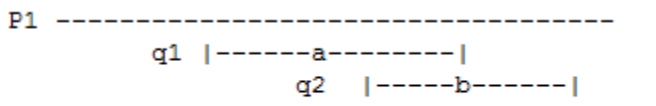


Figure 208: Out of range example 1

Using the formula: $c := n_{ab}/(n_a + n_b) - n_{ab}$, we get:

$n_{ab} = 1$ one co-occurrence of a and b

$n_a = 1, n_b = 1$ a and b each code exactly one quotation.

$$c = 1/(1 + 1) - 1 = 1$$

Such a scenario results in the maximum co-occurrence of 1 !

Case 2: q1 is coded with both codes a and b, the overlapping quotation q2 is coded with b.

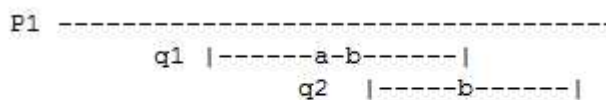


Figure 209: Out of range example 2

$n_{ab} = 2$. q1 alone counts for a co-occurrence event and the overlapping $q1 * q2$ for another.

$$n_a = 1, n_b = 2$$

$$c = 2 / (1 + 2) - 2 = 2!!$$

This results in a value of twice the allowed maximum. Thus, the C index is not appropriate to correctly represent co-occurrence in redundantly overlapping texts. If the c-coefficient exceeds 1, you need to do some cleaning up and eliminate the redundant codes. ATLAS.ti currently does not correct such redundancies automatically.

Correcting the redundant overlaps, could for example look like this:

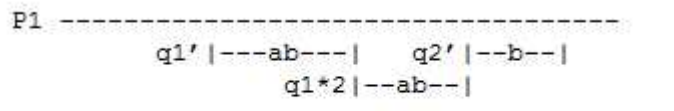


Figure 210: Out of range example 2 normalized

We get three quotations. q1' coded with a and b, q1*2 coded with a and b, q2' coded with b:

$$n_{ab} = 2, n_a = 2, n_b = 3$$

$$c = 2 / (2 + 3) - 2 = 2/3 = 0.67$$

The result is within the allowed range and it correctly takes into account that of the three possible co-occurrence events only two apply.

To detect and correct redundant coding, select **TOOLS / CODINGS ANALYZER**. See page 381.

Colored Circles

Circles with different colors are painted into a cell's upper right corner when certain conditions apply.

12 - 0,23	2 - 0,05	2 - 0,06	n/a	n/a	2 - 0,05
3 - 0,08	1 - 0,05	1 - 0,07	1 - 0,06	n/a	1 - 0,05
n/a	5 - 1,00	n/a	3 - 0,75	n/a	7 - 1,40

Figure 211: Examples of yellow and red circle markers

Red circle: When the c-index exceeds 1 (see "Out of range" on page 306). In addition to the red circle, the entire cell is highlighted in yellow.

Yellow circle: An inherent issue with the C-index and similar measures is that it is distorted by code frequencies that differ too much. In such cases the coefficient tends to be much smaller than the potential significance of the co-occurrence. For instance, if you had coded 100 quotations with code "depression" and 10 with "mother" and you had 5 co-occurrences:

$$n_{\text{dep}} = 100, n_{\text{mother}} = 10, n_{\text{dep-mother}} = 5$$

$$c = 5 / (100 + 10) - 5 = 5 / 105 = 0.048$$

A c index of only 0.048 may slip your eye easily, although code "mother" appears in 50% of all its applications with code "depression". Looking from code "depression" only 5% co-occur with code "mother".

If the ratio between the codes frequencies exceeds a certain threshold (currently 5 but will be user definable in the future) the yellow light goes on in the cell. So whenever a cell shows the yellow marker it should invite you to look into the co-occurrences of this cell despite a low c-index.

When the mouse hovers over a cell with a yellow mark, a pop-up displays the ratio of the two codes.

Orange Circle: The orange circle is simply a mixture of the red and yellow conditions.

Colors

Coloring helps in detecting co-occurrences. The following options are provided:

Cell colors

You can choose among three colors for the table cells: blue, red and green. To select a different color, click on the color button in the tool bar.



Figure 212: Setting the color channel for table cells

All cells showing that a co-occurrence exist are colored with the selected color. Different color intensities are used to indicate the strength of the association. The higher the c-coefficient, the lighter the color. This is also the case if the c-coefficient is not displayed.

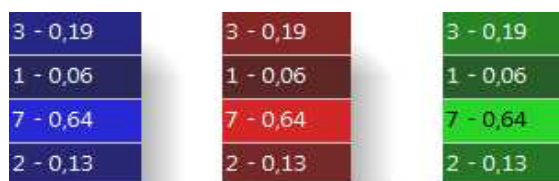


Figure 213: Three alternative colors and their shades by size of c-coefficient

In order not to present a misleading image, all cells displaying an out-of-range number (> 1) are colored in yellow.

1 - 0,05	5 - 1,00
1 - 0,07	n/a
1 - 0,06	3 - 0,75
n/a	n/a
1 - 0,05	7 - 1,40

Figure 214: A yellow cell and a red circle indicate an out of range coefficient

Passive View

If you just want to get feeling for potential patters in your data, try the passive view, which is a detached image that only shows colors.



Figure 215: Example of a passive overview as an aid to detect pattern

Data Export

RTF (qualitative)

You can either export a list of the co-occurring codes, or the list including quotation IDs and names in form of an rtf file. The the full content of the quotations cannot be exported as this potentially results in very large outputs.

- To export the list of co-occurring codes, select **CODES / OUTPUT / PRINT CO-OCCURRING CODES**.
- Next you are asked whether to include the quotation lists (= ID plus name of the quotation).
- Next, select the output destination (Editor, File, Printer).

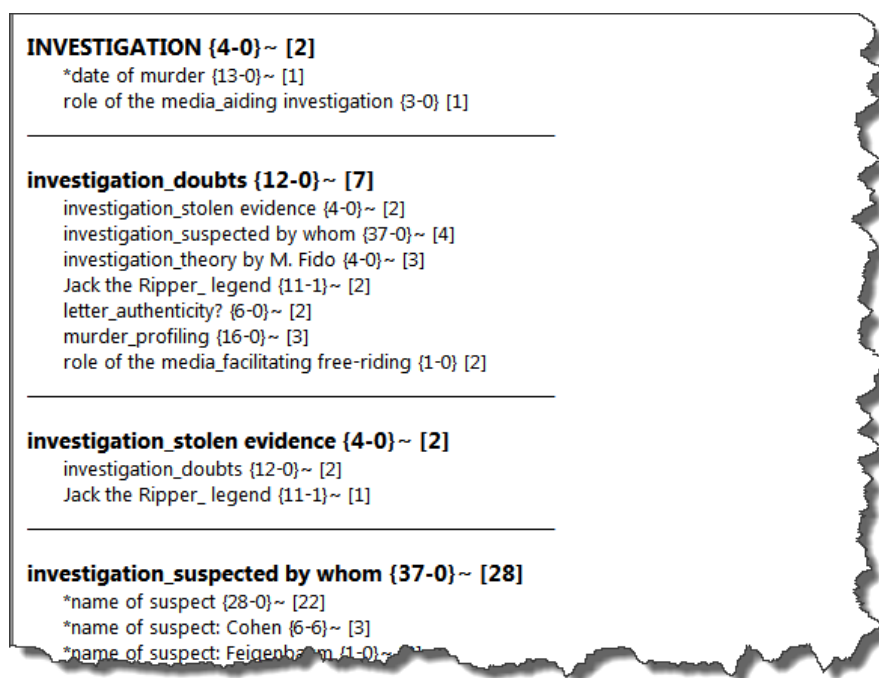


Figure 216: List of co-occurring codes in rtf format

Excel (quantitative)

You can either export the frequency counts of the c-coefficient. If the c-coefficient is activated, then the coefficient is included in the output; if not, the Excel table shows the frequency of occurrence.



- To create an Excel table of either the frequency counts of the c-coefficients, click in the Excel button in the tool bar.
- As output select destination **File & Run**.
- Save the file and wait for Excel (OpenOffice Calc) to be opened. Confirm the conversion of the data.

Application

The two Co-occurrence Tools are very useful for many kinds of analysis. But not all options make sense for all type of data. If you have a smaller data set like a typical interview study with 10 to 20 respondents, then taking a look at the frequency count for exploratory purposes is likely to provide some new ideas and you may gain new insights. The c-coefficient is useful when working with larger amounts of cases and structured data like open-ended questions from surveys. If you use the c-index, pay attention to the additional colored hints. As your data base is qualitative, the c-coefficient is not the same as for instance a Pearson correlation coefficient and therefore also no p-values are provided.

In any case, co-occurrence measures need to be clearly understood, not only for the mechanical but also for semantic issues involved in their meaningful interpretation (e.g., mixed application of codes with different level like broader

and sub terms). Furthermore, you need to be aware of the artifacts enforced by a table approach like being reduced to a pairwise comparison. Higher order co-occurrences which would take more than two codes into account need more elaborate methods.

References: [Garcia \(2004\) http://www.miislita.com/semantics/c-index-1.html](http://www.miislita.com/semantics/c-index-1.html)

Codes-Primary Documents Cross-Tabulation

Even though a bit hidden, a further analysis tool with an emphasis on quantitative output is the Codes-Primary-Documents-Table. You find this option under the menu **CODES / OUTPUT**.

The table is available as internal report within ATLAS.ti in text format, or can be exported to Excel. The internal report displays all PDs as columns and the codes as rows. The Excel table reverses the table: codes are shown as columns and PDs as rows.

The table contains either a frequency count for each code per document, or a word count of the coded segments per code and primary document.

When creating such a table, it is useful to set code families and PD families as filters first. Exporting a table that for instance contains 150 codes (= columns) and 40 documents (= rows) is not likely to provide useful information unless you want to use this table as input to a statistical package.

A useful application is a comparison across different groups of documents for a particular category of codes. Thus, you are likely to create such a table if you have a certain research question in your mind. This will guide you to create the code and PD families you need to construct your query. For example:

You have interviewed 10 women and 10 men in two cities and want to compare location and gender regarding certain issues you have been asking about like their thoughts and feelings about nuclear power plants after the accident in Fukushima, Japan in the spring of 2011. You have codes like fear, worries, belief in technology, change of focus towards renewable energies, no change, indifference. The Codes-Primary-Documents-Table can provide an overview of how often these codes have been applied to the various groups of documents (see figure ref below)

	fear	worries	belief in technology	change of focus	no change	indifference	TOTALS:
P1: female/location A	1	2	1	2	1	0	7
P2: female/location A	0	1	1	1	1	0	4
P3: female/location A	2	0	0	0	0	0	2
P4: female/location A	0	0	1	0	0	1	2
P5: female/location A	0	3	0	3	0	0	6
TOTALS:	3	6	3	6	2	1	21
P6: male/location A	2	1	1	1	1	1	7
P7: male/location A	1	1	0	0	1	1	4
P8: male/location A	0	0	2	0	0	0	2
P9: male/location A	0	0	1	1	1	1	4
P10: male/location A	3	0	0	0	0	0	3
TOTALS:	6	2	4	2	3	3	20
P11: female/location B	0	1	0	1	1	2	5
P12: female/location B	0	1	1	1	0	1	4
P13: female/location B	0	1	0	0	2	1	4
P14: female/location B	1	0	1	1	2	0	5
P15: female/location B	0	0	0	0	0	3	3
TOTALS:	1	3	2	3	5	7	21
P16: male/location B	0	1	1	1	2	1	6
P17: male/location B	0	1	1	1	1	0	4
P18: male/location B	0	0	2	0	0	2	4
P19: male/location B	1	1	0	1	0	1	4
P20: male/location B	0	0	1	0	3	0	4
TOTALS:	1	3	5	3	6	4	22

Figure 217: A possible outcome of creating Codes-Primary-Document tables for various PD families

In order to create such a table, you need four Super-PD-Families (see “Super Families” on page 289) based on the four base families for gender and location:

female / location A,
female / location B,
male / location A,
male / location B,

and a code family for the codes fear, worries, belief in technology, change of focus, no change and indifference (assuming that you have used a few more codes than just these seven). Then you create four tables and copy them all into one spread sheet. In most cases the totals are of highest interest and not the count for each individual PD. But this could of course also be the case, depending on your type of data and the kind of questions you are interested in.

Based on this first result, you can aggregate the data further and could come up with the following comparisons:

	fear	worries	belief in technology	change of focus	no change	indifference
Females/location A	3	6	3	6	2	1
females/location B	1	3	2	3	3	7
TOTALS:	4	9	5	9	5	8
Males/location A	6	2	4	2	3	3
Males/location B	1	3	5	3	6	4
TOTALS:	7	5	9	5	9	7
Female	4	9	5	9	5	8
Male	7	5	9	5	9	7
Location A	9	8	7	8	5	4
Location B	2	6	7	6	9	11

Figure 218: Further aggregation of the data

How to create a Codes-Primary-Documents-Table

Exporting the entire data set

If you want to create table based on all of your data for import into another software for further statistical analysis,

Select **CODES / OUTPUT / CODES-PRIMARY-DOCUMENTS-TABLE** → **QUOTATION COUNT (EXCEL)** OR **WORD COUNT (EXCEL)**.

Select as output destination File (or **FILE & RUN** if you want to view the table first).

Enter a name for the Excel file or accept the default name. Wait for Excel or OpenOffice Calc to open in case you have chosen the File & Run option. Accept the request to convert the data.

If you accept the default name and create a second table, make sure that a) the previous table is no longer open in Excel, otherwise you produce a protection violation error, and b) that you save the second table under a new name or otherwise you overwrite the first table.

Preparing tables to compare sub groups of data

If you want to compare groups of data, this means that you have to create PD families or Super-PD families first (see "Creating Families" on page 240 and "How to create a Super Family" on page 290). In addition, in most cases you probably only want to look at a specific aspect described by a certain group of codees. This means you also have to set a code family as filter as well.

To set PD family as filter, select Documents / Filter / Families →

To set a code family as filter, select Codes / Filter / Families →

All filtered lists and managers appear in a pale yellow color so it is easy to recognize where you have set a filter.

Create the table by selecting **CODES / OUTPUT / CODES-PRIMARY-DOCUMENTS-TABLE** → and then select the option you need: Quotation Count or Word count; the internal or the Excel table.

The internal report looks best using a proportional font like *Courier* or *Courier New*. The filter settings are listed in the report.

```
CODES-PRIMARY-DOCUMENTS-TABLE (CELL=Q-FREQ)
Report created by team - 01.09.2011 21:33:44
"HU: [C:\ProgramData\Scientific Software\ATLAS.ti\CommonDocumen...\Jack the Ripper_stage II - 62.hpr6]"
```

```
Code-Filter: Code Family "Reason for being suspected" [8]
PD-Filter: Primary Doc Family "Investigaton (all files)" [12]
Quotation-Filter: All [237]
```

← Filter setting

CODES	PRIMARY DOCS											Totals	
	7	11	12	13	14	15	16	18	19	20	21		22
reason suspected: at	0	4	0	0	0	0	0	0	0	0	0	0	4
reason suspected: be	0	5	0	0	0	0	0	0	0	0	0	0	5
reason suspected: co	0	13	0	2	0	0	0	0	0	0	0	0	15
reason suspected: fi	0	13	0	0	0	0	0	0	0	0	0	0	13
reason suspected: fi	0	9	0	5	0	0	0	0	0	0	0	0	14
reason suspected: ki	0	12	0	1	0	0	0	0	0	0	0	0	13
reason suspected: kn	0	3	0	0	0	0	0	0	0	0	0	0	3
reason suspected: wi	0	2	0	2	0	0	0	0	0	0	0	0	4
Totals	0	61	0	10	0	0	0	0	0	0	0	0	71

Figure 219: Internal report of a Codes-Primary-Documents-Table

Calculating Inter-Coder Reliability using CAT

Some programs offer rudimentary forms of inter-coder reliability calculation as an internal tool, but we have found CAT, a free external tool, to an excellent addition to ATLAS.ti. Being that it is free, very easy to handle, closely integrated with the ATLAS.ti data format and sporting powerful functionality, we recommend it as a useful add-on rather than reinvent the wheel.

The **Coding Analysis Toolkit** is a web based add-on tool to ATLAS.ti that allows you to calculate inter-coder reliability for ATLAS.ti coded data.

You can access the tool via the following web site: <http://cat.ucsur.pitt.edu/>. To use the tool, you need to register and create a user account. Privacy issues are explained on the website. If you don't want to use CAT via their official website, you can host your own version of CAT from the project source code.

CAT offers the following analysis options to compare the coding of two coders:

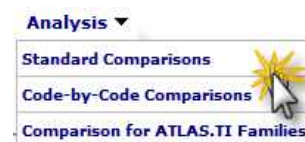


Figure 220: CAT: Analysis options

The standard comparison allows you to either calculate a Kappa value or Krippendorff's alpha. The Code-by-Code comparison shows you the data content and thus offers a qualitative means of comparing coded data by coders. The third options allows a comparison based on families.

Standard comparison

Once the data is uploaded the tool for the standard comparison looks as follows:

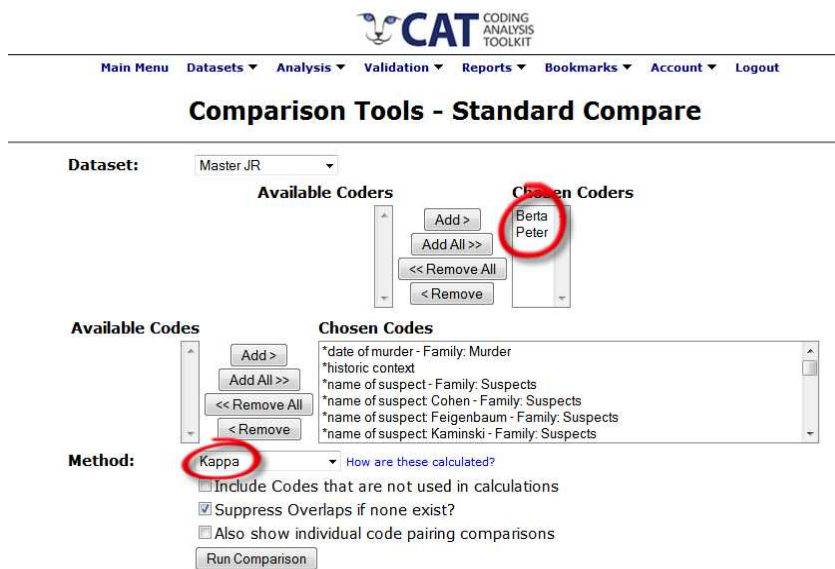


Figure 221: CAT comparison tool for calculating inter-coder reliability

Below you see an excerpt of a comparison results. The results show a perfect match as two identical HUs only differing by author were merged.

Code	Berta	Peter	Exact Match	Overlap	Kappa	Kappa (inc. Overlap)
*date of murder - Family: Murder	13	13	13	0	1.00	1.00
*historic context	4	4	4	0	1.00	1.00
*name of suspect - Family: Suspects	28	28	28	0	1.00	1.00
*name of suspect: Cohen - Family: Suspects	6	6	6	6	1.00	4.00
*name of suspect: Feigenbaum - Family: Suspects	1	1	1	0	1.00	1.00
*name of suspect: Kaminski - Family: Suspects	3	3	3	3	1.00	3.00
*name of suspect: Kelly - Family: Suspects	1	1	1	0	1.00	1.00
*name of suspect: Kosmiski - Family: Suspects	8	8	8	15	1.00	10.38
*name of victim - Families (2): Victim: Who?, Victims	14	14	14	1	1.00	1.07
INVESTIGATION - Family: Investigation	4	4	4	0	1.00	1.00

Figure 222: Result of an inter-coder comparison

Validation

In a less than perfect world, the coders will probably not agree one hundred percent. Therefore CAT offers a validation function where the coders involved can look at each coded segments, or only at those segments where the agreement was unsatisfactory. This way, coders can discuss the results and come to a better common understanding of what a particular code means and how it should be applied.

« Previous Next »

[+] Change Code Filter

Code(s): investigation_doubts - Family: Investigation

Initially it was considered a hoax, but when Eddowes was found three days after the letter's postmark with one ear partially cut off, the letter's promise to "clip the ladys (sic) ears off" gained attention.

(1) Valid (3) Not Valid

856 annotations left to validate for this dataset.

Coders have marked this as:

Berta: investigation_doubts - Family: Investigation, role of the media_aiding investigation - Family: Role of the media

Peter: investigation_doubts - Family: Investigation, role of the media_aiding investigation - Family: Role of the media

Filename: 1_Jack the Ripper_Letters.rtf

Paragraph: 16:16

Figure 223: Validation process: Checking for differences

Further resources

You find detailed tutorials on the CAT website:

- Quick start guide: http://cat.ucsur.pitt.edu/CAT_quickstart_final.pdf
- Instructions for preparing ATLAS.ti data for upload:
<http://cat.ucsur.pitt.edu/uploadInstructions.aspx>
- Video tutorial for preparing ATLAS.ti for upload:
<http://www.screencast.com/users/stustu12/folders/Default/media/ffea5d54-2487-4535-9f79-71421910ec14>

Network Views

The word "network" is an ubiquitous and powerful metaphor found in many different fields of research and application. Flow charts in project planning, text graphs in hypertext systems, cognitive models of memory and knowledge representation (semantic networks) are all networks that serve to represent complex information by intuitively accessible graphic means. One of the most attractive properties of graphs is their intuitive graphical presentation, mostly in form of two-dimensional layouts of labeled *nodes* and *links*.

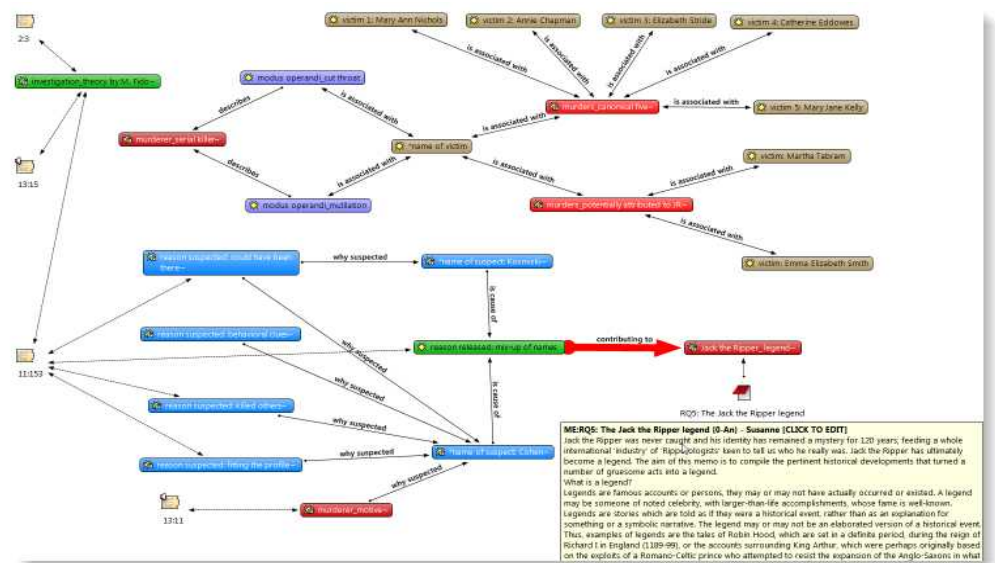


Figure 224: Example of an ATLAS.ti network view

In contrast with linear, sequential representations (e.g., text), presentations of knowledge in networks resemble more closely the way human memory and thought is structured. Cognitive "load" in handling complex relationships is reduced with the aid of spatial representation techniques. ATLAS.ti uses networks to help represent and explore conceptual structures. Networks add a heuristic "right brain" approach to qualitative analysis.

Networks are more than just graphics!

Along with using networks for "mind mapping" and the visual design of theoretical models, you can exploit the structural properties of code-networks to enhance the retrieval of quotations. Using networks for retrieval purposes is a well known technique in information retrieval. In that domain, a structured sets of keywords is usually referred to as a thesaurus. This usage of networks for semantic retrieval will be described at "Semantic Operators" on page 272 in more detail.

Nodes and Links

The term “network” is formally defined within graph theory, a branch of discrete mathematics. A network is defined as a set of nodes (or “vertices”) and links. A node in a network may be linked to an arbitrary number of other nodes.

The number of links for any one node is called its degree; e.g., a node with a degree of zero is not linked at all. Another simple formal property of a network is its order: the number of its nodes. You may make practical use of the degree of nodes by using it as a sorting criterion in the codes list window. The column ‘Density’ in the Code Manager represents the degree of a code.

Directed and Non-Directed Links

Links are usually drawn as lines between the connected nodes in graphical presentations of networks. Furthermore, a link between two nodes may be directed or not. A directed connection is drawn with an arrow. With directed links, source and target nodes must be distinguished. The *source node* is where the link starts and the *target node* is where it ends: the destination to which the arrow points. The terms *connection* and *link* are synonymous.

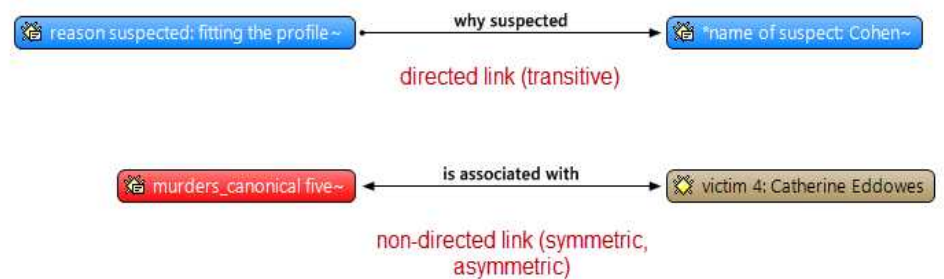


Figure 225: Examples of directed and non-directed links

Links are created either implicitly (e.g., when coding a quotation, the quotation is “linked” to a code), or explicitly by the user. The latter option is described in detail in this chapter.

Strictly speaking, code-quotation associations (“codings”) also form a network:

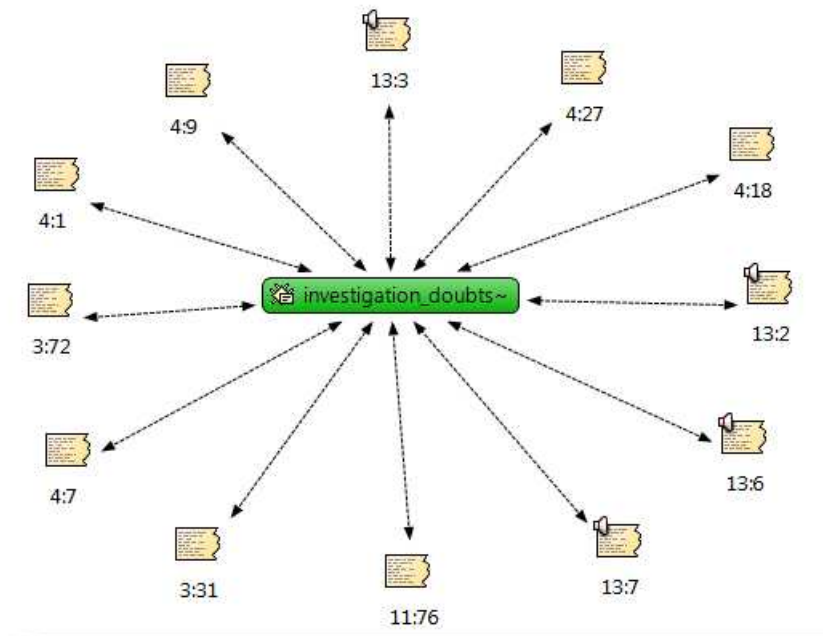


Figure 226: Code-quotations links

But you cannot name these links, the code is simply associated with a quotation through the act of coding. In a network view you can visualize these links. In ATLAS.ti all unnamed links are referred to as weak links, all named links are referred to as strong links.

Strong and Weak Links

Strong links – or “first class” links – are links based on relations. Strong links are entities by themselves, with names, authors, comments, and other properties. A strong link is only a link between a code and another code or a quote and another quote.

Weak links are links that do not have individual properties, e.g., the links between quotations and codes, between codes and memos, between a family and its members.

Network vs. Network View

The difference between a ‘Network’ and a ‘Network View’ is an important distinction that is necessary to understand the way networks are handled within ATLAS.ti.

An ATLAS.ti network is the set of *all* objects and their links inside the Hermeneutic Unit (HU). It exists independently of any display-oriented characteristics (layout, color, line width, etc.). It is the *logical structure* of the HU’s objects. It exists even before the first Network View is created.

A Network View is typically only a subset of this global structure of nodes and links combined with an individual layout of nodes. It is like viewing the same thing, i.e., the network, from different angles and with different pieces visible.

Network View
= logical
structure +
visual layout

Node Types

The user can manipulate and display almost all objects within the HU as nodes in a network view: quotations, codes, code families, memos, memo families, other network views, primary documents (PDs), and PD families. The following discussion applies to all nodes regardless of their type.

See "Node Types" on page 324 further details.

Relations

ATLAS.ti allows you to establish *named links* to more clearly express the nature of the relationships between concepts. With named links, you may express a sentence like "a broken leg causes pain" by two nodes (the source node "broken leg" and the target node "pain") connected with a named link ("causes" or "is-cause-of").

A default set of relations is provided. You may define your own.

The name of a link is displayed in the Network Editor as a label attached to the link midway between the two connected nodes. Six pre-set relations - or link types - are available in ATLAS.ti. These standard relations can be substituted, modified, or supplemented by user-defined relations. The default relations are listed in the table below. C1 and C2 are source and target nodes, respectively.

Relation	Label 1	Label 2	Width	Color	Formal Attribute	Layout Direction
C1 is-associated-with C2	==	R	1	Black	Symmetric	→
C1 is-part-of C2	[]	G	1	Black	Transitive	↑
C1 is-cause-of C2	=>	N	1	Black	Transitive	↑
C1 contradicts C2	<>	A	1	Black	Symmetric	→
C1 is-a C2	Isa	O	2	Black	Transitive	↑
C1 noname C2			1	Black	Symmetric	→
C1 is-property-of C2	*}	P	1	Black	Asymmetric	↑

Some of these characteristics directly affect the display of links, while others affect processing (e.g., search routines, automatic layout). A link between concepts is displayed in a Network Editor by a line with the relation's label. You can choose from three different labels (label 1, label 2 and the name used for the menu when selecting a relation).

The "formal attribute" affects both the display and processing capabilities of a relation. For example: All asymmetric relations are symbolized in the Network Editor with an arrow pointing toward the target code. Symmetric relations are displayed with an arrow at both ends.

A typical transitive relation is the is-cause-of relation: if C1 is-cause-of C2 and C2 is-cause-of C3, it follows that C1 is-cause-of C3. Transitive relations also enable the "semantic retrieval" (see "Semantic Operators" on page 272).

The following properties are user-definable: the two labels and the menu text, which can be used as alternative display options, the width and color of the line linking two nodes, whether a link is directed or non-directed, and the preferred

layout direction. The preferred layout direction affects the layout of a network when ATLAS.ti automatically arranges the nodes. See "Layout Procedures" on page 340.

Link vs. Relation

Relations are like "styles" in a word processor. Changing the style will change all occurrences of its usage, in this case: the links

It is important to understand the difference between a relation (or a link type) and the link itself: There is only one "is part of" relation, but potentially many links *using* it. In the Network View below, the relation "consequence" is used only once, while the relation "strategy" is used four times.

Another way to think of links and relations is to view links as *instances* of relations. Links are well informed about the characteristics of relations, which define their styles. If a characteristic of a relation is changed (e.g., line width, color, symbol), these changes are propagated to all links using it.

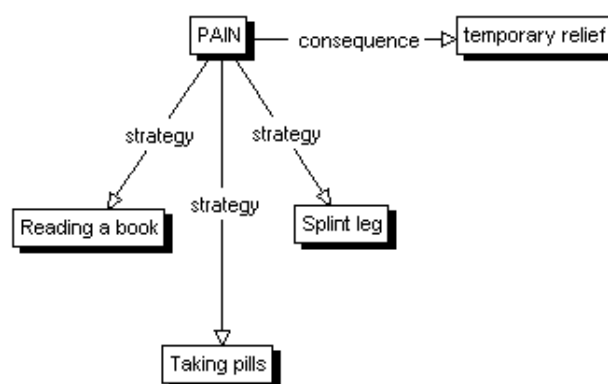


Figure 227: Four links using two relations, "strategy" and "consequence"

The Role of Relations

It is useful to understand the role that relations play in the construction of a theory. The concepts (codes) that are linked using relations represent aspects of the problem domain under investigation. On the other hand, the relations used to link these domain concepts are part of the methodology used to analyze the phenomena. As important epistemological tools they constitute the main questions that guide the development of a model or a theory.

Define your own "epistemological primitives."

The "Grounded Theory" method of Glaser & Strauss uses relations like "is-phenomenon," "is-context-of," "is-consequence-of," "is-condition-for," "is-strategy-for," etc., to relate concepts found during the data-oriented *open coding* phase.

In the analysis of argumentation structures, other relations are more suitable: e.g., "is evidence of," "is contradictory to," "warrants," etc. A medical expert attempting to capture diagnostic knowledge would use, e.g., "is-symptom-of," and "is medication for."

The Network Editor lets you visually connect codes and other objects to create semantic networks or hypertext webs.

The Network Editor

The Network Editor offers an intuitive and powerful method to create and manipulate network structures. It favors a direct manipulation technique: You can literally "grab" codes, quotations, memos, or other objects using your cursor and move them around the screen as well as draw and cut links between them.

The following describes various methods available for creating and editing Network Views.

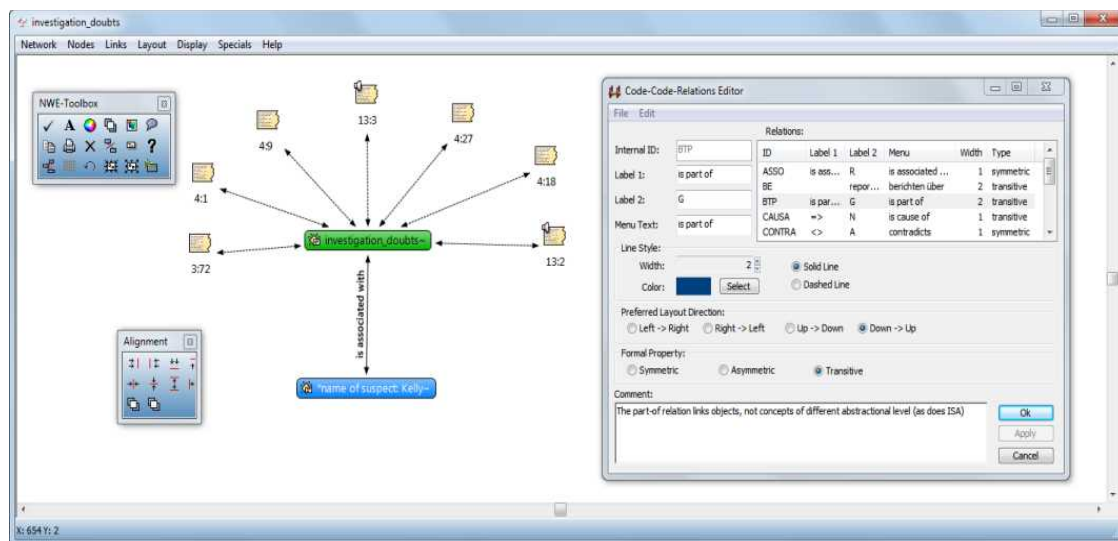


Figure 228: The Network Editor and its helpers

The Network Editor has two "helper" windows ("NWE-Toolbox" and "Alignment Tool") that offer convenient support for some tasks.

The Relation Editor for maintaining the relation "database," and for creating and editing relations is described in a separate chapter (see "The Relation Editor" on page 344).

Network View Characteristics

Network Views have certain important characteristics:

- Several different Network Views on the same network are possible.
- Network Views can be given names under which they are stored and accessed inside the HU.
- Network Views can be commented.
- Network Views are displayed and edited in the Network Editor.
- Network Views allow individual layout of the nodes.
- As a node, a single object can be a member of any number of Network Views, just like a code can be an element of more than one code family.
- An object, e.g., a specific code, can only appear once in any Network View.

Network Views allow for a flexible but logically consistent display of the network of objects, so there are a few constraints to keep in mind:

If code A is linked to code B using the relation “is associated with”, then every Network View that contains code A and code B will necessarily include the relation “is associated with” between the two. Furthermore, as only one link can exist between any two nodes at any given time, no Network View will display any other relation between those two nodes.

If however, you want to link code A and B differently in a different network view, then you need to work with “dummy or modifier codes”. These are empty codes, i.e. you have not used them for coding, but you need them to modify a relation.

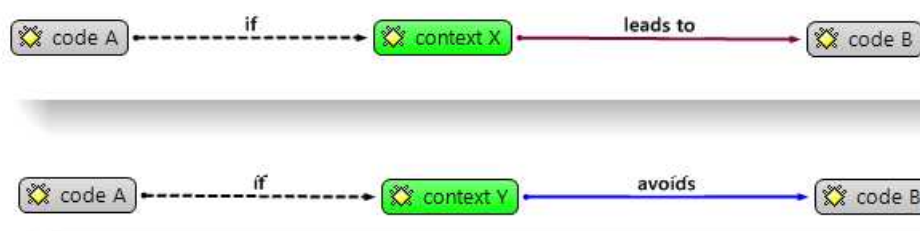


Figure 229: Using modifier codes for case-based network views

Node Types

The following object classes can be displayed and edited as nodes within the Network Editor. The display characteristics of the nodes can be altered in a variety of ways.

Codes as Nodes



Codes are probably the most prominent objects in ATLAS.ti networks. They provide the main ingredients for models and theories.

Memos as Nodes



Memos in networks are often an important supplement to code networks.

Several theoretical memos can be imported into a network to map out their relationship. The visual layout provides comfortable territory for moving from memo to memo to read and contemplate each individually and the relationship(s) between them.

When dragging a piece of text from a "drag-enabled" application (like MS Word™) into a Network Editor, the text becomes a memo with an automatically assigned title. The title can be renamed later.

Primary Documents as Nodes

PDs as nodes are useful sometimes, but in the presence of quotations may clutter the view by myriad links. However, PDs as nodes make a nice graphical content table for graphical primary documents. When selecting the option **DISPLAY/FULL IMAGE FOR PDs**, "thumbnail" images of the PDs are displayed. This option only affects graphical Pds.

Windows Explorer are used as standard icons for PD nodes (indicating the file of the document):



Figure 230: PD node icons

Quotations as Nodes

Quotations and codes have one thing in common that is not true for the other objects. They can link to each other (quotations to quotations and code to codes) with fully qualified "first class" links using relations.

The inclusion of quotations in a Network View supports the construction and inspection of hyperlink structures.



Figure 231: Display of quotations based on its media format



Textual quotations can be included in a Network View by simply dragging a piece of text from the PD.

Families as Nodes

Families are a useful device to group codes, memos, or PDs that belong to one concept. Instead of displaying all of the codes belonging to the concept, the Code Family may be displayed.

The links between families and their members are depicted by a dotted red line.

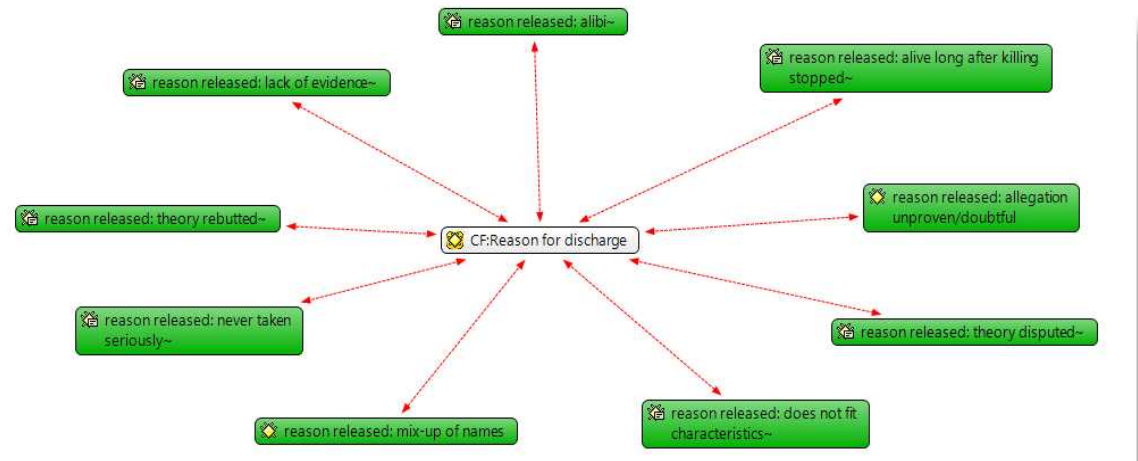


Figure 232: Families as nodes

Network Views as Nodes

The node icon and label for network views:

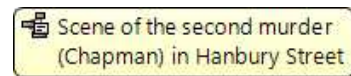


Figure 233: Network view as node

Network Views as nodes allow the inclusion of Network Views in other Network Views. The Network View's context menu offers the option to open the View in a separate Network Editor. This is also available via double-click with Ctrl pressed.

Basic Network View Procedures

Creating Network Views

Two methods for creating Network Views are available. The first one creates an empty Network View into which objects are imported in sequential steps. The other method creates a Network View from a selected object and its neighbors.

To create a new Network View

- Select **NETWORKS / NEW NETWORK VIEW** from the HU editor's main menu or from the drop down list offered by the Network button in the main toolbar.
- Enter a name for the new Network View. A Network Editor opens.
- Import nodes with any of the methods described in the section "Nodes" below.



To open a Network View on an Object

A Network View for an object is created with a selected object and its neighbors. Proceed as follows:

- Open an Object Manager (e.g., the Code Manager), or the Object Explorer, or right click on an object in the margin area.
- Select one or more objects with a left mouse click.
- In Object Managers, you can click the network button. For an object selected in the Object Explorer, select **OPEN NETWORK VIEW** from the context menu
- A Network Editor opens with the selected object and its neighbors.

If multiple objects are selected, their neighbors are not automatically included in the network view. You can import their neighbors in a subsequent step.

The nodes are initially placed using the semantic layout procedure, but can be rearranged manually.

More nodes can be added to this Network View using different techniques (see “Nodes” on page 327 for details).

Each time a network is opened on a selected object, a new Network View is created. There is no need to save it, as you can easily display it at any time following the steps above. If you rearrange the nodes and want to preserve the new layout, or if you add or remove nodes, then you need to save it explicitly (**NETWORK / SAVE AS**). Saved Network Views can be selected from the pick list or the Network View Manager.

Adding Nodes to a Network View

There are several options available for including objects in a Network View.

Via Drag & Drop

From Object Managers, the Object Explorer or the margin area: You can add nodes by dragging objects from Object Managers, the Network View Manager, the Family Manager, the margin, or the Object Explorer into the Network Editor. Drag & drop gives you better control of the initial position of the imported nodes.

- Open the Network View to which you want new objects imported.
- Open the manager(s) for objects (code list, memo list, etc.) that you want to import into a Network View.
- Select the node(s) you want to import into the Network View.
- Drag the selected objects into the Network Editor.

Drag selections of a primary text: This method creates nodes from textual quotations or new selections of text.

- Open the PD that contains the text that you want to import into a Network View.



Text dragged from other applications becomes a memo. Text dragged from the PD pane becomes a quotation.

- Make a selection within the PD or select an existing quotation.
- Drag the selected text into the Network Editor.
- Release the mouse button at the position you want the new node to be placed. A new node is created and displayed. If a quotation did not yet exist for the selection of text, it will now be created.

Drag text from other applications: This method allows you to drag text from drag & drop-compliant applications like Word™ into a Network Editor. Text dragged from Word™ is converted into a new memo and displayed as a node.

- Open the application from which you want to drag selections of text in to a Network Editor.
- Mark the piece of text within the (other) application.
- Move the mouse pointer over the selected text. The pointer changes its appearance
- Hold down the left mouse button and drag the selected text into the Network Editor.
- Release the mouse button at the position you want the new node to be placed with its upper left corner. A new node is created and displayed.

Via the Import Nodes dialog

The Import Nodes window offers access to all available node types. The list pane offers a context menu to select or deselect all displayed objects.

- Choose **NODES / IMPORT NODES** from the Network Editor's menu. A window opens, offering objects to be imported. Only objects that are not already members of the present view are listed.
- First, select the type of node you want listed in the list pane from the node-type drop-down list.

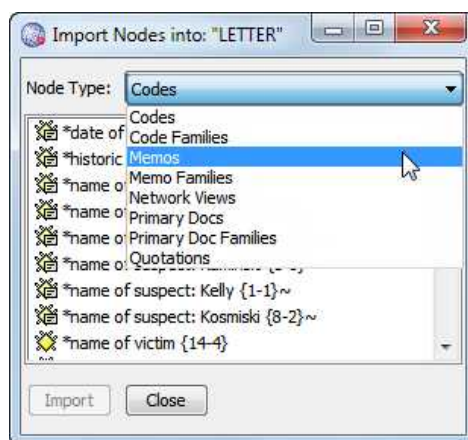


Figure 234: Import nodes window

- Select the objects to be imported into the Network View.
- Click Import.

The imported objects are placed along the upper left corner of the Network Editor. You can either distribute them manually by moving each node with the mouse, or you can place them automatically by (mis-)using the option **LAYOUT / SEMANTIC LAYOUT**.

Selecting Nodes and Links

Selecting nodes is an important first step for all subsequent operations targeted at individual objects within a Network View. Such operations have their corresponding menu commands in the main menu of the Network Editor.

To select a single node

- Move the mouse pointer over the node to be selected. The mouse pointer changes its appearance.
- Click the left mouse button.
- The selected node will be displayed inverted.
- All previously selected nodes are deselected.

To select multiple nodes - method 1

- Hold down the **CTRL** key on your keyboard.
- Select a node as described above.
- Repeat steps 1 and 2 for every node to be selected.

To select multiple nodes - method 2 ("marquee selection"):

This method is very efficient if the nodes to be selected fit into an imaginary rectangle.

- Move the mouse pointer above and left to one of the nodes to be selected.
- Hold down the left mouse button and drag the mouse pointer down and right to cover all nodes to be selected with the selection marquee.
- Release the mouse button.

Linking Nodes

The links between nodes in a network are real connections between the objects. Therefore, creating and removing links should not be regarded as solely "cosmetic" operations. Links make permanent changes to the HU.

There are several ways to link nodes:

To link two nodes using the toolbar icon

- Select a node in a network view and click on the Link button in the toolbar.
- A red "rupper band" appears. Move the cross that you see at the end of the line on top of another node and left click.
- If you link two codes to each other or two quotations, then a list of relations pops up. Select one of the offered relations via a left click.



Set of standard code-code relations	Set of standard quote-quote relations
== : is associated with	>>>> : continued by
[] : is part of	X> : contradicts
=> : is cause of	-> : criticizes
<> : contradicts	:> : discusses
isa : is a	? : expands
: noname	?> : explains
*} : is property of	!> : justifies
	*> : supports

Figure 235: Linking two nodes

The two nodes are now linked to each other. In case of a first-class link between two codes or between two quotations, the relation name is displayed either within the link line, above the line (rotated) or within a box.

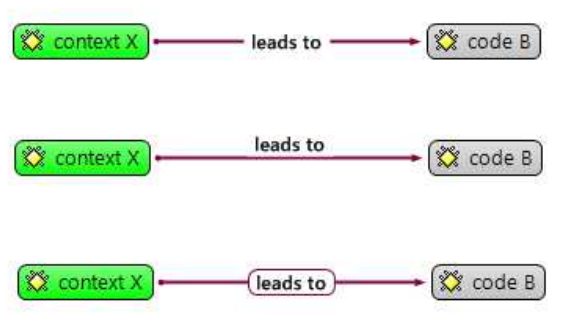


Figure 236: Display options for link labels

You can set the link display options under **DISPLAY / LINK DISPLAY**. Further options are to select between three alternative names (label 1, label 2 or menu label, see “The Relation Editors” on page 344) and to select the display of symmetric relations (just a line or two arrows at both ends).

To link two nodes using mouse and keyboard

A quick way to link two nodes.

- Place the mouse pointer over the source node. The mouse pointer changes its appearance to an arrow.
- Hold down the **SHIFT** key on your keyboard.
- Hold down the left mouse button and drag the mouse pointer to the target node. A red "rubber band" between the mouse pointer and the source node is drawn.
- Release the **SHIFT** key.
- Release the left mouse button.



- Select a relation (applies to code-code and quote-quote links only).

To link more than two nodes

If more than one source node is to be linked with a target node, use the following method.

- Select the source nodes (see "To select multiple nodes - method 1" on page 329).
- Choose **LINKS / LINK NODES** from the Network Editor's main menu, or click on the Link button in the toolbar.
- Move the mouse pointer with the "rubber bands" to the target node and click the left mouse button.
- In case of code-code and quotation-quotation links, you are prompted to select a common relation that applies to all links. You can modify the relations later, if needed.

To link code nodes using the list method

Besides using the Network Editor for creating links between codes, you can also use the "**CODES / LINK CODE TO**" option available from the main menu or the code context menu.

- Select the target code (i.e., the general, broader concept) in the Code Manager.
- Select **CODES / LINK CODE TO: / CODES** from the main menu.
- Select the source code(s) from the multiple-choice list.
- Select a relation that links the selected codes with the target code. If needed, the relation can be modified.

An immediate effect of linking can be noticed when the Code Manager is open: the 'density' counter for all linked codes is updated.

As a reminder, **Density** counts all direct links to other codes. For instance, if six source codes are linked to one target code, the target code is incremented by 6; each source code is incremented by one.

Using **CODES / LINK CODE TO**: From the HU Editor's main menu, memos and quotations may also be linked to codes. Memos can also be linked to other memos, quotations, or codes via the menu option **MEMO / LINK MEMO TO**. However, no specific relation can be selected to link memos to other objects.

To create code-code and quotation-quotation links using the Object Manager

This is not really a topic for this chapter on the Network Editor but should be mentioned here: Codes and quotations can also be linked in the Code / Quotation Manager via drag & drop.

- Identify the target item in the Object Manager's list pane.

- 1. Select one or more source items in the Object Manager's list pane and drag them to the target item in the same pane.
- 2. Select a relation from the list of relations.

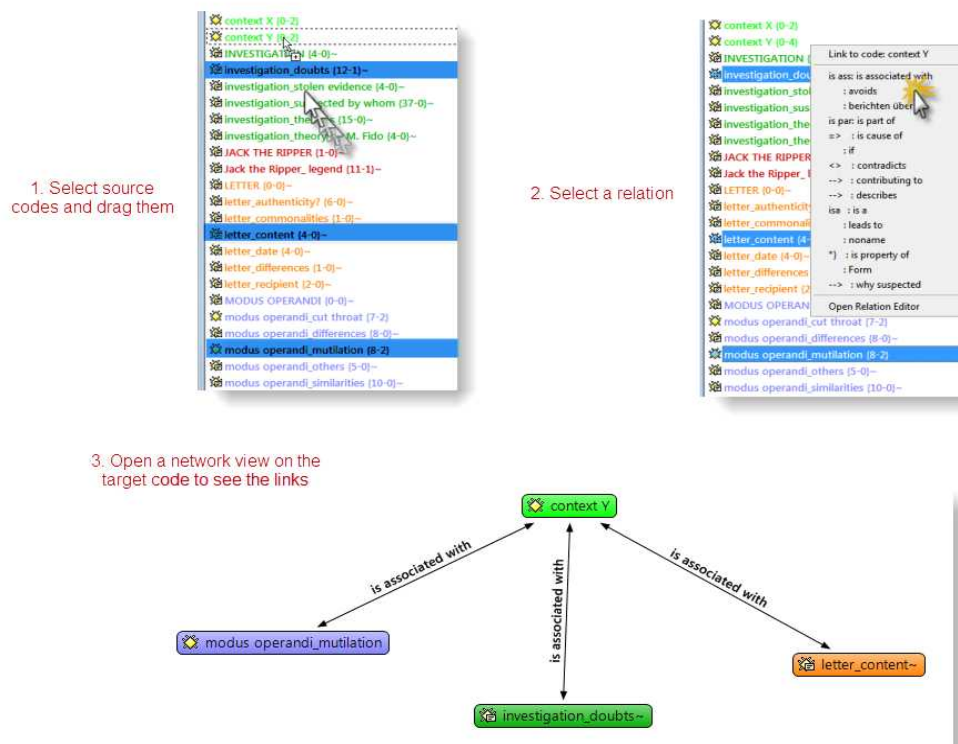


Figure 237: Creating a Code-Code link in the Code Manager

This is only available for codes and quotations in the Code and Quotation Managers.

Selecting a Link

Only “first class” links can be selected. First class or “strong” links can only exist between quotations or between codes. Selecting links is similar to selecting nodes.

- 1. Move the mouse pointer onto the label of the link to be selected.
- 2. The mouse pointer changes its appearance.
- 3. Click the left mouse button.
- 4. The selected link label will be displayed inverted. All previously selected nodes/links are deselected.

Selecting links is a convenient way to cut or flip multiple links (see “Cutting Links” on page 333).



Deselecting Nodes and Links

To deselect a selected node or link: Hold down the **CTRL** key on your keyboard. Click on a selected node or link.

To deselect all nodes and links: Move the mouse cursor over the Network Editor's background. Double-click the left mouse button

Cutting Links

Several approaches to disconnecting previously linked nodes are available.

The first method works for all types of links and is useful when many nodes linked to one other node are to be disconnected:



- Select one or more nodes whose connections to another node are to be removed.

- Choose **LINKS / CUT LINKS** from the Network Editor's menu or click on the Cut Links button in the toolbar.

- Move the mouse pointer with the "rubber bands" to the target node.

- Click the left mouse button

Alternatively:

- Click on one or more link labels.

- Choose **LINKS / CUT LINKS** from the Network Editor's menu or click on the Cut Links button in the toolbar.

Or:

- Move the mouse pointer over a link label.

- Right click and choose **CUT LINK** from the context menu.

The latter two methods work on "first class" links only: code-code or quote-quote ("hyper") links.

Modifying Links

The type of a link (e.g., its Relation) can be changed in the Network Editor.

- Right click on a link label and select **CHANGE RELATION** from the context menu.

- The relation menu pops up. Select a different relation.

A very efficient way to manipulate first class links is offered by the Link Managers (see "Link Management" on page 344).

Selecting Neighbors

Neighbors are the nodes linked directly to a node. Using this procedure repeatedly selects a complete "connected graph", which is a partial Network View where every node has a path (either a direct link or via intermediate nodes) to each other node.

To select neighbor nodes:

- Select the initial nodes.

Choose **NODES / SELECT NEIGHBORS** from the Network Editor's menu, or press **CTRL-N** on the keyboard.

To mark a complete connected sub-network, repeat the previous step until all nodes within the partial Network View are highlighted.

Selecting or deselecting all Nodes

To select all nodes or deselect all selected nodes, select **NODES / DE-SELECT ALL NODES** from the Network Editor's main menu or press **Ctrl-A** on the keyboard.

Inverting the current selection

To invert the current selection, press **Ctrl-I** or select **NODES / INVERSE SELECTION** from the Network Editor's main menu. This will select all unselected nodes and deselect all previously selected.

Moving Nodes

By moving nodes to different positions, you can modify an initial layout created by the automatic layout procedure.

For precision placement of nodes, use the node alignment procedure. To open it, right click on the background of the network view editor and select **SHOW ALIGNMENT TOOLS**.

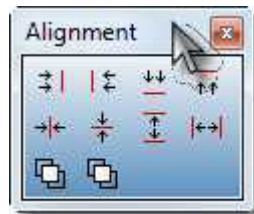


Figure 238: Alignment tools in the network view editor

Do not forget to save the Network View (and the HU itself at the end of the session) if you want to make the new layout permanent.

To move a single node

- Move the mouse pointer onto the node to be selected.
- Hold down the left mouse button.
- Drag the selected node to its new position.

To move multiple nodes

- Create a multiple selection of nodes as described above.
- Hold down the **CTRL**-key and drag the selected nodes to their new position.

Ctrl-Z - Undo
node
placements

'Removing
Nodes' will not
delete the
objects they
represent! The
option 'Delete
Node,'
however, does!!

To move nodes with the arrow keys

- Select one or more nodes using the selection methods described at "Selecting Nodes and Links" on page 329.
- Use the arrow keys in combination with the **CTRL** key to move the node(s) 1 pixel at a time in all four directions.

To undo an erroneous placement, use the function *UNDO POSITIONING* or the key combination *CTRL+Z*.

Removing and Deleting Nodes from Network Views

Removing nodes from the view simply removes the nodes from the Network View. The nodes remain in the HU. Removed nodes can be "re-imported" at any time using the node import functions described previously. However, deleting nodes results in the deletion of the objects they represent from the entire HU—erasing codes, quotations, etc.! Be cautious when deleting nodes!

To remove nodes from a Network View

- Select the nodes to be excluded from the view.
- From the Network Editor's main menu, choose **NODES / REMOVE NODES FROM VIEW** or press Ctrl-Del on the keyboard. If you only want to exclude a single node, you may also choose this option from the node's context menu.

To delete nodes from a Network View

- Select the nodes to be deleted permanently from your HU.
- From the Network Editor's main menu, choose **NODES / DELETE NODE**.
- Confirm the deletion process as it is a critical action. Deleting a node from a network view means that you permanently delete this object from your HU! This can be useful, when you have been adding new objects to a network view for exploratory purposes. Use this option with care.

For this operation, no undo option is available. The only way to undo a false deletion is to close the HU without saving it and to open the most recent version or backup.

If you only want to exclude nodes from a Network View, do not select **DELETE NODE** from the node's context menu or **DELETE ENTITIES** from the main menu. Select the **REMOVE FROM VIEW** option.

Node and Link Actions

Commands affecting selected codes or links are available via their respective context menus. In addition, as described below, type-specific procedures are activated when double-clicking a node.

All nodes and links have context menus.

Actions via Context Menus

Context menus can be activated on nodes and links. Dependent on the type of the node or link selected, these menus will offer specialized options from which to choose.

When the mouse pointer is over a node or a link, related information is displayed in the status window of the Network Editor.

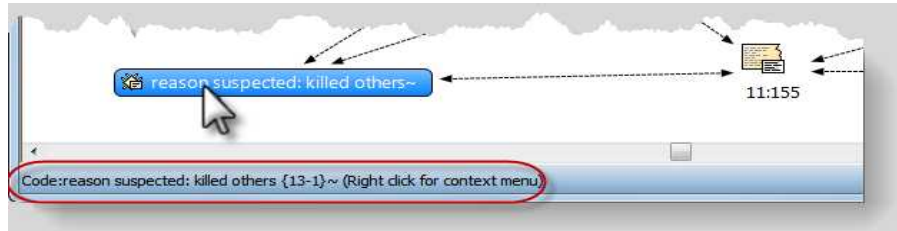


Figure 239: The status bar displays information about a node when moving with the mouse over it

To open a context menu, move the mouse-pointer onto a node or link and click the right mouse button.

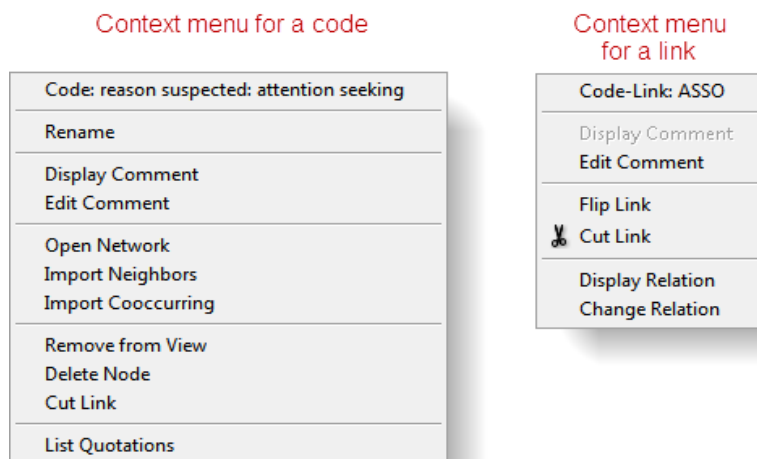


Figure 240: Context menus

To execute node actions per double-click

- Position the mouse pointer over a node.
- Double-click the left mouse button

The table below describes the specific actions launched for the different node types.

If a comment or a memo's text pops up, you can click inside the pop-up window to open a text editor.

Node Type	Double-Click Action
Codes	Displays the code comment (definition).
Memos	Displays the content of the memo.
Quotations	Displays the full text of the quotation.
Primary Documents	Displays the comment for the PD.
Families	Displays the description/comment for the family.
Network Views	Displays the description/comment for the Network View. Hold down the Ctrl key to open this Network View in another Network Editor

Saving a Network View

All links that you create are saved as soon as you save the HU file. You only need to save a network view, if you want to preserve the layout, i.e. the way you have arranged the nodes within the editor. If you do not save a particular view, you can always open up a network view on an object again and ATLAS.ti will arrange the objects according to the default or user-defined layout directions. For first-class relations, the user can defined preferred layout directions (see the section on the “The Relation Editors” on page 344.

To save a specific layout you have created, select the menu option **NETWORK / SAVE AS**.

Enter a name for the network view and click ok.

You can access saved network views via the Network View Manager (main menu: **NETWORKS / NETWORK VIEW MANAGER**), or via the network button that you find in the top left corner of the HU editor underneath the main menu File.

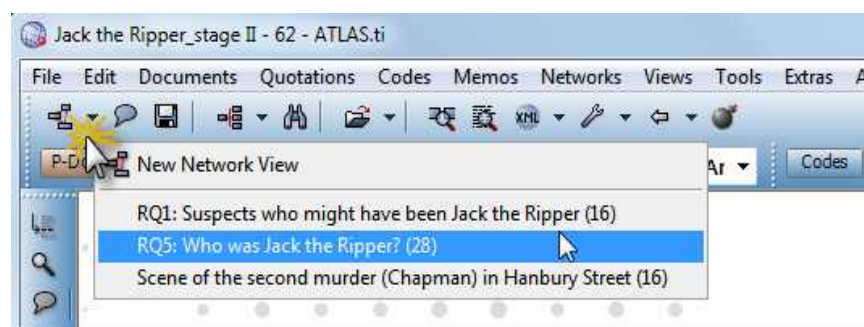


Figure 241: Accessing saved network views

Launching a Network View

You can open a Network Editor on a specific Network that is already part of the HU. Open a Network View by one of the following methods.

To open a Network View from the pick list

- Click on the network button's down arrow on the main toolbar to display the drop-down list of existing Network Views (see figure 241 above).
- Select one of the listed Network Views.
- A Network Editor opens on the selected Network View.

To open a Network View using the Network View Manager

Use this method if the number of Network Views already defined is too large to be comfortably displayed using the pick-list method.

The Network View Manager also allows you to view some properties of Network Views without opening a Network Editor.

- Select **NETWORKS / NETWORK VIEW MANAGER** from the main menu or click the Network button in the main toolbar.
- Select one of the displayed Network Views.
- Click on the network button above the list.

The Network View Manager offers easy access to all Network Views of a given HU. The text area displays the comment for the selected Network View.

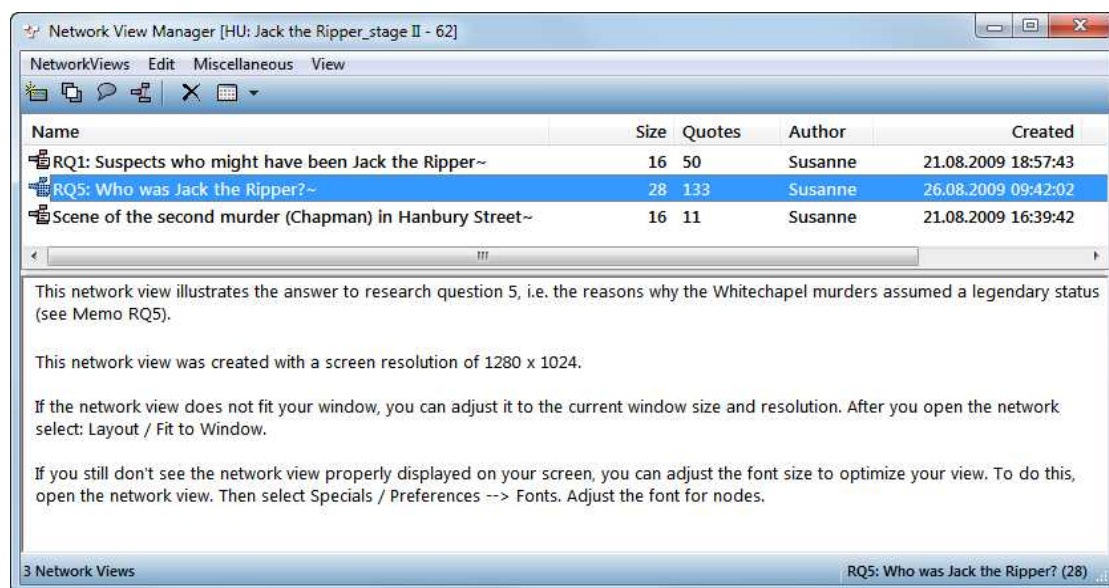


Figure 242: The Network View Manager

Simple analytic functions

Import Node Neighbors

This method imports all direct neighbors of the selected nodes into the Network View. This option is also available from the node's context menu. Importing direct neighbors allows you to construct a *connected* Network View step-by-step. (In a connected graph, there is always a direct or indirect path between any two nodes.)

To import neighbors of selected nodes:

- Select the node(s) whose neighbors are to be included in the Network View.
- Choose **NODES / IMPORT NEIGHBORS** from the menu.

Hold down the **Ctrl** key to suppress the import of quotations.

This procedure imports neighbors of all types. If a code with many quotations is selected, this operation might fill the Network Editor with unwanted quotation nodes. To suppress the import of quotations, hold down the **CTRL** key when issuing this command.

Import neighbors can be undone.
Shortcut: **Ctrl-Shift-Z**.

If you have mistakenly imported the wrong or too many node neighbors, select **NODES / UNDO IMPORT NEIGHBORS** from the menu, or press the key combination **Ctrl-Shift-Z**.

Import Co-occurring Codes

For code nodes, there is a special import feature that exploits the spatial relations of different codings. A code co-occurs with another if it has been used to code quotations that are in close proximity: embedded, overlapping, or if two or more codes are applied to the same quotation.

The proximity of coding applied to a text can also be exploited via the Query Tool's "co-occurrence" proximity operator. However, while the Query Tool yields quotations for explicitly specified codes, the import function brings in only the codes.

To import co-occurring codes:

- Select one or more codes in the Network Editor.
- Choose **NODES / IMPORT CO-OCCURRING CODES** from the Network Editor's menu.

Create Families from Network Views

You can create code, PD or memo families based on the nodes included in a network view.

- Select the nodes that you want to include in the family (see "Selecting Nodes and Links" on page 329).

- From the network editor's menu, select the option **SPECIALS / GENERATE FAMILY** and then the respective object type (code, memo or PD family).
- Enter a name for the family and click OK.

Create network views from code families

It is also possible to create network views based on code families. A new code will be created from the code family name and all member codes will be linked via ISA relations.

- Open the Code Family Manager.
- Select a family and then the menu option **FAMILIES / CREATE NETWORK**.
- A pop-up message informs you that a new code will be created and that all member codes will be linked via ISA relations. Confirm this message.
- Accept the default name for the new code or enter a new one and click Ok. The newly created network view opens.

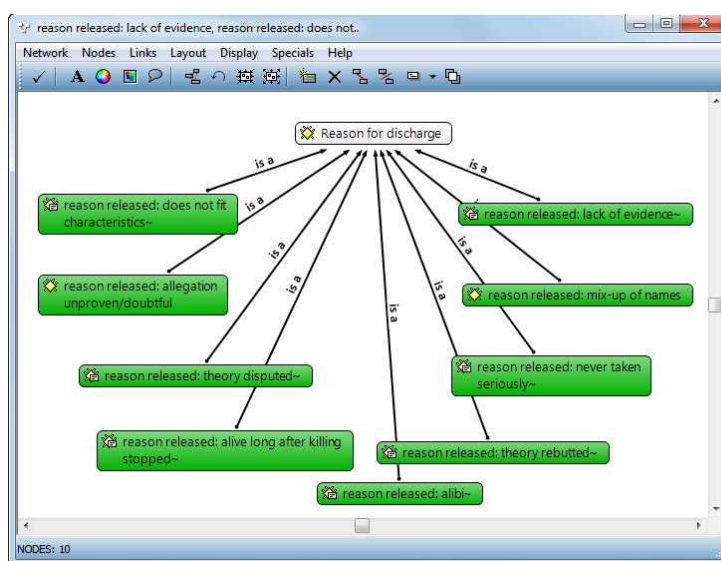


Figure 243: A network view created from a code family

Layout Procedures

Two methods are available for the automatic placement of nodes.

Semantic Layout

Places the nodes within the window using the *semantic layout algorithm*. This algorithm tries to place the nodes into optimal positions using an invisible matrix of default positions. It tries to place the nodes with the highest connectivity into center positions.

Shortcut: CTRL-L

By recursively applying the same method to the rest of the nodes using neighboring positions of the first node placed, the algorithm tries to avoid overlapping nodes and too many crossing links. However, calculating an optimal solution is not possible in a reasonable amount of time.

The user can exert some control on this algorithm via the preferred layout direction of the relations used for the links, e.g., links using the “is-a” relation go from bottom to top, if possible. You can change the layout direction manually using the Relation Editor (see “The Relation Editor” on page 344 for details).

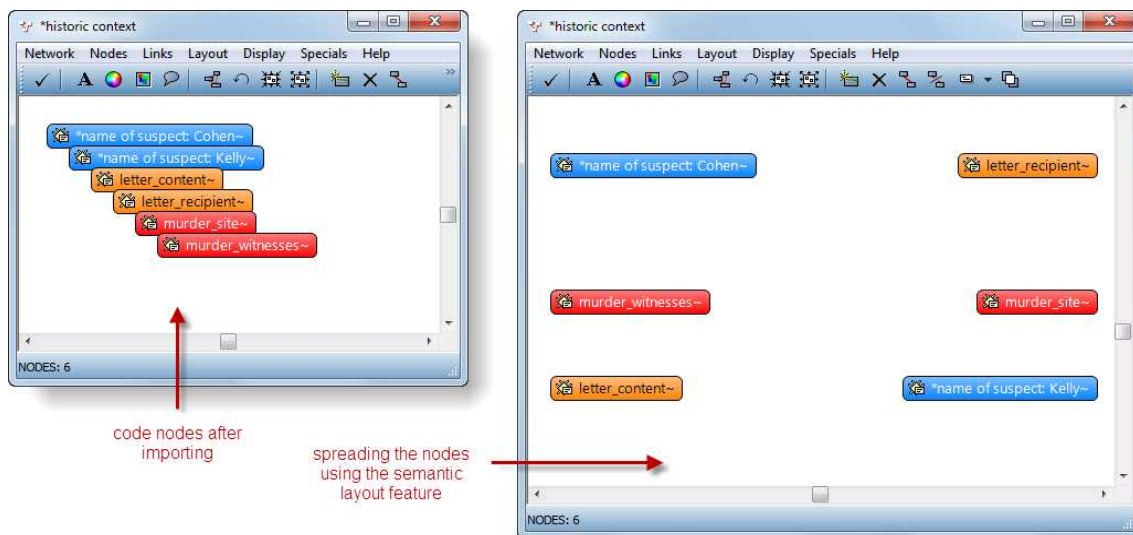


Figure 244: before and after applying Semantic Layout to a Network View

The results of the automatic layout procedure are typically quite usable and provide at least a good starting point for subsequent manual refinement of nodes' placement. If you are not happy with the layout produced, you can revert to the previous placement by using **UNDO POSITIONING** (Ctrl-Z).

Topological Layout

This special layout procedure tries to create a linear list of nodes positioned from the upper left to the lower right. This sequence is the result of a **depth first traversal** of the graph. The algorithm tries to resolve as many constraints between any two nodes so that a node with the least dependencies is made the first node positioned in the upper left corner, and the node with the most dependencies on other nodes is positioned in the lower right corner of the Network Editor.

Ctrl-Z - Undo
node
placements

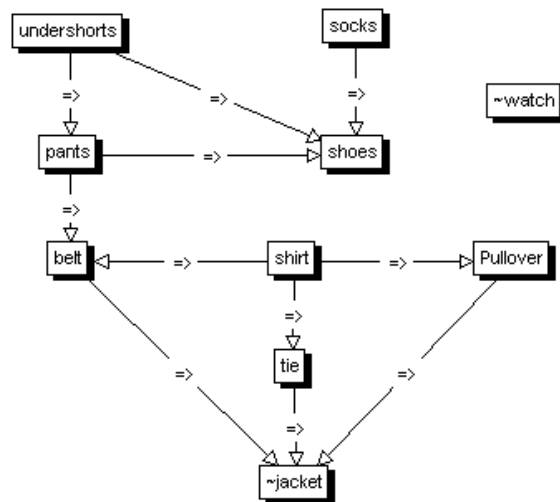


Figure 245: A set of activities with local constraints

In the example above, the dependencies between several activities necessary to get dressed are described by local constraints between the nodes. From these local constraints, a global solution is generated: One correct way to get dressed. The "is-cause-of" relation was used to describe constraints. The only condition a relation must meet is that it has the "transitive" attribute.

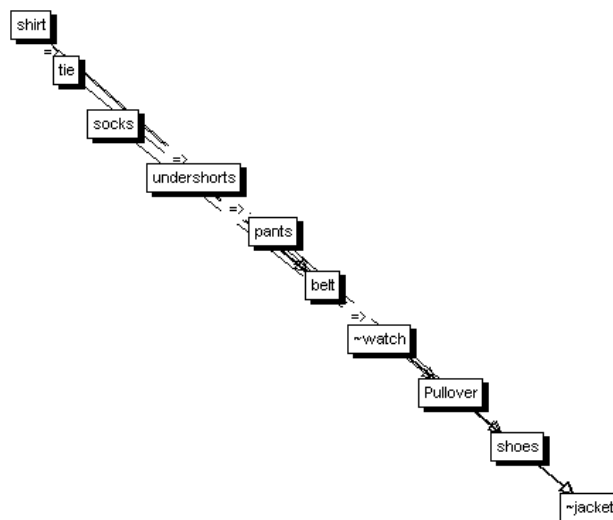


Figure 246: Topological sort always results in a linear, diagonal placement of the nodes

Such algorithms are typically in use in project management software. You can use a directed relation like "before" to represent time dependencies between events ("socks before shoes," "shirt before tie," "marriage before divorce") and then compute a possible sequence of events.

Creating Output

Several output options are available for Network Views. The range is from printing the layout (via copying to the clipboard in a variety of formats both textual and graphical) and by saving a Network View to a file.

Printing Networks

Before printing a Network View the first time, you may prefer to set some general options (include title, print border, etc.) (**SPECIALS / PREFERENCES / PRINTING**).

You can either print the entirety or part of a Network View.

- Open the Network View and arrange all nodes to be printed.
- If you want to print a selection of nodes only, select these nodes (for multiple selection, hold down the Ctrl key).
- Choose **NETWORK / PRINT NETWORK VIEW** from the Network Editor's menu.
- In the Printer dialog window that opens, check "Selection" to print selected nodes only.

If the size of the network view determined by the node layout exceeds a single page, depending on current printer settings, scaling or multi-page print will be offered as a choice.

- Make your choice and the network view will be printed.

Network Views for other Applications

Copy to Clipboard

The menu option **NETWORK / COPY TO CLIPBOARD** copies the network view to the Windows clipboard. From the clipboard it can be included in Word or other "foreign" documents. The Network View (all nodes or selected nodes only) is copied to the clipboard in a variety of formats:

- A textual description of the contained nodes (a node synopsis)
- An Windows Enhanced Metafile for high quality graphics to be used in reports. Depending on the processing capabilities of the target application, results may sometimes be less than optimal.
- A bitmap file that has more accurate layout and fonts, but less quality when printed.

In other applications (Word, PowerPoint, etc) a selection or all of these formats are offered via **PASTE SPECIAL**.

Save Network View as Graphic File

You can save your Network View as a graphic file, either as a bitmap (BMP) or as a Windows Enhanced Meta file (EMF). You can insert this file into reports, Word, PowerPoint, etc. Choose **NETWORK / SAVE AS GRAPHICS FILE**.

This function does not save the network as a reusable structure for import to other HUs. In order to accomplish this, visit chapter "To export the code network" on page 352.

Link Management

The Code-Link and the Hyper-Link Managers (see page 371) offer a very efficient way to review and edit first class links (code-code links and quotation-quotation link, also referred to as hyperlinks).

Links can be edited, flipped, and removed, and a Network Editor can be opened on selected links, e.g., all nodes affected. A comment can be viewed and edited for the selected link. Last but not least, and typical for all Object Managers, links can be sorted by criteria such as the target or source object, the relation used, etc.

Changes made to the links are immediately displayed in any Network Editor that currently display the links.

The Link Managers

The two figures below show a Code Link Manager and a Network View opened on two selected links. In the left figure the two links are selected and Flip Link from the context menu is selected. The right figure displays the effect.

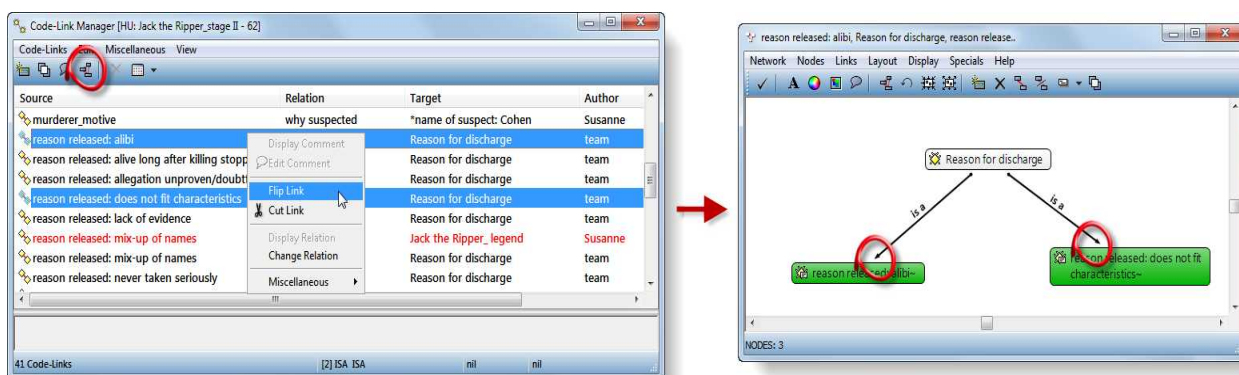


Figure 247: Flipping two links in the Code-Link Manager

The Relation Editors

The two Relation Editors, one for code-code relations and one for hyperlinks (quotation-quotation relations) allows the creation, display, and editing of relations. Explicit relations can only be used when connecting codes to codes or quotations to quotations. Connections between codes and quotations, memos and quotations, memos and codes, and families and their members cannot be named and specified by the user.

The relations editors already include a set of default relations. You can modify these entries at any time, translate them to your language, change the labels or the menu text, modify the line color, etc.

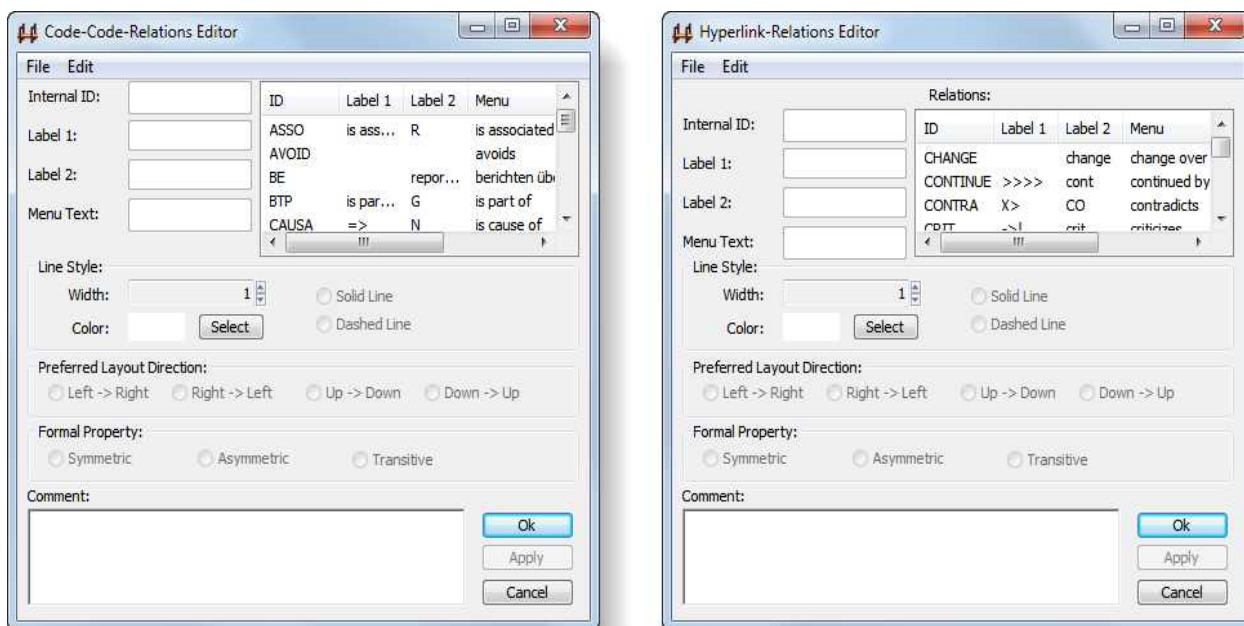


Figure 248: The Code-Code and the Hyperlink Relation Editors

Cosmetic and descriptive as well as structural aspects of relations can be edited with the Relation Editor.

Cosmetics

Cosmetic aspects include the label used when displaying links in a Network Editor; the menu text displayed when creating a connection; and the width, solidity, and color of the line connecting the nodes linked with this relation.

Preferred Layout Direction

A more sophisticated “cosmetic” property is the preferred layout direction. By using this relation characteristic, the user can assert some control on the automatic layout algorithm. Indeed, this option justifies the name “semantic layout”.

Formal Property

The formal property associated with a relation has a cosmetic effect and it controls the “procedural semantics” of the semantic operators in the Query Tool. When you want to utilize the semantic operators (SUB, UP, SIB), transitive relations need to be used.

Comment

As with all entities in ATLAS.ti, a comment can be attached to a relation. The text entered as a relation comment is displayed within a Network Editor after opening a context menu on a link, or when selecting **DISPLAY RELATION**.

Bear in mind that a comment written for a relation is different from a comment written for a *link*. The comment for a relation is of a global nature and defines the relation type: e.g., what is meant by the relation “is associated with.” A *link* using this relation connects two specific codes. When writing a comment

for this link, the meaning is local and explains why two codes were connected using this relation.

How to edit relations

The Relation Editor is available from the main menu **NETWORK**, or can be launched from the Network Editor's **LINKS** menu.

You can change the properties of relations. If these relations are already in use by the currently loaded HU, changes will be stored along with the HU when saving it.

- Open the Relation Editor: **NETWORKS / RELATION EDITOR** and select whether you want to open the code-code or the hyperlinks relation editor.
- In the list of relations, click on the relation to be edited.
- Change any of the values.
- Click on **APPLY**.

If you open the Relation Editor from within a Network Editor, all changes are “broadcast” to the editor and you see the changes in the display of the affected links.

When opening the Relation Editor from the main menu, all but the preferred layout direction settings are realized immediately in all currently open Network Editors.

How to create new relations

User-defined relations are only available for code-code or quotation-quotation links. All other links use “hard-wired” relations (like the ones between quotations and codes).

New relations are stored together with the HU in which they are used. When starting ATLAS.ti 6, the default relations as defined in the file *default.rel* are loaded. This file is located in the user system folder that can conveniently be accessed via **EXTRAS / EXPLORER / USER SYSTEM FOLDER**. When creating new relations, it is suggested that you save these relations to the *default.rel* file. If desired, different REL files can be created and loaded.

New relations can be created when linking codes or quotations, or independently of any linking activity. In both cases, entries are created with the Relation Editor.

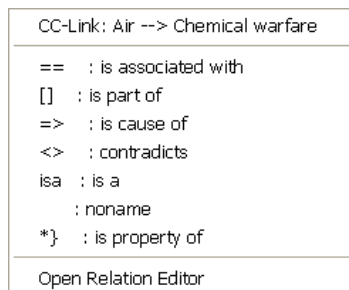


Figure 249: Relations

When linking codes or quotations, select the option **OPEN RELATION EDITOR** instead of one of the offered relations. Or, select **NETWORKS / RELATION EDITOR** from the main menu.

In the Relation Editor, select the menu option **EDIT / NEW RELATION**.

Enter a short unique ID for the relation you want to create. The default are capital letters, but it is not necessary to use capital letters. Just remember that each relation needs a unique ID. Based on this information, ATLAS:ti ensures that none of the relation is overwritten by any other relation.

Next, enter a label 1, a label 2, and the menu text. In the Network Editor, you have three options to display the name of the relation (see figure below). As a view option, you can either display label 1, label 2, or the menu label. If there is sufficient space in the network, you can select to display the menu label, which is usually longer. Choose an abbreviation for labels 1 and 2 as a display option when space is limited.

Choose a symbol for label 1, a short word for label 2 and a longer name for the menu label. Or: enter nothing for label 1, an English language name for label 2, and a label in your native language for the menu label.

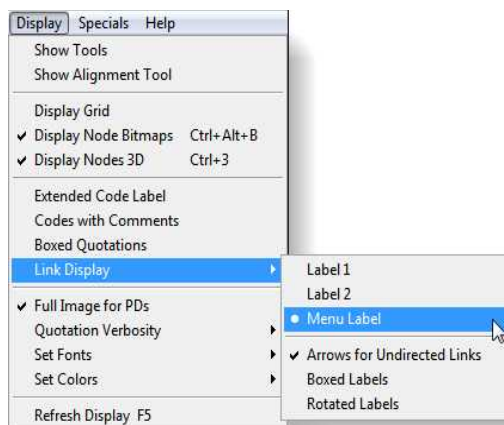


Figure 250: Display options for link labels

The menu label equals the menu text. The text entered in the field 'Menu Text' is used in the relation menu and as a label. In addition, the menu text is also used when outputting networked codes in the form of quasi sentences (**CODES / OUTPUT / CODE HIERARCHY** or **CODE NEIGHBORS**).

Next select the line style (width, color, solid or dashed).

If you wish, you can specify the preferred layout direction that is used to automatically draw the picture when opening a Network View on an object.

The final attribute to enter is the "formal property" of the relation: "transitive," "symmetric," or "asymmetric." A transitive relation is a directed link like "is part of", "is reason for", "is a". Both symmetric and asymmetric relations are non-directed links. An example of a symmetric link is "is associated with"; "contradicts" is an example for an asymmetric link.

Optionally, you can describe the newly created relation in the text pane at the bottom of the Relation Editor.

In order to save the new relation, select **FILE / SAVE** from the Relation Editor menu. A file dialog window opens. The suggested file name is *default.rel*.

It is recommended to use this file as your standard repository for relations. It is possible to create different sets of relations by entering a new file name (see "Managing Relations" below).

Managing Relations

Using the Relation Editor, different sets of relations can be created and stored in separate files (using **FILE / SAVE RELATIONS**). For instance, you could have a set of relations related to argumentation theory, or a set based on Grounded Theory relations. When starting ATLAS.ti, the default relation set is loaded (i.e., the file *default.rel*).

If you have created a new set and stored it in a new REL file, you need to load it after starting ATLAS.ti. To do so, open the Relation Editor and choose **FILE / LOAD RELATIONS**. This adds the new relation set to the already loaded default set.

If you want to delete relations from the default set, or from any newly created set, select a relation in the Relation Editor and choose the menu option **FILE / DELETE RELATION**. When you have removed all unwanted relations and want to make the changes permanent, you need to save the set (select **FILE / SAVE RELATIONS**).

Create sets of relations that reflect your methodology

Cosmetics - Network Display Properties

There are numerous options available to alter the appearance of nodes, links, and even the background.

However, all settings created using the Display menu of Network Editor are lost after closing the editor. If you want to change colors and fonts globally for all Network Views, you need to change these settings under **NETWORKS / PREFERENCES**.

Colors

The color of the Network Editor's background and the color of nodes can be set independently. Choose **DISPLAY / SET COLORS** and then one of the options from the submenu. You are offered a standard color chooser dialog from which to pick a color.

User-defined code colors

If you have colored your codes, you can display these colors either as node label or as node color in a network view. To do so, click on the color circle in the tool bar and select the appropriate option:

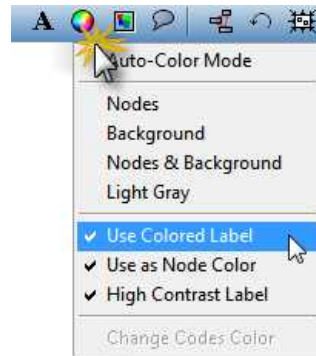


Figure 251: Coloring options

If you have used a dark color to color a code, then use the “High Contrast” option to display the node label in white.



Figure 252: Low and high contrast label display

Auto-Color Mode

Auto-Color mode visualizes the coding and modeling state of the codes. This mode affects code nodes only. Code nodes are automatically assigned a color according to their groundedness and density. Groundedness of a code (i.e., the number of associated quotations) increases the yellow part of the node color (note “name of suspect” in the figure below). Density (i.e., the number of links to other codes) increases the blue part (“name of suspect: Cohen” is the winner in the figure below). In the Code Manager, high-density codes are indicated in red, high frequency codes in blue. This makes codes that are heavily or seldom used for coding or model building easily identifiable.

To initiate the auto-color mode in a network view, click on the colored circle in the toolbar and activate **AUTO-COLOR-MODE**. In the Code Manager you find the auto-color option under the Views menu.

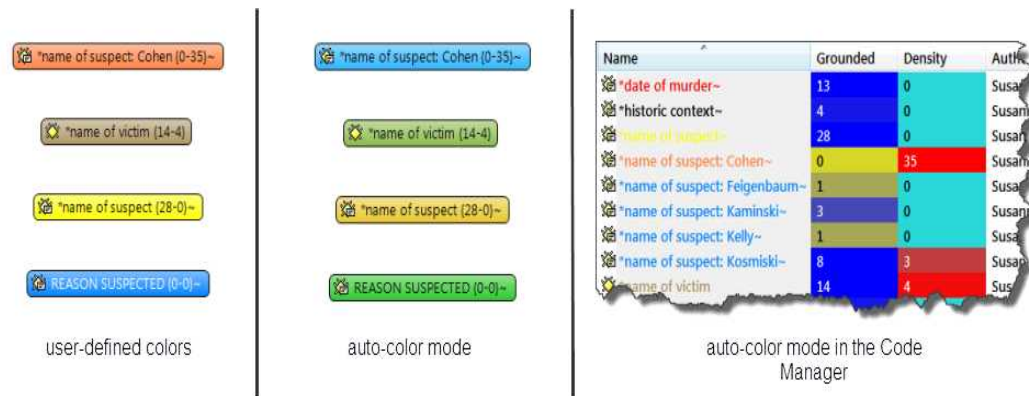


Figure 253: Auto-color mode

Fonts

The font used for nodes and links can be set independently choosing **DISPLAY / SET FONTS** from the Network Editor's main menu.

Display of Nodes

Nodes can be displayed either in a flat or 3D-view, shaded or with rounded edges and a gradient fill. Select any of the three options, click on the Display button shown below.

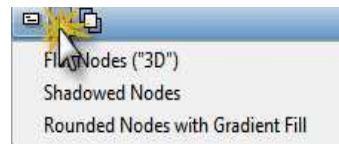


Figure 254: Display options for nodes

Node and Link Appearance

Under the Display menu of the Network Editor you find a large variety of options to alter the display characteristics of nodes and links. Some of these options affect all nodes regardless of their type. Other options change the display of certain node types only.

Node Icon

The node type icon can be switched on and off for all nodes by selecting the menu option **DISPLAY / USE NODE BITMAPS**, or by pressing the key combination **CTRL-ALT-B**. The small image used as a node icon increases the distinctiveness of the nodes, especially when a mixture of node types exists in a Network View. Nonetheless, when space runs low, you may prefer to switch off the icons.

A node can be displayed with a "3D" border, or with a drop shadow. To switch between the 3D and the shadowed view, select the menu option **DISPLAY/DISPLAY NODES 3D** or press the key combination **CTRL-3**.

Node Verbosity

You have several options to control the amount of information displayed in a node. Quotes can be displayed with just their ID or with the complete selection of text they represent.

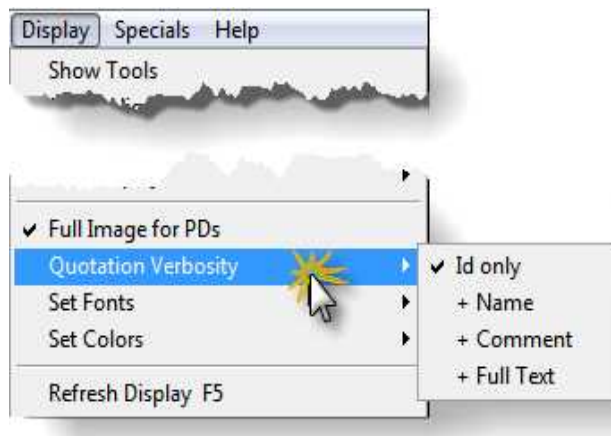


Figure 255: Submenu Quotation Verbosity

Of course, to decide which level of verbosity makes sense, you need to examine how many nodes populate the Network View and the overall size of the text. To change the verbosity of quotes, select the menu option **DISPLAY/QUOTATION VERBOSITY**.

Link Display

There are numerous ways to display links via menu item **DISPLAY / LINK DISPLAY**.

First, choose from three different ways of displaying the label: choose to display label 1, label 2, or the menu text as defined in the Relation Editor. See "The Relation Editor" on page 344 for further detail.

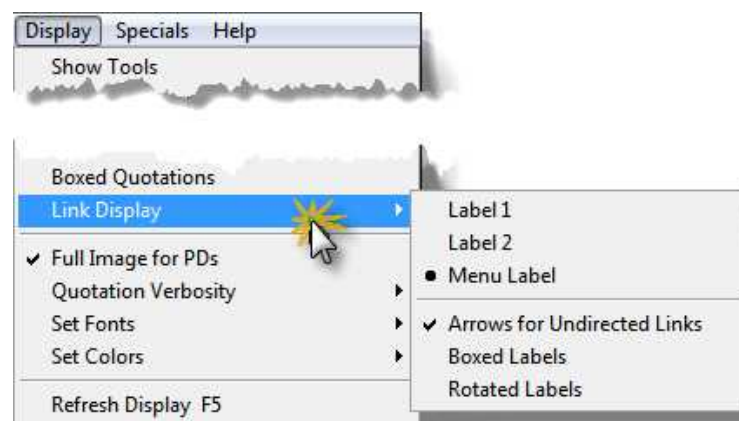


Figure 256: Submenu Link Display

The second option is to display labels with a box around them (or not), or to display them rotated alongside the line connecting two codes or quotes.

Theory transfer supports a deductive approach to analyzing qualitative data and the application of "proven" theories to other domains.

Miscellaneous Network Procedures

Theory Transfer

By "Theory Transfer" we mean the re-use of codes, relations, and code networks produced in one project in subsequent projects.

Two different strategies are supported:

- The re-use of a "flat" (unstructured) list of codes including names, code definitions, author, date of creation and modification in other HUs.
- The transfer of rich representations of codes (including the connections between codes).

"Flat" Code Migration

The first strategy--using unstructured code lists--includes the output of all or a selection of codes from one HU into a file and the later import of this code file into another HU. Step-by-step instruction is provided elsewhere (see "Transferring Codes from Other Projects" on page 216).

The method of flat code migration is useful when working in teams and when a code list is first developed on one computer. This way, other team members can easily import the agreed upon list of codes into their HUs. Other potential applications for this function include testing reliability, or starting deductive structural theory work from scratch. When testing for reliability, a given code base can be used on the same material by different authors.

Semantic Network Migration

This method transfers a relatively complete "theory" into a new project. Like the flat code migration method described above, two steps are necessary. First, the network of codes needs to be exported and saved as an external file. Second, this file is imported into a new HU (or an existing HU).

To export the code network

- Load the HU that contains the "theory" you want to migrate.
- If needed set the code filter to contain only those codes to be processed in the next step.
- Choose **NETWORKS / EXPORT CODE NETWORK** from the HU Editor's main menu.
- Enter a name for network file. By default, the name of the HU with the extension NET is offered.

The file contains a textual description, which can be processed by the import step described in the following directions.

To import a code network

- Load the HU into which the network of codes shall be imported.
- Choose **NETWORKS/IMPORT CODE NETWORK** from the HU Editor's main menu.
- Select a network file (extension .NET).

Conflict Resolution

When importing networks into an HU that already contains networked codes, the following internal strategy is applied to avoid conflicts: Existing codes and links are not modified, inconsistent links are not created (e.g. direct cycles).

Cleaning Up

While the situation of importing homonyms is controlled by the conflict resolution strategy, the system cannot automatically handle unwanted synonyms. Especially when importing codes and networks created by others into a non-empty HU, such synonyms (e.g., "man" and "mankind") might clutter the name space of codes. You can clean up by merging the synonyms (see "Merging Codes" on page 218).

Scaled Theory Transfer

Besides the two strategies described above, you can use the HU merge procedure to gain more control over what components are to be transferred. Code lists with "rich" representations of codes can be extracted from a given "theory template" HU; Network Views, memos, and/or PDs may be included. This method also has the advantage that it is a "one-pass" procedure and there is no need to create extra files containing the codes or networks to be transferred. Unlike the Semantic Network Migration method described above, it also allows you to assert more control over how conflicts with existing codes and links are to be resolved.

For details please refer to "Merging Hermeneutic Units" on page 171.

Merging Codes using the Network Editor

Below we describe how merging codes can be accomplished in a Network Editor.

The figures below illustrate that the merging of two or more codes is not a trivial task, because all of their references, links, and comments need to be transferred to the target code in a consistent manner.

Clean up synonymous codes using the Code Merge procedure. The essentials of merging codes have already been described elsewhere (see "Merging Codes" on page 218).

Using the network method is the "inverse" procedure of the list method described earlier (see "Merging Codes Using the List Method" on page 219). Using the list method, you select the target code first. Then you choose the codes to be merged. Merging codes in a network editor is the inverse. You select the codes to be merged first and then you select the target code.

To merge codes using the Network Editor

- Open or create the Network View that contains the codes to be merged (here "Magic 3", "Magic 7" and "Number magic").
- Select all "source" codes to be merged into one target code. Make sure that the target node is already visible in the Network Editor.
- Choose **NODES / MERGE CODES** from the Network Editor's main menu.
- Move the mouse to the target node and click the left mouse button.

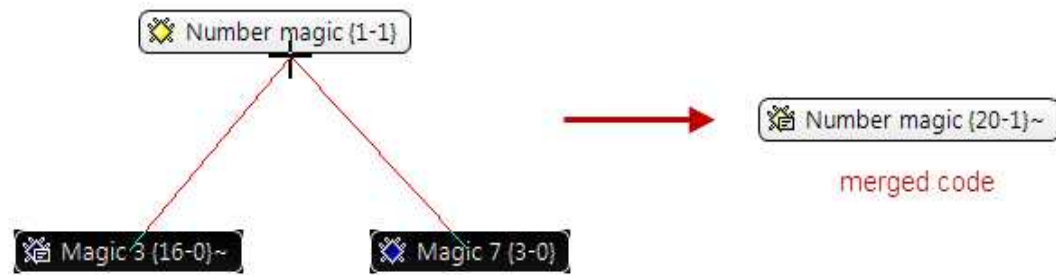


Figure 257: Merging codes in a network view editor

After the merge: The two former sub codes of "Number Magic" - "Magic 3" and "Magic 7" - have been merged into "Number Magic". All references to quotations, other codes, and memos have been "inherited" by "Number Magic".

The target node "inherits" all the references, i.e., quotations, links to other codes and memos, and comments, into the incorporated node(s).

Splitting Codes

There is still some work involved in splitting a code, and therefore it is called the 'Poor Man's Split Code' function. When clicking on **CODES / MISCELLANEOUS / SPLIT CODE**, the following window opens, providing a summary instruction on

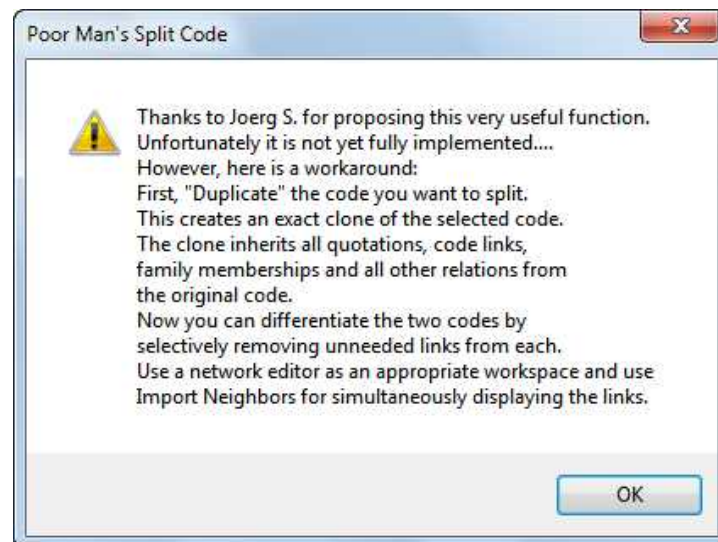


Figure 258: Instructions for splitting a code

what to do in order to split a code:

Below, step-by-step instruction is offered. As an example, the code "Number magic" is split. Above, in the section on merging codes, we merged the two

codes “Magic 3” and “Magic 7” into the “Number magic” code (see “Merging Codes using the Network Editor” on page 353). Before the merge, sixteen quotations were attached to the code “Magic 3”, three quotations to the code “Magic 7, and one quotation to the code “Number magic”. Now we show how to revert this action.

To split the previously merged code “Number magic”:

- Select the code “Number Magic” in the Code Manager.
- Open a Network Editor on this code. The network editor will display “Number Magic” and all its direct neighbors, except quotations.
- Select code “Number Magic” in the network editor and select **NODES / IMPORT NEIGHBORS** from the network editor’s main menu to import its quotations. Remove other node types from the view that might also be linked.
- Select **NODES / DUPLICATE CODES** to create an exact clone of “Number Magic” which is immediately displayed in the network editor as well. The clone inherits all quotations, code links, family memberships and other relations from the original code. You will see that all links originating from “Number Magic” also appear with the newly created clone “Number Magic [Clone: 1]”. You will very likely end up with lots of nodes and links cluttering the screen.
- Repeat this step as we want to split the code number magic into two codes: Magic 3 and Magic 7.
- Enlarge the network window to fill the entire screen.
- To de-clutter the display, select the menu option **LAYOUT / SEMANTIC LAYOUT**. This distributes all nodes in a more ordered fashion.
- Rename the two clones into “Magic 3” and “Magic 7”.

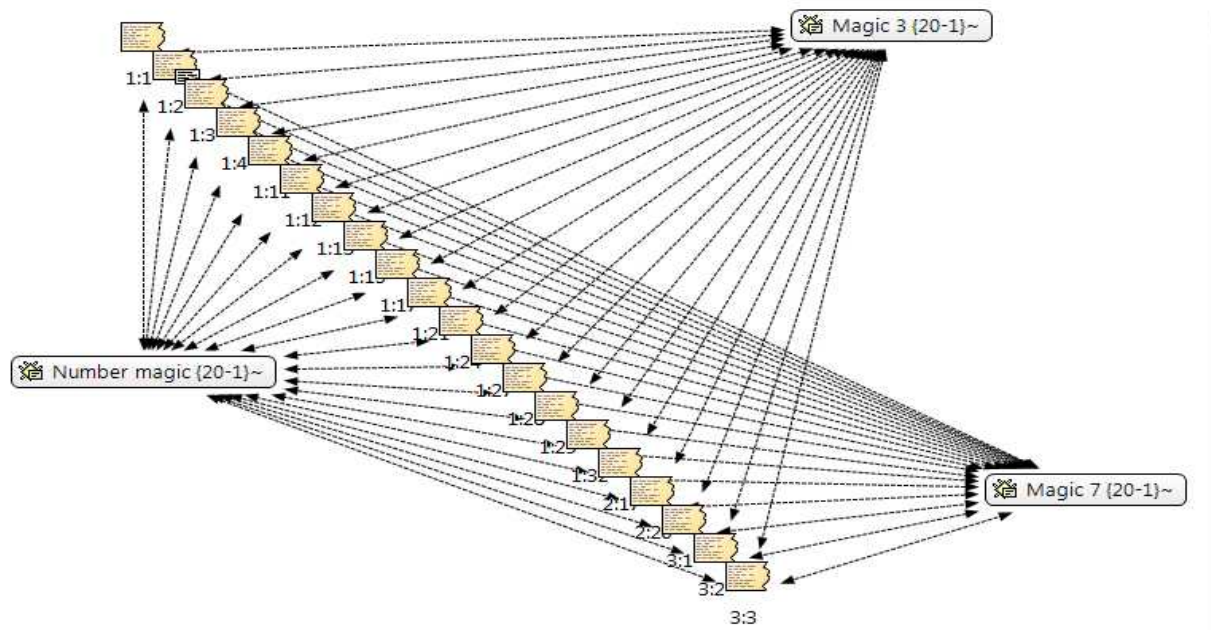
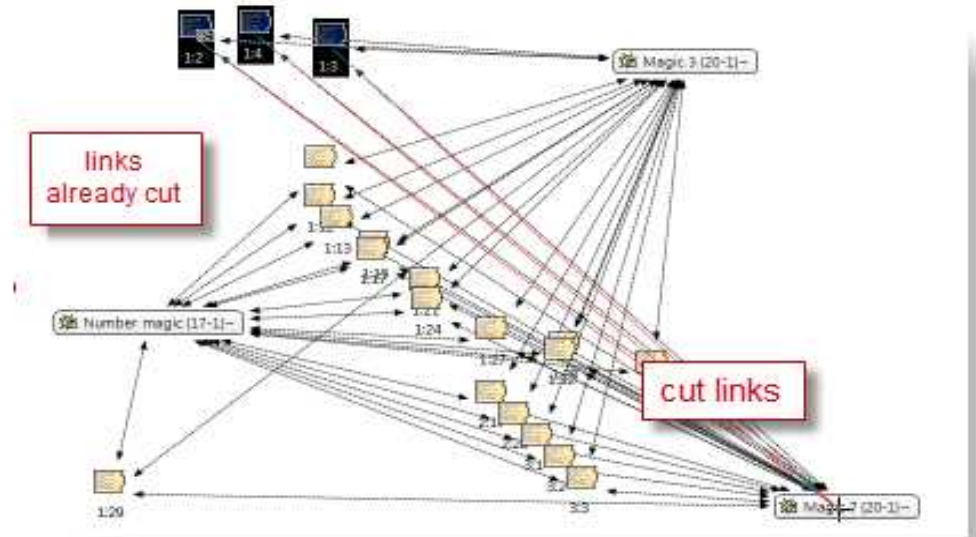


Figure 259: First step in splitting a code: Making one or more clones and renaming them

Select all quotation nodes that should no longer be referenced by the original node. In the above example, number magic remains only linked to quotation (1:29), Magic 7 remains linked to quotations 1:2, 1:3 and 1:4. All other quotations are linked to Magic 3.

Select **LINKS / CUT LINKS** from the menu or use the unlink button in the toolbar. Red "rubber bands" appear, connecting the selected nodes with the mouse cursor. Move the mouse pointer over code node that should no longer be linked with these quotations. This unlinks all selected nodes from the original code.



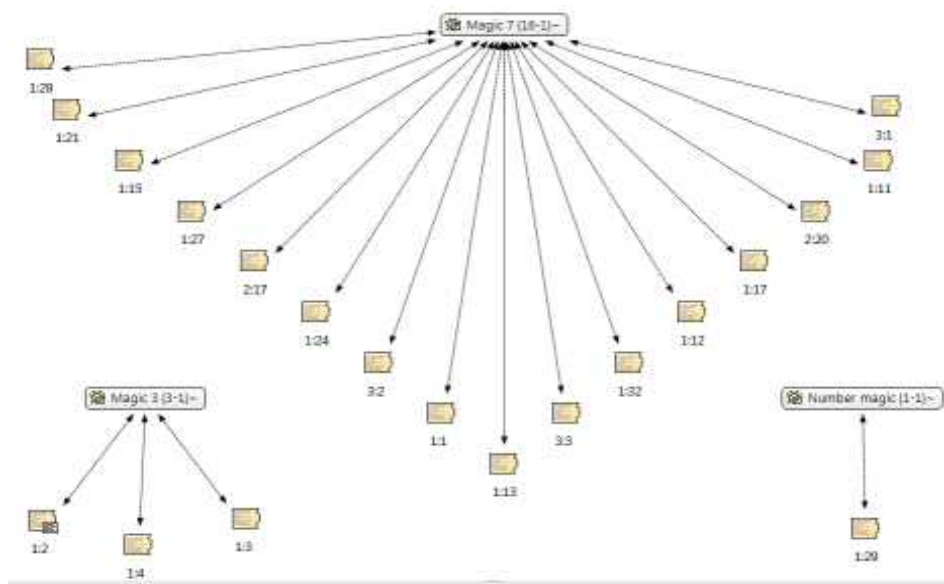


Figure 262: Completed split code action

To produce the above image, the semantic layout option was used again to distribute the code and quotations nodes evenly within the network view editor.

Network Views as Graphical Tables of Contents

If you use graphical PDs, you can use Network Views to display "thumbnails" (small-sized copies) of these PDs.

Create a new Network View by choosing **NETWORKS / NEW NETWORK VIEW** from the HU Editor's main menu.

Change the size
of the
thumbnail
images

- Import some graphical PDs (see "Nodes" on page 327).
- From the Network Editor menu, choose **DISPLAY / FULL IMAGE FOR PDs**.
- Rearrange the nodes in the Network View and save the network view.

You can configure the size of the thumbnails:

- Select **SPECIALS / PREFERENCES**, tab: **Nodes**. The standard width is set to 200.
- Change the width and click Apply. Close the Network Preferences window.

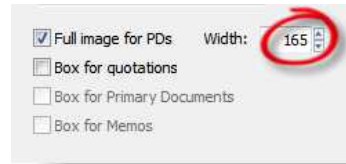


Figure 263: Preference settings for thumbnail PDs

Close and reopen the Network View in order for the changes to take effect.

The figure below shows an example network view including thumb nail images and hyperlinks. Hyperlinks are explained next (see “Hypertext”).

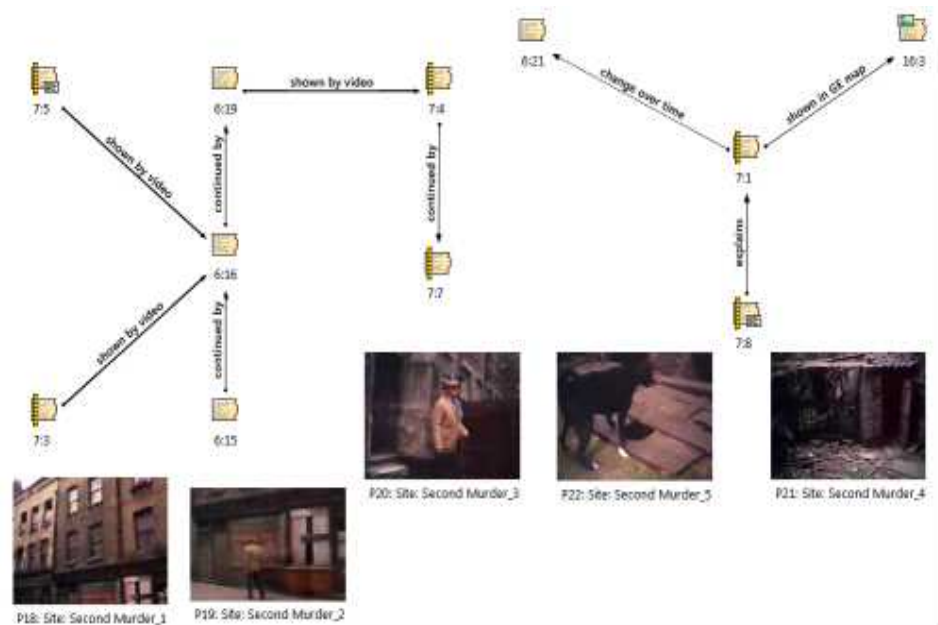


Figure 264: Network View including thumb nail images of image PDs and hyperlinks

Hypertext

A network with text (or other media) as nodes is often referred to as a *hypertext*. The original sequential text is de-linearized, broken down into pieces that are then reconnected, making it possible to traverse from one piece of data to another piece of data regardless of their original positions.

The procedures described so far have focused on the creation of *code* networks. Direct linking of data-segments (quotations) to other data-segments offers similar flexibility in choosing and defining relations. Almost all of the editing functions described for code networks can also be used when connecting two or more quotations.

Code-code and quote-quote links are the only types of network connections that allow you to assign a name to the connection that appears on the line or arrow that runs between the objects.

Representing the “Rhetoric of Text”

*While a code offers fast access to sets of data segments, it defines only a simple relation between them, namely **equivalence**.*

Hyperlinks, which directly relate data segments, express more differentiated relationships between quotations: contradiction, support, illustration, etc.

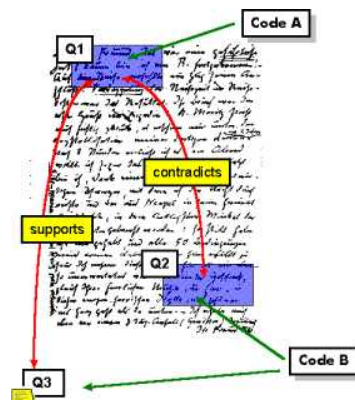


Figure 265: Hypertext captures the macrostructure of a text

No code is needed to connect quotation Q1 with one that it contradicts (Q2).

Today's largest
hypertext
system: the
World Wide
Web

Cross-references between text passages are very common even in conventional media like books - just think of religious and juridical texts, literature, journals etc. Footnotes and endnotes are another common deviation from the pure linearity of sequential text. However, in conventional media, not much navigational support is provided for "traversing" between the pieces of data that reference each other.

Computer-related hypertext applications include, for example, online help systems that display operational information in suitable small chunks (compared to lengthy printed information), but with a considerable amount of linkage to other pieces of information. A well-known hypermedia structure is the **World Wide Web** with its textual, graphical and other multimedia information distributed world-wide.

Benefits of Hypertext

What are the advantages of direct connections between text segments, compared to the traditional procedures of qualitative text analysis?

What codes cannot do

Maybe we should ask a different question first: How can you express that statement X in text A *contradicts* statement Y in text B, or how can you retrieve all contradictory statements of a specific utterance if all you have is codes and their associations with the data?

Pure
classification is
not always
adequate

The "code & retrieve" paradigm, which is so prevalent for many systems supporting the qualitative researcher, is not adequate for certain types of analysis. In formal terms, attaching codes to chunks of data creates named sets of segments with almost no internal structure. This is not to say that partitioning lots of text segments into sets is not useful. On the contrary, classification leads to manageable amounts of segments that later can be retrieved with the help of the attached code words. But this may not be the only way you want to look at your data.

Hypertext
makes text-text
relations explicit

The concept of hypertext introduces explicit relations between passages. These links have to be built manually and result from an intellectual effort. The system cannot decide for you that segment x is in contradiction to segment y. But after the work of establishing the links, you can make semantically richer retrievals: "Show statements contrary to statement x." Hypertext allows you to create different paths through the data you are analyzing. For example, you may create a timeline different from the strict sequence of the original text.

Graphical Hyperlink Maps

ATLAS.ti incorporates procedures for creating and browsing hypertext structures. It allows for two or more quotations being connected using *named* relations. Further, you can create graphical maps (using Network Views) to make parts of your hyperspace accessible in a comfortable way. Hyperlinks may connect quotations (textual, graphical, multimedia) across documents (inter-textual links) or may link segments within the same primary document (intra-textual links). The natural boundary for hyperlinks, like all structures in ATLAS.ti, is the Hermeneutic Unit.

The hypertext Network View to the right displays quotations in maximum "verbosity" set to "full text." Other node types can also be included in the Network View, like the memo in the upper left corner.

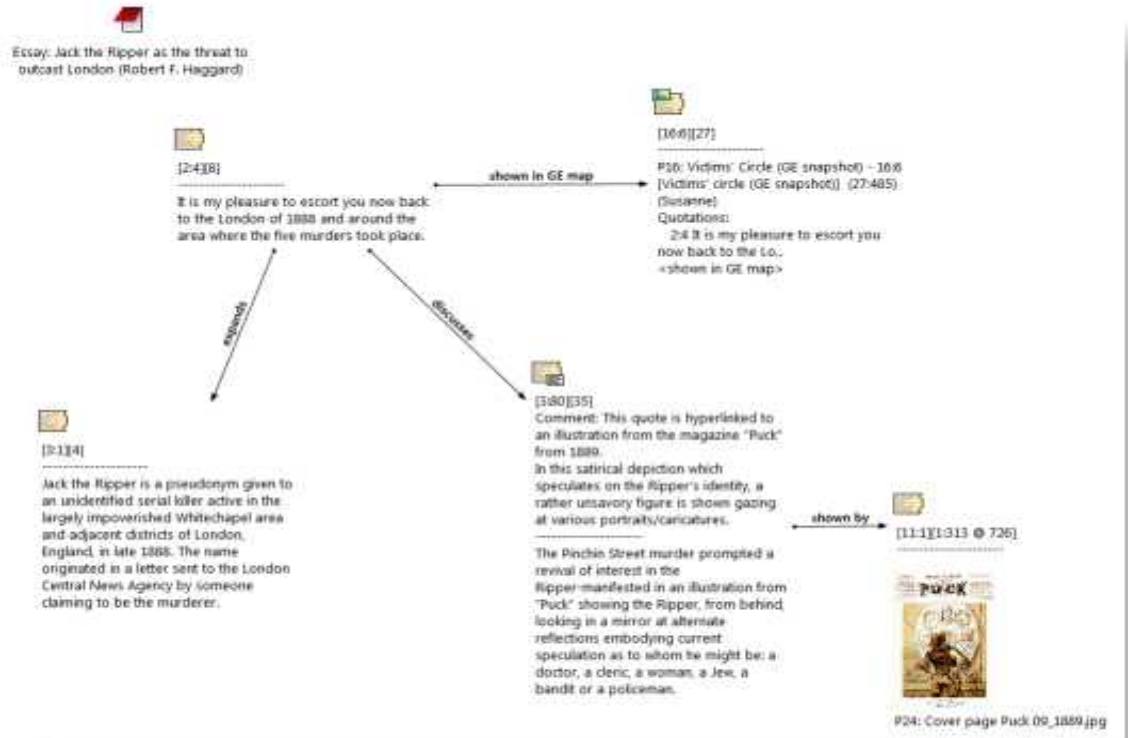


Figure 266: A network of quotations

General Procedures

Star or Chain connections

A hyperlink chain connects quotations sequentially

When linking quotations, you have the option to create a "chain", a "star" or a combination of both. Below, a chain and star connection are illustrated.

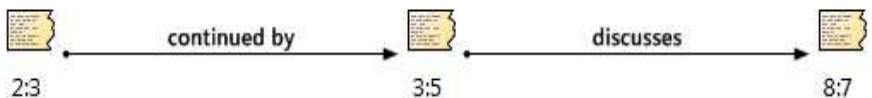


Figure 267: A hyperlink chain

When creating this chain, the quotation 2:3 served as a source quotation and was linked to the target quotation 3:5. In order to continue the chain, the target quotation 3:5 became the source quotation and was linked to the new target quotation 8:7..

A hyperlink star connects many quotations from one source quotation:

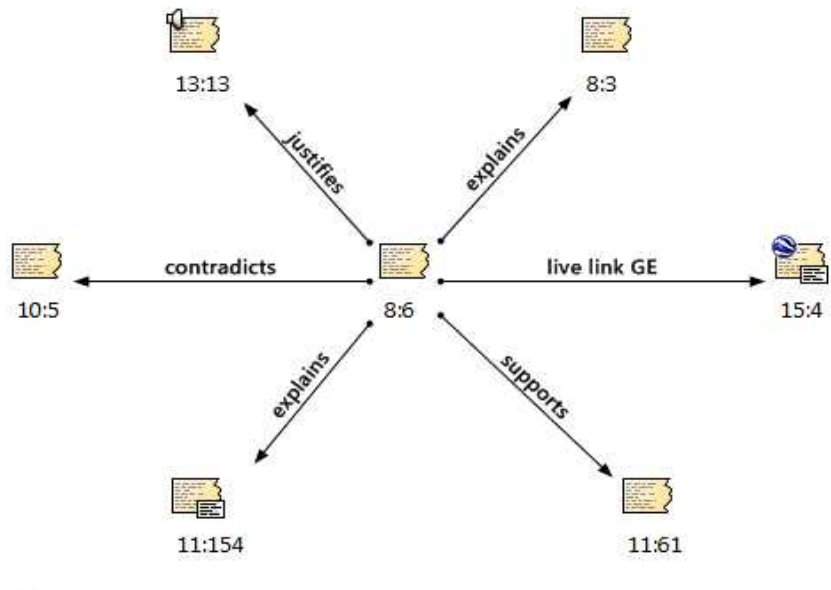


Figure 268: A hyperlink star

When creating a star, there is one source quotation and multiple target quotations. In the above example, the source quotation is 8:6, which is linked to five target quotations via a number of different relations.

Hyperlinks in the Quotation Manager

In list views, linked quotations are prefixed with angle brackets.

All hyperlinked quotations can easily be recognized in the Quotation Manager. All source quotations are marked with an opening angle bracket <, all target quotations with a closing bracket >. If a quotation is both, source and target (as the case when creating chains), then both brackets are used as prefix <>.

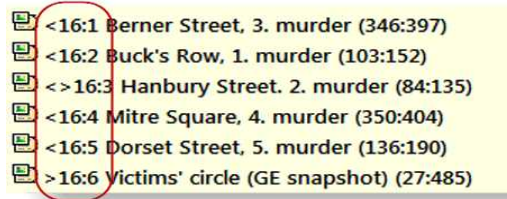


Figure 269: List of linked quotations

Hyperlinks in the Margin Area

The margin is an optimal work space for navigating hyperlinks

When working with hyperlinks, it is advisable to set the margin display options as follows:



Figure 270: Display of hyperlinks in the margin area

To open this context menu, right click on a blank space in the margin area.

Creating Hyperlinks

ATLAS.ti offers a variety of options for creating and traversing hypertext links. Similar to the linking of codes, you may create hyperlinks in the Network View editor (see "Linking Nodes" on page 329). In addition, hypertext links can be created "in context", or via Drag & Drag in the Quotation Manager and in the margin area.

Creating Hyperlinks using the context menu

To create a chain:

- Select a data segment as source or an already existing quotation.
- Right click on the selection or the quotation and select the option **CREATE LINK SOURCE** from the context menu. Alternatively, you can click on the *Source Anchor* button in the primary document toolbar.





Select a target segment or an existing quotation as target, right click and select the option **CREATE LINK TARGET** from the context menu. Alternatively, you can click on the *Source Anchor* button in the primary document toolbar.

If you select a data segment as source or target that was not yet a quotation, ATLAS.ti automatically creates a quotation from it.

A list of relation pops up. Select a relation to link the two selected quotations. If none of the existing relations fit, create a new relation by selecting **OPEN**

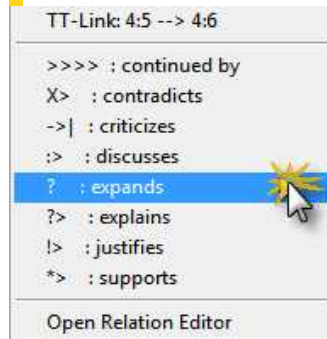


Figure 271: Select a relation to link the source with the target quotation

RELATION EDITOR (see “How to create new relations“ on page 346).

Select the option **CHAIN** to link a next data segment to the current target quotation. Select **FINI** to end the chain.

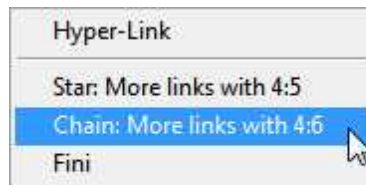


Figure 272: Select "Chain" to link another quotation to the current target quotation

To create a star:

Proceed as explained above “To create a chain:“, but select the option **Star**. Then the next quotation is linked to the current source quotation. For your information, the quotation IDs for the current source and target quotations are listed in the menu.

Creating Hyperlinks in the Quotation Manager

This method can be applied to connect one or more existing quotations to one target quotation.

- Select one or more source quotations in the Quotation Manager (multiple selections can be done in the standard way).
- Hold down the left mouse button and drag the quotation(s) to a target quotation in the Quotation Manager.
- Release the left mouse button. The Relation menu opens and you can specify the relation to be used for the hyperlinks.

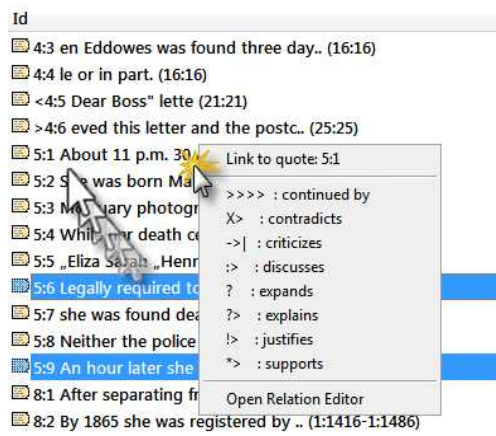


Figure 273: Select quotations, drag and click target quotation in the Quotation Manager

- The new hyperlinks are created.

Creating Hyperlinks in Margin Area

Like the method described above, creating hyperlinks in the margin area is best suitable for connecting two quotations that are in close proximity to each other.

- Select a quotation bar in the margin area.
- Hold down the left mouse button and drag the bar onto another quotation bar.
- Release the left mouse button. The Relation menu opens. Select a relation. The linking procedure ends here.

Dropping a bar onto another quotation displayed alongside a bar, replaces the existing hyperlink.

Modifying Hyperlinks

There are two place to modify existing hyperlinks, the Network Editor and the Hyperlink Manager (see "Link Management" on page 344).

To modify links in the Network Editor

- Open a network view on a hyperlinked quotation (e.g., by right clicking on a quotation and then selecting the option **OPEN NETWORK VIEW** from the context menu).
- In the Network Editor, right click on a link label and select **CHANGE RELATION** from the context menu.
- The relation menu pops up. Select a different relation.

Defining New Hyperlink Relations

The procedure for defining or editing hypertext relations is equivalent to the methods described for editing code-code relations. You may either define a new relation by choosing the bottom option from the list of relations when actually creating a link, or you may use a hyper-links relation editor, that is identical to the code-code relations editor (see "How to create new relations" on page 346). Newly defined or edited relations must also be saved to disk.

Traversing Hyperlinks

Media-type quotations can be distinguished easily by their icons. These icons may be used in the margin area, the Object Manager, the Object Explorer, the Crawler, and in Network Views. The figure below shows the media types of hyperlinked quotations in the margin. From top to bottom these are: text, video, audio, image and Google Earth hyperlinks.

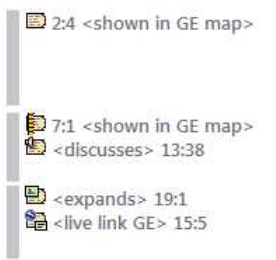


Figure 274: Media types for hyperlinks

The margin area permits a very intuitive traversal of hyper links.

To traverse hypertext links using the margin area

- Switch on the margin area.
- If needed, open up the properties context menu in the margin area and select **OBJECT TYPES / HYPERLINKS**.
- Double-click a hyperlink displayed in the margin. The quotation to the left of the margin area is highlighted and a pop-up window displays the hyperlink's contents.

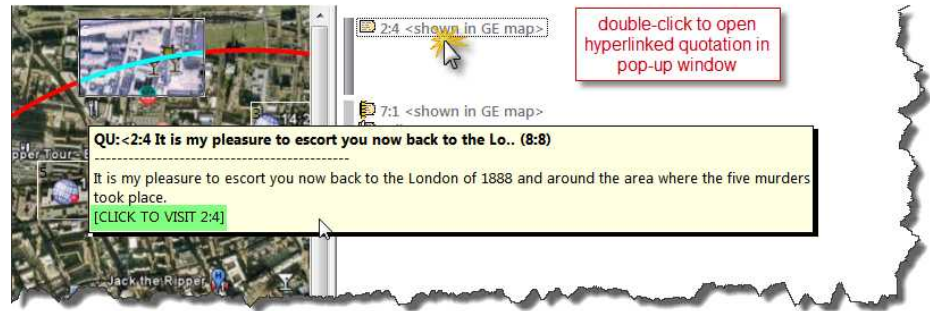


Figure 275: Traversing hyperlinks

To display the hyperlink in context, click into the pop-up window. Clicking outside the pop-up window cancels the process.

When you double-click on a multimedia hyperlink in the margin, you do not see the usual info text popping up. Instead, the quotation is played directly without opening the Media Control window.

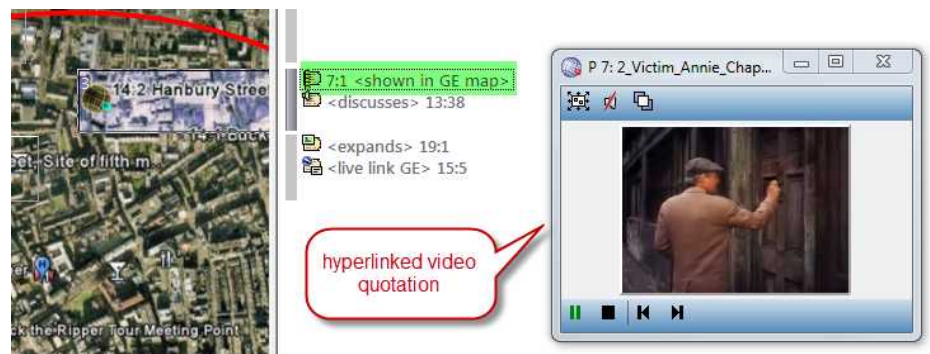


Figure 276: Hyperlinked video quotation

The "In-Place" Method for audio- and video hyperlinks

You may "travel" directly from a highlighted "Hyper"-quotation to its neighbors. This is especially useful for video and audio quotation where you do not have a margin area, but can also be used for other media types.

To display hyperlinked neighbors "in-place"

- Activate a quotation with a double-click in the Quotation Manager.
- Move the mouse cursor into the highlighted area of the document and click the right mouse button.
- From the context menu choose **Show Links**.

Steps one and two can be combined by pressing the Ctrl key while clicking the right mouse button.

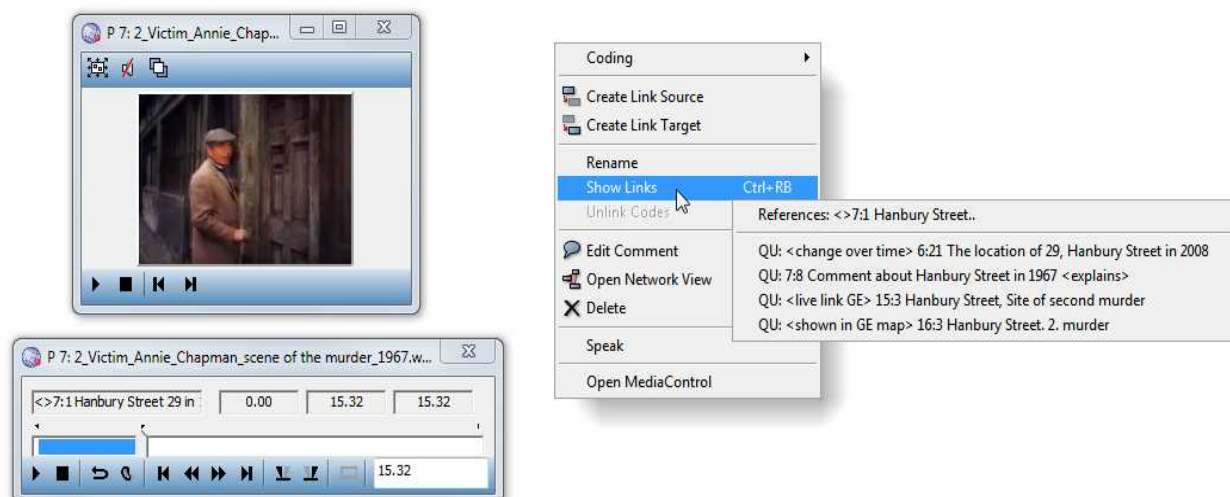


Figure 277: Checking for and jumping to hyperlinked quotations

The quotation "on the other end" of the hyperlink is displayed in a pop-up window.

To directly move to this quotation in context, click into the pop-up display, or click outside the pop-up to cancel.

Useful options for hyperlinks and quotations in the network view editor

To move to the text of a quotation that appears in a network, right click over the quotation node and choose **DISPLAY IN CONTEXT**. You are moved to the section of the Primary Document where the quotation resides.

To import the neighbors of a quotation

The Network Editor lets you import the neighbors of selected nodes by choosing **IMPORT NEIGHBORS** from the Network Editor's **NODE** menu (see description in section "Import Node Neighbors" on page 339). Importing the neighbors of a quotation, that is part of a hypertext, not only retrieves linked objects of type "quotations" but also yields all codes, memos and other quotations directly connected to it.

To reduce clutter by only importing neighbors that are quotations, and not codes, memos or documents, hold down the **CTRL** key when selecting the option from the Network Editor's menu. If you want the neighbors of only one quotation imported, open the context menu of this quotation and choose **IMPORT NEIGHBORS**.

Remove all recently imported objects with **CTRL+SHIFT+Z**

Use the margin area to display and edit link comments.

Editing Hyperlink Comments

The links between quotations use fully qualified relations, like the links between codes and unlike the simple association between a code and a quotation. As "first-class" objects, these links can be assigned a dedicated comment.

Such a comment could explain why quotation A has been linked to quotation B. Link comments can be accessed, displayed and edited from three locations: the margin area, the Hyperlink Manager and the Network Editor.

The margin area has the advantage that it is readily available during scrolling through the primary documents. The Network Editor method offers a visual approach to accomplishing this goal. Create a network view of the hypertext nodes to facilitate this process.

To edit a hypertext link comment using the margin area

- Switch the margin area on. If not already selected, open up the properties context menu in the margin area and select **OBJECT TYPES / HYPERLINKS**.
- Pop-up the context menu for a hyper link displayed in the margin. The quotation inside the primary document pane is highlighted at the same time.
- Choose **EDIT LINK COMMENT**.

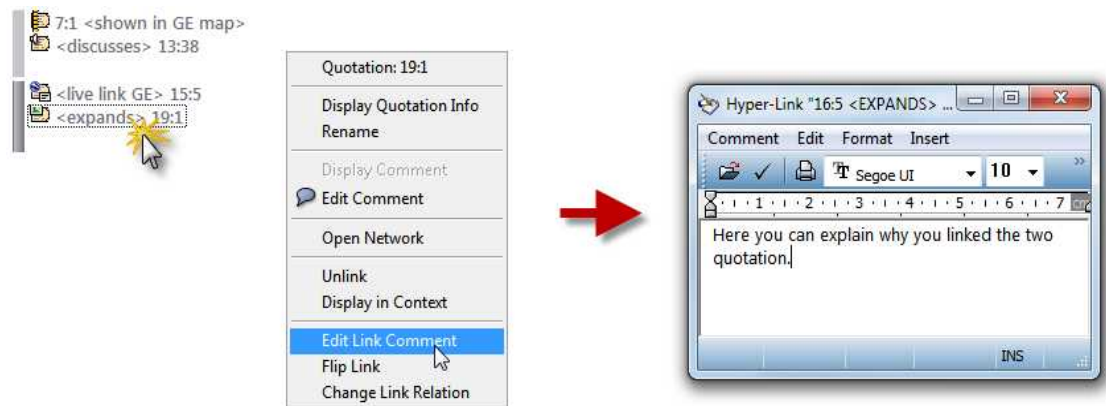


Figure 278: Commenting on a link

To edit a hypertext link comment using the Hyperlink Manager

- Open the Hyperlink Manager via **NETWORKS / HYPER-LINK MANAGER** from the HU Editor's main menu.
- Select a hyperlink.
- Edit the comment in text pane below the link list, or open a text editor by clicking the Editor button.

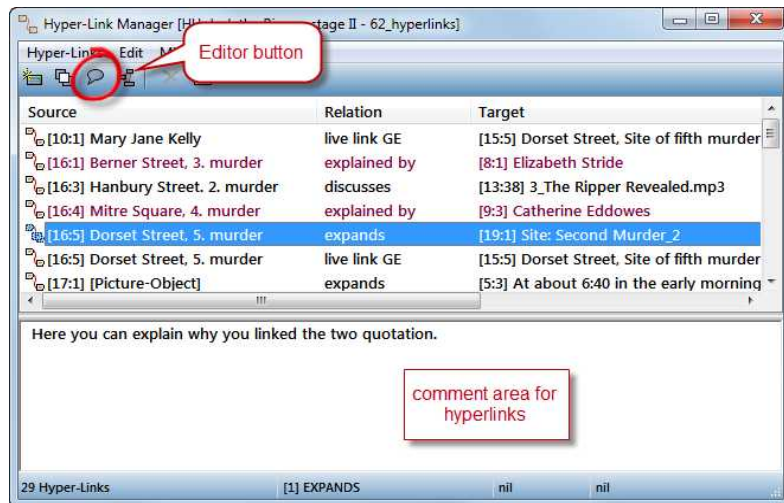


Figure 279: Writing, viewing or editing a hyperlink comment in the Hyperlink Manager

To edit a hypertext link comment using the Network Editor

- Open a Network Editor on a quotation establishing one end of the hypertext link.
- Move the mouse pointer onto the link between two quotations and open the context menu with a right mouse button click.
- Choose **EDIT COMMENT**.

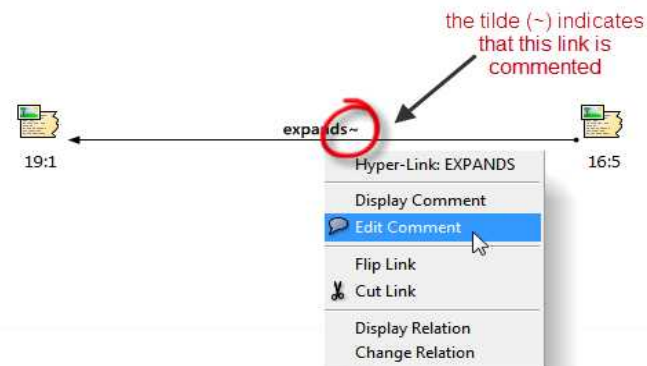


Figure 280: Editing a hyperlink comment in a network view editor

The Hyper-Link Manager

The Hyper-Link Manager works exactly like the Code-Link Manager, only that it is populated by hyperlinks.

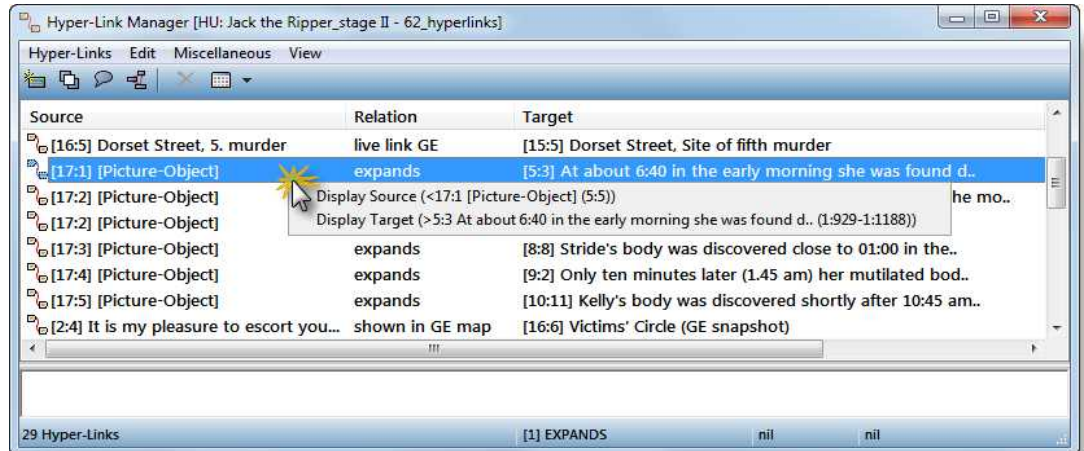


Figure 281: Hyperlink Manager

When double clicking a link a pop-up menu is shown. You can choose to display the source or target quotation. The content of the linked quotation is then shown in a pale yellow window. If you click into this window, the linked quotation is shown in context.

Creating new Relations for Hyperlinks

The Relation Editor has already been discussed in the context of code-code links (see "The Relation Editors" on page 344). The relation editor window for hyperlinks looks the same and can be handled in the same way as the relation editor for code-code relations. It only displays a different set of relations. To open it, select **NETWORKS / RELEATION EDITOR / HYPER-LINKS** from the main menu.

Special Tools

In this chapter a collection of miscellaneous tools is presented that do not fit well under any of the other chapters. Included are tools to search for words in all objects and fields, to explore the components of a HU in a hierarchically manner, and to remove redundantly coded quotations.

The Object Crawler

Use the Object Crawler to search for text and patterns in HUs, PDs, and all other entities that make up an HU. The search can be restricted to certain facets, like name, author, date, comments, and content. Regular expressions (GREP) as well as Category Search can be used as search expressions (see "GREP Search" on page 229 and "Category Search" on page 226).

Unlike the Text Search tool, the Object Crawler can search through all objects and fields that contain text. The Text Search tool only searches primary text documents. However, it finds all occurrences of the entered search term(s) and highlights a match at its original location. The Object Crawler stops at the first occurrence in an object and highlights the hit in the results pane of the Object Crawler window.

How To Use the Crawler

A Crawler search is a three-step procedure starting with entering a query and specifying the scope (e.g., name, comment, etc), and then selecting the object classes to be included in the search and, as the third step, displaying the results.



From the main menu, select **TOOLS / OBJECT CRAWLER**, or click the Object Crawler button in the main toolbar.

The Object Crawler dialog starts with a page to enter the query and specify the scope:

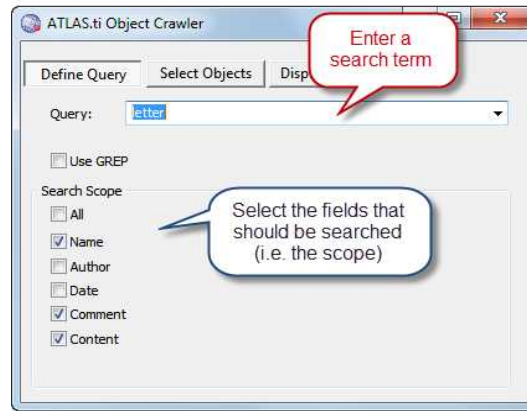


Figure 282: First step in defining a query in the Object Crawler

- Enter a query. Regular expressions and search swarms can be used (see “GREP Search” on page 229 and “Category Search” on page 226)
- Select the fields that should be search, the so called **Search Scope**.
- Click the **Select Objects** tab to proceed to the next step:

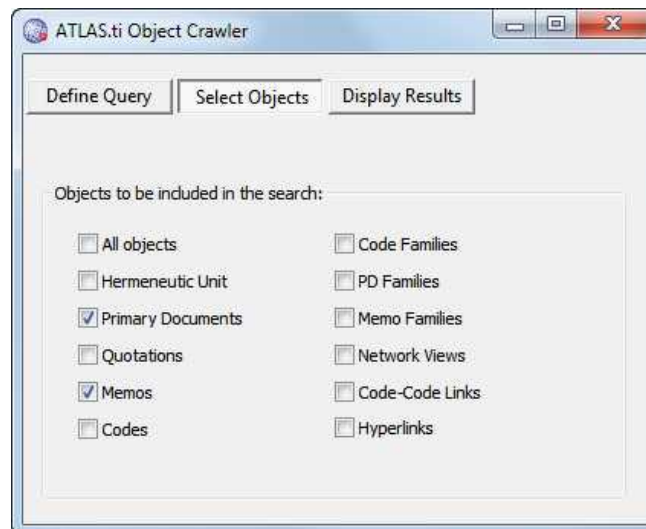


Figure 283: Step 2: Select the objects to be searched

- Select the objects to be included in the search. Clicking **All objects** checks all other check boxes.
- Proceed with the next and last step by clicking the **Display Results** tab.

All objects for which a corresponding match has been found are displayed in the upper list pane. The **Field** column displays the object type in which the match appeared. The selected hit – a PD - in the figure below had its match within the content of the PD. The hit itself is emphasized by red-colored font and with angle brackets for easy detection.

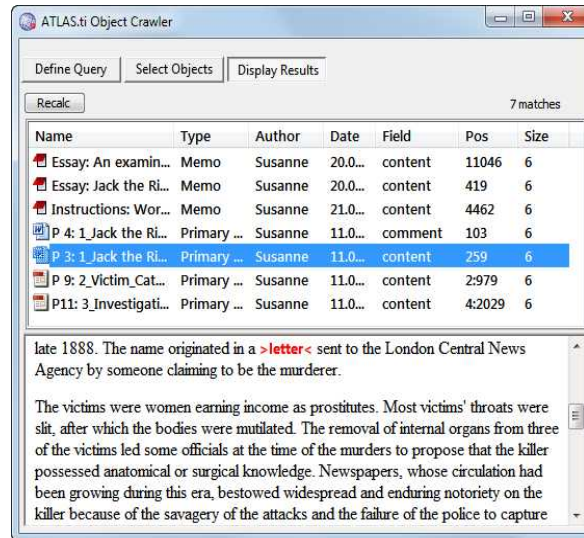


Figure 284: The Object Crawler's result pane

The results list can indeed be used like an Object Manager in a variety of ways: Double-clicking a hit in the results list activates the object. For instance, double-clicking a quotation displays it in context in the PD pane. The list is also drag & drop capable: you can drag objects from the list into a Network Editor or into a Text Editor.

The Object Explorer

Although the structures that can be created with ATLAS.ti are not necessarily restricted to hierarchical trees, the ATLAS.ti Object Explorer provides a hierarchical view of the HU and all of the objects that it references.

Main purpose of the Object Explorer is to serve as a hierarchical content table, which may be used to navigate between the different parts of the HU. Unlike the "pure" Object Managers that display only one type of object, the Object Explorer allows an integrated and structured display of all heterogeneous objects that make up an HU. These are PDs, quotations, codes, memos, families, and networks. The display, though, is not strictly hierarchical. You will notice some redundancy when expanding the tree view. For instance,

quotations are listed under each PD. As PDs can also be members of PD families, their quotations appear there as well.

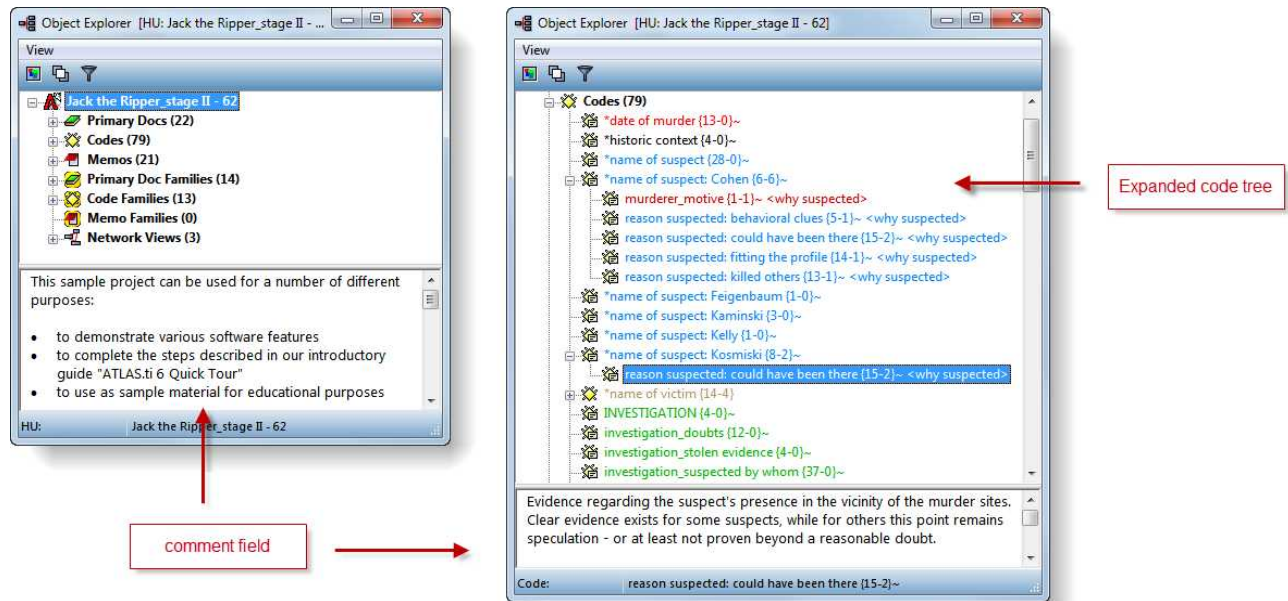


Figure 285: The Object Explorer

The upper pane displays the tree-structured contents of the HU. The text pane below displays the comment that is associated with the activated object.

The root object of the tree is, of course, the HU itself. The direct branches from this root are: Primary Docs, Codes, Memos, Primary Doc Families, Code Families, Memo Families, and Network Views.

Using the Object Explorer

The Object Explorer can be launched by clicking on the Object Explorer button in the main toolbar or by selecting **Tools / OBJECT EXPLORER** from the main menu.

Expanding and Collapsing Branches

You can expand and collapse the branches of the Object Explorer tree. If a branch can be expanded, a plus sign is displayed to the left of the object, unless this is switched off via **VIEWS / HAS BUTTONS**. Expanded branches are indicated by a minus sign. You can expand or collapse a branch with a mouse click on the plus or minus sign. Below a partly expanded branch for memo families is shown.

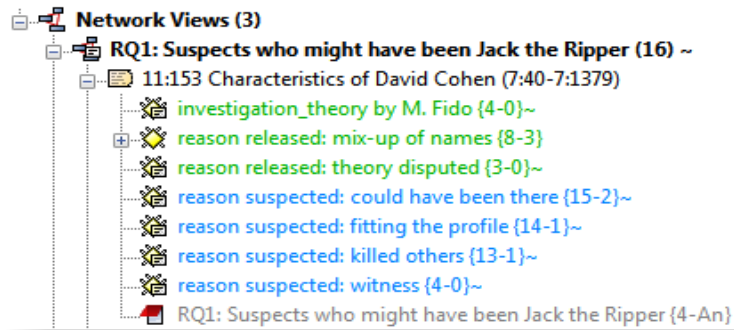


Figure 286: Partly expanded branches for a network view

Expanding the **Primary Docs** branch displays the PDs; expanding this branch displays quotations, expanding those displays codes, memos, and other associated quotations.

Expanding the **Codes** branch displays all codes and their connections to other codes. Following the code names, the semantic relation connecting the code with its parent code is shown.

Each code appears at least once. This means that all codes are listed directly under the “Codes” branch, but may also appear further down in the hierarchy if they are connected to other codes. The order in the hierarchy is determined by the kind of relation you have used. If a directed, i.e. a transitive relation like the <is part of> relation was applied, codes are displayed hierarchically: the target code becomes the higher order code and the source code(s) the lower order code(s).

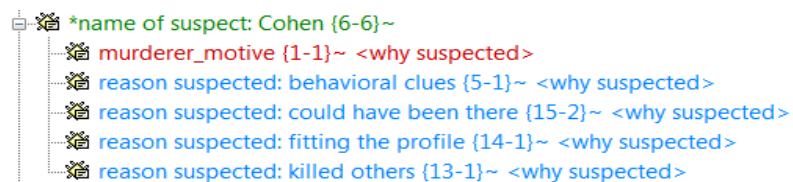


Figure 287: Display of codes that are linked via transitive relations

When using symmetric relations, the codes appear in at least two places since the direction/causal relation cannot be determined.

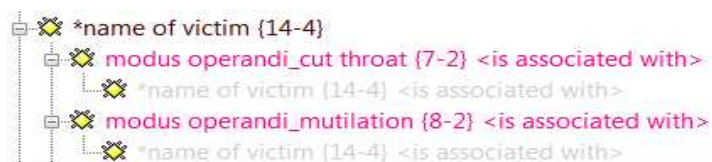


Figure 288: Display of codes that are linked via symmetric or asymmetric relations

Associated memos (if applicable) are displayed under the code branch.

Expanding **Super Codes** allows access to the various parts of a query. Below you can see the expanded branch for the Super Code “name of suspect: Cohen – Reasons for being suspected” (see figure 289). When double-clicking on the entry Co-occur, the two codes that are part of the query are displayed. Clicking the plus sign to expand the tree shows all associated codes: the six codes that were linked to the code “name of suspect: Cohen” and the eight member codes of the code family “Reason for being suspected”.

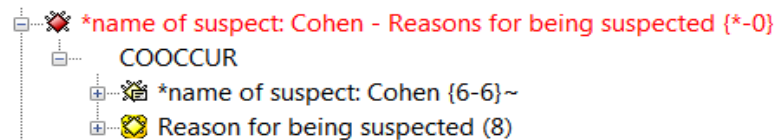


Figure 289: Display of super codes

Expanding the **Memos** branch displays all memos and then the memos associated with other memos. On the next level, all associated codes are shown.

When expanding the **Family** branches, on the first level all existing families are shown. On the next level, all members are displayed. Below the members, all objects that are usually associated with the type of object can be expanded (i.e., as described above: quotations underneath PDs, codes connected to other codes, and so on).

In case you have created **Super Families**, the operators used to build up the super families are also shown. When clicking on an operator, only the corresponding family members are shown, as explained above for Super Codes.

Expanding the **Network Views** branch shows the existing networks on the first level, and all objects contained in the Network Views on the next level. On the levels below, the usual elements as described above for the Primary Docs, Codes, and Memos branches can be made visible.



All codes displayed in the Object Explorer can be used for drag & drop coding. PDs, codes, and memos can be dragged into family managers and assigned to families.

Double-click Actions

Double-clicking the entries launches the respective Object Managers. These are the Object Managers for PDs, codes, and memos; the Family Managers for PDs, codes, and memo families; and the Network View Manager for Network Views.

- When double-clicking on a PD, its comment is displayed.
- When double-clicking on a quotation, it is highlighted in context.
- When double-clicking on a code, a list of quotations pops up. If only one quotation is associated with the code, it is highlighted in context.

When double-clicking on a memo, its content is displayed.

Using the Object Explorer for Coding

Drag & drop coding works from within the Object Explorer, either using the codes under the Codes tree or under the Code Families tree. This way you can utilize the structure you have created via code-code relations (see page 329, or via code families (see page 252).

Renaming Objects

All objects, excluding the top-level entries like the name of the HU, the container entries “Primary Docs”, “Codes”, “Memos”, etc., can be renamed using the “in-place” technique. This technique is also used by Windows Explorer and other Windows file dialog boxes to rename files and directories.

Context menus of objects

Each object in the Object Explorer has a context menu. These menus can be accessed in the usual manner with a right mouse click. This selects the object, if not already selected, and opens the context menu, which offers a few selected object-specific operations.



Figure 290: Context menu for a network view

HU: Review a short information and statistics about your project. Edit the HU's comment or create / install a copy bundle file (see “Copy Bundle – Migrating and Backing Up Projects” on page 129).

PDs / Codes / Memos: Open the object manager or expand to the respective object level.

PD, Code, Memo Families: Open the family manager or expand to the family or member level.

Network Views: Open the network view manager or expand to the network or node level.

Displaying and Editing Comments

To edit an object's comment,

Select an object and edit the comment that appears in the text pane.

Save changes by opening the context menu inside the text area and choose **ACCEPT**.

The View Menu

The items offered by the View menu let you change the font (useful before capturing screen shots for presentations), the display of object-specific items, the length of the tree indentation, the presence of the collapse/expand buttons, the display of the object's icons, and the comment area (Zoom List). You can also disable the in-place editing capability.

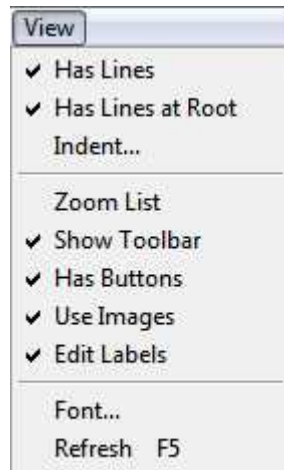


Figure 291: View menu

Code Trees & Forests

Special Object Explorers can be invoked to display codes only. To display a tree view for a selected code only,

- Select a code, e.g., in the Code Manager.
- From the **CODES / MISCELLANEOUS** menu, choose **CODE TREE**.
- To display all root codes with their trees and branches,
- Select a code.
- Choose **CODES / MISCELLANEOUS / CODE FOREST**.

The rules and procedures described above for codes in the Object Explorer apply here as well (see "Using the Object Explorer" on page 376).

Codes displayed in code trees and forests can be used for drag & drop coding. This is a preferred alternative for users who like to work with hierarchically-ordered coding schemes.

Redundant Coding Analyzer

This procedure identifies overlapping or embedded quotations that are associated with the same code. Such “codings” -- possibly indicating redundancy -- can result from normal coding but may occur unnoticed during a merge procedure.

You might not need or want to correct redundant codings, but these occurrences may be indicative of methodological issues in your analysis.

The Redundant Coding Analyzer Screen

The Coding Analyzer finds codes with redundant codings and offers appropriate procedures.

To open the tool, select **TOOLS / REDUNDANT CODING ANALYZER** from the HU editor's main menu.

The upper pane displays a list of codes referencing overlapping quotations. Clicking on a code displays the conflicting quotations pair wise. Double-clicking on a listed quotation displays it in context.

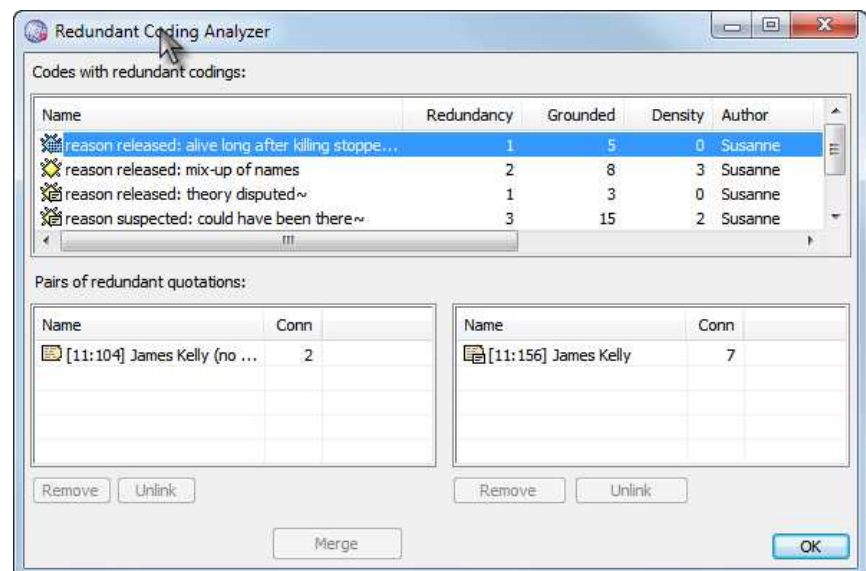


Figure 292: The Redundant Coding Analyzer

The upper pane lists all codes for which redundant codings were found. The Redundancy column displays the number of pairs of redundant quotations found for the codes. If you select one of the codes, the redundant quotations are listed in pairs in the two lower panes. Double-clicking on the listed quotations displays and highlights them in context. Because of this, you can check them in context and decide how to proceed.

The figure below illustrates a typical redundant coding:

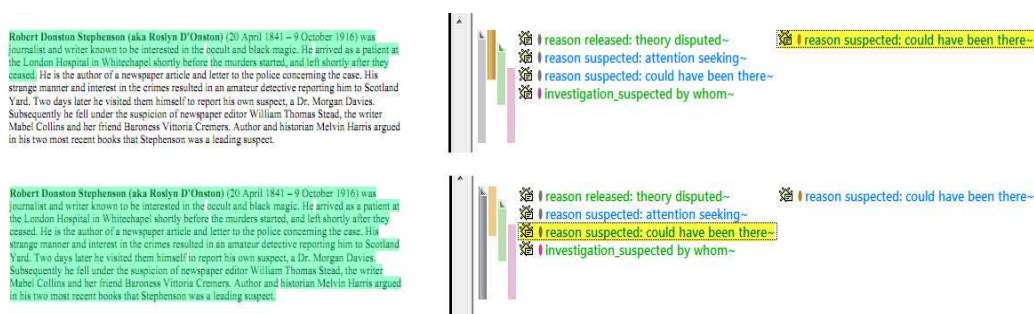


Figure 293: A typical redundant coding

Three procedures to handle a redundant coding are offered:

Unlink detaches the selected code from the quotation selected in one of the quotation panes. This method is the least “destructive” of the available options.

Remove deletes the selected quotation.

Merge melts the quotation in the right pane into the quotation selected in the left pane. All references to and from the merged quotation is “inherited” by the other. If the two quotations overlap, the resulting quotation includes all data from both quotations.

Both quotation panes have a “**Connectivity**” column that shows the number of connections (to codes, quotations, and memos) for the selected quotation. The connectivity counter provides an additional clue about the next step. A quotation with less connections might be less painful to remove.

If you see a quotation listed more than once in one of the quotation list panes, it means that three or more quotations are involved in a redundant coding. You will notice, that merging one pair of quotations may have the effect that other pairs are removed from the list as well, as the redundancy assertion does not hold any longer for the remaining pairs of quotations for this code.

Unlinking, Removing or Merging a Redundantly Coded Quotation

- Select a code in the upper pane. All pairs of redundantly coded quotations are then displayed in the two lower panes.
- Double-click on the quotations of a pair to inspect them in context.
- Decide whether you want to unlink or remove one of the two quotations, or whether you want to merge them.

- To unlink a quotation click the **UNLINK** button below the appropriate list pane. The effect and alternative procedures of unlinking codes is described in further detail in “Unlinking Codes” on page 218.
- To remove a quotation click the **REMOVE** button below the appropriate list pane.
- To merge the pair of quotations, click the **MERGE** button.
- Note that the quotations removed by this procedure cease to exist inside the Hermeneutic Unit.

Sorting and Filtering

The main strengths of a computer clearly lie in sorting and retrieving data. For such techniques to be deployed successfully, however, the data itself must have attributes by which it can be meaningfully ordered and filtered. A variety of attributes can be used for filtering and sorting data. Many entities within an HU can be filtered, for example, primary documents, codes, memos, and quotations.

Sorting and filtering primary documents, codes, memos, and quotations can help you gain deeper insight into your data.

Sorting and filtering can be accessed via the HU editor's menu or the Object Managers' menus. The columns in the Object Managers' report views may also be used for sorting. Some options for sorting and filtering are common to all objects, while others are dependent on the object's type.

Sorting

Sorting is available via the Object Managers' columns and the main menus of the HU Editor and the Managers.

Sorting in Object Managers

Sorting is conveniently available in all Object Managers via the list headers while in details view: clicking on a header "button" sorts the list in either ascending or descending order.

Click the header to sort the items. Click again to reverse the sort.

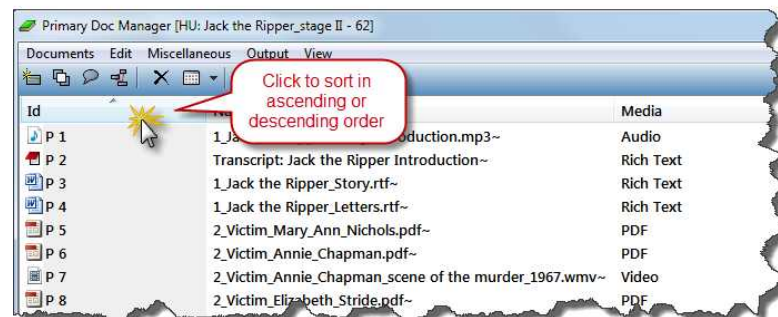


Figure 294: Sorting via the columns in object managers

The column used for sorting is displayed in a darker shade. The sort direction is visualized by an arrow in the header. In four field of the status bar, the sort criterion is displayed.

A double-click on the status bar's sort field refreshes the current sort. This is a useful option because newly added objects are appended to the end of the list regardless of their correct position in the sorted sequence.

Sorting via the menus

The Sort menu option is available in the object menus of the HU Editor (Documents, Quotations, Codes, and Memos) and from the corresponding Manager's menu.

The figure below shows the Sort menu for documents with the current sort criterion set to ID (which is also the default):

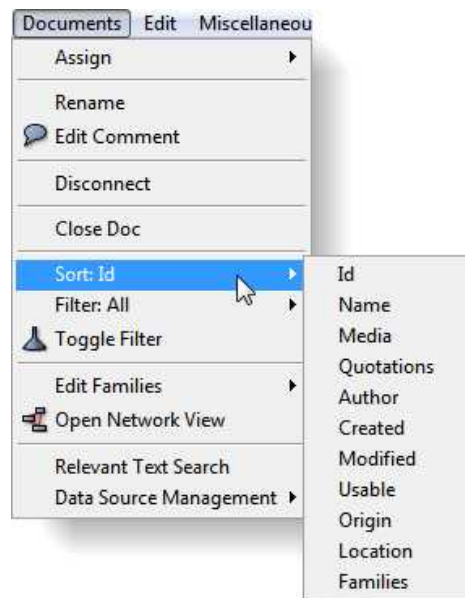


Figure 295: Sort menu for documents

In Object Managers, the currently selected sort criterion is also displayed in the status bar (see Error: Reference source not found). After new items are added to the list, refresh the sort with a double-click on the status pane's sort field.

Overview of Sort Options

The following describes the sort options in more detail. Default sort order: D = descending, A = ascending.

Sort criterion	Entity type	Description	Sort order
Name	PDs, quotes,	Entity name (string)	A

	codes, memos		
Author	PDs, quotes, codes, memos	Author's name (string)	A
Created	PDs, quotes, codes, memos	Creation date - or date of assignment for PDs. (date/time)	D
Modified	PDs, quotes, codes, memos	Modification date (date/time)	D
Density	quotes, codes, memos	Quotes, codes: number of links to objects of the same type Memos: number of links to all associated objects (i.e., quotes, codes, and other memos)	A
Grounded	codes, memos	Number of associated quotations.	A
ID	PDs, quotes	The system generated ID (number)	A
Size	quotes, memos	Quotations: number of lines/paragraphs	
Memos: size of text	A		
Media	PDs	Media type (i.e., audio, image, rich text, text, video)	A
Quotations	PDs	Number of quotations for the primary document.	D
Usable	PDs	Usability of the primary document	D
Origin	PDs	Origin of data source (alphabetically)	A
Location	PDs	Redirected path (if used)	A
Start	Quotes	The quotations' start position	A
Type	Memos	Memo type (string)	A
PDs	Memos	Number of PDs using the memo as their data source (if any).	A
Families	PDs, codes, memos	By families in alphabetic order	A

Filtering

The status bar of all Object Managers displays the current filter and sort setting. The default filter criterion is "All".



Figure 296: Indication of filter setting and sort order in the status bar of object managers

It is possible to combine filtering and sorting (e.g., all "free" codes sorted by the time of their creation).

The filter options are available in the object menu of the HU Editor (Documents, Quotations, Codes, and Memos) and from the corresponding Manager's menu. The filter field in the status bar offers a few additional options like reversing or removing the filter. When a filter is active, the background color of the affected lists and Object Managers changes.

The figure below shows the Filter menu for codes with the current filter set to All (which is also the default):

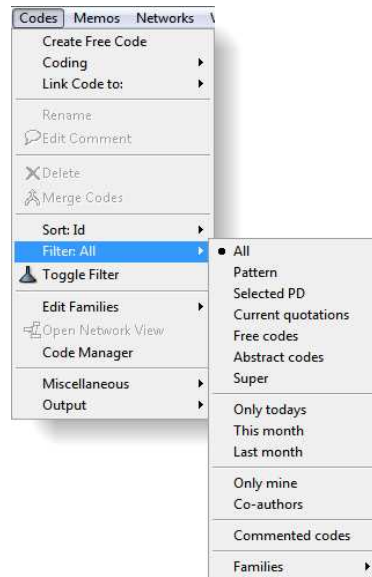


Figure 297: Available filters for codes

After setting a filter, the background color of the affected Object Manager and drop-down list changes. You can modify this color by changing the QuickInfo color via Windows display preferences. In the figure below, the filter is set to **abstract** codes and the QuickInfo color is set to a darker yellow (under Windows preferences). The default color is pale yellow and depending on your computer screen, it may be difficult to see.

Filters affect a number of procedures

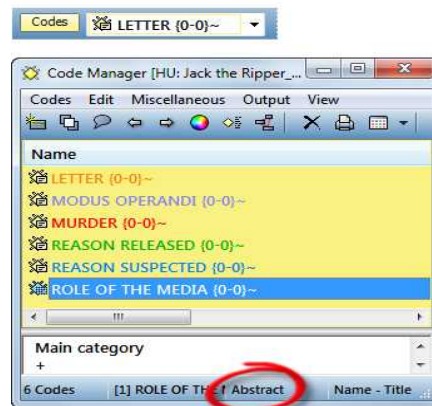


Figure 298: Code Manager with active filter

An overview of all filter options for all object types is provided below.

Overview of Filter Options

Option	Entity type	Description incrementally with immediate feedback after
All	PDs, quotes, codes, memos	All objects are displayed (filter off)
Pattern	PDs, quotes, codes, memos	Objects matching the entered search pattern
Only today's	PDs, quotes, codes, memos	Objects created today
Only mine	PDs, quotes, codes, memos	Objects created by the current user
Co-Authors	PDs, quotes, codes, memos	Objects created by any of the selected co-authors
Families	PDs, quotes, codes, memos	Objects belonging to a family
Free	PDs, quotes, codes, memos	Objects that do no reference any other objects
Commented	PDs, quotes, codes	Objects bearing a comment
Selected PD	quotes, codes, memos	Objects referring or belonging to the currently selected primary document
PD-Memo	PDs	Memo used as primary document data sources
Text	PDs	Textual primary documents (plain and Rich Text)
Rich Text (file)	PDs	RTF encoded primary documents
Graphic	PDs	Graphical primary documents
Audio	PDs	Audio primary documents
Video	PDs	Video primary documents
Uses Mapping	PDs	Redirected primary documents
Renamed	Quotes	Renamed quotations
Hyperlinked	Quotes	Quotations linked to other quotations
Selected code	PD, Quotes	Quotations coded with the currently selected code
Abstract codes	Codes	Codes without quotations. Less selective than "Free"
Super	Codes	Super codes
Types	Memos	Memos of a certain type

Pattern Searches as Filter

Enter a GREP pattern to filter all objects with names matching this pattern.

For example, if you have used names prefixed with "ATT:" for all codes handling "attitudes", the pattern "^ATT:" would filter all those codes (the caret character ^ anchors the search at the beginning of the name).

Enter “[.*\]” to filter all items containing arbitrary text in brackets.

An overview of the available GREP expressions is listed in the section “GREP Search” on page 229.

To Reverse a Filter

Choosing Toggle Filter from the menu or double-clicking the filter field reverses the filter. The tilde symbol ~ indicates a negated filter in the status bar.

By reversing the codes filter ‘Abstract,’ you can display all codes that are *not* ‘Abstract’. These are all codes that do have quotations associated with them. In the filter field you see the entry ‘~**Abstract**’.



Figure 299: Negate a filter by double clicking on the status bar

Press CTRL and double-click the filter field to remove a filter.

To Remove or Reset Filters

To deactivate a filter

- either select **FILTER: ALL** from the menu, or
- double-click on the filter field while holding down the Ctrl-key, or
- select **EXTRAS / RESET ALL FILTERS** from the main menu.

Filter by Families in the Family Managers

When double-clicking a family in any of the Family Managers, the corresponding objects are filtered to the members of the selected family. Double-click again to remove the filter.

Generating Output

This chapter provides an overview of all output options that are available within ATLAS.ti. In addition, some general procedures common to most output functions are explained.

Overview

ATLAS.ti offers numerous options to create output and reports. Most output is textual, but numeric or graphical output is also available where applicable (Network Editor). Typical textual reports include sorted and filtered lists of objects, like code, memos, families and quotations. Comments can often be included when needed.

For textual primary documents a near what-you-see-is-what-you-get (WYSIWYG) output is available, including the annotations populating the margin area.

Output options are available from the menus of the tools, e.g., the HU Editor's menus, the Object Manager's and Object Explorer's menus. Some tools offer an output button, either as the only option (e.g., the Query Tool) or in addition to the menus (Code Manager).

The target of an output is not necessarily restricted to the printer. Many of the text-related report procedures allow output to be directed to a text editor, the printer, or a file.

Other kinds of output are not necessarily intended to be printed directly but are to be processed by other applications, like the SPSS export option, several Excel compatible outputs, and HTML and XML export. You can find those procedures in chapter "Export & Import" on page 413.

General Procedure

Output Destinations

When creating textual output or when creating text-based exports, the following dialog is usually displayed in the course of the process:

You can send output to:

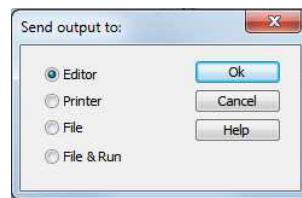


Figure 300: Common output options

Editor: The output will be displayed within a text editor. This option is useful if modifications are needed before actually sending it to the printer or if you are unsure about the size of the result.

Printer : If you select this option, the output will be printed (the printer dialog window opens where you may select the desired print options).

File: If you select this option, the output will be saved to a file (a save file dialog opens).

File & Run: If you select the last option the file dialog window opens. After it has been saved, the file will be opened by the application registered for its extension. (e.g., a CSV or xls file will be opened in Excel™).

Report Layout

Common Header

When creating textual reports, a common header precedes the list of objects (e.g., all codes or all quotations for a selected code).

The header includes information about the kind of report (“All current quotations”), the HU (name and file path), the current user, the date and time of the creation of the report and the current filter if any.

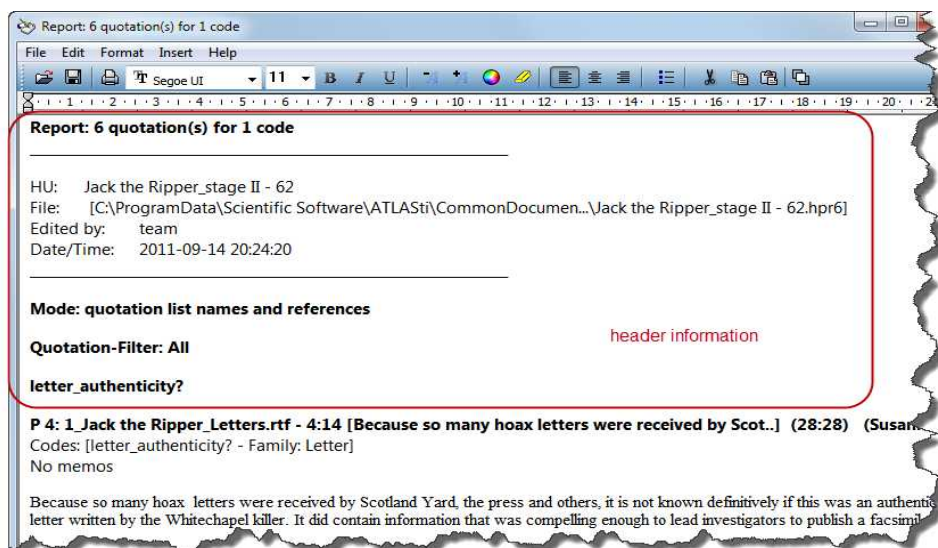


Figure 301: Report header information

Sorts & Filters

Many list reports are affected by the currently active filter for the reported objects. For instance, if the primary document's filter is set to a specific family, creating a report of "All" quotations yields only those quotations for primary documents within that specific family.

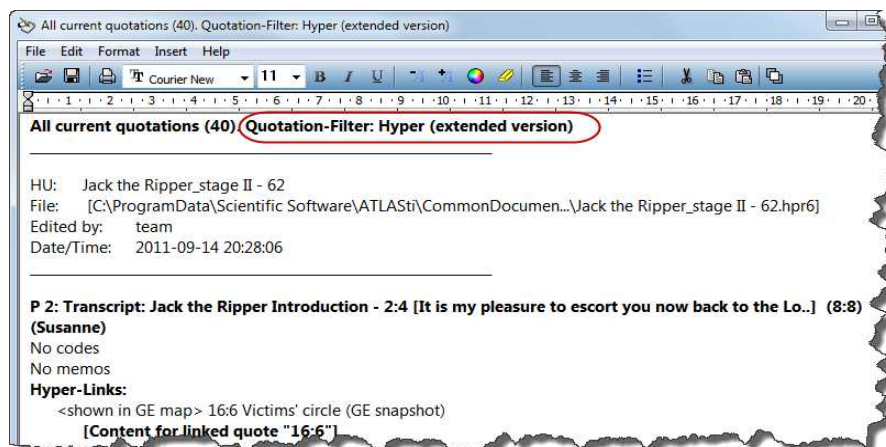


Figure 302: Output of hyperlinked quotations

The figure above shows the report generated after setting the the quotation filter to "Hyper-linked." The quotation filter is displayed in the header.

Restricting Output to Selected Objects

Output options for selected objects available from the HU Editor's menus are restricted to a single object. For example, you can print one code at a time. Output options within the Object Manager allow you to select multiple objects

and output each of them at the same time. For example, you can highlight three codes within the Code Manager and create a report that contains quotations coded to each of the three codes. Another option to restrict output is to work with filters. See “Sorting and Filtering” on page 384.

Creating Output for the Main Objects

Under the main menu for each of the four main object types (primary documents, quotations, codes and memos) you can find an output submenu. The corresponding object managers contain equivalent output menus. However, output options within object managers allow for the selection of specific items (e.g., a subset of codes rather than all codes) to be included in the output.

The output options for the four main object types are explained in detail below.

The (Primary) Documents Output Submenu

The output submenu for primary documents

List

Generates a list of all primary documents in the HU. If any of the PDs have a comment you are asked if these are to be printed as well.

Hierarchy

Prints the selected PD's quotation numbers and their codes and memos in a hierarchical manner.

Quotations

Prints all quotations belonging to the selected primary document.

Print with Margin

The Print with Margin option creates a WYSIWYG printout of coded texts (What You See Is What You Get). It also prints texts with their paragraph numbers. If you direct it to a PDF printer, a PDF document is created.

Print with Margin is currently only available for textual primary documents.

The appearance of the printed text can be controlled in three places:

- Via the PD Printing tab in the General Preferences dialog (see below “Setting PD Printing Preferences”).

- By the current display **settings** in the **HU Editor**. The printout resembles the screen display at the time of creating the output. The margin or the numbering is only included if currently displayed. Only those margin objects are included that were selected to be displayed in the margin. By moving the splitter bar the ratio between document and margin area can be controlled. To change the type of objects that are displayed and they appearance, e.g. font size, right click on a white space in the margin area to open the context menu.
- The **printing dialog** under **FILE / PRINTER SETUP**. Switching to landscape for densely populated margins may improve results. Choose to print the one or more primary documents or a selected text passage only.

Setting PD Printing Preferences

Depending on the size and layout of your document, the number of objects in the margin and the fonts used in the document, adjustments may become necessary. To set PD Printing preferences, select the main menu option **EXTRAS / GENERAL PREFERENCES**.

To print a primary document with margin

- Load the primary document.
- If you do not want to print the entire PD, highlight the section that you want to print. If you want to print several PDs, select those you want to print in the PD Manager.
- Switch the wrap mode to Printer via **EDIT / WORD WRAP / FOR PRINTER**. Although printer wrap is enabled anyway when starting the print, it is advisable to select this wrapping mode in the first place to better judge the expected layout and avoid surprises.
- The printed page is divided into “columns” for the numbering, the actual text and the margin area. Specify the ratio between the space reserved for the text and the margin by moving the splitter bar to an appropriate position. It might take some experimentation to arrive at optimal results for your printer.
- Select **DOCUMENTS / OUTPUT / PRINT WITH MARGIN** from the main menu. If you print several PDs, select out **OUTPUT / PRINT WITH MARGIN** option from the PD Manager's output menu.
- The printer dialog opens. If you have made a selection (e.g., manually or by activating a quotation) and want to restrict the output to this part of the document, check option “Print Selection” before clicking the **Print** button. If you want to create a PDF document, select a PDF writer as printer.

Print selected parts of a document.

Our WYSIWYG of annotated documents has its limits. For instance, if you have coded the document quite densely, with lots of overlapping quotations and many memos and hyper-links, color is recommended for best visual discrimination.

The Quotations Output Submenu

Selected Quotation

Prints the selected quotation. In the Quotation Manager, all selected quotations are printed.

All Quotations

Prints all current quotations. If any of the quotations have a comment you are asked if these are to be included in the printout.

All Quotations (List)

Prints all current quotations in a compact format including only the quotations ID and display name. This is a suitable option for audio, video, image and GoogleEarth documents, when you have renamed the quotations to serve as title.

By default, the quotation name has only 30 characters. You can increase it in the General Preferences Window in the field: **List name size for quotes**. If you do this after the quotations have already been created, you need to update all names via the option **QUOTATIONS / MISCELLANEOUS / UPDATE NAMES**.

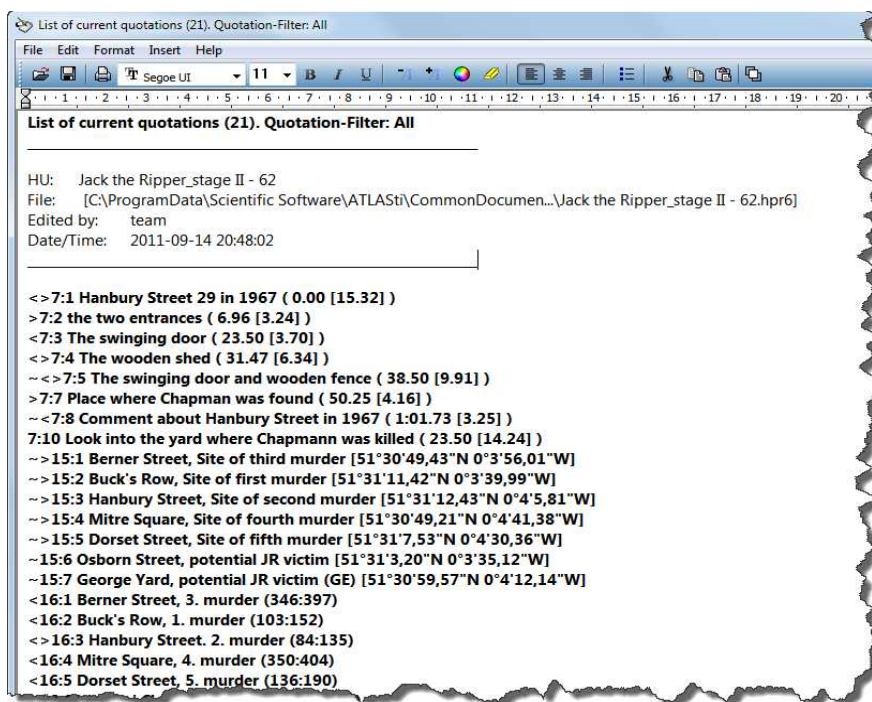


Figure 303: Quotation list output

Speak Quotation

Lean back, close your eyes, and let ATLAS.ti read the quotation to you. (Currently this works only for English language text.)

The Codes Output Submenu

Quotations for Selected Code

Prints all quotations for the selected code(s). When quotations are exported, headers for individual quotations include references to other codes (and memos) that are linked to those quotations. This is also true for other output options including quotations.

Quotation List

Prints a compact list of all quotations for the selected code (appearance as in 'All Quotation (list)').

Include Sub Terms

Prints all quotations for the selected code, including all quotations connected to any of the codes that are transitively linked to this code. This resembles a Query Tool created term using the SUB operator (see page 272 and page 331).

Query Tool

Opens the Query Tool (see page 268 for details).

Code List

Prints a list of codes according to the current sort setting.

Code Hierarchy

Prints the hierarchy of codes as indented text. The hierarchy is not created automatically by ATLAS.ti. It is based on the type of links between codes as defined by the analyst (see "To create code-code and quotation-quotation links using the Object Manager" on page 331).

```

murderer_serial killer <is> Root
  modus operandi_cut throat <describes> murderer_serial killer
  modus operandi_mutilation <describes> murderer_serial killer

murderer_various persons <is> Root

murders_canonical five <is> Root
  *name of victim <is associated with> murders_canonical five
  modus operandi_cut throat <is associated with> *name of victim
  modus operandi_mutilation <is associated with> *name of victim
  victim 1: Mary Ann Nichols <is associated with> murders_canonical five
  victim 2: Annie Chapman <is associated with> murders_canonical five
  victim 3: Elizabeth Stride <is associated with> murders_canonical five
  victim 4: Catherine Eddowes <is associated with> murders_canonical five
  victim 5: Mary Jane Kelly <is associated with> murders_canonical five

murders_more/less than five <is> Root

murders_potentially attributed to JR <is> Root
  *name of victim <is associated with> murders_potentially attributed to JR
  modus operandi_cut throat <is associated with> *name of victim
  modus operandi_mutilation <is associated with> *name of victim
  victim: Emma Elizabeth Smith <is associated with> murders_potentially attributed to JR
  victim: Martha Tabram <is associated with> murders_potentially attributed to JR

```

Figure 304: Code hierarchy based on the links created between codes

Codes Neighbors

Similar to codes hierarchy but restricted to one hierarchy level. Prints all current codes with only their immediate code neighbors.

Codes-Primary-Documents-Table Submenu

Prints frequency counts (number of quotations or sum of all words of the quotations) in form of a table: all current codes (x-axis) by primary documents (y-axis). You may also export the table to Excel for further processing or more flexible reporting. This option is explained in detail in page 309.

Quotation References

Prints a list of codes including the boundaries of their quotations. Code comments can be included.

All Codes with Quotations

Prints all codes with a full report of their quotations. A table based output can be created using an XML style sheet (see page 407 below).

Codes with Comments (Code Book)

Generates an output of all codes with comments including creation and modification date, membership in families and number of quotations referenced by each code. If you want an output in form of a table, use the XML output option and apply the style sheet "Modern Codes (- a report of commented codes". See page 406 or further detail.

Co-occurring Codes

Outputs the results of the Co-occurrence Explorer in rtf format (see page 309). You can choose to include the quotation list or to output only the list of co-occurring codes.



The Output Dialog (in the Code Manager)

When clicking the Code Manager output button (see left), a dialog opens to allow you to select the characteristics of your output.

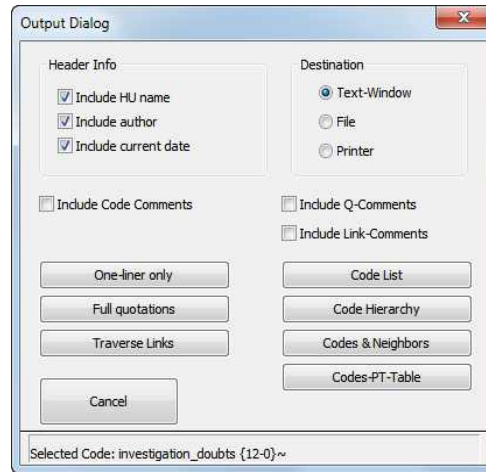


Figure 305: Code Output Dialog Window

Additional choices not available as menu options are the exclusion or inclusion of header information and link comments.

ONE-LINER ONLY corresponds to menu option 'Quotation List'.

TRAVERSE LINKS is the same as menu option 'Include Subterms'.

Reports for Code Combinations via the Query Tool



When clicking on the printer button in the query tool, you can print the list of quotations resulting from your selected combinations of codes and code families, either in full length or in list format. Before creating the output, selected quotations can be excluded (see "Output" on page 281).

A space and paper saving output is the "no meta" option:

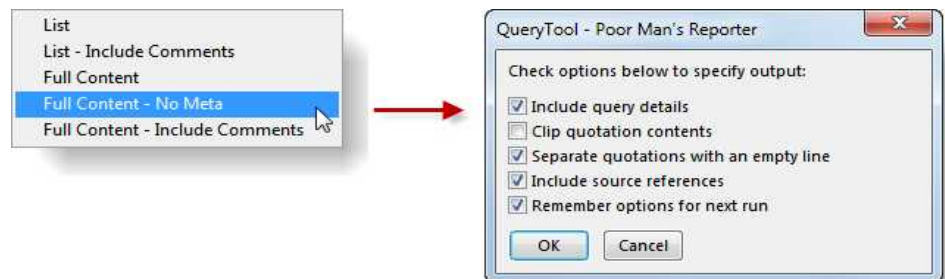


Figure 306: Output using No Meta: Save space and paper

A source reference is provided, if you select this option, but it only uses one line. It is displayed at the end of every quotation:

Query Report

6 quotation(s) found for Query (Infix-Notation):
 "letter_authenticity?"
 Clipped quotation content to number of characters: full length

Because so many hoax letters were received by Scotland Yard, the press and others, it is not known definitively if this was an authentic letter written by the Whitechapel killer. It did contain information that was compelling enough to lead investigators to publish a facsimile

`<ref>P 4: 1_Jack the Ripper_Letters.rtf - 4:14 [(28:28)] by Susanne</ref>`

the postcard mentions that two victims were killed very close to one another: "double event this time". Elizabeth Stride and Catherine Eddowes were both killed in the early morning of 30 September, and part of Eddowes' ear was found detached at the crime scene as a result of facial mutilations that the killer performed. Some authors have argued that the letter was mailed before the murders were publicised, making it unlikely that a hoaxer would have such knowledge of the crime; however, the letter was postmarked more than 24 hours after the killings took place, long after many details were known by journalists and residents of the area. Police officials later claimed to have identified a specific journalist as the author of this message and the earlier "Dear Boss" letter.

`<ref>P 4: 1_Jack the Ripper_Letters.rtf - 4:15 [(32:32)] by Susanne</ref>`

Though many letters claiming to be from the killer were posted at the time of the Ripper murders, the "From Hell" letter is widely considered by many Ripper researchers to be one of only a few reasonable candidates to possibly be authentic writing received from the serial killer.

`<ref>P 4: 1_Jack the Ripper_Letters.rtf - 4:20 [(43:43)] by Susanne</ref>`

Modern scholars are divided on which, if any, of the letters should be considered genuine, but the "Dear Boss" letter is one of three named most frequently as potentially having been written by the killer.

`<ref>P 4: 1_Jack the Ripper_Letters.rtf - 4:29 [(25:25)] by Susanne</ref>`

Figure 307: Quotation output excluding meta information

The Memos Output Submenu

List of Memos

Prints a list of the current memos. You are given the option of output with or without the memo text.

Selected Memo(s)

Prints the selected memo(s).

Selected Memo with Quotations

Prints a selected memo including all referenced quotation(s).

Speak Memo

Lean back, close your eyes and let ATLAS.ti read the selected memo for your. Currently this works only for English language text.



Family Output

When clicking the output button in any of the three family managers, a report is created with information associated with the selected family: name, comment, list of members.

When desired, a report of all quotations that are associated with any of the members of the family is included.

Output for Co-occurrence Tools

See quantitative results of the Co-occurrence Table Explorer, i.e. frequency of co-occurrence of the c-coefficient, can be exported as Excel compatible file. To do this, you find an Excel export button in the tool bar of the Co-occurrence Table Explorer (see page 310).

The qualitative results, i.e. the quotation IDs and names of the co-occurring codes can be exported as an rtf file. You find this option under **CODES / OUTPUT / CO-OCCURRING CODES**.

Output for Network Views

Network Views can be saved as either Windows Bitmap (bmp) or enhanced meta (emf) file. In a network view editor select the option **NETWORK / SAVE AS GRAPHIC FILE**.

A second option is to copy the entire or only parts of the network to the clipboard and then paste it into another application. When pasting, you need to select the "paste special" option in order to paste the network view as image. If you select just the "paste" option, the network view is pasted in text form. This is the equivalent to the code hierarchy output (see page 396 above).

Creating Reports with the XML Converter

XML – an Introduction

XML, the eXtensible Markup Language is a powerful standard for information exchange between applications and has been used by ATLAS.ti since release 4.2. XML is increasingly used in any information technology related domains: the mobile phone web "language" WAP, transcripts created by open source transcription tool Transcriber, and Microsoft Office all use or are based on XML.

In case you don't know what XML is, the short explanation is that XML, similar to HTML, is a document markup language.

XML concentrates on structuring information. Structured information contains both content (actual words, pictures, etc.) plus typically some indication of what role that content plays (for example, text content inside a "heading" has a different meaning from content in a "footnote", content in a "figure caption" differs from content in a "database table", etc.).

Almost all documents have some structure, and a markup language is a mechanism to identify this structure in a document. The XML specification defines a standard way to add markup to documents.

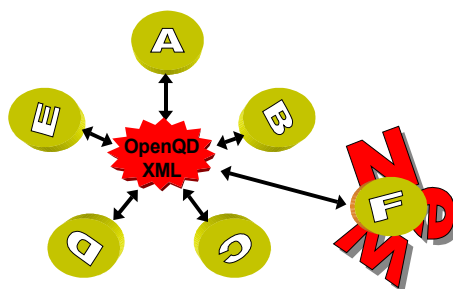


Figure 308: XML is a universal data interchange format, allowing programs to exchange data

If you create an XML output file, it can be read by other applications that support XML. One main advantage is that the application can define autonomously and completely detached from any display information contained in the document what parts of the structure are to be displayed and what the display should look like. This is commonly achieved with the help of so-called style sheets.

Style sheets are a way of prescribing how the content of your XML source file should be rendered. This can range from very simple layout commands ("show all elements of type X in red") to quite complex programming logic ("create an entire website in which each element of type X displays its sub-content on a single page, along with navigation, layout, interactive elements").

ATLAS.ti already comes with a number of such style sheets for you to use, but also to explore and potentially to expand on by copying and extending their functionality for your specific purposes. Once you understand the principle, you will see what an enormously powerful and flexible tool has been put at your disposal with these little programs. All style sheets are written in XSLT, a special language designed for transforming XML content and maintained by the World Wide Web Consortium ("W3C").

See also: <http://www.atlasti.com/xml.html>

XML vs. HTML: A Little Tech Talk

XML is short for *eXtensible Markup Language*. This is already quite a useful description when you compare it to its "competitor" or predecessor, HTML, short for *HyperText Markup Language*.

The crucial term is "extensible", NOT "extended". HTML was intended to allow documents and information of considerable complexity to be exchanged

across different technologies, operating systems, browsers, etc. It was also meant as a language which describes the logical structure of documents.

If you look at today's HTML code (right-click and select "View Source" when browsing a web page), you will have a hard time identifying content in the chaotic "noise" produced by tags representing tables, frames, buttons, rulers, fonts, images, indentation, etc.

Both HTML and XML are descendants of a much more powerful (and less comprehensible) language, SGML, the Standard Generalized Markup Language. What XML shares with the latter is that you can define your own new languages, something HTML does not allow for. While HTML is a ready complete language itself, XML is a meta-language for defining new languages.

HTML has no clear separation of content and presentation. With a fixed set of tags there is no way to clearly mark-up document content in a meaningful manner.

If you have ever seen the source code of a HTML coded web page, you can easily recognize two of the main characteristics of XML which makes them distinct from HTML:

- The presence of tags (e.g., <MEMO>, <SPEECH TURN>) which are not available in the fixed set of HTML tags (where new tags are proprietary or at least deviations from the standards). The tags used in an XML file represent YOUR data without invalidating any standards! Below, a raw XML file is shown.

- The absence of presentation (display, layout) related information (tables, fonts, images, rulers, etc)

Below you can see an XML version of an interview section with some added information:

```
<Trans version="1" trans_method="LING22" version_date="990120"
audio_filename="au.wav" xml:lang="DE">
  <Speakers>
    <Speaker id="I" name="Interviewer"/>
    <Speaker id="B" name="Herr Schultz" dialect="bavarian"/>
  </Speakers>
  <Turn speaker="I" tape_pos="2010">
    Ja.
  </Turn>
  <Turn speaker="B" tape_pos="2314">
    Wars doch eigentlich, ja da wars doch
    glaub ich erst ein oder zwei Tage, oder
    vielleicht einen Tag.
  </Turn>
</Trans>
```

If you interested to learn more about XML, you may want to look at the following online article:

Muhr, Thomas (2000, December). Increasing the Reusability of Qualitative Data with XML [64 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* [Online Journal], 1(3). Available at: <http://www.qualitative-research.net/fqs-texte/3-00/3-00muhr-e.htm> [last access date: Sept. 14, 2011].

Style Sheets

The real power of the XML standard is unleashed by applying so-called "style sheets." In fact an entire style language, the eXtensible Style Language (XSL, or, more specifically, XSLT) is dedicated to creating useful little programs and even full-blown applications on the basis of XML-structured data.

You do not have to learn the XSLT language to use the XML Converter with the provided style sheets. However, to create your own reports, browsers, and converters, some knowledge of the language is necessary.

A Hermeneutic Unit exported to XML can be converted into a wide variety of other representations by using style sheets. Individual reports, conversions into other programs' input formats or creating 'clickable' viewer versions of your HUs are among the options available.

The default XML folder (browse conveniently via **EXTRAS / EXPLORER / XML FOLDER**) hosts some examples of such style sheets waiting to be explored, or modified to suit your own needs or tastes. The XML converter can be viewed as a kind of plug-in interface for user written "programs" or macros.

The ATLAS.ti XML Converter is a convenient tool for user-created reports, converters and viewers. It displays all XML and XSL files located in the default XML folder.

If you change the default XML folder under **EXTRAS / GENERAL PREFERENCES / PATHS** and want to continue to use the provided style sheet samples, you need to copy the content of the default XML folder to the new location.

Requirements

ATLAS.ti's XML Converter requires Microsoft's MSXML v.3 XML parser to be installed. In turn, MSXML requires the Internet Explorer 6 or later to be installed.

Although Microsoft's Internet Explorer 6 (or higher) must be installed on your system, it is not required to be your default web browser!

If you have Windows XP as your operating system, you should already be well equipped. However, it is recommended that you download the most recent version of the parser from the Microsoft web site (run the Check MSXML option below).

To check for the version of MSXML installed on your computer, run **Tools / XML / XML CONVERTER** from the main menu, or click the globe button in the main toolbar.

Checking MSXML compatibility

If you receive an error message, you need to check if you have a compliant version of MSXML installed:

From the main menu, select **HELP / MORE RESOURCES / CHECK MSXML**.

A list of installed MSXML modules will be displayed including their compatibility with ATLAS.ti. If none of the modules is compatible, follow the link to the offered download site to get a compliant version of MSXML.

Working with Style Sheets

ATLAS.ti offers a number of style sheets ready for you to use. Below the general procedure is explained and then a few examples of the most commonly used style sheets and the resulting output is shown.

Click on the down arrow next to the XML button in the main toolbar and select **APPLY STYLE SHEET** (or select main menu option **Tools / XML**):

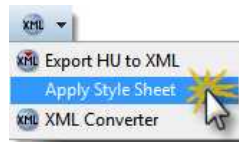


Figure 309: Select the option 'Apply Style Sheet' to make use of existing style sheets

Select a style sheet from the list displayed.

Next you are asked which parts of the HU you want to convert to XML. If you select a style sheet that only shows codes with comments or a list of objects, then you do not have to include the full content of the primary documents.

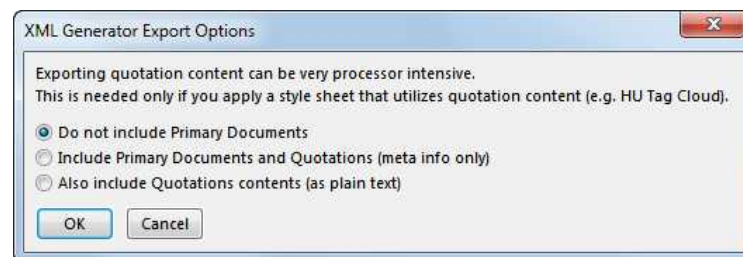


Figure 310: XML export options

An HTML file is generated as your output file. A file dialog opens offering to store the file in the ATLAS.ti XML folder. For the file to be displayed properly including all colors and images as defined by the style sheet, store the file at this location. You can accept the suggested default name or enter a different one. Then click the **SAVE** button.

The output is displayed in your web browser (Internet Explorer by default; results may vary in different browsers).

Example: Sortable Table

In order to create the output in the figure below, style sheet **Sortable Table** was applied. The generated table allows interactive sorting and searching of codes and some of their related information.

Sortable and Searchable Results Table

Instructions: Highlight rows by clicking them. Sort columns by clicking the ARROW in the header. Find data anywhere in the table by using the search facility. (Note: Search is Case sensitive.)

(Search Results)

	Code ▲	Author ▲	Date ▲	Code Family ▲
1	*date of murder	team	08-11-2009	Murder
2	*historic context	Anna	08-11-2009	
3	*name of suspect	team	08-12-2009	Suspects
4	*name of suspect: Cohen	team	08-21-2009	Suspects
5	*name of suspect: Feigenbaum	Tom	08-21-2009	Suspects
6	*name of suspect: Kaminski	team	08-21-2009	Suspects
7	*name of suspect: Kelly	Tom	08-21-2009	Suspects
8	*name of suspect: Kosmiski	team	08-21-2009	Suspects
9	*name of victim	team	08-13-2009	Victim: Who? Victims
10	INVESTIGATION	Anna	08-11-2009	Investigation
11	investigation_doubts	Anna	08-11-2009	Investigation
12	investigation_stolen evidence	Anna	08-11-2009	Investigation
13	investigation_suspected by whom	Anna	08-11-2009	Investigation
14	investigation_theories	Anna	08-13-2009	Investigation
15	investigation_theory by M. Fido	Anna	08-19-2009	Investigation
16	JACK THE RIPPER	team	08-13-2009	
17	Jack the Ripper_ legend	team	08-11-2009	
18	LETTER	team	08-13-2009	
19	letter_authenticity?	Tom	08-11-2009	Letter
20	letter_commonalities	team	08-11-2009	Letter
21	letter_content	team	08-11-2009	Letter
22	letter_date	team	08-11-2009	Letter
23	letter_differences	team	08-11-2009	Letter
24	letter_recipient	team	08-11-2009	Letter

Figure 311: Code list using style sheet 'Sortable Table'

Create presentations using style sheets

Example: CSS Switcher

The output shown in the figure below might be used in presentations because it displays HU information in a more comprehensible way.

This particular style sheet example makes the point that you can go in wildly differing directions with your design ideas when it comes to displaying your ATLAS.ti data to the "outside world", solely equipped with a Web browser.

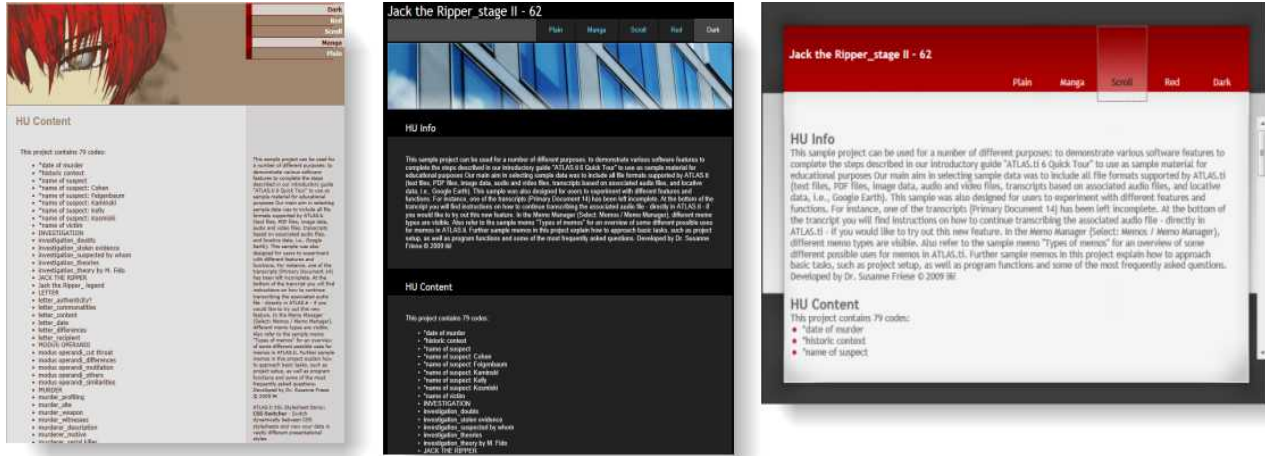


Figure 312: Using the CCS switcher style sheet to choose between different displays of the same information about your HU

The examples shown here (created from the same data source) are intentionally “overdesigned” so as to give an impression of the wide variety of options that are possible.

Example: Code book

The style sheet **Modern Codes - a report of codes with comments** can be used to create a code book in table format. It displays all codes including creation date and author information in the first column of the table and the code definitions that you have written in the comment fields of each code in the second column.

If you don't want date and author information displayed in the table, you can modify the style sheet accordingly.

Commented Codes	
No. of commented Codes: 58	
*date of murder Susanne 08-11-2009	Note: This code list is structured as follows: Main categories and subcategories were used within this list (this is not a requirement; you are obviously free to structure your own list to suit your needs!), and are separated by an underscore or a colon. All terms preceding the underscore or colon indicate the code category name; the terms following the symbol constitute subcategories. As category and subcategory names may contain more than one word, an empty space cannot be used to separate the two levels of coding. The symbols used here (underscore/colon) have no syntactic function. Additional sublevels may also
*historic context Susanne 08-11-2009	Description of the time period (economic situation, living conditions, etc.) during which the Legendary Jack the Ripper murders occurred.
*name of suspect Susanne 08-12-2009	http://www.casebook.org/suspects/
*name of suspect: Cohen Susanne 08-21-2009	http://www.casebook.org/suspects/davidcohen.html Note: This code list is structured as follows: Main categories and subcategories were used within this list (this is not a requirement; you are obviously free to structure your own list to suit your needs!), and are separated by underscores or colons. All terms preceding the underscore indicate the code category name; the terms following the underscore constitute subcategories. As category and subcategory names may contain more than one word, an empty space cannot be used to separate the two levels of coding. The symbols used here (underscore/colon) have no syntactic function. Additional sublevels may also
*name of suspect: Feigenbaum Susanne 08-21-2009	http://www.casebook.org/suspects/carl-feigenbaum.html

Figure 313: Use the style sheet 'Modern codes' to create a code book

You can copy and paste this table from Internet Explorer into a MS Word document or other applications and, if desired, add some further formatting.

Example: All coded segments sorted by codes

If you want to output all quotations sorted by codes, then the style sheet **Print codes in full with comments** can be used. You need to be aware that this potentially may result in large outputs, as you cannot apply filters. Nonetheless, this output is frequently used and asked for, e.g. as a means to add transparency to the analysis process and to make outcomes available to third parties.

The result is a list of tables, one for each code, displaying the code name and its definition/comment in the first row and all quotations underneath. The rows for the quotations are split in two columns, the first column displays the quotation ID and comment (in case a comment has been written).

You can only output textual information. For image, geodata, or multimedia quotations only a reference is provided.

When using this style sheet, you need to export the full content of quotations. Select the third option in the XML export window before creating the HTML file.

<p>■ Code: *name of suspect</p> <p>http://www.casebook.org/suspects/</p>	
<p>Quotation Nr: 87 Source: 1_Jack the Ripper_Story.rtf Has Comment: no</p>	<p>A man named James Thomas Sadler, seen earlier with her, was arrested by the police and charged with her murder and was briefly thought to be the Ripper himself.</p>
<p>Quotation Nr: 5 Source: 3_Investigation_Suspects.pdf Has Comment: yes</p> <p><i>Comment</i></p> <p><i>Does not fit the profile.</i></p> <p><i>Quality/style of correspondence unlikely given educational background</i></p> <p><i>(numerous orthographical mistakes despite college education).</i></p>	<p>Montague John DrUITT (15 August 1857 – 1 December 1888)</p> <p>[3]</p> <p>was born in</p> <p>Wimborne Minster, Dorset, England, the son of a prominent local physician. He was</p> <p>educated at Winchester College and New College, Oxford. He graduated from Oxford</p> <p>in 1880 and two years later was admitted to the Inner Temple. He was called to the bar</p> <p>in 1885, and practised as a barrister and a special pleader until his death.</p> <p>[4]</p>
<p>Quotation Nr: 8 Source: 3_Investigation_Suspects.pdf Has Comment: no</p>	<p>John Pizer (1850–1897) was a Polish Jew who worked as a bootmaker in</p> <p>Whitechapel.</p>
<p>Quotation Nr: 9 Source: 3_Investigation_Suspects.pdf Has Comment: no</p>	<p>Michael Ostrog (1833–1904?) was a Russian-born, professional con man.</p> <p>[3]</p> <p>He used</p> <p>numerous aliases and disguises. Among his many dubious claims was that he had once</p> <p>been a surgeon in the Russian navy.</p>

Figure 314: Excerpt from an output based on the style sheet: Print codes in full with comments

When exporting quotations from PDF documents, you may have to correct the formatting in Word and delete unnecessary hard returns. The original layout is of course lost as the table only contains plain text. As mentioned above, you can simply copy and paste the table(s) from the Explorer to a word processing program and edit them there.

The above excerpt after a few corrections (using the find and replace option in Word) looks as follows:

■ Code: *name of suspect

<http://www.casebook.org/suspects/>

Quotation Nr: 87 Source: 1_Jack the Ripper_Story.rtf	A man named James Thomas Sadler, seen earlier with her, was arrested by the police and charged with her murder and was briefly thought to be the Ripper himself.
Quotation Nr: 5 Source: 3_Investigation_Suspects.pdf Does not fit the profile. Quality/style of correspondence unlikely given educational background (NUMEROUS orthographical mistakes despite college education).	Montague John Druiitt (15 August 1857 – 1 December 1888) [3] was born in Wimborne Minster, Dorset, England, the son of a prominent local physician. He was educated at Winchester College and New College, Oxford. He graduated from Oxford in 1880 and two years later was admitted to the Inner Temple. He was called to the bar in 1885, and practiced as a barrister and a special pleader until his death. [4]
Quotation Nr: 8 Source: 3_Investigation_Suspects.pdf	John Pizer (1850–1897) was a Polish Jew who worked as a boot maker in Whitechapel.
Quotation Nr: 9 Source: 3_Investigation_Suspects.pdf	Michael Ostrog (1833–1904?) was a Russian-born, professional con man. [3] He used numerous aliases and disguises. Among his many dubious claims was that he had once been a surgeon in the Russian navy.

Figure 315: Table excerpt in MS Word

Creating and Modifying Style Sheets

In addition to the few examples presented above, many more examples are included that can show you a variety of practical style sheet applications. If you already know how to write XSLT style sheets, use the supplied examples as a point of departure for your explorations. If you are motivated to learn XSLT, they can serve as study material for basic and advanced XSLT coding. Many more examples are supplied to give you a hint of the limitless possibilities in designing and individualizing ATLAS.ti XML output.

Check our Web site, <http://www.atlasti.com> for additional information on ATLAS.ti's XML support, as well as for an emerging repository of useful style sheets and dedicated service providers who specialize in creating custom applications, interfaces, and conversions on the basis of ATLAS.ti's XML / XSLT capabilities.

Let's take a look at some of the examples for manipulating raw XML data that come with the program. The following sample was created by exporting the Jack the Ripper sample HU to XML. Below you see some excerpts of the raw XML file:

```

<?xml version="1.0" encoding="UTF-8"?>
- <storedHU mode="complete" version="6.2.27" method="AML (ATLAS Markup Language)" creator="ATLAS.ti" lastSaved="2011-09-15T11:10:18" xmlns:aml="http://www.atlasti.com/hu/ns2003">
- <hermUnit prot="private" lastPD="22" mDate="2010-12-12T21:59:25" cDate="2009-08-11T13:24:25" au="Susanne" name="Jack the Ripper_stage II - 62">
- <comment size="627304" type="text/html">
- <p>This sample product can be used for a number of different purposes.</p>

- <dataSources size="20">
<dataSource mime="bmp" loc="<HUPATH>\Site Second Murder_29 Hanbury Street.png" id="doc_1"/>
<dataSource mime="snd" loc="<HUPATH>\1_Jack the Ripper Story Introduction.mp3" id="doc_2"/>
<dataSource mime="bmp" loc="<HUPATH>\Site Second Murder_Wooden Shed.png" id="doc_3"/>
<dataSource mime="geo/google earth" loc="@GE:" id="doc_4"/>
<dataSource mime="bmp" loc="<HUPATH>\Site Second Murder_Place where Chapman was found.png" id="doc_5"/>
<dataSource mime="bmp" loc="<HUPATH>\Site Second Murder_2 Entrances.png" id="doc_6"/>
<dataSource mime="text/rtf" loc="<HUPATH>\3_Criminal Profiling.rtf" id="doc_7"/>
<dataSource mime="text/pdf" loc="<HUPATH>\2_Victim_Mary_Jane_Kelly.pdf" id="doc_8"/>
<dataSource mime="text" loc="<HUPATH>\2_Victim_Mary_Jane_Kelly_App_Note_05.pdf" id="doc_9"/>

- <primDoc mDate="2009-11-30T22:32:00" cDate="2009-08-11T13:24:37" au="Susanne" name="1_Jack the Ripper_Story.rtf" loc="doc_10" id="pd_3" qIndex="101">
- <comment type="text/html">
<p>Wikipedia entry on the legend of Jack the Ripper</p>
</comment>
- <quotations size="99">
- <q mDate="2009-08-18T17:00:49" cDate="2009-08-11T14:01:08" au="Susanne" name="Jack the Ripper is a pseudonym given to an unident." loc="1 @ 4, 289 @ 4!" id="q3_1">
- <content size="296">
<p>Jack the Ripper is a pseudonym given to an unidentified serial killer active in the largely impoverished Whitechapel area and adjacent districts of London, England, in late 1888. The name originated in a letter sent to the London Central News Agency by someone claiming to be the murderer.</p>
</content>
</q>
- <q mDate="2009-08-19T15:34:58" cDate="2009-08-11T14:01:41" au="Susanne" name="Most victims' throats were slit, after which the b.." loc="55 @ 5, 125 @ 5!" id="q3_2">
- <content size="78">
<p>Most victims' throats were slit, after which the bodies were mutilated.</p>
</content>

- <q mDate="2009-08-19T12:51:37" cDate="2009-08-19T12:51:37" au="Susanne" name="Elizabeth Long testified that she saw a man and a .." loc="text:v02:2:1480:2:1749:!" id="q6_8">
- <content size="305">
<p>Elizabeth Long testified </p>
<p>that she saw a man and a woman she believed to be Chapman </p>
<p>conversing outside 29 Hanbury St at approximately 5:30 am. If </p>
<p>correct in her identification, it is likely that Long was the last </p>
<p>person to see Chapman alive besides her murderer. </p>

```

Figure 316: Excerpt of a raw XML file

Three different style sheets were independently applied to this XML file using the XML converter to generate completely different representations from the same source.

It is important to notice that these representations work independently of ATLAS.ti. That is, they "live" exclusively in your Web browser. This adds a huge new repertoire of applications to your tool chest, since you can modify the supplied style sheets to your hearts content and even create your own style sheets to suit your unique and very specific needs.

The following assumes some knowledge about XML and XSLT. XSLT styles sheets are XML conformant text files. As such, they can be edited with a simple text editor like the one built into ATLAS.ti.

To edit a style sheet, it is best to open the XML Converter tool first, which you can select from the XML button in the main tool bar (or via the main menu **Tools / XML**):

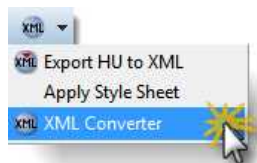


Figure 317: Open the XML converter to apply and edit style sheets

By pressing the **EDIT STYLESHEET** button, you may start editing a selected style sheet. However, XSLT, the language the style sheets are written in, although not exactly rocket science, is not completely trivial, and you will also need some basic knowledge about the "guts" of a style sheet to start writing your own. You can start by analyzing any of the existing style sheets and creating modifications of those.

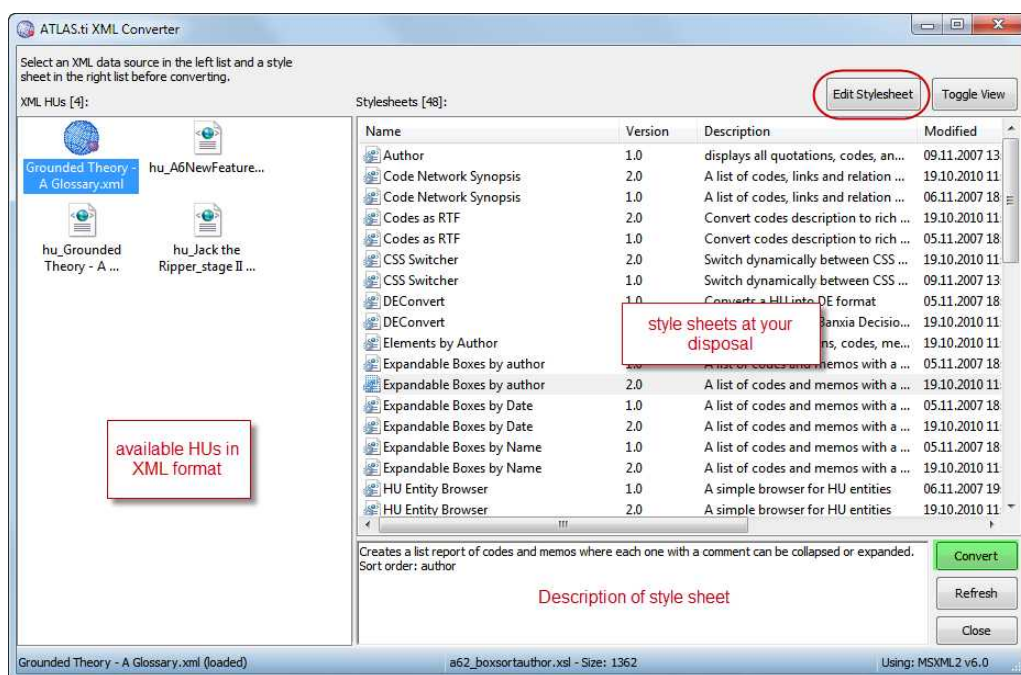


Figure 318: XML converter tool

Conventions

You will note that the XML Converter displays more than just the file name of the style sheets it found in the XML folder. This additional information is part of the style sheets themselves. The atlas description node within the atlas:data namespace contains this self description. **Style sheets that do not use this header are not displayed in the converter.**

Style sheets are stored in the ATLAS.ti XML folder, which you can conveniently locate via the main menu option **EXTRAS / EXPLORER / XML FOLDER**.

Applying style sheets using the XML converter

The XML Converter offers XML versions of HUs you have already created using the procedure described in "Exporting an entire HU as XML file".

The XML Converter can only convert XML versions of ATLAS.ti Hermeneutic Units. It is not a generic tool for arbitrary XML conversions.

- Select an XML file in the left browser pane entitled XML Data Sources.
- Select a style sheet from the Style Sheets pane. Style sheets are categorized by name, converter type, and target format (usually HTML).
- Double-click the style sheet or click the Convert button.
- Select the amount of content that is needed (excluding primary documents, including meta information or including full content of quotations as well).
- This starts the conversion process, which usually creates an HTML document. The HTML document is stored in the XML folder (you are not specifically asked where to store it and how to name it).
- Wait until the browser opens displaying the result of the conversion.

Exporting an entire HU as XML file

The ATLAS.ti XML export option for HUs can be used for different purposes:

- For internal use in the XML converter
- For external use as a non-proprietary format, e.g. to archive data. The qualitative data archive in Essex for example uses ATLAS.ti's XML format as blue print for their standard. See: <http://www.esds.ac.uk/qualidata/about/introduction.asp>
- As a means to import data into other applications that offer an import function like the software QDA Miner. QDA Miner offers further quantitative analysis tools like cluster, factor and correspondence analysis and thus for some studies it presents a very useful complement to ATLAS.ti.

To export an HU for any of the above mentioned purposes, select either the down arrow next to the XML button in the main tool bar and then the option **EXPORT HU TO XML**, or from the main menu select **TOOLS / XML / EXPORT HU TO XML**, or **EXTRAS / EXPORT TO / XML**.

Select the amount of content that is needed (excluding primary documents, including meta information or including full content of quotations as well).

Select the output destination (Editor, Printer, File, or File & Run), see "Output Destinations" on page 391).

If you select the 'File' or 'File & Run' option, enter a file name (or accept the default name) and select the folder where to store the XML file. If you do not want to apply style sheets, i.e., you need the output for archiving purposes, or want to import your project into another application, you can save the resulting XML file to any location. If you want to apply style sheets, save the XML file in the suggested location, the ATLAS.ti XML folder.

Export & Import

This chapter describes procedures to export/import data and structures between ATLAS.ti and other software. The export procedures introduced in this chapter are not always clearly distinguishable from the chapter “Generating Output” on page 390. While the output options are generally display and print oriented, export of the HU or parts thereof allows for analysis of data and structures created with ATLAS.ti within other software packages.

SPSS Export

ATLAS.ti is intended primarily for supporting qualitative reasoning processes. On the other hand, especially with large amounts of data, it is sometimes useful to analyze the data in a quantitative manner using statistical approaches. ATLAS.ti provides an export function to permit further processing of the *syntax* file by SPSS®, the Statistical Package for the Social Sciences.

The case for cases.

ATLAS.ti exports quotations as cases. You can use SPSS features to use primary documents as cases.

Cases & Variables

The basic components for statistics are cases and variables. The SPSS export function in ATLAS.ti treats codes as variables and data segments (quotations) as "cases."

In contrast to the dichotomous treatment of codes within ATLAS.ti, you can use codes as ordinal or otherwise scaled variables in SPSS jobs by using a specific code-naming convention.

The notion of a "case" here is rather fine-grained and differs from the common understanding of this term. Usually cases in qualitative research refer to persons, interviews, or documents. We chose to treat the smallest unit as a case for the output to SPSS, to ensure that no data is lost during export. Broader information, e.g., which primary document a quotation belongs to, is coded into the variable PD (primary document).

SPSS Syntax File

The output of the SPSS generator is a complete SPSS syntax file containing variable definitions, optionally the data matrix and some default jobs statements:

VAR LABELS are taken from code and code family names.

VALUE LABELS for variables created from codes are:

Yes (1) - code is assigned

No (0) - code is not assigned

Every "case" is not only described by the codes, but also by information about position (primary document, start and end position), and date of creation.

Code and primary document families are handled using COMPUTE statements.

If applicable super codes can turn into non-dichotomous variables.

The SPSS syntax output created with ATLAS.ti is plain ASCII and can be edited before storing it as a file for further processing with SPSS. Below you see an example syntax file:

TITLE 'ATLAS.ti - Jack the Ripper_stage II - 62'.

*** SPSS Syntax file generated by ATLAS.ti 6.2.27 .**

* SPSS Generator Version 3.2

* Date: 2011-09-15T18:25:13.

DATA LIST RECORDS=3

```

/1 CASENO (F6.0) PD (F6.0) QU (F6.0) SL (F8.0)
SC (F8.0)
      EL (F8.0) EC (F8.0) TI (F10.0)
/2 K1 to K77 1-77
/3 K78 to K79 1-2

```

VARIABLE LABELS PD 'Primary Doc'

```

/QU 'Q-Index'
/SL 'Start Line'
/SC 'Start Column'
/EL 'End Line'
/EC 'End Column'
/TI 'Creation Date'
/K1 '*date of murder'
/K2 '*historic context'
/K3 '*name of suspect'
....
....
....
/K78 'victim_last hours and death'
/K79 'victim_marriage / children'.

```

VALUE LABELS K1 to K79 1 'YES' 0 'NO'.

*** Represent code families as computed variables.**

```
COMPUTE KF1 = K10 + K11 + K12 + K13 + K14 + K15.
```


END DATA.

Scaled vs. Dichotomous Codes

Within ATLAS.ti, a code is always *dichotomous*, because it either refers to a given quotation ("1") or it does not ("0"). Each case (= quotation) can, in respect to the codes, be described as a vector of 0's and 1's. The concept of scaled codes/variables requires a special syntax.

The dimension or scale along which an evaluation is to take place is partitioned into the number of different values required. Assuming that five degrees of fear are to be distinguished in a given analysis, five codes must be created:

```
degree of fear %1
degree of fear %2
degree of fear %3
degree of fear %4
degree of fear %5
```

A special naming convention is necessary to let ATLAS.ti identify variable codes from dichotomous codes.

Naming Convention for Scaled Codes

Each code name is followed by at least one blank and the %-character (you may choose an alternative lead character for the value part through the SPSS initial screen) followed immediately by a value.

This notation allows the system to construct *one* variable from a group of codes (as in the example given above). The new ordinal variable "degree of fear" has as many distinct values as the number of codes the user defined according to the convention. In SPSS syntax the transformation of the data could be expressed as follows:

```
if (degree of fear %1 eq 1) degree of fear=1
if (degree of fear %2 eq 1) degree of fear=2
  if (degree of fear %3 eq 1) degree of fear=3 etc.
```

You are not restricted to numerical values; anything that follows the special symbol is interpreted as a value. The width reserved in the Data List statement of the syntax file is the maximum width of the largest of all values collected for a variable code:

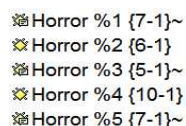
```
Name %Christine
Name %Thomas
Name %Hal
```

The variable code "Name" will have three values: "Christine," "Thomas" and "Hal." The width reserved in the data list statement will be 9, determined by the maximum width value "Christine."

A comment linked to such codes could be used as an explanation of the values to instruct researchers in coding the material.

Use comments
for an
explanation of
scaled code's
values

Keep in mind that ordinal codes only have meaning in the context of being used by SPSS. Within ATLAS.ti, the differently valued codes are treated like every other code: dichotomously.



Horror %1 {7-1}~
 Horror %2 {6-1}
 Horror %3 {5-1}~
 Horror %4 {10-1}
 Horror %5 {7-1}~

Figure 319: Example of a scaled variable

Check 'The Sample.hpr6' for an application of an ordinal code. You find the file in the samples folder, which you can access via **EXTRAS / EXPLORER / SAMPLES FOLDER**. The name of the code is Horror, split into Horror %1 to Horror %5.

Do not assign mutually exclusive codes to the same quotation!

Do not assign more than one scaled variable value (e.g., fear %1 and fear %2) to the same quotation. Although ATLAS.ti permits an arbitrary number of codes to be attached to a quotation, this would not make much sense with mutually exclusive values of scaled variables. If you do so, the SPSS generator will simply ignore additional values after processing the first one it finds for a given quotation. Since it cannot be guaranteed which value will be detected first, this will most likely produce unpredictable results in the SPSS job generated.

How SPSS Export Handles Families

Treatment of Code Families

Code families in SPSS jobs simply count the occurrences of assignments of any of its contained codes for the current case (=quotation) using COMPUTE statements. Below an example for computing a code family variable is provided:

```
COMPUTE KF1 = K10 + K11 + K12 + K13 + K14 + K15.  
VARIABLE LABELS KF1 'KF_Investigation'.
```

Scaled codes are ignored in the computation of code family variables.

Treatment of Primary Document Families

Each case (= quotation) has its primary document index automatically generated by the SPSS export function. The value of a quotation that is part of a primary document that is a member of a primary document family will be computed as a "1" or "0." In the SPSS syntax file the PD family variable is computed as follows:

```
* PF1 Description of Victims.  
COMPUTE PF1 = 0.
```

```
IF (PD = 5 or PD = 6 or PD = 8 or PD = 9 or PD = 10) PF1
= 1.
```

```
VARIABLE LABELS PF1 'PF_Description of Victims'.
```

Missing Values

Missing values are only computed for scaled variables. A sequence of blanks (depending on the format width of the variable) is inserted in the data matrix for any missing value.

Creating SPSS Output

- From the HU editor's main menu select **EXTRAS/ EXPORT TO / SPSS**.
- The Send Output to: dialog window opens. Select a target location.
- Next, the SPSS Job Generation Window opens (see Figure 310).

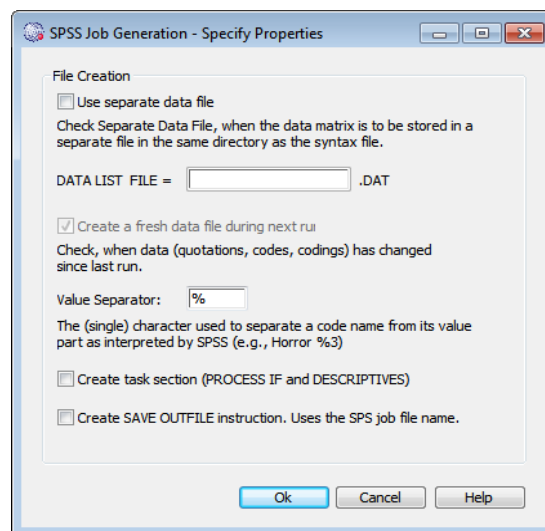


Figure 320: Property window for SPSS job

Use separate file: When checked, the data matrix is written to a separate file. This is mandatory if the size of the matrix exceeds a certain size. SPSS cannot handle large data sets within a syntax file. For regular size projects, leave this option unchecked.

Specify the name of the data set. This name is used as the file name and as the FILE reference from the DATA LIST section. You only need to enter a name here if you generate separate data files.

“**Create a fresh data file during next run**” can be unchecked if the data has not changed since it was last created. This may save some processing time.

The value separator is % by default, but can be changed to something else. See “ ”.

Create task section. Enable this option if you want templates for procedures included at the end of the syntax file.

Create SAVE OUTFILE instruction. Enable this option if you want SPSS to save the data as *.sav file after running the syntax file..

Specify all desired properties and then click OK.

The output is generated and sent to the selected target location. When directed to a text editor, you can edit the job statements and other parts of the syntax file before proceeding. If file separation is selected, two files – the SPSS job file and the data file - are created simultaneously.

You can directly RUN the result if SPSS is installed on your computer and the SPS extension has been associated with SPSS.

	CASENO	PD	QU	SL	SC	EL	EC	TI	K1	K2	K3	K4	K5	K6	K7	K8	K9	K10	K11
1	1	2	1	4	118	4	280	3428240739	0	0	0	0	0	0	0	0	0	0	0
2	2	2	2	4	281	4	443	3428240748	0	0	0	0	0	0	0	0	0	0	0
3	3	2	3	8	1	8	252	3428240776	0	0	0	0	0	0	0	0	0	0	0
4	4	2	4	8	254	8	370	3428240886	0	0	0	0	0	0	0	0	0	0	0
5	5	2	5	4	1	4	116	3428332512	0	0	0	0	0	0	0	0	0	0	0
6	6	2	6	8	1	8	370	3435910437	0	0	0	0	0	0	0	0	0	0	0
7	7	3	1	4	1	4	289	3427452068	0	0	0	0	0	0	0	0	0	0	0
8	8	3	2	5	55	5	125	3427452101	0	0	0	0	0	0	0	0	0	0	0
9	9	3	3	5	55	5	183	3427452136	0	0	0	0	0	0	0	0	0	0	0
10	10	3	4	5	301	5	514	3427452161	0	0	0	0	0	0	0	0	0	0	0
11	11	3	5	6	1	6	301	3427452187	0	0	0	0	0	0	0	0	0	0	0
12	12	3	6	6	181	6	301	3427452202	0	0	0	0	0	0	0	0	0	0	0
13	13	3	7	5	301	5	363	3427452232	0	1	0	0	0	0	0	0	0	0	0
14	14	3	8	8	1	10	177	3427452260	0	1	0	0	0	0	0	0	0	0	0
15	15	3	9	11	174	11	1012	3427452435	0	0	0	0	0	0	0	0	0	0	0
16	16	3	10	11	174	11	267	3427452444	0	0	0	0	0	0	0	0	0	0	0
17	17	3	11	11	310	11	577	3427452467	0	0	0	0	0	0	0	0	0	0	0
18	18	3	12	11	690	11	913	3427452482	0	0	0	0	0	0	0	0	0	0	0

Figure 321: Data matrix in SPSS after running the syntax file

	Name	Typ	Spalten	Dezimal	Variablenlabel	Wertelabels	Fehlende Wer	Spalten	Ausrichtung	Meßniveau
1	CASENO	Numerisch	6	0		Kein	Kein	8		Metrisch
2	PD	Numerisch	6	0	Primary Doc	Kein	Kein	8	Rechts	Nominal
3	QU	Numerisch	6	0	Q-Index	Kein	Kein	8	Rechts	Metrisch
4	SL	Numerisch	8	0	Start Line	Kein	Kein	10	Rechts	Metrisch
5	SC	Numerisch	8	0	Start Column	Kein	Kein	10	Rechts	Metrisch
6	EL	Numerisch	8	0	End Line	Kein	Kein	10	Rechts	Metrisch
7	EC	Numerisch	8	0	End Column	Kein	Kein	10	Rechts	Metrisch
8	TI	Numerisch	10	0	Creation Date	Kein	Kein	12	Rechts	Metrisch
9	K1	Numerisch	1	0	*date of murder	{0, NO}...	Kein	4	Rechts	Nominal
10	K2	Numerisch	1	0	*historic context	{0, NO}...	Kein	4	Rechts	Nominal
11	K3	Numerisch	1	0	*name of suspect	{0, NO}...	Kein	4	Rechts	Nominal
12	K4	Numerisch	1							Nominal
13	K5	Numerisch	1							Nominal
14	K6	Numerisch	1							Nominal
15	K7	Numerisch	1							Nominal
16	K8	Numerisch	1							Nominal
17	K9	Numerisch	1							Nominal
18	K10	Numerisch	1							Nominal
19	K11	Numerisch	1							Nominal
20	K12	Numerisch	1							Nominal
21	K13	Numerisch	1							Nominal
22	K14	Numerisch	1							Nominal
23	K15	Numerisch	1							Nominal

Wertelabels definieren

Wertelabels

Wert:

Label:

Hinzufügen

Ändern

Entfernen

OK

Abbrechen

Hilfe

Figure 322: Variable View

Export & Import using XML

Codes, memos, or entire HUs can be exported into the XML format. Exporting codes and memos as XML files allows you to transfer all or only selected codes or memos between HUs using the import function. (If you are looking to merge complete HUs, check the section on “Merging Hermeneutic Units” on page 171).

Exporting the entire HU in XML opens up numerous possibilities for individual reports and conversion for other applications.

Exporting and Importing Codes in XML

Exporting Codes

The code's name, author, creation and modification date, as well as the query for super codes and their respective comments are included in the export format. However, no links to quotations or other objects are included. You can export all codes, or selected codes, or all codes that pass the current filter.

To export all codes (or all filtered codes),

- Choose **CODES / MISCELLANEOUS / EXPORT CODES (XML)** from the main menu.

- In the output target dialog select **FILE**. Confirm the default name, or enter a new file name, and save the file to disk

To export a list of selected codes,

- Open the Code Manager and select one or more codes.
- Choose **EXPORT SELECTED CODES (XML)** from the Code Manager's **MISCELLANEOUS** menu.
- In the output target dialog select **FILE**. Confirm the default name, or enter a new file name, and save the file to disk.

Importing Codes

When you import codes in XML format, additional information like the date of creation and modification, the author and code comments (in plain text only) are also imported.

This is how you do it:

- Select **CODES / MISCELLANEOUS/IMPORT CODES (XML)** from the main menu.
- A file dialog window opens. Select the XML file that you previously created and click the **OPEN** button.

The code list including all comments is immediately imported and displayed in the Code Manager. If conflicts occur, you receive a warning and have the option to overwrite only the code for which a conflict was detected, or all codes.



Figure 323: Options to resolve conflicts when importing XML codes

Code colors are not preserved in the XML file. Thus, if you import codes and their comments via the XML option, you lose the coloring.

Exporting and Importing Memos in XML

Exporting Memos

You can export selected memos or all memos.

To export all memos,

- Choose **CODES / MISCELLANEOUS / EXPORT MEMOS (XML)** from the main menu.

In the output target dialog select **File**. Confirm the default name, or enter a new file name, and save the file to disk.

To export one or more selected memos,

Open the Memo Manager and select one or more memo(s).

Choose **EXPORT SELECTED MEMOS (XML)** from the Memo Manager's **MISCELLANEOUS** menu.

Select **FILE** as the output destination. Confirm the default name, or enter a new file name, and save the file to disk.

Importing Memos

Select **MEMOS / MISCELLANEOUS / IMPORT MEMOS (XML)** from the main menu.

A file dialog window opens. Select the XML file and click the **OPEN** button.

If a naming conflict occurs, you can choose to overwrite all memos, to **NOT** overwrite the memo for which a conflict was detected, or to never overwrite an existing memo.



Figure 324: Options to resolve a conflict when importing XML memos

Exporting the Hermeneutic Unit in XML

Instead of just exporting a small selected part of your project, you can also export the entire HU as an XML file. You may exclude primary documents and quotations, if not needed.

The benefit of exporting the entire HU lies in applying style sheets to create impressive reports, browsers and formats suited for other applications. By using ATLAS.ti's XML Converter and the supplied style sheets on HUs exported as XML you can create output (usually HTML) displayed in the web browser installed on your system.

The steps for exporting an entire HU as XML file were explained above in the section "Exporting an entire HU as XML file" on page 412.

The default folder for storing XML files also contains the style sheets and several other auxiliary files that are used when working with the ATLAS.ti converter (see "Creating Reports with the XML Converter" on page 400). If you select a different folder to store XML files (customizable via General Preferences), but still want to make use of the ATLAS.ti converter, make sure that you copy the content of the default XML folder to your new XML folder.

When using XML as an exchange format to transfer memos and codes between HUs, or when creating XML version HUs, you will lose some formatting of the texts contained in the memos and codes.

HTML Export

The HU to XML export and conversion utility allows an alternative and very powerful and flexible approach to creating web pages for users willing to learn how to “program” style sheets. Using HTML Export and specifying the layout using the HTML generator on the other hand is simply a matter of clicking options without any need to learn HTML.

Potential reasons for creating HTML versions of Hermeneutic Units include:

Create a web publication. Even intermediary results can be presented to other researchers without much effort. These reports are readable without needing ATLAS.ti on every system that has a web browser available.

Create a report. A convenient way to create a printout of (almost) all objects contained in a Hermeneutic Unit using a web browser.

ATLAS.ti’s HTML code generation converts the Hermeneutic Unit currently being worked with into an HTML document. The user can control the HTML creation entirely via the HTML Preferences dialog box. Of course, the generated code can be edited and refined with a plain text editor or specialized HTML tools if you are knowledgeable in HTML.

Exporting an HU as HTML Document

Specify all desired characteristics using the ATLAS.ti HTML setup under **EXTRAS / GENERAL PREFERENCES / HTML PREFERENCES**.

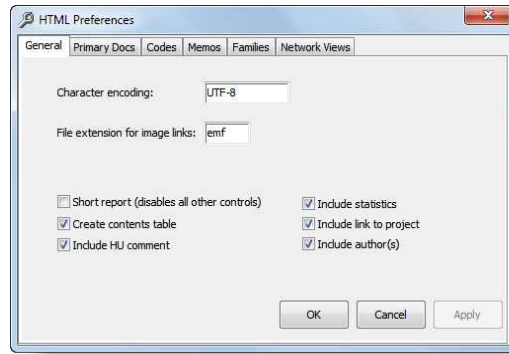


Figure 325: The HTML preference window

Select **EXTRAS / EXPORT TO / HTML** from the main menu.

Select **FILE & RUN** as the output destination to immediately open the generated output in a web browser. Select **EDITOR** if you want to modify the source before storing it.

Below you see an example of how an ATLAS.ti project in HTML format may look like:

Jack the Ripper_stage II - 62


Generator: ATLAS.ti WIN 6.2 (Build 27)
 Date: 15.09.2011 19:32:59
 Original project (ATLAS.ti needed): jack the ripper_stage ii - 62.acb (Copy Bundle format)

Table of Contents

- General
- Statistics
- Primary Documents
- Commented Codes
- Memos
- Network

Statistics:

- Co-Authors: 0
- Primary Texts: 22
- Quotations: 456
- Codes: 79
- Codings: 523
- Memos: 21
- Primary Document Families: 14
- Code Families: 13
- Memo Families: 0
- Network Views: 3
- Code-Code Links: 22
- Hyperlinks: 70

 **P 3: 1_Jack the Ripper_Story.rtf**





File name: 1_Jack the Ripper story.rtf (media type: richtext)

Comment: Wikipedia entry on the legend of Jack the Ripper

99 quotations

Codes (28): *date of murder, *historic context, *name of suspect, *name of victim, INVESTIGATION, investigation_doubts, investigation_suspected by whom, JACK THE RIPPER, Jack the Ripper_legend, modus operandi_cut throat, modus operandi_differences, modus operandi_mutilation, modus operandi_others, modus operandi_similarities, murder_profiling, murder_site, murder_weapon, murderer_serial killer, murderer_various persons, murders_canonical five, murders_more/less than five, murders_potentially attributed to JR, reason released: lack of evidence, reason suspected: knew victim, role of the media_legend building, role of the media_sensationalizing, victim: Emma Elizabeth Smith, victim: Martha Tabram

Commented Codes only:

-  **investigation_stolen evidence {4-0}~v**
Information regarding evidence stolen from police records
-  **investigation_suspected by whom {37-0}~v**
Persons (e.g. police investigators, journalists, historians or book authors) who suspect(ed) a specific person to be Jack the Ripper
-  **investigation_theories {15-0}~v**
Various theories about Jack the Ripper's identity, motives, occupation, life and death
-  **investigation_theory by M. Fido {4-0}~v**
Theory about the identity of Jack the Ripper

 ***Idea memo {0-Me-F} - Susanne**
 Create a single idea memo...
 Guesses, hunches, thoughts, dreams....
Instead of writing a separate memo for every new idea, collect all of your ideas in a single memo. If you have a hunch pertaining to a specific research topic, insert it into the appropriate research question memo. The overall aim of this suggested strategy should be to stay on track and revisit important thoughts with ease - and not to end up with an unmanageable number of memos with scattered bits and pieces of information which make it difficult to retrace your steps.

Figure 326: Example HTML output

Special Considerations

Size of HTML Documents

The more options you specify in the HTML Preferences dialog, the bigger your HTML file will be. This may not be a concern if you are using the documents in-house. However, when making such documents accessible to others via the Internet, slow transmission rates may demand a reduced set of output options. In-lined (= content included in the web page) primary documents may boost the size considerably (and therefore transmission times) depending upon the size of the documents.

Rich Text

Rich Text formatted documents cannot be included in the resulting HTML code. All contents from rich text primary documents (including Word files), comments or memos are converted to plain text for HTML output.


Embedded file links to such documents can of course be used. When clicking the link, the application registered for this file type (e.g., Word) is opened or displayed using a plug-in inside the browser's window.

Network View Images


Checking the option to include Network Views is not sufficient to display them in an HTML document. The graphic files have to be created manually for every network that you want to include. By default, a network view entry looks as follows:

Network Views

Nodes are prefixed with a single letter denoting its type: C= Code, M = Memo, Q = Quotation, P = Primary Document



RQ1: Suspects who might have been Jack the Ripper



This network visualizes the results contained in the Memo "RQ1: Suspects who might have been Jack the Ripper".

This network view was created with a screen resolution of 1280 x 1024.

If the network view does not fit your window, you can adjust it to the current window size and resolution. After you open the network select: Layout / Fit to Window.

If you still don't see the network view properly displayed on your screen, you can adjust the font size to optimize your view. To do this, open the network view. Then select Specials / Preferences --> Fonts. Adjust the font for nodes.

Nodes (16): CO:reason released: theory disputed {3-0}~, CO:reason suspected: fitting the profile {14-1}~, CO:reason suspected: attention seeking {4-0}~, CO:reason released: mix-up of names {8-3}, CO:reason released: alive long after killing stopped {5-0}~, CO:reason released: lack of evidence {3-0}~, CO:reason suspected: witness {4-0}~, CO:reason suspected: killed others {13-1}~, CO:REASON SUSPECTED {0-0}~, CO:REASON RELEASED {0-0}~, CO:reason suspected: could have been there {15-2}~, ME:RQ1: Suspects who might have been Jack the Ripper {4-An} - Susanne, QU:11:153 Characteristics of David Cohen (7:40-7:1379), QU:~11:155 Carl Feigenbaum (6:40-6:832), QU:~11:157 Robert Donston Stephenson (6:863-6:1717), QU:~11:156 James Kelly (7:3028-7:3607)

Figure 327: Network Views in HTML files

To insert Network View images into HTML files

At first you need to create a graphic file of the network view. This file then needs to be linked to the generated HTML file.

- Open the Network View in a Network Editor.
- Set the fonts, colors, and the size of the window. Arrange the nodes as desired.
- Choose **NETWORK / SAVE AS GRAPHIC FILE** from the network editor's main menu. ATLAS.ti saves network views in Bitmap (BMP) or Windows Enhanced Metafile (EMF) format. Choose EMF as format, since this is also the default format used by the HTML generator.
- Save the file, e.g. on the desktop and the copy it into the ATLAS.ti HTML folder. The HTML folder can easily located via **EXTRAS / EXPLORER / HTML FOLDER**.
- Open the HTML file in the Windows Explorer and go to the Network View section, e.g. by clicking on the link in the table of contents:

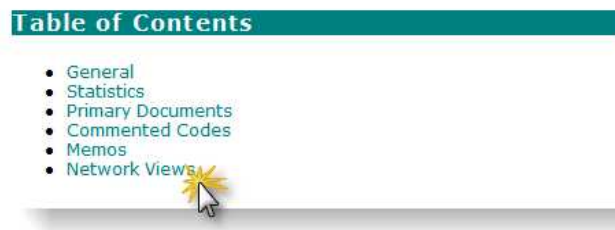


Figure 328: Jumping to the network view section by clicking on the link in the table of contents

In addition to the textual information and the network view bitmap, you see the image of the saved network view.

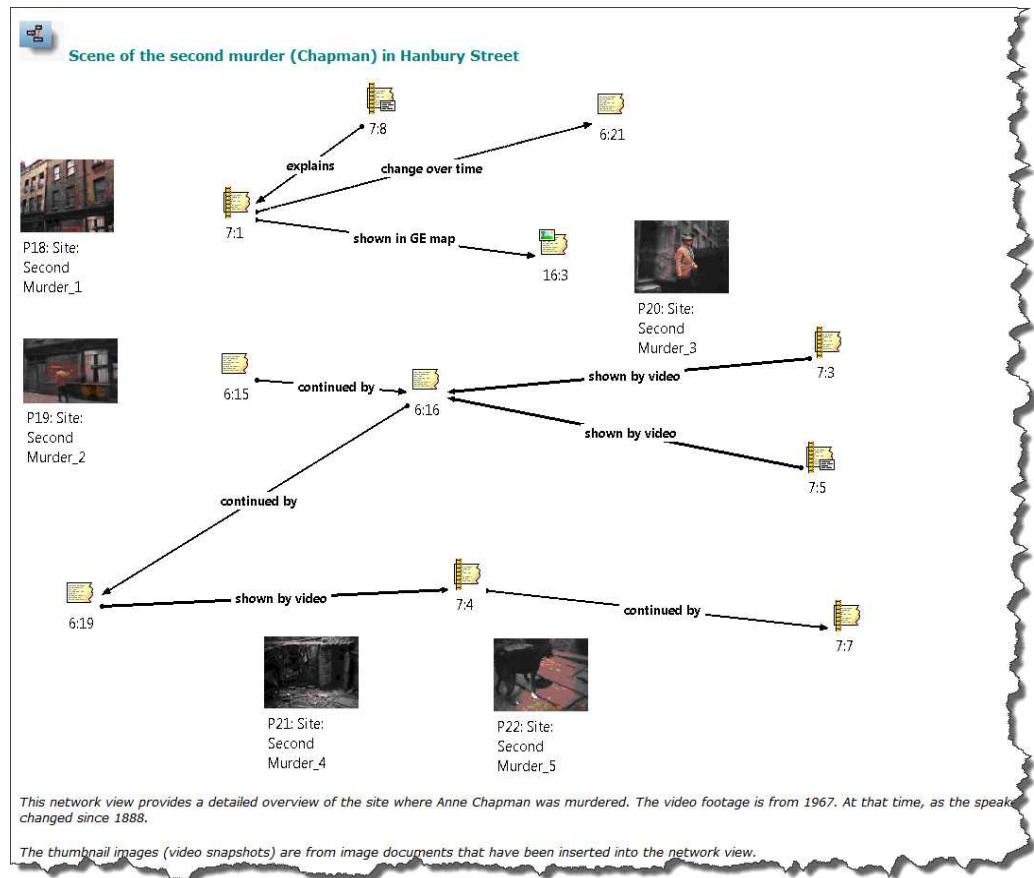


Figure 329: A network view image inserted into an HTML output

Export and Import of Documents and their Attributes

Please refer to “PD-Family Table” on page 245 for details on how to bulk assign a large number of documents and associated families in Excel™ compatible CSV format.

Appendix

Useful Resources

The ATLAS.ti Website

<http://www.atlasti.com>

The ATLAS.ti website should be a regular place to visit. Here you will find important information such as video tutorials, additional documentation of various software features, workshop announcements, special service providers, and announcements of recent service packs and patches.

Quick Tour

<http://quicktour.atlasti.com>

To get started, we recommend to work your way through the Quick Tour. Within 1,5 to 2 hours, you get an overview of the main functions and an idea on how to conduct an analysis with ATLAS.ti. When you are ready to start your own project, use the “Mini Manual” (see below) as your continuing guide.

Mini Manual

<http://manual.atlasti.com>

The Mini Manual, a special condensed version of the full manual you are currently reading, summarizes the most important information that you need to get started and for your day-to-day work. **Highly recommended reading!**

Full Manual and “How To” Documents

<http://manual.atlasti.com>

Find information on network installation, tips and tricks and special instructions on how to work with specific type of documents.

Video tutorials

<http://tutorials.atlasti.com>

If you like to learn via video tutorials, we offer a range of short videos on the following topics: Features and Interface, Getting started on a project, Coding, Visualizing – Working with Network Views and Hyperlinks.

Library

<http://library.atlasti.com>

The library contains a list of white papers by various authors (mostly ATLAS.ti trainers and consultants) extracted from past newsletters. Submissions are always welcome.

Knowledge Base

<http://kb.atlasti.com>

Search the knowledge base for immediate questions you may have related to licenses, installation, update procedures, trouble shooting or use-related questions. A quick search may already provide the answer without having to dig for an answer in the full manual.

Social Media

YouTube

<http://youtube.atlasti.com>

You find a growing number of video tutorials on the ATLAS.ti YouTube channel. So far videos are available in English and Spanish, other to come.

Facebook

<http://facebook.atlasti.com>

Stay updated with the latest news on product updates, special offers, new training materials, etc. by joining us on Facebook. We are also happy to hear from users via facebook. Stop by and let us know about your projects and experience with ATLAS.ti!

Twitter

<http://twitter.atlasti.com>

Follow us on Twitter for the most essential bits of information and announcements (version and service pack releases, special offers, training opportunities, etc.).

Newsroom

<http://newsroom.atlasti.com>

The newsroom aggregates all pertinent company news conveniently on a single platform. Press releases, articles and comments from the various ATLAS.ti profiles on social networking sites are agglomerated in real time. In addition, the newsroom lets you subscribe to available content via RSS so you're always up-to-date on what's going on with ATLAS.ti.

The Help Menu

You can access a number of resources via the ATLAS.ti Help menu:

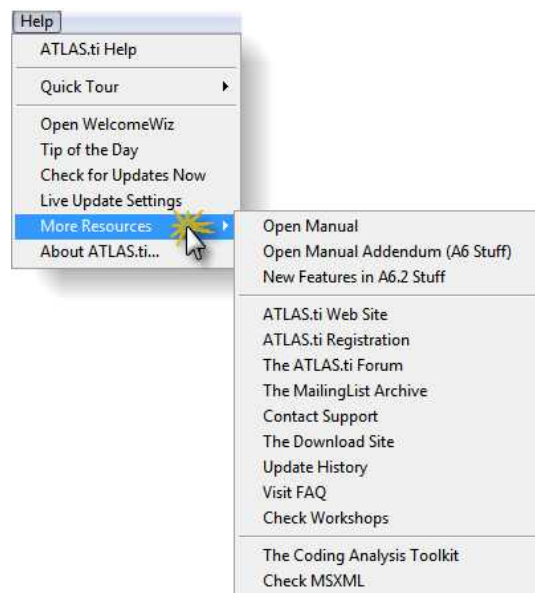


Figure 330: Accessing resources via the Help menu

The options provided via the More Resources sub menu may change over time reflecting the up-to-date status on documentations available. So it may be worthwhile to check this menu from time to time.

All options present links to internet web sites. Thus, you need to be online to access these resources. Apart from the Coding Analysis Toolkit (CAT), all other options are self-explanatory. Therefore, you find a brief introduction to CAT below on page Error: Reference source not found.

Getting Support

<http://support.atlasti.com>

The easiest way to contact the Support Center is via the main menu option **HELP / MORE RESOURCES / CONTACT SUPPORT**. Or access the Support Center directly via the above URL.

From the categories provided, select the appropriate option so your request can be processed as quickly as possible.



Figure 331: List of support channels

Frequently Asked Questions

Frequently asked questions are collected in our knowledge base on our website. To access the site directly from ATLAS.ti, select **HELP / MORE RESOURCES / VISIT FAQ** from the HU editor's main menu. An active Internet connection is required to access this web page.

Forum

<http://forum.atlasti.com>

ATLAS.ti maintains various a large forum for peer-to-peer communication, i.e. for users to (virtually) meet, exchange experiences with the tool, share tips and tricks, and discuss technical and methodological issues that arise with the use of the program.

Mailing List Archive

Like the forum, the mailing list is another tool for peer-to-peer discussion, advice, and tips. The complete mailing list archive can be conveniently accessed via **HELP / MORE RESOURCES / THE MAILINGLIST ARCHIVE**.

Troubleshooting

Help with Data Management Problems

Documents cannot be accessed

Please take a look at the mini manual, which explains data management in detail. See: http://www.atlasti.com/uploads/media/miniManual_v6_2011.pdf. Or check out the chapter on “Data Management in ATLAS.ti” on page 105.

If you cannot solve a problem related to unloadable documents on your own, please create an accessibility report (see below) and send it to our support staff:

To create an accessibility report, select **DOCUMENTS / DATA SOURCE MANAGEMENT / ACCESSIBILITY REPORT**. Save the output as file and then contact the support center, e.g. via the **HELP / MORE RESOURCES** menu.

Embedded Objects Cannot be Activated

In order to activate objects embedded in primary documents, memos or comments, the object's application (e.g., Excel) needs to be installed. You might have received an HU created on another computer, which had the application installed. Another cause is that you may have uninstalled the application needed for activation.

Cannot Enter Edit Mode for Primary Documents

Currently, only RTF and plain text documents can be edited under ATLAS.ti's control. An assigned Word document (*.doc or docx) cannot be edited. To be able to edit a document created with Word, you need to save it from Word as a rich text document (*.rtf) before you assign the document.

If you have assigned a document in doc or docx format and are in need to edit it, you can turn it into an internal document.

■ Highlight the entire document and copy it, e.g. Ctrl+C.

■ Next, create a new internal document via **DOCUMENTS / DATA SOURCE MANAGEMENT / NEW TEXT DOCUMENT**. Enter a name for the document. The document will be loaded in edit mode.

■ Paste the coded content of the doc or docx into the new text document. Then save and leave edit mode.

■ Disconnect the assigned doc or docx file from the HU (right click on the document in the PDoc Manager and select the option **DISCONNECT**).

Of Bugs and Nuisances

Sad but inevitable: no software and no operating system is totally free of errors, or "bugs."

It's usually not so much inherent programming slip-ups that cause a program to malfunction. Much more frequently, it is simply the digital environment inside your computer with which it doesn't agree. This is because every deployment situation is ultimately unique--every installation on every single computer differs from the next, as different software packages, drivers, hardware components, and many, many individual user settings all struggle to get along and vie for system resources. Sometimes that precarious balance cannot be easily achieved and clashes occur.

There really is no good way to test complex software other than through empirical tests. Only by practical application in the hands of developers, beta-testers and, yes, the users, can errors and conflicts be found.

The development of ATLAS.ti is and has been an evolutionary process by design and with significant user involvement (providing feedback, proposing new features, reporting "bugs"). The good news is that the majority of bugs are never even noticed under normal conditions and are eradicated as soon as reported through a new service pack. ATLAS.ti has a stellar record of reacting quickly to reported problems.

Other errors are only errors in the eye of the user, and not infrequently even turn out to be part of the software by design.

And quite often, errors or unexpected behavior are the result of applying the wrong procedure to a task.

Most errors are "trapped" by the program and reported to the user in such a way that the erroneous behavior can be avoided in a subsequent attempt.

Screen Refresh

When scrolling lists in any of the tools you may experience refresh problems under certain system configurations. Such problems may appear as incomplete redraw of items, looking like items are missing.

Select **EXTRAS / PREFERENCES / GENERAL PREFERENCES** and check the option **Increase List Refresh**. This will result in more complete redraws but also increases screen flicker.

No Buttons in Main Toolbar

This problem has been reported by some users. As far as we know this problem only appears on some computers when working under Windows XP in Classic Mode (user interface elements look as in previous Windows versions). The workaround: switch to XP mode.

Internal Error Message

Once in a while you might see a message like the following:

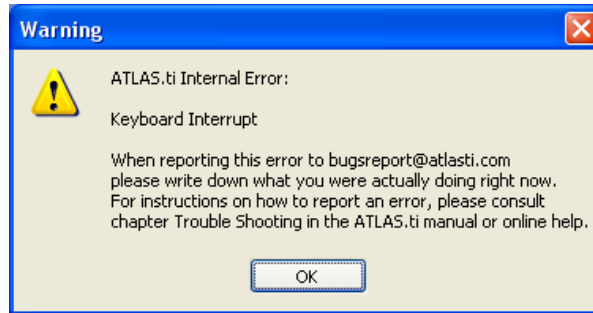


Figure 332: ATLAS.ti Internal Error

Although this is by no means always a dramatic issue, you should contact support via the email address provided in the message, or through the Support Center at <http://support.atlasti.com> (section Bugs/System Report) if the same error happens repeatedly.

When you do, it is essential that you supply a detailed description of what you were doing at the time this error occurred (coding a text passage, deleting a memo, etc.) and what the error looked like (any error messages you see). We need this information to diagnose the problem, but also user feedback is an integral part of ATLAS.ti's evolution and improvement.

For more information on how to send an error report see the following section.

Reporting Bugs

Most errors that occur during the operation of ATLAS.ti are displayed and written to a special log file named ERROR.LOG. This text file is located in the user system directory.

The contents of this file can only be interpreted by the developers of the program and is of no use for others. If you file a bug report, you might be asked to send a system report including this file to a specified support e-mail address.

The error report contains the following:

- The ERROR.LOG file.
- The System Report (which you can view via **EXTRAS / SYSTEM REPORT / DISPLAY SYSTEM REPORT**)
- The user's configuration file USER.INI.
- The ATLAS.ti configuration file ATLAS.INI.
- The list of files in ATLAS.ti's program folder.
- The list of files in the user's system folder.

The information in the package contains technical information needed for the technical support personnel to analyze and respond to reported problems. Except for the content of the ERROR.LOG, the system report and two INI files, no other file content is transferred.

To send an error report, from the main menu, select **EXTRAS / SYSTEM REPORT / CREATE AND MAIL REPORT**.

A message informs you that the report has been created and which files it includes. Click OK.

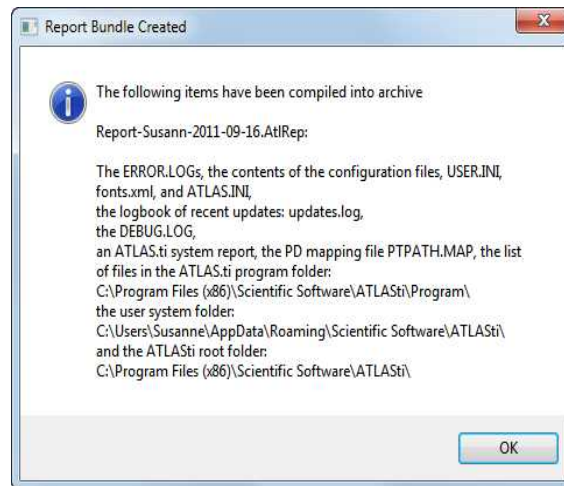


Figure 333: This message informs about about the files included in the bundle

ATLAS.ti launches your default email client and creates a new message addressed to an ATLAS.ti support address. The report file (Report-name-yyyy-mm-dd.AtlRep) should already be attached to the mail automatically. In cases where it isn't, please attach it manually (its exact location is indicated in the on-screen message).

The body of the message displays further instructions.

Add a description of your problem in the mail body. If possible, name any circumstances under which the problem occurred.

Make sure you have an active Internet connection.

Send the mail. Our support team will usually respond in less than 24 hours.

Service Packs & Patches – Live Update

Program updates (patches and service packs) are regularly available to update your installation. The program downloads and installs these service packs automatically.

Provided you have administrative rights to your computer (note: under VISTA and Windows 7, you need to explicitly run ATLAS.ti as administrator **in addition** to being logged in with full administrator rights in Windows), ATLAS.ti checks for new service packs upon start up (this requires an Internet connection). If a new service pack is found, you will be informed and asked to install it.

To run the software as administrator (for VISTA and Windows 7 users)

Right click on the program icon instead of double clicking. From the context menu, select the option (that appears in the language of your Windows system) **RUN AS ADMINISTRATOR**.

A Windows message pops up that you need to confirm. Next, a message generated by ATLAS.ti pops up informing you that you run the software in administrative mode. Confirm this message as well.

Now you should have the necessary rights to install service packs (and also to create new user accounts).

Live Update Settings



Figure 334: Live update settings

You find the settings for the live update under the **HELP** menu.

You have the option to prohibit the live update for instance for settings where users do not have administrative rights to the computer. Or if internet access is not always available. Then it can become quite annoying if ATLAS.ti starts the update request, just to find out after half a minute that no Internet access is available.

You can set the proxy settings or enter an authentication if needed.

We strongly recommend that you leave automatic update checking enabled (see Help menu). By always keeping ATLAS.ti up-to-date you avoid problems and benefit from ongoing continuous development of new tools and features. Also, in case you need to request assistance with a technical problem, our support team may not be able to assist you as quickly if your installation is severely out-of-date

Updating regularly is beneficial on all levels, so the adage “never change a running system” we sometimes hear is--at least as far as ATLAS.ti is concerned--a misguided superstition that will hamper you more than anything. If it wasn't for the many (free) service packs/updates we publish for each program generation, users would still not be able to perform a great many tasks that they hence have come to consider essential for their work, such as survey processing, XML stylesheets, smooth PDF, and many more. All of these were introduced in free service packs!

Manual installation of service packs

For those rare cases where an Internet connection is not available to use the comfortable live update procedure (usually users on highly secure networks), there is a workaround that lets you install the service packs manually.

This is not the recommended procedure for any installation where a normal live internet connection exists. Such users should rely on the much more convenient Live Update process.

The manual update procedure is as follows:

Check your current version including the build number and the most recent version.

As updates (service packs and patches) for ATLAS.ti are incremental you may need to download a number of files to update your installation. Ask our support to provide you will a direct link to download the appropriate files (**HELP / MORE RESOURCES / SUPPORT CENTER**).

Download these files and then copy them into a special folder of your ATLAS.ti installation so that the service pack manager will find them. You can access the default folder via **EXTRAS / EXPLORER / SERVICEPACK FOLDER**.

After you have downloaded, transferred the files to the ATLAS.ti computer into the so called “Service Pack Folder”:

Start ATLAS.ti (if not already opened)

Launch the Service Pack Manager while holding the SHIFT key (!): **TOOLS / SERVICE PACK MANAGER**.

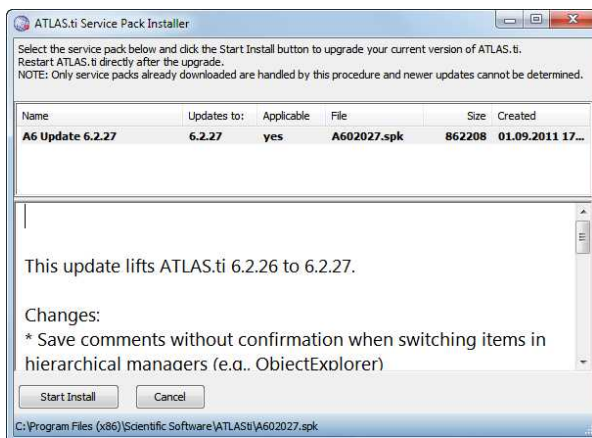


Figure 335: The Service Pack Installer window

Holding down the SHIFT key prevents the Service Pack Manager from trying to connect to our download server.

The update file(s) (*.spk) should be displayed. Click **INSTALL** to proceed and follow the instructions on your screen. If multiple updates need to be installed, you may have to repeat the procedure.

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